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Luís Henrique Pavan

Infrastructural interplays

spatial products and social infrastructure in three university campuses

Florianópolis

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Infrastructural interplays: spatial products and social infrastructure in three university campuses

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To my parents.

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Artificial Intelligence Disclaimer

No generative artificial intelligence was used in the intellectual development of this work. The use of artificial intelligence tools was limited to language support. Grammarly was employed for checking grammar and consistency in British English, and Google Gemini Pro was used for the same purpose. When necessary, mechanical translations were carried out using the DeepL platform. Manual translations from German into British English were primarily supported by the LEO platform.

Abstract

University campuses constitute a critical yet under-theorised form of social infrastructure. Like urban environments more broadly, campuses are increasingly conditioned by global political and economic forces, with neoliberal governance impacting their spatial, organisational, and symbolic production. This thesis examines how contemporary university campuses are produced through the interaction between social infrastructure and spatial products, and how these interactions both construct and are constructed by the university as an institution. Through a comparative analysis of three case studies, Columbia University, Johann Wolfgang Goethe-Universität Frankfurt am Main, and the Universidade Federal de Santa Catarina (UFSC), in Florianópolis, Brazil, the research brings together perspectives from architectural theory, infrastructure studies, and science and technology studies. Columbia and Goethe-Universität exemplify expansion models in the Global North aligned with internationalised, market-oriented university strategies, while UFSC offers a contrasting perspective from the Global South, where the public character of the institution continues to shape the provision and politics of social infrastructure. The study combines architectural analysis of buildings and campus layouts with an examination of institutional policies, administrative structures, and official discourse. It focuses on materiality, spatial typologies, urban interfaces, and the alignment, or misalignment, between stated institutional objectives and built outcomes. The findings demonstrate that university spaces resist fixed categorisation. They operate simultaneously as institutional assets and as social infrastructures that mediate relations between universities and their surrounding communities. By foregrounding infrastructure as a relational and political condition rather than a neutral backdrop, the thesis argues that contemporary campuses increasingly mobilise social infrastructure to project prestige, manage risk, and optimise institutional performance under neoliberal logics. This thesis therefore adopts a lens of complementarity, focusing not on comparison through equivalence, but on how different institutions respond to similar pressures under unequal conditions. In doing so, it reveals how architectural form, governance, and social provision converge in shaping the university.

Keywords: contemporary architecture, neoliberalism in architecture, university campuses, infrastructure studies, infrastructural turn.

Resumo

Os campi universitários constituem uma forma crítica, ainda que pouco teorizada, de infraestrutura social. Assim como os ambientes urbanos em geral, os campi são cada vez mais condicionados por forças políticas e econômicas globais, com a governança neoliberal impactando sua produção espacial, organizacional e simbólica. Examinamos como os campi universitários contemporâneos são produzidos através da interação entre infraestrutura social e produtos espaciais (*spatial products*), e como essas interações constroem e, simultaneamente, são construídas pela universidade enquanto instituição. Por meio de uma análise de três estudos de caso, Columbia University, Johann Wolfgang Goethe-Universität Frankfurt am Main e a Universidade Federal de Santa Catarina (UFSC), a pesquisa articula perspectivas da teoria da arquitetura, dos estudos de infraestrutura e dos estudos de ciência e tecnologia. Columbia e Goethe-Universität exemplificam modelos de expansão no Norte Global alinhados a estratégias universitárias internacionalizadas e orientadas para o mercado, enquanto a UFSC oferece uma perspectiva contrastante a partir do Sul Global, onde o caráter público da instituição continua a moldar a provisão e a política da infraestrutura social. Combinamos análise arquitetônica dos edifícios e das implantações dos campi com o exame de políticas institucionais, estruturas administrativas e discursos oficiais. O foco recai sobre a materialidade, as tipologias espaciais, as interfaces urbanas e o alinhamento (ou desalinhamento) entre os objetivos institucionais declarados e os produtos construídos. Demonstramos que os espaços universitários resistem a categorizações fixas: operam simultaneamente como ativos institucionais e como infraestruturas sociais. Ao situar a infraestrutura como uma condição relacional e política, e não como um pano de fundo neutro, a tese argumenta que os campi contemporâneos mobilizam cada vez mais a infraestrutura social para projetar prestígio, gerenciar riscos e otimizar o desempenho institucional sob lógicas neoliberais. Esta tese, portanto, adota uma lente de complementaridade, focando não na comparação por meio da equivalência, mas em como diferentes instituições respondem a pressões semelhantes sob condições desiguais. Dessa forma, o trabalho revela como a forma arquitetônica, a governança e a provisão social convergem na configuração universitária.

Palavras-chave: arquitetura contemporânea, neoliberalismo na arquitetura, campi universitários, estudos da infraestrutura, virada infraestrutural.

Abstrakt

Universitätsgelände stellen eine kritische, jedoch bisher unzureichend theoretisierte Form sozialer Infrastruktur dar, die Bildungsfunktionen mit einer breiten Palette von Dienstleistungen verbindet und so das Alltagsleben, institutionelle Praktiken und die Beziehungen zur Stadt prägt. Wie städtische Umgebungen im Allgemeinen werden auch Campusareale zunehmend von globalen politischen und ökonomischen Kräften bestimmt, wobei neoliberale Governance ihre räumliche, organisatorische und symbolische Produktion beeinflusst. Diese Arbeit untersucht, wie zeitgenössische Universitätsstandorte durch die Wechselwirkung zwischen sozialer Infrastruktur und räumlichen Produkten (spatial products) hervorgebracht werden und wie diese Interaktionen die Universität als Institution sowohl konstruieren als auch von ihr konstruiert werden. Durch eine vergleichende Analyse dreier Fallstudien, Columbia University, Johann Wolfgang Goethe-Universität Frankfurt am Main und Universidade Federal de Santa Catarina (UFSC), führt die Forschung Perspektiven aus der Architekturtheorie, den Infrastrukturentwürfen sowie der Wissenschafts- und Technikforschung zusammen. Columbia University und Goethe-Universität stehen exemplarisch für Expansionsmodelle im Globalen Norden, die an internationalisierten, marktorientierten Universitätsstrategien ausgerichtet sind, während die UFSC eine kontrastierende Perspektive aus dem Globalen Süden bietet, wo der öffentliche Charakter der Institution weiterhin die Bereitstellung und Politik der sozialen Infrastruktur prägt. Die Studie verknüpft eine architektonische Analyse von Gebäuden und Campus-Layouts mit einer Untersuchung institutioneller Strategien, Verwaltungsstrukturen und offizieller Diskurse. Im Mittelpunkt stehen Materialität, räumliche Typologien, städtische Schnittstellen sowie die Übereinstimmung (oder Diskrepanz) zwischen erklärten institutionellen Zielen und den gebauten Ergebnissen. Die Ergebnisse zeigen, dass sich Universitätsräume einer festen Kategorisierung entziehen: Sie fungieren gleichzeitig als institutionelle Vermögenswerte und als soziale Infrastrukturen, die Beziehungen zwischen Universitäten und ihren umliegenden Gemeinschaften vermitteln. Indem die Arbeit Infrastruktur als eine relationale und politische Bedingung statt als neutralen Hintergrund in den Fokus rückt, argumentiert sie, dass zeitgenössische Campusareale zunehmend soziale Infrastruktur mobilisieren, um Prestige zu projizieren, Risiken zu managen und die institutionelle Leistungsfähigkeit unter neoliberalen Logiken zu optimieren. Diese Arbeit verfolgt daher einen komplementären Ansatz und konzentriert sich nicht auf einen

Vergleich anhand von Äquivalenzen, sondern darauf, wie verschiedene Institutionen unter ungleichen Bedingungen auf ähnliche Belastungen reagieren. Dabei wird aufgezeigt, wie architektonische Form, Governance und soziale Versorgung bei der Gestaltung der Gegenwart und Zukunft der Universität konvergieren.

Schlüsselwörter: Zeitgenössische Architektur, Neoliberalismus in der Architektur, Universitätsgelände, Infrastrukturforschung, Infrastrukturelle Wende.

Resumo expandido

Introdução

Os campi universitários constituem uma forma crítica, ainda que pouco teorizada, de infraestrutura social. Assim como os ambientes urbanos em geral, os campi são cada vez mais condicionados por forças políticas e econômicas globais, com a governança neoliberal impactando sua produção espacial, organizacional e simbólica. Por meio de uma análise de três estudos de caso, Columbia University em Nova York, Johann Wolfgang Goethe-Universität Frankfurt am Main e a Universidade Federal de Santa Catarina em Florianópolis, a pesquisa articula perspectivas da teoria da arquitetura, dos estudos de infraestrutura e dos estudos de ciência e tecnologia. Columbia e Goethe-Universität exemplificam modelos de expansão no Norte Global alinhados a estratégias universitárias internacionalizadas e orientadas para o mercado, enquanto a UFSC oferece uma perspectiva contrastante a partir do Sul Global, onde o caráter público da instituição continua a moldar a provisão e a política da infraestrutura social.

Objetivos

Examinamos como os campi universitários contemporâneos são produzidos através da interação entre infraestrutura social e produtos espaciais (spatial products), e como essas interações constroem e, simultaneamente, são construídas pela universidade enquanto instituição. Nosso objetivo com esta tese é interpretar o campus por meio dessas interações infraestruturais, precisamente porque essa interação é de grande relevância para destacar alguns dos aspectos formativos das universidades na atualidade. Assim, ao focar nessa mútua influência, integramos primeiramente pontos de análise que normalmente não são vistos em conjunto e, ao fazê-lo, evidenciamos aspectos que raramente são abordados em análises do espaço universitário. Esta é também uma área na qual nossa análise se mostra mais abrangente e inovadora.

Metodologia

Combinamos a análise arquitetônica dos edifícios e das implantações dos campi com o exame de políticas institucionais, estruturas administrativas e discursos oficiais. O foco

recai sobre a materialidade, as tipologias espaciais, as interfaces urbanas e o alinhamento (ou desalinhamento) entre os objetivos institucionais declarados e os produtos construídos. Esta tese adota uma perspectiva transnacional no estudo da arquitetura universitária, destacando processos, circulações e interligações transfronteiriças que excedem os limites nacionais. Em contraste com abordagens baseadas na globalização, que muitas vezes privilegiam dinâmicas abstratas e homogeneizantes, uma perspectiva transnacional atende às formas situadas, desiguais e relacionais pelas quais modelos arquitetônicos, políticas, mecanismos financeiros e práticas institucionais são produzidos, adaptados e contestados em contextos específicos. Nosso método aborda o ambiente construído como uma manifestação de regimes de governança e de provisão em constante mudança. Selecionamos os estudos de caso em resposta a esse problema de pesquisa, uma vez que eles encapsulam as tensões entre o financiamento público e o privado, funcionam como locais de visibilidade institucional e cristalizam mudanças nos regimes de gestão, governança e prestação de serviços, embora em contextos nacionais e institucionais marcadamente distintos.

Resultados e discussão

Esta tese demonstra que as infraestruturas nos campi universitários são simultaneamente construídas por arranjos institucionais e participam ativamente na construção do campus e da própria universidade. Compreender essas interações como relacionais permite que a infraestrutura seja lida não como um suporte de fundo, mas como uma força formativa na moldagem da vida acadêmica, da governança e do engajamento urbano. A decisão de analisar esses processos sob a ótica do neoliberalismo reflete não uma imposição teórica, mas a identificação de um modo de operação cada vez mais consolidado no ensino superior contemporâneo. Esta pesquisa abordou o campus universitário como infraestrutura e, a partir desse ponto de vista, desdobrou as tensões conceituais e analíticas que estruturam o ensino superior contemporâneo. A infraestrutura é aqui compreendida como não monolítica e relacional, respondendo às pressões neoliberais de maneiras diferenciadas. Nossa definição desses produtos espaciais foi construída para que pudéssemos identificar arranjos nos quais a lógica neoliberal já está intrínseca. Assim, os produtos espaciais revelam como o poder assume formas materiais e espaciais ao se

alinhar a sistemas financeiros, políticos e técnicos. Surgidos da privatização e da mercantilização de ativos públicos, esses produtos tendem a adotar layouts padronizados em campi, distritos empresariais e outros empreendimentos. Ao incorporar estruturas logísticas, políticas e regulatórias à organização do espaço, eles moldam as relações sociais de forma sutil, porém decisiva. Sua estética controlada torna o poder menos visível, conferindo uma aparência de neutralidade que mascara as motivações econômicas e políticas subjacentes. Infraestrutura social e produto espacial funcionam aqui como dispositivos analíticos que tornam visíveis os valores incorporados nos campi universitários. Embora suas formas materiais possam se sobrepor, a distinção entre eles é definida menos pela arquitetura do que pela ideologia institucional, pela governança e pelas estruturas de financiamento. Demonstramos que os espaços universitários resistem a categorizações fixas: operam simultaneamente como ativos institucionais e como infraestruturas sociais. Ao situar a infraestrutura como uma condição relacional e política, e não como um pano de fundo neutro, a tese argumenta que os campi contemporâneos mobilizam cada vez mais a infraestrutura social para projetar prestígio, gerenciar riscos e otimizar o desempenho institucional sob lógicas neoliberais.

Palavras-chave: arquitetura contemporânea, neoliberalismo na arquitetura, campi universitários, estudos da infraestrutura, virada infraestrutural.

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Acronyms

AfE: Abteilung für Erziehungswissenschaft

AI: Amerika Institut

BfCG: Büro für Chancengerechtigkeit

BRuW: Bibliothek Recht und Wirtschaft

BSKW: Bibliothek Sprach- und Kulturwissenschaften

BSP: Bibliothek Sozialwissenschaften und Psychologie

BzG: Bibliothekszentrum Geisteswissenschaften

Capes: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior

CCEVEN: Centro de Cultura e Eventos

CEO: Clínica Escola Odontologia

CfH: Centre for Humanities

CIAM: Congrès Internationaux d'Architecture Moderne

CN: Columbia Neighbors

CUB: Ciudad Universitaria de Bogotá

CUIMC: Columbia University Irving Medical Centre

DGH: David Geffen Hall

DIPF: Leibniz-Institut für Bildungsforschung und Bildungsinformation

EFI: Espaço Físico Integrado

EPFL: École Polytechnique Fédérale de Lausanne

ESDC: Empire State Development Corporation

ETH: Federal Institute of Technology Zürich

FEESC: Stemmer Foundation for Research, Development and Innovation

FORPROEX: Forum of Pro-Rectors of Extension of Brazilian Public Higher Education Institutions

GPP: General Project Plan

GUF: Johann Wolfgang Goethe-Universität Frankfurt am Main

HoF: House of Finance

HRKH: Henry R. Kravis Hall

HU: Hospital Universitário, UFSC

ICC: Instituto Central de Ciências

IIT: Illinois Institute of Technology

JB: Juridicum Building

JLGSC: Jerome L. Greene Centre

LCfA: Lenfest Centre for the Arts

LDB: Lei de Diretrizes e Bases da Educação Nacional

MEC: Ministério da Educação

MES: Ministério da Educação e Saúde

MPIRR: Max-Planck-Institut für Rechtsgeschichte und Rechtstheorie

NETI: Núcleo de Estudos da Terceira Idade

NSB: Northwest Science Building

NYU: New York University

PA: Präsidium und Administration

PEG: Psychologie, Erziehungswissenschaften Gesellschaftswissenschaften

RDVEC: Roy and Diana Vagelos Education Centre

REUNI: Programa de Apoio a Planos de Reestruturação e Expansão das Universidades Federais

RLC: Rolex Learning Center

RPBW: Renzo Piano Building Workshop

RU: Restaurant Universitário

RuW: Rechtswissenschaft und Wirtschaftswissenschaften

SCEG: Student Coalition on Expansion and Gentrification

SGN: Senckenberg Gesellschaft für Naturforschung

SI: Social Infrastructures

SINAES: Sistema Nacional de Avaliação da Educação Superior

SKW: Sprachwissenschaften und Kulturwissenschaften

SozFra: Akademie für Sozial- und Handelswissenschaften

STS: Science and Technology Studies

SUS: Sistema Único de Saúde

UB: Universidade do Brasil

UC Berkeley: University of California, Berkeley

UCL: University College London

UNC: Universidad Nacional de Colombia

UEE: União Estadual dos Estudantes

UFRJ: Universidade Federal do Rio de Janeiro

UFSC: Universidade Federal de Santa Catarina

UnB: Universidade de Brasília

USAID: United States Agency for International Development

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Infrastructural
interplays
spatial products
and social
infrastructure in
three university
campuses

Introduction

Universidade Federal de Santa Catarina (UFSC) in Florianópolis, Brazil, Johann Wolfgang Goethe-Universität Frankfurt am Main (GUF), and Columbia University in the City of New York may initially appear to form an unlikely trio. The differences between them, rooted in distinct socio-economic, cultural, and political contexts, are immediately apparent, and readers may reasonably hesitate to see them analysed together. Yet it is precisely these contrasts that make their juxtaposition a productive analytical endeavour.

The three institutions operate within markedly different urban settings and are shaped by divergent educational models. UFSC is a federal public university founded in 1960. It offers tuition-free education and serves a socioeconomically diverse student body, but its operation is frequently affected by political and financial instability. Columbia, by contrast, was founded in 1754 as King's College and placed under private trusteeship in 1787. It is now one of the world's most prestigious private universities, characterised by substantial financial autonomy, a vast endowment, and highly selective admissions. These conditions allow it to attract faculty and students globally and to construct and maintain state-of-the-art facilities, albeit at the expense of high tuition fees that reinforce its elite status. GUF occupies an intermediate position within this constellation. Founded in 1914, it was initially established as a foundation, later became a state university, and in 2008 was reconstituted as a public-law foundation. This model affords greater financial and administrative autonomy than that of a conventional public university, while preserving tuition-free education within Germany's public funding framework.²

The contrasts between the institutions are mirrored by the national and urban contexts in which they are located. Brazil, Germany, and the United States represent markedly

² Unlike public universities in Brazil, where students do not have to pay any fees or contributions, in Germany, students must pay a semester fee before the start of the term. It normally covers contributions to student services, including the *Studentenwerk* (Student Welfare Organisation), transport tickets, and other services.

different political, economic, and cultural formations.³ Within this configuration, however, the pairing of Frankfurt am Main and Manhattan appears almost self-evident. Both function as major nodes of global finance.⁴ Manhattan hosts Wall Street and the New York Stock Exchange, while Frankfurt is home to the European Central Bank and a dense concentration of international financial institutions. In both cases, these roles have fostered highly internationalised urban environments shaped by global capital flows, mobile labour, and transnational corporate presence.

Parallels can also be observed in infrastructure and cultural institutions. Frankfurt Airport ranks among Europe's busiest and is comparable in function, if not in scale, to New York's major airports. Culturally, Frankfurt's Städel Museum and opera house occupy positions analogous to Manhattan's Metropolitan Museum of Art and Broadway. These affinities, however, should not obscure significant differences. Manhattan's scale far exceeds that of Frankfurt. New York City's population surpasses eight million inhabitants, while Frankfurt counts fewer than one million. This disparity is reflected in their respective urban forms, ranging from Manhattan's rigid grid and density to Frankfurt's layered coexistence of medieval remnants and contemporary high-rise development.

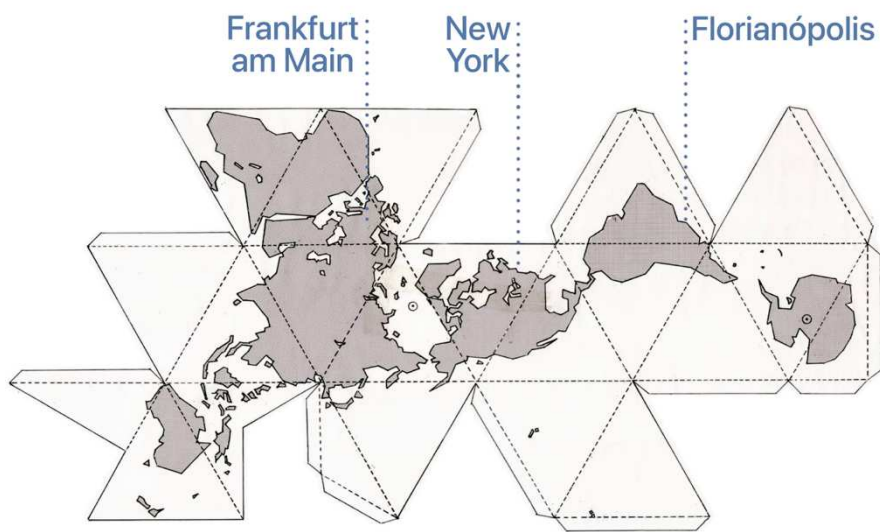
³ Since the beginning of Donald Trump's second administration in January 2025, U.S. higher education has undergone a qualitative reconfiguration in its relationship with the federal state, shifting from a terrain of ideological contestation to an object of direct political governance. Universities have been increasingly targeted through coordinated executive actions that repurpose federal research funding, contracts, and regulatory oversight as instruments of leverage, frequently bypassing established civil-rights enforcement mechanisms and peer-review procedures. Under the stated aims of combating antisemitism, dismantling diversity, equity, and inclusion programmes, and restoring "academic excellence," funding from agencies such as the National Institutes of Health and the National Science Foundation has been frozen, delayed, or cancelled, producing immediate disruptions to research infrastructures, graduate training, and employment stability. These interventions exploit the structural dependence of universities on federal resources, generating conditions of anticipatory compliance in which institutions pre-emptively adjust policies, governance structures, and public positioning to mitigate political risk. The effects extend beyond individual campuses, undermining the temporal continuity on which scientific research and academic planning depend. While high-profile conflicts have centred on elite private universities, public and urban systems are disproportionately exposed. Institutions such as the City University of New York, which operate with limited financial reserves, high reliance on public funding, and a mission oriented towards access and social inclusion, face compounded pressures that threaten both their research capacity and their teaching mission. Although these issues are closely intertwined with the theme and object of this study, they will not be addressed in the present discussion. The situation remains highly volatile, evolving on an almost daily basis, and it therefore seems methodologically and analytically more prudent to refrain from engaging with this topic at this stage (Green, 2025).

⁴ The playful comparison between Manhattan and "Mainhattan" – a nickname for Frankfurt am Main – highlights the influence of finance capitalism in both cities. Manhattan, the global epicentre of finance in New York, and Frankfurt, Europe's financial hub, showcase similar urban landscapes shaped by global capital (Möller, E. 2015).

Introducing Florianópolis complicates this assessment. Unlike Frankfurt and Manhattan, it lacks the infrastructural and financial centrality associated with global cities. With a population of approximately 530,000, a comparatively small airport, limited public transport, and lower urban density, its urban condition is structured by different spatial and economic logics. Most of the city is located on an island which, unlike Manhattan, received its first point connection to the mainland about 100 years ago. Although the city is undergoing rapid transformation, its cultural identity remains strongly tied to its coastal geography and Brazilian social formations (Map 1).

It is these contrasts that motivate the examination of the three campuses associated with UFSC, Columbia, and GUF. Infrastructural space, understood here not merely as a set of technical systems but as the spatial, organisational, and institutional frameworks that sustain them, plays an active role in shaping both the physical environment of the campus and the global reach of the university. It is through such spaces that the global, the structural, and the total are assembled and extended across a series of localised sites (Latour, 1996, 2007). The objective of this study is therefore to identify moments in which comparable phenomena emerge across distinct contexts, marked by shared institutional and spatial indicators.

Artefacts, technologies, and institutions do not constitute neutral backdrops to human action; they actively participate in shaping social relations and power structures. Universities are no exception. Despite the persistent rhetoric of humanism and personal development that surrounds them, they are not inherently impartial institutions. A critical reading of university territory must therefore recognise that campuses exceed their function as physical containers, materialising political agendas, ideological frameworks, and specific modes of engagement.



Map 1. Location of Frankfurt am Main, New York and Florianópolis.

In the humanities, recent conceptualisations of infrastructure have emphasised its historical, political, and cultural dimensions. Such scholarship has supported a qualitative modification in how the theme is approached. Infrastructure, thus, appears exceeding the hardware realm, operating simultaneously as a material and discursive formation. They are, in such vein, simultaneously formative of, and responsive to, the conditions of modernity and, in the process, mediate and connect multiple scales of time, space, and social organisation (P. N. Edwards, 2002). Similarly, a hermeneutics of infrastructure might reveal historical change, power relations, inequalities, and technological systems (Richter, 2018).

From this perspective, universities can be understood as complex infrastructures composed of buildings, technologies, administrative routines, funding regimes, and institutional values. Their buildings function as organisational devices that stabilise practices and contribute to the continuous fabrication of the institution itself (Martin, 2003, 2021). Spatial production emerges through the daily operation of the campus, where multiple infrastructures intersect. Organisational and architectural models that circulate transnationally arrive on campuses as standardised protocols but only become effective through their encounter with local institutional conditions, which modulate and, at times, transform them. Through this process, campuses are inserted into broader matrices of management and regulation that articulate global and local scales.

Campus architecture thus operates as mediating devices within a wider socio-technical assemblage.⁵ They translate institutional priorities into spatial form through networks of material infrastructures, operational practices, and architectural conventions. The campus both shapes and is shaped by the city, acting simultaneously as a driver of urban transformation and as a register of prevailing social and political expectations. Like other infrastructural systems, it confronts spatial constraints, depends on external debates, and remains subject to shifting interpretations of architecture and urban design.

⁵ Socio-technical refers to the fundamental inseparability of social and technical elements in the production of action, knowledge, and order. From a Latourian perspective, what we call the social is always composed of heterogeneous assemblages of human and non-human actors (people, machines, texts, institutions, standards, and material artefacts) whose relations jointly produce agency. Technologies, in this sense, not only reflect social intentions but, more importantly, stabilise, translate, delegate, and redistribute action (Latour, 2007; Latour & Woolgar, 2013).

Institutions themselves operate as symbolic orders shaped by competing interests and unstable normative frameworks. From this perspective, guiding principles such as the tension between educational ideals and practical demands, or between teaching and research, are not stable foundations but sites of ongoing contestation. These principles do not coexist evenly; rather, institutions strategically foreground certain values over others in response to specific circumstances (Dauß & Rehberg, 2009). This selective emphasis unfolds through continuous interaction with the public sphere, where institutional legitimacy is negotiated and rearticulated. Institutional stability therefore also depends on symbolic power exercised through visible representations. When knowledge and its various media are naturalised, the historical conditions under which universities are designed—and the public they are intended to serve—risk being obscured. This naturalisation conceals the extent to which infrastructure, technology, and politics shape the production, circulation, and democratisation of knowledge. These dynamics extend beyond the campus, influencing how knowledge is accessed, legitimised, and shared. From this perspective, two interrelated issues come into focus.

The first concerns the transformation of investment in infrastructure and public goods. Since the late 1960s, the modern infrastructural ideal and its material outcomes have been subject to sustained critical and practical scrutiny.⁶ At the same time, the Keynesian economic framework entered a deep fiscal and legitimacy crisis within an increasingly interconnected yet uneven global capitalist economy.⁷ Any serious reading of this period must therefore recognise that the world itself changed, and that the modern project became burdened by doubt. Part of this scepticism stemmed from the observation that large-scale infrastructural and urban interventions increasingly produced fragmented and segregating outcomes. These tendencies have been theorised through concepts such as *Splintering Urbanism* and *Extreme Urban Forms*, which describe how infrastructure can

⁶ The theorisation of a so-called modern infrastructure production project mainly concerns the transformation of Western developed cities from around 1850-1960, moving from fragmented, localised infrastructure to centralised, standardised, and regulated systems. Significant public and private investments expanded networks for water, sewerage, communication, electricity, and transportation, symbolising modernity and embodying coherence and rationality in urban planning (Graham & Marvin, 2001; Moss, 2022).

⁷ At the same time, encouraging liberalised competition has become a growing approach to national infrastructure regulation (Montes & Reis, 2011; Santos, 2000).

intensify spatial and social inequality rather than mitigate it (Arantes, 2021a; Graham & Marvin, 2001, 2022). The utopian aspirations of avant-garde modernism, particularly its faith in universal solutions and radical spatial prescriptions, proved incapable of delivering the promised democratisation of the city. In practice, universalist claims often resulted in paradoxically localised and exclusionary spatial arrangements.

This impasse reflects a broader condition of incompleteness within cultural modernity itself. Enlightenment ambitions to establish an inner logic of art, a universal morality, and an objective science ultimately generated a series of aporias that revealed the structural limits of the modern western project.⁸ As developmental promises increasingly translated into chaotic urbanisation and social fragmentation, a technocratic tolerance of alienation took hold. This paved the way for strategic, corporate-style urban planning, in which local and transnational entrepreneurship sustain hyper-urbanisation while benefiting from social polarisation.⁹ What emerges is a reconfiguration of responsibility for urban development where the diminishing role of the state, coupled with decentralisation, foreign capital, and intensified inter-urban competition, marks a decisive transition in how infrastructure and public goods are conceived, financed, and governed.

The second issue concerns the positioning of university infrastructure within this broader framework. While the influence of political and economic regimes on campus form is both analogous to and emblematic of wider infrastructural transformations, it remains comparatively under-examined. Neoliberalism is a protean project, highly capable of mutation, which seeks not the withdrawal of the state but its mobilisation through market-oriented technologies and infrastructures. Between adaptable local practices and a strong

⁸ The critique of modernism, however, should not be understood in isolation from other practices, nor decontextualised from its broader historical context. The criticism largely centres on the unfulfilled aspirations of universalism and technological progress, which proved fragile in theory. Additionally, it is crucial to acknowledge that the modern movement in architecture was not a monolithic entity. Internal conflicts and differing visions, as evidenced by the disputes within influential groups like the *Congrès Internationaux d'Architecture Moderne* (CIAM. Congresses of Modern Architecture), highlight the diversity of perspectives that shaped the global dissemination of modern architectural principles. An insightful account on such criticism appears in Colquhoun (2002) and in Mumford, E. (2018).

⁹ Hyper-urbanisation is as a phenomenon in which city-making is driven by financial speculation, astronomical scales, and frantic speeds rather than social necessity. Arantes characterises this process as the production of dream worlds or phantasmagorias, monumental, image-centric enclaves designed to attract global capital while masking profound inequality (Arantes, O. F. B, 2021a).

emphasis on competition, neoliberalism also produces its own aesthetic framework and cultural sensibility. In Europe, this project took hold between the 1970s and 1980s as a response to the crisis of the welfare state. In Latin America, it intensified after 1980, largely through the imposition of structural adjustment programmes. In Brazil, neoliberal reforms expanded after redemocratisation, reshaping economic policy, privatising state assets, and reducing the role of the state in social and educational provision, with significant effects on federal universities.¹⁰

Neoliberalism operates as a pervasive ideological framework that reshapes institutional identities, spatial practices, and subjectivities. Within this outline, new subject positions emerge, such as the student-entrepreneur or the citizen-consumer, signalling a shift towards individualised competition in which self-interest becomes a dominant social value. The materialisation of the so-called “knowledge society” further transformed universities. In the United States during the 1960s, this paradigm redefined knowledge from a relatively stable public good into a continuous flow regulated by intellectual property, in which students increasingly function as consumers. This model spread internationally through American soft power, including technical cooperation with Latin America and Europe.

Ignoring the impact of these transformations on the built university environment limits the study of university territory. As this thesis argues, infrastructures are simultaneously relational and shaped by processes that operate across longer temporal and spatial scales than is often assumed. Restricting analysis to formal or functional aspects obscures how campuses participate in broader flows and how their materiality is reconfigured by neoliberal governance. It is precisely here that concept of spatial products becomes analytically useful, revealing how urban and architectural forms circulate globally as standardised models that express the logic of transnational capitalism (Easterling, 2005). This circulation accompanies a shift from centralised, universalist infrastructures to segmented and unequal networks, increasingly governed through private rather than public mechanisms (Graham & Marvin, 2022).

¹⁰ Brazilian redemocratisation refers to the gradual political transition from the military dictatorship (1964–1985) to a civilian democratic regime, culminating in the 1988 Constitution.

As with many urban spaces subjected to commodification, the university has increasingly withdrawn from its identification with the *res publica*.¹¹ The notion of the “neoliberal university” captures this transformation, describing the integration of higher education into economic rationalities that privilege competition, efficiency, and measurable performance. Universities are increasingly managed as quasi-corporate entities oriented towards cost reduction, revenue generation, and labour-market alignment. Declining public funding further compels institutions to seek alternative income streams, reshaping campus culture around entrepreneurialism and differentiation.

Our definition of these spatial products was constructed so that we can identify arrangements in which neoliberal logic is already embedded. Thus, spatial products illuminate how power takes material and spatial form through alignment with financial, political, and technical systems. Emerging from privatisation and the commodification of public assets, they tend to adopt standardised layouts across campuses, business districts, and other developments. By embedding logistical, political, and regulatory frameworks within spatial organisation, they subtly but decisively shape social relations. Their controlled aesthetics render power less visible, lending an appearance of neutrality that conceals underlying economic and political rationales.

The architectural artefacts produced within these dynamics do represent institutions; but they also actively participate in the production of organisational practices and subjectivities. Part of contemporary university architecture appears, in such light, as a technology of power oriented towards the production of neoliberal subjectivity (Spencer, 2016). Design and its discourse thus function as mechanisms of conformity, crafting ideal and sufficiently flexible profiles, whether for workers or students. This thesis adopts a framework in which artefacts, management regimes, and political processes operate as infrastructures that co-produce the campus by articulating global and local scales. University buildings condense norms, technologies, and managerial flows, functioning as operational devices of the institution. Neoliberalisation reconfigures this assemblage by reorganising provision networks, segmenting access, and shifting power towards

¹¹ See Brandão, C. A. L. (2023).

corporate actors, thereby transforming the infrastructural configuration of the contemporary campus.

A further critical insight lies in the recognition that certain spatial products on campuses function as integral forms of social infrastructure. Social infrastructure consists of the physical places and organisations that shape the way people interact, providing the material foundations for social and urban life. Facilities such as schools, parks, hospitals, theatres, and universities are central to this outline, particularly insofar as they enable a diversity and intensity of human encounters. In this sense, social infrastructure does not describe social relations themselves, but the spatial and institutional conditions that make them possible. Consequently, this concept holds particular significance for both architectural and educational scholarship in neoliberal settings.

The forms of social interaction sustained by such infrastructures are often unplanned, and rigid institutional organisation may even inhibit their organic emergence. While individual schools or hospitals are formally planned objects, the collective assemblage they form constitutes a distinct and highly articulated infrastructure, especially in the context of university campuses. Although social infrastructure plays a crucial buffering role in moments of climatic, social, or political stress, its ubiquity often renders it nearly invisible. We align with authors who argue that this taken-for-granted condition is itself a risk, since infrastructural invisibility leaves these systems particularly vulnerable to neglect and divestment.¹²

Based on our earlier discussions, our **research problem** centres on a conceptual and analytical tension in how university campuses and the buildings that comprehend it are understood within architectural and urban scholarship. Although campuses are increasingly recognised as forms of infrastructure, existing analyses often fail to fully account for the interplay of different infrastructures and contradictions that emerge when

¹² This issue will be examined in greater depth in Part III of this thesis. At this stage, it is sufficient to note that a significant body of scholarship on social infrastructure addresses the problem of its taken-for-granted character. The assumption of its continued functioning is itself problematic, insofar as it obscures underlying crises and structural deficiencies. Moreover, the relative absence of sustained political attention and investment renders social infrastructure particularly vulnerable. Public spaces, in this sense, are often perceived as self-evident or naturalised elements of the urban fabric, rather than as outcomes of deliberate political choice and institutional commitment (Latham & Layton, 2022).

these spaces are examined simultaneously as supportive public services and as urban artefacts embedded in neoliberal political-economic regimes. This problem also manifests in how campus buildings are understood as both spatial products and social infrastructures. These analytical categories are not mutually exclusive; rather, their intersection reveals how architectural form, programme, and material organisation mediate institutional rationalities and social relations. Another part of the problem, therefore, lies in the insufficient theorisation of how campuses, while contributing to human and social development through education, labour formation, and cultural production, may simultaneously reinforce segregation or reproduce urban patterns structured by existing power asymmetries.

We have formulated **three research questions** to address our research problem. The first examines how university campuses operate in different contexts both as spatial products and as social infrastructures, and which artefacts, protocols, and institutional arrangements orient these positions. It further investigates how these dual roles shape the present and future spatial and institutional organisation of universities. Although these analytical positions are not exhaustive, they directly engage the tension between the campus's specialised functions and its broader role within the urban and social landscape. This tautness is materialised in both the design of individual buildings and the overarching spatial organisation of institutions.

Addressing this question requires moving beyond an understanding of the campus as a singular, monolithic entity. While it is essential to acknowledge the specificity, mono-functionality, and relative homogeneity that often characterise campuses, whether in terms of their institutional purpose or the populations they serve, and the ways in which their internal functioning render them spatial products, it is equally necessary to approach the campus as a public entity embedded in wider urban, social, and infrastructural systems.

Secondly, we question the implications of theorising the campus as an infrastructure, acknowledging that the histories of infrastructure, urban development, and universities collide within university spaces. Here, we use the term collision to refer to the tensions and

dynamics shaping both architectural and urban environments.¹³ Underlying this dynamic is the reality that universities, as powerful institutions, have the capacity to assert their own agendas and shape the landscape while also yielding to external pressures and adapting to prevailing trends. This perspective challenges the notion of linear progression or teleology in the study of infrastructures. Instead, it is through their adaptations, modifications, and interruptions that we can grasp these structures in their deeply embedded spatial and social contexts.

The third research question addresses the possibilities and limits of understanding social infrastructure typologies as a means of rearticulating the relationship between universities and society, also considering that spatial products and social infrastructure are not mutually exclusive concepts. It directs attention to the policies through which social infrastructure is shaped within universities, whether funding arrangements, governance structures, and modes of engagement with surrounding communities. In this sense, administrative practices cannot be treated as external to social infrastructure. They participate directly in its constitution, becoming part of the very assemblage through which the university operates.

This thesis adopts a transnational perspective in the study of university architecture, foregrounding cross-border processes, circulations, and entanglements that exceed nationally bounded frameworks. In contrast to approaches grounded in globalisation—which often privilege abstract, homogenising dynamics—a transnational perspective attends to the situated, uneven, and relational ways in which architectural models, policies, financial mechanisms, and institutional practices are produced, adapted, and contested across specific contexts. Part of the originality of the approach proposed here lies in its

¹³ We are expanding on Tafuri's reflections concerning the inherently provisional nature of history, which serves to analyse and question observable realities. This dynamic process means that history both influences and is influenced by events. Architecture as an institution does not represent a singular ideological entity. Such idea of collision relates to how "architecture as politics is by now such an exhausted myth that it is pointless to waste more words on it. But if Power – like the institutions in which it incarnates itself – 'speaks many dialects,' the analysis of the 'collision' among these dialects must be the object of historiography. The construction of a physical space is certainly the site of a 'battle': proper urban analysis demonstrates this clearly. That such a battle is not *totalizing*, that it leaves borders, remains, residues, is also an indisputable fact. [...] The threshold, the boundary, the limit all 'define': it is in the nature of such definition that the object so circumscribed immediately becomes evanescent. The possibility of constructing the history of a formal language comes about only by destroying, step by step, the linearity of that history and its autonomy: there will remain only traces, fluctuating signs, unhealed rifts" Tafuri, M. (1987, p.8).

treatment of neoliberalism as a spatial and institutional condition that is articulated differently across university environments, rather than as a monolithic or universally imposed rationality.

Furthermore, this thesis seeks to advance a critical refinement of analytical notions such as infrastructure, social infrastructure, and spatial product by treating them not as stable or self-evident categories, but as historically contingent and relational constructs. Their meanings are examined as the outcome of transnational processes of circulation, translation, and localisation, through which architectural forms and institutional logics are continuously rearticulated. From this perspective, the transnational framework functions as a critical instrument that renders visible those determinations and contradictions that remain obscured within nationally circumscribed or abstractly global readings.

For Souza (2011, p. 405, our translation¹⁴), it is crucial that scholars focus on problems and concepts that are “at least as universal as the capitalist expansion.” He argues that the absence of such perspectives has contributed to the persistence of problematic concepts formulated in the Global North and subsequently reproduced in the so-called periphery. It is therefore essential that researchers from other regions take an active role in shaping these more universal concepts. It follows from the expanded approaches that these approximations create an importance in how we study so-called universalising concepts, as is the case here with neoliberalism and its spatial products.

Although the specific methods differ in each chapter, we can summarise our **methodology** as follows. Our research employs a multi-layered methodology anchored in a critical approach to architectural production and the recent shift in infrastructural studies in contemporary scholarship. Our method addresses the built environment as a manifestation of shifting governance and provision regimes.

We selected the case studies in response to this research problem, as they encapsulate tensions between public and private funding, function as sites of institutional visibility, and crystallise shifts in management, governance, and service provision regimes, albeit across

¹⁴ From the German original: “[Damit verliert sich die Möglichkeit der Erfassung universaler Zusammenhänge die] zumindest so universal sind wie die globale Expansion des Kapitalismus” (Souza, J., 2011, p. 405).

markedly different national and institutional contexts. The research unfolded through a set of complementary analytical movements. First, we examined institutional transformations by situating changes in management and financing within the broader processes of neoliberalisation. Second, we analysed the architectural projects through technical documentation, institutional archives, and publicly available materials. We then examined how each university presented these projects, focusing on expectations, discursive framings, and symbolic uses. Finally, we analysed the actors involved in promoting and financing the projects, highlighting the varying articulations between architecture, market logics, and governance structures.

Our methodological framework is structured around three interrelated analytical cores. The first, termed *literary*, concerns the literature review and is based on an integrative strategy that reflects the multidisciplinary scope of the research and the range of concepts it mobilises. The second core comprises *critical-historical and analytical* procedures. This involves situating architectural projects and institutional transformations within their historical, political, and economic contexts, while critically analysing their material, spatial, and organisational dimensions. The third core addresses organisational and textual strategies. These shape how the thesis is structured and articulated, ensuring that the analysis reflects the multiscalar nature of the research problem and maintains coherence across case studies, theoretical discussions, and empirical material.

The critical-historical and analytical core constitutes the central axis of our methodological framework, integrating technological studies with critical historiographical approaches in architecture. This core is grounded in critical empirical analysis, combining historical contextualisation with close attention to material, spatial, and institutional practices. Our engagement with Science and Technology Studies (STS) enables a multidisciplinary approach that situates architectural and infrastructural artefacts within their cultural, historical, and social contexts, particularly where these dimensions intersect.

Here we also explore the inherent tension between the specialised academic roles and broader urban responsibilities, avoiding viewing campuses as monolithic, self-contained spaces towards recognising them as public and political entities. Our research process has

begun by focusing on the UFSC campus, thus, when expanding the scope to include other institutions, it served as a reference. For the German case, we first examined data from the *Deutsches Statistisches Bundesamt* (German Federal Statistical Office) to filter potential universities and campuses to work with, refining our selection through individual institutional websites.¹⁵ We sought a university with a comparable number of enrolled students, undergraduate programmes, staff, and campuses. GUF was ultimately chosen, partly due to these similarities.¹⁶ The decisive factor, however, was qualitative and concerned the recent relocation from part of the schools from the Bockenheim to the Westend campus, which introduced structural changes relevant to our study. We chose Columbia University for a similar reason, mostly considering its Manhattanville rearrangement and expansion. Both movements offer significant venues to discuss university infrastructure, the overlay of neoliberal universities processes and the resulting spatial products.

Drawing on STS, we approach infrastructural relationships as simultaneously material and semiotic. This perspective allows us to analyse how campuses operate not only through physical systems and built form, but also through protocols, representations, and symbolic regimes that shape urban space and academic environments. Agency, including non-human and institutional forms, is treated as analytically significant, insofar as abstract organisational logics and policy frameworks inevitably manifest in spatial and material arrangements.

The organisational-textual core of our methodology operates across the structure and articulation of the thesis. It informs how we engage with representations of infrastructure and university space, which includes institutional narratives, cultural depictions, and media discourses. Treating representation as an analytical object allows us to examine how

¹⁵ Our initial filter considered the enrolled students, mostly because from this indicator we might infer a lot from how the institutions organise themselves. We have also considered Universität Köln; Universität München; Universität Münster; Universität Frankfurt; Universität Hamburg; Universität Bochum; Freie Universität Berlin; Universität Bonn; Humboldt-Universität Berlin and Düsseldorf. See: destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Hochschulen/Publikationen/_publikationen-innen-hochschulen-studierende-endg.html

¹⁶ UFSC offers 87 programmes and enrolls 48,081 students, while Frankfurt offers 93 programmes with 43,360 students. uni-frankfurt.de/37318133/Über_die_Goethe_Universität and <https://dpqi-seplan.ufsc.br/ufsc-em-numeros/>

universities and their infrastructures are framed, legitimised, and contested. Given the multidisciplinary nature of the research, our methodological aim is also to foster dialogue between STS, urban studies, and urban history. This dialogue makes visible both the constraints and the possibilities that infrastructures introduce across different scales, including the social infrastructures of educational spaces. Engaging with the campus as infrastructure requires addressing the dominance of theoretical models developed in the Global North and their often-uncritical global circulation.

Rather than assuming infrastructural universality, we reflect critically on how non-canonical experiences are theorised and on the implications of adopting dominant perspectives without sufficient contextualisation. Studying the campus as infrastructure opens analytical pathways for understanding the dynamic relations between space, human and non-human actors, and institutional environments, revealing how built structures both shape and are reshaped by social practices. Recent scholarship has shown that concepts such as flow, connection, and sharing, which are often rooted in Western infrastructural and architectural imaginaries, must be reconsidered.

University campuses were seldom analysed explicitly as infrastructures, even though institutional processes, protocols, and governance arrangements are materially inscribed in campus space.¹⁷ As infrastructures and universities intersect differently across regions, van Laak's (2018) perspective encourages a global, relational reading of universities as participants in transnational exchanges, without presuming convergence or coherence. Instead, this approach foregrounds tensions between Northern-oriented theories and empirical realities, particularly in the Global South.

Our writing brings these analytical layers together through a careful interplay of description, interpretation, and critique, drawing on materials that range from institutional documents and project archives to public discourse and media representations.

We have structured this thesis in three parts and twelve chapters, apart from the introduction and conclusion chapters. Part One, entitled *Universities of Somewhere*, introduces the theoretical framework and contextualises the case studies. Chapter One, ...

¹⁷ The exceptions here are Barboza, A., & Dauß, M. (Eds). (2022); and Martin, R. (2021).

And on its learned head it bore a Crown of many towers, examines the evolving relationship between universities and society, analysing how societal demands have historically shaped university infrastructures and their integration into urban landscapes. Chapter Two, *Becoming urban under metropolitan conditions*, focuses on Columbia University and its territorial development, also concentrating on its expansion to the Manhattanville campus. Chapter Three, *Those who want to say goodbye should do so soon*, addresses GUF, examining the institutional processes involved in the university's relocation from the Bockenheim campus to the new premises at Westend. Chapter Four, *Organising a university, organising a city*, analyses the role of UFSC in the spatial and political organisation of Florianópolis. Together, these chapters establish the relationships between the universities and campuses examined in this study. Part One concludes with Chapter Five, *Seeing infrastructure, acknowledging infrastructure*, which engages with recent shifts in infrastructure scholarship and examines the relationship between Science and Technology Studies and social infrastructure. This chapter presents a series of episodes in which these analytical domains intersect.

Infrastructure and the spatial products of universities is the title of the second part of the thesis. Chapter Six, *From Alma Mater to spatial products*, analyses how neoliberalism has reshaped university spaces, focusing on the transformation of campuses into spatial products. We address rankings and the commercialisation of academic environments, presenting a case study of a paradigmatic artefact that exemplifies these dynamics. In this chapter, we also explore the theoretical and conceptual implications of neoliberalism as a term. Chapter Seven, *The quintessential great urban university?*, presents Columbia's Manhattanville campus, uncovering the historical background and the complex politics and negotiations behind the project. It also introduces the main features of Manhattanville, offering an architectural analysis of selected spatial products. *Temples for the Mind*, Chapter Eight, examines the Campus Westend, addressing the balance between cutting-edge spatial design and spaces of social infrastructure, and detailing the modular approach and socio-political context that have shaped its spatial products. Part Two concludes with Chapter Nine, *In Florianópolis I found the administrative solution for Brazilian universities*, which examines the influence of Atcon, the evolution of UFSC's

spatial products, and the principles and protocols that structure their design. The chapter analyses how these dynamics are inscribed in the campus itself, revealing the contradictions between administrative rationalisation, architectural form, and the university's public mission.

The third part, *Typologies of Social Infrastructure in University Campuses*, turns to the problem of social infrastructure as a site of institutional mediation rather than social harmony. Here, social infrastructure is approached as a contested field in which universities articulate their public role through specific organisational, spatial, and administrative forms. The chapters in this section examine how different conceptions of social infrastructure emerge, operate, and collide within distinct institutional and territorial contexts. Chapter Ten, *Theorising social infrastructure*, develops the theoretical framework through which social infrastructure is analysed in relation to universities. It interrogates how universities position themselves as providers of public services, and how practices of connectivity, support, and resilience are institutionalised within academic and urban environments. Chapter Eleven, *The software of social infrastructure*, shifts the focus from built form to organisational and administrative arrangements. It examines the traditions and principles that underpin university outreach, reading them as operational systems that structure social infrastructure beyond architecture alone. Through a comparative analysis of UFSC, Columbia, and GUF, the chapter highlights how distinct institutional cultures and governance regimes give rise to differentiated approaches to academic outreach. In our last chapter, *Typologies of social infrastructure*, we first revisit the concept of typology and then address some of the most prominent typologies within the university campuses we are studying.

Part one.

Universities of
somewhere

1. ...And on its learned head it bore a Crown of many towers

The Victorian era witnessed a cultural struggle that placed universities and their structures at the core of a knowledge war in the United Kingdom. At the time, the influence of universities on the physical and social fabric of cities had become more pronounced, unsettling traditional norms and structures. On one side, institutions such as University College London (UCL) and the Society for the Diffusion of Useful Knowledge advocated for the democratisation of education. On the other side, conservative factions resisted these efforts, scorning the idea of expanding learning to the wider public. The intricacies of knowledge, technological progress, infrastructure, and media were evident in this "March of Intellect." At the heart was a conflict between differing visions of knowledge and progress and, amongst the vectors of such dispute, the highly effective then novel media-device, the encyclopaedias,¹⁸ which promoted mass education as a form of political reform (Rauch, 2001).

Conservatives polemicised, crafting ironic, often malicious newspaper cartoons critiquing how universities (and liberals, in general) would exploit the prestige some institutions had. UCL, before it even existed, became a target portrayed as an awkward machine, an infrastructural monster, of unwanted progress. This image captured conservative anxieties about universities as symbols of unwelcome, technology-driven change, with infrastructure symbolising a perceived threat. Robert Seymour's cartoon, with its "crown of many towers" (which lends this chapter its name), underscores the fraught relationship between universities, their infrastructure, and society (Figure 1). Seymour's chaotic imagery references the construction of William Wilkins' neoclassical Portico building at UCL, begun in 1828, which sought a new iconography for UCL's urban relation.¹⁹ Henry Peter Brougham, one of UCL's founders, became a frequent target of satire. In 1825, George

¹⁸ Encyclopædia Britannica was first published in Britain in 1771. As Rauch (2001, p. 25) tells us, "Although first taken to be only a 'moderate success,' the Encyclopædia, initially 2,670 quarto pages in three volumes illustrated with 160 copperplates, grew by 1827 (the seventh edition) to 17.101 pages in twenty-one volumes with 506 plates".

¹⁹ Seymour's cartoon and its infrastructure monster crowned with a project that closely resembles the Gatehouse building at King's College in Cambridge, completed in 1828, also designed by William Wilkins, and not the actual building, the Portico, that Wilkins designed for UCL.

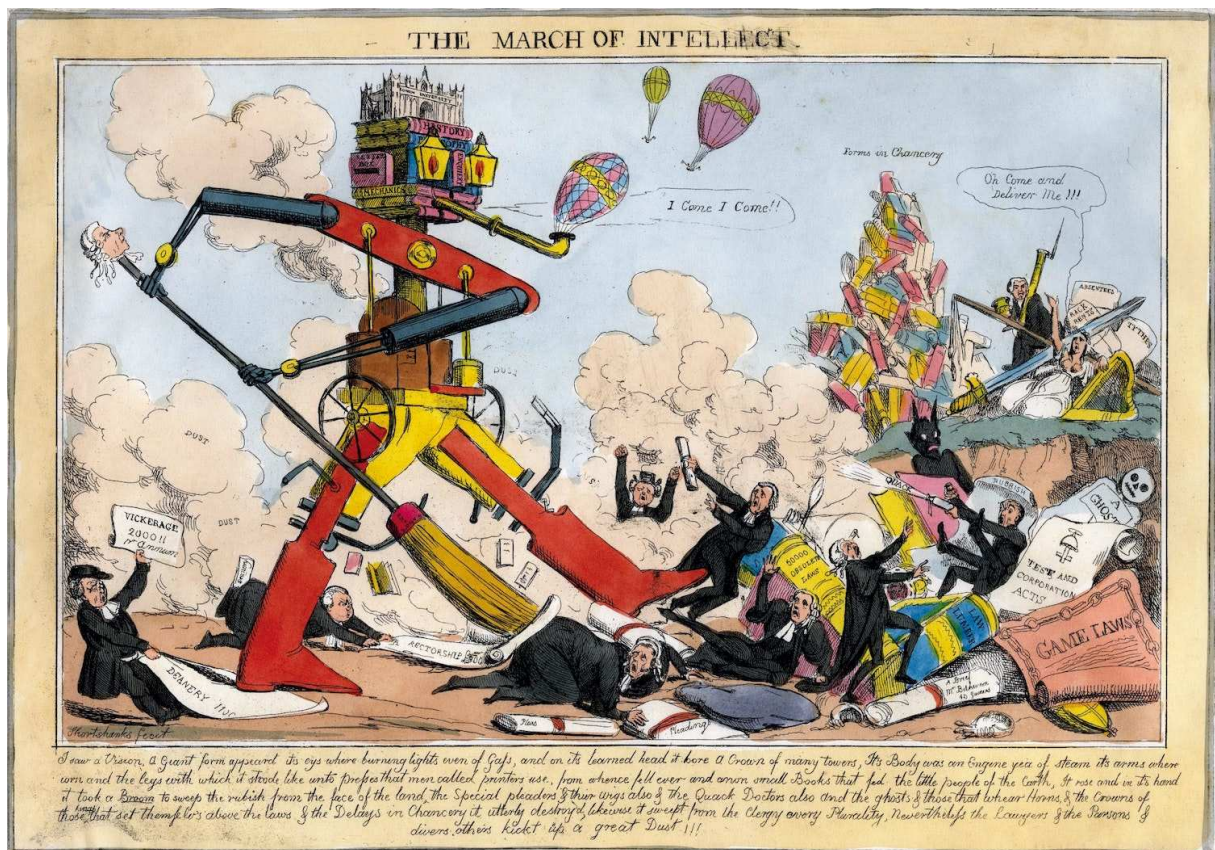


Figure 1. Seymour, The March of Intellect, 1828. Part of the long inscription reads: "I saw a Vision, a Giant form appeared; its eyes were burning lights even of Gas, and on its learned head it bore a Crown of many towers". Source: Public Domain Review.



Figure 2. Isaac Robert Cruikshank, The political, toy-man, 1825. Henry Peter Brougham, one of UCL's founders, became a frequent target of satire, caricatured as a laughable figure balancing a neo-Gothic university design on his head. Source: The British Museum.

Cruikshank caricatured him as a laughable figure balancing a neo-Gothic university design on his head, mocking his vision of education as a venture (Figure 2). Despite such attacks, Brougham's relentless campaigning culminated in UCL's founding in 1827.

In this section of our work, we seek to explore some of the infrastructural foundations of university campuses. These include how they emerged, became established as organisational practices, and evolved to serve distinct purposes over time. The recollection above highlights what scholars of university history have long asserted: universities and their spaces have always been contested grounds. The examples we examine in the following pages are neither definitive nor exhaustive. Nor have we sought to construct an all-encompassing narrative; rather, these instances, primarily drawn from Europe, with focus on Germany, and the United States, illuminate moments in the development of campuses as institutional and infrastructural spaces. Our centre of attention spans from the late nineteenth century to the mid-twentieth century, a period which we consider instrumental in understanding the evolution of the modern university and as a foundation for our later argument concerning contemporary campuses. Subsequent discussions of Brazilian campuses will further contextualise how architects and planners contemplated campuses as viable infrastructure models for higher education institutions, building on and interpreting pre-existing models. Our approach does not assume direct influence but instead traces complex, reciprocal relationships shaped by cultural and economic exchanges, dynamics evident across multiple fields. In this sense, each case we present remains open to supplementation, reorganisation, or contestation.

Plurality is a central concept for analysing campuses and its spatial arrangements (Barboza & Dauß, 2022). In such relationship, two dimensions intertwine. Local patterns related to the implementation of higher education institutions and other circumstantial and

contextual features comprehend one of such dimensions. How campuses, as types, are defined globally, is the other. Dauß (2022) navigates such plurality maintaining that “to map both the concrete location and the universal range of university spatial concepts, campuses must be thought always in plural and in singular at the same time” (Dauß, 2022, p.15, our translation²⁰). The same plurality appears in how western universities have structured themselves. To discuss campuses is, inevitably, to discuss how universities and their structures have transformed historically. Their designs have long embodied the shifting educational philosophies, a trajectory well-documented in existing scholarship, which allows us to focus our analysis without retracing the well-worn ground of universities’ formative eras. The concept of *universitas* originated from the idea of cooperative associations, but the university was shaped by its borrowings from other medieval institutions. Its corporate elements, including privileges, statutes, seals, oaths, and the functions and titles of its officials, mirrored the legal and organisational assemblies of the time and contributed to its growth as a major European phenomenon (Figures 3; 4). To distinguish universities from other institutions, the term *universitas magistrorum et scholarium* or *universitas studii* was introduced, emphasising its focus on teaching and learning (Ridder-Symoens, 1992).

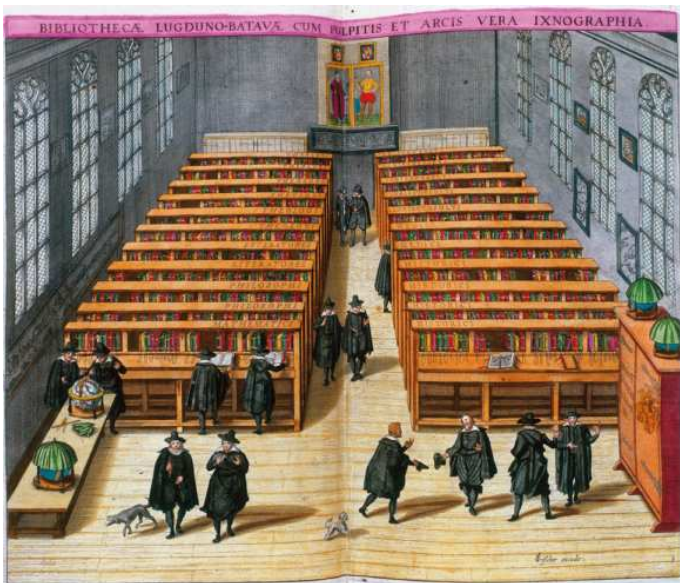
The university's success as an alternative for teaching was driven by a combination of political and economic factors, along with the respect given to the intellectual authority of its local scholars. Grouped, such characteristics and reputation operated to attract more teachers and students. It also ensured that the interests of universities were safeguarded by home-grown authorities, which included securing a structured academic framework. As western universities have its roots in church-related structures, resolving conflicts with parochial powers, and acquiring support from central authorities was also part of the deal. Rüegg (1992) agrees that it is reasonable to derive the organisational pattern of the medieval university from the Islamic schools of learning, for instance.

²⁰ From the German original: “Daher ist Campus immer im Singular und Plural gleichzeitig zu denken, um sowohl die konkrete Verortung als auch die universelle Spannweite universitärer Raum-konzepte abzubilden” (Dauß, 2022, p.15).



Figure 3. Luigi Serra, 1886, Irnerius Elucidating the Justinian Code. Irnerius, the father of legal science, at work in 11th-century Bologna. His lectures on Roman law created such a stir that students from across Europe flocked to hear him, accidentally "inventing" the university in the process (Libertas). Source: WM Commons.

Figure 4. Drawing by Johannes Woudanus, Universiteit Leiden library, 1610. Source: WM Commons.



However, the privileges and protection it received from the Pope and its own development in Europe make it a product of the Christian West of the twelfth century. The papacy had a vested interest in universities, particularly as a means of combating heresies and reinforcing authority against secular and feudal dominances. Medieval universities functioned as organised communities responsible for higher education in which a sense of community was central to their identity, granting them a degree of autonomy and internal cohesion. Admission was voluntary, but membership came with responsibilities as universities, following other moral entities, could issue deeds under their own seal, sue in civil court, create statutes, and enforce them (Ridder-Symoens, 2006).

To capture the transformation of universities in the eighteenth and nineteenth centuries, we must consider the secularisation and bureaucratisation of nation-states, both as driving forces and results of the process of Western modernisation (Jobani, 2016). On the infrastructure for the education, the rise of secular power, particularly among the nobility, introduced a taste for luxury that transformed university ceremonies and architecture. Institutions such as Oxford and the Université de Paris of the fifteenth century illustrate this trend (Tyack, 1998).²¹ However, the presence of universities in cities was not perceived as a unified institution or a single cohesive entity. Houses rented by the masters, churches, convents, and other structures would hold lectures and other activities (Coulson et al., 2010; Tyack, 1998). Such developments shaped the institutional frameworks and ethos of universities, paving the way for the liberal reforms that occurred later. Universities were intertwined with broader societal and economic growth, especially as new forms of political organisation, primarily nation-states, and industrialisation reshaped economies. Structural transformations at Oxford, Cambridge and even the reorganisation of German institutions during the nineteenth century are, in this light, part of the redesigning of universities across Europe, and the very conception of the universities in the U.S. as well (Stone, 2019).

The emphasis on research, a major innovation in modern universities, emerged in the late nineteenth century, when universities re-emerged as knowledge-producing institutions. In

²¹ Tyack (1998) also shows us that the Divinity was built to host lectures, theological debates, and exams, it marks Oxford's emergence as a significant patron of architectural projects. This period saw the university take on a more active role in commissioning and sponsoring buildings, a notable departure from earlier times.

Germany, the founding of the Universität zu Berlin, today's Humboldt University of Berlin, in 1810, for example, became a blueprint for university reformers across the globe, affecting institutions from the U.S. to Japan.²² The so-called German university model is often associated with the Humboldt University, named after Wilhelm von Humboldt, who, alongside his brother Alexander, is said to be instrumental in the development of contemporary higher education. Wilhelm Humboldt persuaded the King of Prussia, initially inclined towards the French system, to establish a university founded on Friedrich Schleiermacher's liberal principles in Berlin. For the latter, universities should illustrate the discovery of knowledge, not merely transfer established, practical knowledge as schools and colleges did (Eichler, 2012; Falanga, 2005).

Starting from Germany, many of these alterations transformed universities from teaching institutions to research-oriented centres of knowledge production, often termed the "axial" institutions of the modern world (Wittrock, 1993, p.311). While this did not lead to major changes in the overall spatial planning of institutions, specific interventions, such as new buildings and research facilities, significantly influenced the organisation of German universities (Gerbord, 2004).

Although some universities boasted grand, palatial structures during this period, many institutions were housed in much less impressive settings. Most early modern universities occupied buildings dating from before 1800, many of which were dilapidated and the subject of frequent complaints from their users. In the German Empire, after 1870, significant state and municipal investments led to the creation of grand university buildings in cities such as Halle, Göttingen, Leipzig, München, and Karlsruhe (Figure 5) (Rüegg, 2004).

²² The so-called German/Humboldtian model's influence has been increasingly questioned as new geographical and social factors shape the theory of university history in the nineteenth century. Some historians argue that this narrative oversimplifies and misrepresents the truth, suggesting the Humboldtian model was a recent construct, not a direct result of Humboldt's early work (Eichler, M., 2012).

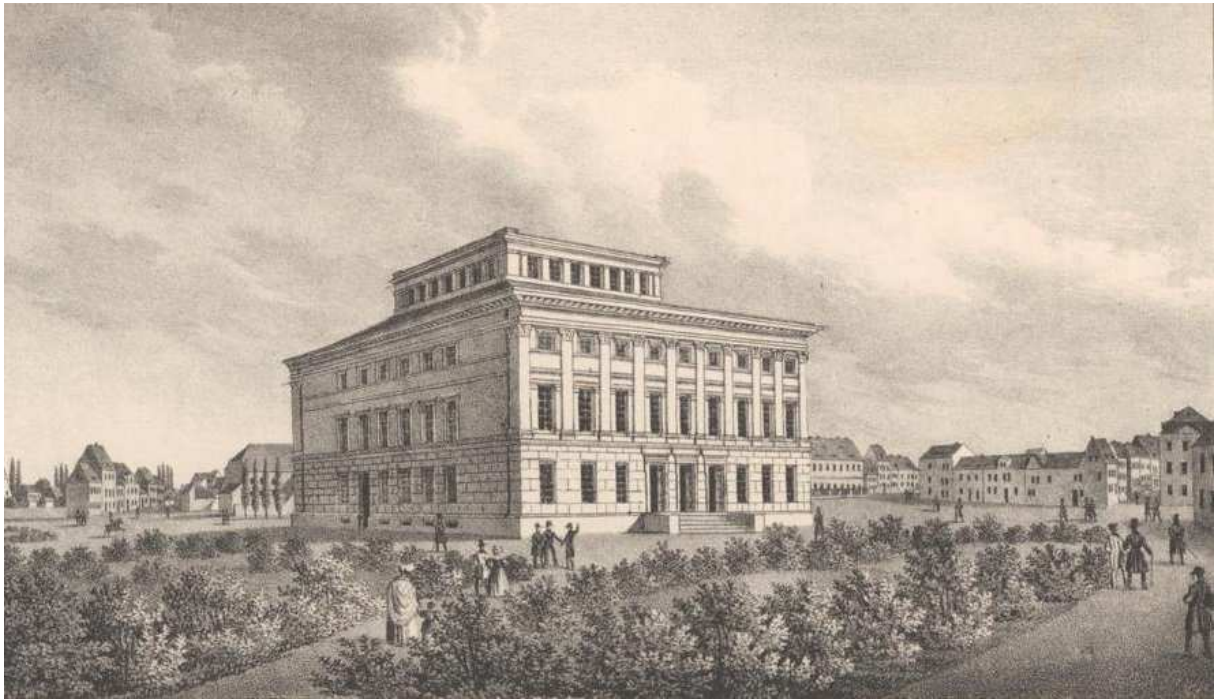


Figure 5. Heinrich Wilhelm Teichgräber, Universitätsgebäude in Halle, 1838. Source: WM Commons.

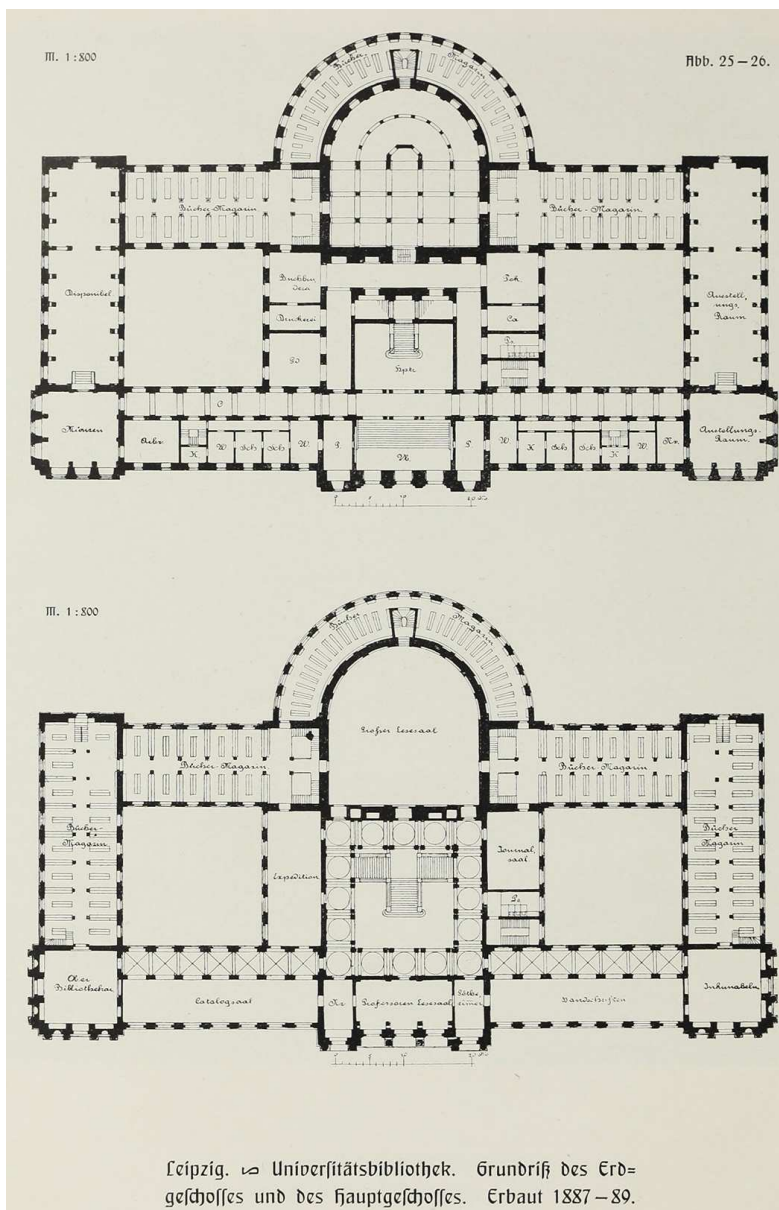


Figure 6. Arwed Roßbach, 1889. Floor plans of the ground floor and upper floor of the then newly built Albertina University Library in Leipzig. Source: Bruck. Arwed Rossbach und seine Bauten. Wasmuth 1904, p. 32.

For example, between 1887 and 1891, Arwed Roßbach designed the Albertina Library at Universität Leipzig (University of Leipzig) in the Neo-Renaissance style, a popular architectural choice for university buildings in Austria and in the German states (Figure 6). Leipzig's Albertina was regarded as one of the most important university libraries in Europe, but it was no exception to the period in terms of this inclination to represent and endow the university with grandeur and monumentality (König, 2002). Prominent architects of the era, such as Gottfried Semper in Zürich, Heinrich Freiherr von Ferstel in Wien, Alfred Waterhouse and Sir Thomas Graham Jackson in Oxford, and Henri-Paul Nénot in Paris, shaped what were often described as "palaces" or "cathedrals of science" at the time (Gerbord, 2004, p. 103). They did not, however, imply an approximation to what we understand today as a campus.

The campus, as an architectural typology, was refined in the U.S. through reinterpretations of the European college systems (Chapman, 2006; Gumprecht, 2007). These colleges, founded in rapid succession since the thirteenth century, were deeply traditional institutions, with the enclosed quadrangle as their dominant spatial form, echoing the monastic cloisters from which academic learning had evolved. Initially modest in appearance, early colleges developed gradually, one structure at a time. As new colleges were founded, competition among their patrons led to increasingly impressive architecture. Architects like Christopher Wren introduced fully developed classicism into the medieval landscapes of Oxford and Cambridge, bringing directionality and central emphasis to academic architecture (Figure 7).

This innovation would reshape English universities and impact design in the U.S. Turner (1987) depicts the American university campus as a meticulously designed architectural and landscaped environment, reflecting the institution's values, ambitions, and educational ethos. This deliberate arrangement promotes intellectual engagement while shaping the behaviours and relationships of the academic community. Turner's deeply articulated perspective, along with the enduring influence of his work among scholars interested in campus design, comprehends a deep analysis of the typological and historiographical evolution of the campus as a distinct form. Additionally, it highlights how Americans interpreted European practices in the construction of universities (Payton, 1985).

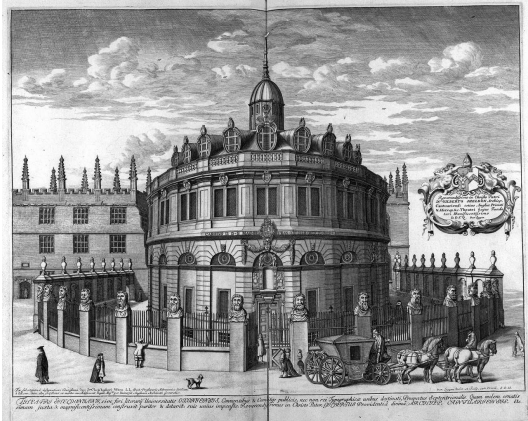


Figure 7. Sheldonian Theatre, Oxford. Perspective view with the Bodleian Library. Line engraving by D. Loggan, after Sir C. Wren. Source: WM Commons.

Figure 8. William Henry Bartlett depicts Yale College in the 19th Century. Source: Yale University Library

Figure 9. Bird's-eye-view map of the Yale University. 1912-13, from the Bulletin of Yale series. Source: Yale University Library.

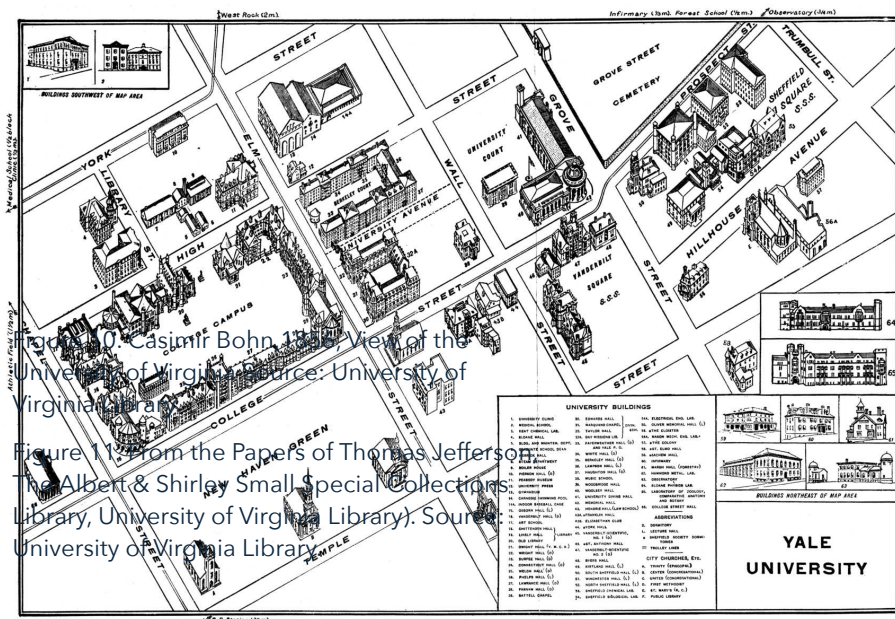


Figure 10. Casimir Bohn 1848 View of the University of Virginia. Source: University of Virginia Library

Figure 11. from the Papers of Thomas Jefferson. The Albert & Shirley Small Special Collections Library, University of Virginia Library. Source: University of Virginia Library

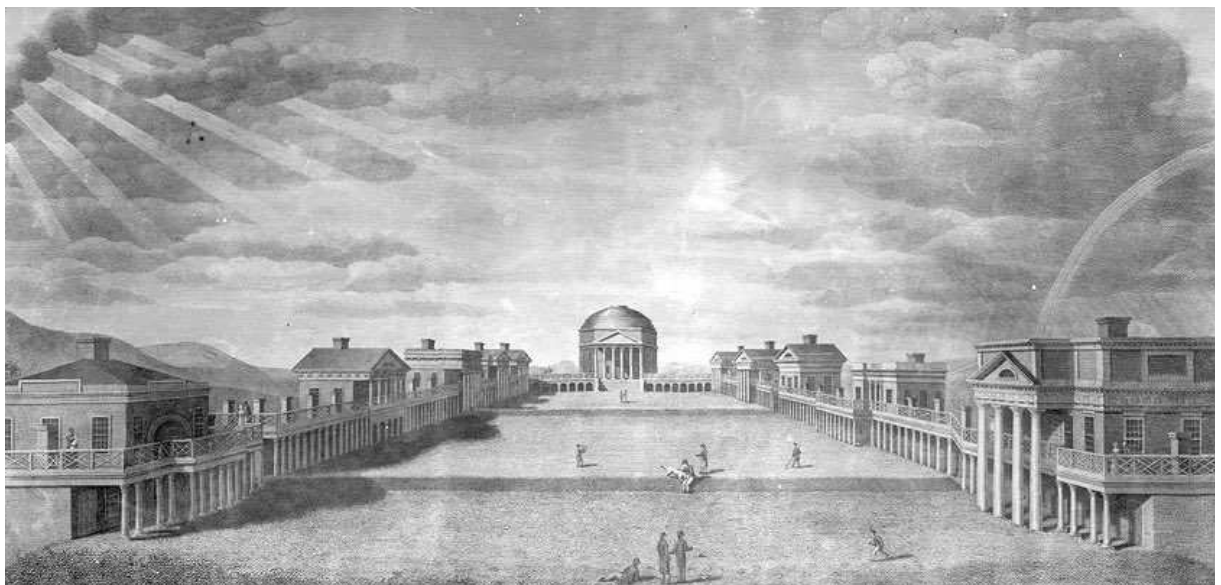
The campus emerged as a potent spatial resolution, driven by a convergence of historical and functional necessities. Its consolidation as a distinct classification reflects both its endurance and the inherent malleability that has allowed it to anchor diverse institutions across varying geographies (Figures 8; 9). In architectural theory, types represent a process of generalisation and abstraction of built forms. Architectural types capture the essence of architecture, appealing to both emotion and reason. This essence, while unique in construction, varies across societies and reflects different aspirations for beauty. Types exist prior to the form and embody a constancy inherent in architecture itself (Jacoby, 2015).

When defining types and typology, authors largely draw on Quatremère de Quincy, who introduced the concept with the methods of categorisation, a defining feature of the Enlightenment, in his mind (Colquhoun, 2002; Grover et al., 2019; Moneo, 1978). Quincy's distinction between type and model is particularly telling. The former refers to a conceptual logic based on theoretical principles that inform the creation of an object, while the latter concerns reproduction and imitation. In this sense, architectural and spatial types re-establish the relationship between form and content, including an ideological perspective, as they are fundamental to creating architecture. Such understanding of types as a synthesis also reinforces the establishment of certain procedures which are readily identifiable in the North American campus configuration.

University of Virginia's layout has been extensively studied as one of those cases in which the typological synthesis appears more clearly, also taking into account how it shaped later realisations (B. Edwards, 2014; Wilson et al., 2009; Yanni, 2019). There, Thomas Jefferson designed a system integrating pavilions for professors, student dormitories, and open lawns for the institution. His approach departed from the cloistered European traditions by presenting a different role for how the open spaces structure the whole scheme, alongside the moral and formative qualities Jefferson attributed to it (Figures 10; 11).

Figure 12. World's Columbian Exposition in Chicago, 1893. Source: The New York Public Library Digital Collections.

Figure 13. Perspective drawing of Henry Ives Cobb final campus plan for the University of Chicago, 1893. Source: University of Chicago Library Photographic Archive





Turner (1987) points out that Jefferson's work was not necessarily radical and even had similarities with existing colleges, especially the Union College in New York. When the University of Virginia was established in the early nineteenth century, the U.S. had approximately 45 degree-granting colleges. Among them, Harvard College had been founded just six years after the Massachusetts colony was established and in deliberate contrast with the European spatial models and their cloistered propositions (Chapman, 2006; Turner, 1987). The novelty of Jefferson's spatial proposition lies in how he redefined the prevailing spatial parameters, which were already emerging in other institutions. Equally important is the attention his work attracted, not merely that of an architect or planner, but of a statesman. As a prominent Virginian plantation owner and the third President of the U.S., Jefferson's spatial vision helped in shaping the American landscape, both urban and rural, as his agrarian and distinctly anti-urban ideals left a lasting imprint on the nation's early planning efforts (E. Mumford, 2018).

Some decades later, the 1893 World's Columbian Exposition in Chicago provided an iconographic synthesis for this ideal. Daniel H. Burnham's planning and Frederick Law Olmsted's landscaping fused neoclassical harmony, baroque monumentality, and civic purpose into a unified whole (Figure 12). Charles Follen McKim, whose firm later participated in the master plan for Columbia University's Morningside Heights campus, was among the chief coordinating architects (Bolotin & Laing, 2002). That same derogatory view of the urban environment's reasoning and, in part, the same actors, supplemented the City Beautiful movement, which promoted ideals of balance, grandeur, and moral order in reaction to the rapid urbanisation of the period. By the 1850s, affluent individuals began migrating to suburban enclaves accessible by rail, designed to echo the pastoral aesthetics and other forms of controlled urban environments.

It was not until the latter part of the nineteenth century that the U.S. saw a concerted effort to develop universities that diverged significantly from the earlier collegiate model, reflecting a more expansive vision of academic and architectural ambition. These projects, shaped by the principles of the City Beautiful movement, reveal a synthesis of Beaux-Arts urbanism and the evolving ideals of academic planning that were, during that moment, spreading across institutions in the country (Chapman, 2006; Peterson, 2003; Taylor, 2019).

Notable among these are the McKim, Mead & White master plan for Columbia University, Frederick Law Olmsted's design for Stanford University, executed in collaboration with Charles A. Coolidge, and Henry Ives Cobb's plan for the University of Chicago (Figure 13).

The intersection of campus planning with urban history is particularly significant in this context. Both architects and developers in the U.S. drew inspiration from European precedents, including examples such as London's Regent's Park. Early university developments, much like the suburban estates of the mid-nineteenth century, were deliberately situated beyond the confines of burgeoning cities, embodying a pastoral ideal that resonated deeply with cultural aspirations of the time. This ideal, influenced by the English picturesque tradition, stood in sharp contrast to the denser, more traditional urban environments rapidly expanding in parallel (Peterson, 2003). This is not to suggest that every university design of the time was inherently anti-urban. Olmsted, for example, a prominent name in the City Beautiful movement, proposed a campus with a deliberate connection to its urban surroundings in a proposal for the University of California, Berkeley (UC Berkeley). Even if the project wasn't realised, it supplemented some of the decisions the university made when it decided to build its main campus. The competition for the UC Berkeley design is a particularly significant case. The ensuing competition firmly embraced Beaux-Arts principles from its inception in a vision that, in a way, can hardly be interpreted without considering the landscape of the bay. The winning proposition, work of French architect Henri Jean Émile Bénard, was later extensively reinterpreted by American architect John Galen Howard (Brentano, 1995).

Although California, particularly the region where UC Berkeley is located, posed a very dynamic region, the urban relationship between campuses and cities elsewhere is also noteworthy. In small cities, early American university and college campuses innovated by becoming social hubs. As towns grew around these institutions, campuses became regional cultural centres with concerts, plays, sporting events, and other activities. Campuses offered museums, ballrooms, banquet halls, and auditoriums for social gatherings. In cities, campus events complemented the cultural scene, while in college towns, campuses were the primary source of culture, entertainment, and community interaction, providing amenities rare for towns of their size (Gumprecht, 2007; Yanni,

2019). Libraries, a very active architectural programme for those places, for example, also demonstrate a departure from the European model, where universities traditionally relied on state and city libraries (Rüegg, 2004). In the U.S. and Canada, leading universities invested in constructing imposing book collections that would further impact on the emergence of the academic librarian as professional activity and in the construction of libraries themselves. Over time, these features gained symbolic significance, becoming integral to the institution's identity.

The booming economy and abundant funding of the post-Second World War U.S. led to significant alterations in the higher education landscape. The return of veterans eager to pursue university education, supported by federal initiatives like the Servicemen's Readjustment Act of 1944, drove these changes. This period witnessed the transformation of urban forms, including the development of suburbs, legally sanctioned urban clearance practices, and new building types such as shopping centres. Even during the war, architectural and urban planning approaches reflected a spectrum of positions, ranging from the high-density residential towers supported by the *Congrès Internationaux d'Architecture Moderne* (CIAM, International Congresses of Modern Architecture) to the decentralised layouts typical of suburban developments. Institutions began embracing various aspects of the modern movement in arts and architecture, evident in both single buildings and entire campus plans. Perhaps the most emblematic of these projects in the U.S. is Ludwig Mies van der Rohe's extensively published and studied design for the Illinois Institute of Technology (IIT) in Chicago, created between 1938 and 1940.



Figure 14. Carpenter Center for the Visual Arts, completed in 1963 by Le Corbusier with contributions from Guillermo Jullian de la Fuente and Josep Lluís Sert at the Harvard University. 2019.



Figure 15. College of Education. c.1960. Source: Center for Southwest Research, University Libraries, University of New Mexico.

Frank Lloyd Wright's Florida Southern College and Architects Collaborative's plans for Black Mountain College in North Carolina are also significant examples (Díaz, 2015; Gyure, 2010).²³ At Harvard, the *Carpenter Center* for the Visual Arts, completed in 1963 by Le Corbusier with contributions from Guillermo Jullian de la Fuente and Josep Lluís Sert, materialises an early attempt at the university's modernist leanings (Figure 14) (Cohen et al., 2013). Similarly, Yale University in the 1950s, under the guidance of President Whitney Griswold, adopted a modernist vision that included Louis Kahn's Yale University Art Gallery, Eero Saarinen's Ingalls Rink and Morse and Stiles Colleges, Gordon Bunshaft's Beinecke Rare Book Library, and Paul Rudolph's Art and Architecture Building (Figures 16; 17) (Stern & Stamp, 2016).

Comparable experiences appeared all over the country, often with local architects and firms at the forefront or through the appointment of architects within the structures of universities. For example, the University of New Mexico's campus transformation initiated in the 1960s illustrates how these processes occurred (Figure 15). In 1959, the renowned San Francisco architect John Carl Warnecke proposed a design concept that arranged buildings around courtyards and patios, forming loosely connected quadrangles organised by related disciplines. His project was followed in its entirety. In 1963, Van Dorn Hooker was appointed as the university's first official architect, solidifying a modernist direction in the campus's development and departing from New Mexico's romanticised architectural heritage towards a more technologically, modernist driven vision (Price, 2010). The sixties also mark the time when local architectural firm Flatow, Moore, Bryan, and Fairburn led this transformation with their design for a new College of Education building, presenting a new solution for the organising the buildings and to the overall relation with heritage and regionalism on campus. This example is far from unique and, as we might confirm in scholarly work (Coulson et al., 2010; Dober, 2000), reflects the reality faced by many institutions during that period.

²³ Architecture and educational experimentation were, in the case of Black Mountain College, a milestone for the school, which operated from 1933 until its closure in 1957.



Figure 16. Beinecke Rare Book Library at Yale University. 2024.



Figure 17. Paul Rudolph's Art and Architecture Building at Yale University. 2024.

Now, back to Europe. The war undeniably reshaped higher education across the continent. In Germany, this often involved both the physical destruction of universities and a fundamental rethinking of their purpose and approach after the conflict. Another significant shift, paralleling developments in the U.S., was the massification of education, marked by institutional expansion and the establishment of new universities to accommodate growing student populations. In postwar England, universities adopted a comprehensive line to planning and architectural form, as new institutions emerged in areas that previously had no universities. The University of Sussex, established in 1959, was among the first institutions in this development. Following Sussex, the University of York became the second of the New Universities, opening in 1962/63. Like Sussex, York featured a collection of colleges spread across a park setting. Essex University, founded in 1963, broke away from this model under a project of the architect Kenneth Capon. Instead of grouping individual elements, its design focused on a sequence of interconnected spaces, seamlessly linking institutes and communal areas into a unified whole (Muthesius, 2000).

A markedly less integrative approach was taken in France, where, following the student movements of 1968, the government decided to replace traditional universities with autonomous faculties. For instance, the Université de Paris (University of Paris) was divided into thirteen independent institutions. During this transition, some institutions had already begun planning or constructing modern campuses. This was the case for the Université Grenoble-Alpes (Universities of Grenoble), which the government divided into four specialised institutions, and Université de Lyon (University of Lyon), that was transformed into three independent organisations.

In the former, plans for a new campus began in the late 1950s, driven by the increasing student population and the need to address the scattered nature of the University's buildings across central Grenoble. Similarly, after 1968, the government restructured Université de Lyon into three autonomous entities. The Doua campus in Lyon, conceived in 1957 and designed by architect Jacques Perrin-Fayolle, was rapidly built using large quantities of concrete and prefabricated structures. Perrin-Fayolle drew significant inspiration from the Universidad Central de Venezuela (UCV; Central University of

Venezuela) project, designed by Venezuelan architect Carlos Raúl Villanueva. Like its Caracas counterpart, the Doua campus emphasised modernist principles and integrated plastic arts, an artistic sensibility evident in features such as the sculpted concrete walls.

After the war, efforts to rebuild higher education in Germany involved confronting its intellectual foundations, including how much academia had collaborated with National Socialism or had its freedoms restricted during that time. To prevent future conflict, Allied Powers pushed initiatives focusing on “re-education”, mostly under British guidance, as they started such policies focusing on Europe during the war but rolled it out more actively in occupied Germany afterwards. Rebuilding universities was no easy task. As historian Rüegg (2004) notes, the French took a more hands-on approach in their zone, even setting-up and restructuring institutions along the Rhine’s western bank, such as Johannes Gutenberg-Universität Mainz in 1946 and the Universität Saarbrücken, today the Universität des Saarlandes (Saarland University), in 1948.

Other Allies did similar work: the Soviets reopened universities in their zone by 1945/46, while all occupation powers invested in restructuring higher education (Giles, 1978). By the 1970s, West Germany’s government pushed for democratisation in universities. As Reihlen and Wenzlaff (2016) highlight, this included state-funded expansion and democratisation of university access. Universities were reimagined through curricula, organisation, and ideals aligned with re-education goals. Campus architecture and planning adapted to this shift, combining urban design with a renewed vision for academic life, university roles, and the value of knowledge.

These ideas, some of which were also influenced by Western Cold War politics, shaped the construction and reconstruction of West German campuses. The approach was distinctly modern, encompassing a range of styles and interpretations. For instance, Ferdinand Kramer’s post-war redesign of Frankfurt’s Campus Bockenheim (examined in another chapter) reflects this ethos. His minimalist modernism, reminiscent of Mies van der Rohe’s structural innovations at Chicago’s IIT, responds to the site’s constraints by prioritising density.



Figure 18. Querforum at the Ruhr-Universität Bochum. Source: Hoppe-Sailer, R. (2015). Ruhr-Universität Bochum. Architekturvision der Nachkriegsmoderne. Gebr. Mann Verlag.



Figure 19. Bird view of the Querforum at the Ruhr-Universität Bochum. Source: Hoppe-Sailer, R. (2015). Ruhr-Universität Bochum. Architekturvision der Nachkriegsmoderne. Gebr. Mann Verlag.

Yet other projects of the era reveal modernism's structural experimentation with other plastic, formal and tectonic complexities. Ruhr-Universität Bochum (Ruhr University Bochum) was constructed between 1964 and 1975. Its design traces back to Hentrich, Petschnigg and Partner, who secured the project through a competition (Stallmann, 2004). A functionalist approach included pioneering the campus university spatial organisation with its departmental structure. The architects lined the two longitudinal edges of the site with 120-metre-long perpendicular department towers, creating a strict structural rhythm and ensuring their narrow ends faced the city or Ruhr Valley, a clever visual sleight of hand (Figures 18;19). But they disrupted this order with bold communal spaces: the main auditorium, the library, and the university canteen anchor the central cross-axis, their expressive forms contrasting sharply with the regimented departmental blocks. Walkways and platforms stitch these elements together, balancing functional flow with dramatic, monumental, spatial interchange (Hoppe-Sailer et al., 2015).

In East Germany, campus development aligned closely with broader architectural and urban planning directives of the socialist government. University design reflected the pursuit of a distinctly socialist architectural and spatial expression, mirroring ideological shifts across society. From the outset, the German Democratic Republic (GDR) defined universities as centres for socialist education and ideological formation. This extended beyond academic instruction rooted in Marxist-Leninist doctrine to encompass the physical and aesthetic conception of university spaces. The emphasis was on fostering collective teaching, research, learning, and communal living. Gibas and Pasternack (1999) offer us one of the most didactic sum-ups of this moment.

One of the earliest campus projects was the Hochschule für Elektrotechnik Ilmenau²⁴ (Ilmenau University of Electrical Engineering) in Thuringia, where construction progressed in phases from the 1950s to the 1980s. There, the campus incorporated various social and cultural infrastructures within a verdant setting with canteens, student residences, libraries, and a sports centre. The first impetus to build monumentally and formulate a kind of socialist tradition based on this heritage did not last long. Still, some examples such as the complex for the Deutsche Hochschule für Körperkultur (German University of Physical

²⁴ Since 1992, the Technische Universität Ilmenau.

Culture) designed by Hanns Hopp and Kunz Nierade from 1952 to 1957, served as model for further Higher Education infrastructure construction. The guiding principle became: "Build better, faster, and cheaper," (Gibas & Pasternack, 1999, p.10, our translation²⁵) with standardisation emerging as a key strategy.

Over time, this emphasis on efficiency evolved into a conscious effort to combat architectural monotony. This prompted a pursuit of a symbolic approach to architecture of symbols, assigning cities, and by extension, university infrastructure, a crucial role in showcasing the regime's progress. The expansion plans of some institutions often involved redesigning entire sections of pre-existing cities, as Welch Guerra (2019) illustrates with the unrealised plans for the Hochschule für Architektur und Bauwesen Weimar²⁶ (Weimar University of Architecture and Civil Engineering), which it would have changed the character of the university and the whole city.

The work of Candilis, Josic, and Woods for the Freie Universität Berlin (FUB, Free University of Berlin) between 1967-1973 presents a distinctly different proposal and is one of the most renowned examples of spatial production in higher education institutions in West Germany. Its radical departure from traditional institutional forms is reflected in its pervasive presence in architectural discourse (Kiem, 2008). Established in 1948 in the American sector of Berlin, the FUB was as a direct counterpoint to the Soviet-controlled Humboldt-Universität zu Berlin, which Western allies criticised for its authoritarian governance. Candilis, Josic, and Woods rejected hierarchical spatial conventions, opting instead for a decentralised plan with no central axis, dominant façade, or formal main entrance. This egalitarian layout mirrored the university's democratic ethos.

French engineer Jean Prouvé contributed the structural framework, devising a system of concrete-encased steel columns, I-section steel beams, and prefabricated reinforced concrete slabs. His unrealised façade design, though never fully executed, hinted at the project's industrial pragmatism. The architects organised the campus around a strict modular grid, alternating enclosed and open spaces to encourage fluid movement and

²⁵ From the German original: "Besser, schneller und billiger bauen!" (Gibas & Pasternack, 1999, p.10).

²⁶ Since 1995, the Bauhaus-Universität Weimar.

interaction. However, the competition-winning scheme faced practical hurdles during construction. Builders simplified its intricate spatial sequences and detailing, diluting the original vision. Despite these compromises, the FUB became a touchstone for post-war educational architecture, balancing idealism with the cluttered realities of implementation.

At the turn of the twentieth century onwards, universities in the Global North experienced profound qualitative transformations, driven by the expansion of higher education, shifts in funding models, and their direct impact on campus development. As governments increasingly steered internationalisation efforts, campuses became not only spaces for learning and research but also strategic assets for attracting students and enhancing institutional visibility. This shift influenced campus planning and design, reinforcing their role in the global competition for talent and resources. In the following sections, we will examine these dynamics more closely through the campuses that shape our research.

A notable omission is the lack of attention given to the proposal developed by architect and educator Leopoldo Rother, in collaboration with fellow pedagogue Fritz Karsen, starting in 1936 for the Ciudad Universitaria de Bogotá (CUB, University City of Bogotá), which serves as the main campus of the Universidad Nacional de Colombia (UNC, National University of Colombia), north-west of Bogotá's centre.²⁷ The proposal, as Bray (2014) argues, adopts a baroque approach, emphasising its centre with an oval design, while also revealing also an expressionist tone. The zoning is highly pronounced, featuring a clear separation between pedestrian and vehicular traffic, embodying modern principles. In the case of CUB, this approach appears unusually early for a Latin American campus, giving it an almost pioneering character in this respect. Rother, a graduate of Karlsruhe who fled Jewish persecution during the war, infused the campus buildings with a modernist program and his designs draw heavily from the Dessau's Bauhaus (Murcia, 2004).

Particularly in Latin America, these experiments embodied a spirit of advanced innovation. As Carranza and Lara (2015, p.162) aptly observe, they often manifested as large-scale,

²⁷ On the other hand, Rogelio Salmona's building for the Posgrados en Ciencias Humanas (Human Sciences Graduate School) on the campus has gained international recognition, particularly for its tectonic quality and spatial inventiveness.

typologically and morphologically ambitious, urban interventions. In essence, they represented urban experiments, "utopias of what the city could aspire to be". In this context, extensively studied cases emerge in the literature, such as Mario Pani's experiments at the Universidad Nacional Autónoma de México. His modernist approach, which developed on a 1946 proposal by architecture students Armando Franco, Enrique Molinar and Teodoro de León to the main campus stands out for its figurative synthesis expressed in the architecture. Similarly, Carlos Raúl Villanueva's project for the Universidad Central de Venezuela exemplifies a blend of Beaux-Arts syncretism and abstract modernity, which became a defining feature of the campus design.

2. Becoming urban under metropolitan conditions

When Lee Carrol Bollinger became president of Columbia in 2002, he envisioned reshaping the institution. His inaugural address emphasised how Columbia had proved itself to be “*the quintessential great urban university*” since its beginning (L. Bollinger, 2002). In his speech, Bollinger congregated the spatial legacy of the university and mobilised its architectural heritage to reinforce and legitimise the ambitions for its growth and transformation. The Low Memorial Library and its dome, for instance, appeared as a “temple to knowledge,” underscoring a symbolic role at the heart of the Morningside Heights campus. Daniel French’s Alma Mater²⁸ sculpture, and its prominent position, illustrated inseparable Columbia’s facilities are from the urban context (Figure 20).

For Bollinger, being the quintessential urban university meant refusing isolation and required a commitment to internationalisation and diversity, suitable to reflect the demographic richness of New York City. It was not, however, only at the Morningside Heights campus that the president was aiming, mostly because despite the importance and character of these facilities, Morningside had become constrained. The same urban configuration that positioned Columbia and its surroundings as the ultimate college town, as he expressed, had also brought spatial limitations. Bollinger framed this scarcity as a call for expansion and articulated his vision for a future campus with the historical trajectory that the institutions had since long imprinted in NY.

Columbia traces origins to 1754, when it was founded as King's College (Figure 21). In 1784, reflecting the emerging American identity, it was renamed Columbia College and by 1896, the trustees renamed it Columbia University (McCaughey, 2012). Columbia is a private research institution that operates under a self-perpetuating board, where current members select new ones (Altbach, 2016; Columbia, 2022c).

²⁸ Bollinger considered the steps surrounding the Alma Mater sculpture, which lead to the Low Hall, to be his favourite feature. He observed that students gathered there during sunny weather, engaging in conversations, reading, or simply unwinding. These steps functioned as a social hub, anchoring the entire campus community, and the city, around them. See: L. Bollinger (2002).



Figure 20. The inauguration of Daniel Chester French's Alma Mater) on September 23, 1903. Source: Columbia University Archives.

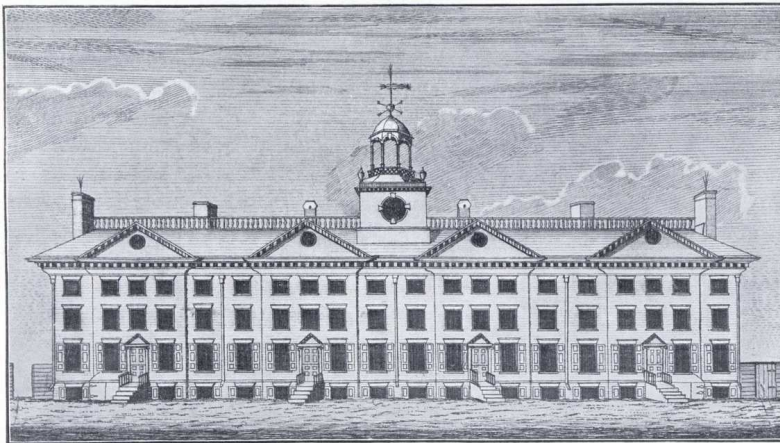


Figure 21. King's College, 1790. Scan 112. Historical Photograph Collection, University Archives. Source: Columbia University Libraries Blog.

As part of the Ivy League, Columbia belongs to an elite group of highly respected American universities, renowned for their prestigious brands, high tuitions and exclusive admissions. In 2023, Columbia had circa 35,000 enrolled students and circa 20,000 permanent staff.²⁹ Academic activity is primarily structured through faculties and departments. Affiliated with the University, yet corporately distinct, are other educational institutions, hospitals, and research institutes. Morningside Heights in Upper Manhattan is the main campus, with the Columbia University Irving Medical Centre (CUIMC) positioned around four kilometres north, in Washington Heights. The newer campus, Manhattanville, is between these two, in the Harlem region and about one kilometre north from the Morningside Heights. Other facilities of Columbia University include the Lamont-Doherty Earth Observatory, which lies across the Hudson River in Palisades, New York, while the Nevis Laboratories are based in Irvington, New York. Beyond the U.S., the University also operates the so-called Reid Hall, an educational centre in Paris, France (Map 2).

Columbia has actively asserted its significance within the urban fabric and its development has consistently mirrored New York's own growth, particularly through its expansion northward on the Manhattan Island. Its trajectory reflects an ongoing (and not always peaceful) negotiation between the university and the city, as both have shaped and redefined each other over time. The institution moved from Park Place Street (near today's One World Trade Center) to Midtown Manhattan in 1857, where it remained for fifty years in a block between Madison and Fourth (now Park). Architect Charles C. Haight designed most of the small buildings that comprehended the facilities for this plot, which soon became inadequate. According to Dolkart (1998), Columbia appeared increasingly marginal in the landscape of higher education growth during this time.

²⁹ The instructional staff is predominantly white (60%), with notable representation from Asian (19%), Hispanic or Latino (6%), and Black (5%) individuals. Research roles have a significant portion of non-resident (47%), with white (28%) and Asian (15%) staff also well-represented, followed by Hispanic (6%) and Black (2%) individuals. Support staff are predominantly Hispanic (43%), followed by Black (20%), white (18%), and Asian (9%) workers. Administrative roles show a strong presence of white (40%), Hispanic or Latino (24%), Asian (14%), and Black (13%) staff. Groups as Native American, Pacific Islander, multiracial, and undisclosed groups don't have significant numerical representation in none of the sectors. More profile information at: https://opir.Columbia.edu/sites/default/files/content/Statistical%20Abstract/opir_fulltime_employee.pdf



Map 2. New York. 1) Columbia University Irving Medical Center; 2) Manhattanville Campus; 3) Morningside Heights Campus. Source: Google Earth.

In the country, particularly in the New England region, new universities and colleges would fuel the growing momentum of higher education. Many Columbias's trustees believed that the cramped, suboptimal facilities, which made the location unsuitable for academic pursuits, contributed to decline its status. Prominent families, including those of the trustees, preferred to send their sons to Harvard, Yale, Princeton, or other prestigious northeastern colleges (Brubacher & Rudy, 2017; McCaughey, 2012). The matter of physical appearance and performance, of expressing modernity and ability to both attract students and make its reputation better, was interpreted as vital if Columbia wanted to survive as a prominent institution (Bergdoll et al., 1997; Dolkart, 1998).

Seth Low was appointed as college president in October 1889, and the trustees expected him to resolve this matter. The Morningside Heights campus, which Bollinger so vividly recollected in his 2002 speech, was part of the solution Low and an uncountable number of other actors constructed. Within two years of his presidency, Low formed a committee to explore potential new locations for Columbia (Kurlan, 1971). The committee assessed three main options: relocating to the countryside, decentralising the institution throughout the city, or acquiring new property within Manhattan. Low dismissed the idea of moving to the countryside, advocating instead that the university should thrive "under city conditions and under metropolitan conditions" (Dolkart, 1998, p.110). By 1891, the Morningside Heights site, now home to the main campus, became a serious consideration. After choosing the site, persuading the trustees and engaging the alumni to secure donations became important challenges. As reflected in media discourse, the broader community anticipated that the university should be a symbolic foundation capable of representing the higher interests of every great, prosperous community, and that it should contribute to the construction of a monumental architectural presence in New York (Bergdoll et al., 1997).

It is no surprise that the city was expecting so much of the campus. Gandy (2002) notes that from the late 1840s, calls for new public spaces in Manhattan became increasingly prominent in newspapers, political speeches, and professional architectural journals. By the mid-nineteenth century, the urban environment was marked by overcrowding, pollution, and recurring episodes of social unrest. These deteriorating conditions

triggered debates among political and cultural elites about how best to manage the city's rapid expansion and improve urban life. In his analysis, Gandy highlights how the emerging dialectical approach to landscape design in nineteenth-century U.S. introduced a new mediation between nature and culture, deliberately evoking what he describes as a metropolitan nature aesthetic. This perspective shaped the visual and functional qualities of urban spaces and reflected new directions in how cities sought to harmonise natural elements within rapidly expanding urban environments.

Major infrastructural projects, such as the construction of aqueducts in Harlem, dramatically reshaped urban form in Manhattan. It was, however, in the iconic example of the Central Park that the ambition of reconciling urban life with nature took motion. New proposals for public spaces in the city at the time necessarily dealt with the ballast generated by Olmsted's work on the planning of Central Park.³⁰ While Morningside Heights campus adopts a different design language from Central Park, both projects share a conceptual alignment in their attitudes towards the metropolitan landscape. While distinct in its composition, Morningside mirrors Central Park's ambition to reimagine urban space by incorporating public space elements into the city's fabric. This demonstrates a parallel vision of what metropolitan nature could represent in a different, more artificial type of urban setting.

The Upper West Side of Manhattan rises steeply from the Hudson River, forming highlands that define neighbourhoods like Morningside Heights and Washington Heights. The area now occupied by Morningside Heights campus was once the site of the Asylum for the Deaf and Dumb. Columbia led the early development of Morningside Heights, using the opportunity to embrace contemporary planning and architectural concepts, in close dialogue with the Chicago World's Fair of 1893 (Bolotin & Laing, 2002).

³⁰ Gandy (2002), particularly chapter two, points out, however, that uncritical interpretations of Olmsted have fostered rigid formalist views of urban design, often paired with reductive behavioural assumptions about how nature influences urban society. He further suggests that these readings risk oversimplifying the nuanced relationship between landscape and public life that Olmsted's projects, like Central Park, sought to engage with.



Figure 22. Charles McKim's masterplan for the Morningside Heights campus, c. 1984. Source: Dolkart, A. S. (1998). *Morningside Heights: A history of its architecture & development*. Columbia University Press.



Figure 23. Columbia University's Morningside Heights campus circa 1903, Source: Library of Congress.

In 1893, Charles McKim was appointed to design the Morningside campus and brought with him the Beaux-Arts principles that his firm had begun to champion. McKim's master plan, commissioned in 1894, aligned with both architectural trends and evolving ideas about education and urban development (Figures 22; 23). His Beaux-Arts approach prioritised axial layouts, monumental scales, and civic spaces, aligning well with Columbia's ambition to create a modern urban university (Coulson et al., 2010). The plan centred on the Low Library, forming an east-west axis linked to St. Paul's Chapel and Earl Hall. A corresponding north-south axis was intended to extend towards the planned but unrealised University Hall. Around these axes, McKim and his team envisioned a harmonious arrangement of 15 buildings, each contributing to a coherent architectural hierarchy. Secondary structures like the chapel and Earl Hall featured colonnades that echoed the façade of the Low Library. Dodge and Kent Halls, prominent teaching facilities, anchored the south-eastern and south-western corners, reinforcing the grandeur of the layout.

Aspiring to be the "quintessential great urban university" inevitably involves engaging with the surrounding community. Columbia's actions indicated a rather challenging relationship (Winling, 2010). Already during its implementation, the Morningside Heights facilities served as a form of mediation between the future envisioned by the official institutions and the reality that was imminent. Only through considerable effort and arduous negotiations could this reality gain entry to the campus.

The Morningside Heights campus's development was profoundly shaped by its relationship with surrounding infrastructure, most notably the 1902 completion of the 110th Street subway station, which catalysed Morningside Heights' urban evolution (Figures 24; 25). This period saw Columbia as part of a broader institutional migration, with multiple organisations concurrently establishing presences in the area.³¹ The resulting concentration created a distinctive district. Following the initial institutional settlement, the

³¹ According to Dieg (2018, p.11), "Following Columbia, many other elite institutions began to take advantage of Morningside Heights' location being both within the city limits, but removed from the congestion of downtown and midtown. Among those who relocated included the Jewish Theological Seminary (1903), Corpus Christi Church (1906), Union Theological Seminary (1910), the Institute of Musical Art (1910), later becoming the Juilliard School of Music, the International House (1924), and the Riverside Church (1930)".



Figure 24. Crossing arch of cathedral, with elevated railroad on 110th Street in foreground, and St. Luke's Hospital, Low Library, and various apartment buildings and rowhouses in background, 1902. Source: Dolkart, A. S. (1998). *Morningside Heights: A history of its architecture & development*. Columbia University Press. p. 51.

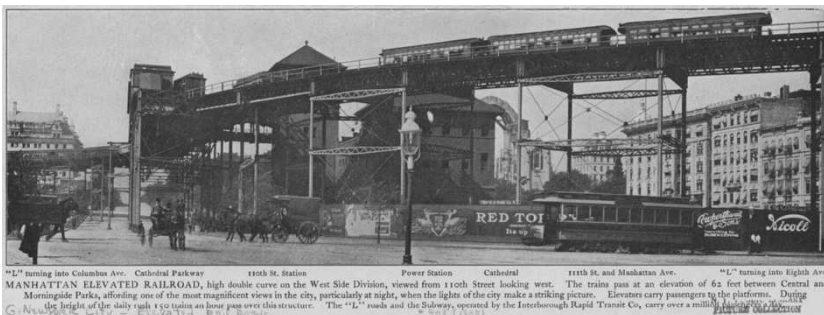
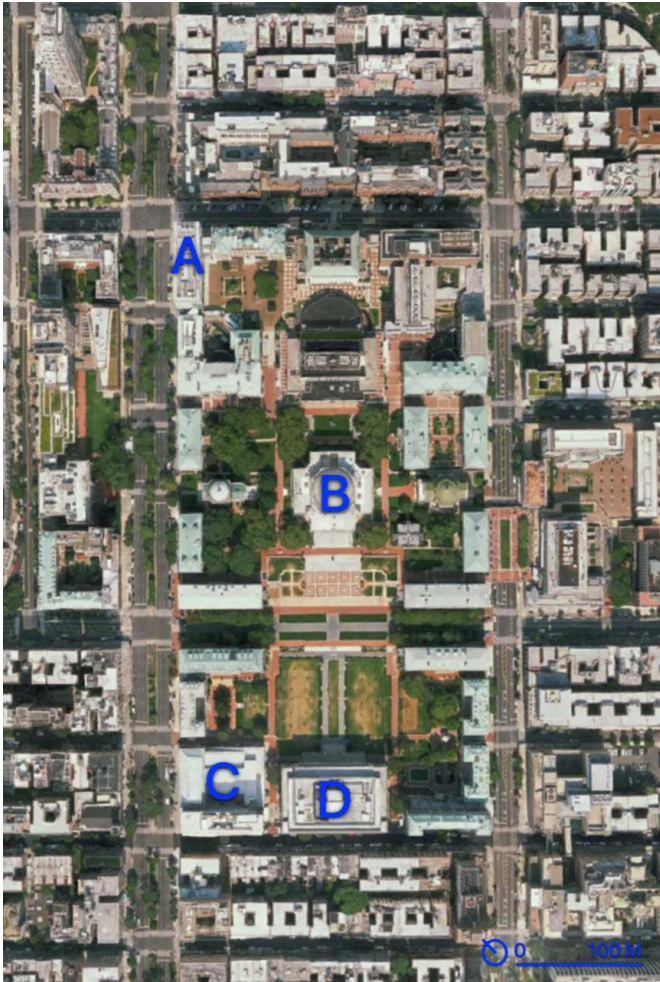


Figure 25. in 1905. Source: The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Picture Collection, The New York Public Library.

neighbourhood underwent two significant residential development phases: an immediate post-subway construction boom, followed by a second wave of predominantly eastern expansion during the 1920s (McCaughey, 2012). The Great Depression sharply reduced housing demand, while World War II and subsequent migration added strain to the existing housing stock. This further overcrowded the region, mostly in unhealthier housing conditions.

The concentration of established institutions in Morningside Heights proved instrumental in facilitating large-scale urban reforms. A consortium of thirteen local organisations, operating collectively as Morningside Heights, Inc., from 1947, systematically replaced low-cost rental properties with housing catering to middle and upper-middle income residents (Dieg, 2018). By the 1960s, slum clearance initiatives and social challenges such as crime, tuberculosis outbreaks, and drug use had further shaped the landscape. Peter Marcuse (1988) reports on how Columbia's expansion in Morningside Heights reshaped the neighbourhood (Map 3; Figure 26).

Marcuse frames the constant wrestling of Columbia and its environment ever since it established itself in Upper East Side. Rapid residential growth characterised the neighbourhood through the 1920s, but by 1960, shifts in economics and demographics had altered its fabric. These issues became a growing concern among university trustees, as they impacted its image and ability to attract new students. At the same time, the university conducted an expansionist approach that involved acquiring properties and planning recommendations at the time focused on reserving space for institutional growth at the expense of neighbouring communities. Public housing was excluded from development plans, and the university pushed to remove single-room occupancy units, which were often associated with lower-income residents. Many of the new buildings were used by the teams of the organisations that made up the consortium (Dieg, 2018).



Map 3. Columbia University Morningside Heights campus. A) Northwest Corner Building; B) Low Memorial Library; C) Alfred J. Lerner Hall; D) Butler Library. Source: Google Earth.



Figure 26. Columbia University Morningside Heights campus. In the background and on the left is Hamilton Hall, and the Butler Library is on the right. 2024.

The university's 1961 agreement with municipal authorities to construct a gymnasium in Morningside Park exemplified these tensions most acutely. From the outset, the proposal faced sustained opposition, with several years elapsing between the initial agreement and preliminary site clearance. Resistance intensified among civil rights groups and gradually permeated the university community, gaining traction among both students and segments of the faculty. It did not help the university that the land clearance began in 1968. On campus protests, which began in April 1968, reached their peak during the final week of that month with students occupying some of the precincts. This period witnessed multiple concurrent occupations across university grounds, each representing distinct factions within the protest movement (Slonecker, 2008).

While diverse political and cultural motivations drove these demonstrations, the controversy surrounding the gymnasium construction in Morningside Park served as the primary catalyst, intensifying existing tensions on campus. The spatial distribution of these occupations physically manifested the spectrum of activist demands and ideological positions. According to Slonecker (2008), at the centre were the Vietnam War, the university's relationship with its neighbourhood, and the race issue. The 1968 Columbia University protests became a seminal moment in global student activism, influencing protest movements across the U.S. and internationally (McCaughey, 2012).

Around 1982, the institution had control over 4,921 housing units on the neighbourhood. Marcuse further suggests that Columbia's mission lent moral weight to its actions, portraying institutional expansion as serving a higher cause. This framing often clashed with existing residents' objections to displacement, which the university dismissed as personal grievances. The institution justified its actions by asserting its authority and purpose, diminishing opposition from local communities. As Marcuse puts it, the attitude gravitated around being urban and socially attentive on paper, and, at the same time, saying "Get out of our way!" to the community (Marcuse, 1988, p.88).



Map 4. Relationship between the Morningside Heights campus to the south and the Manhattanville campus further north. Source: Google Earth.

The 1968 protests marked a turning point in Columbia's spatial development, effectively concluding its expansionist phase within Morningside Heights. In the aftermath, the university significantly curtailed its local property acquisitions, a trend that persisted until the 2003 announcement of the Manhattanville project, its first major territorial initiative beyond Morningside Heights since the contentious 1961-68 gymnasium proposal (Map 4) (Dieg, 2018). It was above all with the most glorious part of this past that Bollinger dialogued when recalling the architectural features of the Morningside Heights campus in 2002. The object of his attention, however, was a little further north. When he accepted the position of president, he knew Columbia wanted to expand its facilities, again (Map 4).³²

³² He was the President of the University of Michigan (1996-2002). His name appeared as an option in 2001, when the then President George Rupp announced his retirement. During Rupp's term, the institution had expanded both its territory and increased its size as an institution (Sachare, 2002).

3. Those who want to say goodbye should do so soon

A group led by Architects for Future has launched *Abriss Atlas Deutschland* (German Demolition Atlas) in 2023.³³ The initiative charts the extensive number of building demolitions and demolition threats across Germany and draws attention to the major impact the construction industry has in waste production. In the dynamic and construction-obsessed Frankfurt, at the time of writing this thesis, two buildings belonging to GUF were classified as being under threat of demolition. These two structures are the Amerika Institut Gebäude and the Juridicum Gebäude. Ferdinand Kramer designed the AIG, completed in 1954, and later created the JG, which Heinrich Nitschke realised in the early 1970s. These two buildings appeared in context of the university's rebuilding at a moment when the institution concentrated all its efforts on recovering from the devastation of the second world war (Hansen, 2001).

Had the *Abriss Atlas* been launched a few years earlier, it would likely include the *Abteilung für Erziehungswissenschaft Turm* (AfE, Department of Educational Science), which was also part of the Bockenheimer complex, GUF's main campus until the institution moved to its new premises at Westend. In early 2013, the alumni newsletter cautioned, "Those who want to say goodbye should do so soon" (Wagner, 2013, p. 1, our translation³⁴), as AfE demolition was imminent. At that time, the departments of Social Sciences and Psychology were relocating to new facilities on the Westend Campus, part of the phased transition from Bockenheimer to the new facilities (Figure 27). Discussions about this move began around 1995, with the first departments relocating in the late 1990s.

³³ See: <http://crowdnewsroom.org/abrissatlas-de/> [<https://web.archive.org/web/20250925151834/https://crowdnewsroom.org/abrissatlas-de/>]

³⁴ From the German original: "[und] wer Abschied nehmen möchte, sollte es bald tun." (Wagner, 2013, p. 1).



Figure 27. On February 2, 2014, people watch and photograph the demolition of the AfE tower. Source: Deutsche Presse-Agentur.

The demolition of the AfE tower was neither the beginning nor the end of this process. It remains, however, as one of the most paradigmatic events in this move.³⁵ The destruction of icons leads to the creation of new ones. Demolition, a spectacle itself, echoes the ongoing cycle of experimentation and deconstruction in contemporary culture. Just as artists have redefined image, beauty, and genius, developers, investors, and architects have replaced old structures with new, iconic buildings (Latour & Weibel, 2002). High-rises have become synonymous with transformation in Frankfurt am Main and evolved into an essential architectural feature of the city. Frankfurt's skyline mirrors and reinforces its economic significance and accompanies other major infrastructures.³⁶ An additional, perhaps unexpected, actor in this interplay of infrastructures is the GUF, one of Germany's largest and most respected higher education institutions. As the future of Bockenheimer campus remains under discussion, the university has found in its Westend Campus facilities another chapter of the urban relation the institution has constructed since its foundation (Leclerc, 2024).

The AfE Tower was demolished and replaced by a taller, more modern 145-metre-high building, as part of a large redevelopment in the Senckenbergquartier. Architects and developers describe it as a "hybrid tower" (MAA, 2024), though this term is a commercial spin on its mixed-use design. The new tower incorporates a hotel up to the 23rd floor, with residential apartments above. It blends hospitality and housing in a format that enhances

³⁵ AfE Tower demolition drew large public attention, marking it as the tallest building in Europe ever to be demolished. This media event attracted crowds and was widely covered, with local news streaming it via city webcams and online platforms. Dauß and Barboza (2022) opens with a series of photographs documenting the demolition. A widely viewed YouTube video of the event has amassed nearly five million views. See: Sprengung 116 Meter Hochhaus (AfE-Turm) in Frankfurt. youtube.com/watch?v=fRGEPVTrIMQ; FAZ. (2014, January 31); Hochhaus-Sprengung im Live-Stream. Frankfurter Allgemeine Zeitung. faz.net/aktuell/frankfurt/hochhaus-sprengung/hochhaus-sprengung-im-live-stream-der-116-meter-hohe-riese-ist-zu-fall-gebracht; Spektakuläre Sprengung eines Hochhauses in Frankfurt: ingenieur.de/technik/fachbereiche/bau/spektakulaere-sprengung-hochhauses-in-frankfurter-city/

³⁶ Messe Frankfurt, one of the world's largest trade fair venues, cements the city as a hub for global commerce. Together with Frankfurt Airport and the European Central Bank headquarters, these landmarks support an interconnected attractor network for business. Frankfurt's Hauptbahnhof (Central Train Station) connects Frankfurt nationally and internationally, making it one of Europe's busiest stations. See: Hitz, H., Keil, R., Lehrer, U. (Eds). (1995). The objective of continuously consolidating Frankfurt's position as a financial centre through an economic expansion strategy has been pursued under both Christlich Demokratische Union (CDU) and Sozialdemokratische Partei Deutschlands (SPD) administrations. Successive governments have promoted the city through marketing initiatives, international events, and investment missions, while strengthening cooperation between the public sector and financial institutions (Hitz et al., 1995).

its appeal and functional versatility within the urban landscape. As in many metropolitan areas, in contemporary Frankfurt transformation is inseparable from high-rises. Renowned for its standing as a global metropolitan hub, the city seeks in the skyscrapers another expression of its importance.³⁷ High-rise construction was prohibited in Germany for at least the first two decades of the twentieth century (Rodenstein, 2000). In Frankfurt, the push for high-rise development did not emerge until after 1945, when developers advocated for relaxed height restrictions and a formal plan focused on taller structures as gateways to the city centre was introduced (Rodenstein, 2020). The city government and investors deemed the typical six-storey buildings of the 1950s inadequate when they decided to prioritise service sector growth, as well as industrial and economic prosperity. Both banks and real estate groups began to pioneer the city's development, a process that gained momentum in the early 1980s signalling an aggressive wave of capitalisation (Böhm-Ott, 2000). Building heights became tools and symbols amid these processes (Figure 28).

AfE was part of the imagery that skyscrapers conjure up and helped in reinforcing the importance that the institution already had at the time of its inauguration. The development of the Bockenheimer Campus began even before the founding of the GUF, as part of a broader infrastructural initiative within the city. During this period, the university acted as both conduit and catalyst for urban transformation, alongside roadworks and other structural planning programmes. Since then, the evolution of the GUF has been characterised by a continual negotiation with the city's status quo, at times challenging it, at others adapting to it. Like many German cities, Frankfurt am Main suffered extensive destruction from Allied bombing, particularly during the raids of 1943 and 1944, and the Bockenheimer campus was not spared. Severely damaged during the Second World War, the campus subsequently underwent a distinctly modernist reconstruction and expansion (Figure 29).

³⁷ Frankfurt had approximately 770,000 inhabitants in 2022, it is Germany's fifth largest city. The Rhein-Main metropolitan region, has c. 5.8M. inhabitants. See: <https://statistik.hessen.de/unsere-zahlen/bevoelkerung>



Figure 28. View of Frankfurt city centre from the Main. 2024

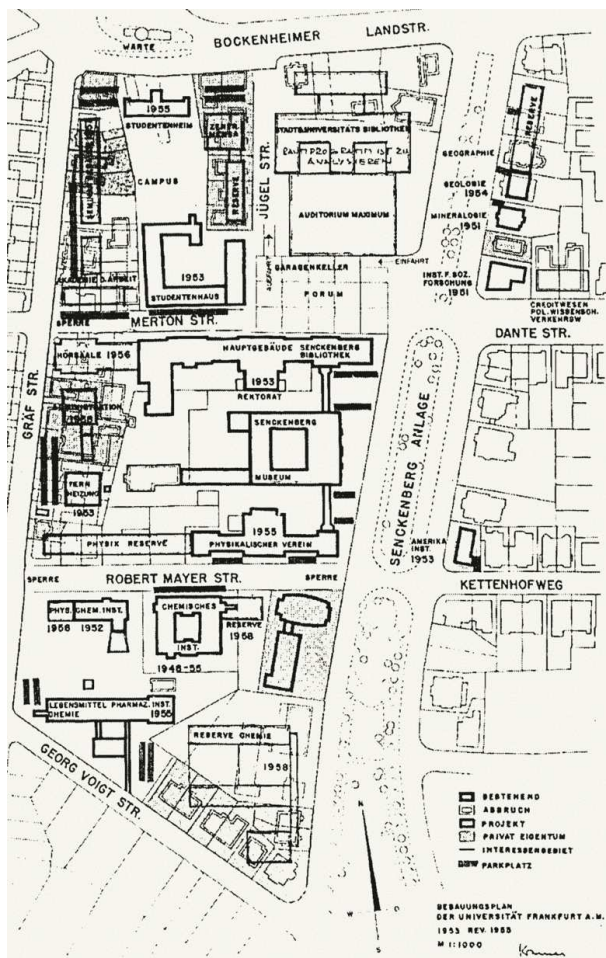


Figure 29. General Development Plan. 1955. Source: Hansen, A. (2001). Die Frankfurter Universitätsbauten Ferdinand Kramers. VDG Weimar. p.277

Though relatively young, as the *Königliche Universität zu Frankfurt am Main* (Royal University of Frankfurt am Main) had been founded in 1914 amidst political conflicts and a desire to assert power against Prussia, the institution already played a significant role in the city's intellectual and political life. Renamed *Johann Wolfgang von Goethe Universität* in 1932, its post-war rebuilding was emblematic of the tensions between maintaining tradition and embracing modernity (Hammerstein, 2012).

Today, GUF hosts around 45,000 students across four main campuses in Frankfurt, each dedicated to different disciplines. Besides from the former Bockenheimer and the Westend campus, other GUF premises include the Niederrad Campus for medical sciences, which houses the university hospital and related health departments. It opened almost at the same time as the Bockenheimer campus and had significant growth between 1970-80 (Benzenhöfer, 2014). Riedberg Campus, whose construction began in the 1970s, focuses on the natural sciences and provides advanced research facilities on that field. Ginnheim, the smallest of the campuses, is dedicated to the sports related departments (Map 5) (GUF, 2024a).

At the turn of the nineteenth to the twentieth century, Frankfurt incorporated surrounding areas into its municipal boundaries. In the early nineteenth century, rail transport began to alter the city's organisation, with new connections influencing urban growth. Concurrently, the city invested in public infrastructure and developed its schools, water supply, sewage systems, and bridges. This period also marked the systematic organisation of Frankfurt's burgeoning industrial sector and the emergence of a municipal cultural policy (Eckardt, 2009b). As Frankfurt's industrial sector expanded, much of it shifted from Bockenheimer to the northern banks of the Main, where activities ranging from metal production to printing services began to cluster. This spatial and economic reorganisation heightened the demand for a university. For a city of Frankfurt's scale and economic weight, the lack of such an institution had become increasingly conspicuous by the early twentieth century. The foundation of the university in 1914 was intended to address such issue, mostly because the institution was conceived both as a practical support for industry and as a symbolic marker of civic stature.



Map 5. Frankfurt am Main. 1) Westend Campus; 2) Bockenheimer Campus; 3) Campus Niederrad; A,B) Sportcampus Ginnheim and Campus Riedberg. Source: Google Earth.

Its location on the city's western edge, together with the monumental character of its architecture, conveyed the self-confidence of local elites determined to project themselves as leaders in both industry and intellectual life (Hammerstein, 2012; Laak, 2018).

Frankfurt's expansion is closely tied to hard infrastructure investments, particularly in the planning and development of its concentric boulevard system. The *Alleenring*,³⁸ inspired by Parisian models reorganised the city. As Eckardt (2009b) notes, *Alleenring* was conceived to connect past and future, with the former city walls serving as a foundational element for the new urban organisation. Encircling what was once the *Landwehr*, a part of the city fortifications, it directed development towards northern and western districts, including Nordend, Westend, and Bornheim.

This spatial reorganisation was intended to free up space within the city. Frankfurt faced spatial challenges in planning its new university, Hansen (2001) notes. Unlike other cities, it lacked large existing buildings that could be repurposed for academic use. New constructions were therefore necessary, yet opportunities within the inner city were scarce. The city's preservation of its former ramparts, now transformed into a green belt, restricted development in that zone, while regulations governing the suburban areas further constrained large-scale projects such as the planned university. *Alleenring*, particularly its western section, provided a feasible solution. Developed under mayor Franz Adickes (Baba, 2014) it accommodated large, representational projects, offering both affordable land and ample space for future expansion. For GUF, it meant the possibility of finding a strategic position on the urban outskirts.

Adickes saw in the *Alleenring* a visionary urban policy aimed at transforming Frankfurt into a modern metropolis. With strategic land acquisitions, Adickes laid the groundwork not only for administrative buildings and public spaces but also for a city poised to grow, adapt, and ultimately embrace future expansions (Baba, 2014). Monumental buildings from the Wilhelmine era, such as the Senckenberg Museum and administrative structures like the *Polizeipräsidium* (Police Headquarters) and *Oberpostdirektion* (General Post Office Directorate), lined this avenue, contributing to an emerging sense of power and civic pride (Becker, 2005). Hansen (2001) observes that the university's inclusion within this framework

³⁸ This word can be translated as Avenues Ring, we chose to keep the original German spelling.

was deliberate, intertwining the functional needs of the institution with the monumental character that the city sought to project.

The urban front along the *Alleenring* signalled Frankfurt's growing ambition, and the university soon became part of that story. Placing it between Westend and Bockenheim was not simply a matter of cheap land or future expansion. The western site also appealed to the wealthy residents of Westend, long-time supporters of civic and educational causes, whose backing was crucial to the project's success. Buildings such as the museum and library were planned as public monuments, designed to strengthen Frankfurt's reputation as a centre of culture and knowledge. Founding a university became a civic goal, supported by the mayor Adickes, industrialists like Wilhelm Merton, and especially by the city's Jewish community, which contributed generously to turn the project into reality (Hammerstein, 2012).

In the early twentieth century, a scientific hub began to form along what is now the *Senckenberganlage*³⁹ in Frankfurt. This centre included institutions as the *Physikalischer Verein* (Physical Society), the *Senckenberg Gesellschaft für Naturforschung Musuem* (SGN; Senckenberg Society for Natural Research) constructed in 1907, the SGN library, and the *Akademie für Sozial- und Handelswissenschaften* (SozFra; Academy of Commercial and Social Sciences) (Figure 30). At that time, SozFra also housed the *Jügel-Stiftung* (Jügel Foundation) in what is known today as the Jügelhaus, constructed in 1906 following a design by Ludwig Neher. These were the main structures of the university until after the Second World War and, as Hansen (2001, p.83) also shows us, they were already outdated spatially and were becoming the subject of increasingly frequent debates within the institution (Figure 31).

³⁹ Which might be translated as Senckenberg Facilities.



Figure 30. Figure 22. Façades of the Scientific Institutes - Senckenberg Foundation. Architects Franz von Hoven and Ludwig Neher. Source: Deutsche Bauzeitung 42 (1908) via WM Commons.

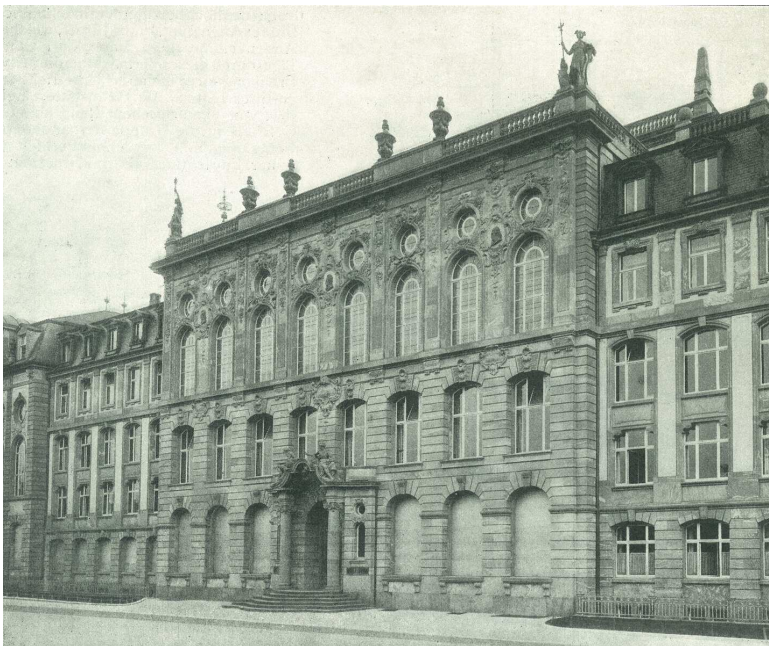


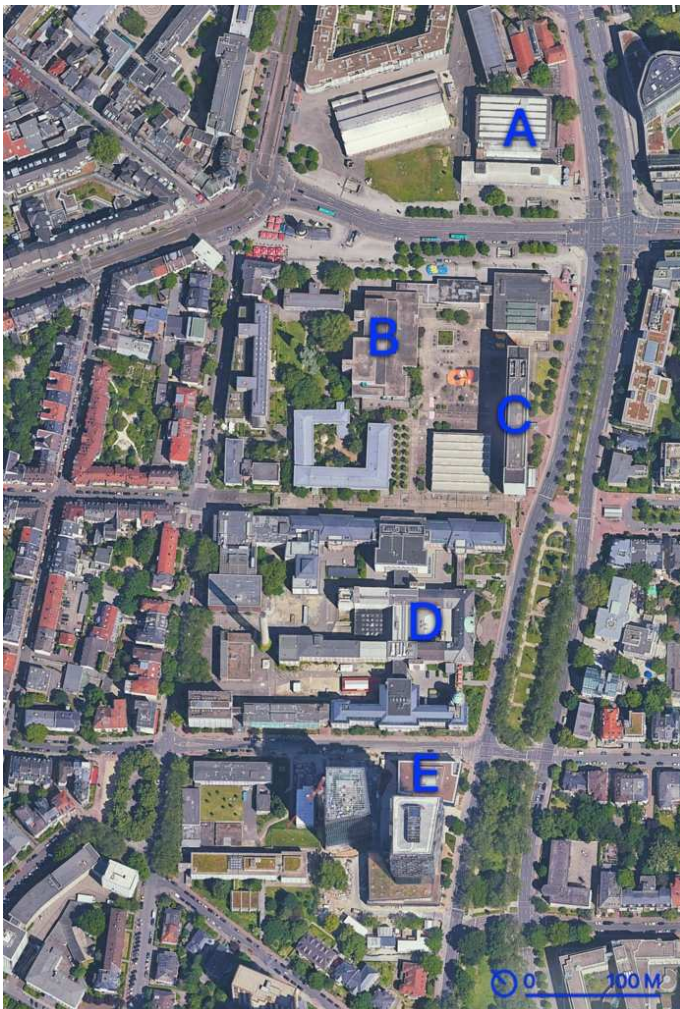
Figure 31. Jügelhaus in 1908, designed Ludwig Neher. Source: Deutsche Bauzeitung 42 (1908) Nr. 86, S. 585-589, p. 588 via WM Commons.

Rebuilding the university after the Second World War required funds, and labour and a clear vision for modernising its infrastructure. While the First World War brought economic hardship and resource shortages, the Second World War left a far more devastating impact. When the architect Ferdinand Kramer, with Walther Dunkl, Helmut Alder and Klaus Peter Heinrici, took charge of the university's renovation, an invitation he received from the president Max Horkheimer, he opposed Frankfurt's prevailing preference for restoring historical architecture (Dauß, 2023). Drawing on his experiences in the U.S. while exiled, he introduced a modern architectural style to the campus. As the city debated between nostalgic reconstruction and modern design, Kramer's vision for the Bockenheimer campus embraced a distinctly modern approach inspired by American campus ideals (Schreiber & Bode, 1986). A distinction, however, pertains to the urban presence and density of the buildings that the architect designed for the campus. Which can also be explained by reference to the configuration of the land.

Today, the Bockenheimer campus is organised around a tripartite area bordered by Grärfstraße and Senckenberganlage, which becomes Zeppelinallee beyond Bockenheimer Landstraße. At this corner stands the central library, a major campus landmark designed by Kramer. North of the library is the University Archive, while to the west lies the Bockenheimer Depot, now a cultural venue. Bockenheimer Landstraße bisects the campus's northern side, and Mertonstraße separates the main cluster of Kramer's post-war buildings complex to the south. Opposite the library is the old cafeteria which now connects westward to the university's refectory and social centre, which are important social and geographic hubs on campus. The former Hochhaus der Philosophen (or Philosophicum) along Grärfstraße now hosts private student housing, reflecting a shift from purely academic use to a mix of institutional and private interests. Further south, Robert Mayer and Georg-Voigt streets form a block of university buildings, including the *Senckenberg Biodiversität und Klima-Forschungszentrum* (Senckenberg Biodiversity and Climate Research Centre), originally built by Kramer in 1958 for the *Institut für Pharmazie und Lebensmittelchemie* (Institute of Pharmacy and Food Chemistry), as well as the former AfE site (Figure 32, Map 6).



Figure 32. View from the centre of the Bockenheimer campus. 2023.



Map 6. Bockenheimer campus. A) Universitätsbibliothek; B) Sozialzentrum; C) Juridicum; D) Senckenberg Forschungsinstitut and Naturmuseum, Physikalischer Verein; E) AfE plot. Source: Google Earth.

It was mostly during Werner Meißner's term as university president that GUF decided to move to Westend (Map 7). Meißner headed the institution from 1994 to 2000 and was a main articulator of the plan of acquiring the IG-Farben building (Kantzenbach et al., 2014). The creation of a campus responded to a perceived need for expansion and coincided with major shifts in the university's governance. With its transformation into a foundation university, the emphasis of administration shifted towards the presidency and the university council, both of which at GUF came to be dominated by private-sector representatives. The relocation to Westend, launched in 1995, unfolded in three main stages. The first phase, completed in 2008, brought the faculties of law and economics. From 2013, the social sciences and central administration followed as part of the second phase. By 2017, the third phase introduced the university library and several smaller departments to their new premises, though parts of this stage are still ongoing (GUF, 2011).

Bockenheim housed many of the humanities and social degrees, but the institution began to transfer faculties in stages, as the first renovations and construction work on the Westend campus were completed. This relative capacity for expansion might be chiefly attributed to the German state and its investment in higher education. Additionally, it is favoured by the pervasive transition that higher education institutions have themselves undergone in Europe. The German higher education system operates primarily as a public sector model and responsibility for education falls to the 16 individual states. Universities and universities of applied science are the core of the system, in addition to specialised post-secondary institutions dedicated to fine arts and music. Public institutions number around 238, but there are also state-recognised private institutions that function independently (Hüther & Krücken, 2018).

The spatial strategy that GUF pursued at Westend parallels, in part, that observed at Manhattanville, oscillating between cutting-edge architectural statements and the provision of spaces intended to foster social infrastructure. Despite being justified through similar arguments, their material expressions diverge sharply. Where Manhattanville emphasises transparency and integration through glass and steel, Westend relies on monumental stone forms to convey permanence and authority. The comparison is not only

a matter of style but also of shared ambitions. Emerging in the mid-1990s, both projects articulate a vision of the university as an institution shaped and legitimised through space, projecting academic prestige while restructuring the relationship between campus, city, and society.

Two works are relevant to our analysis. First, Belina et al (2013) argued that the Westend campus represents the spatial manifestation of a series of neoliberal processes within GUF. They contrasted this with the Bockenheimer campus, suggesting that these two sites embody two distinct "constellations of power relations"⁴⁰ (p.50) between the university and the federal government. The Bockenheimer campus is seen as reflecting a Fordist model, while the Westend campus, by contrast, aligns more directly with neoliberal principles. Each of these campuses, according to the authors, is tied to different phases in the university's relationship with broader socio-economic systems.

The second work to inform our analysis was written by Markus Dauß (2022a) and offers a critical interpretation of the architectural and spatial strategies at Westend. Dauß links them to an evolving self-image scheme at GUF and its alignment with a corporate ethos, reflected in the media apparatuses that include the campus itself. For the author, Westend has a corporate atmosphere from its inception and embodies, through design, a shift away from modular structures of the Bockenheimer campus towards an architecture designed to project other validation of institutional power. Natural stones claddings and glass further enhance this sense of permanence and cultural gravitas,⁴¹ embedding the campus within a broader narrative of timelessness and institutional weight. The seemingly liberal and rhetorically urban (as the urban label becomes pervasive in the discourse surrounding the campus) and open spatial design masks a more controlled environment, with carefully curated open spaces, access restrictions, and the presence of professionalised service.

⁴⁰ From the German original: "[die unseres Erachtens] für zwei Konstellationen von Kräfteverhältnissen [an der JWGÜ und in der BRD] stehen". Our translation. (Belina et al., 2013, p.50).

⁴¹ As referring to the commanding presence or profound significance someone or something holds within a cultural sphere.



Map 7. Relationship between campuses A) Westend; B) Bockenheimer. Source: Google Earth.

We build on these earlier insights by extending the discussion of campus space, situating it within the longer history of how universities engage with their urban environments and, more specifically, how neoliberal strategies and infrastructures materialise on campus. This perspective moves beyond reading these sites purely as expressions of corporate ethos and instead emphasises the university's shifting role as it repositions itself within an international landscape. Campus projects and buildings may serve as corporate markers, yet they also embody changing relations between the institution, the city, and its educational mission. We suggest that these dynamics can be understood through distinct infrastructural temporalities, each articulating a different stance toward local and global contexts. Tracing such temporalities reveals how universities adapt, resist, or negotiate urban transformations while responding to evolving global expectations of higher education.

By the time the new Westend campus was fully operational, Brigitta Wolff, then president of GUF, described its buildings as “temples for the mind” (Kohler, 2015). After the competition for the university's urban development project had concluded, GUF was already striving to create “one of the most beautiful university facilities in Europe.”⁴² The first competition for the campus transfer was robust. Commissioned by the state of Hesse, the competition brief called for around 300,000 square metres of gross floor area in addition to the existing I.G. Farben Building (Schmal & Voigt, 2007). This structure, and its imposing presence, was the beginning of what would eventually become Westend dominant formal motif (Figures 33; 34). Even there, where practically everything should have pointed to the design of a university of the future, it was a pre-existence that was not very easy to assimilate both in form and symbol. The *Interessengemeinschaft Farbenindustrie*, or I.G. Farben, was a chemical conglomerate and the largest private company in Europe from 1925 to 1945. The company grew significantly during the war, often at the expense of victims of national socialism (Hayes, 1987).

⁴² From the German original: “Der historische Campus Westend zählt heute schon zu einem der schönsten Universitätsstandorten Europas”; see <https://www.uni-frankfurt.de/38072362/standorte>

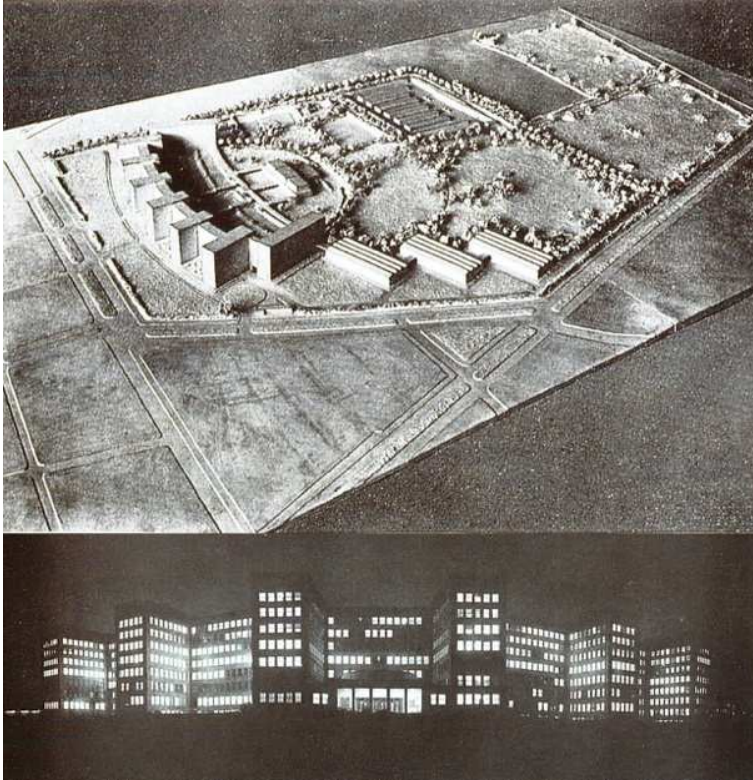


Figure 33. I.G.-Farben complex. Source: Poelzig, H., Pehnt, W., Bolz, H.-S., & Akademie der Künste (Eds). (2007). Hans Poelzig, 1869 bis 1936, Architekt, Lehrer, Künstler (1. Aufl). Ausstellung Hans Poelzig, 1869 bis 1936. Architekt, Lehrer, Künstler, München. Dt. Verl.-Anst. p.117 and 112.



Figure 34. I.G.-Farben complex. 2024.

Shortly after its founding, the company sought a strategic location for its headquarters that would provide easy access from its previous sites. In Frankfurt's rapidly growing scene, I.G. Farben's intention was met with enthusiasm, so they purchased a large area at Westend (Schmal & Voigt, 2007). Following a design by Hans Poelzig, the I.G. Farbenindustrie constructed the monumental building between 1928 and 1931. Poelzig designed a symmetric layout with six radial wings intersecting a curved segment, guiding its overall form. A central corridor runs the length of the building, further connecting these wings across the vast site in Frankfurt's Westend district.

After 1945, Allied troops occupied the site. By 1952, the building had become the European headquarters for the United States European Command and the American Central Intelligence Agency in Germany. Following German reunification, the U.S. government announced a troop withdrawal by 1995 (Jonak, 2019). As early as March 1994, with the U.S. Army's plans announced, discussions began about the future use of the I.G.-Farben complex. Its association with Germany's past under national socialism made it difficult to find new occupants. Andreas von Schöler, then-Frankfurt Mayor, the Urban Development Council, and the *Bund Deutscher Architektinnen und Architekten* (Federation of German Architects) proposed the building for the European Central Bank headquarters, which was declined due to its controversial past, and a proposal for placing there the police headquarters also failed for similar reasons. The proposal to repurpose the complex for academia followed swiftly. In June 1996, the State of Hessen acquired the site for 148 million DM, securing a new home for the humanities and university administration. (Dugall, 2008; Meißner, 2014).

The demolition of the AfE tower, the uncertain situation of the old Bockenheimer campus, and even the condition of buildings once seen as landmarks of state architecture are part of the ballast that sustains the construction of the Westend icon a little further north.⁴³ This vision carries within it another, that is the university's own sense of itself, and the changing way the world looks at universities.

⁴³ Dauß tells us, for example, that buildings such as the *Philosophicum* were considered exemplary in 1965 by the state of Hessen (Dauß, 2023).

4. Organising a university, organising a city

In Florianópolis, the idea of establishing university facilities in what was the subdistrict of Trindade had long been discussed and sparked considerable debate. The intention to locate the university campus near the historical centre of Florianópolis was part of the city's first master plan, developed between 1952 and 1955 by Demétrio Ribeiro, Edgar Graeff, and Edvaldo Paiva (J. P. de Souza, 2012). Professor Henrique da Silva Fontes, then the university's president, was an advocate for placing the university outside Florianópolis's central area. Silva Fontes had already set his sights on the lands of a former farm called Assis Brasil (Figure 35). Despite opposition from the architects responsible for the city master plan and the existence of a draft proposal for placing the university downtown, the state government supported the idea of placing the campus in the Trindade area. In November 1954, the state of Santa Catarina formally designated the swampy Fazenda Assis Brasil (Assis Brasil Farm) lands for the "university city," as the project was called at the time.⁴⁴ While securing a site for the institution was clearly significant, it is essential not to underestimate the wider implications of its placement. The decision to locate the institution, together with the federal funding it mobilised, was as an active force in reshaping land values and the associated spatial and economic dynamics.

For Sugai (2015), the dispute between the political and economic elites of the state of Santa Catarina over the vectors of urban development in the city of Florianópolis was decisive in the location of the university. Whereas the Ramos family held significant influence over the state's legislative and executive branches, the Konder and Bornhausen families were linked to the financial and business sectors. The interests of both families concerned the appreciation of land and the state provision of infrastructure on properties they owned and had acquired in advance of the university's transfer. Even the very foundation of the university, through the merging of independent schools, needs to be understood considering these power struggles. If the creation of UFSC meant placing the city within the national context of educational initiatives, the local games of interest and power were no less significant for the future of the endeavour than its inclusion in a broader national university system.

⁴⁴ At the time, it was a rural area.

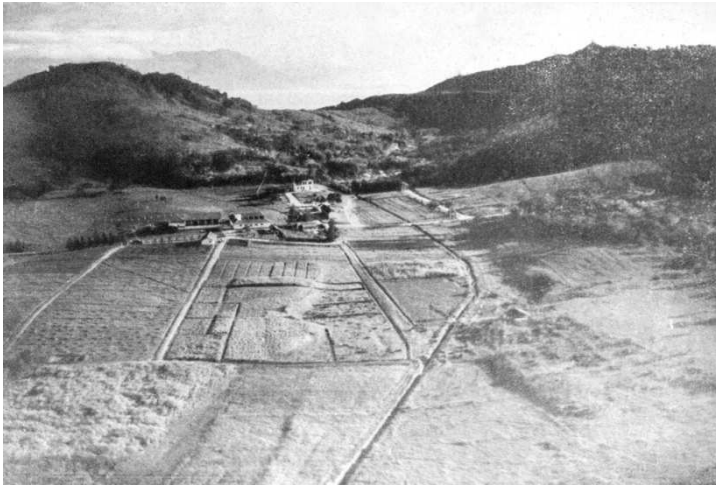
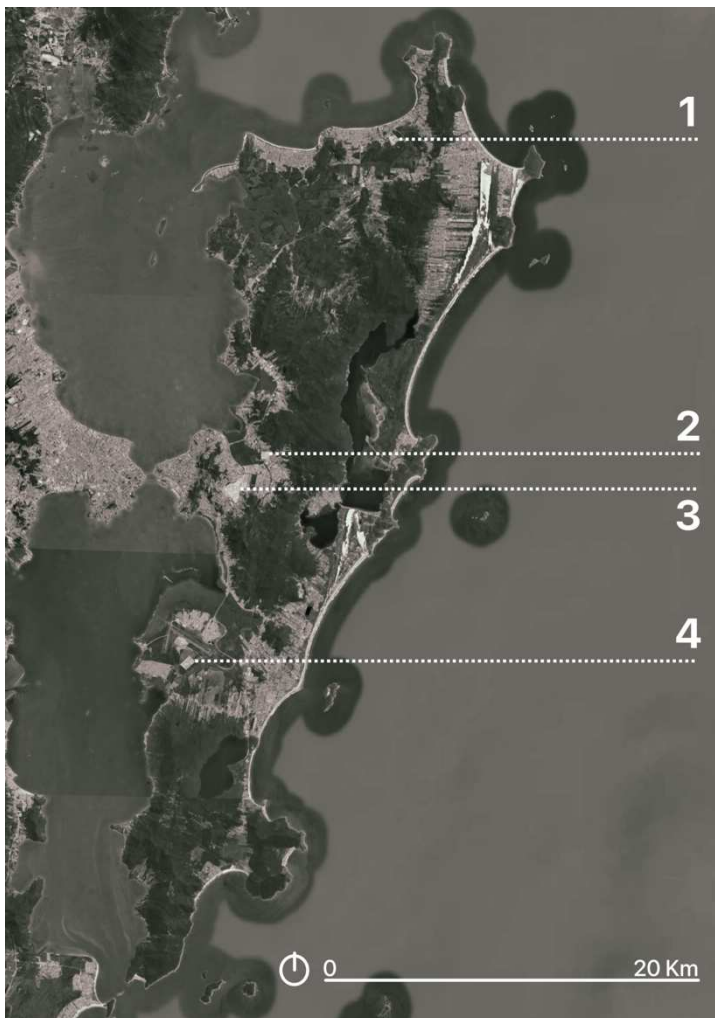


Figure 35. Fazenda Assis Brasil. Source: Agecom UFSC.



Map 8. Florianópolis. UFSC campuses on the city. 1) Sapiens Park; 2) Centro de Ciências Agrárias; 3) Main campus; 4) Ressacada. Source: Google Earth.

While the procedures preceding the university's foundation are undoubtedly significant for understanding its institutional formation, they have already been examined in the literature (Neckel & Küchler, 2010). Given our explicitly spatial concern, we therefore, turn to the campus itself and to the university as one of the city's fronts of urban development—an institution that, even in the mid-twentieth century, sought to project a modern future within the limits imposed by its circumstances.

Florianópolis is the capital of Santa Catarina and comprises a mainland and an insular section, the latter dominated by the Island of Santa Catarina.⁴⁵ It is a multi-nucleated city where ecosystem diversity and environmental fragility coexist (Medeiros, 2009; Reis, 2012). Before the colonisers from the Azores arrived, the Guarani people inhabited the area in substantial numbers (Map 8). The coloniser settlement was concentrated in small, scattered agricultural communities that continue to shape socio-spatial relationships today, largely due to the endurance of morphological configurations such as the *Estradas Gerais* (main roads) (Reis, 2012). The growth of tourism-related activities, which began in the 1950s and accelerated in the 1970s, supported the urban expansion of various service sectors. This condition represented a significant change from the kind of commerce that had previously characterised the city.

In 1930, Santa Catarina State experienced notable economic growth, particularly in its industrial sector. Still in the 1940s however, and largely due to the poor condition of the roads and the size of the island, maritime transport remained a significant mode of mobility. It had become something of a tradition, one that early road infrastructure didn't immediately displace. Certainly, the construction of the first bridge between 1922 and 1926 linking the island to the mainland influenced land use in the central area and introduced new possibilities for other transportations modes. This major infrastructural undertaking unfolded alongside another, more time-sensitive process. The city's harbour had long been central to maritime transport, and local commerce depended heavily upon it, as trade and export through the port had shaped much of the urban economy in the late nineteenth and early twentieth centuries. As vessels increased in size and technical

⁴⁵ According to estimates from the Instituto Brasileiro de Geografia e Estatística (IBGE, English: Brazilian Institute of Geography and Statistics), the city's population in 2022 was approximately 530,000, making it the second most populous city in Santa Catarina.

complexity, however, the harbour became progressively incompatible with these demands and, ultimately, obsolete (Peluso Jr., 1981). Even in the 1930s, when the federal government introduced regulations on the navigation of small coastal boats, affecting, above all, how the most socio-economically vulnerable groups used this form of transport. The effects were slow to materialise, although we can observe them unfolding in lightly defined cycles.

We base our characterisation of the city on Teixeira (2009) and his definition of modernisation cycles in Florianópolis. The first cycle, spanning from the 1930s to the early 1950s, coincides with the administration of President Getúlio Vargas, during his authoritarian Estado Novo and later democratic government.⁴⁶ This period saw significant modernising reforms and a nationalistic vision for Brazil. As a predominantly insular state capital, Florianópolis was heavily dependent on state investments, which solidified its role as the administrative centre. Urban expansion was marked by the inauguration of the Nereu Ramos Hospital, alongside federal investment in public health, education, and social infrastructure. The second cycle, from the early 1950s to the mid-1960s, saw significant urban growth and increased density in central areas. One of the most significant infrastructural undertakings of this period was the construction of Avenida Beira-Mar Norte, initiated in the early 1960s and completed in the mid-1970s. The avenue formed part of a broader set of interventions that had already singled out the northern portion of the island as a priority for investment. UFSC was positioned along this axis, which only began to take on a more defined form following the 1952-1955 master plan (J. P. de Souza, 2012; Sugai, 2015).

During the Vargas era, Brazil witnessed the first official organisation of a university structured in a form more closely aligned with Western conceptions of the university within the national territory. The Universidade do Brasil (UB) campus, now the Fundação campus of the Universidade Federal do Rio de Janeiro (UFRJ), lies at a juncture in Brazil's political and

⁴⁶ Pandolfi (1999) contends that Getúlio Vargas stands as one of the most contentious figures in the history of republican Brazil. During the Estado Novo period, Vargas is portrayed as a domineering and voluntaristic leader, driven by a strong ambition to command. He utilised repression and coercion without hesitation to maintain his grip on power, even going so far as to eliminate former friends and allies. This period is marked by his distinctly authoritarian approach. In contrast, Vargas of the 1950s, elected as president to lead the country into a new political era, is often viewed in a different light.

developmental history. While this history is well-known and extensively documented in the historiography of Brazilian modern architecture, a few observations are worth noting, as they capture and synthesise one of the earliest instances in which the Brazilian higher education system was politically, theoretically, and deliberately conceived as a cohesive system, also in what comes to space and physical assets. Already in 1920, then-President Epitácio Pessoa established the first Brazilian university, building on a 1915 decree. This initiative merged the Polytechnic School and the Medical School while incorporating a Law School, granting these three institutions both academic and administrative autonomy. It was, in part, the result of the efforts from organisations such as Academia Brasileira de Ciências (ABC, Brazilian Academy of Sciences,) and the Associação Brasileira de Educação (ABE, Brazilian Association for Education), which supported the modernisation of Brazilian education, including higher education.

Brazilian public universities primarily followed European models until circa 1945. Afterward, North American universities, recognised for their technological advancements during the war effort, became the dominant influence on the structure and organisation of Brazilian higher education. These changes are far from random, reflecting the solidification of the United States' "Good Neighbour" policies, introduced at the onset of the Second World War. Faced with the threat of Nazi expansion into the tropics, the U.S. sought to foster sympathy for the American way of life, a strategy that proved safer and more effective than overt threats of war (Tota, 2011). The Brazilian Estado Novo, which began in 1937, represents a dictatorial turn by the government of President Getúlio Vargas, who imposed a new dictatorial constitution to rule Brazil as a dictator.

Rolland (2003) highlights the inherent ambiguity of the Estado Novo in its dealings with the Brazilian intellectual class. He notes how intellectuals were elevated to an advisory role for the state, which, according to Rolland, also marked an initial attempt to mythologise the state through arts, culture, and the cultivated image of the president. During this period, according to sociologist Helena Bomeny (1999, p.141, our translation⁴⁷) a "militarisation of thinking" ruling education took place, where the pressing demand for order and discipline shapes both the purpose and structure of education and witnessed active participation of

⁴⁷ From the Portuguese original: "Militarizando o pensamento" (Bomeny, 1999, p.141).

ministries concerned with security in education policies. In a sense, this continued to happen even when the paradigm ceased to be European.

If we view the university as a distinctive institution of Western civilisation, particularly as it historically developed in Europe, it is adequate to say that until very recently Brazil had no universities. An important moment for the beginnings of Higher Education in the country took place when the Portuguese Royal Family fled Napoleon's army invasion of Portugal and arrived in Rio de Janeiro in 1808. It was only after their arrival that D. João VI advanced with the implementation of professional schools, military academies, and the National Library in the colony, for example. Jesuit colleges preceded these institutions in Brazil, where they founded the first Philosophy course in the country during 1572. This can be explained by the fact that the Jesuits had a great influence on one of the oldest higher education institutions in Europe, the University of Coimbra, therefore impacting in their power over education in Portugal's domains.

The Society of Jesus, founded in the sixteenth century, also reflects the leading role that the Jesuits took on in Catholic countries and in their colonies, such as Portugal and Brazil (Mendonça, 2000). The development of Brazilian university campuses is deeply tied to the evolution of modern Brazilian architecture and the broader efforts to modernise governmental and bureaucratic systems. This phase represents the first architectural approach to addressing the "university question" in Brazil, positioning them as vital for advancing other sectors. Recently, an increasing number of studies have analysed and examined public university campuses in Brazil. Several monographs have focused on specific aspects that illuminate how campuses were part of larger undertakings while also highlighting their diverse manifestations as spatial and infrastructural entities. In terms of design, these campuses often represented radical spatial and urban experiments, located in regions on the edge of a developing country. As such, they became drivers of development while also serving as arenas for regional political disputes and diverse perspectives on urban planning, architecture, and the integration of art and architecture.

Throughout their long history, universities have often stopped from relying directly on the city to becoming independent entities through the development of campuses. The

campus emerged to organise and give spatial coherence to institution territories. By the time Brazil began establishing its first universities, the campus model was already becoming common in the Global North. While generalisations can be problematic, a brief historical overview of Brazilian universities reveals that the campus model became prominent after the 1940s. For public institutions, adopting such a model involved selecting plots of land that frequently pushed city development into previously unoccupied areas. This approach ensured an abundance of land but also resulted in spatial organisations that disregarded both pre-existing land uses and the urban sprawl the university would later generate. Pinto and Buffa (2009) identify two main phases in the evolution of universities in Brazil. The first phase, during the 1920s and 1930s, involved the establishment of isolated faculties based on classical models, primarily designed to train personnel for the state, housed in monumental buildings that blended into the urban fabric. The second phase, beginning in the 1960s, reflects the influence of North American models, coinciding with Brazil's broader economic, political, social, and cultural transformations.⁴⁸

As seen, during the 1930s, Brazil underwent significant political upheaval, characterised by increasing government centralisation across various sectors. This centralising tendency in education during Vargas's early years as president was evident in the reforms implemented by his Minister Francisco Campos in the 1930s. In 1934, Gustavo Capanema assumed the role of Minister of Education and Health, bringing with him a remarkable ability to mobilise intellectuals and foster connections with writers, poets, architects, musicians, and artists. Many of these figures collaborated with him directly or benefitted

⁴⁸ While this division is a useful framework for understanding the evolution of Brazilian university spaces, it oversimplifies the issue, particularly when considering the very concept of influence, which is often treated as a one-way process. Although Pinto and Buffa (2009) make significant contributions to the discourse on Brazilian campuses, their work frequently adopts an uncritical perspective on modernism in architecture and urbanism, which limits their analysis of these campuses as objects of study. It's safer, therefore, at least as far as physical space is concerned, to understand that each of the multiple public education institutions is surrounded by a myriad of particularities. Although this type of division makes sense from a foundational-administrative point of view, the issue becomes clearer when each case is confronted with specific and concrete realities. As the same authors do when they focus on the cases they analyse.

from his patronage within the Ministry of Education and Public Health (MES).⁴⁹ Beyond this personal capacity, Schwartzman (1985) identifies a “normative” centralisation in Capanema’s tenure, which involved deliberations over nearly every aspect of educational life, and a “monumental” approach to his artistic interests and his interpretation of Brazilian cultural heritage. It was unsurprising, therefore, that when the UB became a “National” institution via decree in 1937, Capanema held high expectations for its development and for the canon it was suppose to configure. 1937 also marks the construction beginning of the MES building (today known as Palácio Capanema). The new headquarters for the MES was a long-desired project for Capanema, and so was the idea that this building should both represent and orient his Ministry’s direction toward modernisation, aesthetically and culturally.

After a frustrated competition, Capanema dismissed the winning project due to its conservative and traditionalist nature. Instead, Lucio Costa, Affonso Eduardo Reidy, Carlos Leão, and Jorge Moreira, later joined by Oscar Niemeyer, developed a new proposal. When Le Corbusier was in Brazil in 1936, he served on two commissions, one to assist with the design of the MES headquarters and the other for the design of the Cidade Universitária, as the UB campus was called at the time.⁵⁰ Segre (2013) suggests that Le Corbusier's involvement in the UB project may have been a response from modernist-aligned groups within the Vargas government. This move aimed to counter Marcello Piacentini's proposal, which had initially been chosen for the project and that was aligned with conservative sectors. Piacentini's project, also developed in 1936, even had the

⁴⁹ It is no coincidence that Capanema's closest circle consisted precisely of the intellectuals tasked with reflecting on Brazil's past and present, forging a new, modern identity for the country. The approximation of the Brazilian intellectual class to government positions between 1920 and 1945 still adhered to a socially dependent logic. The relationship between intellectuals and the state, particularly through the figures of Capanema and Vargas, is crucial for understanding Brazil in the mid-twentieth century. Canons were consolidated via influential means supported by cultural fronts of active action of the driving group of Brazilian modernism and interpretations of modernity closely followed the relational transformations within the hegemonic groups of Brazilian institutions and the ideological inclinations of these circles. This programme resulted in the suppression or reorientation of non-aligned expressions. In architecture, this translated into alignment with the intellectual framework devised by figures such as Lucio Costa (Arantes, O.B.F, 1999; Cardoso, 2022; Miceli, 2001).

⁵⁰ Le Corbusier had visited the Americas earlier. According to Ortiz (2017), his 1929 voyage marked a significant moment when he incorporated the southern part of the continent into his agenda and discourse on architecture and the New World. The author argues that Le Corbusier's ideas initially spread throughout the Americas via the individuals who followed or participated in the avant-garde debates in Paris during the 1920s.

backing of Benito Mussolini, who sought to extend Italian cultural influence in a country traditionally shaped by French cultural dominance. Lucio Costa also developed proposals for the Cidade Universitária. Alberto (2003) examines the tensions between different interpretations of modernity, debates over land allocation, and how these shaped visions for both the university and the future of Rio de Janeiro. He also provides one of the most thorough analyses of the proposals by Piacentini, Le Corbusier, and the projects by Lucio Costa.

The terrain of the Fundão campus differed entirely from its current state, created through landfill operations that connected nine islands, including the original Fundão Island, along Guanabara Bay in Rio de Janeiro. Jorge Machado Moreira's team developed the campus master plan between 1949 and 1962. The final design, often described as distinctly Corbusian, followed the Athens Charter principles and embodied modernist ideals of functional organisation (Postingher, 2012). The plan included a park, separated pedestrian and vehicular lanes with greater emphasis on vehicles, and a predominantly longitudinal layout. The architects grouped building volumes by function, with their heights determined by practical considerations. This modern architectural approach marked a decisive moment in debates over UB's institutional future, reflecting a victory for modernist principles.

Le Corbusier's presence in the Brazilian cultural scene reflects a long-established relationship between French cultural figures and Brazilian ruling classes and intellectuals.

⁵¹ This connection is longstanding and goes back to artistic, political and cultural relations with France and Portugal, but as an official strategy, it becomes clear in 1816, when the so-called French Artistic Mission was brought to Brazil by D. João VI. This Mission⁵² laid the foundation for the country's first academic fine arts institution, Academia Imperial de Belas-Artes do Rio de Janeiro (AIBA, Imperial Academy of Fine Arts of Rio de Janeiro) in 1826, latter renewed into the Escola Nacional de Belas Artes (ENBA, National School of Fine Arts) (Figures 36; 37). Prominent figures, such as painters Jean-Baptiste Debret and Nicolas-Antoine Taunay, architect Grandjean de Montigny, botanist Auguste de Saint-Hilaire, Swiss engraver Charles Simon Pradier, and sculptor Auguste-Marie Taunay, all guided by Professor Joachim Lebreton, contributed significantly (Schwarcz, 2008).

⁵¹ The exchange of ideas and practices between Latin America and other regions has been a longstanding process. In architecture and urban planning, specific events reveal how the connection between France and Brazil became deeply rooted. Latin America's rapid modernisation and urban expansion reshaped many European concepts while adapting them to regional needs. In the early 20th century, this dynamic was evident in Rio de Janeiro under Pereira Passos, who implemented an ambitious reform focused on public health, urban mobility, and beautification. Influenced by Auguste Comte's positivist philosophy, a dominant ideology at the Military Engineering Institute at the Royal Military Academy where he studied, Passos also incorporated ideas from Baron Haussmann's redesign of Paris, which he encountered during his education at the École Nationale des Ponts et Chaussées. The Avenida Central, a grand boulevard linking the city's historic centre to newly developed areas structured an important part of the scheme. This urban transformation continued for decades, including the removal of two hills in the city centre, which displaced many residents, particularly newly freed slaves who had settled there. Passos embodied a broader cultural and political atmosphere with significant influence across the Americas. Almandoz's (2002) edited book *Planning Latin America's Capital Cities* offers an insightful introduction on this matter. Particularly sharp are chapter two, by Almandoz himself, titled *Urbanization and Urbanism in Latin America: From Haussmann to CIAM*; Gutiérrez's chapter three, *Buenos Aires, A Great European City*; and chapter four by Pereira, M., titled *The Time of the Capitals: Rio de Janeiro and São Paulo: Words, Actors, and Plans*.

⁵² Some scholars argue that the so-called French Artistic Mission functioned less as an official cultural delegation and more as a coordinated exile of artists and intellectuals closely linked to Napoleon. This interpretation builds on Mario Pedrosa's thesis, which questioned the traditional narrative of an "invited" mission and instead suggested a political flight disguised as cultural diplomacy. More recent research revisits Pedrosa's argument, reinforcing the idea that these figures sought refuge in Brazil (Arantes, O.B.F., 1998; Trevisan, 2007).

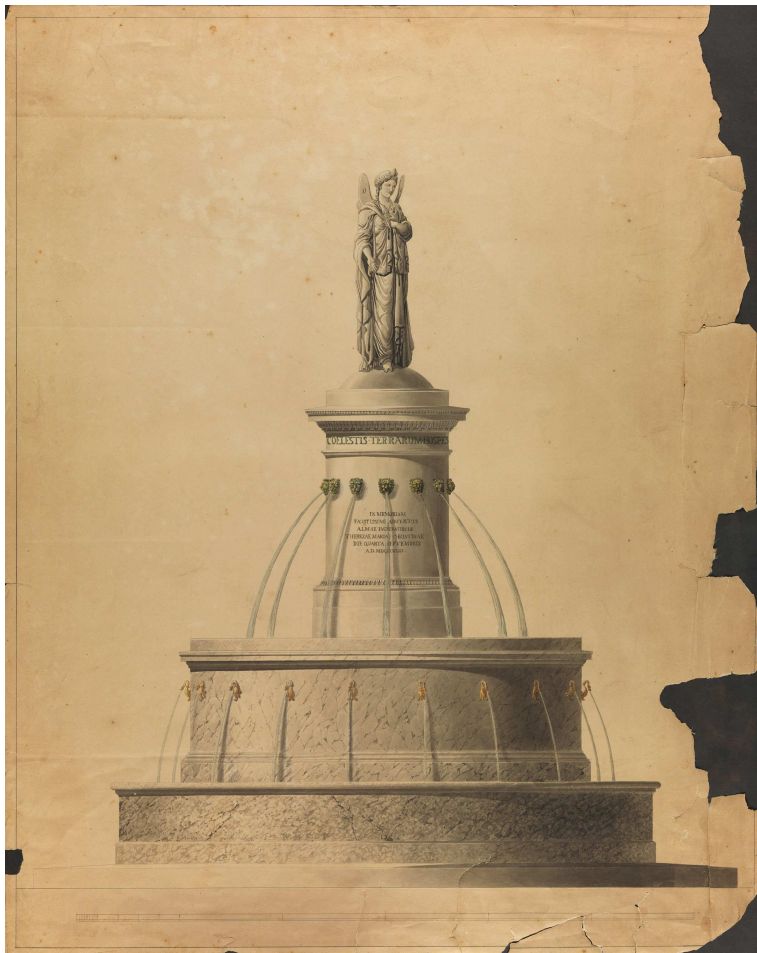
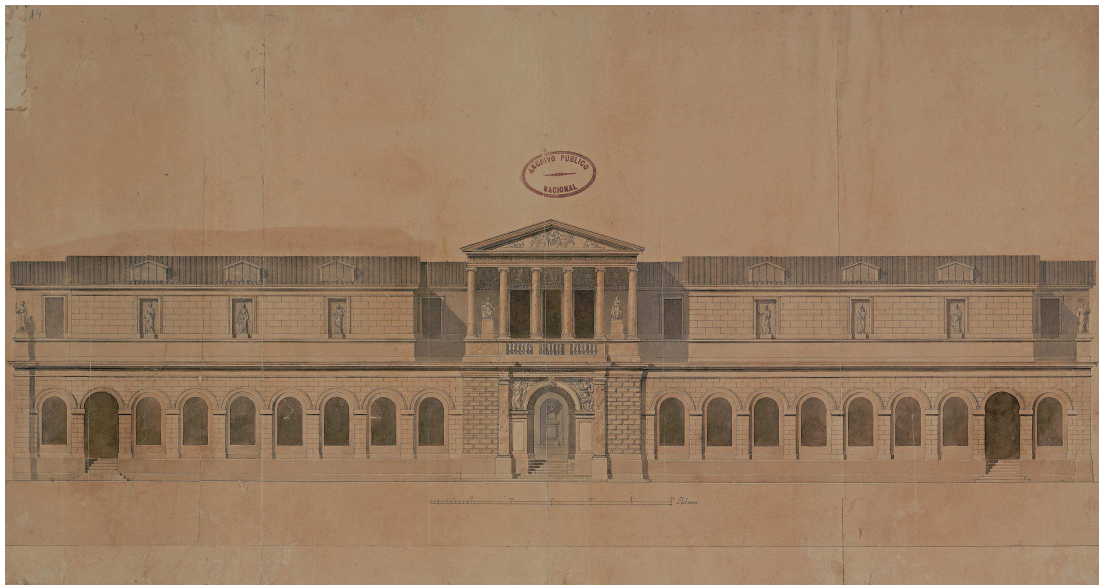


Figure 36. Facade of the Academia Imperial de Belas Artes (Imperial Academy of Fine Arts). 1839. Project by Grandjean de Montigny. This building and the institution were designed in the context of the French artistic mission in Brazil. Source: Arquivo Nacional Brasileiro.

Figure 37. Another project of Montigny, this image depicts a design for a commemorative fountain for the arrival of Empress Teresa Cristina, also produced during the French Artistic Mission. Source: Biblioteca Digital da Fundação Biblioteca Nacional.

All these French academic artists had seen their influence wane during the revolutionary French and found new opportunities in Brazil as part of a broader diplomatic strategy (Nunes, 2016). D. João VI and his family, with British support, sought refuge in Brazil after Napoleon's general Jean-Andoche Junot campaigns in Portugal in 1807. Diplomatic relations between Portugal, its colonies, and France normalised only after the 1814 peace agreement and, for France, that also implied acting upon of England's growing cultural and political influence.

The AIBA joined a group of institutions that can be classified as higher education establishments, although not universities in the traditional sense. As Mendonça (2000) explains, these institutions were closely tied to the need for military defence of the colony, which had also become the seat of the Portuguese Court. They arose from the pragmatic necessity of creating infrastructure to support the Court's survival. Between 1808 and 1820, notable examples included Rio de Janeiro's Academia de Marinha (Navy Academy) and Academia Real Militar (Royal Military Academy), both established to train engineers. In addition, the Portuguese founded health-related institutions in Rio de Janeiro, such as the Academia de Medicina e Cirurgia (Academy of Medicine and Surgery). These schools were not solely initiatives of a court seeking to establish order but also reflected explicit demands from the population. Efforts to create higher education institutions during this period often involved active organisation by the populace, as evidenced by examples of institutes in Bahia and Minas Gerais (Cunha, 2007a).

Years later, the hiring of foreign professors was essential to the establishment of the University of São Paulo (USP) in the 1930s, driven by a group of intellectuals aligned with the director of the newspaper *O Estado de São Paulo*. Beyond its political significance, namely, asserting cultural and economic leadership to rival Rio de Janeiro, USP's foundation aimed to transcend mere specialised and professional training, focusing instead on advancing research. Research at the UB, for example, was not an institutional established field (M. D. F. C. D. Paula, 2002). This also meant recruiting teachers capable of attracting students and prestige to the institution. Competition between France and Italy for cultural and scientific influence in São Paulo formed the backdrop to this recruitment. At the turn of the nineteenth to the twentieth century, France had expanded its influence

through University Missions, promoting academic mobility and fostering ties between professors.⁵³ These efforts bridged diplomacy and academia, laying the groundwork for implementing French cultural policy in Brazil, a policy carried on under the guidance of minister Georges Dumas in Brazil and Latin America. At USP, French professors conducted mostly disciplines related to the humanities. German professors occupied prominent positions in the Botany, Chemistry and Zoology fields⁵⁴ (Silva, 2013; Suppo, 2000).

The juxtaposition of different existing schools was also the procedure for creating USP, some of it already had significant infrastructures constructed, hence the campus being located at the juncture of the Faculty of Medicine through the Pinheiros neighbourhood and ended at the Butantã Institute. Construction work on the campus picked up speed in the early 1950s. Hélio Duarte, who also played an important role in establishing UFSC's first campus project, was responsible for revising the 1940s plans. These projects had been carried out by independent commissions that had been meeting since the first idea for the university appeared.

In the context of UFSC, Peluso Jr. (1981) draws a parallel between the establishment of UFSC and the construction of BR101,⁵⁵ treating both as engines of Florianópolis's modernisation. This process encompassed a series of urban interventions designed to project a progressive image of the capital, encouraged by the economic expansion of the 1960s. After the 1964 military coup, major infrastructure projects were advanced within a broader agenda of territorial organisation and strategic planning, with direct consequences for Florianópolis. Hélio de Queiroz Duarte and Ernest Robert de Carvalho Mange, the authors of UFSC's first master plan in 1957, both had previously worked in the intersections between construction and education (Figure 38).

⁵³ Most foreign professors sent to Brazil recognised their role as promoters of their respective culture, which reinforces a form of cultural colonialism.

⁵⁴ This was, as Silva (2013) also demonstrates, a deliberate choice on the part of USP's founders, who feared that bringing German or Italian professionals into the humanities could lead to the circulation of totalitarian ideas.

⁵⁵ The BR-101 is a major longitudinal highway in Brazil, stretching approximately 4,650 kilometres, which also connected Florianópolis during the 1960s.

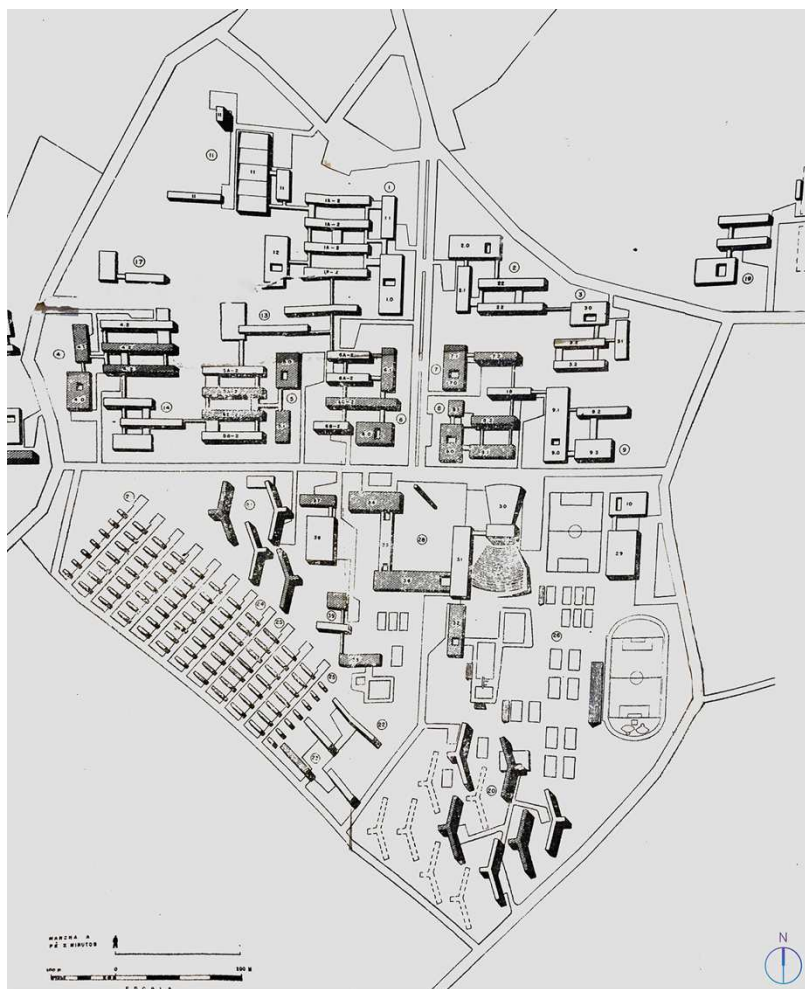


Figure 38. UFSC's first master plan in 1957. Source: Arquivo do Departamento de Projetos de Arquitetura e Engenharia - DPAE-UFSC.

Duarte's work consistently focused on educational programmes, encompassing administrative planning, conceptual organisation, and territorial and architectural design across all levels of education (Lessa, 2017). Mange, by contrast, left his mark on painting as well as urban and architectural practice, working with the Brazilian architect Rino Levi and with Le Corbusier in France (L. R. dos Santos, 2018).

Duarte and Mange presented their document under the title *Master Plan for the University City of Santa Catarina*. After the introductory section, which broadly characterises the region and the site, the document outlines regulations and proposes an overall solution, placing zoning at the centre of the project. The authors divided the site's territorial planning into different functions (F) and assigned corresponding zones (Z) to each. These zones include Teaching and Research (Z.1), Housing (Z.2), Recreation (Z.3), and Administration (Z.4). For each function and its zone, they calculated the required square meterage, considering future expansions and the need to adapt to evolving functions. They based the placement of zones on topographical conditions, exposure to favourable winds, protection from southern winds, and access to sanitation infrastructure (Duarte & Mange, 1957; Pavan, 2022).

Each zone followed its own principles to organise the sectors within it. In Z.1 (Teaching and Research), for example, they grouped the various sectors, such as schools and related institutes, into three domains: Humanities and Arts, Physical and Technical Sciences, and Biological Sciences. The circulation plan drew a clear separation between vehicles and pedestrians and defined levels of specificity. They structured car circulation hierarchically into general roads and first- and second-degree internal roads, classifying them as urban, intra-campus, and intra-sector routes. For the pedestrian routes, the duo assigned adjacent paths within the internal and intra-sector roadways, connecting the various buildings planned for construction.

Duarte and Mange's plan considered aspects of civic infrastructure, arranged to reflect a growing trend in architectural and urban production at the time—an urban approach that would soon become common practice in campus design, replicating many urban programmes within campuses. While civic centres had become a standard feature of

urban renewal projects in Latin America, at least since the post-World War II era), state architecture came to symbolise bureaucratic efficiency and organisation, transforming the civic centre into a symbolic programme (Carranza & Lara, 2015). After 1964 in Brazil, bureaucratic efficiency came to signify an intensified modernisation of the state apparatus, supported by financial and administrative centralisation at the federal level following the military coup. This reality took spatial form through the construction of transport, energy, and communication infrastructures, along with the launch of more specific programmes. The construction of Brasília also reinforced the civic centre concept, which took on renewed significance in the post-Brasília era under the developmentalist rhetoric of the "Economic Miracle",⁵⁶ which also fostered modernist campus projects across the country (Bastos & Zein, 2010; Segawa, 2012).

The planning and construction of Brasília also have significance for the history of university construction in Brazil, particularly with the implementation of the Universidade de Brasília (UnB, University of Brasília). This process involved prominent intellectuals and architects. The Instituto Central de Ciências (ICC, Central Institute of Sciences), a building approximately 700 metres long that defines the centre of the campus, presents an original approach to learning philosophy and we might consider it one of the most innovative spatial propositions for higher education institutions in the country. The ICC occupies the area designated by Lucio Costa, who created the initial sketch for the university campus in the winning proposal for the Brasília master plan competition, for a large central square. Miglievich-Ribeiro (2017) suggests that a utopian mindset influenced the conception of the project for UnB, largely driven by anthropologist Darcy Ribeiro.

Ribeiro, an advocate for the university's foundation in Brazil's new capital, reflected on the Brazilian intellectual climate of the 1940s and 1950s, characterised by a commitment to societal transformation. His vision for UnB emphasised the need for public education as a tool for national development. While recognising universities as part of global social

⁵⁶ Following the 1964 military coup, Brazil experienced rapid economic growth between 1968 and 1973, a period known as the *milagre econômico* ("economic miracle"), driven by foreign capital, state-led industrialisation, authoritarian control over wages and unions and major infrastructure projects. It also generated significant external debt, persistent social inequality, and adverse environmental impacts due to accelerated industrialisation. The cycle ended in the mid-1970s, as the Oil Crisis, rising external debt, and refinancing difficulties curtailed growth (Paulino, 2020).

systems, Ribeiro rejected superficial modernisation through imitation of European and North American models. Instead, he proposed a Latin American-oriented institution to foster authentic national progress and social innovation. Ribeiro believed universities should combat elitism, reject traditional academic hierarchies, and engage dynamically with society through cultural and educational outreach. He championed diversity, arguing that universities should reflect the varied interests of students in their structure. His emphasis on critical reform and community engagement strongly influenced the centrality of the Central Institutes and the positioning of the ICC, which was designed in 1962 by Niemeyer and his team, embodying Ribeiro's vision. The change from Costa's vision of the central square as an organising element for the campus to the construction of the ICC reflects evolving perspectives on the university's pedagogical and institutional projects.

The Duarte and Mange's plan invites us to investigate two questions. The first concerns the conception of education that was at the heart of the idea, and the second is more related to architecture and urbanism as disciplines that were being reorganised at the time.

Duarte grounded his practical and methodological proposals in a close engagement with the writings of Anísio Teixeira. The UFSC master plan, like the redevelopment efforts at the Universidade de São Paulo (USP), is one example of how his disciplinary approach took shape in concrete planning procedures. Teixeira's guidelines, together with the principles of the New School movement and progressive pedagogy, oriented Duarte's thinking about the spaces of schools and universities, above all, in pointing to the public dimension of knowledge and the idea that its internal coherence depended entirely on a broader socio-political project. Second, Duarte's project practice is still tied to a moment of reorientation within CIAM and to the effective professional contact he maintained with Mange, himself aligned with the ideals of the Modern Movement (Lessa, 2017; L. R. dos Santos, 2018). Beyond the already established visions of Le Corbusier, particularly

following the programmatic-monumental solutions conceived for Chandigarh, crucial theoretical revisions emerge at the core of CIAM (Barone, 2002).⁵⁷

A cursory assessment of Duarte and Mange's plan might emphasise only the scheme's strong adherence to the Athens Charter. However, it is understood that the solution presented in the UFSC plan was conciliatory; neither indicating that the inclusion of the core reflected the impending division within CIAM itself, nor serving as a predecessor for Team X's later reorganisation (Barone, 2002). CIAM VIII is directly referenced by Duarte in the 1955 replanning of the University of São Paulo. Paraphrasing the concept of the civic core's intended function, Duarte interprets the human activities it accommodates while fostering cooperative relations, framing such positions as acts of solidarity (LESSA, 2017). The civic core conceived by Duarte and Mange for UFSC reflects CIAM's reorientation by integrating the core as the plan's central element, linking it to the sectoral layout. For instance, accommodations for single professors and married professors without children were placed near the core to encourage interaction with students in this civic space. The same logic applied to the Administration and Maintenance sectors, as well as the cultural-social recreation sector, both treated as conceptually and spatially central.

Duarte and Manges's plan must be understood in relation to Sugai's (2015) identified late-1950s dispute over the university's location, suggesting the scheme's fundamentally political nature. Beyond the constructed roadworks, little of the plan materialised, reinforcing its role less as a blueprint than as a discursive framework for negotiating the campus's political and practical feasibility. This interpretation is reinforced by the return of debates over the university's location in 1960.

⁵⁷ Among these revisions is the reconsideration of the role of the central urban nucleus through the guiding theme of the VIII Congress of 1951, *The Heart of the City*, organised under the influence of Lluís Sert. At that time already accustomed to North American urban production, Joseph Lluís Sert was attentive to the role of the automobile as a pillar of suburban development. The suburb and the sociabilities it provoked indicated to Sert that the spread of cities required efforts to design new elements of civic centre's capable of synthesising architecture, urban design, and landscaping to foster places for pedestrian gatherings and civic engagement. Far from being an individual understanding, this vision spread through the practices of many members of CIAM and was even incorporated as part of the operative critique of the Modern Movement.



Figure 39. Model of the plan proposed by Souza, Castelar Peña and Guntzel in 1964. Source: Arquivo do Departamento de Projetos de Arquitetura e Engenharia - DPAE-UFSC.

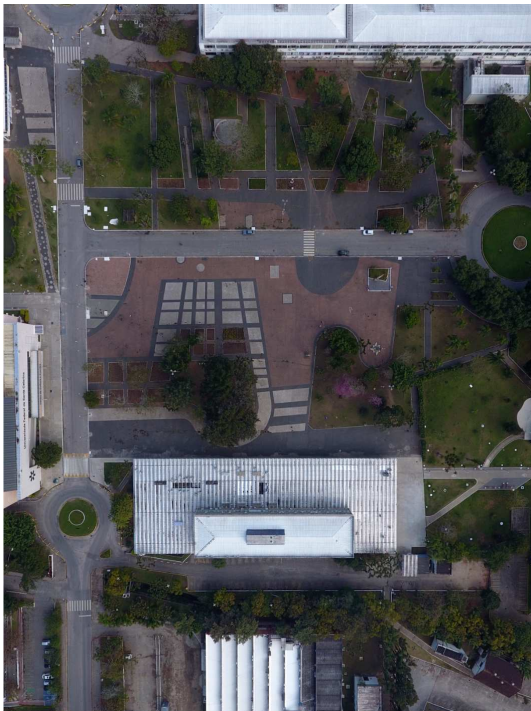


Figure 40. The constructed portion of Praça da Cidadania, inaugurated in 1992, is part of the project that landscape architect Burle Marx designed in 1970 for the entire campus. 2019. Photo: Felipe Finger. Source: LEUr-UFSC.

Sugai's conclusions regarding the area allow us to interpret the plan as an urban catalyst, signalling the impending transformation of the Trindade neighbourhood. This shift is further evidenced by the marked increase in approved allotments following UFSC's foundation, despite the institution attaining unified status only several years later. The scheme should thus be understood not as an architectural prescription, but as a strategic political artefact embedded within broader territorial mechanisms.

The first proposal informed a later one, the 1964 Master Plan for the University Complex, led by UFRGS architects Souza, Castelar Peña and Guntzel (Figure 39). This new plan did not break with the original scheme; instead, it amplified it. The designers reinforced the idea of distinct academic zones (humanities, technology, medical sciences and arts) while keeping the same road system and overall zoning logic. They also introduced the idea of a "university park". In practice, though, it leaned far more towards physical separation from the city than towards any ambition to form a public park (UFSC, 1965). Importantly, the plan paid little attention to what already existed on site. By the time the University Reform took shape, UFSC already had several anchor buildings in place: the Centre for Basic Studies (initially the Faculty of Philosophy) in 1957, the Rector's Office and University Library in 1959, the Faculty of Industrial Engineering, which is today's President building, in 1966, and the University Restaurant and most of the sports facilities by 1969 (Neckel & Küchler, 2010; Teixeira & Yunes, 2016).

During the Brazilian military regime (1964–1985), the number of public universities grew by roughly 50%, largely due to bilateral agreements with the United States. These agreements steeled how universities expanded, as well as political and administrative expectations that influenced campus governance and the infrastructure (Buffa & Pinto, 2016; Pereira, 2017). This meant that the physical layout of campuses and their internal management structures developed in step with the regime's priorities, aligning academic space and institutional organisation with its broader political project.

To better understand how this unfolded at UFSC, it is useful to follow the periodisation proposed by Pimenta et al. (1998), who divide UFSC's spatial development into three phases encompassing UFSC's installation up to 1975, expansion from 1976 to 1983, and

the period from 1984 to 1997. In the first phase (1960–1975), the University Reform left clear physical and administrative marks. A kind of pragmatic rationalism guided zoning decisions and the allocation of land to each teaching centre. The creation of a specialised sector to develop architectural projects is a good example of how physical planning began to move in line with the new academic structure.

From 1976 to 1983, UFSC experienced what Pimenta et al. (1998, p. 13) call a “fever” of construction. Strong federal investment, through the Brazilian Ministry of Education (MEC) and support from national and international development agencies, pushed large projects forward. The campus expanded quickly, and these centralised works left a strong imprint on its spatial organisation. The establishment of a technical administrative office in 1976, following MEC’s guidance, reinforces the idea of a centralised and coordinated development strategy during this period. In 1969–70, Burle Marx and his team developed a landscape proposal for the UFSC campus, bringing his well-known sensitivity to Brazilian flora into the university setting. Only a small and modified part of that plan ever materialised. Praça da Cidadania (English: Citizenship Square), completed in 1992, stands as the clearest trace of his contribution, despite some modifications to the original proposal (Figure 40).⁵⁸

Alongside this federal centralisation, local political and economic interests also shaped construction timelines, the allocation of funds, and even design choices and building techniques across university projects. In Brazil, this period relied heavily on ambitious macro-planning carried out by interdisciplinary teams who envisioned integrated road systems, housing sectors, development hubs, and strategic urban areas.

⁵⁸ The square’s design, described by C. F. Santos (2000) as lyrical abstraction, integrates bold red, yellow, and green plant motifs within Portuguese stone mosaics. This space, a Cultural Preservation Area, remains architecturally and culturally significant. See: Anexo D03. Plano Diretor Municipal Florianópolis, Lei Complementar 739/2023. strapi.redeplanejamento.pmf.sc.gov.br/uploads/D03_Areas_de_Preservacao_Cultural_c0a4414530.pdf

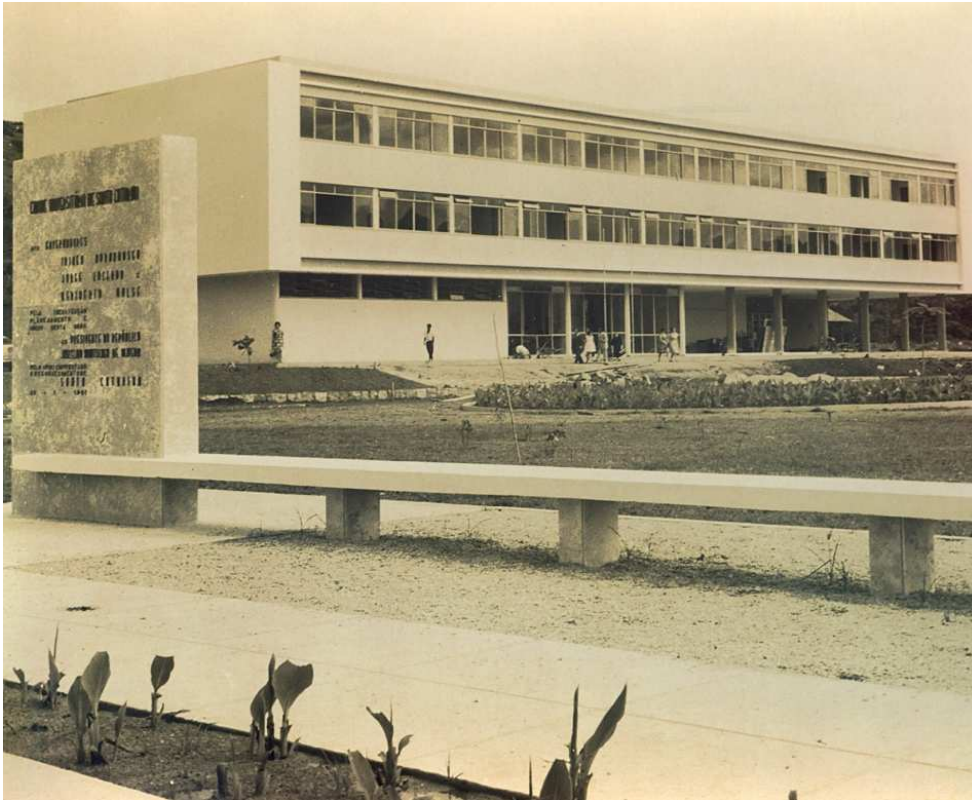


Figure 41 Philosophy building, later converted into the basic courses building, currently home to the Communication and Expression Centre (CCE). Source: Fontes Family archive, via agecom UFSC.



Figure 42. The university's first computer. 1970. Source: agecom UFSC.

The federal government launched national development plans to align political objectives with urban planning strategies (Oliveira, 2016; Segawa, 2012). Within this context, metropolitan plans and large-scale infrastructure schemes took centre stage. Florianópolis, for instance, was imagined as a medium-sized regional hub intended to counterbalance major cities such as Rio de Janeiro, São Paulo, and Porto Alegre.

As we have seen, the military years began with optimism powered by state-led industrialisation and foreign capital in the so-called Economic Miracle. The mid-1959 laying of the Faculty of Philosophy's cornerstone marked a formative period in which the institution was still envisioned as a traditional state university; this structure was subsequently inaugurated in January 1961. By 1969, a notable increase in student concentration prompted the further development of the Trindade campus (Figure 41). Whilst the university restaurant had operated in the Florianópolis city centre under student management until 1965, UFSC began constructing a dedicated campus facility in 1969 to serve this growing population. This year also saw the university's initial transition towards digital infrastructure with the acquisition of an IBM computer. Installed in February 1970, the system featured 32k of main memory and a 512k 16-bit disk drive (Neckel & Küchler, 2010) (Figure 42).

By the late 1970s, however, the combination of the second oil shock, rising external debt, and an unsustainable development strategy began to make clear that this idea of miraculous development was something artificial created by the military and the economic downturn soon reached university projects. The 1980s became the "Lost Decade", with recession and inflation shaping everyday life and public investment (Veloso et al., 2008). Pimenta et al. (1998) note that between 1984 and 1997, UFSC experienced a clear slowdown in planning and construction. Centralised interventions faded, particularly in spatial planning. Major projects stopped, and the dismantling of the Ministry of Education's planning structures left the campus with only small-scale renovations and incremental expansions. When larger works did appear, they often unfolded without proper coordination with existing infrastructure.



Map 9. UFSC's main campus. A) Hospital Universitário; B) NETI; C) Moradia Estudantil; D) Colégio de Aplicação; E) Biblioteca Universitária; F) Clínica Escola de Odontologia; G) Espaço Físico Integrado; H) CCEven; I) Nursery; J) Planetário; K) Sports. Source: Google Earth.

Temporary buildings became a common response, scattered across wide and sparsely occupied areas, reinforcing the university's horizontally spread layout (Map 9). To the timeline proposed by Pimenta et al. (1998), we can add two further phases. The first begins in 1998 and runs to roughly 2007, when UFSC created a series of committees to draft a participatory Master Plan. These efforts generated several reports but little in the way of concrete implementation.

One detail that Pimenta et al. overlooked, for instance, is the continued revision of campus boundaries, which was still taking place in the late 1990s, almost forty years after UFSC's foundation (UFSC, 1996). The second phase relates to the Programa de Apoio a Planos de Reestruturação e Expansão das Universidades Federais (REUNI. Support Program for Restructuring and Expansion Plans of Federal Universities) which stretches from the late 2000s to the present.⁵⁹ At UFSC, REUNI shaped student retention strategies and guided the university's territorial expansion across Santa Catarina. In 2009, UFSC opened new campuses in Araranguá, Blumenau, Curitibanos, and Joinville under this programme, following a movement seen across the federal system mostly through REUNI's influence.

⁵⁹ REUNI aimed to expand access and retention in higher education. Established by Decree 6,096 on 24 April 2007. Its actions included increasing undergraduate vacancies, expanding evening courses, promoting pedagogical innovations, and combating dropout rates. See: Brasil. (2007) Decreto N° 6.096, de 24 de Abril de 2007 (2007). https://planalto.gov.br/ccivil_03/_Ato2007-2010/2007/Decreto/D6096.htm

5. Seeing infrastructure, acknowledging infrastructure

The notion of an infrastructural turn has gained considerable traction in recent years. Scholars have adopted and reshaped the concept of infrastructure, expanding and redefining its significance within the social sciences. Central to this perspective are the intersections of power, which encompass both state regulatory apparatuses and extra-state forces that actively reshape the phenomena under investigation. Following Martin (2021), we may understand universities as infrastructural and media complexes, composed of networks of material infrastructures, operations, and techniques through which people make sense of themselves and the world. According to the author, the expanding knowledge worlds that encompass universities place these institutions in a constant state of transition, with their spaces and internal orders continually forming rather than ever being fully settled (Figure 43).

The architecture of universities functions as a juncture, shaping the physical boundaries through which knowledge emerges, circulates, and departs. These knowledge worlds manifest at every scale, physical, symbolic, and rhetorical. Universities are therefore constituted by distinct yet interconnected knowledge worlds, where each level of relation, between society and the university, a college and the wider institution, or among academic disciplines, rests on material foundations. The interplay of gates, screens, reports, departments, and other media reveals a fluid economy in which internal and external boundaries are constantly shifting and transforming.

Turns, transparencies and medias

Easterling (2014, p.16) described contemporary infrastructural space as the "secret weapon of the most powerful people in the world". Indeed, spatial and infrastructural technologies, and their embedded political ideologies, orchestrate the world. Yet, it's curious to think that the word infrastructure itself did not appear until the late nineteenth century. According to van Laak (1999), etymologists traced its origins to French, where it referred to the literal foundation upon which the superstructure of train tracks would be

built (Figure 44). By 1927, this pragmatic definition had expanded slightly, only enough to encompass landfills, bridges, and level crossings. Since its initial use, scholars have continually adapted and expanded the concept of infrastructure, which explains its pervasive presence (Anand et al., 2018; Laak, 2018; Richter, 2018; Webster & Blom, 2004).

In the humanities, current infrastructure conceptualisations encompass societal and organisational structures with interdisciplinary approaches, acknowledging historical, political, and cultural dimensions and justifying the identification of an infrastructural “turn” (Bridges, 2023). Discussions concerning scientific turns have become common place in humanities. Bachmann-Medick (2019), for instance, argues that the proposition of new turns, and the resistance to them, signals tension within the social sciences and reflects a conflict between traditional, nationally focused perspectives and newer, more multidisciplinary and global, viewpoints. Primarily within cultural studies, though not exclusively, epistemologies now engage with societal processes as they bring constructs such as image, view, *performativity*, and space to the forefront of analysis. By doing so, they also reshape how we understand media, politics, and power.

Infrastructure embodies a fundamental ambivalence. As forces of rationalisation and standardisation of everyday life, yet also mechanisms of control; as tools for self-empowerment through technology, yet instruments of subjugation; as integrators of national spaces, yet agents of globalisation and boundary dissolution (Easterling, 1999; Gandy, 2022; Porombka, 2013) (Figure 42). Bridges (2023) proposes that scholars have advanced the concept using two main approaches typologies. The first would concern a narrower definition of infrastructure that deals with its construction per-se, while describing its physical and technical aspects. The second approach is an expansive definition of infrastructure. In it, scholars develop interconnections among phenomena, tangling the material, cultural and political facets of the infrastructural space. For Gandy (2017), the concept of infrastructure has proved itself to be malleable to work with multiple types of technical and organisation network.

For Paul Edwards (2002), infrastructures mutually shape and are shaped by the condition of modernity, co-constructing its very fabric. Such construction happens through how

technologies and infrastructures connect “macro, meso, and micro scales of time, space, and social organisation” (p.186) and, by doing so, how they provide the stable foundations upon which modern social worlds are built and sustained:

Infrastructures constitute an artificial environment, channelling and/or reproducing those properties of the natural environment that we find most useful and comfortable; providing others that the natural environment cannot; and eliminating features we find dangerous, uncomfortable, or merely inconvenient. In doing so, they simultaneously constitute our experience of the natural environment, as commodity, object of romantic or pastoralist emotions and aesthetic sensibilities, or occasional impediment. They also structure nature as resource, fuel, or “raw material,” which must be shaped and processed by technological means to satisfy human ends. Thus, to construct infrastructures is simultaneously to construct a particular kind of nature, a Nature as Other to society and technology (P. N. Edwards 2002, p.189).

Similarly, for Richter (2018) a hermeneutics of infrastructures, seeing it both as tangible entities and evolving discourse, reveals them as essential to understanding modernity. For both authors, infrastructure extends beyond physical hardware to include organisations, embedded knowledge, public acceptance, and accessibility. Shifting from technocratic terms, infrastructure becomes a framework for analysing (and making visible) historical change, power dynamics, socio-economic disparities, and technological systems. The discussion about the symbolic and literal visibility of infrastructure space also begins to emerge through these ideas.

Visibility in infrastructure is not an inherent quality but rather the result of deliberate technical and political processes (Larkin, 2018). Infrastructure often recedes into the background, becoming part of what Larkin terms the “ambient conditions of everyday life,” surfacing only in moments of breakdown or crisis. Larkin (2018) also refers to the exclusion of infrastructure from public awareness and its relegation to expert domains as a “practice of occulting” (2018, p. 186). Such notion of hidden networks resonates with Hughes’s (1993) identification of a “seamless web” which integrates physical components, institutions, and social elements into cohesive systems. The embedded nature of the infrastructural space suggests that its social, technical, and political choices often sediment into the background, discretely but fundamentally shaping everyday life (Figure 43) (Moss, 2020; Niewöhner, 2015).

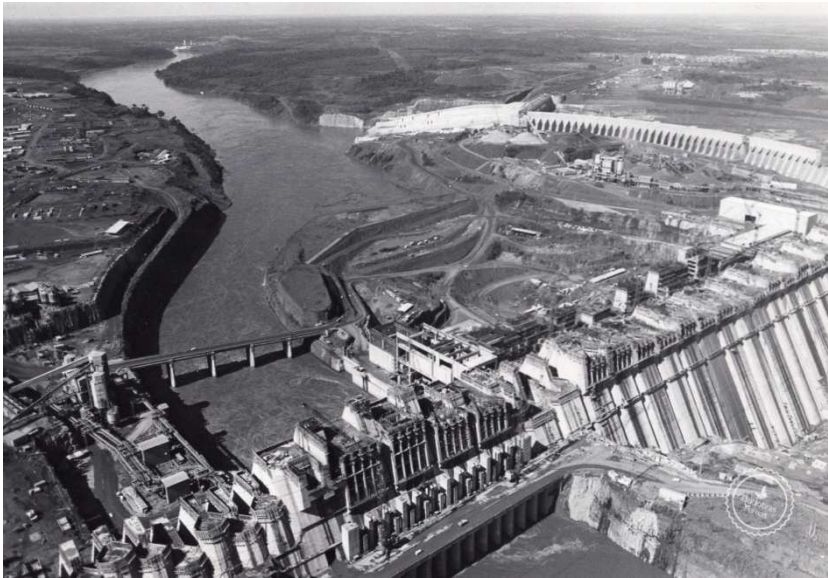


Figure 43. Aerial construction images of the Itaipu Binacional Power Plant in Foz do Iguaçu, Paraná, Brasil. 1981. Source: Acervo Furnas.

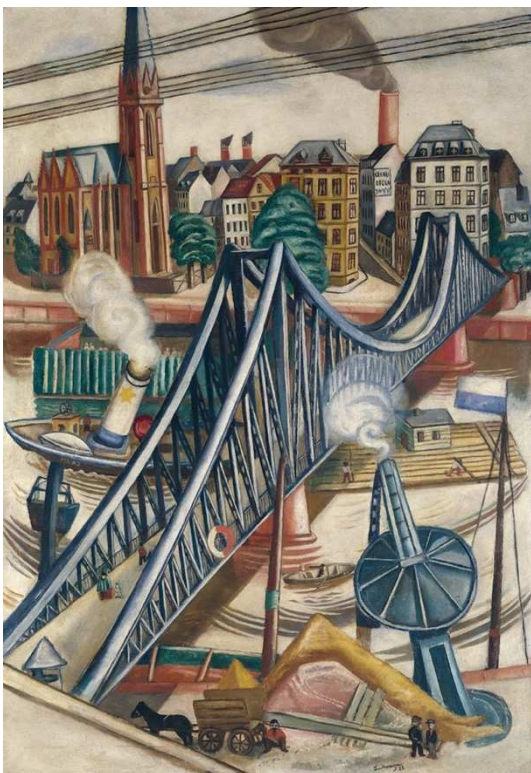


Figure 44. Max Beckmann, 1922, Die Eisenbrücke (Ansicht Frankfurt). Source: Archive of the Kunstsammlung Nordrhein-Westfalen.

One can state that transparency is a common category in reading such assemblies. Such approach appears in an influential work from Star (1999)⁶⁰, where transparency and how infrastructure becomes visible upon breakdown are two of the most visual categories she establishes. Debates around transparency hold a significant place in architectural theory, with Collin Rowe and Robert Slutzky's work on the topic shaping discourse. In *Transparency: Literal and Phenomenal... Part II* (Rowe & Slutzky, 1971), building on an essay they had published in 1963, the authors explored how observers perceive transparency in architecture and its manifestation in modern buildings. Phenomenal transparency concerns the organisation and perception of space, surpassing visual clarity and including ambiguity and complexity. It involves a psychological perception of space and time, where different spatial locations and forms coexist and interpenetrate without losing their distinct identities (Rowe & Slutzky, 1963) (Figures 45; 46). Kang and Park (2021) note the lasting influence of Rowe and Slutzky's analysis on architectural theory. They see, however, issues in how the authors conceive phenomenal transparency. First, their misunderstanding of Cubism confines them to the artificial depth of traditional perspective. Second, they reduce phenomena" transparency to a simplistic binary opposite of literal, neglecting the deeper spatial experiences.

Transparency also appears in Paul Edwards' (2002) work, not as a direct theme but through the notion of salience. He argues that "the most salient characteristic of technology in the modern [...] world is the degree to which most technology is not salient for most people, most of the time." Similarly, one of the strongest aspects of Star's (1999) conceptualisation lies in how she describes infrastructures as ambivalent: they become so embedded in everyday practices and organisation that they appear self-evident. As she notes, "we hardly reflect on them and reproduce them as skilfully as we do casually, thereby contributing to their social permanence and effectiveness" (Schubert, 2017, p. 206, our translation⁶¹). If Star's (1999) assertion that infrastructure is often invisible when functioning smoothly but

⁶⁰ As of August 2024, Susan Leigh Star's influential article, "The Ethnography of Infrastructure," originally published in *American Behavioral Scientist* in 1999, has garnered approximately 5,140 citations on Google Scholar, 2,349 on Scopus, and 2,016 on Web of Science.

⁶¹ From the German original: "[...] Unsere Alltagskategorien sind uns so selbstverständlich, dass] wir sie kaum reflektieren und ebenso gekonnt wie beiläufig reproduzieren und gerade damit zu ihrer gesellschaftlichen Dauerhaftigkeit und Wirkmächtigkeit beitragen" (Schubert, 2017; p. 206).

becomes noticeable upon breakdown is still valid, a substantial body of literature has complexified our understanding of, and approach to, the notions of transparency and smoothness in the context of infrastructure.

At the centre of these discussions lies the question of how politics is embedded in objects, and how this embeddedness exposes the non-neutrality of artefacts. Far from being passive or impartial, such artefacts rely on standards, protocols, and both state and extra-state powers to secure their persistence and circulation. This is precisely why the so-called infrastructural turn has become a multidisciplinary field, mostly because it signals a shift in how we approach the objects and phenomena that shape our infrastructural environments. Reading material conditions through an infrastructural lens reveals how authority and environmental consequences are inscribed in the systems we inhabit. It also allows us to trace how power relations are reinforced through built environments, while recognising the poetics that both architecture and infrastructure imprint on our surroundings (Gandy, 2017).

A similar approach appears in Porombka (2013) in her use of the concept *Inframedialität* (inframediation⁶², our translation). Porombka argues that infrastructure shape social practices and discourses by becoming the framework through which they inevitably flow. They function, thus, as medium. The media effect of infrastructure is not goal-directed or linear; rather, it reflects the universal reach of technical networks. This stimulus operates at a broad level, effecting subtle yet significant transformations in both organisational structures and imaginative practices. The former is manifested where infrastructural interventions reconfigure spatial conditions and social networks, thereby reshaping the social landscape. The latter engenders emergent modalities of aesthetic expression and creativity.

⁶² We are translating "medialität" to correspond to "mediation" in English, which refers to the process or means through which something is communicated or transmitted. The term mediation suggests an ongoing process of shaping, influencing, or enabling communication, which aligns closely with the conceptual focus of *Inframedialität* and has precedent in academic use, using "medium", for example, as in "Inframedium" would suggest something static, whereas mediation emphasises the underlying dynamics at play (Gumpert & Cathcart, 2019; Schneider, 2018).

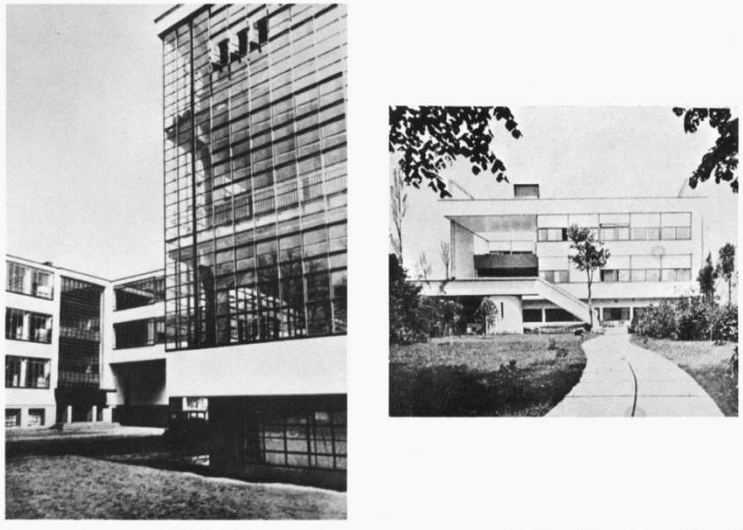


Figure 45. Corner of the Bauhaus Dessau building, designed by Walter Gropius, and Villa Stein-de-Monzie, designed by Le Corbusier. Image Rowe, C., & Slutzky, R. (1963). Transparency: Literal and phenomenal. *Perspecta*, 8, 45, p.50.

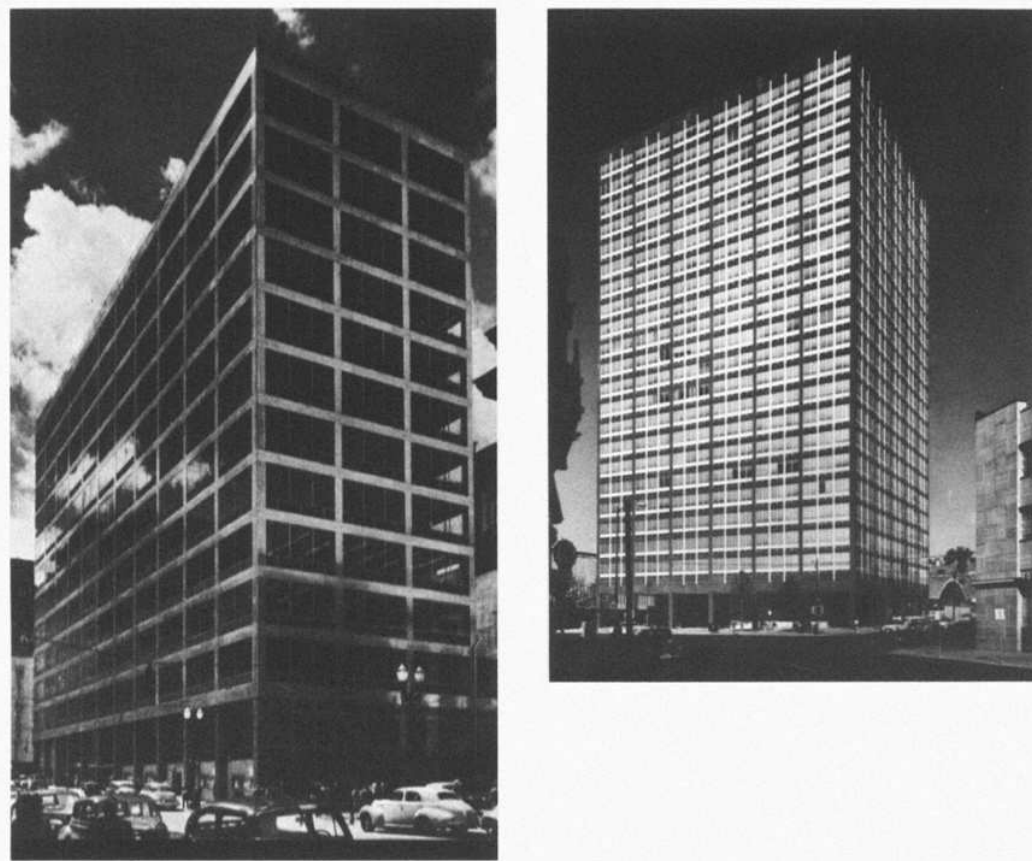


Figure 46. Pietro Belluschi's Equitable Life Insurance building in Portland, Oregon (Fig. 2) and I.M. Pei's Mile High Center in Denver, Colorado as published in Rowe, C., & Slutzky, R. (1971). Transparency: Literal and phenomenal... Part II. *Perspecta*, p.289.

Both stimuli establish the conditions for new fields of imagery and associations to emerge. *Inframedialität*, in such a sense, implies attributing to technical systems an inherent transformative potential that operates as a pervasive cultural condition from which the mediating function of infrastructure appear as mechanisms to understand media in their own right (Porombka, 2013; Schabacher, 2019).

Martin (2016) redefines mediation to include the agency of objects or systems, with human subjects playing a non-exceptional role.⁶³ Infrastructure, through its repetitive nature, not only perpetuates itself but also influences us, as we engage with it rhythmically. In this semi-autonomous process, humans become iterations of the system rather than its controllers. Martin views the urban realm as both an aesthetic and sociotechnical force organising the world, with mediapolitics providing the explanatory framework. This perspective is grounded in Larkin's (2013) comprehensive essay, *"The politics and poetics of infrastructure"*, where infrastructure appears as concrete semiotic and aesthetic entities that expose the political rationalities behind technological projects. Beyond their technical functions, infrastructures embody desires and fantasies, sometimes assuming a fetishise-like quality independent of their intended purpose.

By focusing on the form, or the poetics of infrastructure, the political dynamics in which infrastructures are constructed become apparent. Larkin draws on systems thinkers and STS to argue that infrastructure is a mix of technical, administrative, and financial techniques, influenced by actor-network theory and the tracing of associations within diverse networks (Latour, 1996, 2007). The poetics of infrastructure, as the essay's title suggests, reads the infrastructural environment as social facts that convey meaning and in which aesthetic and material qualities might be prioritised. In such sense, understanding infrastructure, like art or architecture, involves interpreting it as an expressive medium, shaped by the creator's intentions, where technical structures also carry social significance.

⁶³ Martin reinterprets Cornelia Vismann's (2013) concept, suggesting that cultural techniques are the "verb" form of media, functioning as mediations in their truest sense. For Vismann (2013) cultural techniques define the agency of media and execute the procedural rules that the latter establish. For both authors, if media theory had a grammar, that agency would be expressed by objects occupying the grammatical subject position, with cultural techniques acting as the verbs.

A then particularly innovative approaches to this theme can be seen in the work of Reyner Banham. In his *Megastructure: Urban Futures of the Recent Past* (Banham, 1976 [2020]), Banham explores the possibilities of infrastructure and its relationship with architecture, focusing on vast-scale buildings and urban facilities in a range of contexts, functions, and tectonic expressions. Banham's conceptualisation of infrastructure is both tangible and flexible, offering different classifications for the buildings and megastructures he examines. His references to oil platforms are particularly noteworthy.

Another somewhat unusual approach in his reading of the city of Los Angeles. When he decided to study the American metropolis in his *Los Angeles: architecture of four ecologies* (Banham, 1971 [2009]), he intertwined city and infrastructure so closely that they took on the quality of ecologies. For Banham, infrastructure, alongside architecture, roadside adverts, and piers, formed Los Angeles's distinctive landscape as part of a dynamic network that expressed the city's cultural and spatial identity through four interwoven ecologies of the Surfurbia, the Foothills, the Plains of Id, and Autopia.⁶⁴ As Allen (2017) puts it, Banham challenges traditional categories in art history and architectural studies by engaging with LA as an integrated ecological system in which urban culture made of surf, sun, and sea coexists with the flow of motorways as transitional spaces of flow.

This inclination to read infrastructures aligns with a long tradition of examining them through flows and exchanges. Edwards (2002) notes that infrastructures simultaneously shape and are shaped by the condition of modernity, linking different scales of time, space, and social organisation to form the foundations of modern social worlds. The deep entanglement of sociotechnical infrastructures with the cultural, economic, psychological, and historical transformations was described through the "space of flows" metaphor by Manuel Castells (1996[2008]). Sustaining these flows are the advances in communication and information technologies that produce a new spatial formula where time and

⁶⁴ In Surfurbia, beaches, piers, and decorative imagery define an urban visual culture, though Banham notes that railroads, more than motorways, guided the city's early growth. The Foothills expose the tension between infrastructure and terrain, where winding roads and retaining walls cut into steep landscapes and enable architectural fantasy that fuses function and spectacle. The Plains of Id evoke the suburban flatlands, where cars mediate urban experience. Finally, Autopia captures the close bond between Angelenos and their vehicles, as freeways and driving practices create a vast man-machine system that continually reshapes the city.

geography lose their traditional significance as territorially bound “spaces of places”. For Castells, flows of information, capital, and power have substituted such places.

The importance of infrastructure in everyday life is also evident in van Laak’s expression “the lifelines of our society” ⁶⁵ (Laak, 2018). These perspectives help situate the blurred disciplinary boundaries between architecture and infrastructure, where architecture begins to operate like infrastructure and infrastructures themselves take on architectural form (Jerkovic-Babovic et al., 2020). Yet, as Jerkovic-Babovic and colleagues show, this blurring has often been addressed without fully engaging the contributions of STS, which have expanded and reshaped the architectural field.

Winner (1980) famously argues in *Do Artifacts Have Politics?* that technologies and infrastructures are inherently political, not only through their technical design but also through their ability to shape social organisation. For him, politics involves the distribution of power and authority within human groups, and infrastructures actively participate in this organisation. Technologies impose order on the world, structuring daily life in ways that extend far beyond functionality. This perspective resonates with later work that treats infrastructures as political forms (Easterling, 2014; Hughes, 1993; Schnitzler, 2020). Some artefacts, Winner explains, hold political weight comparable to laws, reinforcing institutional power and reproducing social inequalities.

Knowledge and the technologies of flaws and flows

Event one. On the 24th of July 1972, Bishop Dom de Paula blessed a computer with his aspergillum at its inauguration at the Polytechnic School of the University of São Paulo. This computer, nicknamed *Patinho Feio* (The Ugly Duckling, after Andersen’s fairy tale), was the first to be developed in Brazil. Event two. On the 1st of April of 1979, U.S. President Carter left the Three Mile Island nuclear power plant in Pennsylvania after it suffered a partial meltdown due to mechanical failures and operator errors. The incident released radioactive gases into the environment, causing widespread public fear and concern

⁶⁵ The expression appears as a subtitle in his 2018 book *Alles im Fluss: die Lebensadern unserer Gesellschaft - Geschichte und Zukunft der Infrastruktur*, S. Fischer.

about nuclear safety (Figures 47;48). These two events, though both related to technology and infrastructure, differ greatly in scale and impact.

One immediately made headlines and prompted significant regulatory changes worldwide, while the other was merely a ceremony in a university laboratory. They too reveal conflicting attitudes and perceptions towards technology. The bishop blessing the computer symbolises hope, standing in stark contrast to the scepticism surrounding technology exemplified by the nuclear accident. We may also identify that infrastructure and the narratives surrounding it reflect a dual attitude towards technology, knowledge and modernity having both benefits and drawbacks. They support technical, scientific and social progress and, concurrently, they give rise to challenges that even our advanced technological expertise finds difficult to address, such as the environmental crisis.

These characteristics are foundational for technology and infrastructural studies (Smith & Marx, 1994). As Pinch (2010, p.80) states, infrastructures, “technologies and their meanings do not exist detached from the rest of society, its institutions, culture and the vast assemblages of technologies and humans we have already built”. The approaches emerging from the so-called infrastructural tie strongly with STS, which in turn influence both architectural and urban theories. In this sub-chapter, we will identify specific aspects of STS that resonate with our inquiry and examine them alongside architectural and urban theory. This exploration will ultimately inform our methodology for analysing campuses and their built environments.

When tracing the origins of STS, Rohrer (2015) encountered two distinct perspectives on the social impact of technology informing sociological and philosophical engagement with technology and artefacts. The author juxtaposed Lewis Mumford’s *The Myth of the Machine* (1967) with Jacques Ellul’s *The Technological Society* (1964). Although both works present a complex interweaving of human history and technology, a significant emotional tones alteration appears in how they reflect contrasting sentiments of hope and pessimism.



Figure 47. A blessing for the Ugly Duckling. 1972. Source: O Globo.



Figure 48. U.S President Jimmy Carter leaves Three Mile Island Nuclear Power Station after the accident on April 1, 1979. Source: U.S. National Archives.

These sentiments often emerge in various analyses of infrastructures and technologies viewed through an STS-oriented sociological and philosophical lens. This shift in subjectivity is significant as it creates a point of convergence between STS and architectural theory and history. The resonance of this phenomenon in both disciplines offers a perspective for analysing universities, both in terms of their institutional frameworks and regarding their physical forms. Additionally, it is closely linked to how scholars have begun to rethink their own perceptions of infrastructure.

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Wolfgang Pehnt, in introduction his *Das Ende der Zuversicht*⁶⁶ (1983) captures a mood of diminishing ambitions. He acknowledges the challenge of maintaining objectivity when architecture's spatial proximity and physical presence complicate analysis but contends that the optimism that once fuelled design during nineteenth and twentieth centuries has now faded. Many of the bold, technologically driven designs of that period have led to disappointing results, unable to meet their ambitious promises. The work reflects a broader cultural transition from a teleological faith in progress to a more ambivalent and disillusioned view of modernity, a change inscribed even in its title, which intimates the fading confidence in the ideals that once legitimised architectural experimentation.

⁶⁶ English: The End of Confidence, our translation.

Artefacts, however, do more than represent their immediate functions; they inform us about their role in developing a disciplinary field, the techniques used in their creation, the materials that compose them, and the labour involved in their production. Liernur (2011) illustrates this concept using the example of a house. For him, a house reflects ways of living, family structures, and the reinterpretation of symbolic elements. Similarly, the study of domestic objects reveals how inhabitants engage with work, social life, and urban space. Material culture, then, is a way of understanding how objects within a society convey meaning in how they conjugate symbolism, physicality, materiality, the philosophical constraints of the language they express, and the history of their production. Specific histories often overlook these material aspects, and document-focused traditions can also struggle to capture their full technical and material significance.

Even if not mentioning them, Liernur follows Pinch and Bijker (2012, p.18) when they stated that “the success of an artefact is precisely what needs to be explained”. Pinch and Bijker were developing their discussion on the social construction of facts and artefacts, focusing on the potential connections and benefits from integrating sociological and technological studies. Important here is their own reading concerning STS. For the authors, researchers seeking to determine the exact interdependence between science and technology have likely asked the wrong question, having assumed that both are well-defined, monolithic entities. They overlook the fact that science and technology are socially constructed within a range of different contexts.

In Rohracher (2015), the core idea in STS is that scientific facts, technologies, and objects are not products of a privileged form of knowledge but are open to social analysis as in STS sociotechnical assemblages form the fundamental units of analysis, resisting any simplistic division into separate social and material components. Society and technology are co-constitutive, continually shaping one another through dynamic processes of translation, inscription, and enactment. When applied to organisations, STS operates on two fundamental assumptions. The first is that organisations function as interconnected systems, where alterations in one component directly cause shifts in others. The second assumption recognises organisations as being in constant interaction with their

environments, continually shaped by and shaping external influences in an uninterrupted state of flux (Poutanen, 2021).

In STS we might identify three major perspectives. The first centres on technological determinism. A second one focuses on social determinism. A third perspective, which connects both, is also presented. According to Smith (1994), technological determinism sees technology as a decisive force that governs human relations, arguing that the main influence on societies comes from technological change. Smith traces this view back to Enlightenment ideals, particularly to the eighteenth-century belief in technology as a liberating force (Smith, 1994, p. 2). At the opposite end stands social determinism, which argues that sociocultural forces shape technological change. This approach suggests that social groups define and assign meanings to artefacts according to their own interests and contexts, determining how these artefacts are designed and used (Pinch & Bijker, 2012).

Hughes (1994, 2012) positions himself between these two perspectives, introducing the concept of technological momentum. His theory highlights the importance of time in the relationship between technology and society. For Hughes, technological momentum reconciles the deterministic positions by recognising that social development both shapes and is shaped by technology, with time acting as the key factor that shifts influence from one side to the other (Hughes, 1994, p. 112). Hughes develops this idea through case studies of major infrastructures.⁶⁷ He describes technological systems as complex networks made up of institutions, companies, people, and non-human actors. These systems include inventors, operators, users, and artefacts that interact in multiple ways. Within such systems, time becomes the decisive element that defines whether technology is more susceptible to social influence or more capable of shaping its surroundings. In their early stages, technologies remain open to social intervention, and when they fail to meet expectations or standards, they may be abandoned.⁶⁸ As technologies mature, however, they gain stability and autonomy. Hughes argues that as systems grow more

⁶⁷ Hughes' (1993) studies focussed very frequently and in depth on the history of infrastructures and other American socio-technical systems. The study of the history and development of these systems was essential in the conception of his thesis about the technological moment.

⁶⁸ A dynamic also discussed by Easterling (1999) in her study of connectors for multimodal nodes in the U.S. highway system.

complex, they acquire momentum and begin to shape their environments rather than being shaped by them (Hughes, 1994, p. 108). With time, they become increasingly resistant to change, echoing certain aspects of technological determinism. This tension between the social and the material provides the foundation for a renewed discussion on the concept of infrastructure considering these theoretical milestones.

New scholarly work highlights the compositional and recursive qualities of infrastructures (Moss, 2022). The compositional view examines how infrastructure takes shape through the interaction of varied elements, such as actors, materials, standards, and ideas, some of which become integrated into these systems while others are excluded. This approach draws attention to the selective processes impacting the formation of infrastructures. The recursive perspective, meanwhile, focuses on the dynamic relationship between infrastructure and society, where technologies both shape social life and are shaped by it. These dual perspectives avoid treating sociotechnical systems as fixed or given. Scholars working at the intersection of STS, urban studies, and environmental history use infrastructure as a lens to explore human-environment relations, showing how these systems extend beyond the technical domain of engineers to influence governance, climate policy, and urban life.

We interpret the rules and frameworks embedded within networks of engineering practices, production technologies, product characteristics, skills, and procedures through the concept of sociotechnical regimes, which highlight how these activities are shaped by a semi-coherent set of rules upheld by different social groups. These include methods for managing artefacts and people, and for defining problems, all situated within institutions and infrastructures. Established sociotechnical configurations emerge from the interconnectedness of diverse elements which encompass, for example, those who construct, maintain, and regulate infrastructures, as well as how cultural and symbolic meanings are shaped through interactions among users, societal groups, and cultural mechanisms like media and public opinion (Brey, 2014; Winner, 1986). These processes reveal practices and patterns emerging from daily use, the technological knowledge embedded, the cognitive routines formed, and the political dynamics inscribed in these artefacts. When the activities of these varied groups align and coordinate around a

particular artefact, they collectively constitute a sociotechnical regime that STS might help to grasp.

STS offers architectural studies a way to emphasise what objects do within social processes and how they shape social contexts. Theories developed by Müller and Reichmann (2015) highlight that artefacts actively constitute both society and knowledge, and, as they state, this acknowledgment characterises a posture in sociological theory where architecture and other “material objects are being increasingly conceptualised as an active part of social order and sociality” (p.7). Drawing on studies by Beck (1997⁶⁹), Preda (Preda, 1999), Latour and Woolgar (2013) and Reckwitz (2002), among others, the authors argue that technologies contribute to the stabilisation of social organisation and knowledge.

These processes occur through the coupling of architecture and its social contexts. Architecture emerges from the social conditions that enable its existence while, at the same time, it gains a stabilising function by becoming fixed within an “enduring network of practices, theories, and social institutions” (p. 217). In this sense, architecture appears as the material objectification of social structures themselves rather than limited as a representation of a given social order. Drawing on Latour’s work, particularly his conceptualisation of actor-network theory and the idea of networks composed of socio-material elements. Within this framework, the physical space of laboratories acquires agency, as it underpins the ways in which a nexus of different lifeworlds can emerge. Through this process, new insights are generated, and new scientific facts follow. All these artefacts, things, objects necessarily comprise social networks and the different practices of knowledge that are formulated through them and with their participation.

⁶⁹ Müller and Reichmann refer to the 1996 edition of the book, which differs from the one consulted here.

Part two.

Infrastructure
and the spatial
products of
universities

6. From Alma Mater to spatial products

The Latin term *Alma Mater* means nourishing mother and mostly refers to an institution where one has attended and from which they have graduated. It conveys, thus, a sense of loyalty and affection.⁷⁰ Traditionally, universities have been closely linked to specific places, often reflecting and serving the cultural, economic, and intellectual needs of their local contexts. However, the dynamics of higher education are undergoing significant changes with globalisation, a force that affects all aspects of society and private life and reshapes how universities operate. In such sense, the architecture of university campuses has reinterpreted an additional (but not necessarily new) role: attracting students and, in turn, securing financial resources. Interestingly, even in regions where public funding still plays a significant role, the corporate ethos is increasingly permeating not just the administrative structures of universities but also their campus (Lundahl, 2016).

In between the many settings that characterise contemporary Higher Education, we might include the access to tertiary education and the growing mobility of students and faculty, now a hallmark of international academic exchange. Programmes like Erasmus and the European Framework Programmes have promoted short-term study experiences abroad, fostering cross-border learning. The initiatives like the Bologna Process⁷¹ have helped to create a more interconnected (and competitive) academic scenario. In this increasingly competitive landscape, there is growing pressure on universities to become globally active research hubs. These institutions are expected to perform at the highest level, adapting to the needs of a globalised world by producing innovative knowledge and maintaining strong international networks (Hertig, 2016; Lund, 2020). A more critical reading of these changes reveals the neoliberal logic driving this pursuit of connectivity. As we have seen, theories on infrastructure often highlight flows, exchanges, and facilitation, which are tied

⁷⁰ *Alma mater*. In: Merriam-Webster dictionary. <https://www.merriam-webster.com/dictionary/alma%20mater>

⁷¹ The Bologna Declaration, signed in 1999 by 29 European countries, launched the Bologna Process, an initiative aimed at creating a more cohesive and comparable European Higher Education Area. It aims academic mobility, mutual recognition of degrees, and establishing a common structure for higher education programmes (e.g., a three-cycle system with bachelor's, master's, and doctorate). This process encourages cooperation between institutions and enhances the competitiveness and attractiveness of European higher education globally. Over time, it has expanded to include nearly 50 countries, fostering collaboration and student exchange through initiatives like Erasmus (Lorenz, 2011).

to the goal of minimising friction between artefacts, policies, and other actors. Here, the absence of friction does not merely signify functional infrastructures; it signifies the removal of barriers to implementing policies that sustain these systems. Understanding these processes and their spatial manifestations, particularly through the concept of "spatial products," helps us interpret how universities have evolved under neoliberalism.

Buchanan co-wrote *Academia in Anarchy: An Economic Diagnosis* (1970) with Devletoglu to critique the structure of higher education, particularly its public funding model.

Academia in Anarchy is often credited with laying the groundwork for the corporatisation of higher education, proposing that education should operate within market frameworks where scarcity and individual costs are central. A neoliberal perspective guides such mentality and reframes public goods, like education, as commodities (MacLean, 2017). For the authors, subsidising education encouraged students to devalue resources and provoked a state of economic inefficiency and moral corrosiveness.⁷² Hall (2020) sees the book as a reflection of the unique socio-political context at the University of California during the 1968–1969 school year and states that the methods the authors employed mostly concerned the specific case of their university and not the whole higher education system, as they stated.⁷³ In any case, as Fleming (2021) reminds us, the book assumed an important position in advocating for a change in university administration and funding, completely in tune with the neoliberal ideology.

The impact of these comprehensive neoliberal processes on university administration and organisation has been extensively studied in recent years. However, there remains a lack of understanding about how these changes manifest at the spatial level within these

⁷² During the nineteenth century, higher education in the U.S. was largely a public good, accessible and aimed at promoting societal progress. However, as the number of students increased and public funding decreased, universities began charging tuition to cover expenses. This shift was further accelerated by the introduction of federal student loans, which made it easier for students to finance their education, leading to tuition hikes as universities took advantage of the increased access to funding. Also important were the new cultural images that had been forming since the beginning of the 1900s and that helped to associate higher education with the economic and social accomplishment of a managerial middle-class (Clark, 2010; Thelin, 2019).

⁷³ The 1968 protests challenged traditional authority structures across several nations. In France, students demanded reforms and clashed with police during the May events, triggering widespread strikes. In the U.S., students opposed the Vietnam War, racial segregation, and university ties to military industries, leading to protests like those at Columbia University. Meanwhile, in Brazil, students resisted the military dictatorship, particularly its censorship and repression, shaping the fight for democratic reforms.

institutions, particularly in terms of their infrastructures. We propose approaching this subject through the theorisation of the spatial products. The concept of spatial products is not straightforward. Before using the term, Easterling had employed the expression “spatial commodities” to designate similar artefacts and processes (Easterling, 1999, p.4). One of its first appearances was in Easterling’s (2005) book *Enduring Innocence: Global Architecture and Its Political Masquerades*. In it, Easterling describe spatial products loosely with the witty expression “Teflon formats of neoliberal enterprises”⁷⁴ (p.2). Implicit in such definition is the fact spatial products exempt local characteristics (as Teflon® can be applied into a lot of different surfaces) and, mostly important, the elimination of friction (both spatially and politically). The concept becomes clearer when we analyse the physical examples. Spatial products are, according to her:

[...] resorts, information technology campuses, retail chains, golf courses, ports, and other enclave formations— [they] are familiar commercial formulas that index the world by marketing or scheduling protocols, thus presumably avoiding the political inconveniences of location (Easterling, 2005, p.1)

Spatial products include corporate centres, campuses, smart cities, planned neighbourhoods, and convention centres, all of which reflect globalised corporate capitalism (Figures 49; 50). Despite their varied functions and locations, they share material, spatial, and organisational traits, forming a unified typology. While these spaces might seem integrated into the urban fabric, they operate under distinct rules that separate them from their surroundings. This segregation is reinforced through architectural and formal similarities, a trend that has become more evident as universities, like corporations, pursue market-driven interests.

Many of the characteristics of the spatial products overlap to other concepts.⁷⁵ Its convenience for our work, however, rests in how it synthesises a situation for architect and

⁷⁴ Polytetrafluoroethylene, or Teflon®, is a trademarked name from DuPont de Nemours, Inc. Cambridge Dictionary’s definition highlights its slippery, nonsticking properties: “a brand name for a type of plastic that is very smooth and does not have chemical reactions with other substances. It is used in industry and as a surface for cooking pans so that food does not stick to the pan”. See: Teflon. In: Cambridge Dictionary. Retrieved October 17, 2024, from <https://dictionary.cambridge.org/dictionary/english/teflon>

⁷⁵ Some of the potential overlaps can be found in Marc Augé’s concept of non-places. Jameson’s remarkable interpretation of the Westin Bonaventure Hotel, designed by architect and developer John Portman in downtown Los Angeles, similarly reflects many aspects of spatial products. This is also evident in the discussions surrounding generic globalisation or capitalist globalisation (Jameson, 1998).

urban design today. Primarily, because it encapsulates a certain detachment of these architectural forms from their local contexts. Spatial products are designed with a focus on optimising urban and architectural programmes, aiming to minimise disruptions or unforeseen challenges. This functional autonomy reflects a deliberate effort to produce spaces that operate seamlessly, regardless of the specificities of their surroundings. Beyond their physical design, these products also adhere to strict regulatory frameworks, reinforcing their standardised nature. This dual independence, both operational and legislative, ensures their reproducibility across different regions, aligning them with global urban trends. It is also relevant because Keller Easterling situates it within a broader debate on the physical and ideological infrastructures shaping urban spaces under neoliberalism.

Other critical aspect of the concept of spatial products touches on a core architectural issue as it shifts the focus from conventional design parameters towards organisational protocols. This perspective moves beyond traditional architectural concerns like form, style, or typology and delves into how spaces are governed and regulated. Spatial products embody the operational rules, economic strategies, and logistical systems that organise urban space under frameworks such as neoliberalism. Rather than viewing architecture as merely the production of built environments, this approach emphasises the processes and standards that shape how spaces function within global networks. Protocols, in such sense, must be understood as almost literally (that is, as the official procedures or system of rules governing affairs of state or diplomatic occasions, as the accepted or established code of procedure or behaviour in any group, organisation, or situation) and figuratively, as generators of the architectural (or spatial) artefacts.

In *Extrastatecraft: The Power of Infrastructure Space* (2014), Easterling frames these zones as emblematic (spatial and conceptual) arrangements operating within semi-autonomy, beyond traditional state regulations. Special Economic Zones serve as a prime example, as institutions and governments often heralded them as engines of economic growth, trade liberalisation, and development.



Figure 49. People play golf during a forest fire in Eagle Creek, Oregon. Easterling argues that spatial products, like golf courses, are designed to be "worlds within worlds," legally and physically separated from their surroundings. In this image, we see the ultimate success of that separation: the "operating system" of the golf course continues running smoothly, even while the actual local context being destroyed just yards away. Photo: Kristi McCluer. Source: Reuters.



Figure 50. Resort in Florianópolis. Just as the golf course the resort is a spatial product designed to maximise consumption. Source: nd.com.

These zones, she argues, are spatial technologies that reinforce corporate interests and transnational governance through extraterritoriality, where taxation, labour, and environmental laws are constant eased to attract investment.⁷⁶ The infrastructure within these zones serves as a mechanism of governance, not through direct policies but through spatial arrangements and operational protocols that facilitate capital flows. Additionally, zones reflect shifting forms of sovereignty, where alliances between public and private actors blur the boundaries between local and global governance. Easterling's concept of infrastructure space thus highlights how power is embedded in technical systems, regulating behaviour invisibly and shaping global processes without overt coercion.

Here comes another convenience of the term, which concerns regulation and standardisation. Easterling explores this theme in her analysis of ISO 9000, as it represents the shift towards regulatory frameworks that are not enforced through traditional state mechanisms but instead operate through technical, managerial, and organisational protocols. This standardisation process homogenises global practices, contributing to the uniformity of infrastructure across diverse geographies. For Easterling, this system of protocols affirms to ensure efficiency but also creates a form of governance that is technocratic and often obscures the political and social implications. This can, however, appear in other forms of pattern. Grazziano (2019) frames the systems like the Leadership in Energy and Environmental Design (LEED®) in a similar logic, pushing a new stage in the process of international aligning. For him, LEED is part of an ecosystem of competing standards that mobilise architectural dispositions.

The discussion that Grazziano constructs on disposition also follows Easterling's, for whom disposition is as a potential or inherent quality within an arrangement or context, like a ball

⁷⁶ According to Nelson and Shelton (2023) Statecraft refers to the process of managing and directing the affairs of the state or political community to achieve collective objectives. It involves deliberate actions taken to address social, economic, and political conditions at a specific moment. As both a strategic and creative endeavour, statecraft requires assessing challenges and opportunities, formulating responses, and enacting policies that align with the community's goals. This practice encompasses not only governance and administration but also the broader political actions required to maintain stability, promote development, and adapt to shifting circumstances. What Easterling implies with the *Extrastatecraft* is a kind of arrangement that suspend conventional governance structures, enabling a form of *Extrastatecraft*, where authority operates beyond the state. Easterling also notes the repetitive nature of these developments, as master plans and infrastructure templates are reproduced across various regions, from China to Latin America, generating a homogenised urban landscape (Nelson & Shelton, 2023).

poised on an inclined plane, with the capacity to roll but not necessarily doing so. Disposition shapes the possibilities and constraints within a system's behaviour. This idea is crucial to understanding the gap between an organisation's stated goals and its actual behaviour, which can be exploited for political manipulation within infrastructural spaces. Building on Easterling's concept, we can define dispositions as inherent tendencies or qualities within systems that can produce specific outcomes in certain contexts (Blackburn, 2005). Dispositions differ from categorical properties in that they only manifest when triggered by specific circumstances, as they are intrinsic properties of objects, which may exist without ever being expressed, and sometimes may never emerge at all (Heil, 2005). The university campus, as a spatial organisation, consistently communicate implicit information about its operations, even when these activities remain undeclared. Rather than being passive collections of objects or volumes, these urban organisations behave as dynamic actors, operating through a series of well-rehearsed codes and repeatable patterns, whether in the form of zones, suburbs, or commercial developments.

... you'd wear a Rolex

In the late 1960s, Rolex launched its You'd wear a Rolex advertising campaign. With minimalist flair, the ads juxtaposed a bold grid of images against a sleek black background (Figure 51). A wrist adorned with a Rolex sat beside larger, evocative scenes wealth and performance. The tagline, *"If you were ... tomorrow, you'd wear a Rolex,"* anchored the message, displayed in Helvetica font. Geneva's Palais des Nations, the headquarters of the United Nations or even Jackie Stewart's Formula One car were featured in imagery of interchangeable challenges, power, and luxury; a nod to precision and prestige that should reflect the brand itself. But what does this advertisement help us understand about the state of research and education infrastructures today? Here, we present the Rolex Learning Center (RLC) as a paradigm that brings together the key themes we will explore in later sections, where universities and science-related infrastructure converge with the distinct critical qualities of the architectural spatial products.

RLC was designed by the Japanese architectural firm SANAA, with project and construction between 2005 and 2010, at the École Polytechnique Fédérale de Lausanne

(EPFL). Here, the collaboration between university and enterprises underscores blending academic excellence with corporate partnership. The building offers a concise entry point to discuss how the shift of a nation's university system towards international and global frameworks is mirrored in the spatial organisation of the campus. As an architectural artefact, the RLC reflects this transition in its spatial logic and, by it, the building allows us to explore three critical intersections (Figure 52).

First, it translates curricular and institutional guidelines into built form, illustrating direct connections between academic policy and physical space. Second, it showcases how some of the core conceptual frameworks for reading and understanding infrastructural theory, particularly those focusing on visibility, transparency, and the reduction of friction, are manifested through the building's ode to flow and fluidity. Third, the RLC reveals the intersection of these dimensions with the corporate interests that co-financed its construction, most notably Rolex, whose name the building now bears. Marchl observed that Rolex (the brand) appeals to individuality and personal success within its target demographic (Marchl, 2019). Wearing a Rolex has become a universal symbol of status and affluence. It is the image of the historical overachiever, that RLC into a form of university social value.

Switzerland's professional education system focused on vocational training from the 1880s to the 1930s. Significant expansion in higher education occurred only in the 1990s and 2000s, but the German-speaking area still concentrates many of the major universities. Since the late 1960s, the country's Confederation has played a more active role, funding research through the National Science Foundation, and fostering shared governance, although funding remains fragmented (Goastellec, 2017; Orosz, 2018). As in many places, internationalisation processes functioned in Switzerland reshaping power relations in higher education and aligning the country with European and North American standards. The Bologna Process, for example, influenced two distinct dimensions. On one hand, international developments were harnessed by both the Federation and universities to legitimise their efforts in redesigning, using this to bypass veto structures and advance their agendas. On the other hand, these same forces helped to clear institutional inertia, paving the way for domestic reforms (Bieber, 2016).

If you were speaking here tomorrow



you'd wear a Rolex

The personal symbol of leadership in world affairs is the best watch in the world.

Its large classic shape is carved out of a solid block of 18 kt. gold. Inside its solid seamless walls beats the world's most protected 30-jewel chronometer movement. Because most of the work is done by hand, it takes us more than a year to build a Rolex. Many heads of state feel it was time well spent.

The Rolex they prefer is the Day-Date® Chronometer. Like all Rolex Oyster Perpetuals, the Day-Date is self-winding and pressure-proof.* With matching 18 kt. gold bracelet, \$1,000. Other Rolex Oyster Perpetual Chronometers in steel, steel and gold, or gold, from \$175.

*Guaranteed to a depth of 100 feet when case, crown and crystal are intact. Official Timepiece, Pan American World Airways.



Figure 51. Rolex advertising campaign. c. 1960s.
Source: D.A.S.



Figure 52. RLC. 2024.

Although even before the Bologna Process took hold, Swiss reforms had already been shaped by ongoing internationalisation trends, the implications of Bologna increased the uncertainty in national decision-making, serving as a global policy model that provided the federal government with political capital to justify new objectives and new forms of investment in education.⁷⁷

The EPFL campus transformation became a recognised asset in recruiting professors from prestigious institutions across, mostly, the Global North. EPFL offered competitive funding, modern infrastructure, spousal support programs, and attractive salaries despite the high cost of living. Patrick Aebischer's appointment as EPFL's president also marks a decisive shift, as his scientific background aligned with the emerging scientific fields poised to become central research hubs. Under Aebischer, EPFL embraced elements of new public management, reducing direct government oversight and granting greater institutional autonomy through performance-based funding. The university was able to attract faculty from Berkeley, Google, Harvard, and other renowned institutions. To compensate for diminished federal funding, EPFL sought external investments, further entrenching its reliance on performance-based financing (Escher, 2018). Aebischer's vision and its emphasis in building "a university where traditional boundaries [...] are replaced by a spirit of collaboration or true scientific inspiration" are also seminal for the RLC as an architectural artefact (EPFL, 2010). In 2005, when EPFL initiated an architectural competition for the building, the programme outlined its character as a prominent landmark in the landscape and its goal to "magnify the institution" (Bisbrouck, 2006).

The RLC's design features a rectangular plan measuring 66.5m by 121.5m. Its longest side runs east to west, which contrasts with the predominantly north-south orientation of the other slender buildings on campus. Situated along the Route Cantonale, its location has ensured that the RLC serves as a prominent showcase for the Lausanne Campus, which is part of a larger multi-institutional site, hosting in addition to the EPFL, the Université de Lausanne on the shores of Lake Geneva. RLC showcases a Multimedia Library, student workspaces, along with a multipurpose hall, a café, and a bar spanning approximately

⁷⁷ In 2023, around 60% of EPFL's financing was federal. The remaining funding was sourced from third parties, including the Swiss National Science Foundation and private funding (EPFL, 2023).

1850 square metres. Offices for the Student Association, Alumni Association, Pedagogy Research, and the Publication Office are also present. It costed 110 million CHF and, besides from Rolex, received financial backing from several prominent names, including Logitech, Credit Suisse, and Nestlé (EPFL, 2010).

The same appreciation of precision that we see in Rolex's advertising appears in this artefact too, but over-scaled, as it functions an object of advertisement for the EPFL as well. Corporate design, corporate image and corporate architecture are three important concepts here. The first encompasses all elements that define a company's visual identity. While it predominantly focuses on visual aspects, it can also engage all sensory levels. The corporate image, which is the public's perception of the company, reflects its market representation. Corporate architecture, as part of a comprehensive corporate identity programme, involves the deliberate design of a company's physical structures. This approach communicates the firm's fundamental principles and belief systems, offering a symbolic dimension, an emotional experience, and an organisational framework that reinforces corporate values perceptually (Horn, 2022). EPFL, Rolex and the other supporting companies employ the building in these three senses (Figures 53; 54).

Two interconnected concrete shells, supported by subtended arches, form the building. The smaller shell rests on four arches spanning 30-40 metres, while the larger shell is supported by seven arches ranging from 55-90 metres, stabilised by pre-tensioned cables buried underground. As the building functions as a unified structure, all components, including the roof, were designed to flex and adapt to subtle shifts caused by structural and environmental factors. Consequently, the internal ceilings had to be joined in a way that accommodated these movements. The curved glass façades surrounding the courtyards were engineered to move independently, with each pane of glass individually cut to adapt to the shifting dimensions of the concrete shell. Both the university and the architects faced the challenge of organising the building amidst such a radical spatial proposition, which appears more topographical than architectural. Conceptually, the radicalism lay in proposing a continuous programme for all activities. Constructively, this radicalism was synonymous with technological innovation.



Figure 53. RLC as seen from the campus centre. 2024.



Figure 54. RLC seen from one of the internal courtyards. 2024.

In this context, technology becomes a central force shaping cultural norms. Although the building is often described as having “no physical barriers,” practical adjustments suggest otherwise. Gregory observes that SANAA prioritised plan fluidity over a more restrained construction approach, allowing spatial continuity to dominate over visible structure (R. Gregory, 2010) (Figures 55;56). However, he downplays some of the building’s challenges. For example, while he mentions that certain areas have concrete slopes reaching up to 30°, he overlooks the practical impact. By 2023, parts of the building were cluttered with vases and barriers to prevent accidents, and some study chairs struggle to stay balanced on the uneven floor, challenging the common description of the building as a space with a “lack of physical boundaries” (Figures 57; 58).⁷⁸ The report on the structural design and the laborious development of this same structure also highlights the sheer intellectual and structural effort went into achieving this so-called “more muted language of construction” (K. Bollinger et al., 2010; R. Gregory, 2010).

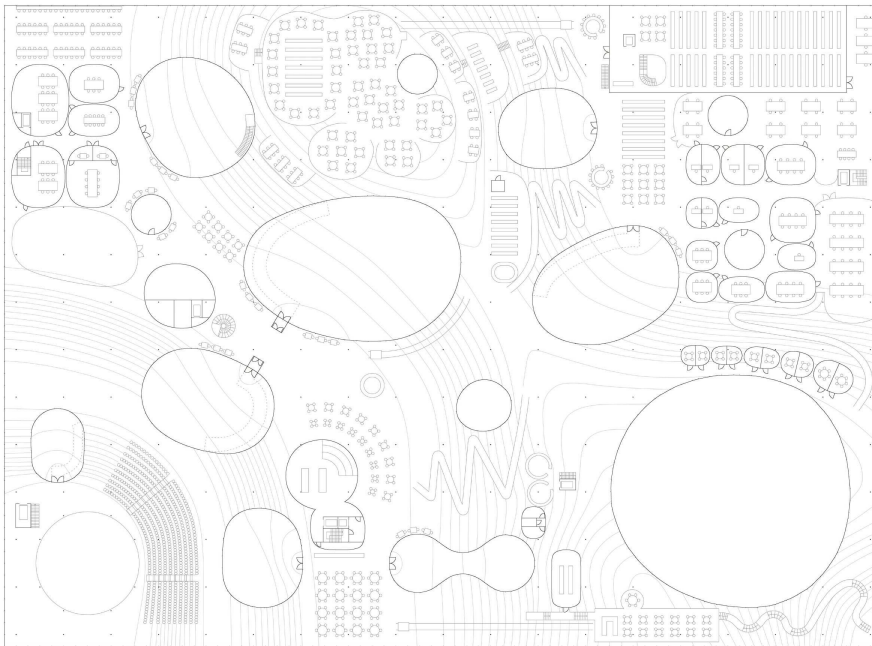
Another dominant concept there, arguably more influential than technological radicalism, is fluidity. The university, the architects, and scholars who have analysed the building frequently reference this idea. This notion of fluidity, connected to current discussions around infrastructures and the effort to reduce spatial friction, takes centre stage. In a way that parallels infrastructure theories, flow, fluidity, and transparency have become central to architectural thinking. These concepts now shape the relational, kinetic, aesthetic, and formal qualities of urban artefacts and spaces. Contemporary architecture increasingly embodies this argument, reimagining, at least rhetorically, infrastructure with fluid, dispersed forms that open “new” spatial possibilities (Jerkovic-Babovic et al., 2020).

The university describes the RLC as a “fluid space” where study areas, social hubs, and outdoor environments are seamlessly connected. For Last (2014), SANAA’s architects have disrupted traditional architectural models that rely on static, binary thinking. Her analysis highlights how the RLC rejects typical oppositions—form vs. function, inside vs. outside—by embracing fluidity. Rather than offering fixed narratives or teleological design, it provides

⁷⁸ Baunetz, for example, states that “physical and visual boundaries between the individual areas are here [in the building] nowhere to be found” (From the German original: “Physische und optische Grenzen zwischen den einzelnen Bereichen sucht man hier vergebens”.) <https://www.baunetzwissen.de/beton/objekte/bildung/rolex-learning-center-in-lausanne-1669931>



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Figures 55; 56. RLC floor plans. Sanaa. Source: Archello.

open, adaptable spaces. Its design logic avoids a single narrative or a historical progression, offering no specific moment or place of resolution, no overarching narrative, and no absolute direction beyond its creation through collective use and social agency.

This architecture resists hierarchy and programmed order, with its voids and openness challenging any pre-set spatial or functional structure. In doing so, the building enables a progressive and generative experience, allowing inhabitants to engage with space beyond traditional dichotomies. Its lack of resolution and rigid boundaries invites continuous reinterpretation, marking a shift from postmodern dialectics towards an architecture of possibility and agency. This approach asserts the liberation of subjects, architecture, and purpose. It reflects a naturalisation of neoliberal rationalities, using iconic structures to represent established elite power and to establish *other* forms of authority (Balke et al., 2018).

The relentless emphasis on technical refinement, programmatic freedom, and innovation has become so routine that it risks falling into redundancy or tautology. Wyss argues that the decline in the visibility of operational processes parallels the diminishing relevance of physical materials, rendering them increasingly redundant (Wyss, 1997). This transformation mirrors the structure of contemporary advertising, which often embodies sheer redundancy to resonate with the prevailing social mood. Rather than promoting novelty, advertising reinforces familiarity, championing what is already known and relying on this familiarity as a persuasive tool to engage viewers (i.e., customers) with ever-shortening attention spans.

At the RLC, the design epitomises openness and innovation, with flowing forms, minimal structural interference, and energy-efficient solutions blending nature and architecture. However, beneath its organic aesthetic, there exists a tension between public and private interests. The collaboration between the university and elite private institutions bolsters the institution's brand while aligning academic space with the demands of a media-driven cultural economy that permeates science, or the production of it, as-well. Here, architecture becomes a symbolic asset, more focused on reinforcing corporate identity



Figure 57. Flower-pots as a way of protecting uneven flooring. 2024.



Figure 58. Accessibility platform inside the RLC. 2024.

than fostering educational exchange, effectively turning the campus into a spatial commodity embedded in financial narratives.

The RLC inaugurated a cycle of ventures that have significantly transformed the campus. It creates practices and shifts them. It serves as a precursor and guides how other projects can emerge on campus. Above all, it offers a “closed package,” in the sense that Easterling (2005) gives to spatial products in its combination of emblematic work, cutting-edge architecture, renowned names, specific aesthetic principles, and public-private partnerships. This combination continues to inform EPFL's institutional advertising and strategies for attracting professionals. We see this in the EPFL Pavilions project, a low-rise building almost 200 metres long, designed by Kuma and Kobler. The same is true of the Double Deck project by Dominique Perrault Architecte, which is scheduled to continue until 2028 (EPFL, 2012, 2024).

Neoliberal forms and facets

In 1998, Swiss artist Christian Philipp Müller unveiled a thought-provoking installation *Der Campus als Kunstwerk* (The Campus as Work of Art) at the Lüneburg Universität (Figures 59; 60).⁷⁹ The two-part installation, which featured 101 silkscreens and 200 prototypes of merchandising articles, served as a critical examination of the university's campus within a global context. Müller's project began by juxtaposing the Lüneburg campus with over a hundred international examples, using Thomas Jefferson's design for the University of Virginia as a foundational archetype. Jefferson's plan for the University of Virginia serves as the archetypal model, from which Müller examines the other examples, and as a vision of an ideal society and the setting where education, or *Bildung*,⁸⁰ unfolds. The overlay also reveals how the idealised university layout has evolved over time, including going through

⁷⁹ Since 2007, the Leuphana Universität Lüneburg. The campus occupies a site previously used as military barracks, which played a key role in the armament efforts of Germany under the National Socialist regime. In 1989, following the departure of the stationed border guards, the vacant complex was repurposed for academic use. By 1994, the newly designated university officially moved into this former military site. For further reading concerning the university's history, see Weinert-Brieger (2024).

⁸⁰ *Bildung* encompasses education and personal development. It goes beyond formal schooling to include the comprehensive cultivation of a person, including the development of intellectual, moral, and cultural capacities, aiming to shape a well-rounded, self-aware person who contributes meaningfully to society.

the *Beaux-arts* ideals to the implementation of flexibility and economy dominated concepts. Müllers work also presented a less territorial approach. In another scale of consumption, his installation highlighted how universities market themselves, evident through branded merchandise and symbols of prestige that serve as markers of institutional identity (C. P. Müller et al., 2001). In his work, Müller's scrutinised how these spatial configurations and commercial strategies reflect and influence the underlying purposes and values of contemporary universities (Marginson & van der Wende, 2007).

Another aspect, less evident in the artist's work, concerns Müller's observation about the late-twentieth-century surge of rankings and international benchmarks. These tools reshape the campus as an arena of market competition. We increasingly value educational mobility, foreign-language proficiency and even architectural refinement as signs of institutional quality. In this setting, beauty and coherent master plans operate not merely as spatial visions but as branding strategies that enhance institutional prestige. The university therefore moves from the Enlightenment ideal of a community of learning to a market-orientated terrain of knowledge production. The artist describes these reflections as follows:

"University rankings have experienced something of a boom in recent years. In 1989, the German magazine Der Spiegel was the first to adopt this typically American 'best of' evaluation system and compared the quality of teaching at 51 universities across Germany. In June 1998, it published a Europe-wide university ranking. In the context of European integration, so the argument went, periods of study abroad and foreign-language skills were becoming prerequisites for later success: following the flexibilisation of employment relations came 'educational mobility'. Like other statistical surveys, rankings convey an impression of objectivity. Yet their selection criteria, evaluative frameworks, and outcomes are never neutral; they are always shaped by particular interests. This is evident not only in the often sharply contradictory results, but also in the fact that the most diverse categories may become the subject of investigation: students' living conditions (Spiegel Spezial, June 1998), the balance between tuition fees and performance (U.S. News, September 1996), or even the 'beauty' of individual campuses. In his 1991 study The Campus as a Work of Art, Thomas A. Gaines assessed American universities according to their harmonious overall composition, employing similar compositional criteria to those used for works of art. At the top of his 'Top Fifty' stands Stanford University, which emerged from the late-nineteenth-century City Beautiful movement. In 1886, Leland Stanford – president of the Central Pacific Railroad and former governor of California – commissioned Frederick Law Olmsted to produce the campus masterplan. The result was an expansive complex

combining axial monumentality, Mediterranean architectural forms, and subtropical landscaping. A palm-lined north-south axis leads through the Memorial Arch into a central courtyard: despite the tension between the client, who prioritised monumentality, and the architect, who favoured a more "naturalistic concept", Stanford remains one of the few truly coherent campus landscapes ever realised. (C. P. Müller et al., 2001, p. 136, our translation.⁸¹)

The campus becomes a curated asset, designed to cultivate competitive subjects and to communicate distinction through architecture and planning. Everyday life on campus follows hierarchies, practices of strategic visibility and forms of exclusion that feel routine in our neoliberal present, even when institutions continue to speak of openness, community and equality of opportunity.

Defining neoliberalism is no simple task. In *Constructions of Neoliberal Reason*, Jamie Peck (2012) offers insight into this challenge. He describes neoliberalism as a dominant policy paradigm, which partly explains the difficulty of analysing it, as our thinking is constantly shaped by its frameworks. To complicate even more, neoliberalism is inherently contradictory and polymorphic, lacking a definitive origin or a singular point from which all its subsequent iterations can be assessed.

⁸¹ From the German original: Hochschulranglisten erleben seit einigen Jahren eine Konjunktur. 1989 griff das Nachrichtenmagazin Der Spiegel erstmals dieses typisch amerikanische Bewertungssystem der „Best of“ auf und verglich die Lehrqualität von 51 Hochschulen in Deutschland. Im Juni 1998 veröffentlichte es ein europaweites Hochschulranking. Im Zuge der europäischen Vereinigung, so die These, gehörten Auslandsaufenthalte und Fremdsprachenkenntnisse zu den Voraussetzungen späteren Erfolgs: Der Flexibilisierung von Arbeitsverhältnissen folgte die „Bildungsmobilität“ auf den Fuß. Wie andere statistische Erhebungen vermitteln Rankings den Eindruck von Sachlichkeit. Doch die Auswahlkriterien, Bewertungsmuster und Resultate von Rankings sind nie objektiv, sondern immer auch interessengeleitet. Davon zeugen nicht nur die teils einander stark widersprechenden Ergebnisse, sondern vor allem auch die Tatsache, dass unterschiedlichste Kategorien Gegenstand der Untersuchung werden können: die Lebensbedingungen von Studierenden (Spiegel Spezial, Juni 1998), das Verhältnis zwischen Studiengebühren und Leistung (U.S. News, September 1996) oder auch die „Schönheit“ einzelner Campusanlagen. So bewertete Thomas A. Gaines in seiner Studie *The Campus as a Work of Art* von 1991 amerikanische Universitäten in Hinblick auf ihre „harmonische Gesamtanlage“, nach ähnlichen kompositorischen Gesichtspunkten also wie Kunstwerke. An der Spitze seiner „Top Fifty“ befindet sich die Stanford University, hervorgegangen aus dem „City Beautiful Movement“ am Ende des 19. Jahrhunderts: Leland Stanford, Präsident der Central Pacific Railroad und Ex-Gouverneur von Kalifornien, beauftragte 1886 Frederick Law Olmsted mit dem Masterplan der Campusanlage. Das Ergebnis war eine großzügige Anlage, die axiale Monumentalität, mediterrane Baustile und subtropische Parkgestaltung miteinander verbindet. So führt eine palmengesäumte Nord-Süd-Achse durch den Memorial Arch bis zu einem zentralen Innenhof: trotz des Interessenkonflikts zwischen dem Auftraggeber, der vor allem Monumentalität forderte, und dem Architekten mit seinem eher „naturalistischen Konzept“ eine der wenigen existierenden Campusanlagen aus einem Guss).

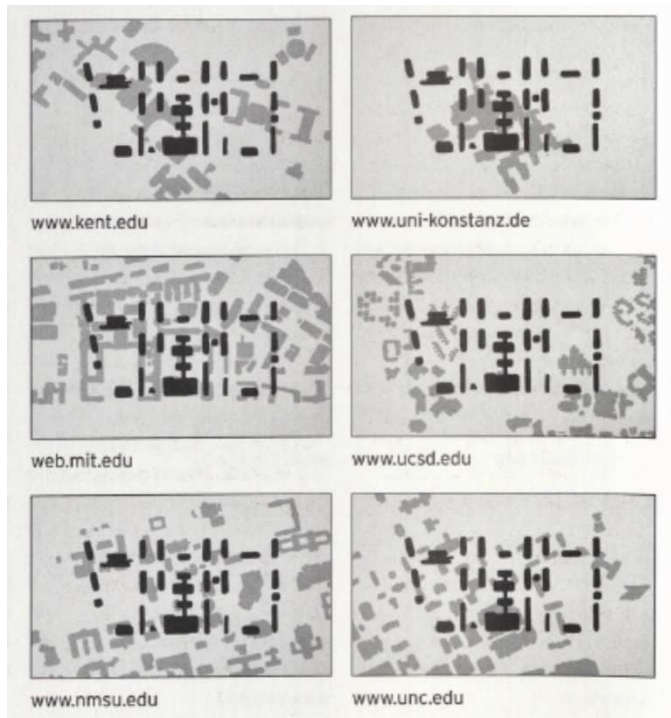


Figure 59. Source: Müller, C. P. et al. (2001). Der Campus als Kunstwerk. Abteilung Prototypen. Eine Künstlerische Arbeit in Zwei Teilen, 1996 - 1998, Universität Lüneburg, Düsseldorf. Richter. p. 130.



Figure 60. Source: Müller, C. P. et al. (2001). Der Campus als Kunstwerk. Abteilung Prototypen. Eine Künstlerische Arbeit in Zwei Teilen, 1996 - 1998, Universität Lüneburg, Düsseldorf. Richter. p. 36.

Ptak (2017) argues that “one can speak neither of *the* neoliberalism nor of a *closed* theoretical-ideological conception of neoliberalism”(Ptak, 2017, p.22, our translation⁸²; emphasis as in the original). In this sense, it never represented a singular, uncontested concept.

The definitions and concepts we employ are, in this sense, instrumental, helping us navigate the complexities posed by contemporary capitalism, complexities that are, in turn, reflected in the very concept of neoliberalism. Whether these ideas converge or diverge on specific details such as dates, origins, or significant actors, they should be seen as part of a broader dialogue rather than a rigid framework. The authors we engage with here offer diverse approaches to the theme, allowing us to navigate the complexities of contemporary capitalism, complexities that are deeply entangled with the very notion of neoliberalism. Thus, we employ these definitions instrumentally rather than in definitive, as we do not claim the expertise of economists or political economists to establish a precise definition. Instead, we mobilise scholars who explore neoliberalism transversally, beyond the confines of economic thought, tracing its influence across various fields. Our primary task is to understand how this totalising concept manifests through multiple readings and interpretations as scholars attempt to delineate its contours.

One of the most productive ways to begin this discussion is by viewing neoliberalism as a mobile assemblage. Social policy professor John Clarke identifies this approach both in Ong’s (2006) work and in his own (Clarke, 2008). In Ong’s framework, neoliberalism consists of a set of technologies, methods, and practices that are selectively adopted and frequently come into conflict with local political and cultural contexts. These elements are not merely incidental but play a crucial role in the expansion of neoliberalism, either as driving forces or as mechanisms in its dissemination. This makes it impossible for neoliberalism to be seen as a fixed global phenomenon, or to be understood as a singular culture or structure, but as a set of mobile governing techniques that can be detached from their original contexts and reassembled within new, interdependent relationships. Some years later, Dardot and Laval (2017), proposed a similar approach. In their work,

⁸² From the German original: “[Insofern] kann man weder von dem Neoliberalismus noch von einer geschlossenen theoretisch-ideologischen Konzeption des Neoliberalismus sprechen (Ptak, 2017, p.22).

neoliberalism is a *rationality* of contemporary capitalism, in which competition dictates the rules of the game. According to them, neoliberalism can be understood as an assemblage of “discourses, practices, and apparatuses” that shape this new mode of governance. In the various manifestations of this rationality, we may also consider the processes of articulation and assemblage that operate within neoliberal rationality. These involve the continuous construction and adaptation of objects and relationships within neoliberalism’s repertoire, entailing “the articulation of elements from neoliberalism’s repertoire into specific/local assemblages or constellations as part of political and governmental projects to remake particular places” (Clark, 2008, p. 144).

Spencer (2016) provides a particularly appropriate definition of neoliberalism arguing that its intelligentsia imposes a “necessary ignorance” on how *governmentality* takes place.⁸³ He draws on Mirowski’s (2013) analysis of Hayek and Ludwig von Mises and how they sought to redefine the role of knowledge in society to shape public opinion. Mirowski, in his turn, defines neoliberalism as a project that re-engineers society to follow market principles, dismantling non-market structures and favouring market values over democratic checks on economic excess. This extends beyond deregulation to an active restructuring of social frameworks toward a market-based model.

Other important contribution comes from Peck (2012), which is particularly valuable for its role in denaturalising the ascendancy of neoliberalism. His work extends and develops the arguments put forward by the scholars we have previously mentioned. Additionally, Peck challenges a crucial chronological assumption, that is, the very conception of neoliberalism itself. For him, as well as for most scholars whose work we engage with, it is meaningful to discuss the turbulent and often violent processes that facilitated neoliberalism’s rise. Many of these were explicitly endorsed by influential figures from the Chicago School, as seen in the 1973 coup in Chile that ousted Salvador Allende, the policies implemented under Margaret Thatcher’s government in the United Kingdom after 1979, or Ronald Reagan’s presidency in the U.S. However, these moments should not be mistaken for the origins of the neoliberal rationality. They signify the point at which

⁸³ Spencer cites writings such as Hayek’s 1949 essay *The Intellectuals and Socialism* and the 1973, the creation of the Mont Pelerin society in 1947, and the book *Law, Legislation and Liberty* as tools in the process of neoliberalisation of the common knowledge.

neoliberalism became hegemonic, representing key episodes in a far-reaching and long-standing process of its formation, meaning they were concomitantly experiments in neoliberal *governmentality*⁸⁴ and components in the process of neoliberalisation.

Neoliberalism emerged directly from a crisis within liberal thought. For neoliberalism to take shape, liberalism first had to be dismantled. Its early advocates shared a common opposition to what they viewed as the *Leviathan* state's overarching control (Figure 61). Although, as we are attempting to demonstrate, neoliberal thought may be characterised by plurality, several lines of reasoning are commonly shared in its conception. The critique of the *laissez-faire* approaches is one such example. *Leviathan* alludes to Hobbes' political theory, in which the social contract and the state serve to guarantee collective security through the outline of the rights and obligations between the governed and their rulers. Classical liberal thought highlights two conceptions of liberty that are perceived as conflicting within neoliberal frameworks. In classical liberalism, the absolute liberty of one individual would inevitably limit the liberty of another; thus, liberals concurred that a certain degree of restraint was essential to maximise freedom for all. This produced a dilemma in which markets are considered natural, and the state should refrain from interference, allowing economic actors to operate freely.

Yet, it was also concluded that the state was indispensable for safeguarding the participants within the market. The crisis of liberalism, in part, stemmed from its inability to adapt to the expanding influence of enterprises and their evolving needs, such as legal structures, resource concentration, shifting competitive dynamics, and transformations in wage-labour relations (Mirowski, 2013; Plehwe et al., 2020). The foundations of economic liberalism underwent significant transformations following the crisis of 1929 and the Second World War. In Europe, state interventionist approaches, particularly those

⁸⁴ Foucault developed the concept of *governmentality* by examining the relationship between sovereignty, the family, and the broader practices of governing. He defined it as a complex system comprising institutions, procedures, analyses, reflections, calculations, and tactics that enable a distinctive form of power. *Governmentality*, as he described it, emerges at the intersection of techniques used to dominate others and techniques of self-regulation. To govern, in this sense, is to guide human behaviour; both that of others and oneself. Crucially, governance does not function in opposition to freedom but rather operates through it. By harnessing individual liberties, power encourages conformity to norms, shaping conduct in ways that appear voluntary rather than imposed (Rose et al., 2006).

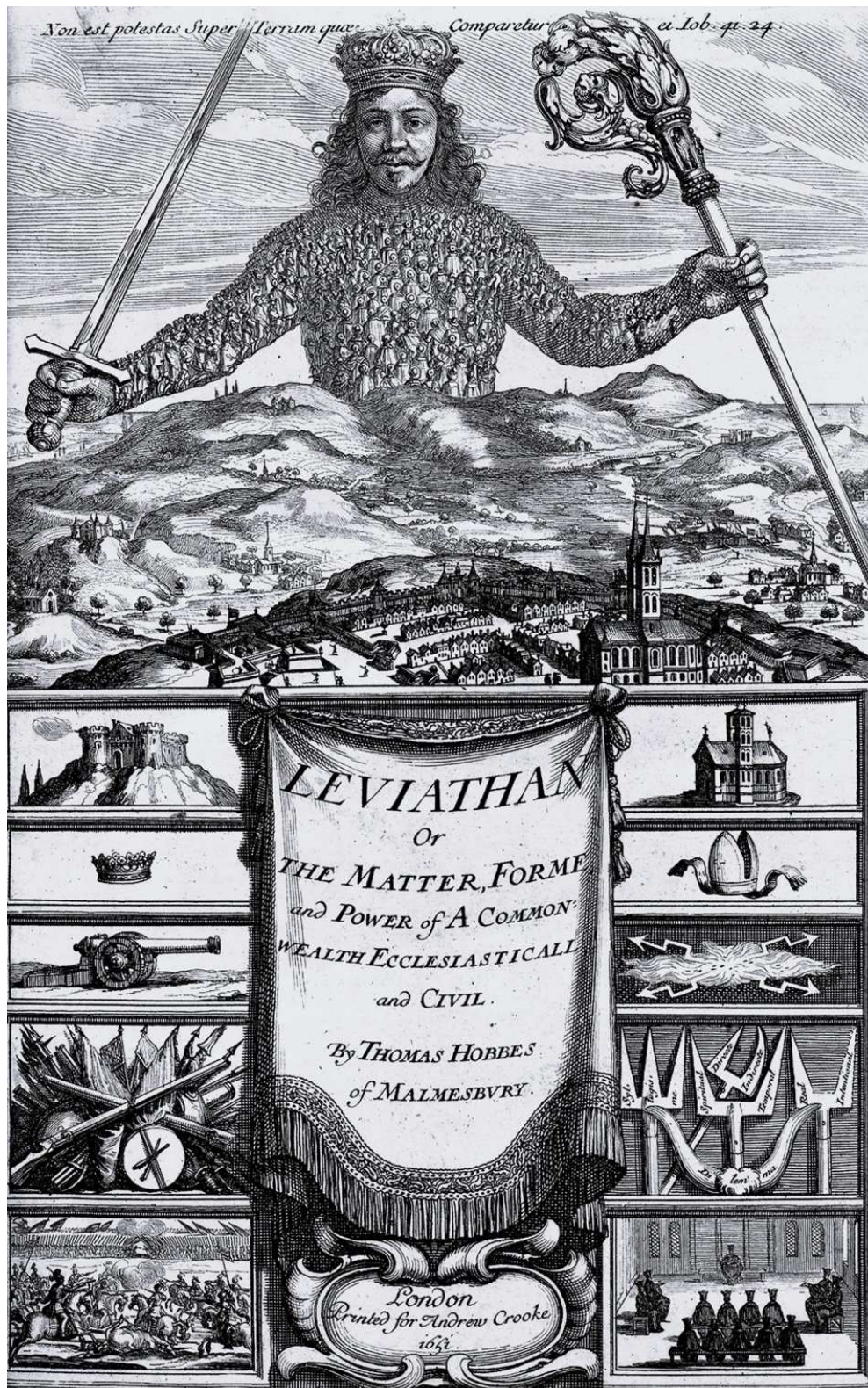


Figure 61. The frontispiece of the book *Leviathan* by Thomas Hobbes; engraving by Abraham Bosse. 1651. Source: British Library Archives.

advanced by John Maynard Keynes, gained prominence. Meanwhile, in the U.S., similar interventionist measures took shape through the policies of the New Deal (Harvey, 2005).

Different timeframes emerge when attempting to define neoliberalism, particularly regarding its origins in time and place. The perceived birthplace often depends on the researcher's background. Ralf Ptak (2017), for instance, situates the roots of neoliberalism in German ordoliberalism. He argues that ordoliberalism was the first to present a structured market economy programme aligned with neoliberal principles. This perspective links neoliberal thought to critiques of interventionist states that gained momentum during the early years of the Weimar Republic, particularly within Freiburg Universität and through the work of economists such as Walter Eucken and Alexander Rüstow.⁸⁵ During the 1930s, alongside Germany, early neoliberal currents also took shape during in Austria, England, France, and the U.S., but neoliberal ideas remained somewhat restricted to some very specific circles. It would be, according Ptak, 1950s West Germany where the first decisive triumph of neoliberalism appeared. During this period, Ludwig Erhard, who was Federal Minister of Economics from 1949 to 1963, and his ordoliberal advisory team successfully steered the country towards an economic and social order grounded in neoliberal principles.

Dardot and Laval (2017), in turn, trace neoliberalism's origins to the Walter Lippmann Colloquium, held in Paris in August 1938. This gathering brought together figures such as Friedrich Hayek, Wilhelm Röpke, and Alexander Rüstow. Although linked to earlier debates, the colloquium sought to revitalise liberalism through regular international meetings of intellectuals. Participants broadly agreed on the necessity of framing and promoting a reformist liberal doctrine as hegemonic, leveraging prestigious institutions and academic networks as instrumental. However, this reformulation of liberalism did not emerge through a unified vision. Instead, it encompassed diverse and, at times, conflicting perspectives, including debates over core neoliberal principles such as the acceptable

⁸⁵ Eucken viewed the growing influence of the masses on the state as a catalyst for interventionist policies that altered its structure. In his view, the economic crises of 1929–30 stemmed from state interventions that, under pressure from societal disorder, disrupted market competition. The circle of thinkers surrounding Eucken and Rüstow ensured that neoliberal ideals developed as a relatively structured market economy programme, ultimately presenting themselves as a coherent intellectual movement after 1945. See: Ptak (2017), especially pages 16–21.

extent of state intervention. Differing interpretations of the causes of the economic crisis further fuelled these disagreements. It is essential to keep these moments in mind, as they offer insight into the debates that shaped discussions before neoliberalism became a dominant paradigm. As we are about to see, the central issue was the role of the liberal state.

A common reference point in discussions on neoliberalism's emergence is the foundation of the Mont Pèlerin Society in the spring of 1947, led by Friedrich Hayek. Named after its Swiss conference venue, the society was officially registered in Illinois. However, interpretations of this gathering vary across different works. For Peck, the meeting brought together a small group of self-proclaimed "intellectual pilgrims" who established what would become a leading space for intellectual exchange, negotiation, and calculation—an inherently transnational project from the outset. Harvey, on the other hand, emphasises how the Mont Pèlerin group attracted financial and political backing, particularly from a network of influential corporate leaders and wealthy individuals in the U.S. However, he also notes that despite this support, the movement remained largely peripheral in both policymaking and academic circles until the crises of the 1970s, when its opposition to state intervention gained renewed traction.

After 1970, these processes evolved both in scale and nature, shaping the production of neoliberal subjectivities and the construction of the neoliberal self. Authors like Jim McGuigan (2016, p.9) suggest that it is possible to speak of a distinct "art and soul" of neoliberal cultures, where ideology, political economy, and cultural expression become deeply intertwined. McGuigan introduces the idea of a specific structure of feeling within neoliberalism, proposing that its influence extends into cultural fields. He argues, in a similar vein to what the authors we have analysed so far stated, that neoliberalism is not merely an economic or political framework but a pervasive force that has "invaded, occupied, and effectively colonised art and soul across the globe" (McGuigan, 2016, p.11). Such culture extends far beyond the arts; it is deeply embedded in family values and a broad spectrum of semi-private and private spheres.

Such integration aligns with the rise of increasingly conservative behaviours, which have developed alongside critiques of the welfare state. Rather than advocating for state support or alternative forms of social and political organisation, an important part of the neoliberal discourse reinforces the centrality of the family nucleus as the primary site of responsibility and support, as a deliberate attempt to dismantle politically organised society. Within this framework, society, outside a very limited and controlled family environment, holds no intrinsic value (Cooper, 2020). This analysis is part of a body of literature which examines neoliberalism through the lens of subjectivity, focusing on what he terms its "self-image" and the practices it promotes (McGuigan, 2016; Ptak, 2017). This self-image is shaped by factors such as flexibility and heterogeneity, characteristics that lead the author to argue for conceptualising neoliberalism in the plural rather than the singular. Its adaptability across different social contexts reflects its historical role in advancing neoliberal projects. Moreover, this self-image is deeply rooted in a strong reaction against collectivism, a sentiment that had already emerged as a widespread political and ideological force in the 1920s.

Dardot and Laval (2017) highlight a significant shift in the 1980s, when neoliberal and conservative rationalities reconfigured the exercise of government power, challenging many established forms of macroeconomic regulation through the International institutions such as the International Monetary Fund (IMF) and the World Bank intensified their promotion of neoliberal economic policies, particularly from the 1980s into the 1990s, pushing a strategic agenda focused on privatisation, market liberalisation, and deregulation. This process both shaped and reflected broader patterns of globalisation, unfolding in varied and often contradictory ways across different regions. David Harvey (2005), for instance, conceptualises these transformations through the notion of the "neoliberal state," a term that seeks to capture the structural shifts in governance under neoliberal rationality. For Harvey, the neoliberal state is primarily designed to create and sustain conditions for profitable capital accumulation, for domestic and foreign interests. It prioritises individual property rights, fosters various configurations of free markets, promotes free trade, and facilitates the privatisation of public assets. One of the most apparent contradictions of neoliberal thought emerges here: while neoliberalism is often

framed as a doctrine advocating minimal state intervention, in practice, it relies on a strong state to construct and enforce the legal, institutional, and economic frameworks necessary for markets to function.

The first materialised neoliberal state took shape in Chile following the 1973 coup d'état—a U.S.-backed, CIA-orchestrated overthrow of Salvador Allende's government (Harvey, 2005). Harvey highlights the role of economic intelligentsia in shaping the economic model imposed under the violently installed regime of Augusto Pinochet. This framework was largely crafted by a prestigious circle of University of Chicago-trained economists, led by Milton Friedman. These individuals, often referred to as the "Chicago Boys," had been educated in the U.S. through exchange programmes funded by the national government, specifically designed to promote anti-communist economic doctrines in Latin America (Klein, 2023). Chile stands as one of the defining examples of the neoliberal state's emergence, but similar transformations unfolded in other national contexts. The economic policies of Ronald Reagan in the United States and Margaret Thatcher in the United Kingdom reflected the same ideological shift, where both leaders spearheaded widespread deregulation, tax cuts, and the systematic dismantling of social welfare programmes. Recognising the distinction between what Harvey terms the "neoliberal state" and earlier liberal reformist traditions is crucial.

This distinction informs how we approach neoliberal rationalities, particularly in academic and intellectual spheres, where many of these ideas were first developed and legitimised. This resilience of neoliberalism is a central theme in the work of Plehwe and Slobodian, who metaphorically refer to its "nine lives," emphasising its ability to endure and reinvent itself (Plehwe et al., 2020). They highlight how neoliberalism has demonstrated an almost "agile and acrobatic" quality in navigating crises that, in theory, should have been existential threats to its dominance. Neoliberal strategies have evolved in response to shifting political and economic landscapes. Whether through structural adjustments imposed by global financial institutions, the corporate-driven restructuring of knowledge and higher education, or the strategic rebranding of governance as market-driven efficiency, neoliberalism has consistently reshaped itself to maintain legitimacy (Butterwegge et al., 2017).

Just as there is a liberal approach to knowledge and scientific production, as we have seen with the foundation of modern universities, neoliberalism has also shaped how knowledge-related matters are managed. Central to this is the establishment of a competitive order, characterised by constantly shifting and interchangeable strategies. Slobodian (2020) examines this dynamic by exploring how policymakers and corporate actors exert control over intangible processes and technologies across various sectors, including pharmaceuticals and information technology. Intellectual property has become a cornerstone of neoliberal rationality, though its implications remain highly contested.

Debates over intellectual property rights have been particularly intense, with controversies surrounding the patenting of lifeforms and the inflated costs of essential medicines, particularly in the Global South. These issues highlight broader tensions within neoliberal governance. As Harvey notes, the lack of clearly defined private property rights, especially in the Global South, is regarded as one of the most significant institutional obstacles to economic development and human welfare. This perspective has underpinned the structural adjustment programmes imposed by the IMF and World Bank, which pressured indebted nations to open their markets to foreign competition, enforce austerity measures, and privatise public assets.

Olssen and Peters (2005) trace the multiple ways neoliberalism has reshaped knowledge production and higher education in recent decades. Here, too, the IMF and World Bank act with different actors regarding the neoliberal restructuring of intellectual and academic work. At the core of Olssen and Peters' analysis is what they describe as the commodification of knowledge, research, teaching, and academic life. By examining a range of publications financed or produced directly by these international institutions, they demonstrate how global higher education policies were shaped by mechanisms that reframed knowledge as intangible, yet highly mobile, capital within a neoliberal framework. Their study also revisits Hayek's immediate post-war writings, particularly his distinction between "codified textbook-type" knowledge and market-driven knowledge, the latter being regarded as more efficient and inherently valuable. Neoliberalism in practice, then, involved restructuring public institutions along managerial and market-driven lines, redefining hierarchies in the academic workplace, and introducing a new

lexicon centred on assessment, self-assessment, and efficiency. For Olssen and Peters, theories concerning property rights form the “fundamental grounding theory for the conception of self-interested human behaviour assumed in neoliberal theories” (p.322). This emphasis on property rights further reinforced the neoliberal imperative to dismantle centralised state control and discredit alternative forms of state planning, consolidating a vision of knowledge production that aligns with market imperatives rather than collective intellectual or social good.

The prevailing discourse on inefficiency, as Dardot and Laval also highlight, is closely tied to the construction of a competitive ethos, framed as a means to enhance productivity, accountability, and institutional control. Among direct and indirect outcomes of these transformation, is the emergence of new strategic administrative positions within universities, many occupied by individuals from outside traditional academic circles, reflecting a broader shift towards the corporate model of higher education. This transition is further evident in the restructuring of intellectual property systems, which now align more closely with commercial knowledge production and the legitimisation of novel epistemological approaches that standardise performance assessment.

A significant aspect of this corporatisation has been the rebranding of universities, both physically and in terms of institutional identity (Ball, 2015; Marginson, 1998; Olssen & Peters, 2005). This involves not only architectural transformations, such as the redesign of flagship campuses like EPFL’s RLC, but also the expansion of public relations teams and external agencies tasked with shaping the university’s public image. In this process, as Olssen and Peters (2005) point out, communications are carefully managed to ensure that “only positive statements appear [about] the university and its products” (p.328), reinforcing a market-oriented vision of higher education that prioritises image, competition, and financial performance over critical inquiry and academic independence.

Efficiency is also a central concept inscribed in the notion of a knowledge-based society. “Knowledge economy” or “knowledge society” appear as an economic and social paradigm where knowledge, research, and innovation are central to economic growth, competitiveness, and societal development. Ward (2012) revisits how governments,

industries, and knowledge-producing institutions would engage in a "limited, localised and relatively uncoordinated" (p.132) manner until a strong reframing occurred in the Global North beginning in the 1930s. The specific descriptions and theoretical formulations of the emerging knowledge society began to surface in a few related yet distinct forms during the 1960s and early 1970s. For the author, there are basic components that guide such reformulation. Firstly, public education should incorporate market principles and their presumed efficiencies. Accountability for meeting specific, elevated academic benchmarks or objectives, all of which are subject to monitoring, constitutes a second component and underpins the use of performance indicators and assessment scores as tools for comparing the outcomes of schools and teachers. This comparison fosters market-like competition, introducing systems of rewards for those demonstrating strong performance and sanctions for those deemed to be underperforming. Finally, the dissemination of information derived from these indicators is intended to enable a degree of choice between institutions, with direct implications for tuition fees (in the case of private universities) and for public financing when it comes to state-funded institutions.

While university rankings date back to the late nineteenth century, it is the rise of globalisation that has driven their prominence and rapid success in recent decades. The global context of heightened competition and interconnectedness relate to their widespread adoption since the early 2000s (Hazelkorn, 2018). Standardised systems have become increasingly prevalent in universities through rankings and other mechanisms that foster a global evaluative culture (Espeland & Sauder, 2016). These frameworks enable comparisons across institutions, relying on indicators such as the Academic Ranking of World Universities and the Times Higher Education rankings. Even if they adopt different methodologies and scopes, the ranking promotes the use of metrics to measure performance and compels institutions to align with global standards. Internally, these mechanisms alter governance, research priorities, and funding strategies. Standardisation through rankings reinforces a competitive environment, pushing universities to adopt similar models and practices, regardless of their local contexts (Lukman et al., 2010). The intense global competition among higher education institutions is driven by the growing

influence of international ranking systems, the alignment with international norms and the growing drive for internationalisation (Hertig, 2016; Larsen, 2016).

In June 2005, Germany's *Exzellenzinitiative* (Initiative for Excellence) set a benchmark for government strategies addressing international competitiveness in higher education. The Academic Ranking of World Universities, the Times Higher Education and Quacquarelli Symonds appeared in 2004, alongside Webometrics. U.S. News and World Report returned to the global scene, while THE collaborated with the Wall Street Journal to create a U.S. ranking, reflecting the internationalisation of American higher education. By 2018, there were over 150 national and specialist rankings and nearly 20 global rankings. In Brazil, the government assesses the quality of education through various evaluations but doesn't produce university rankings directly. Instead, it generates general indices for the evaluated courses. By 2012, the newspaper Folha de São Paulo introduced the first Brazilian national ranking (Righetti, 2016).

These processes take shape in very different ways in the West. Costa and Silva (2019) argue that neoliberal policies in Brazilian higher education have evolved with strong influence of the recommendations made by international organisations. These programmes promote inclusive policies that enhance training flexibility through diverse course offerings, alter financing structures, and foster an entrepreneurial culture within universities, while also introducing managerial practices. This represented a renewal of traditional neoliberalism, marked by a more opportunistic role for the state and a reactive rather than proactive approach. Changes during the Lula (2003-2010) and Dilma (2011-2016) governments align with the World Bank's late 1990s directives, notably expanding the number of universities, vacancies, and campuses. It was before, however, that Brazil, neoliberal doctrine began influencing politics during the administrations of Collor de Mello (1990-1992) and Franco (1992-1995). This tendency intensified under Fernando Henrique Cardoso (1995-2002) and the significant reform his administration promoted. The private higher education sector expanded notably during FHC, especially following the approval in 1966 of the Lei de Diretrizes e Bases da Educação Nacional (LDB, National Education Guidelines and Framework Act), which facilitated increased private

participation in education (Chaves & Amaral, 2016). For Durham (2010), the LDB, among other modifications:

[...] strengthened regulatory trends, executive and financial decentralisation of the education system and divided responsibilities between the different levels of government (federal, state and municipal), emphasising the responsibility of states and municipalities for universal primary education, which became the responsibility of both (Durham, 2010, p.156, our translation⁸⁶).

For Cunha (2007b), privatisation in education appears to be a multifarious process influenced by varying forces that can simultaneously promote both the public and private sectors. This intersection between state and market in universities involves corporate entities, including federal and regional councils. The transition to democracy provided indiscriminate subsidies for private educational institutions. 1996 new regulations introduced the possibility of profit for private institutions, coinciding with resource constraints for federal universities, highlighting a push to private higher education institutions during Fernando Henrique Cardoso's (FHC) administration. During FHC first and second administration, federal universities faced a significant reduction in expenses achieved through salary cuts, budget constraints, and the failure to replace lost educational staff (Cunha, 2003). Concurrently, during FHC an emphasis in the new role given to the market in allocating resources and reducing the role its role as a provider of services took place.

Brazil entered the 1990s still under the weight of a deep economic and social crisis that had begun in the early 1980s. What followed was not a recovery driven by public planning, but a political project centred on shrinking the state. Under President Fernando Affonso Collor de Mello, and later under Fernando Henrique Cardoso, privatisation and strict control of public spending became central strategies (Singer, 2000). These measures weakened the state's capacity for strategic action, particularly in planning and sectoral policy-making. Supported by a new climate of monetary stability, FHC consolidated a governing bloc aligned with the interests of economic elites and committed to a liberal

⁸⁶ From the Portuguese: "[A LDB] fortaleceu a tendência à descentralização normativa, executiva e financeira do sistema educacional e repartiu a competência entre as instâncias do poder (federal, estadual e municipal), enfatizando a responsabilidade de estados e municípios para com a universalização do ensino fundamental, que passou a ser responsabilidade de ambos" (Durham, 2010, p.156).

modernisation agenda. Fiscal discipline and market efficiency came first; labour rights, public institutions, and social investment were pushed to the margins. Stabilising inflation did widen access to basic services like water, energy, and telecommunications (Modiano, 2000). Yet this technical progress unfolded alongside rising unemployment, growing inequality, and persistent poverty.⁸⁷ In higher education, and especially in public universities, this period also marks the introduction of other actors.

For instance, when we look at the growing role of institutions like the World Bank in Brazilian education, it becomes hard to treat their presence as mere technical cooperation. Their involvement operates as a political project that reshapes national development agendas and steers reforms through financial leverage (D. Guerra & Figueiredo, 2021). This dynamic became particularly evident in the early 1990s, when Brazil aligned itself more closely with the IMF and the World Bank. The priorities pushed at the time followed a familiar script of microeconomic market discipline and the promise that efficiency would resolve structural problems. Loan agreements did not arrive empty-handed; they came tied to expectations that reached well beyond financial management. Education policy, in this context, became one of the preferred tools for promoting a specific modernisation agenda. This pattern reappeared in 2017, when a World Bank report labelled Brazilian public higher education “inefficient and regressive” and used that diagnosis to advocate for tuition fees. In other words, these institutions did not simply advise the Brazilian state (WB, 2017, p.13, our translation⁸⁸). They influenced the direction of policy itself, reinforcing a view of universities grounded in market logic, managerial efficiency, and cost-sharing as if these principles were not deeply political (D. Guerra & Figueiredo, 2021; Sguissardi, 2006).

The intersection of science and the market can be described as a gradual process of marketisation that takes place through the creation and reinforcement of market structures, alongside the growing acceptance of market ideologies. Marketisation is

⁸⁷ The contradictions of the period appeared clearly in Brazilian cities. Informal settlements expanded, urban violence intensified, and large segments of the population found themselves increasingly excluded from urban life. The city became a terrain where austerity and liberalisation took physical form.

⁸⁸ From the Portuguese original: “[As despesas com ensino superior são, ao mesmo tempo,] ineficientes e regressivas” (WB, 2017, p.13).

currently reshaping numerous spheres of society, including cities and the university sector, resulting in profound changes across economic, social, and political dimensions.

Universities no longer exist solely as centres of knowledge for their own sake. Instead, they are increasingly tasked with producing "useful" research, which can be directly applied to benefit society or industry, particularly as the latter demands tangible and immediate outcomes related to utility and profit (Fleming, 2021; Wedlin, 2020). The pressure to rise in international rankings reflects a broader trend towards emulating the management structures of global corporations, driving universities to reorganise their operations.

An "emerging global model" (Mohrman et al., 2008) for universities implies that institutions seek to posit themselves as global actors. Other shifts include both how academics and administration produce knowledge, as research intensity has dramatically increased, with a growing focus on addressing the so-called "real-world problems" and producing knowledge through public and private investments often at the expense of more fundamental or critical studies. The reliance on diversified funding from corporations, private donors, and spin-off businesses reflects a troubling trend in which both education and research are being commodified (Fleming, 2021; Ward, 2012).

Professors, once stewards of independent thought, are now burdened with securing competitive grants and partnerships, often aligning with industry goals rather than purely academic or societal needs. Moreover, universities' worldwide recruitment strategies, while seemingly enhancing global collaboration, are often part of a broader effort to secure international tuition fees and bolster institutional rankings. The expansion of university missions beyond national borders might seem progressive, but it risks prioritising global prestige over addressing local and national issues, deepening the divide between higher education and the communities it claims to serve (Busch, 2017).

Many forms of global city discussions have focused heavily on telematics, flows, and boundless connectivity, and use these categories to form their "global types" (Dovey, 2008). For Dovey (2008), these types are internationally recurring and recognisable transnational development forms that carry and circulate particular cultural meanings and ideological frameworks and, by doing so, shape everyday life in many parts of the world. They also highlight, however, that the idea of a singular global city no longer applies.

Today, global cities serve as transaction hubs, export zones, and offshore banking centres, while also functioning as vital economic nodes that host leading industries, financial powerhouses, and innovation centres (Arantes, 2021a; Castells, 1996). This dual role underscores their complexity and essential place in the global economy (Carlos & Prieto, 2021; Sassen, 2000). This also implies that the global has many ways of manifesting itself in the local and that global cities function as distinct entities, each contributing specific features and patterns to a comprehensive image of capitalism.⁸⁹ Various processes, actors, institutions, and spatial configurations actively reinforce this system. Universities facilities, as well as the very presence of the institutions themselves, play a crucial role in this transformation. Such spaces are designed to attract international students, corporate partnerships, and government investment. As a result, the physical form of the university mirrors its market-oriented mission, symbolising the institution's new role as a hub of economic and social productivity, deeply embedded in the competitive fabric of global capitalism.

Another part of this question is precisely the kind of client that prestigious universities represent for large and renowned architectural firms. Distancing himself from economic approaches, Spencer (2016) redefines contemporary architecture as a technology of power dedicated to the production of neoliberal subjectivity. Design and its discourse thus act as mechanisms of conformity that sculpt the ideal profiles for maintaining the neoliberal order, such as the student-entrepreneur, the citizen-consumer, and the flexible worker. The strategic alliances established between large architectural offices, entrepreneurs and developers constitute yet another important dimension of the contemporary situation (Cohen, 2013).

As Foster (2011) suggests, architects are drawn to these associations, eager to amplify their own reputations through such commissions. Prestigious universities opt to construct buildings that materialise their ambitions and project an image aligned with certain internal policies they develop. These buildings proliferate increasingly based on symbolic capital and the value attached to capital through a symbolic, aesthetic, or mythological

⁸⁹ As stated by Eckardt (2009a), networks and lifestyles are built up by very different institutions of different global, national, local levels.

aura. The future of such structures, but also, perhaps more importantly, the future of these institutions, is conceived as a speculation on revenue generation and capital accumulation. These aesthetic and cultural dimensions, embedded within investment mechanisms, as Jameson (1998) noted, suggest a correlation between emerging architectural styles and new ways of conceptualising architecture, with a correspondence between those styles most suited to fulfilling investment objectives.

There is a certain ubiquity of enterprises and firms, coupled with a competitive dynamic that places organisations and companies in a constant search for architectural expressivity, even if much of this expressivity unfolds through a shared lexicon, one designed to attract sufficient attention without posing excessive risk to investors. For Sharon Zukin (2000, p.42), "new architecture and urban forms are, moreover, produced under nearly the same social conditions as consumer products". Large groups of specialised practices operate across multiple countries; firms such as Sasaki, for example, are dedicated to educational architectural and urban projects, exporting worldwide not only their spatial visions but also their perspectives on administration and organisational structures. These offices frequently work for major corporations and are often themselves large architectural entities engaged in multi- or transnational practices. Higher education institutions with greater resources are particularly inclined to hire such teams, much as they have historically sought out acclaimed architects; likewise, it is professionally valuable for architects to include university buildings in their portfolios.

7. The quintessential great urban university?

In colonial New York, Manhattanville emerged as a diverse social enclave, where slave owners lived alongside enslaved African Americans, abolitionists, Black activists, tradespeople, labourers, and industrialists drawn by its proximity to the Hudson River. The early twentieth century brought significant change with the construction of the Interborough Rapid Transit Company's line, linking the area to lower Manhattan and accelerating its transformation from a rural outpost to a vital part of the expanding city. Over the decades, successive waves of Cuban, Dominican, and Puerto Rican immigrants enriched the neighbourhood's cultural setting (Prince, 2004). As mentioned, during 1950 and 1960, Columbia accelerated its property acquisitions in response to the transformation of parts of West Harlem and Morningside Heights from middle-class neighbourhoods into areas struggling with unemployment, crime, and deteriorating housing. Once again, administrators feared these changes would deter potential students (Ramirez, 1998). As we have seen, even the very decision to commission Charles McKim's firm to design its Morningside Heights campus in 1893 relates to this matter. McKim was a prominent architect whose work embodied a modern ethos that signalled a new phase for the institution.

The construction and subsequent development of the Morningside Heights Campus in the years following should also be viewed within this framework. The university's built environment, and the subsequent interpretation of McKim's master plan, drew substantial criticism, particularly concerning the structures erected at Morningside Heights between the 1950s and 1970s. At Columbia, this era is widely recognised for its architectural inconsistency. Several pressures underpinned this decline, including a blatant disregard for the original planning principles, a lack of institutional coordination between faculties, chronic funding constraints, and flawed processes for selecting architects (Bergdoll et al., 1997; McCaughey, 2012). Dissatisfaction with the architectural quality of these buildings ran high, as did concerns over their impact on McKim's legacy. Notable examples include the Law School, designed by Max Abramovitz of Harrison & Abramovitz, as well as the School of Engineering and Uris Hall, completed in 1964 by Moore & Hutchins, which was

deemed so unsightly that the university's architecture students protested it (McCaughey, 2012).

At the Morningside Heights campus, Columbia addressed this issue in the mid-1990s with the Alfred Lerner Hall Student *Center*, a design by Bernard Tschumi, then the dean of the university's Graduate School of Architecture, Planning and Preservation (Figures 62; 63). The university required the building to align with the composition of McKim, Mead & White's original plan. When construction started in 1994, it was already clear that, while the overall volume adhered to the nineteenth century layout, adaptations in the materiality and spatial proposal bestowed the building a distinct character. Tschumi and his team organised the building using two side wings, which maintained continuity with the campus through their modulation, scale, and use of exposed brick and natural granite. A transparent central volume connected these wings, accommodating a grand hall, an auditorium, and a theatre. This space was further animated by intersecting ramps, adding a dynamic quality to the interior as Tschumi's design places strong emphasis on human movement, using as part of his philosophy ramped surfaces to shape spatial experience. The ramps, in such sense, assist a circulatory function but also aim to redefine movement as a space for social interaction and possibility (Stickells, 2010).

Tschumi's intervention was not the only instance in which the relationship between campus and city was reimagined. The Northwest Corner Building, a 14-storey structure designed by Rafael Moneo in collaboration with Davis Brody Bond and Moneo Brock Studio, similarly engaged with this dynamic (Figure 64). Yet, whereas the university had long been anchored in Morningside Heights, this project marked a deliberate shift, both symbolic and physical, towards Manhattanville, only a few blocks to the north. It was even announced as the final major addition to the original Morningside campus scheme, underscoring its role as a threshold between a closed historical composition and a new phase of territorial expansion (King, 2005). Situated at the intersection of Broadway and West 120th Street, construction commenced in 2007, with the building reaching partial occupancy by 2009, its design included multiple challenges. As Ockman (2017) notes, part of the building's remit was to engage with the material palette of the Morningside Heights



Figure 62. Alfred Lerner Hall. Source: Hays, K. M., Damiani, G., & De Michelis, M. (Eds). (2003). Bernard Tschumi. Rizzoli International.

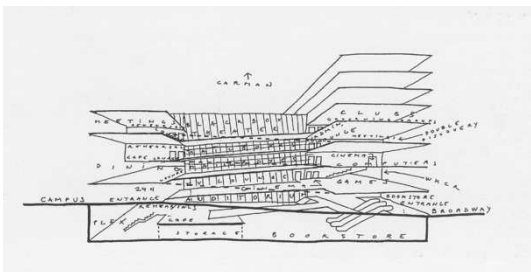


Figure 63. Alfred Lerner Hall. Source: Hays, K. M., Damiani, G., & De Michelis, M. (Eds). (2003). Bernard Tschumi. Rizzoli International.



Figure 64. Northwest Corner Building as seen from the corner of Broadway and 120th Street. Photo: Duccio Malagamba.

Campus (brick, mortar, and stone) while accommodating twentieth-century scientific research across both theoretical and applied fields. The project also had to incorporate a pre-existing sports facility, which remained in operation throughout construction. In addition, the building was required to connect two adjacent science buildings, complete the campus's north-west corner on a sloping urban site, and establish a visible presence on the neighbourhood skyline.

The building's design functions prismatically. Moneo and his team deploy subtle interventions, such as the recessed ground floor along West 120th Street, alongside more assertive gestures, most prominently the 14-storey glazed volume. This glass-clad addition, set back from the primary façade, establishes a dynamic dialogue with the campus when viewed from within. The structure thus exhibits two distinct yet modular façades: a more sheltered, urban-facing elevation to the north-west (responding to both building orientation and urban context) and a transparent counterpart to the south-east, engaging directly with the campus. Unifying these contrasting expressions is a rigorously consistent structural logic, mostly through using a trussed metal framework augmented by aluminium profiles. Angled at 45 degrees across most modules, these elements form a delicate veil across the upper floors while mirroring the angular motif of the stone cladding below. This repetition of geometry operates at multiple scales, from the macro-level structural system down to the minutiae of cladding details, generating a striking cohesion.

The fins, in effect, replicate the rhythm of the underlying iron trusses, reinforcing the building's tectonic harmony. The building's design also advances an argument for interdisciplinarity, both programmatically and symbolically. This is most explicit in the bridging element that Moneo and his team conceived to connect the existing structures. During the inauguration, this architectural intervention was framed as a conceptual mediator, one that physically and metaphorically unites institutional legacy with future academic ambitions (The Record Staff, 2010). The gesture thus operates on multiple registers, spatially integrating segregated disciplines, while materially and formally negotiating between historical context and contemporary innovation. These were the same arguments that exhaustively support the construction of Manhattanville.

It would be mistaken, however, to assume that already consolidated campuses such as Morningside Heights or the Columbia IMC were stagnant in terms of construction. The example just mentioned, Moneo's Northwest Corner Building, demonstrates this clearly. This is also evident in the case of the Roy and Diana Vagelos Education *Center*, which was designed by the firm Diller Scofidio + Renfro in collaboration with the firm Gensler. Completed in 2016, the building is located on the Medical Campus in a predominantly residential area of Upper Manhattan. The Vagelos *Center* is affiliated with New York-Presbyterian Hospital, the teaching institution for both Weill Cornell Medicine and Columbia University's College of Physicians and Surgeons (Figures 65; 66). The architectural strategy centres on dynamic staircases and bleacher-like seating positioned near glazed façades, integrating educational activities with the urban environment and providing opportunities for informal interaction.

The building's most prominent feature is its southern section, known as the "study cascade". Organised through a sequence of double- and triple-height spaces, this element integrates circulation with areas for informal gathering, alternating between staircases, stepped seating, and open platforms. Frequently mobilised in promotional material by both the university and the architectural practice, the study cascade is presented as a spatial analogue to a pedagogical shift in medical education, from lecture-based instruction to collaborative, team-oriented learning. Extensive glazing renders this internal organisation visible from the city, framing transparency as both architectural device and institutional statement. Of note is the visual continuity established between the elevated square above the garage entrance, also serving as the building's structural base, and the full vertical extension of the southern elevation. The cascade rises uninterrupted across the building's fourteen floors, producing a strong sense of formal and spatial unity.



Figure 65. Roy and Diana Vagelos Education Center. 2019.



Figure 66. Roy and Diana Vagelos Education Center. 2019. Source: Architectural Record. With amendments by the author.

This effect is reinforced by the building's vertical circulation system and by the deliberate interweaving of formal and informal teaching spaces. Cantilevers of approximately eight metres further contribute to this strategy, opening views and activating portions of the southern façade. A cast-in-place concrete core anchors this expressive section to a more conventional curtain-wall tower, which accommodates what the architects describe as active learning classrooms, organised as a sequence of specialised teaching environments. These more regular spaces nonetheless incorporate advanced academic and scientific facilities, including a large anatomy room supported by digital equipment and screens, which replace the human bodies traditionally employed in this mode of instruction (Diller Scofidio + Renfro & FXCollaborative, 2025b).

Gonchar (2016) characterises the southern elevation of the *Vagelos Center* as “attention-grabbing”, a description that is difficult to dispute. Its angular planes, extensive glazing, and projecting volumes are articulated through a composite envelope of metal panels, metal screens, and a glass curtain wall. Much of the so-called study cascade is executed in glass fibre reinforced concrete, arranged as ribbon-like bands that appear to spill down the façade. As Gonchar notes, these elements are not always convincingly resolved, particularly where the expressive intent outweighs constructive clarity. Through this composition, the university and its architects cultivate an image of costly transparency, presenting openness as a defining architectural value. Yet this openness proves largely representational. In practice, access to the elevated plazas produced by the building's form is restricted to authorised users, signalling a managed and selective relationship with the city rather than a genuinely public one. A comparable condition is evident at ground level, where entry is immediately filtered by turnstiles. Transparency here functions less as a mechanism of public inclusion than as a visual device.

In what would eventually become the Manhattanville campus, the velocity in which Columbia acquired property was impressive. The university had been steadily acquiring properties in Manhattanville since 1994, signalling its long-standing intentions. In less than 3 years, the university passed from owning two properties in the project area to, by the time they announced its plans to expand into Manhattanville in 2003, controlling over of

51% (Matter of Kaur v. New York State Urban Dev. Corp., 2009)⁹⁰ In 1991, the economic planning body for part of West Harlem initiated a comprehensive redevelopment strategy. The plan sought to establish a new development model, prompting the involvement of urban planners to draft a proposal that became known as Plan 197-a, named after the relevant section of the New York City Charter. Revised in 2001 and approved by the Department of City Planning in 2005, Plan 197-a aimed to address the escalating tenant displacement crisis in greater Harlem by enhancing local jobs, housing, and educational infrastructure. The proposed Manhattanville Campus, located within an area already supporting 1,600 manufacturing and retail jobs, was envisaged as a central component, leveraging its proximity to public transit and residential facilities to create new employment opportunities and public space (S. Gregory, 2013).

By early 2003, Columbia presented its own General Project Plan (GPP), a move that led to significant developments the following year. In 2004, the Empire State Development Corporation (ESDC), the only state agency with authority over eminent domain,⁹¹ began actively supporting the GPP, hosting multiple meetings with university officials and consultants. In response to the growing community opposition, Columbia enlisted the firm AKRF to assist planning, which included an environmental impact assessment.⁹² A subsequent study deemed the area "blighted," further advancing an expansionist agenda, despite mounting protests from students, faculty and residents. Two groups were particularly active in voicing their discontentment. The Coalition to Preserve Community, established in 2002 specifically to oppose the expansion (some sources cite 2003), and the Student Coalition on Expansion and Gentrification (SCEG), formed in 2003, asserted strong opposition.⁹³

⁹⁰ "In 2000, Columbia owned only two properties in the Project area. By early October 2003, Columbia controlled 51% of the property in the Project area – 33% of which was still privately owned." See https://www.nycourts.gov/REPORTER/3dseries/2009/2009_08976.htm

⁹¹ Eminent domain refers to the state's authority to appropriate private property for public use, requiring the provision of "just compensation" to the owner(s) for the seizure.

⁹² The final version of this document was produced in 2007. AKRF et al. (2007). Final environmental impact statement Manhattanville. See: nyc.gov/site/planning/applicants/env-review/manhattanville-west-harlem.page

⁹³ See: <https://scegblog.wordpress.com/about/>

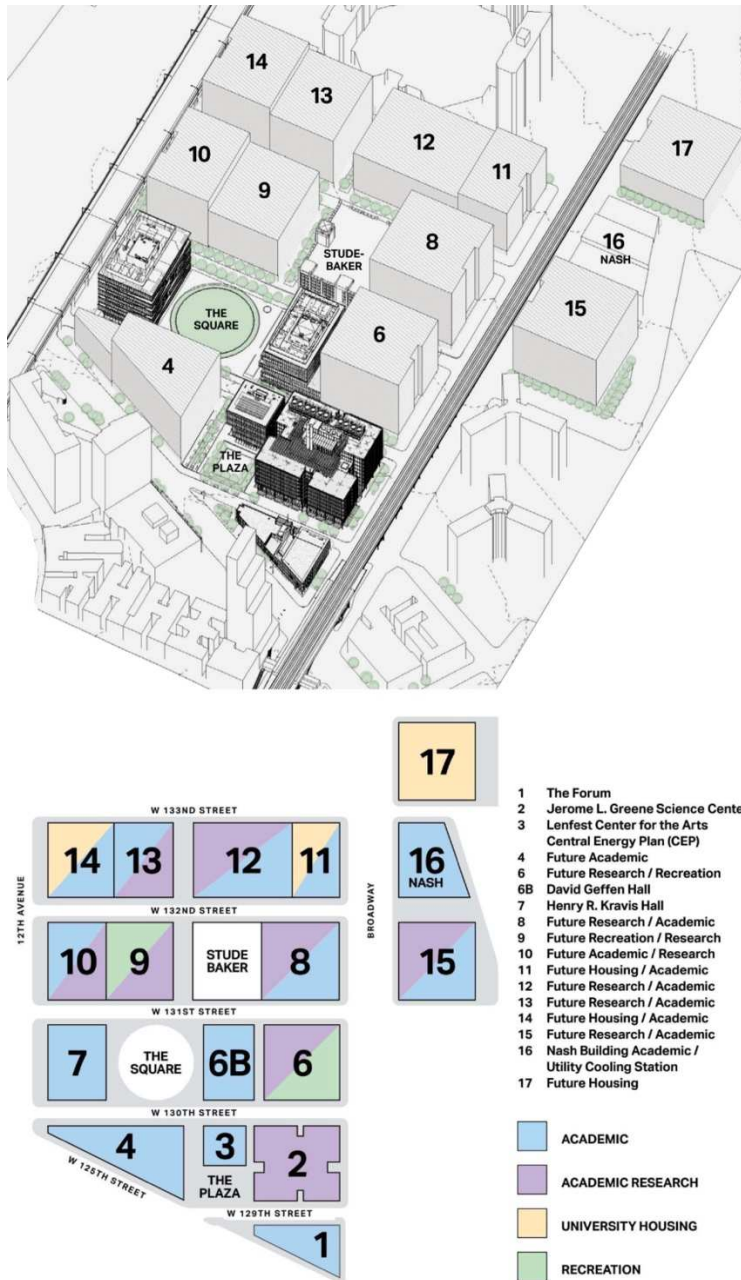


Figure 67. Manhattanville zoning. Source: Columbia & Bond. (2022). Manhattanville Campus Master Plan Summary Report. Columbia University in the City of New York. With amendments by the author.

The ESDC officially declared in 2008 its intention to use eminent domain and displace the remaining property owners from Columbia's planned expansion area. This decision followed a contentious process initiated in 2006, when the ESDC commissioned AKRF (which is the same firm previously hired by Columbia to develop the studies for the neighbourhood) to conduct a comprehensive neighbourhood conditions study in Manhattanville. The study, published in November 2007, reaffirmed earlier findings that designated the area as blighted, which provided the legal grounds for the state's intervention (DeMott, 2017). The university asserted that its project could revitalise the area, and technical agents confirmed an urban decay or blight was occurring. Consequently, employing a state body to compel property owners to sell was legally justified (Figure 67).

In *A Standardless Standard*, Kamen (2012) criticises the decision of the New York Court of Appeals to allow the ESDC to seize land in Manhattanville through eminent domain and subsequently sell it to Columbia University. He argues that this action misinterpreted the Public Use Clause of the Fifth Amendment, which restricts the government's authority to take private property solely for public use, with appropriate compensation. Kamen contends that judicial oversight should be stricter in such cases, requiring substantial evidence to prove that the public purpose is not a pretext for private gain. For Kamen, the criteria for declaring an area blighted have expanded significantly, encompassing a broad spectrum of factors such as the mere absence of economic development. Such interpretation starkly contrasts with the traditional notion of blight, which was narrowly defined and primarily associated with slum areas whose removal was deemed necessary to protect the health and welfare of the surrounding community.⁹⁴

Columbia, an institution that owns more addresses than any other private entity in New York City, deepens its urban presence with the Manhattanville Campus by Renzo Piano and

⁹⁴ This echoes Gordon (2003) when he argues that local governments, incentivised by ambiguous state laws and the allure of federal grants or an increased tax base, are often tempted to stretch how blight is defined. This expansive definition allows authorities to justify condemnation under the guise of promoting economic growth, rather than addressing genuine urban decay. In his view, the case exemplifies a failure to meet this standard, as the decision appeared to favour the university's interests more than a legitimate public need.

SOM⁹⁵ (Small & McHugh, 2018). Located between 125th and 133rd Streets in West Harlem, with boundaries on Broadway and 12th Avenue/Riverside Driveway, Manhattanville campus introduces a new phase in the university's contested relationship with surrounding communities. The construction of the Manhattanville campus involved acquiring businesses and demolishing numerous structures, preserving only what was strictly necessary.

The Columbia Daily Spectator supplement of 23 April 2004 offered a pointed and almost unsanctioned reading of Columbia's planned expansion into Harlem and Manhattanville. (Columbia Daily Spectator, 2004) It raised the questions that the official narrative tended to mute, including whether rising property values would displace long-standing residents; whether the project promised any substantive benefit to the surrounding community; and how the neighbourhood's historic character might be altered in the process. The supplement documented the overlaps between the proposed campus and the existing commercial landscape, also through mapping essential services and local businesses, which situated the project firmly within its broader socio-economic terrain.

Its cover presented the blocks designated for redevelopment through an aerial photograph that captured the area's overall character including the precinct framed by the Hudson River to the right and downtown Manhattan receding in the distance (Figures 68, 69). It further emphasised the contrast between the neighbourhood's existing fabric with its distinctive industrial and simple buildings, and the transparent, planar volumes of the proposed scheme that Renzo Piano's and SOM's sketches showcased for the new campus. Unlike McKim's plan, which worked through conforming a free space inside the existing block structure, the new design moves in the opposite direction, using the city streets themselves to articulate the different parts of the campus complex. Subtle hierarchies are produced through variations in street width, landscape treatments, flowerbeds, and tree-planting patterns. Near the centre of the ensemble, though still shaped by the street grid that organises the campus, lied a square intended to establish a sense of centrality while

⁹⁵ Up to today, Columbia holds approximately 246 properties in Manhattan. Although the footprint of its properties ranks Columbia University in seventh place, in terms of actual buildings and parcels of land owned, it's only second to the New York City itself (Small & McHugh, 2018).

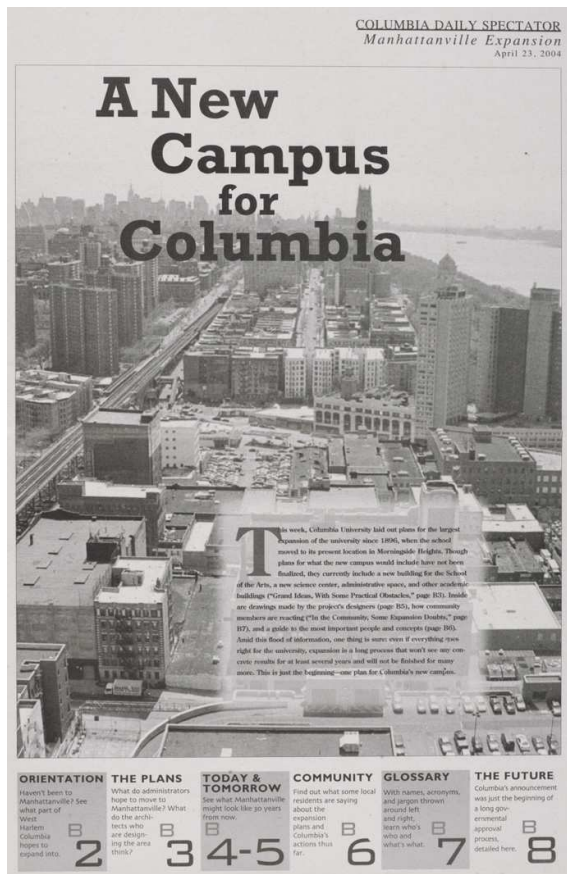


Figure 68. Columbia Daily spectator. Source: Archive of the Columbia Daily Spectator.

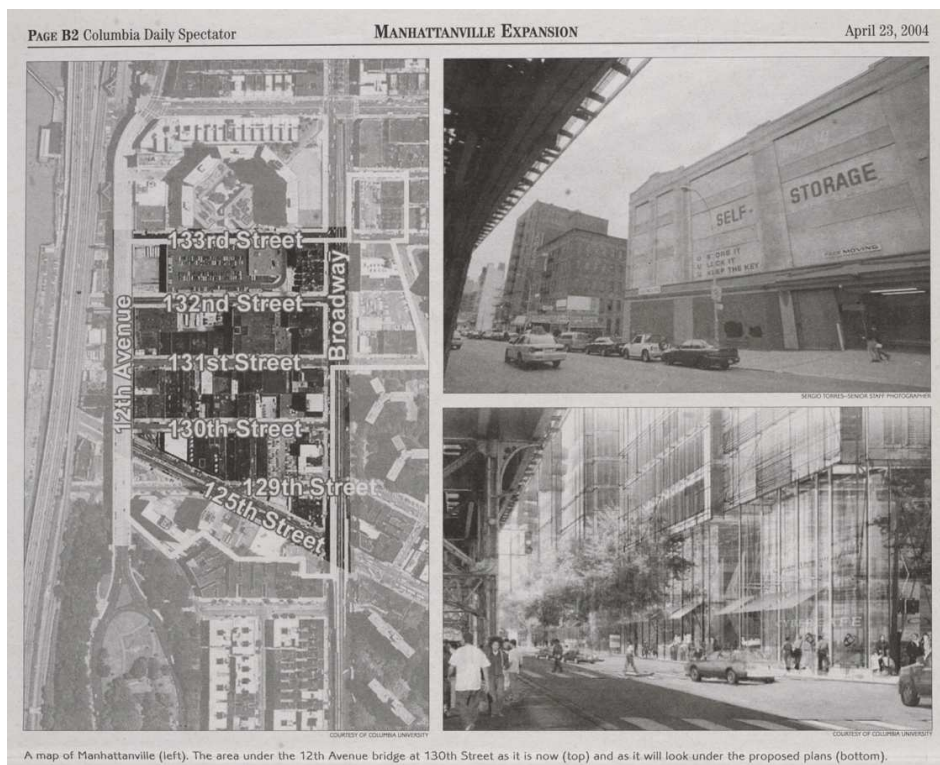


Figure 69. Columbia Daily spectator. Source: Archive of the Columbia Daily Spectator.

connecting the new complex to the few existing structures preserved by the university, most notably the Studebaker Building immediately to the north of the site.

Neither Renzo Piano nor SOM was chosen by accident. SOM, founded in the 1930s by Louis Skidmore, Nathaniel Owings, and John Merrill, became widely recognised in the 1950s for a modernist, corporate design ethos in which emerging material and technological developments shaped a new aesthetic language and drew high-profile corporate clients to the firm (Adams, 2007).⁹⁶ Today, SOM operates as a multinational company, with offices in more than three countries. Renzo Piano, by contrast, presented a far less corporate profile at the outset of his career. His early work demonstrated a marked interest in construction methods, an orientation reflected even in the name of his practice, the Renzo Piano Building Workshop (RPBW). His practice moved from almost experimental projects in the field of technology, such as the Centre Pompidou, a collaborative work with Richard Rogers in 1971, to large-scale urban developments, from which one of the most emblematic is Potsdamer Platz in Berlin. The preference shown by many corporations, as well as cultural and academic institutions, for RPBW is one of the elements that connects the two architectural practices. A passage from Foster (2011), which we quote in full as it clearly captures the cultural and economic reach of RPBW, makes this particularly clear:

"Among his buildings [...] are the Menil Collection in Houston (1982-87), an exquisite museum that distinguished the more classical Piano from the more Pop Rogers; the Beyeler Museum in Basel (1991-97) and the Nasher Sculpture Center in Dallas (1999-2003), two more elegant temples devoted to private art collections; the Niccolò Paganini Auditorium in Parma (1997-2001) and the Parco della Musica in Rome (1994-2002), [...]; the Paul Klee Museum in Bern (1999-2006) and the Morgan Library extension in New York (2000-06); new wings for the High Museum in Atlanta (1999-2005), the Los Angeles County Museum of Art (2003-08), and the Art Institute of Chicago (1999-2009); and still to come, among other such projects, are makeovers of the Isabella Stewart Gardner Museum in Boston and the Kimbell Art Museum in Fort Worth, as well as an annex for the Whitney Museum of American Art in New York. So, too, in the academic category Piano has schemes underway for such universities as Columbia, Harvard, and Michigan. His fifty-two-story tower for the New York Times on Fortieth Street and Eighth Avenue was completed in 2007, and his California Academy of Sciences in San Francisco, which boasts

⁹⁶ As Martin (2003) points out, these buildings often served a dual purpose: beyond their practical function, they were also designed to promote the flagship products of the companies that commissioned them. In the case of Lever House, built for a soap company now part of UNILEVER, the themes of hygiene and cleanliness were embedded in the architectural concept and were highlighted by contemporary critics.

an undulating roof with turf and skylights, was finished in 2008—and these are just two of his many corporate-institutional jobs of late. That Piano has four major projects in Manhattan alone—a new campus for Columbia to come uptown, the Times tower and the Morgan complex completed in midtown, and a satellite for the Whitney to appear in Chelsea—is extraordinary: When was the last time one office had so many important pieces on the Monopoly board?” (Foster, 2011 p. 53)

Columbia, as we have been seeing, is an important piece in New York’s fabric. If the Morningside Heights campus resorted to a more restrained and internalised alternative of occupation through the McKin project, the Manhattanville expansion is fundamentally inscribed within the Manhattan grid. The project’s adaptation to this matrix resonates with the density and congestion that scholars, most notably Koolhaas (1978), have identified as the defining paradigm of Manhattan’s metropolitan condition. Like much of New York’s urban fabric, the campus emerges through the strategic occupation of blocks whose forced proximity, their juxtaposition within the grid’s relentless geometry, heightens their individual architectural identities through the same lexicon of highly technological and transparent architectural and urban artefacts, but also individualise the group when juxtaposed to the remaining parts of former industrial context and to its less privileged neighbours (Adams, 2007).

This tension between collective urban form and institutional presence emerges as the project’s central dialectic. In this reading, the grid corresponds to an urban epistemology in which adjacency does not entail assimilation. Buildings assert their difference through formal and programmatic contrasts while remaining subject to the city’s underlying structural order. The project’s public space interventions respond in distinct ways to Manhattan’s grid, a layout that critics have long argued constrains conventional forms of civic programme and limits the possibility of genuinely open urban space.⁹⁷ This stiffness persists even within Columbia’s Morningside Heights campus, where deliberate deviations

⁹⁷ The full impact of Manhattan’s grid on public space construction requires more extensive analysis than our context allows. Since the nineteenth century, critics have consistently highlighted its deficiencies. As Reps (1997) observes, the grid created numerous urban challenges, as it implicated insufficient space for public buildings, chronic traffic congestion at intersections, inadequate north-south thoroughfares, and excessive development on narrow lots resulting from shallow blocks. Furthermore, the street network showed complete disregard for natural topography. These represent only some of the system’s failures to adhere to established civic design principles that could have provided varied street perspectives and designated focal points for significant buildings and functions.

from the grid create alternative spatial relationships between buildings and open areas. Such approach appears most notably in the Morningside Heights central green space between the Low Memorial Library and the Butler Library, an esplanade that virtually occupies the W 116th street, and where primary pedestrian axes collectively establish grand visual corridors absent in the surrounding gridiron urban fabric.

The Manhattanville campus is composed of a series of purpose-built academic and research buildings, predominantly characterised by transparency and inserted into the urban fabric of West Harlem as an organised ensemble. At its southern edge stands The Forum, a building that occupies a triangular site defined by the intersection of Broadway, 129th Street, and 125th Street. Just to the north, the Jerome L. Greene Science Center (JLGSC) stands on a large trapezoidal plot and serves as one of the campus's anchor buildings. This site also includes a public plaza and is intended as a key point of interaction between the university and the surrounding community. The more western portion of this plot, which is triangular, remains under development and is designated for future academic use. Further north, between 130th and 131st Streets, stand Henry R. Kravis Hall (HRKH) and David Geffen Hall (DGH), two buildings dedicated to business education and executive learning.

One could argue that the university reflects and replicates broader patterns of urban development visible throughout New York City. The complex dynamics of gentrification seen in areas such as SoHo, Brooklyn, and Hudson Yards, where striking, high-profile buildings would even include separate entrances for affluent condominium owners and subsidised tenants, illustrate similar tensions.⁹⁸ Academic expansion has followed comparable trajectories. Though smaller in scale, examples like the academic building for Cooper Union's Albert Nerken School of Engineering at (Figure 70) have had a notable impact on both land values and the institutional image they help to construct.⁹⁹

⁹⁸ See, among others, Caldeira, M. (2021).

⁹⁹ Thom Mayne and his architectural firm, Morphosis, conceived and designed the structure between 2004 and 2006. In addition to accommodating the Albert Nerken School of Engineering, the building also houses the Faculty of Humanities and Social Sciences, the Louis and Jeannette Brooks Computer Center, and the Herb Lubalin Study Center. The organisation found itself embroiled in controversy when it began charging students tuition fees shortly after the building was completed. More recently, the school is planning to return to the free tuition policy, at least for part of its students (Sparks, 2024).



Figure 70. Cooper Union's Albert Nerken School of Engineering. Designed by Thom Mayne, Morphosis + Gruzen Samton-IBI Group. Photo: Ajay Suresh, 2019. Source: WM Commons.



Figure 71. NYU Bookstore, located on Broadway, near Washington Square Park. 2024.

Equally significant is New York University's (NYU) long-term development strategy (Figure 71). The proposed NYU 2031 plan, first announced in a 2007, aims to introduce roughly 2.5 million square feet of academic, residential, and commercial space mostly across the Washington Square Village and University Village, just south of the main campus.¹⁰⁰ In New York, the expansion of universities—most notably NYU and Columbia—has long coincided with a broader weakening of public authority. These institutions have increasingly exercised influence over the urban landscape, regulatory frameworks, and governance structures. Even where universities are not the direct agents of redevelopment, investors and real estate developers intervene, producing high-end student housing that frequently displaces residents in need of affordable accommodation.

Such patterns align with the rise of New York's intellectual, cultural, and education-based industries, which have become central to the city's economy and identity (Baldwin, 2021a). Official accounts of the Manhattanville campus development repeatedly emphasise the idea of permeability. This notion, however, unfolds in a threefold and internally contradictory manner (Columbia et al., 2022). First, most buildings occupy their plots almost entirely, leaving only limited open areas within the blocks. These spaces are concentrated primarily around the JLGSC and the Lenfest Center for the Arts (LCfA), as well as in the interstitial zone between the two Columbia Business School buildings. This extensive site coverage already complicates any straightforward claim to urban permeability.

Second, a more direct form of connection is articulated through what RPBW and SOM describe as the "urban layer", referring to the ground floors of nearly all campus buildings. These levels accommodate public programmes and adopt an architectural language defined by transparency and visual continuity with the street. Third, above the ground floor, permeability is pursued through material strategies. Here, transparency becomes

¹⁰⁰ In the 1960s, these very blocks were the site of major disputes between renowned urban theorist Jane Jacobs and city planner Robert Moses. The university's controversial NYU 2031 expansion plan, announced under the leadership of President John Sexton, was met with great resistance. Unlike Columbia, whose expansion occurs in a historically Black and working-class area, NYU now operates within a predominantly white and affluent neighbourhood, one of the wealthiest in the United States (Baldwin, 2021).

primarily visual rather than spatial, as façades employ glazing and lightness to suggest openness without necessarily extending public access.

If we take the description of the project provided by the architects, we will find clichés typical of a kind of aesthetic of connectivity and flows:

*“The proposed Manhattanville Campus is a vision for a new campus of the 21st century, rooted in a commitment to diversity and **accessibility**, while at the same time meeting the growing space needs of the University.[it] includes academic, research, recreational, residential, administrative, and support space for the University, as well as **publicly accessible open space** and commercial, cultural, and social spaces, seeking to actively engage with the community. **Perhaps the overriding feature of the overall scheme is its permeability.** Unlike the gated campus just five blocks south at Morningside Heights, the Manhattanville development is designed to be part of the neighbourhood and open to all. [...] (RPBW & SOM, 2007, emphasis added)*

Permeability, framed as an aesthetic of connectivity, translates contemporary demands for openness into spatial and communicative mechanisms linking institutional and urban systems, thereby rendering the university legible as an integrated component of the city (Map 10). This material aesthetic projects continuity between public and institutional realms, implying that social difference can be reconciled through spatial design. At the same time, transparency functions as a communicative technology. That implies an interface intended to channel movement, information, and legitimacy in support of the contested and politically fraught process through which the campus was implemented.

This arrangement transforms architecture into a medium that performs institutional narratives of inclusion while relying on concealed systems of control and support. Beneath almost the entire campus lies a continuous service zone that underpins daily university operations. This subterranean layer accommodates research support facilities, a shared loading dock for all deliveries, and an extensive network of freight and utility corridors linking the buildings below ground. It also contains parking areas and two energy centres supplying steam, chilled water, and other essential utilities. Notably, parts of the academic and programme spaces, including those of the Business School (HRKH and DGH), extend into this underground infrastructure (AKRF et al., 2007).

*University programs have been pushed up a floor or more above street level, creating what has been termed the **“Urban Layer”, whereby the***

ground floor of each building on the new campus will be devoted to public activity.

*Retail, restaurants, galleries and performance spaces, health clinics, community meeting space and a variety of University-community partnerships will **fill this hybrid space, accessible to all**. Throughout the new Manhattanville Campus, all streets will remain public and open to vehicular traffic, and pedestrian access through the campus will be enhanced by tree-lined streets and widened sidewalks connecting the campus and the neighbourhood to the Hudson River Waterfront Park. Together with the "Urban Layer", **a network of large and small open spaces** and a north-south pedestrian route weaves the campus together.*
[...](RPBW & SOM, 2007, emphasis added)

The significance of this subterranean network of tunnels is a central theme in Reinhold Martin's (2016a) essay *Made in Manhattanville*, in which he examines the concealed infrastructures that sustain the campus and expose the less visible processes shaping its development. Martin interprets this extensive underground system as an expression of the spatial control and property regime that underpins the project.

Extending across seven storeys, the network links all buildings through parking areas, loading docks, mechanical spaces, and service corridors, an arrangement made possible only by the university's continuous ownership of the entire site. This concealed foundation enables Piano's and SOM's vision of openness and community above ground. By concentrating technical and logistical operations below street level, the design preserves the urban grid and produces transparent ground floors that claim to invite public access. Yet, as Martin argues, these gestures of visibility and inclusion coexist with less legible forms of power and negotiation. The openness that defines the campus thus depends on an infrastructural base that remains hidden, functioning simultaneously as technical support and as an instrument of control.



Map 10. Columbia University Manhattanville campus. 1) Broadway; 2) Riverside Driveway; 3) W. 125 street. A) Studebaker Building; B) Kravis Hall; C) David Geffen Hall; D) LCfA; E) JLGSC; F) The forum; H) Prentis Hall; I) 600 W 125th street; G) 560 riverside. Source: Google Earth.



Figure 72. Render view south on Broadway from West 131st Street. Source: AKRF, Emisstar, HydroQual, & The Sam Schwartz Company. (2007). Final environmental impact statement for the proposed Manhattanville in West Harlem rezoning and academic mixed-use development.

Palaces and clean machines

The building would read as a singular, voluminous rectangle were it not for two intersecting axes that divide it, both visually and functionally, into four distinct volumes. These axes also organise the research floors, which constitute the core of the programme. Vertical and horizontal circulation is concentrated primarily along the north-south axis, which runs through the lobby, while the east-west axis accommodates meeting rooms, break spaces on each level, and a generous lecture hall at the top of the building. From the exterior, these axes register less as additions than as subtractions: carved voids within the massing that structure the building's composition (Figures 73; 74). Pale metal structural elements frame the façades, reinforcing this articulation. When the JLGSC opened in spring 2017, it materialised a longstanding representation of how Columbia had conceived and projected its institutional and urban strategies.

Columbia's communication around the Manhattanville campus expansion project had long relied heavily on a carefully crafted narrative of innovation and social contribution, disseminated through press coverage, institutional reports, and architectural statements. The JLGSC, the Manhattanville campus project's flagship building, was announced in 2006 by the then Columbia's president Bollinger as a breakthrough for neuroscience research, enabled by a \$200 million endowment (L. Bollinger, 2006; Columbia, 2016).

The Martimer B. Zuckerman Mind Brain *Behavior* Institute housed within the building was conceived alongside the architectural project itself; the two were developed in parallel in a broader institutional effort to construct both infrastructure and identity at once. The JLGSC appears as joint construction of scientific infrastructure, i.e., the institute itself, which did not exist before, and the spatial product that would house it. Both RPBW and Columbia articulate the JLGSC through three recurring images that function as explicit analogies and metaphors. The first is the "palace of light", a direct reference to the Crystal Palace and its association with transparency, technological display, and progress. RPBW, in collaboration with Davis Brody Bond and Body-Lawson Associates, invokes the notion of a palace to project a refined image of scientific pursuit through the building's design, an idea explicitly associated with historical architectural precedents (Columbia, 2017).



Figure 73. JLGSC. 2017. Photo: Nic Lehoux.



Figure 74. JLGSC. 2024.

The second draws on the image of DNA, aligning the building's spatial organisation with the scientific research conducted within it (Figure 75). The third image presents the building as a machine or, more precisely, as a "clean machine", and invokes an ideal of scientific efficiency, sustainability, precision, and controlled environments. The machine operates as a signifier, reactivating associations with industrial form and mechanisation that were central both to twentieth-century architectural culture and to past of Manhattanville.

This technological ambition is reinforced through the integration of motorised shading devices and rooftop mechanical systems intended to regulate energy performance with precision (RPBW, 2025). The palace, the DNA, and the clean machine function as stabilising metaphors, gathered under the institutional authority of the university. They offer symbolic reassurance and a sense of continuity, lending legitimacy to claims of innovation at a moment marked by disruption and unease, particularly in relation to the campus's contested urban effects.

Amid the controversy surrounding the construction of the Manhattanville campus, the JLGSC, its inaugural structure, is a front-line figure tasked with offering a first glimpse into the campus's future. Several institutional capabilities were activated in the process of making this infrastructure feasible. The donations that made the building possible reflect, above all, a strong capacity to mobilise financial resources. Equally significant is the strategic emphasis on health-related research, a domain with considerable influence on public perception. The programme reinforces this positioning. The JLGSC houses, along with the Mortimer B. Zuckerman Institute, a Wellness Centre, an Education Lab, and the Synapse, an exhibition space dedicated to communicating the scientific research developed within the Institute itself. As the then president Lee C. Bollinger remarked: "The JLGSC, on our proposed Manhattanville campus, will forever symbolise our ongoing effort to understand the human organism." He further stated:

"This state-of-the-art facility will be the world's preeminent centre for education and research in the neurosciences and will house many of the most prominent faculty in the field. [...] the Centre will seek to illuminate the brain and mind, with the ultimate goal of decoding their mysteries, curing the diseases that impair their functioning, and unlocking still more of their untold potential" (L. Bollinger, 2006).

Bollinger's remarks are full of gratitude, particularly in the manner in which the donation that enabled the JLGSC is framed within the longstanding philanthropic relationship between the Greene family, through its foundation, and the university. The endowment, the largest in Columbia's history, is presented as a singular act of generosity and as a decisive instrument of institutional development and long-term strategy.

Bollinger retraces the donors' trajectory at points where it intersects with the university's own history and with the broader narrative of New York City and its cultural and urban institutions. From a Latin American perspective, particularly in the Brazilian context, the scale and continuity of such philanthropic practices are far less common. In the United States, by contrast, philanthropy has long operated as a central mechanism through which higher education institutions expand and consolidate their position. A decisive moment in this process is the Morrill Land-Grant Act of 1862, which provided federal land to states to support the establishment of colleges and universities. As Singh (2021) observes, educational institutions had received public land well before the Act; its significance lay in formalising a system that institutionalised exclusion. Approximately eleven million acres, expropriated from Native American communities, were mobilised to finance land-grant institutions. Over time, donation methods became more sophisticated and began to include other types of agents and private institutions.¹⁰¹

The endowments that drove the growth of prominent institutions like Yale in New Haven, for instance, were deeply intertwined with state authority and infrastructures that systematically exploited the labour of marginalised communities worldwide. Elihu Yale, the benefactor that the university honours in return for large donations made at the beginning of the eighteenth century, was a merchant with the British East India Company, amassed his wealth through exploitative tax policies in colonial India (D. Huyssen, 2016). Further

¹⁰¹ In her ethnographic study of high-net-worth donors, Ostrower (1997) argues that elite philanthropy functions less as a series of individual charitable acts than as a collective way of life that defines and sustains upper-class social boundaries. Donors, she observes, tend to prioritise institutions such as universities and museums not because these are the most pressing sites of need, but because they provide the cultural and social infrastructure through which elite cohesion and identity are reproduced. Poverty and social welfare are more often regarded as the responsibility of the state, while private philanthropy is directed towards the "enrichment" of public life through the support of prestigious institutions. This institutionalisation of philanthropic values converts private wealth into durable social status and a shared cultural legacy, enabling its transmission across generations and legitimising class position through the language of public stewardship.

south, as Winling (2010, p.89) ingeniously puts it, "oil is the lifeblood of the University of Texas. It courses through the financing of every building, funds endowed chairs around the university, and monuments on campus serve as testaments memorialising individual oil wells." In Columbia's case, and in the case of the generous donations from the Greene Foundation, this money becomes as eloquent an object as a "palace".

As we have seen, the notion of the university as a palace is by no means recent.¹⁰² The idea of "palaces" or "cathedrals of science" emerged in Europe as early as the nineteenth century (Gerbord, 2004). Within the context of Columbia, the image of the palace acquires renewed significance. The explicit invocation of the Crystal Palace, together with the emphasis on the glass materiality of the JLGSC, serves to reactivate this symbolic form. Less immediately apparent, yet no less consequential, is the reference to Paxton's Crystal Palace as a model for reorganising internal spatial logic and enhancing visual permeability between interior and exterior. What becomes evident is a reliance on the canon, indeed, on the paradigm, that the Crystal Palace has come to embody, functioning as a source of representational security. Association with such a canonical architectural model offers reassurance, even as the meaning of the reference has been continually reshaped through processes of repetition, reinterpretation, and iteration.

The Crystal Palace can be read both as a spatial product and as an active driver of the mentality that underpinned the great exhibitions of the nineteenth century. Emerging alongside industrialisation, these exhibitions were conceived to display its achievements. Although initially marked by a stronger national character (closely tied to the decline of the guild system) they rapidly developed into global spectacles celebrating free trade and industrial modernity. Joseph Paxton designed the Crystal Palace for the Great Exhibition of 1851 by adapting construction techniques developed for glasshouses (Frampton, 1980). The result was a vast, orthogonal, three-tiered glass structure, whose components closely resembled those of the giant lily house he had designed the previous year (Figure 76). Alongside these direct precedents drawn from Paxton's own work, the building also absorbed more distant references, which further informed its architectural setting.

¹⁰² See our Chapter1 "...And on its learned head it bore a crown of many towers."

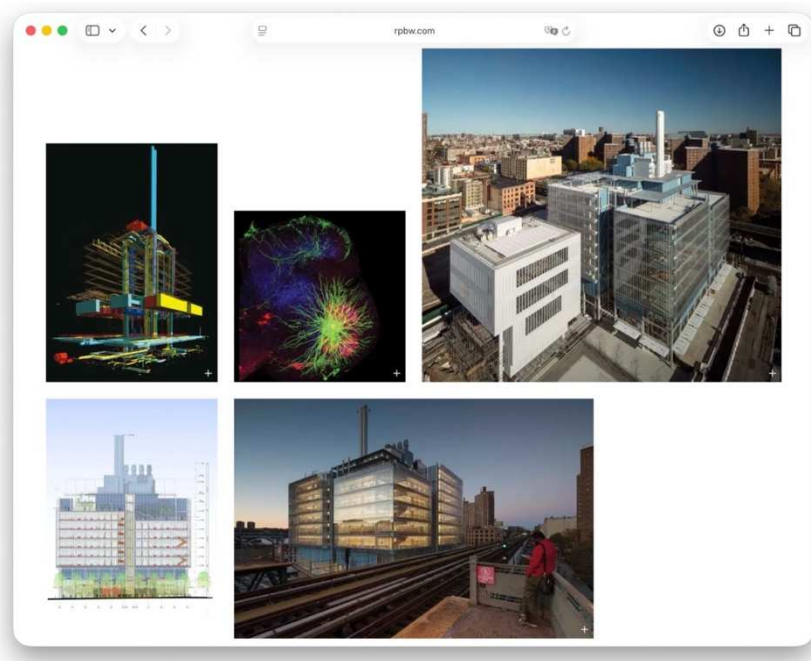


Figure 75. The webpage on the RPBW website presents the building together with a fluorescence micrograph of brain tissue. 2025. Source: RPBW.

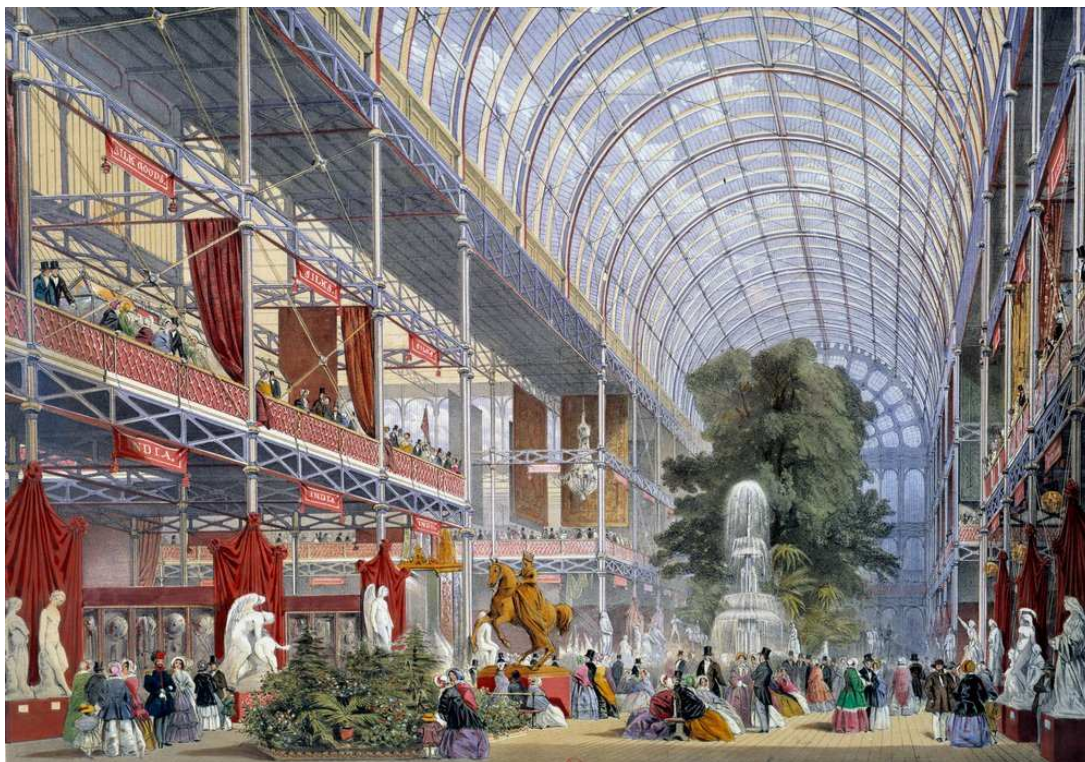


Figure 76. A visual depiction of Sir. Joseph Paxton's transept within the Crystal Palace during London's 1851 Great Exhibition in Hyde Park. Source: Encyclopædia Britannica.

Frampton (1980), for instance, highlights the increasing use of “cast-iron columns and wrought-iron rails, used in conjunction with modular glazing [which] had become the standard technique for the rapid prefabrication and erection of urban distribution centres—market halls, exchanges, and arcades.” This latter typology, he notes, found development in Paris as early as in the Fontaine’s Galerie d’Orléans, at the Palais Royal in 1829. Especially when we think about these galleries, but also when we talk about these spaces for major exhibitions, as the Crystal Palace was, an almost inevitable path for the analysis we propose is the liaison of such typologies as the ideological unconscious of modernity and the stages for the fantasy of consumer culture in its nesting form (Buck-Morss, 1999). The container and the contained become conceptually entangled, reinforcing each other’s ideological significance.

If we turn our attention to the immediate context of the JLGSC, an elevated subway station dominates the corner. Modest local commerce lines the street, these are remnants of an older Harlem that continues to endure. Walking north along Broadway from the Morningside Heights campus, one reaches the station quickly on foot. The infrastructure supporting the elevated tracks rises first into view, concealing parts of the JLGSC behind it when approached from this direction. Arriving by subway, however, offers the opposite experience, as one emerges onto the platform with a privileged view of the complex and the glazed corners of the building. These transparent edges reveal glimpses of the programme in spaces defined by warmer tones that stand apart from the pale hues of the structural framework and opaque wall segments. Blue detailing interrupts this palette in particular places. It is precisely these blue elements, mostly hiding mechanical functions in the second floor, that mediate the upper volumes and the transparent ground level. Though opaque, they accentuate the glass surfaces around them and sharpen the contrast to the prevailing transparency that defines the structure.

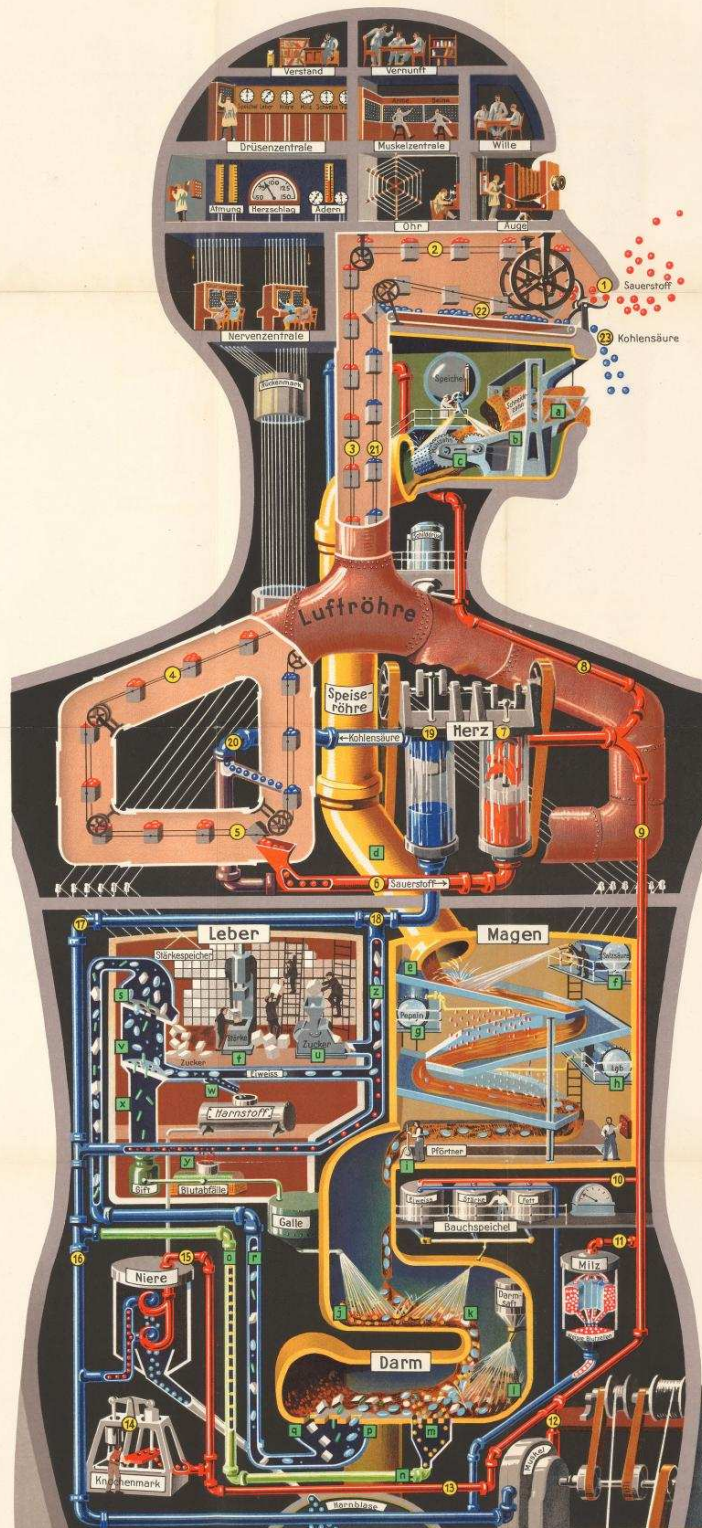
The stepped roofline adds complexity to the building’s upper massing, where two accessible terraces offer views across the city and towards the Hudson River. Resembling an industrial facility, the rooftop machinery remains visible, exposing the building’s highly engineered mechanical systems. Chimneys rising from the basement-level energy plant to the roof of the science centre reference Harlem’s industrial history, the very same the

campus project obliterates. The structural scheme incorporated architecturally exposed structural steel elements throughout, including custom-shaped columns, detailed brace connections, cast components, and deliberate transitions between structural and non-structural systems in mezzanine and shared areas. This approach extended to the rooftop terraces, where trellises and support structures for the cooling towers and chimneys continue the use of exposed steel.

The idea of transparency is consistently rearticulated in the building. This transparency is deliberately linked to the complexity of what is revealed and to the institute's central object of study the human mind and the dense network of relations it produces. The procedure pursued by the architects in the JLGSC recalls a graphic tradition that gained prominence in the early twentieth century through scientific publications addressed to a general audience. Such imagery was not concerned with surface appearance but with explaining how systems operated. It translated complex processes into legible visual narratives, making abstract mechanisms intelligible through spatial and diagrammatic form. A well-known example is Fritz Kahn's *Der Mensch als Industriepalast* (Man as Industrial Palace) (Figure 77). The image represents the human body as an interior landscape of conveyor belts, pipes, control panels, machines, and workers, recasting the organism as a metaphorical factory. For earlier generations, works of this kind served as visual explanations of material and biological processes; today, they are more readily recognised as early forms of infographics.

Beatriz Colomina (2019) has examined in depth the symbiosis between X-ray imagery and architecture. For her, twentieth-century modern architecture cannot be fully understood without acknowledging the profound influence of medical discourse, imaging technologies, particularly the X-ray, and wider cultural preoccupations with health and illness. In this reading, buildings functioned as medical instruments. Beyond the notion of the house as a machine for living, architects frequently conceived architecture as a means of bodily care intended to heal, strengthen, or otherwise regulate their occupants in ways comparable to medical technologies. Colomina thus reframes the history of modern architecture through a medical lens, foregrounding illness, imaging practices, and the body as formative forces shaping architectural form, spatial organisation, and cultural

Der Mensch als Industriepalast



Aus Kahn, DAS LEBEN DES MENSCHEN / Franckh'sche Verlagshandlung, Stuttgart /

Illustration: Frick & Co. Stuttgart

Figure 77. Der Mensch als Industriepalast (The Man as industrial palace), Fritz Kahn and Fritz Schöler, 1926. Source: Klassik Stiftung Weimar.

reception, and in doing so challenges narratives centred solely on aesthetics, function, or technology.

As Sappol (2017) observes, the visual rhetoric of industrial modernity celebrated the machine, the factory, and the logic of production. It adopted schematics, abstraction, and geometry with the exactitude of technical drawing. While rooted in the encyclopaedic imagery of the eighteenth century and the illustrated periodicals of the nineteenth, this representational mode consolidated itself as a distinct artistic and communicative form in the early twentieth century. The German physician Fritz Kahn was among the European figures who first explored this visual language.¹⁰³ Among these images, *Der Mensch als Industriepalast* became the most widely recognised. Sappol argues that Kahn's work located modernity within the human body while simultaneously situating the body within modernity. In this reading, the human organism served as a model of industrial society itself: the body refigured as assembly line, combustion engine, circuit network, or chemical plant, and transformed into a site where technological, physical, industrial, and mechanistic forces converged.¹⁰⁴

Presented as a "clean machine," the JLGSC does not simply reiterate the modernist fixation on the object, whether technological, mechanical, or structural. Rather, it operates as a contemporary building that aligns autonomous formal strategies with its educational programme and with the broader cultural forces shaping the university's relationship to the city. What it nonetheless sustains is the image of a seamless world in which technology and science appear to converge, even as the logic embedded within the building points towards a conception of science distinct from that of modernism. A tension emerges in this

¹⁰³ He published extensively in the science magazine *Kosmos* and later in his multi-volume series *Das Leben des Menschen* (The Life of Man), issued between 1922 and 1931. Comprising five volumes and approximately 1,200 illustrations, many produced on Kahn's commission, the series established his approach to visual explanation (Sappol, 2017).

¹⁰⁴ Much has been written about the influence of machine aesthetics during modernism, to the point that an in-depth review here would be redundant. The machine became so central that it defined what Banham famously called the Machine Age in his classic study (Banham, 1960 [2009]). A period which Banham also argued that was marked by a revolution in sensibility, in which, as he notes citing Theo van Doesburg, every machine was seen as "the spiritualisation of an organism." Any such review would necessarily revisit Futurism and Marinetti's 1909 manifesto, exploring how the Futurists embraced ideas of interpenetration and simultaneity. Their work intertwined multiple perspectives and temporalities, aligning with what Giedion (1948) later described as the modern principle of simultaneity as a way of seeing and experiencing that became emblematic of modern life.

dialogue precisely because the building suppresses the visible machinery and industrial character of its surrounding context while simultaneously projecting the image of a state-of-the-art research facility, conceived as an anchor for the spatial model Columbia aimed to produce.

Spencer (2016) adds a critical dimension to this discussion by analysing how architecture assimilates political demands for openness and informality and converts them into marketable spectacle. He describes this condition as the “hypermarket,” in which institutional prestige and global visibility come to outweigh the very ideals such architecture purports to represent. The JLGSC articulates its intentions through glass façades and an exposed structural frame, elements explicitly linked by both the architects and the university to neuroscientific research and to an ideal of urban transparency. The building operates simultaneously as metaphor and mechanism, as its visible layers of structure, circulation, and laboratory space translate cognitive processes into spatial terms, rendering research and thought materially legible. This alignment between architectural body and human body recalls, again, Colomina’s (2019) analysis in her *X-Ray Architecture*, where modern architecture is understood as a diagnostic instrument that reveals rather than conceals the processes of life. In this sense, the JLGSC extends that lineage by converting exposure into both an aesthetic and an institutional claim, in which scientific transparency is equated with architectural transparency.

At the same time, this visualisation of the building’s internal functions recalls earlier efforts to depict the human body as a machine, most notably in the work of Fritz Kahn. His well-known diagrams, which imagined the body as an industrial palace animated by pipes, conveyors, and circuits, find a telling parallel in the design of the JLGSC. In both cases, the ambition is to render invisible processes visible, that means acting to spatialise thought, metabolism, or research. Yet, as with Kahn’s illustrations, this apparent transparency also entails abstraction and control, translating complex and contingent realities into an

ordered and legible system. In this respect, the JLGSC operates as a planogram¹⁰⁵ in a schematic arrangement that organises functions, flows, and activities in a way that is meant to be immediately intelligible. What is presented as openness and clarity thus also performs a managerial and representational task.

The technical documents submitted to the municipality for approval of the project outlined the new facilities as requiring more space than earlier educational buildings would have, while also stressing the need for flexibility to support emerging research approaches and foster interdisciplinary collaboration. These principles follow recommendations set out by the National Science Foundation (NSF) and the National Institutes of Health (NIH), which advocate for laboratories designed to adapt easily to changing functions without major alterations to their structure or infrastructure (AKRF et al., 2007). Their guidelines discourage overly specific or customised layouts, promoting instead the idea of “generic spaces” (AKRF et al., 2007, p.8) that can accommodate different uses within similar categories. In practice, this emphasis translates into environments designed for multiple users and disciplines, with shared amenities and core facilities. The architectural focus is on creating spaces that can adapt to institutional needs, allowing reconfiguration over time which also ensures operational efficiency and cost control.

The Mortimer B. Zuckerman Mind Brain *Behavior* Institute, directed by the neurobiologist Thomas Jessell in collaboration with the Nobel laureates Richard Axel and Eric Kandel, brings together approximately 850 researchers drawn from nineteen departments. Its declared mission is “to decipher the brain,” based on the premise that understanding how the brain functions, and how it produces mind and behaviour, represents one of the most pressing scientific challenges of the present. Under the slogan “The Future in Mind,” the institute presents neuroscience as a wider cultural undertaking. Significantly, the “Vision” statement explicitly incorporates the JLGSC into this project, framing the building not simply as an infrastructure for research but as an architectural expression of the ambition

¹⁰⁵ Derived from commercial logistics, the planogram serves as a schematic instrument for regulating spatial organisation. It prescribes the precise distribution of goods and circulation routes, thereby choreographing movement and optimising visual accessibility. Beyond its immediate utility, the device functions as a mechanism of abstraction; it reduces complex, dynamic operational flows into a fixed, legible order, ensuring environmental control.

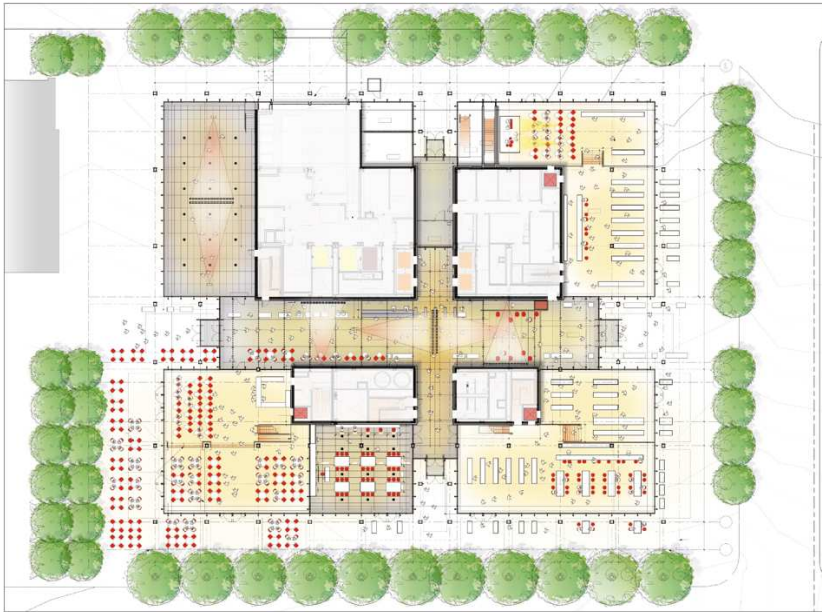


Figure 78. JLGSC ground floor plan. Source: Archello.

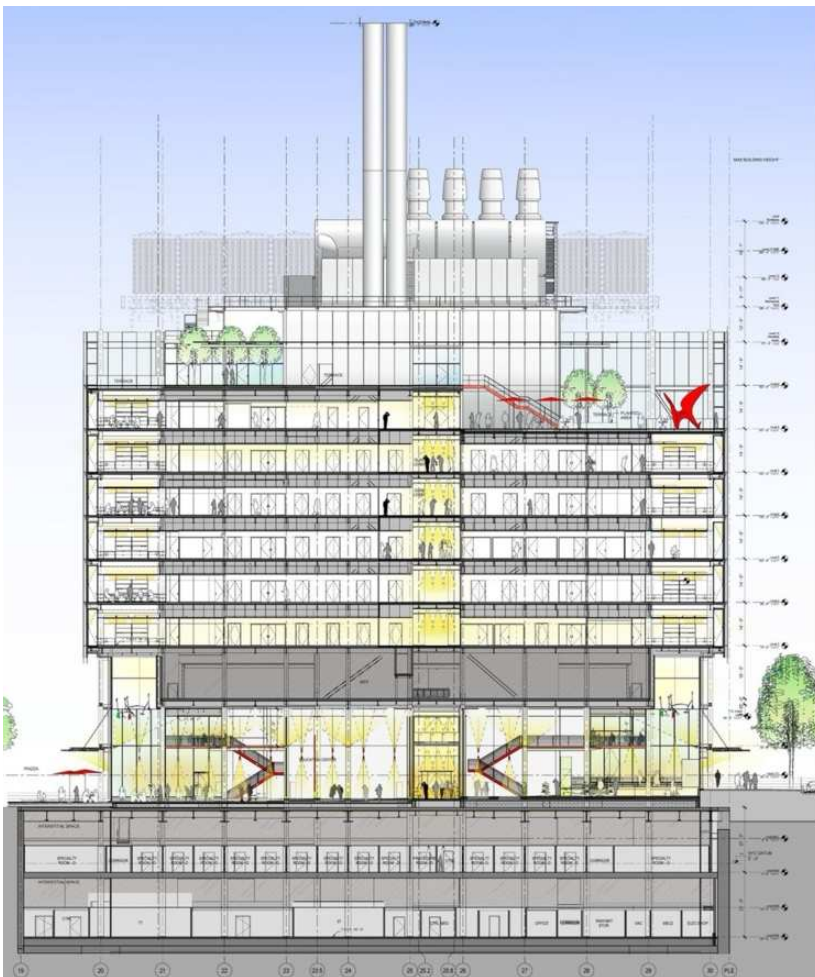


Figure 79. JLGSC architectural section. Source: Archello.

to render cognitive processes visible, open, and spatially connected to the surrounding city:

"[...] shared culture of creativity, which extends to our commitment to educate and inspire future generations of scientists and innovators, is brought to life in the JLGSC – a state-of-the-art facility, purpose-built to spark interaction and the collision of minds. (Columbia, 2025)"

In the JLFSC, transparency at ground level is effectively realised (Figures 78; 79). This level accommodates public and semi-public programmes along almost the entire perimeter, and even in the more restricted areas visual continuity with the surroundings is maintained. The ground floor incorporates food outlets, spaces for physical activities, including climbing facilities, bicycle storage, and other functions commonly associated with the notion of the active façade. Together, these elements reinforce a continuous visual and functional exchange between interior and exterior, situating the building within contemporary debates on permeability and urban engagement. This claim, however, warrants closer examination.

The "urban layer," intended to accommodate cafés, restaurants, and other publicly oriented programmes, projects an image of openness and inclusivity, yet its realised form often corresponds to a carefully regulated environment in which access and patterns of use are subject to control. RPBW has designed several buildings for the Manhattanville campus, including The Forum, a multipurpose performance venue designed in 2011 and completed in 2018. In this project, RPBW acted as design architect, with Dattner Architects as executive architect. When compared with the JLGSC, the most significant difference lies in material treatment and in the inversion between opaque and transparent surfaces. Across these projects, transparency is consistently organised through what the "urban layer."

In the case of The Forum, the ground floor is presented as highly transparent, luminous, and animated, and is described as permeable and open to the public (Columbia News, 2018). The architects emphasise the contrast between the opaque volume of the auditorium, clad in prefabricated concrete panels, and the glazed façades of the upper-level offices, which require daylight, as well as the transparent ground floor.



Figure 80. In the foreground is Riverside Driveway. The building immediately after that is Henry R. Kravis Hall, followed by The Square and then David Geffen Hall. Photo: Iwan Baan.

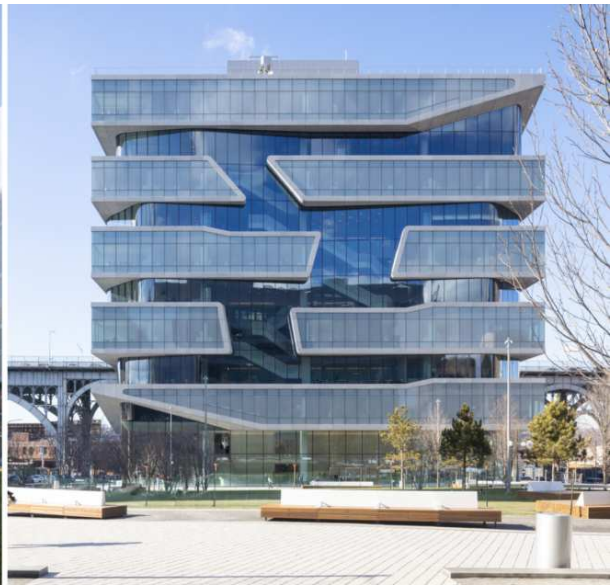


Figure 81. Facades of buildings facing the central square. On the left is the HRKH, on the right the DGH. Photos: Iwan Baan

This compositional strategy reinforces a clear hierarchy between spectacle, programme, and visibility, while maintaining the appearance of urban openness.

When compared to the JLGSC, The Forum is smaller. Aside from its underground, it has only three storeys. At ground level, it organises and mediates a slight change in elevation between West 125th and 129th Streets. The façade facing Broadway is largely closed above ground level, with openings limited to the ground floor. The volume increases in height towards Broadway, reflecting the location of an auditorium with a capacity of approximately 430 seats. The remaining programme, including an information centre, a café, and flexible spaces intended for community events, is distributed along the ground floor. Here, a glazed envelope is employed to draw the attention of passers-by and to signal a degree of public engagement at street level. The RPBW also designed the LCfA,¹⁰⁶ in collaboration with Davis Brody Bond LLP and Body Lawson Associates.

A further association between academic mission, architectural form, and transparency is articulated in another spatial product of the campus. The Business School buildings, DGH and HRKH, designed by Diller Scofidio + Renfro in collaboration with FXCollaborative, consolidate Columbia's spatial strategy in its stated commitment to openness and visibility. Completed in 2022, the two buildings are characterised by extensive glass façades and exposed vertical circulation, organised as what the architects describe as a "network" of stairs (Figures 80; 81).¹⁰⁷ This arrangement is presented as a spatial challenge to hierarchical models traditionally associated with business education and, as emphasised by Dean Costis Maglaras, as a means of connecting the school more directly to its urban surroundings (Russell, 2023).

Both buildings are organised on rectangular plans oriented along a north-south axis. Approaching from Broadway, one first encounters DGH. Here, the base extends beyond the footprint of the upper tower, and the first four storeys form a broader plinth that appears to anticipate a future connection with the adjacent parcel. Consequently, the eastern façade is largely opaque. Volumetrically, the building is composed of a series of

¹⁰⁶ A building that we will explore in more detail in part 3 of this work.

¹⁰⁷ A strategy reminiscent of the Roy and Diana Vagelos Education Center.

overlapping bars whose misalignment and alternating chamfers along the lateral edges introduce a measured sense of movement. By contrast, the north-west façade, oriented towards the central open space, is almost entirely transparent.

At the opposite end of the site, and aligned with the footprint of DGH, stands the HRKH. Unlike its counterpart, this volume reads primarily as a solid mass from which connected portions have been carved out. These excavations articulate the façade, producing projecting elements that accommodate programmes such as meeting rooms, classrooms, and the space occupied by the so-called “network” of stairs. This articulation is most evident on the façade facing the green space that compositionally binds the two buildings. On the opposite elevation, oriented towards the riverside drive, the logic is reversed, with the mass asserting a more continuous and restrained presence.

The ground floors of the two buildings share a markedly similar spatial organisation. In both cases, the volumes present a gentle concavity towards The Square, reinforcing a sense of continuity between interior and exterior. The façades at this level are extensively glazed, in the HRKH almost along the entire perimeter, and in the DGH primarily in the portions facing the square. In both buildings, the entrance sequence leads directly to a reception desk, establishing an immediate point of visual control over arrivals. Despite this shared arrangement, the internal articulation differs in emphasis. In the DGH, an open auditorium occupies much of the northern portion of the ground floor plan, foregrounding collective and programmed use. In the HRKH, by contrast, a more informal seating landscape with an irregular design animates the southern corner of the composition. Functionally, however, both spaces are conceived to accommodate a range of activities, from scheduled events to informal encounters, as they remain largely unobstructed internally. In both buildings, the principal vertical circulation cores, particularly, the lifts, are concentrated centrally, reinforcing a conventional organisational structure. Alongside this, the so-called “network” of stairs operates as an alternative system of vertical movement, extending circulation beyond purely functional requirements and integrating it into the spatial and social life of the buildings (Figures 82; 83).

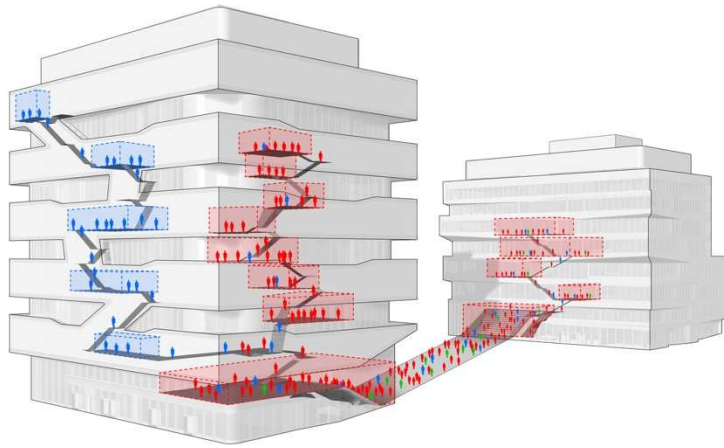


Figure 82. DGH and HRKH. Source: archdaily.com

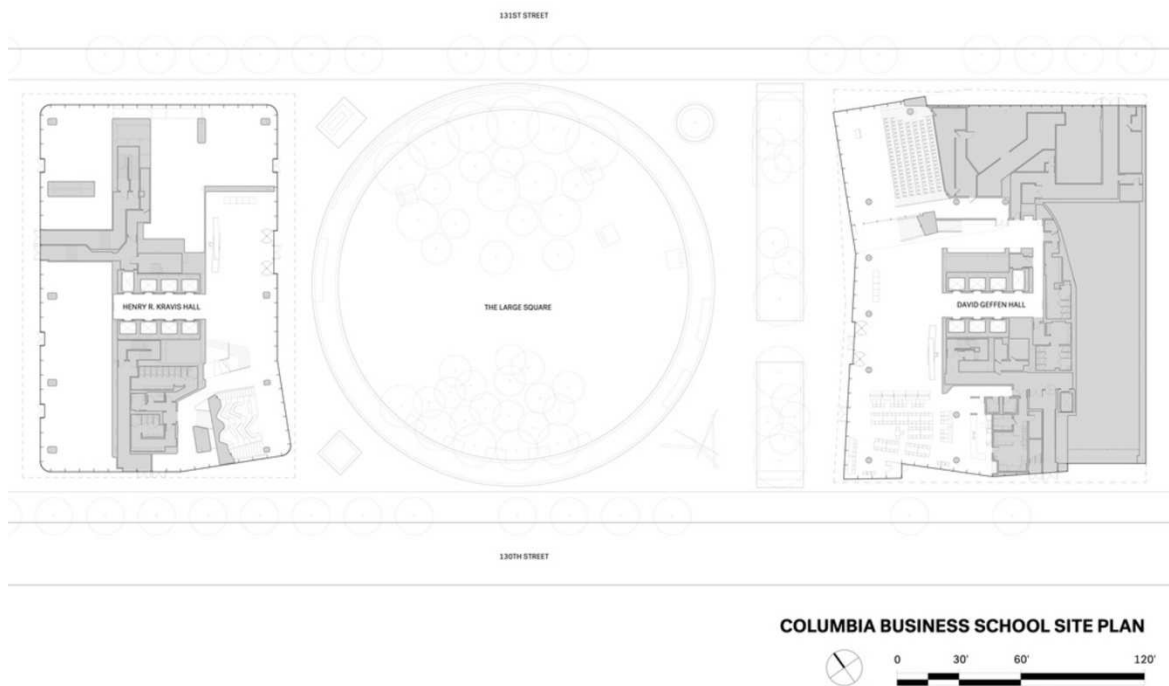


Figure 83. HRKH and DGH. Source: archdaily.com.

At the DGH and HRKH appears a formal and conceptual continuity which was further articulated in relation to the Roy and Diana Vagelos Education *Center* and in the broader agenda advanced under Dean Glenn Hubbard, the dean when the idea of constructing the buildings took shape, whose vision for the economic disciplines and for the university's role within them departed from a narrow focus on profit. As Hubbard stated, the aim was to develop a framework oriented towards flourishing rather than profit alone (Russell, 2023). This ambition is spatially expressed through a prominent system of stairs that structures movement and encounter, guiding users towards shared study areas and producing a deliberate intermingling of spaces for faculty and students across the floors. A significant inversion becomes evident when the ensemble formed by DGH and HRKH is compared with the former facilities of the Business School on the Morningside Heights campus. Where the earlier headquarters of the school reinforced separation and hierarchy, the new configuration privileges visibility, circulation, and proximity. As Russell (2023) observes, the stair system operates in a "kaleidoscopic" manner, offering continuous visual and spatial engagement with both the Manhattanville campus and the city beyond.

As with the JLGSC, the new Business School buildings consolidate a range of research centres, including the Eugene Lang Entrepreneurship Center, the Tamer Center for Social Enterprise, and the Columbia-Harlem Small Business Development Center. Despite their shared formal language, the two buildings are conceived as complementary rather than identical. HRKH accommodates most classrooms alongside faculty offices and most of the research centres, while DGH primarily houses administrative functions. Together, they reinforce the alignment between architectural form, institutional programme, and the university's evolving conception of economic education.



Figure 84. CCTV cameras installed in the vicinity of DGH. 2024.



Figure 85. Bench with protection that prevents users from lying down at the front of the LCfA. 2019.

Costis Maglaras was the dean in charge during the complex's inauguration. He stated that:

The opening of these new facilities marks the beginning of a new era and an opportunity to shape the future of Columbia Business School and its legacy. Modern business practice is increasingly collaborative and non-siloed, and is predicated on an expanded adoption of technology, data, and advanced analytics alongside the fundamentals of traditional business education. Our new, open, light-filled spaces reflect this reality, creating a truly collaborative and immersive experience that is unique to Columbia Business School and ideal for a programme that prioritises team and interdisciplinary work. Acting as a nexus across the University and beyond, these spaces foster engagement in areas including digital transformation, healthcare, climate change, and the interface between business and society (Columbia, 2022, p.3).

This paradigmatic shift is also evident in the way the architects themselves frame the project. Transparency once again occupies a central position and is explicitly set in opposition to the form of “academic monumentalism” associated with the former headquarters of the Business School, Uris Hall, on the Morningside Heights campus. The architects draw a deliberate contrast between Columbia’s Beaux-Arts ensemble and the Manhattanville campus. The former is characterised as inward-looking and monumental, the latter as transparent, porous, and continuous with the city. This opposition resonates with a long-standing disciplinary critique of academic classicism as a spatial expression of exclusion, as well as with architectural discourses that associate glass, openness, and permeability with democratic values (McQuire, 2003). The position is largely adopted without reservation, with transparency presented simultaneously as a design strategy and a moral claim, a stance that aligns with prevailing institutional narratives, yet remains open to critical reassessment within architectural theory (Diller Scofidio + Renfro & FXCollaborative, 2025a).

For Diller Scofidio + Renfro, and FXCollaborative, the paired vertical circulation systems, described as “networks”, intended to facilitate both planned and incidental encounters. Within this framework, the buildings are presented as material expressions of the school’s evolving mission, swaying from finance-oriented training towards a more socially engaged and globally attuned model of business education (Diller Scofidio + Renfro & FXCollaborative, 2025a). Architecture is treated as a didactic medium in which openness

to the city is made to parallel openness to global challenges such as climate change, social inequality, and technological transformation.

The two buildings are linked both at ground level, through a small open space known as The Square, and below ground, by an underground corridor. Conceived as the connective core of the ensemble, the Square introduces a deliberate contrast to the highly articulated and programmatically dense architecture of the surrounding buildings. Rather than functioning as a rigorously organised or formally prescribed space, it is presented, particularly in the university's own descriptions, as a more generic and flexible public realm, open to multiple and shifting uses.

What is striking here is the tension between the rhetoric of flexibility and the degree of spatial prescription embedded in the design. Although the square is presented as an open and adaptable space, it is in fact organised through a relatively dense programme of predefined activities and anticipated behaviours. The paved area is deliberately partitioned into four activated corners, each assigned a unique identity and use. The Stage Corner, with its terraced platform, prefigures performance and assembly; the Meet Corner formalises informal gathering through fixed seating around a symbolic tree; the Art Corner predetermines curatorial occupation; and the Water Corner choreographs play, cooling, and acoustic buffering through a controlled technical installation (Columbia, 2022b).

Rather than emerging from spontaneous appropriation, flexibility is thus tightly scripted through design. The square does not so much suspend hierarchy as redistribute it across a set of curated scenarios, each spatially and programmatically defined in advance. The designation of this space as The Square already performs a strategic act of urban naming, mobilising a long tradition of civic openness and collective life while obscuring the extent to which the space departs from genuinely urban conditions. Although presented as an extension of the public realm, its design and management rely on urban methodologies more commonly associated with controlled institutional interiors. The symbolic language of the square thus operates at odds with its material and operational characteristics.

This tension becomes evident in the contrast between the space's carefully staged urban imagery and the mechanisms that regulate its use. Surveillance cameras, security staff, and

subtle forms of hostile architecture undermine the claim to openness and inclusivity, revealing a space in which access and behaviour are continuously monitored. As Dovey (2008) observes, control over spatial structure and representation is inseparable from control over conduct, with surveillance acting as a primary means through which behavioural norms are enforced. The square's apparent flexibility and civic generosity therefore mask a tightly managed environment (Figures 84; 85).

This chapter has argued that the recent adoption of transparency and permeability constitutes a strategic response to the political and social contests over land use in Harlem. The new campus generates a selective interface with the city, one that projects inclusivity while maintaining the rigorous spatial controls necessary for the university's continued operation as a global knowledge enterprise. The deployment of high-tech architecture and the rhetoric of the "Urban Layer" serve to reframe the university's expansion as a civic contribution, even as the use of eminent domain and the displacement of local industries suggest a continuity of the "blight" narratives employed in previous decades. Dovey (2008) describes as a "pseudo-community," a spatial construct that tolerates neither poverty, social division, nor forms of presence that fall outside a narrow spectrum of acceptable behaviour (2008, p. 133). Rather than accommodating the unpredictability and friction characteristic of urban public space, the square produces a sanitised version of collectivity, governed by discreet yet pervasive forms of control. Rules are not only imposed through explicit regulation but are embodied in the spatial *habitus* itself, shaping conduct in advance and limiting the range of possible uses. In this sense, the square functions less as an urban common than as a managed representational surface, where the ideal of public life is carefully curated and continuously monitored.

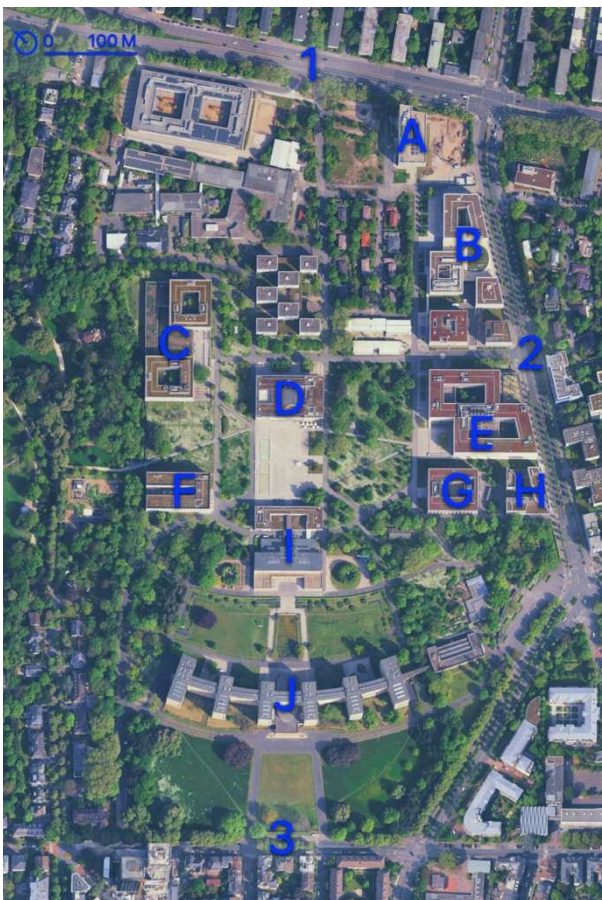
8. Temples for the mind

The metaphor of the temple is explicitly invoked. Brigitta Wolff, then the university president, described the new buildings at Westend as “temples for the mind” (Kohler, 2015). Indeed, when the competition for the urban development of GUF’s new facilities had concluded, the university was already aspiring to construct one of the most beautiful university facilities in Europe. Ferdinand Heide, Dieter Leipoldt, and Richard Weller won the architectural competition for the Westend master plan in 2002. Their vision for the expansion of Campus Westend aimed to maintain the park-like character already present in the site while accommodating all social sciences, cultural studies, and humanities departments. The new buildings were carefully situated to preserve expansive green areas, with a central axis extending from the existing Casino building, which was also part of I.G. complex, housing the main communal facilities. Institute buildings aligned along the northern and eastern edges, creating a defined boundary between the campus and the city.

Heide’s team aimed to integrated the so-called Grünburgpark, a large historic public park south of the campus, into the design by extending its landscape through open spaces and a newly defined network of paths. The significance of the I.G. Farben Building was maintained within the wider development by extending Poelzig’s architectural legacy northwards, through the continuation of the listed outdoor spaces in the form of two parallel green strips flanking a central axis. In their proposal, the architects championed continuity as a central philosophy, establishing Poelzig’s complex as both a formal generator and a definitive spatial delimitation. Certain recurring patterns dictate the overarching design scheme, manifesting clearly across the façades and within the internal spatial sense of the structures. The resulting composition is dense, regular, and monumental (Figure 86).



Figure 86. Westend Campus. Source: 21Aerials.



Map 11. Campus Westend. 1) Miquelallee; 2) Hansaallee; 3) Fürstenbergerstraße; A) DIPF; B) SKW; C) RuW; D) Hörsaalzentrum; E) PEG; F) HoF; G) PA; H) MPIRR; I) Casino; J) I.G. Farben. Source: Google Earth.

The Westend Campus occupies a trapezoidal plot. To the south, Westend is bounded by Fürstenbergerstraße, facing directly the monumental I.G. Farben-Haus and the Norbert-Wollheim-Platz right in between the street and the building.¹⁰⁸ Along this frontage and outside of the campus, most buildings rise to five storeys, but at the corner with Grüneburgweg a pair of 27 and 19 storeys towers, today known as 160 Park View, are the exceptions that dominate the skyline. Two perpendicular streets, Oberlindau and Parkstraße, intersect Fürstenbergerstraße. The internal paths leading from the street to the main building run as an extension of the central axis of these two streets directly towards the I.G. Farben-Haus via Norbert-Wollheim-Platz (Map 11).

These streets alignment also mirrors the orientation of the central blocks of the I.G. Farben ensemble, creating an approach across a slight topographical rise of about five metres. This uneven topography is balanced out by the 120 metres that separate the I.G. Farben-Haus from the Fürstenbergerstraße. Gates and semi-transparent fencing along this same street emphasise a controlled permeability. Turning east, Bremer Straße stretches as a wide, tree-lined axis that converges with Hansaallee. At this junction lies Gisèle-Freund-Platz, another principal access to the campus. This dry, paved square, partly enclosed by dense vegetation and low walls, mediates between the public street and the wall of the I.G. Farben complex, whose material finish is echoed in adjacent surfaces to unify the ensemble. Nearby stands a small parking area serving the university's day-care centre.

Hansaallee itself underwent substantial transformation with the campus development (Figure 87). The avenue incorporated a central landscaped median, while its eastern side was largely redeveloped, replacing a series of smaller structures with uniform mid-rise blocks of up to six storeys. Their chromatic and modular language resonates with the campus buildings on the opposite side. Two important entrances pierce the Hansaallee boundary. Max-Horkheimer-Straße, running perpendicular, is primarily a vehicular access leading to the underground car park, and is modest in pedestrian infrastructure. Far more

¹⁰⁸ Since June 2014, this square has borne the name of Norbert Wollheim, in recognition of his survival of Auschwitz and subsequent lawsuit against I.G. Farben. The renaming, accompanied by a broader reorganisation of campus toponyms, is a deliberate act of memory politics, attempting to negotiate the troubled legacy of the site itself. See: <https://www.uni-frankfurt.de/67028322/wollheim-memorial>

significant for pedestrians is Helmut-Coing-Weg, though equally discreet, which threads aside of the Max Planck Institute and the building occupied by the presidency of GUF.

To the north, the campus approaches Miquelallee, part of the high-speed Alleenring. Yet here the university's presence is less direct: the edge is shared with other institutions, such as the Adorno-Gymnasium and the Philipp-Holzmann-Schule, which interrupt the continuity of the campus perimeter. Only at the corner adjacent to the Leibniz Institute, where the new Humanities Centre is under construction, does the northern edge assume a more explicit campus character, even though this appears to be more of a possibility, since the part of the land we are referring is still under construction at the time of writing this document. Almost the entire western part of the site is bounded by the Grüneburgpark.

The presence of the I.G. Farben Haus decisively concedes the spatial character of the campus. Extending across the site in a broad concave sweep, the building encloses the central grounds and establishes the dominant frame of the overall composition. With the former Casino building, which is located some 100 metres away and likewise predating the campus redevelopment, it exerts a commanding influence over the ensemble. Seen from the I.G. Farben Haus, the Casino itself assumes a monumental aspect through a long water fountain, approximately 45 metres in length, stretches across the foreground, while a natural change in level of nearly five metres elevates the building above the surrounding terrain, further amplifying its visual and symbolic prominence.

Ferdinand Heide and his team reinforced this effect through the introduction of two symmetrical flowerbeds, each approximately 50 metres in length, positioned on either side of the Casino and articulated by a central circular motif. These elements anchor the Casino within a rigorously ordered composition, intensifying the monumentality of the ensemble. The campus's transverse alignment was drawn through the Casino and the central wing of the I.G. Farben Haus, extending this symmetry across the new interventions.



Figure 87. Hansaallee. Source: Google Earth.

The Casino, in turn, became the reference for a newly established central line, as its width of roughly 75 metres was adopted as the regulating dimension for the principal north-south organisation of the campus.

From the southern edge towards the interior of the campus, the central strip, which extends for approximately 700 metres, remains firmly aligned with the transverse axis of the I.G. Farben Haus. This axis organises the entire sequence of buildings. To the west lies a narrow open band of roughly 50 metres, while to the east a broader strip of nearly 100 metres extends along the campus. These green bands frame the built fabric. The western sector is comparatively restrained, with fewer buildings. The eastern side, by contrast, is denser, accommodating the largest concentration of academic facilities and establishing a direct edge along Hansaallee. At the centre of the composition lies Theodor-W.-Adorno-Platz, a paved and deliberately austere square measuring approximately 95 metres across. It functions as the focal node of the plan, enclosed to the south by the rear extension of the Casino and to the north by the Hörsaalzentrum (Lecture Hall Centre), which together define the square as the principal campus hinge.

A rigid layout overall plan lends the Westend campus a markedly assertive formal character. Dauß (2022) offers a detailed interpretation of these features, identifying a multiscalar ambivalence in the project that resonates with our discussion of interactions between different infrastructures. This ambivalence operates simultaneously at the scale of the campus as a large urban artefact and in the relationships between individual buildings, open spaces, and the surrounding urban fabric. Dauß (2022), for instance, points to the evocation of classical figures and monumental scale in the expansive square between the Hörsaalzentrum and the Casino, which now houses the canteen. This reading can readily be extended to other parts of the campus, as demonstrated in the preceding paragraphs. At its core, the project reveals a tension between its self-presentation as contemporary and ostensibly neutral and its persistent reliance on architectural traditions associated with order, monumentality, and institutional authority.

Given the significance of Dauß's (2022) intervention, it is worth dwelling briefly on his argument. In his reading, architecture at Campus Westend functions less as an enabling

framework for academic practice than as a medium of institutional self-representation. The buildings construct a carefully calibrated image of the university as stable, authoritative, and competitive within a global knowledge economy. Through monumentality, symmetry, and material permanence, the campus projects an impression of continuity and seriousness that aligns the university with state power and corporate capital with critical, experimental and intellectual work.

The author further argues that the architecture of Campus Westend is conceived from the outset for medial circulation. The buildings are designed to perform effectively as images through axial compositions, legible volumes, controlled perspectives, and carefully staged photographs that circulate seamlessly across brochures, websites, and press material. These images do not simply document the architecture; they actively constitute its meaning. Medial representation stabilises the campus as an iconic ensemble while suppressing alternative readings, particularly those that might foreground everyday use, spatial friction, or exclusion. Architecture thus operates within a regime of visibility that privileges recognisability and prestige over openness or even ambiguity.

The architectural language of Campus Westend, as described by Dauß (2022), is characterised by a selective synthesis of modernist and classical references. While rationalist planning principles and abstract geometries are invoked, they are embedded within a classical framework of axuality, typological continuity, and stone-clad solidity. Modernism is stripped of its critical and utopian ambitions and reconfigured as a legitimising aesthetic for institutional and corporate order. This strategy produces what the author identifies as a deep structural continuity beneath the surface of apparent change. Historical references are mobilised to naturalise contemporary power relations rather than to question them (Figures 88; 89).

Perhaps Dauß's (2022) most critical observation concerns the convergence of university architecture with a broader landscape of corporate and investor-driven building. At Campus Westend, formal, material, and spatial affinities with nearby financial and administrative complexes produce a supralocal architectural idiom that signals the neoliberal transformation of the university into an organisation competing for visibility,

capital, and symbolic value. In adopting this shared language, GUF relinquishes the possibility of articulating its institutional specificity. Architecture no longer stages the university as a site of contradiction, debate, or intellectual risk, but instead presents it as a polished, uniform, and depoliticised entity.

This convergence is reinforced through a mirroring of aesthetic and institutional values. While the architectural repertoire invokes ideas of progress, openness, and dynamism, an emphasis that is also present in the university's own discourse, it does so within an explicitly neoclassical framework. As Dauß notes, this strategy operates along two historical lines. Many Westend buildings recall projects realised in Berlin in the 1990s and 2000s, through cubic volumes derived from classical typologies, modular grids, rational ordering systems, a preference for stone over glass, and the deployment of monumental gestures. At the same time, the architecture draws on an earlier and more politically charged lineage, namely Italian architecture of the early twentieth century, introducing unsettling historical resonances, particularly in the monumental framing of the campus and its echoes of fascist aesthetics.

This approach stands in marked contrast to the Manhattanville campus, where similar values, openness, connection, and transparency, are articulated through a different formal and spatial register. The divergence is evident both at campus scale as a whole and in the architectural treatment of its individual buildings. For Dauß, transparency at Westend does not primarily denote material transparency (glass façades, visual openness) nor democratic accessibility. Instead, it is a medial and semantic condition. It refers to the way architecture presents itself as self-evident, readable and naturalised.



Figure 88. Among the direct connections identified by Dauß is the visual similarity between the HOF foyer and Raphael's painting, Scuola di Atene. Source: Dauß, M. (2022). Die Bauten des Campus Westend als ‚Corporate Architecture‘. Konzept Campus: Transformationen des universitären Feldes, p. 122.



Figure 89. Rafael Sanzio, Scuola di Atene, 1551, Fresco located in the Vatican. Special attention to the floor design. Source: WM Commons.

Buildings appear to “explain themselves” through familiar typologies, axial orders and classical references. This legibility produces the impression that spatial arrangements are obvious, historically grounded and functionally appropriate, rather than contingent or politically charged. Crucially, transparency operates as a mode of concealment. By appearing clear and unproblematic, architecture obscures the processes, interests and power relations that produced it. Institutional agendas (neoliberal governance, corporatisation of the university, investor logic) are rendered invisible precisely because the architectural language feels conventional and culturally reassuring.

Following the conclusion of the first competition for the Westend Campus masterplan, a second competition was held in 2004 to design five buildings constituting the first phase of development. This phase comprised the House of Finance (HoF), the Rechtswissenschaften und Wirtschaftswissenschaften building (RuW; School of Law and Economics), the Hörsaalzentrum, student residences, and the renovation and expansion of the Casino building. Ferdinand Heide’s team was once again commissioned, this time to design the Hörsaalzentrum and to carry out the renovation and extension of the Casino. Müller Reimann Architekten won the competition for the RuW building, while the House of Finance was commissioned to Kleihues + Kleihues. The student housing complex was designed by Karl und Probst (BauNetz, 2004).

In 2007, a further competition selected the design for the Präsidiumsgebäude (PA; Presidential Building), which was also awarded to Müller Reimann Architekten. In the same year, the firm was chosen through competition to design the Psychologie, Erziehungswissenschaften und Gesellschaftswissenschaften building (PEG; Educational Sciences and Social Sciences). A subsequent competition, held in 2015, selected the design for the large complex housing the Sprach- und Kulturwissenschaften centre (SKW; Linguistics and Cultural Studies) (Wettbewerbe-Aktuell.de, 2015). Also in 2015, Ferdinand Heide completed a project for the Seminarhaus (Seminar Centre) on campus.

Following Dauß’s (2022), we shift our analysis to spatial projects that lie beyond the scope of his discussion. Precisely because at the same point that Dauß identifies the mutual and strong construction of a corporate identity for the Westend campus, we also identify a

great infrastructural interplay in the spatial products of the campus. Dauß concentrates primarily on the first construction phase at Campus Westend, addressing the House of Finance, the RuW, the Hörsaalzentrum, along with selected open spaces and sculptural elements. Our attention instead turns to projects that were still in development or remain comparatively under-examined: the Studierendenhaus, the Centre for Humanities (CFH), and the large SKW complex. We also include buildings not formally administered by the university but which, through proximity, architectural consistency, and formal continuity, effectively form part of the same campus ensemble. These include the Max-Planck-Institut für Rechtsgeschichte und Rechtstheorie (MPIRR; Max Planck Institute for Legal History and Legal Theory) and the Leibniz-Institut für Bildungsforschung und Bildungsinformation (DIPF; Leibniz Institute for Research and Information in Education). Their presence is analytically relevant not only in spatial terms but also because it illuminates broader structural transformations currently reshaping German universities.

On houses and temples

The Studierendenhaus, which can be literally translate as the student union building, was designed in 2014 and is still not constructed. Construction was planned to begin in 2018 and should follow a design by the architectural office hjp architekten. The firm prosed an artefact in which the main spatial feature would be a split-level core, starting in the foyer, and organising all the other spaces around it. As for the architects, such an approach would ensure a comprehensive experience of many social functions at the building. The south-facing front area connects the building to the campus, featuring a large café terrace in the southwest. A protected courtyard to the north, coupled with the foyer and event spaces, allows for outdoor activities. Adjacent is a small plaza-like space, linked to workshops and other gathering places (GUF, 2014). Here, the substantial architectural forms contrast with the supposedly informal programmes within (Figures 90; 91).

The fact that this piece of social infrastructure was never realised is revealing. Its absence is symptomatic when set against its architectural programme, which diverged markedly from the rest of the Westend campus. At the former Bockenheimer campus, the Studierendenhaus was designed by Otto Apel in 1951 (Figure 92). Apel had initially

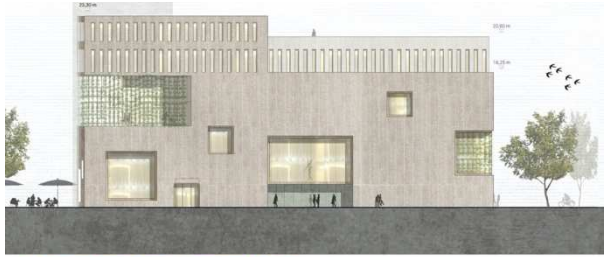
worked as an architect in Berlin and, after the war, served as chief architect in Frankfurt where he was involved in several projects in the reconstruction of the city, including a housing construction programme. For the Studierendenhaus, Apel combined a still neoclassical, straight-lined formal language with the curved and filigree style characteristic of the early post-war period. When the GUF reopened after the extensive wartime destruction, none of the seven former student houses could be returned to their original use. In response, Federal President Theodor Heuss called for the construction of new student houses, linking this demand to the broader social imperative of democratising higher education.

Jointly financed by the American High Commission, the city of Frankfurt, and the state of Hesse, the Studierendenhaus was completed in 1953.¹⁰⁹ With the relocation to Westend, the Bockenheimer Studierendenhaus has entered a process of transformation. In recent years, civil society organisations in Frankfurt am Main have sought to redefine it as the headquarters and driving force of the initiative Offene Haus der Kulturen (Open House of Cultures), which envisions the building as a space where social and political actors, artists from diverse disciplines, and people of different origins, religions, sexual orientations, ages, abilities, and economic backgrounds can engage in exchange (OHdK, 2021).

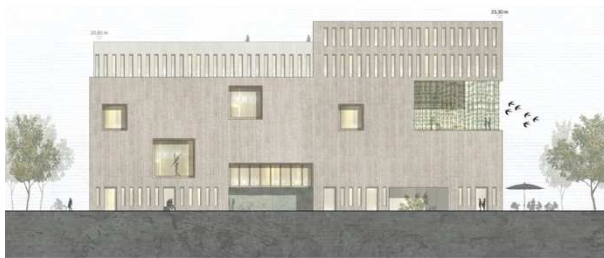
The delay in constructing the Studierendenhaus at Westend has been addressed by GUF largely in response to criticism and concerns that the institution was deliberately obstructing the project. The student union¹¹⁰ opposed the project in its second version, and a dispute emerged between the university, the student body, and nearby residents that live in a small settlement on the campus with single-family houses that originally date back to the time of the United States European Command.

¹⁰⁹ In his opening remarks, the then university president Max Horkheimer stressed that the education of academic youth should extend beyond the mastery of scientific procedures to include meaningful interaction with people of different nationalities and religions. He underlined the importance of voluntary engagement in social, artistic, and sporting activities, together with a commitment to thinking, research, discussion, and creative leisure, as essential to the cultivation of a genuinely active democratic spirit. See: <https://studierendenhaus.asta-frankfurt.de/horkheimers-eroeffnungsrede/>

¹¹⁰ We are referring to the Allgemeine Studierendenausschuss or AStA.

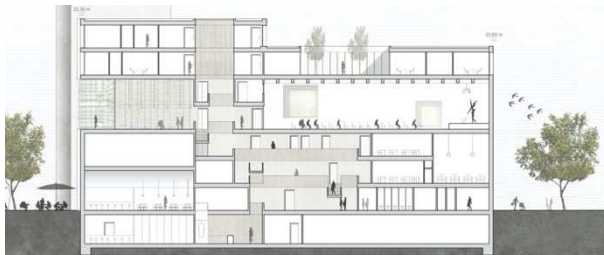


Studierendenhaus. Southern façade.



Studierendenhaus. Northern façade.

Figure 90. Studierendenhaus façades. Source: hjp architekten.



Studierendenhaus. Sections.

Figure 91. Studierendenhaus sections. Source: hjp architekten.



Figure 92. Studierendenhaus at the Bockenheimer campus, designed by Otto Apel in 1951. Photo 2024.



Figure 93. Studierendenhaus rendered perspective. Source: hjp architekten.

These neighbours objected primarily on the grounds of noise, insisting that no events should be held inside or outside the building after 22:00, and went so far as to contest the building permit granted in September 2017. Perceptions that the university yielded too readily to external pressures, or adjusted the plan without adequately considering student perspectives, fuelled a conflict that persisted for months. The COVID-19 pandemic and rising construction costs further aggravated the situation (GUF, 2024b).

Although the proposed architectural programme stands in marked contrast to that of Westend, its formal, tectonic, and aesthetic expression aligns closely with the rest of the campus. This similarity was evident across all the competition entries, including the winning design, which displays an almost complete adherence to the existing Westend projects. Kohler (2014) even describes the entry projects as exhibiting a kind of obedience or docility towards the established order. Hjp architekten's conceived the building as a largely regular rectangular block, with only a few subtractions marking points of differentiation within the volume.

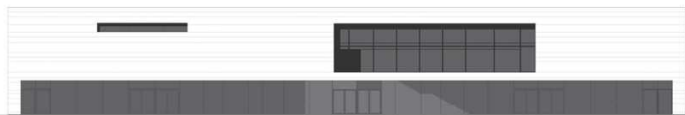
In his analysis of Heide's buildings, Dauß (2022) identifies a modern reminiscence of Walter Gropius and Adolf Meyer's Fagus-Werk in Alfeld, especially in the emphasis on transparency and in the strategy of excavating and exposing the building's corner. A comparable gesture can also be observed in the upper corner of the Studierendenhaus which in turn echoes much of Heide's work on campus. In Heide's works, however, we see much less explicit modulation systems and much more restricted to the very format of the cladding stones. This break in the module is very clear in buildings such as the Hörsaalzentrum and the Seminarhaus, although in the latter, the supremacy of the modulation is very easily identified on some façades (Figures 94-96). The same applies to the predominantly quadrangular openings, which are distributed intermittently across the façade. The design invites comparison with the façade of the Hörsaalzentrum, although the principal distinction lies in the treatment of the top floors. At the Studierendenhaus, this upper zone accommodates workrooms, student administration, and the offices of the student union.



Figure 94. Hörsaalzentrum main façade. Ferdinand Heide.



Hörsaalzentrum. Southern façade.



Mensa Casino. Northern façade.

Figure 95. Hörsaalzentrum and Mensa Casino façades. Ferdinand Heide.



Figure 96. Seminarhaus façades. Source: Ferdinand Heide.

Appearing almost segregated from the rest of the structure, a rhythmic sequence of narrow, floor-to-ceiling windows dominate all façades from the Studierendenhaus. At ground level, the southern façade reintroduces more vertical and rhythmic openings, alternating with others of a more irregular character. This strategy, however, fails to establish a clear compositional relationship with the building's upper levels (Figure 93).

The formal continuity across the buildings of Campus Westend frustrates any attempt to read them as autonomous architectural objects. A strong sense of formal and spatial cohesion permeates the complex, a condition that becomes particularly evident in its largest interventions, notably the PEG, the RuW, and the SKW complexes. The RuW building is designed to perform continuity. By cladding a contemporary steel frame in travertine and shell limestone, a direct, operative nod to Hans Poelzig's IG Farben complex, the architects Thomas Müller and Ivan Reimann have sought to wrap the volatile, shifting nature of modern research in a shroud of permanence (Krug, 2011).

The choice of stone serves to provide a veneer of civic gravity, effectively masking the fact that the campus is no longer a place of humanist contemplation, but a highly rationalised node for the production and transfer of knowledge. The façade's relentless verticality and the standardised repetition of openings are the architectural expressions of a system that demands total order. As it happens in many buildings at Westend, the individual researcher is subsumed into a larger administrative whole; the invisible and restrained architectural language that the designers celebrate is, in fact, the abandonment of any ambition to provoke or transform the social order, settling instead for the role of a background or a neutral container.

RuW's relationship with the surrounding Grüneburgpark confirms its status as an alienated object within the urban landscape. Though the architects speak of a tension-filled relationship with the greenery, the park is treated as little more than a framed commodity to be consumed from behind glass (T. Müller & Reimann, 2018). A 90-centimetre platform and the carefully staged hierarchies of access act as physical barriers that manage the movement of the masses, ensuring that the public nature of the site remains strictly controlled. Nature is here domesticised, reduced to a visual "amenity" that serves to

soothe the nerves of the campus inhabitants. The RuW building merely frames nature, underlining a boundary between the space of the institution and the reality of the outside world, thereby completing the reasoning of the campus as an autonomous, self-regulating territory.

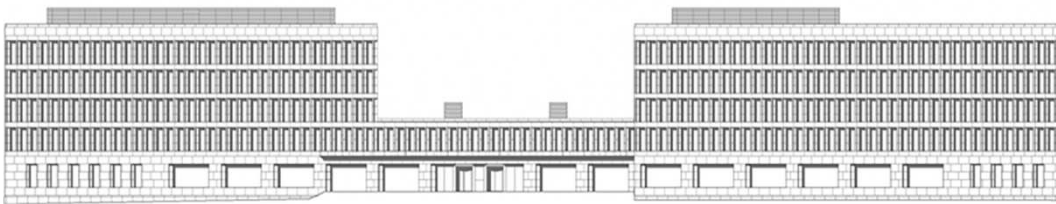
As seen, in addition to RuW, Müller and Reimann designed the PA and PEG buildings in Westend. The façades of the RuW, PA, and PEG buildings are articulated as a series of rationalised surfaces, dominated by a rigid modulation of vertical openings. This compositional strategy produces a deliberately restrained architectural language, marked by a calculated form of invisibility (Figure 97). The stone volumes, conceived as immutable and uniform, suppress expressive differentiation in favour of continuity. In the three buildings, Müller and Reimann employ a repetitive grid that effectively neutralises the individual identity of the different faculties, subsuming them into a single, coherent architectural backdrop for the campus.

Throughout the buildings at Westend, one encounters a highly rigid modulation, in which window apertures are stacked with precision, and this applies to virtually all projects in the complex (Figure 98). This arrangement generates a sequence of stone piers that run uninterrupted from the top of the plinth to the roofline. Such vertical alignment suppresses any perception of individual rooms or scale; instead, it produces façades defined by clear vertical profiles that imply an industrialised and repetitive interior logic. The windows operate as components of a modular skin stretched across a steel frame. Argan (1958) understands the module not as a conciliatory device of harmony, in the Vitruvian sense of *symmetria*, but as an instrument through which invention is disciplined and rendered operable within the logic of modern administration.¹¹¹ The module no longer mediates

¹¹¹ For Vitruvius, *commodulatio* refers to the practical way in which architectural proportion is organised and applied. It describes the coordination of all parts of a building through a common module (*modulus*), so that dimensions are adjusted in relation to one another and form a coherent whole. *Commodulatio* is therefore not simply a matter of numerical ratios, but a design method that ensures the parts “fit together” (*commodantur*) in a clear and intelligible way. It involves the systematic calibration of dimensions, the proportional relationship between parts, and the translation of abstract proportional principles into built form. Within Vitruvius’ broader theory, *commodulatio* operates alongside *symmetria* and *proportio*. While *symmetria* defines the correct correspondence between parts and whole, *commodulatio* is how this correspondence is practically achieved through modular adjustment. (Lefas, 2000; Rykwert, 1996).



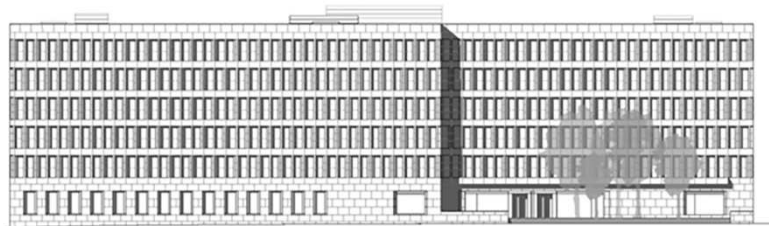
Figure 97. RuW. Photos: Stefan Müller.



RuW. Eastern façade.



PA. Werstern façade.



PEG. Western façade.

Figure 98. Buildings designed by Thomas Müller and Ivan Reimann for the Westend campus. Drawing by Müller Reimann Architekten. With amendments by the author.

between parts and human measure; instead, it guarantees the efficient coordination of elements within a bureaucratic and industrial system. Crucial to this reading is Argan's distinction between the module as abstract measure and the module as concrete object. The former belongs to the realm of proportion, the latter to that of production. Even the most elementary component, Argan's brick, or in our case the stone cladding, thus assumes the role of a bearer of formal value, inseparable from the conditions of its fabrication.

There is a clear desire to produce façades that appear timeless. As Dovey (2008) notes, this aspiration is particularly significant, and it is no coincidence that the use of natural stone as cladding has become so widespread on campus. Stone functions as a powerful signifier of permanence and of nature, evoking ideas of authenticity and stability, which are values presumed to endure over time. As Dovey (2008, p.112) observes, "stone is an important signifier of permanence and nature, for authentic values that do not change. Small matter that the stone has been crushed and reconstituted to achieve consistent quality across its very thin sheets." For Zukin (2000), a façade can be understood as an architectural surface that operates simultaneously as a spatial, visual, and ideological device, mediating between power, desire, and perception. It is a constructed image that abstracts meaning from the landscape and reflects it back to its viewers, transforming complex social, economic, and political relations into legible and consumable appearances.

Goebel (2003) further draws attention to the tension between the aura of authenticity attributed to historical fragments and their strategic mobilisation by corporate interests, a contradiction that is clearly legible in the architectural language of Westend. In such sense, the façade operates by separating visual coherence from structural and historical depth, allowing environments to function as scenes, backdrops, or stage-sets rather than as expressions of an integrated urban form. In the postmodern city, the façade becomes a primary instrument of urban organisation, replacing traditional centres, skylines, or public spaces with images designed for circulation, mobility, and visual consumption. It enables the projection of collective fantasies, whether of harmony, mobility, or prosperity, while simultaneously masking underlying inequalities, exclusions, and mechanisms of control.

Promotional material typically reinforces this association by presenting jewel-like samples in rustic, quasi-natural forms. This naturalisation of meaning plays a crucial role in the myth-making process surrounding such architectures. The resulting image, as Dovey (p.112) further argues, "refers both back and forward in time: it is designed for the future, but with echoes of an elegant past." At Westend, the most immediate reminder of this past is Poelzig's work.

At the RuW, the volumetric strategy employed by Thomas Müller and Ivan Reimann, which consisted in splitting the mass into two five-storey towers connected by a two-storey longitudinal bar, is a calculated exercise in the rationalisation of space. The towers, situated to the north and south, act as vertical silos for specialised intellectual labour, while the lower bar serves as the administrative hinge that binds these separate blocks into a singular, productive unit. This volumetric arrangement ensures that while different disciplines remain physically distinct, they are nonetheless subsumed under the same overarching institutional logic, dictated by the competition's requirement for a legible, efficient typology.

A very similar strategy occurs in the SKW, which is conceived as an urban composition formed by four rectilinear volumes of differing heights and widths, each accommodating a distinct programme. The project emerged from a closed architectural competition, won by BLK2 Böge Lindner K2 Architekten of Hamburg, and was concluded in 2022. Three of these volumes rise above the others, two reaching six storeys and one four, while a lower, two-storey block connects them. In plan, the complex approaches a trapezoidal figure, although the taller volumes extend beyond the footprint of the connecting bar, producing a composition that remains disciplined yet avoids complete regularity. The result is a massing strategy that balances formal rigidity with a measured degree of variation.



Figure 99. The SKW building with the Frankfurt am Main skyline at the back. Source: BLK2 Architekten.



Figure 100. SKW's main entrance. Source: BLK2 Architekten.

The building presents different readings depending on the point of approach. From Hansaallee, it appears as two taller towers linked by a lower, two-storey volume, forming a continuous edge along the campus perimeter. From within the campus, the composition is perceived as two principal blocks, one six storeys high and the other four, unified by the connecting volume, which reinforces the campus's inward orientation, privileging internal coherence over outward urban address.

Access follows this same inward logic. Within the campus, the connecting volume assumes a markedly monumental character. The primary entrance is articulated through a sequence of seven intercolumns and double-height spaces, establishing a controlled yet emphatic threshold (Figure 100). From the glazed entrance vestibule, visitors enter a generously proportioned foyer that functions as the main distribution space. From here, the principal programme elements are accessed, including a lecture hall with approximately 700 seats and the library. To the south, a small service courtyard accommodates deliveries to the canteen and to ground-floor workshops. Two basement levels are devoted to a public underground car park, archives, storage, and technical facilities, fortifying the separation between representational space above and infrastructural operations below.

While the exterior of the complex adheres to the chromatic restraint of natural stone, projecting an image of permanence and continuity with the surrounding campus, the interior operates according to a different, though no less codified, logic. Here, BLK2 reproduces a spatial grammar already established by figures such as Heide and Müller Reimann, deploying a recognisable repertoire of interior devices that has become almost established within the Westend ensemble. The sequence of internal spaces is articulated through a calculated alternation between the neutrality of natural materials and the strategic insertion of colours. These chromatic interventions construct an abstract, legible order formed by a composition of planes, voids, and geometric fragments designed to organise movement and perception.

The two towers facing Hansaallee each rise to six storeys. Apart from the lower levels, openings on this façade are predominantly vertical. On the first two floors, more square openings alternate with vertical ones, introducing a limited degree of variation without

disrupting the overall order. Doors along this elevation are few and largely restricted to emergency exits or regulated access, underscoring the secondary role of the street façade in the building's spatial hierarchy.

In SKW's northern portions, the buildings are organised around internal courtyards. These spaces introduce controlled moments of spatial relief within the otherwise dense ensemble. It is here that the architects employ coloured wall surfaces, visible from multiple interior vantage points, adding a layer of visual differentiation that remains largely concealed from the exterior. Above the lower connecting bar, a roof garden further offers a secluded open space detached from the surrounding urban fabric.

The competition brief addressed the third phase of development of the Westend Campus and required the integration of several shared and service-oriented programmes. These included a central library, the Centre for Continuing Education and Teacher Training, administrative offices for the Studentenwerk, and an underground car park accommodating approximately 250 vehicles. The significance of the SKW also lies in its position at the intersection of Hansaallee and Miquelallee, where it effectively marks a gateway to the campus. Yet this role is articulated with restraint. Along the campus perimeter, one encounters only secondary entrances and a discreetly integrated service access, absorbed into the travertine cladding. The principal entrance, as noted, is oriented towards the campus interior. In spatial terms, the building operates as a continuous façade along Hansaallee, consolidating the campus edge while simultaneously enclosing a highly regulated interior world (Figure 101; 102).

In the post-war period, Germany developed a substantial network of non-university research institutions, funded through federal and state governments as well as contract research. Among the most prominent are the Max Planck Society, devoted to basic research and operating in its current form since 1948, and the Leibniz Association, created in 1990. Both operate under these funding arrangements, and since the 1990s they have faced growing competition (Hohn, 2010). The introduction of performance-based and managerialist approaches has significantly impacted these institutions' internal dynamics.

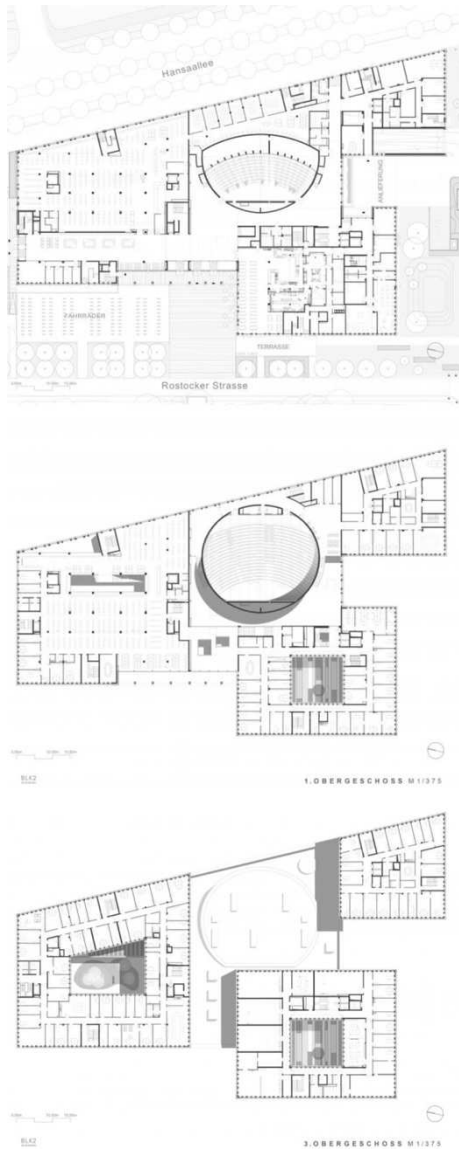


Figure 101. Source: BLK2 Architekten.



Figure 102. SKW interior. Source: BLK2 Architekten.

Like universities, these institutions are increasingly subjected to competitive pressures over funding and prestige, compelling them to justify their existence through claims of economic and technological relevance embedded in both research output and built form. Consequently, they have adopted self-adaptation and incremental changes. Hohn (2010) notes that these modifications enable functional flexibility while preserving core identities, reflecting the pressures to adapt without fundamentally altering institutional missions. Both institutes maintain research infrastructure at the Westend Campus.

The building for the MPIRR occupies a lot in the east limit of the Westend campus (Figure 103). The architects who won the 2007 competition opted for a design approach that sought to harmonise the proposed MPIRR building with the existing structures on the Westend campus, particularly the main I.G. building (Staab Architekten, 2006). Their objective was to ensure that the new facility would integrate seamlessly with the architectural language of the surrounding campus. Staab Architekten designed the building on a trapezoidal platform from which three independent towers emerge. These towers are interconnected only at ground level by the platform, in a similar strategy used at the RuW and SKW buildings; they revolve around a courtyard. The largest of the towers runs parallel to Hansaallee, while the other two are positioned to the west, facing the inner campus part. The arrangement of the towers responds to functional and spatial needs. The bigger volume is supposed to act as a noise barrier, shielding the inner block from the busy Hansaallee.

For the MPIRR, the competition brief was succinct, providing little guidance on how to address the campus and its existing buildings in terms of materiality or composition. However, it underscored the necessity of establishing a principal entrance that would serve all the programmes it aimed to bring together. These included a library designed to house 500,000 media units along with special collections, office spaces, collaborative work areas, and meeting rooms intended to foster "scientific exchange of opinions," as well as provisions for future expansion (WA, 2006). The project's final design spans about 34,800 square metres and was inaugurated by the Max-Planck-Institute in 2014.



Figure 103. Building from the Max-Planck-Institut für Rechtsgeschichte und Rechtstheorie.

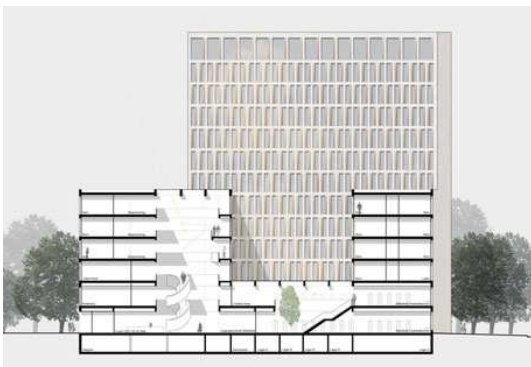


Figure 104. DIPF. Source: k9architekten.



Figure 105. DIPF. Photo: Oliver Rieger. Source k9architekten.

The largest tower extends along the entire perimeter of the trapezoidal platform, projecting directly onto the pavement for approximately 50 metres, except for a glass panel near the entrance. The six-storey façade, clad in travertine, features a rigid grid of windows at two uniform heights, creating an imposing street frontage. This spatial and tectonic approach is common across the Westend Campus. Hansaallee, where the campus most directly engages with the city, often reflects a sense of disconnection, justified by noise concerns. The buildings create a unified interface with the street through similar cladding materials, rhythmic façades, and the absence of canopies or public entrances. Access is limited to service doors, discreetly concealed within the travertine façade.

The DIPF occupies a prominent position at the north-west gate of Campus Westend. The building was designed by Architekturbüro K9 following a competition held in 2012, construction began in 2015 (Schumann, 2012; Stirm, 2015). The building is organised around a central entrance atrium and a second-floor courtyard, articulated through two distinct volumes, one comprehended by a six-storey block and the other by a thirteen-storey tower (Figures 104; 105). The atrium occupies the smaller volume, produced, according to the architects, to mark a sense of spatial openness, while the elevated courtyard introduces a more restrained and introspective condition (K9 Architekten, 2025). In contrast to the Max Planck Institute, the DIPF presents a more compact and markedly vertical profile.

The building is organised around a rigorous grid, a formal device that extends from the façades into other architectural elements, including the skylights, and establishes a consistent ordering principle throughout. From the entrance foyer, circulation unfolds with immediate clarity: the library, kindergarten, and reception are directly accessible, while conference facilities are displaced to the first floor. The taller volume is largely given over to office accommodation, consolidating administrative functions within a distinct mass. A podium underpins the composition, articulated through differentiated façade openings. At ground and first-floor levels, windows approach a square proportion, lending the base a more civic and accessible character.

On the north façade, three large square openings mark the entrance, while recessed surfaces suggest latent apertures, introducing a measured rhythm into an otherwise compact and controlled exterior. Clad in Jura limestone from the Altmühl valley, the façades combine material permanence with a calibrated modulation of depth. Internally, the 21-metre-high atrium operates as both a spatial hinge and a representational core, mediating between the building's programmatic layers. At 49.53 metres, the structure asserts itself as the tallest building on the site, a condition that reinforces its institutional prominence without departing from the disciplined formal language established at the scale of the façade.

The politics of architecture are embedded in its material organisation, as the arrangement of elements carries ideological weight (Amhoff, 2014). In the German context after 1990, Huyssen (1997) identifies a persistent duality between nostalgic reconstruction and globalised futurism, often mediated through stylistic references to the pre-First World War period. These tendencies reflect efforts to reconcile national identity with corporate ambition. A comparable logic underpins what Dauß (2022) describes as the rationalist orientation of the Westend campus, where formal restraint and repetition operate as instruments of institutional representation.

Besides the similar volume approach, stone cladding is the unifying theme of the Westend campus. A general characteristic of the campus buildings is the prevalence of symmetry and of opacity over transparency in the relation between interior and exterior, while transparency is reserved and more pronounced within the interiors themselves. It is quite curious that the continuous reference to the legacy of the I.G. Farben building seems to contradict an idea that Poelzig himself defended at the time of his design. Poelzig's own architectural stance distanced him from many of his contemporaries, especially those later associated with what we now call modernism. As Schmal and Voigt (2007) argued, his reliance on symmetrical composition, the pronounced and reinforced framing of windows, and his choice to strengthen rather than free the corners with solid framing and robust crossbeams all reveal this departure.

It is striking that Poelzig's building has since assumed the role of a module, one that subsequent Westend buildings echo to varying degrees, whether at the scale of the master plan or in the calibration of voids, opacity, openings, and façade articulation. Poelzig understood technic as a semi-autonomous sphere operating between technology, art, and tradition. His architectural thinking moved across these domains while remaining consistently grounded in the question of how technology informed design. He engaged directly with modern materials such as steel and reinforced concrete, with the demands of new industrial building types, and with the implications of a world increasingly organised by technological forces (Stabenow, 2007).

The Westend campus is characterised by a pronounced formal homogeneity, evident both in individual buildings and in the campus ensemble. This uniformity is produced through consistent tectonic choices, volumetric massing, and façade modulation, resulting in a repeated monumental register. Pehnt (2011) associates comparable strategies with the architectural conservatism of post-reunification Berlin, where stone cladding, aligned façades, and vertically proportioned windows were favoured, generating an aesthetic of standardisation. Westend campus articulates formal continuity as an expression of institutional and political values that sustain a controlled, image-driven urban environment.

This same issue arises in projects such as CFH. At the scale of the campus, the building's compliance becomes even more evident.¹¹² The CFH aligns itself obediently with its surroundings, reinforcing the logic of the Westend as a controlled enclave. Its volumetric constraints derive from a prior architectural competition for the neighbouring DIPF building, with formal alignment, particularly in storey heights, used to ensure visual continuity across the ensemble. Architecture here does not mediate between institution and city but stabilises an inward-looking order.

¹¹² At the time of writing, the CFH was still under construction and had not yet been officially opened.



Figure 106. CFH project overview. Source and credits: ArGe Architekten.



Figure 107. CFH under construction; May 2025. Photo: Mustafa Omrovic.

Such stabilisation is further reinforced at the level of institutional discourse. In official communications, the university frames the CFH as a building of visibility and representation, describing it as “characterising the appearance of the campus from afar” (GUF, 2024). Architectural visibility is explicitly linked to institutional vitality. Yet, this rhetoric stands in tension with the building’s formal restraint. Rather than producing visibility through spatial openness or urban confrontation, the CFH relies on recognisability as a function of conformity (Figure 106). In line with Dauß’s (2022) analysis of the corporate ethos in Westend, the university’s own architects align seamlessly with the prevailing status quo, materialising a self-conception of the institution as aesthetically controlled.

With the CFH, the GUF undertakes, for the first time on the Westend Campus, the planning and financing of a major building project entirely in-house (GUF, 2025). This increased institutional autonomy, however, does not result in architectural experimentation or programmatic rupture (Figure 107). On the contrary, the building, designed by the university’s own Property Management, Planning and Construction Department under the direction of architect Esref Yavuz, closely adheres to the established architectural language of the campus (GUF, 2024).

Through the CFH, the university orchestrates the consolidation of the Westend Campus as a corporately coherent institutional enclave, where architectural form, programme, and communication converge to stabilise a specific self-conception. It is autonomous yet managerial, transparent yet controlled, open yet internally stratified. The building naturalises these conditions through disciplined repetition, strategic restraint, and the internalisation of an established idiom. Rather than opening a space for critique or innovation, autonomy here consolidates continuity.

This continuity becomes manifest in the building’s formal organisation. It presents itself as a compact, rectilinear volume governed by an orthogonal grid that rigorously regulates façade articulation, openings, and proportions. The architecture renounces gesture and expressivity, reducing itself to the calm administration of surfaces. Transparency is mobilised as a guiding principle, yet only within strictly controlled parameters: glass is

framed, standardised, and normalised. What appears as openness is, in fact, a carefully modulated visibility, compatible with institutional legibility.

Programmatically, the CFH is organised around a carefully staged sequence of accessibility, visibility, and functional differentiation that translates institutional priorities into spatial form. The building is entered at ground level from both the east and west, converging in a generous foyer that functions as the primary point of orientation and symbolic condensation. From this space, a two-storey, glass-enclosed volume designated for exhibitions and events is immediately visible, foregrounding cultural production as a public-facing activity. Opposite the foyer, a rehearsal stage extends vertically from the basement to the ground floor, serving students of Theatre, Film and Media Studies. Visible from both interior and exterior, this positioning frames performative and technical practices as emblematic components of the building's identity.

The ground floor further accommodates a seminar room and administrative office, while three additional seminar rooms and student learning spaces occupy the first floor, reinforcing a gradient of academic accessibility at the base of the building. In contrast, floors two through five are dedicated to approximately 180 office workstations, primarily for third-party funded research projects (GUF, 2025). This vertical organisation spatially separates publicly legible academic activities from the more insulated spaces of research administration. In political discourse, this arrangement is framed as a "showcase" for research, teaching, and the arts; in practice, the sobriety of the CFH signals an acceptance of architecture's reduced agency within neoliberal academia.

The internal spatial organisation of the CFH ultimately translates this self-conception into a strict programmatic hierarchy. The revised programme conceives the building as a shared resource yet strictly stratifies it: accessibility and collectivity are spatially concentrated below, while research capital and institutional prestige are elevated above. This vertical stratification makes visible the internal logic of contemporary academic production. It operates as a document of institutional self-alignment, in which form, programme, and discourse converge to reproduce ideological continuities through disciplined repetition and controlled visibility.

9. In Florianópolis I found the administrative solution for Brazilian universities

When Rudolph Philippi Atcon visited UFSC to prepare the material that would later become the report *Rumo à Reformulação Estrutural da Universidade Brasileira* (Towards a structural reformulation of the Brazilian University¹¹³, 1966), he was pleased with what he found, as the passage lending the title to this chapter illustrates (Atcon, 1966, p. 70). The report appeared at a moment in the rethinking of the university system under the military dictatorship, yet it consolidated ideas Atcon had already been developing about Brazilian higher education, especially during the 1950s. From the 1920s to the mid-1980s, Brazilian public campuses planning was centralised thorough the Federal Government. As demonstrated by the UB, part of the government even imagined it possible to conceive a defined physical model for the Brazilian university system.¹¹⁴

Decentralisation and changes in funding models began mostly after 1980 when campus planning became more specialised and localised throughout the country. It was also at this time that territorial and physical planning offices began to become more common within universities. It signalled that, even within a federal institution, decision-making and interventions were becoming less centralised (Almeida, 2017). These offices allowed universities to assume their duties within context-aware agencies, which made sense given Brazil's size and the growing robustness of its higher education system. However, this also meant that personnel, budget conditions, and local political influences became even more decisive in defining planning approaches. Such dynamics often led to imbalances between schools and departments in terms of their power and ability to attract construction funding. Overall, this stemmed in a lack of comprehensive spatial planning.

¹¹³ Our translation.

¹¹⁴ Here we return to the experience discussed in Chapter Four, and to the intention articulated by the then Minister of Education, Gustavo Capanema, that the University of Brazil should be elevated as a model of territorial and institutional development for other Brazilian public universities.

Between the 1950 and 1980, many federal universities were established, contributing significantly to the development of university infrastructure.¹¹⁵ Two main characteristics can be observed in this period: one concerning the physical aspects and the other related to administration. As many institutions across the country acquired land, they also promoted the development of infrastructure such as roads, electricity, water supply, sewage systems, and telephone lines. In several cases, they secured the land and oversaw the assembly of basic services and facilities needed to support future growth, be it for the institution itself or for the neighbouring communities. Many of such enduring artefacts, as Solà-Morales (1997) notes, resist change and establish the urban relationships that university spaces continue to cultivate. This period also laid the physical and administrative foundations for a university system which was, we argue, gradually prepared towards reduced federal dependence. Although the system remained public and publicly funded, the structural changes during this time set the stage for austerity policies, efforts to privatise public higher education, and new efficiency-driven administrative models, which have not yet been explored in the Brazilian context with a spatial approach.

The military coup of 1964 in Brazil established a dictatorship that lasted until 1985 (Figure 108). It was motivated by opposition to President Goulart's reformist agenda and by fears of communism, and it received considerable support from the U.S. Beginning in 1968, the University Reforms drastically transformed Brazil's higher education system. Although some reform guidelines were developed before the coup, the military adapted them to fit their vision in an apparently axiomatic combination of modernisation with authoritarianism, an attitude that some scholars refer to as conservative modernisation

¹¹⁵ The number of universities created or federalised during this period is substantial. It includes, among others, the Universidade Federal do Rio Grande do Sul (UFRGS), Universidade Federal Rural do Rio de Janeiro (UFRRJ), Universidade Federal da Bahia (UFBA), Universidade Federal do Paraná (UFPR), Universidade Federal de Pernambuco (UFPE), Universidade Federal Rural de Pernambuco (UFRPE), Universidade Federal de Viçosa (UFV), Universidade Federal do Rio Grande (FURG), Universidade Federal do Maranhão (UFMA), Universidade Federal do Espírito Santo (UFES), Universidade Federal do Ceará (UFC), Universidade Federal da Paraíba (UFPB), Universidade Federal do Pará (UFPA), Universidade Federal do Rio Grande do Norte (UFRN), Universidade Federal de Pelotas (UFPel), Universidade Federal de Goiás (UFG), Universidade Federal de Santa Maria (UFSM), Universidade Federal Fluminense (UFF), Universidade Federal de Santa Catarina (UFSC), Universidade Federal de Juiz de Fora (UFJF), Universidade Federal de Sergipe (UFS), Universidade de Brasília (UnB), Universidade Federal de Alagoas (UFAL), Universidade Federal do Amazonas (UFAM), Universidade Estadual de Campinas (UNICAMP), Universidade Federal de São Carlos (UFSCar), Universidade Federal de Uberlândia (UFU), Universidade Federal de Ouro Preto (UFOP), Universidade Federal de Mato Grosso (UFMT), and Universidade Federal do Acre (UFAC).

(Cunha, 1988).¹¹⁶ Educational policies during the coup integrated research and graduate programmes under the control of the authoritarian state and international influences. Despite structural advances, such as the expansion in the number of degree programmes, the reforms fostered a dual system. They encouraged the growth of private institutions, often associated with lower-quality undergraduate education, while concentrating resources for postgraduate training within public universities.

The 1968 University Reforms in Brazil should not be seen, even under the military regime, as a monolithic development. Its complexity has been addressed from various perspectives, and the challenge of understanding its many dimensions has long engaged historians of education and related fields. Pereira (2017), for instance, examined the influence of North American expertise on the spatial planning of Brazilian public universities, including the regulatory framework that supported cooperation agreements with U.S. agencies. As the broader reform promoted by the military met with escalating protests, the federal government created a working group to accelerate the process of university restructuring. The resulting decrees promoted an entrepreneurial vision of higher education, drawing on North American models. They emphasised the evaluation of spatial conditions in universities, the identification of institutions to receive priority funding for campus construction, and the rapid development of buildings intended to house basic training centres, also inspired by U.S. examples. The reform mobilised a wide range of actors and mechanisms. Cunha (1988, 2007) provides a critical analysis of this process, though without a specific focus on physical university space.

¹¹⁶ Conservative modernisation integrates modernisation efforts within a framework that maintains traditional social, political, or economic structures. It balances innovation with the preservation of power dynamics and hierarchies, often using modernisation to legitimise these structures. In Brazil, Guimarães first used the concept in 1977, inspired by the analysis of the bourgeois revolutions in Germany and Japan as they transitioned from pre-industrial to capitalist and industrial economies (Pires & Ramos, 2009).



Figure 108. Women carrying a banner reading "Brazil will not become a new Cuba" during the *Marcha da Família com Deus pela Liberdade* (March of the Family with God for Freedom), one of a series of conservative demonstrations held between March and June 1964 that mobilised fears of communism and helped legitimise the military coup later that year. Source: WM Commons.

One of these figures is Rudolph Philippi Atcon. Here, we seek to contribute to the scholarship on his work by drawing attention to aspects of his thought that have not been fully explored in previous research. While his diagram representing a hypothetical university campus is well-known, there remain important dimensions to examine, including his views on the philosophy of science and his interpretation of the relationship between the state and the university. These perspectives allow for a more multidimensional understanding of his thinking. Atcon's work, we argue, encapsulates the paradoxical combination of modernising ambition and conservatism that characterised the period. It congregates several elements that align the image of the university campus with what we describe as spatial products.

Atcon emerges as a globalising figure before the age of globalisation, making both the subjective dimensions and the theoretical foundations of his work instructive to how we interpret spatial products. This does not mean that the technician was a neoliberal *avant la lettre*, but it does allow for parallels, particularly when we place him and some of his ideas in the context of the U.S. during the period when Atcon produced the most substantial part of his work with the Brazilian federal university system. This revisiting of Atcon's theories, as well as of the philosophy inscribed in his technical work, helps us explain part of the preconditions of the infrastructural interactions we see on campus and in the spatial products of these rationalities themselves.

UFSC's material conditions and construction volume warrant a different approach compared to the other two universities we have studied so far. The second part of this chapter turns to the UFSC campus to examine how these dynamics were translated into practice. Before the Reform, the campus reflected the logic of large-scale infrastructural projects that drove mid-twentieth-century development in Brazil. After 1968, reformist ideas, informed in part by Atcon's work, began to shape its evolution, alongside new conceptions of the state's role and the participation of emerging actors. The chapter concludes with an analysis of two later buildings which, although constructed long after Atcon and the Reform, embody the policies, practices, and subjectivities rooted in that transformative period.

Muse protocols

"Rudolph Atcon, MEC-USAID's muse, opposes public (and free) higher education," declared the União Estadual dos Estudantes (UEE, or State Student Union) newsletter in its June 1968 edition (UEE, 1968). At the time, both Atcon and the agreements between MEC and the United States Agency for International Development (USAID) instigated significant debate. These agreements were part of a broader strategy by the U.S. government during the Cold War to modernise Brazilian higher education by introducing American educational and administrative practices. This collaboration aimed to align Brazil's educational system with strategic interests, promoting economic development and countering the influence of communism in the region. Atcon's work with Latin American universities introduced new principles of spatial organisation in the region, while his Brazil-focused contributions strongly influenced the wide-ranging educational reforms after 1968, which also had territorial and spatial impacts. At UFSC, Atcon appeared as a highly esteemed name, especially by the university administration.¹¹⁷

His sustained involvement with MEC, combined with the breadth of his studies and his extensive engagement, including travel, contacts, and interactions with Brazilian institutions, elevated him to the status of a well-known figure. National newspapers devoted significant attention to Atcon's views, turning him, as Cunha (1988) observes, into a prominent target of criticism directed at the MEC-USAID agreements and, by extension, at the military's control of the Ministry of Education and U.S. interventionist policies in Brazil. Part of such critiques went beyond his proposals, reflecting deeper anxieties about sovereignty, the dismantling of public education, and foreign influence on national policy. This episode constitutes yet another chapter in the long tradition of U.S. involvement in

¹¹⁷ As reported by Heitor Bittencourt, President David Ferreira Lima's public support and admiration for Atcon were consistent. Bittencourt recalled Ferreira Lima receiving Atcon at the council, where "he [Ferreira Lima] praised Atcon as if he were a god. I even remember a phrase he used, that Atcon was so important, his ideas were so good, that his words were like pearls falling on the floor and we should follow and pick them up". (UFSC, 2018, p. 356, our translation, from the Portuguese original: "No Conselho ele elogiava o Atcon como se fosse um Deus. Até me lembro de uma frase que ele usou, que o Atcon era tão importante, as ideias dele eram tão boas, que as palavras dele eram como pérolas que caíam no chão e a gente deveria seguir e recolher."). (UFSC, 2018).

education.¹¹⁸ Atcon was also advisor for the Organización de Estados Americanos (Organisation of American States) and United Nations Educational, Scientific and Cultural Organisation (UNESCO), both of which relations had granted Atcon with high mobility and prestige.

As said, Atcon exemplified a global agent operating before the advent of globalisation, although his biography is somewhat fragmented and inconsistent. Born in 1921 in Weimar, Germany, Atcon attended Athens College in Greece. He spent much of his life in the U.S., where he earned his undergraduate degree from Amherst College. His academic and professional career were diverse. In 1941, he began civil engineering studies at Union College in Schenectady, New York, then pursued graduate work at Harvard University, focusing on the philosophy of science and symbolic logic. Shortly after completing his graduate studies, Atcon joined the Institute of Inter-American Affairs, marking the beginning of a career centred on university reorganisation and educational reform. Beyond these facts, much remains unknown about him.¹¹⁹

During the restructuring of the Brazilian Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes, Coordination for the Improvement of Higher Education Personnel) in 1952 Atcon had his first documented contact with Brazil, an invitation he received from Anísio Teixeira.¹²⁰ His extended involvement in Brazil, however, was made possible through agreements between MEC and USAID.¹²¹ One of Atcon's early influential contributions in Brazil was his above-mentioned report, *Rumo à Reformulação Estrutural da*

¹¹⁸ Throughout the nineteenth and twentieth centuries, U.S. guidance in this field was multifaceted, combining political, economic, and ideological objectives. Notably, alongside Latin America and post-war Europe, the nineteenth century Eastern Mediterranean cases are significant. I am thankful to Prof. Dr. Daniela Ortiz for suggesting Yasmina El Chami's (2024) work, which explores these interactions through college typologies in nineteenth century Lebanon.

¹¹⁹ The most dependable source on Atcon is the Amherst College Archives & Special Collections, to which our access has been incomplete.

¹²⁰ Teixeira was a seminal Brazilian intellectual. He took office as general secretary of CAPES in 1952 and simultaneously served as director of the National Institute of Pedagogical Studies, positions he held until 1964, when he was removed by the military regime.

¹²¹ The nature and extent of Atcon's role in these agreements remain uncertain. Souza notes that his position may never have been formally established. Even so, his presence in MEC's activities at the time was considerable. The confusion arises from the overlap in his roles, as he was directly involved with MEC while also overseeing the implementation of the MEC-USAID agreements.

Universidade Brasileira (1966), also commonly referred to as the "Atcon Report". Prepared between June and September 1965 for the Higher Education Directorate of the Ministry of Education and Culture, the report assessed eleven federal universities and one private institution.¹²²

Atcon helped modernise Brazilian universities, addressing both pedagogical and urban aspects and advising on new campus structures and academic governance changes. This cooperation was part of the broader Alliance for Progress, aiming to align Latin American education with U.S. economic and cultural interests, emphasising modernisation and Anglo-American standards, and highlighting the political nature of this educational "modernisation" amid geopolitical alignment.¹²³ The first agreement between the Brazilian government and the USAID was signed in June 1964, only a few months after the April coup d'état, extending beyond the field of education and within four years, twelve agreements had been concluded. In June 1966 the MEC-USAID Agreement of Advisory for the Modernisation of University Administration was signed, which, after criticism, was reformulated as the MEC-USAID Agreement of Advice on Higher Education Planning. Many of its proposals became government measures, feeding directly into the Higher Education Reform. Under its terms, USAID and the scholars it dispatched were tasked with identifying problems and prescribing solutions, which were subsequently implemented through decree-laws and, ultimately, the 1968 Reform (Pina, 2011).

Atcon's 1966 Report reveals the philosophical underpinnings of his approach to the Brazilian university system, framed as methodologically neutral yet deeply normative. He posits the need for a systematic framework capable of comparison across institutions, claiming universality for his principles and relegating adaptation to a secondary stage.

¹²² Atcon visited and analysed the following institutions: The institutions he analysed. Pontifícia Universidade Católica do Rio Grande do Sul, Universidade Federal da Bahia, Universidade Federal da Paraíba, Universidade Federal de Minas Gerais, Universidade Federal de Pernambuco, Universidade Federal do Ceará, Universidade Federal do Pará, Universidade Federal do Rio de Janeiro, Universidade Federal do Rio Grande do Norte, Universidade Federal do Rio Grande do Sul, Universidade Federal de Santa Catarina e Universidade Federal de Santa Maria.

¹²³ In 1961, U.S. President Kennedy announced the Alliance for Progress, an economic assistance programme aimed at promoting political democracy, economic growth, and social justice in Latin America. U.S. pledged over twenty billion dollars in public and private capital for the region. This was a multifront effort, as some scholars have noted, and it also extended into educational policies (Rabe, 2016).

Atcon structures the report around a series of theoretical sections that he refers to as factors. The first of these factors is strikingly quantitative, foregrounding demographic pressure and the physical expansion of higher education as a primary philosophical concern, thereby reducing the complexity of university life to a problem of scale. The qualitative factor follows, yet it rests on unsubstantiated claims of declining standards. The economic dimension is framed in terms of absolute efficiency, defined as the achievement of maximum output with minimal investment, an overtly utilitarian position that exposes the technocratic ethos of the document. The subsequent “non-correspondence” factor advances a functionalist expectation that graduates should serve society strictly within the confines of their formal training, while the educational factor laments the absence of substantive intellectual content across the system. Finally, in what he terms a “temporal factor”, his managerial and predictive view prevails, indicating that universities must respond not only to immediate demands but also to an undefined future.

Atcon’s vision of the university cast it as the legitimate trainer of community thought in the spiritual, moral, intellectual, social and economic, a formative institution responsible for modelling the future of society and anticipating its demands in knowledge, profession, and civility. The reform he proposed required a realistic and efficient administrative framework capable of granting universities both financial and academic autonomy, which he argued was impossible under the concentration of power in the executive branch of the state.¹²⁴ The visits he carried out were part of this so-called realistic diagnosis. For most of the institutions, Atcon’s evaluation was notably harsh, reflecting his push for structural flexibility, integration, and cost-efficiency. He emphasised the importance of basic education as the core of the system and argued for universities to detach from state financial and administrative control. His recommendations included management by professional administrators, ideally sourced from the private sector.

UFSC was singled out as an exception in Atcon’s report. He attributed part of the credit to its then president/rector, David Ferreira Lima, whom he considered capable of combining

¹²⁴ In the national government, the Executive Branch is headed by the President of the Republic. the Federal Executive is responsible for the entire country's interests, national security, and international relations. Brazil follows a presidential system, meaning the President holds two distinct roles simultaneously: Head of State (representing Brazil to the world) and Head of Government (managing the internal administration).

administrative experience with legal expertise. Atcon praised the administration for its use of technology to “simplify current procedures in the public service and adapt machines to the needs of the institution” (Atcon, 1966, p.60,¹²⁵). He observed that the system was oriented towards efficient processing, equipped with the necessary control mechanisms, yet without excessive attention to formalities often invoked to prevent abuse. According to Atcon, both document handling and financial procedures were resolved in ways more commonly associated with well-run private enterprises, and only rarely encountered in public administration.

Atcon’s relationship with UFSC was strategic. The allocation of funds to the university, granted by Minister Roberto Campos at Atcon’s recommendation, confirms UFSC’s privileged position within the reform agenda of the post-coup government. UFSC was chosen to host a national Training and Improvement Course in University Administration aimed at staff from other Brazilian universities, thereby positioning it as a pilot institution for the dissemination of new managerial and administrative models. As the then university president, Ferreira Lima, makes clear, this attention resulted from Atcon’s direct involvement with UFSC during his nationwide assessment of Brazilian universities, conducted under the auspices of the Ministry of Education and Culture (Comissão Memória e Verdade, 2018). The coup government’s particular attention to UFSC can thus be understood as the result of a convergence of interests. The university appeared to embody—or, at the very least, to be receptive to—the technocratic and managerial principles advanced by Atcon, which made it a fitting testing ground and training hub for the wider restructuring of Brazilian higher education under the logic of authoritarian modernisation.

In West Germany Rudolph Atcon encountered another legend. Little has been written in depth about the theoretical and conceptual frameworks underpinning Atcon’s work, which is largely practical and centred on recommendations rather than sustained reflection on the ideas informing them. It is for this reason that we consider Atcon’s reading of Alexander von Humboldt’s work (Atcon, 1964). The *Stifterverband für die Deutsche*

¹²⁵ From the original Portuguese: “[...] simplificação das tramitações vigentes no serviço público e a adaptação das máquinas às necessidades da instituição” (Atcon, 1966, p.60).

Wissenschaft (Today known as German Donors' Association for the Promotion of Sciences and Humanities), an association for the promotion of Sciences in Germany, invited Atcon as an advisor for the West German Rectors' Conference in 1961 and 1962, when he undertook a critical analysis of the situation of the West German universities.¹²⁶

Responding to this request, Atcon produced an essay, written originally in German, in which he analysed the evolving role of higher education in West Germany, with particular attention to Humboldt's legacy and to the state's role in financing and providing higher education. Its title closely echoes that of his report on Brazilian universities, which he began drafting the following year. The essay, a substantial work of nearly seventy pages, is entitled *Zum Strukturwandel der deutschen Universität*, which translates as *On the Structural Transformation of the German University*. Atcon's reading of Humboldtian ideals must be seen particularly against the backdrop of what was perceived as a crisis in regional Latin American higher education. This concept of academic reform, inspired by Humboldt's principles of autonomy, research, and educational freedom, resonated strongly with Atcon, as reflected in his 1966 report following his visit to the Federal Republic of Germany.¹²⁷

Atcon reflects on Humboldt's work because he sees it as impossible to analyse German universities without considering Humboldt's ideas, and the broader Humboldtian tradition, dating back to the eighteenth century. His main focus is the text *Über die innere und äußere Organisation der höheren wissenschaftlichen Anstalten in Berlin*, published by

¹²⁶ At the time, as noted in the epilogue, he was an adviser at the Universidad Autónoma de Santo Domingo, Dominican Republic.

¹²⁷ Ash (2006) argues that Humboldt's legacy must be viewed within the context of what scholars call the "Humboldt myths," constructed traditions often entangled with misinterpretations and adaptations of his actual writings. Ash notes the so-called "Humboldtian model," reflects a narrative established mainly in the late 19th and early 20th centuries, coinciding with a perceived crisis in higher education. Humboldt's contributions to pure science and university organisation were relatively limited, with many practices attributed to him predating his influence, especially within today's Humboldt-Universität zu Berlin. Even in his later-recovered writings, Humboldt's visionary notes stand out. Richter (2018) sees Humboldt's insights into what we would now understand as globalisation as a cornerstone infrastructure of modernity. Humboldt's scientific method fosters a global outlook, using standardised measurements for cross-continental comparisons. His emphasis on global interconnectivity, especially through the sciences, aligns with the relational infrastructures that underpin modern globalisation, transforming it into a measurable and universally applicable framework (Richter, 2018).

Wilhelm von Humboldt in 1809–10.¹²⁸ Atcon approaches tradition, given the weight that Humboldt's work carries, as something that repeatedly curbs the dangers of social excess and collective superficiality, which might otherwise contribute to the decline of social order. At the same time, he stresses the importance of allowing those within institutions to examine their own traditions, so that these traditions are upheld as virtues rather than rigid frameworks that prevent universities from evolving in response to social needs. As, for Atcon, the seemingly vast range of problems faced by universities could, upon closer examination, be traced back to a few fundamental issues. Addressing or redefining these core problems, he argues, would trigger a broader process of recovery.

The core of Humboldt's memorandum, Atcon notes, lies in the reciprocal obligations it sets out concerning how society must provide the forms and means that ensure the university's autonomy and unhindered development, while scholars, in turn, must safeguard their independence from the state. Only through such internal discipline and self-regulation can universities truly expand their mission in a purposeful, free, and intellectually conscious way. *Bildung*,¹²⁹ in such sense, appears as a commodity, recognising that many might be unable to afford it. Yet, he argues that universities must move beyond Humboldt's notion of the *universitas litterarum*—the “university of the learned”—to become a *Bürgerschule*, a civic institution embedded within society.¹³⁰ Central to this position is a critique of state involvement in funding, set against the German model, in which university freedom is fundamental to shaping teaching and learning, and the role of the state is largely confined to safeguarding that autonomy and appointing professors.

¹²⁸ von Humboldt, W. (1960). Über die innere und äußere Organisation der höheren wissenschaftlichen Anstalten in Berlin [1809 or 1810]. In W. Weischedel, W. Müller-Lauter & M. Theunissen (Ed.), *Idee und Wirklichkeit einer Universität: Dokumente zur Geschichte der Friedrich-Wilhelms-Universität zu Berlin* (pp. 193–202). Berlin, Boston: De Gruyter.

¹²⁹ See Footnote 79 in this thesis.

¹³⁰ It is not entirely clear what Atcon means by *Bürgerschule* in this context. Historically, the *Bürgerschule*, which literally translates a citizens' school, was a form of municipal institution that emerged in the late eighteenth and nineteenth centuries, designed to provide a practical education for the urban middle classes. It functioned as an intermediary between basic primary schooling for the poor and the elite, classically oriented secondary schools. It is therefore likely that Atcon was invoking the notion of a civic university, oriented towards social integration and practical utility rather than scholarly formation alone.

His text is not straightforwardly neoliberal. Rather, combines two conflicting logics. On the one hand, it adopts the market metaphor, including education as consumption, universities adjusting to demand, to render its critique more “realistic”. On the other, its normative horizon remains distinctly egalitarian. Atcon’s reflections on the condition of the university centre on the need to reconcile educational ideals with social and economic constraints. He notes that higher education increasingly operates according to market logic, in which learning becomes a consumer good pursued for social advantage rather than recognised as a public right. Against this tendency, he insists on understanding education as a fundamental social need that should be universally accessible.

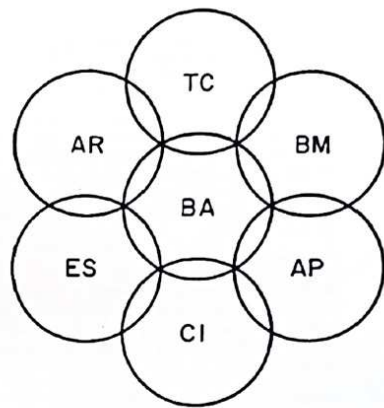
Universities, in such view, must resist the reduction of knowledge to a commodity and reclaim their civic role as institutions that serve all citizens, not just scholars or the privileged elite. This means expanding access, fostering equality, and adapting to the evolving demands of society without compromising intellectual integrity. At the same time, Atcon recognises that structural reform is essential. Bureaucracy, economic pressures, and ingrained prejudices often prevent universities from adapting to change or integrating new fields of knowledge. He argues that institutions must face social and educational conditions rather than rely on idealised assumptions about students or society. While a comprehensive overhaul of the entire education system may be the long-term goal, universities must, in the meantime, act as laboratories for reform, flexible, innovative, and socially responsive spaces that balance vocational training with intellectual cultivation, what could also imply charging for education.

Among Atcon's fundamental contributions is his *Manual sobre o planejamento integral do campus universitário* (Manual for Comprehensive Campus Planning, our translation, from here on referred to simply as *Manual*), developed in 1970 and endorsed by Brazil’s Council of Rectors of Brazilian Universities (CRUB), in which Atcon served as the first executive secretary. This document appeared as an appendix in another robust work that the technician produced, the book *Administração integral universitária: uma teoria unificada da estruturação e administração universitária* (Atcon, 1974, Comprehensive university administration: a unified theory of university structuring and administration, our translation).

In this book, which exerted a strong influence on the 1968 university reform, two principal missions can be identified. The first concerns Atcon's approach to university administration, developed across the 145 pages of the theoretical section. Here he outlines the core components of what he terms *integral administration* and establishes the principal theoretical markers of this model. Within this framework, he introduces a series of administrative roles that he considers indispensable. These include departments, central institutes and study centres. He then dedicates a long section to the roles of senior managers and institutional leaders, where the author describes the positions of rector (university president) and pro-rectorates in detail.¹³¹ The *Manual* appears as a substantial appendix and extends to more than 100 pages (Figures 109; 110).

The *Manual* offered practical guidance on implementing Brazil's University Reform, emphasising an organised, homogenous campus structure designed to streamline management and minimise construction and operational costs. Here, Atcon conceives of the comprehensive university as one in which teaching, research, and extension are integrated under a central administration. He characterises this integrative approach as a "biological principle" (p. 169), one that should be present from the very inception of the campus.

¹³¹ Atcon states that the university needs additional executives beyond the Rector, Deans or Directors. These executives handle matters common to the entire institution. Their role is to act horizontally across the university, rather than vertically within each specific unit. They may be called sub-Rector (or pro-Rector), but not Vice-Rector. A "Rector" (Latin *rēctor*) originally meant "ruler, guide or director", coming from *regere* "to rule or guide". In a university context, the rector is the chief academic and administrative official. By contrast, a "pro-Rector" (or sub-Rector, in this author's terminology) refers to a deputy or assistant to the Rector. The author insists that the institution should have only one Vice-Rector, a substitute for the Rector, who assumes the Rector's duties when required, rather than multiple independent executives whose authority might rival or conflict with the Rector's. See: Merriam-Webster. (2025a). Prorector. Merriam-Webster.Com Dictionary. <https://www.merriam-webster.com/dictionary/prorector> and Merriam-Webster. (2025b). Rector. Merriam-Webster.Com Dictionary. <https://www.merriam-webster.com/dictionary/rector>



BA = Centro Básico TC = Centro Tecnológico
 BM = Centro Biomédico AP = Centro Agropecuário
 CI = Centro Cibernético ES = Centro Desportivo
 AR = Centro Artístico

Figure 109. Diagram summarising how Atcon conceived his integral university. Source: Atcon, R. P. (1974). Administração integral universitária: Uma teoria unificada da estruturação e administração universitária. MEC.

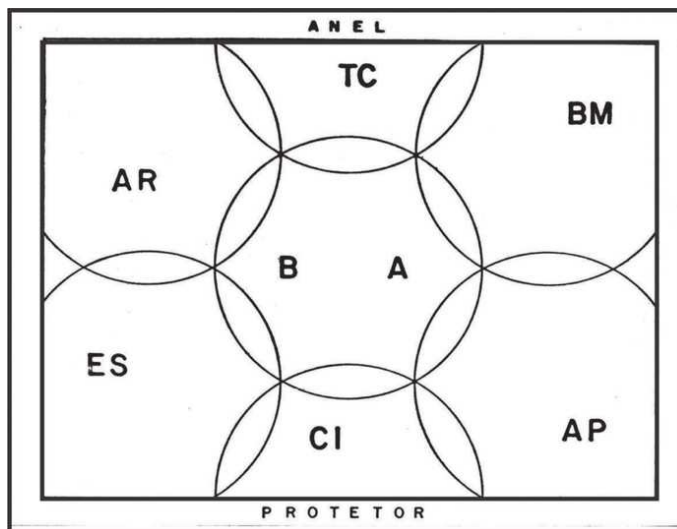


Figure 110. Diagram showing the spatial concept developed by Atcon in his Manual. Source: Atcon, R. P. (1974). Administração integral universitária: Uma teoria unificada da estruturação e administração universitária. MEC.

In his framework, the ideal university must consider biological viability, qualitative growth, quantitative flexibility, and a structure that is both practical and economical. This “integrality”, as Atcon proposes, ensures the institution’s adaptability and sustainability across academic, administrative, and spatial planning dimensions. What Atcon terms a “integral university” implies that the institution should organise itself around fields of knowledge rather than around the catalogue of courses it offers. These fields (what Atcon refers to as discipline-centric areas¹³²) form the basic structure of the university and presents it as an organism built from disciplinary affinities where each field is broken down into departments, and these departments then come together in centres that reflect shared academic or scientific interests.

Atcon outlines his notion of the integral university through ten criteria. For clarity, we organise them here according to the broader dimensions they address. The first group deals with resource management and institutional efficiency. A second group concerns purpose and social responsibility and sets out the university’s orientation towards society. The third group focuses on institutional form and internal functioning and highlights how academic and administrative structures should operate in relation to one another. We can group simplicity and economy (criterion 1), moderation (criterion 2), performance (criterion 3), and time (criterion 7) within the dimension concerned with resource management and institutional efficiency. These criteria form the operational base of the university and are focused on the careful use of financial, material, and temporal resources. Atcon argues that simplicity should cut back unnecessary administrative layers and create the conditions for moderation, understood as avoiding excess rather than imposing austerity. With fewer demands on the system, the university can increase its performance, that means achieving more while using less. Time appears as a sort of determining factor encompassing quicker academic and administrative procedures as means to reduce both social and operational costs and establishing an organisational rhythm that, in his view, secures the institution’s long-term viability.

¹³² Atcon (1974, p. 30) employs the term *materiocêntrica*. Here, *matéria* denotes academic disciplines/subjects, known in Brazilian Portuguese as *matérias escolares* or *acadêmicas* (school or university subjects).

The second dimension concerns purpose and social responsibility and brings together the criteria of quality (criterion 4), quantity (criterion 5), and correspondence (criterion 6). It addresses the question of why the university exists and whom it serves. For Atcon, quality is non-negotiable and must encompass not only technical competence but also moral and civic formation. Since expanding access becomes an ethical commitment to democratisation, quantity introduces a different challenge. What binds these two aims, quality and quantity, is correspondence, as it makes little sense to widen access and insist on quality if the institution's programmes fail to respond to professional realities and broader social needs. In Atcon's view, only when these three elements work together does the university fulfil its public role.

The third dimension, which focuses on morphology and systemic dynamics, reunites the criteria of organisation (criterion 8), vigour (criterion 9), and viability (criterion 10).

Organisation refers to the structural layout of the university, the way its parts relate and sustain each other. Vigour concerns its capacity to act, adapt, and respond to internal and external pressures. The trio is completed by viability, which deals with resistance and institutional durability. Without the ability to self-renew, modulate its scale of action or stabilise internal processes, the university compromises its future and tends to inertia. Here, Atcon turns to biological metaphors to think through the "anatomy" and "physiology" of the institution. He leans on this biological metaphor to frame the university as something that behaves less like a static institution and more like a living organism:

Let us view the university as a dynamic, living system. It is, therefore, a biological entity subject to the laws of physics, chemistry, and biology, akin to all living organisms. Indeed, contemporary events daily reinforce my working hypothesis: that the university is to the social body what, by analogy, the genetic mechanism is to an individual organism (Atcon, 1974, p. 7, our translation¹³³).

¹³³ From the Portuguese original: "Tratemos, então, da universidade como um sistema dinâmico, vivo e, por conseguinte, como um ente biológico, sujeito às leis naturais da física, da química e da biologia, tal como todos os seres vivos e suas instituições. Quanto mais, vendo como os eventos contemporâneos reforçam, diariamente, minha hipótese de trabalho, que a universidade deveria ser considerada para o corpo social o que, por analogia, o mecanismo genético representa para um organismo individual" (Atcon, 1974, p. 7).

Atcon (1974, p.25, our translation¹³⁴) strengthens his definition of the university through a biological metaphor, describing it as “a modeller of society’s future, a legitimate shaper of the community’s thinking in the spiritual, moral, intellectual, artistic, civic and economic realms at its most advanced educational level.” In this view, the university acts as a gene within the social body to which it belongs, drawing its staff and material resources from it, while being obliged to anticipate, regulate and confront future demands in knowledge, valorisation, professional formation and civility.¹³⁵ Depending on the university’s structural, administrative and intellectual maturity and, of course, on the historical moment in which the institution finds itself, this function is either carried out unconsciously or performed with full awareness.

In this work, the scientific method appears as the highest expression of human evolution, even as Atcon concedes that it is applied only in exceptional moments of our existence. From this premise, he argues for a systematic study of the university, one that should encompass a philosophical framework, an ethical framework, a psychological framework, and a sociological framework, alongside planning, objectives, structure, academic and scientific content, administration, and evaluated results. Yet, he develops many of these points or markers only in passing. His philosophical framework, for instance, is reduced to a brief note on the premises of simplicity and economy, two principles he recommends for the philosophical grounding of the “integral university”. He justifies them by claiming that they are rooted in the scientific method and supported by studies in symbolic logic, semantics and cybernetics. In such conception, a strong simplicity guides the phenomena through an economy of procedures that is less financial than epistemic.

¹³⁴ From the Portuguese original: “[...] modeladora do futuro da sociedade, como legítima formadora do pensamento da comunidade no espiritual, moral, intelectual, artístico, cívico e económico no seu nível educacional mais avançado” (Atcon, 1974, p. 25).

¹³⁵ During the Brazilian military regime, the notion of civility was profoundly reconfigured. It became closely aligned with morality, discipline, and national security. In this context, civility was no longer understood as the exercise of political rights, but rather as a set of duties centred on obedience, patriotism, and socially “orderly” behaviour. This redefinition also carried a technical dimension, tied to the discourse of *Brasil Potência*. The civilised citizen was imagined as productive, technically skilled, and disciplined, oriented towards economic progress and national development, while refraining from questioning the political parameters that governed this growth. Public order thus became a core component of civility, and the ideal citizen was expected to collaborate with the state in maintaining social peace, a demand that frequently entailed silence and acquiescence in the face of censorship (Carvalho, 2021).

Cybernetics lies at the centre of Atcon's understanding of systems and informs the way he conceives the campus. The field examines how different systems, biological as well as mechanical, regulate themselves, emphasising processes of feedback and control and seeking structural and functional analogies across domains. Early cyberneticians, for instance, drew parallels between nerve synapses and the switching actions of vacuum tubes in early computers. When Atcon resorts to biological language to explain systemic operation, he is working within this same impulse. His metaphors echo the cybernetic ambition to identify common rules binding technical, organisational, and physiological systems, in a campus conceived simultaneously as a living organism and as a machine that responds to inputs and adjusts its own behaviour.

In Atcon's model, we might trace a parallel with Martin's (2003) reading of Norbert Wiener's (1954 [1988]) *The Human Use of Human Beings: Cybernetics and Society*. Both point to an overlap between the movement of physical bodies and the movement of information. In each case, these movements are governed by regimes, codes, and protocols that shape their circulation through infrastructural networks. Wiener's book, in its turn, develops this idea in a broader argument about communication, control and feedback in human and mechanical systems. He argues that information is the basis of order, that societies depend on stable flows of communication, and that disruptions to these flows can lead to disorder and degradation. He also warns that technical systems can shape human behaviour in ways that demand ethical attention, as the line between human agency and machine processes becomes increasingly blurred.

Planning is the marker Atcon develops most fully. He offers a brief historical sketch of planning as a science, which he locates at the beginning of the twentieth century as a response to demographic change in the Global North and, as an administrative technique of the nation-state, as something that first emerged in the Soviet Union. Within the university, planning supersedes reformist impulses as it forms an integral process that treats reform not as a set of corrective measures but as the conception and activation of an

“integral restructuring and institutional reorganisation”, together with the “logical and functional redistribution of all university activities” (Atcon, 1974, p. 13, our translation¹³⁶).

The *Manual* aim is to outline an “integral philosophy of campus planning, based on the organic nature of the enterprise and the new responsibilities of the university” (Atcon, 1974, p. 159, our translation¹³⁷). In this framework, the university appears as a shaper of the social future, responsible for meeting future demands related to knowledge, profession and citizenship. To do so, it must remain flexible, economical and cooperative. Atcon again contrasts this model with what he calls the “traditional” university, i.e. an aggregation of professional schools and faculties, each operating in relative isolation and enjoying its own administrative, didactic, financial and personnel autonomy.

The integral university, in turn, is defined by the full interconnection of teaching, research, and extension across all courses, under a central administration that coordinates activities rather than merely supervising separate units. Any entity with a clearly defined administrative structure qualifies as an academic unit. The department brings together all disciplines within a given field of knowledge, linking them at academic, scientific, and administrative levels. It concentrates staff and the infrastructure on which they depend within a single physical space, thereby supporting collective work and shared objectives. In Atcon’s model, the department thus emerges as a necessary alternative to the traditional university chair.

Throughout the *Manual*, Atcon returns to the biological metaphor to explain how a university should be structured from the start, as this sense of systemic integrity must be set from the moment the university is created. He argues that the institution needs its own internal coherence, not a loose federation of separate units. In his view, the university functions as a single organism. Core disciplines act like vital organs –he compares them to the liver– whose absence prevents the institution from remaining a true university and turns it into a cluster of professional schools. Other areas, such as the arts or the sports

¹³⁶ From the Portuguese original: “[...] integral reestruturação e reorganização institucional”; “[...] redistribuição lógica e funcional de todas as atividades universitárias” (Atcon, 1974, p. 13).

¹³⁷ From the Portuguese original: “[...] filosofia integral do planejamento de um campus, em função da organicidade do empreendimento e das novas atribuições que a universidade tem” (Atcon, 1974, p. 159).

department, work more like sensory organs. They are not essential for survival, but without them the institution becomes weaker and less complete. Here again, for Atcon, comprehensive or integral planning should aim at biological viability, qualitative growth, quantitative flexibility, and a structure that is both practical and economical. Both the plan itself and the figure of the planner are conceived as drivers of this biological development. The planner's role is grounded in the idea that knowledge functions as a tool for action, while the plan establishes the general scheme to be followed and incorporates graphic representations of the campus buildings.

Atcon organises his treatment of university infrastructure around a set of main areas concerning location, urbanisation, zoning, construction, and housing. In the section on location, he addresses the usable area of the campus and the need to define an appropriate scale. He proposes 500 hectares as a technical guideline, arguing that this scale allows room for future expansion. He also stresses the need for environmental control in the surrounding area. This is achieved by reserving land around the campus to form a kind of protective ring, which, as we shall see, also configures the zoning on campus. The author argues that the functional integration of the university complex also depends on the presence of a specialist in campus urban planning. He adds that the institution should create a technical office to coordinate the studies needed for the university's general urban plans. These studies should examine topography, subsoil conditions, the routes that provide public access, the way the campus connects to essential urban utilities and services, general bioclimatic factors, the surrounding area, parking, public and civic gathering spaces, and the network of parks and squares.

In the *Manual*, Atcon structures zoning around five foundational principles: the ring, space, interdependence, positions, and geographic orientation. The ring principle proposes a buffer that isolates the campus from undesirable surroundings, establishing a perimeter within which internal zoning can be organised. The space principle advocates for horizontal campus layouts, utilising Brazil's vast territory. Interdependence and positions focus on the spatial relationships between university sectors, guiding physical integration. The orientation principle emphasises adapting campus design to local climate conditions,

ensuring alignment with regional environmental factors. University spaces should prioritise rationality and cost-effectiveness in construction, administration, and control.

One of Atcon's most significant contributions to campus space discussions is the diagram illustrating his spatial principles (Figure 111). In this diagram, the outer areas feature sectors dedicated to Biomedical courses, Sports, Agriculture, and Technology, promoting greater permeability, particularly between the Biomedical sector and its associated hospital and the sports sector. At the centre, the Basic sector, primarily composed of classrooms, is designated for initial student credits before transitioning to specialised sectors. The other sectors comprise the Artistic Sector and the Cyber Sector, in addition to the Administrative Sector. The technician defines the spatial relationship between the major sectors and the internal layout of each one. Atcon also sets out how interactions should occur at the sectors' edges, specifying which services will be shared and how different disciplines should occupy the spaces that lie between these areas, mainly through the simultaneous physical and administrative functions that departments run.

At the centre of the campus lies the so-called Basic Centre, which brings together all activities related to basic knowledge. It is made up entirely of departments, each placed near the applied sectors it is meant to support. The library should also occupy a central position within this area. For the libraries, Atcon notes that it should stand at the heart of the university and evoke a "medieval origin", a symbolic reference he mentions only briefly. Around the library, he proposes a ring of general fields, which would house Mathematics, Languages and Literature, Education and Theology. Beyond this ring, he calls for the implementation of courses such as geology, physics, chemistry and biology. These are followed by the social and humanistic fields. The social sciences would bring together psychology, philosophy, sociology and anthropology, while the humanities would form groups such as philosophy and theology, history and languages, and geography and history.

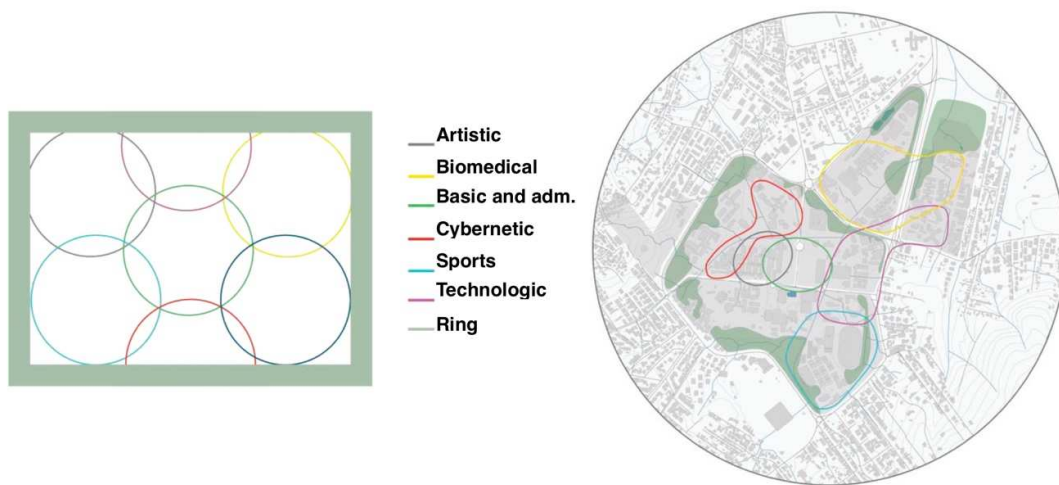


Figure 111. Diagram showing the spatial design developed by Atcon in its Manual superimposed on the UFSC main campus.



Figure 112. Northwestern part of the campus. The wooded area coincides with the protective ring that Atcon suggested. 2016. Photo: Felipe Finger. Source: LEUr-UFSC.



Figure 113. The same part of the campus seen from the ground. 2025.

This approach to university management and the development of educational facilities aligns with systematic efforts to control, standardise, and coordinate operations, a practice commonly seen across various systems and traditional work environments (Schnitzler, 2020). At the time, UFSC's Newsletter depicted Atcon as a dedicated yet somewhat independent figure, "a free shooter," working to reshape the university. Atcon first visited UFSC in 1966, appreciating its isolation, which, according to him, added to its charm (UFSC, 1966 *apud*. Farines et al., 2021, p.185, our translation¹³⁸). With the backing of its president, UFSC moved quickly to align itself with the military government's reform plan inspired by the Atcon Report, doing so without wider consultation through the university assembly.

Despite internal resistance, the University Council approved the reform in 1967, and President João David Ferreira Lima formalised it two years later. The changes were far-reaching, introducing a new structure that dissolved the faculties and replaced them with Teaching Centres and Departments.¹³⁹ While this reorganisation followed a broader national pattern in which isolated schools were consolidated into universities, in the case of UFSC it also marked a more profound shift in how the institution understood itself. The spatial distribution of the new departments across the campus, now physically separated and organised by teaching centres, gives material form to the ideological and theoretical priorities of the period.

For Farines et al. (2021) the new model drew a sharp line between those who taught and researched and those who managed, strengthening administrative authority and centralising decision-making towards an entrepreneurial logic. At the academic level, the

¹³⁸ From the Portuguese original: "É um livre-atirador a serviço da reorganização universitária. [Por conta própria, servindo a instituições que se valem da sua experiência por períodos contratuais limitados, dedica-se a análises, estudos, formulações de reformas, implantação e administração de serviços educacionais em nível superior]" (UFSC, 1966 *apud*. Farines et al., 2021, p.185).

¹³⁹ The implementation of the 1968 University Reform was neither immediate nor uniform throughout Brazil. Although Law No. 5,540/1968 established a unified framework for higher education, its adoption unfolded in a gradual and fragmented manner, as each university was required to revise its statutes and internal regulations. This transition was marked by intense institutional and political pressure. The military government tied the transfer of funds and the expansion of enrolment to the rapid adaptation of institutions to the new model. At the same time, the presence of surveillance bodies on campus, such as the Special Security and Information Advisories (AESI), ensured that resistance from staff and students was contained. As a result, the reform functioned also as an instrument of ideological control, implemented at different moments by each University Council (Amaral & Castro, 2020).

university created the Centre for Basic Studies, where students spent roughly four semesters before moving into specialised programmes. This move reflected a belief in a unified intellectual foundation but also reinforced a controlled and hierarchical academic progression. When compared to the national scenario, UFSC became an early adopter of the Reform, sustained by its proximity to Atcon's ideas and a posture of alignment with the military government. Alongside structural reorganisation came a broader agenda for academic "modernisation." Lifetime professorships ended, academic careers became formalised, and the new departmental system tied access to teaching positions to postgraduate qualifications. To sustain this model, the federal government launched a national postgraduate policy through dedicated funding agencies and multi-year plans. In practice, this moment set the tone for a new university ethos, one that prized professionalisation and efficiency, but also tightened the links between academic life, state control, and emerging market-oriented expectations (Martins, 2009).

While it is unfair to attribute all territorial shortcomings to the *Manual*, it undoubtedly represents one of the most far-reaching attempts at centralising planning related to territory, which has had and still has significant influence. Its principal limitation lies in the scant attention it affords to societal factors, which, when acknowledged at all, are relegated to a marginal role. The functional segregation it legitimises can be seen as counterproductive to societal relations and university integration (Pavan, 2022). Our approach to the *Manual* frames it as a protocol-driven document promoting a model for public universities to become self-reliant in spatial organisation, which is particularly evident in Atcon's recommendations for establishing internal technical offices and his detailed protocols for campus development or adaptation. These protocols aim to simplify campus planning within institutions, especially those transitioning under the Brazilian University Reform, thereby reducing their dependence on external state resources for spatial governance and administration.

Adas (1989), for instance, demonstrates how techniques initially developed to rationalise industrial production, such as time studies, hierarchical supervision, and standardised procedures, migrated beyond the factory to become general models of social order, forming what he terms a *gospel of labour* that appealed across a wide range of political

and philosophical positions. Crucially, he argues that this confidence in scientific and technological mastery provided a metric of civilisational worth that shaped Western, and particularly American, interventions abroad in the early twentieth century. In this context, educators, missionaries, and engineers promoted wide-ranging political, economic, and cultural reforms in regions such as China and Latin America, anticipating later development agendas. When efficiency and managerial science are elevated to universal values, architectural education comes to privilege functional zoning, modularity, and environments optimised for circulation, surveillance, and productivity. The buildings that house studios, laboratories, and lecture theatres thus become instruments for inculcating these rationalities. The diffusion of managerial technologies, in turn, generates both epistemic claims about progress and concrete spatial arrangements that reproduce and legitimise them.

The pattern of occupation and spatial organisation that Atcon and the other technicians promoted through the *Manual* resembles a protocol more than a territorial plan. We use protocol here in a sense borrowed from communication systems and computer networks, where time and storage flow together as part of the same logic. In these systems, space does not appear as a fixed object but as something shaped by rules of interaction and circulation. Network architecture depends on strong organisational protocols that coordinate actors, adjust rhythms, and manage flows across different environments. Architecture, thus, becomes a matter of organising and sustaining the system that makes construction possible in the first place. Easterling (1999) captures this reality well, pointing to spatial practices that operate less through form and more through instructions, maintenance, and continuous negotiation of space. For the author:

"[...] it is possible to understand sites as separate agents that remotely affect each other—that is, the way one can affect point C by affecting points A and B. It is also possible to describe the amplification of a simple move across a group of separate agents, or to describe their parallel or serial sequencing. [...] It is not about triangles and tauruses or motion trajectories, but about timing and patterns of interactivity, about triplets and cycles, subtractions and parallelism, switches, and differentials. Architecture, as it is used here, might describe the parameters or protocols for formatting space" (Easterling, 1999, p.2).

The *Manual* teaches universities how to think about space and knowledge. It pushes a kind of unity that comes from the same intellectual roots as modern scientific fragmentation, where we break things down to control them more easily. What emerges is a protocol-like campus where everything is routed, separated, and timed, rather than lived through. It promises clarity yet produces a landscape of isolated units.

Time and space fold into operational categories, and the university becomes less a place of encounter and more a system to be managed. This rational, simplified view of knowledge gradually altered how universities organised themselves administratively and spatially, especially throughout the twentieth century. We can trace this impulse back to the Enlightenment and the early reforms that accompanied the emergence of modern science (Kuhn, 2012). As universities distanced themselves from the Catholic Church, which had long served as a central authority over knowledge and discipline, they embraced new ways of structuring teaching and research (García, 1994).

This reorganisation promoted thematic and disciplinary specialisation and reinforced the idea that each field required its own dedicated space. Universities began to build separate facilities for each domain, reinforcing boundaries between areas of study. Later developments, such as the division between the natural and human sciences, further entrenched this spatial and intellectual separation. The push for disciplinary depth always came paired with a certain suspicion toward efforts to bring different fields together. For instance, writing on fragmented sciences and their impact on urban life and cities, Lefebvre (1996) noted that, throughout much of the nineteenth century, emerging sciences of social reality defined themselves against philosophical attempts to grasp the world as a rational and unified totality.¹⁴⁰

¹⁴⁰ The French sociologist states: "These analytical division do not lack rigour, but as has already been said, rigour is uninhabitable. The problem coincides with the general questioning of the specialist sciences. On the one hand, the only approach which seeks to find the global reminds us strangely of philosophy when it is not openly philosophical. On the other hand, the partial offers more positive but scattered facts. Is it possible to extract from fragmentary sciences a science of the city? No more than a holistic science of society, or of 'man', or of human and social reality. On the one hand a concept without content, on the other, content or contents without; concept. Either one declares that the 'city', the urban reality as such, does not exist but is only a series of correlations. The 'subject' is suppressed. Or the continues to assert the existence of the global: one approaches and locates it, either by extrapolations in the name of a discipline, or by wagering on an 'interdisciplinary' tactic. One does nor grasp it except by an approach which transcends divisions." (Lefebvre, 1996, p.95).

Across Atcon's work, we also see a strong faith in the supposed neutrality of science and technical practice. This belief hides the fact that power runs through every technical system. Winner (1977, 1980) argues precisely this point. He shows that ideas such as power, authority, freedom and justice sit inside technologies themselves. They are not external concerns. Because of this, he urges us to examine the whole technological order, rather than limit the debate to questions of use or misuse. For him, these narrow questions only hide the deeper, systemic effects of technology present on the idea of technocracy as a wider condition in which people adapt so closely to the logic of technical systems that their choices appear to shrink.

Martin (2003) picks up this thread and examines how these ideas shape design. He demonstrated how the focus on systems produced an aesthetic centred on self-regulation, flexibility and smooth information flow. The aim was to create organisations where top-down control could seem to disappear into the structure itself. Such approach might also change how we understand politics. When architecture and media present society as one integrated system, they make it look like something to be managed by experts, rather than a space of open disagreement. The technocratic ideal, ruling through technical control, now lives in our built environment. It shapes offices, universities and cities, turning it into a concrete, everyday reality.

Another aspect of Atcon's design that demands critical scrutiny is the assumption that the university must be spatially isolated to function properly. In his diagrams, this premise is formalised through the designation of a so-called "protection area," which simultaneously operates as a land reserve. The outermost element of Atcon's scheme is a rigid rectangular perimeter that acts as a buffer, spatialising the manual's prescriptive logic and fixing in advance the relationships between the university and its surroundings. At the edge of the complex, a green belt establishes a clear and deliberate separation from the urban context.

While presented as a multifunctional device, intended to exclude unwanted access, provide acoustic insulation, and accommodate future expansion, this buffer reveals an underlying conception of the city as a threat rather than as a constituent condition of

academic life. Atcon's insistence on shielding the campus from what he characterises as undesirable neighbourhoods appears as a normative and hierarchical view of urban space. Social proximity is not a condition to be engaged but treated as a risk to be managed. The proposal to encircle the campus with a park-like protective ring, whose use is deferred to an unspecified future is part of how Atcon imagined the isolation of campuses. Only after this perimeter is secured does zoning occur within the campus, suggesting that separation precedes programme and that institutional autonomy is achieved through spatial withdrawal (Figures 111-113)

Atcon (1974) also set out prescriptions concerning the conduct of construction on university campuses. He argues that architecture should carry a weight comparable to that of zoning in processes of urbanisation. However, for Atcon, architecture only assumes its decisive role once urbanisation has been clearly defined, zoning firmly established, and the underlying principles fully understood. These principles include transience, flexibility, functional correspondence, whereby activities are not expected to adapt to buildings, but buildings are conceived in direct response to specific functions, in a strict *form-follows-function* sensibleness, as well as provisions for expansion and acoustic protection. It is also worth noting how Atcon (1974) addresses the character of campus construction through typology (p. 230). In this context, he identifies three key aspects: building height, monumentalism, and style. Regarding height, Atcon argues that where land is available, buildings should remain low and campus expansion should proceed horizontally, favouring a less dense spatial configuration.

The author's position concerning monumentalism is internally consistent and sharply polemical. His argument can be reconstructed around four interrelated claims. First, Atcon (1974) identifies architectural monumentalism with what he understands as the traditional university model, which he treats as both obsolete and counterproductive. Monumental buildings are described as exorbitant, rigid, and expensive, characterised by luxurious materials, excessive scale, and what he dismissively calls "lost spaces" (p.231). For Atcon, such architecture fails economically and epistemically.

That means that knowledge “does not take root” in monumental settings because these buildings lack flexibility, adaptability, and capacity for incremental expansion.

Monumentality, in this sense, is fundamentally incompatible with the evolving and provisional nature of academic work. Second, he frames monumental architecture as a violation of his principles of organicity and “integrality”. The monument presupposes permanence, completion, and stability. Atcon explicitly rejects the idea that academic-scientific buildings should be conceived as lasting “forever”, arguing that this aspiration is itself anti-intellectual and anti-university. Universities, in such interpretation, must remain structurally open-ended, capable of responding to shifting pedagogical, scientific, and institutional demands.

Third, he draws a clear distinction between architectural expression and institutional value. He insists that the importance of a university derives from its intellectual output rather than from its architectural appearance. Monumental architecture is thus a misallocation of attention and resources. This position leads him to criticise the authority traditionally granted to architects, particularly when design decisions are driven by aesthetic coherence or stylistic unity rather than by functional efficiency and institutional needs. For Atcon, architectural autonomy, especially when any monumental ambition appears, is incompatible with rational campus planning. Finally, Atcon frames monumentalism as an ethical and political problem. Universities, built with public or community resources, should not serve as vehicles for personal prestige, architectural authorship, or symbolic grandeur. Here, his critique frames monumental architecture as a symptom of misplaced priorities and distorted power relations within university planning.

Atcon’s understanding of architectural style follows directly from, and amplifies, his critique of monumentalism. Style becomes the operational counterpart to his anti-monumental stance. Having rejected permanence, symbolic excess, and architectural self-assertion, he advocates a deliberately anti-monumental style grounded in modesty, reversibility, and functional clarity. Style, for Atcon, is the visible outcome of organisational principles and not an autonomous aesthetic choice. Buildings should be simple, horizontally expandable, and even removable, precisely because the university is a growing and mutable institution. He explicitly denies that architectural simplicity diminishes institutional value, arguing

instead that non-permanent constructions can be both well-built and aesthetically satisfactory. What he calls a “fluid” architectural style is a procedural one, implying an architecture capable of accommodating change without symbolic overstatement.

In this section, we could grasp the personal and intellectual significance of a figure as contentious as Atcon and his locus at the intersection where the political, the spatial, the administrative, and the scientific debates of Brazilian universities collide. So far, architectural readings of his work have lingered on the spatial principles he set in motion, yet they have rarely illuminated the philosophical scaffolding that sustained them. We might locate our line of inquiry in showing how his presence compressed a layered spatial and political interpretation of university infrastructure and how he articulated them through a stance that was anything but provincial and that remained tightly fastened to wider global currents. Even if he does not emerge as a neoliberal in a strict doctrinal sense, his interventions nonetheless prepare the terrain on which such a project could advance within the Brazilian university, and, by extension, within UFSC and its infrastructures.

The elephant

Approached from the north, the Centro de Cultura e Eventos (CCEven) asserts itself as one of the most monumental buildings on the UFSC campus. A large portico frames its principal façade, while a broad paved esplanade establishes a clear ceremonial foreground. Inscribed prominently on the building’s face, the name Centro de Cultura e Eventos announces a programme that exceeds the ordinary scale of academic facilities.¹⁴¹ This is not a peripheral structure, but a building conceived to represent the university to itself and to the city. Yet, despite its formal prominence, the CCEven has long occupied an ambiguous position within the campus. Colloquially known as the *elefante branco* (white elephant), the building has come to symbolise a broader condition of institutional

¹⁴¹ Since 2018, the building has been named the Centro de Cultura e Eventos Reitor Luiz Carlos Cancellier de Olivo (Rector Luiz Carlos Cancellier de Olivo Culture and Events Centre) in tribute to the late rector. For further discussion of the Cancellier case and the recent resurgence of authoritarianism in Brazil (Borges & Dutra, 2023; Romão & Medeiros, 2020).

uncertainty. Its scale and visibility invite interpretation as material traces of the political and economic processes that shaped Brazilian public universities at the turn of the century.

If we recall the periodisation outlined in this thesis, at UFSC, the 1990s emerge as a decade marked by stalled construction projects, chronic underfunding, and institutional paralysis across Brazilian federal universities.¹⁴² Under the Fernando Henrique Cardoso administrations, higher education was subjected to a combination of fiscal restraint, managerial reforms, and a gradual reorientation towards market-compatible governance. Large-scale public investment in campus infrastructure became increasingly rare, and many ambitious projects entered prolonged states of suspension.¹⁴³

The CCEven was one of the most conspicuous casualties of this context. Conceived early in the 1990s and initiated with considerable symbolic weight, it soon became entangled in the same financial and administrative difficulties that affected the university. Its interrupted construction was not an isolated failure, but part of a wider landscape of incomplete buildings, deferred maintenance, and institutional improvisation that defined the period.

Before these interruptions, however, the CCEven was conceived as a carefully articulated architectural ensemble. The project, designed in 1995 by Luiz Roberto Mayr from the university's technical planning office,¹⁴⁴ underwent substantial alterations during its lengthy construction, which ultimately diluted much of its original intent. Mayr place the protagonist of the programme, the university's biggest auditorium, on the first floor. Access to this space was choreographed through a generous elevated square, conceived as a civic foyer. This square organised the main components of the complex, with a series of support spaces arranged to the west and an outdoor stage positioned to address the *praça da cidadania*, at the front. The ascent to the auditorium is itself a spatial event.

¹⁴² Chapter 4, Organising a university, organising a city.

¹⁴³ During the presidency of FHC from 1995 to 2002, the Brazilian administration underwent a profound transition from a state-led developmentalist model to a neoliberal framework. This era is perhaps most famous for the expansion of the National Privatisation Programme (PND). Originally instituted by his predecessor Fernando Collor (1990-1992), the PND was accelerated under FHC based on the premise that the state was inefficient and lacked the capital to modernise infrastructure (Pinheiro, Giambiagi & Moreira, 1999).

¹⁴⁴ Today the Departamento de Projetos de Arquitetura e Engenharia (DPAE, Architectural and engineering design office).

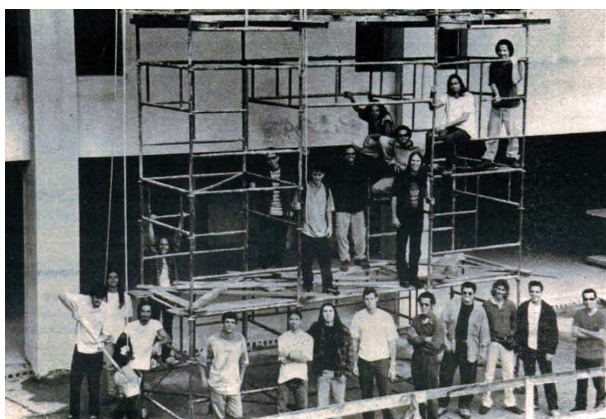
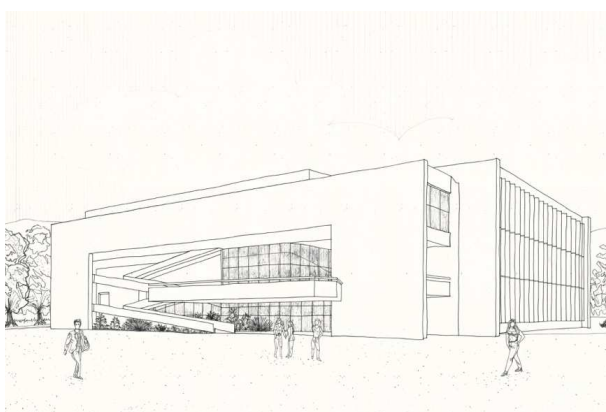


Figure 114. North façade of the CCEven. 2024.

Figure 115. CCeven project. 1995. Source: Arquivo do Departamento de Projetos de Arquitetura e Engenharia – DPAE-UFSC.

Figure 116. Students and UFSC decided to host an scientific exhibition in the Culture and Events Centre building while it was still under construction, which at the time was paralysed due to a lack of funds. The intention was to draw attention to the large number of works delayed at the university during the 1990s. Photo from 1999. Source: Jornal Universitário, 5 November 1999 edition, p.11.

A monumental ramp guides visitors upward, reinforcing the ceremonial character of the building and establishing a clear separation between everyday campus flows and the exceptional occasions hosted within. At ground level, the original design proposes a porous and accessible plane, intended to accommodate exhibitions, informal gatherings, and public-facing activities.

Over the nearly ten years of construction, Mayr's design underwent substantial transformations, most notably in relation to the programme it would eventually house. While the main auditorium remained very similar to what we described above, the rest of the programme underwent significant changes. A relatively minor architectural adjustment was the decision to lift the building slightly above ground level. Although modest in absolute terms, approximately one metre, this intervention placed the structure on a podium and subtly complicated access to the ground floor. These alterations unfolded alongside prolonged construction delays, legal disputes, and funding interruptions. In this sense, the nickname *elefante branco* acquires analytical weight.

Portuguese writer José Saramago published *A Viagem do Elefante* (The Elephant's Journey) a novel inspired by a historical episode from 1551 (Saramago, 2008¹⁴⁵). The narrative recounts the absurd and arduous journey of the elephant Solomon and his Indian mahout, Subhro, dispatched as an extravagant wedding gift from King João III of Portugal to Archduke Maximilian of Austria. The caravan traverses Portugal and Spain, crosses the Mediterranean, and struggles through the Alpine passes, enduring harsh weather, courtly bureaucracy, and religious hypocrisy. Against this backdrop, Saramago develops a critique of the vanity of power and the limits of human compassion. Although the journey ends with a ceremonious arrival in Vienna, the novel concludes on a note of melancholy when, beware of plot revelation, the elephant Solomon soon dies, and his feet are reduced to ornamental walking sticks at the palace entrance, a stark emblem of the fleeting nature of glory.

As in Saramago's allegory, the building became an object of excess whose symbolic value outlived the political and economic conditions that had produced it. The CCEven was

¹⁴⁵ The book was published in German by Hoffmann und Campe (2010) under the title *Die Reise des Elefanten*, and in English by Houghton Mifflin Harcourt as *The Elephant's Journey: A Novel* (2020).

neither abandoned nor fully realised; instead, it entered a prolonged state of suspension during its construction (Figure 116). The eventual completion of the building was only possible when an organisation typical of the neoliberalisation of Brazilian public universities entered the scene. In 2003, the Stemmer Foundation for Research, Development and Innovation (FEESC) assumed the role of financier, enabling UFSC to conclude the long-delayed works. In exchange, the university granted the foundation the right to occupy a substantial portion of the ground floor for a period of twenty years.

This arrangement must be understood within a broader genealogy. Since the 1968 University Reform, Brazilian universities have increasingly relied on auxiliary entities, foundations, support agencies, and parallel administrative structures, to bypass legal and fiscal constraints imposed on public institutions. As Atcon had already argued decades earlier, such mechanisms allowed universities to operate “like companies” without formally relinquishing their public status. By the 1990s, these arrangements had become structural components of university governance.

Sguissardi (2002, 2006) identifies Atcon’s work in Brazil as the beginning of a sustained mistrust surrounding the most widely adopted model of university organisation through autarchies. Atcon framed autonomy as a complete detachment from state administrative and financial controls, advocating a university structure modelled not as a public service but as a private enterprise. In his view, only such a model could guarantee institutional efficiency and produce what he considered a genuine increase in autonomy. Atcon therefore proposed the foundation as the ideal legal-administrative structure for universities. The military government, however, resisted this proposal. It absorbed aspects of the model only to the extent that they served its centralising agenda. Rather than expanding academic and political freedom, the emphasis fell on financial independence, a form of autonomy that aligned neatly with authoritarian control and the economic rationality that followed, and which continues to endure in university foundations.

At the CCEven, architecturally, the consequences were direct. The entire ground floor of the CCEven was redesigned, leading to the near elimination of spaces originally intended for public use. In 1996, more than a year into the process, the university resorted to the

Rouanet Law to revive the stalled project. By that point, the original contractors had abandoned the site, forcing UFSC to initiate legal proceedings to recover R\$600,000 of the R\$1.68 million initially contracted.¹⁴⁶ Confronted with severe financial constraints and a wider institutional crisis, marked by the increasing outsourcing of so-called peripheral services, the university was compelled to commission new firms to execute only the most indispensable elements of the scheme (Figure 117). By 2002, a revised scheme had already been proposed that introduced continuity with the earlier design while significantly altering the ground floor in relation to the original project. These modifications suppressed part of the cultural programme and incorporated a food court in the same location it occupies today (Figure 118). The reduced budget proved sufficient to complete little more than the roof structure and the main auditorium, leaving the remainder of the project suspended and further reinforcing the building's association with incompleteness, excess, and uncertainty (JU, 1996, 1997; Scarduelli, 1999).

Control over access, maintenance, and occupation became unevenly distributed, with areas managed by the foundation benefiting from resources and security systems unavailable to the rest of the building. What had been conceived as a shared civic interface was fragmented into zones of restricted and commercialised use.

Today, users entering the ground floor of the CCEven encounter only residual traces of the original programme. An exhibition space survives, but it is constrained by a series of commercial units rented out by the university as a means of generating revenue. Some of these uses appear institutionally aligned, such as the presence of two bookshops, one of which belongs to the university press. Others, however, sit uneasily within an academic environment. Implemented in one of the university's most symbolically charged buildings, and in an area traditionally used as a gathering space for families during graduation ceremonies, this arrangement carried implications that extended well beyond functional expediency. It displaced the building's intended role as a public threshold and replaced it with a spatial logic closer to that of a shopping centre food court than a university cultural facility (Figure 119). For much of the period in which FEESC controlled these spaces, they

¹⁴⁶ c. € 95 700 and € 268 000, respectively in January 2025.

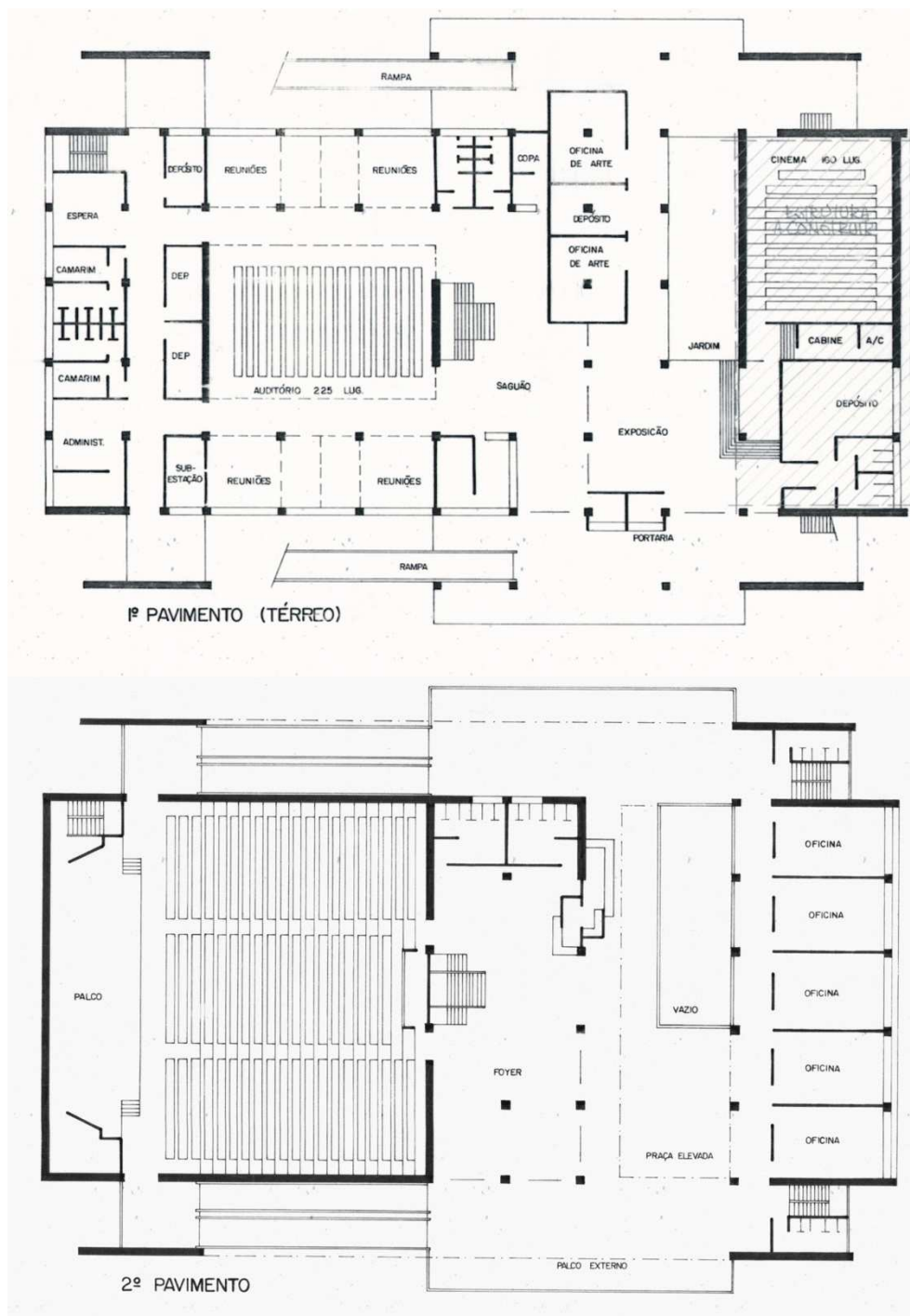


Figure 117. Original design for CCEven. Source: Arquivo do Departamento de Projetos de Arquitetura e Engenharia - DPAE-UFSC.

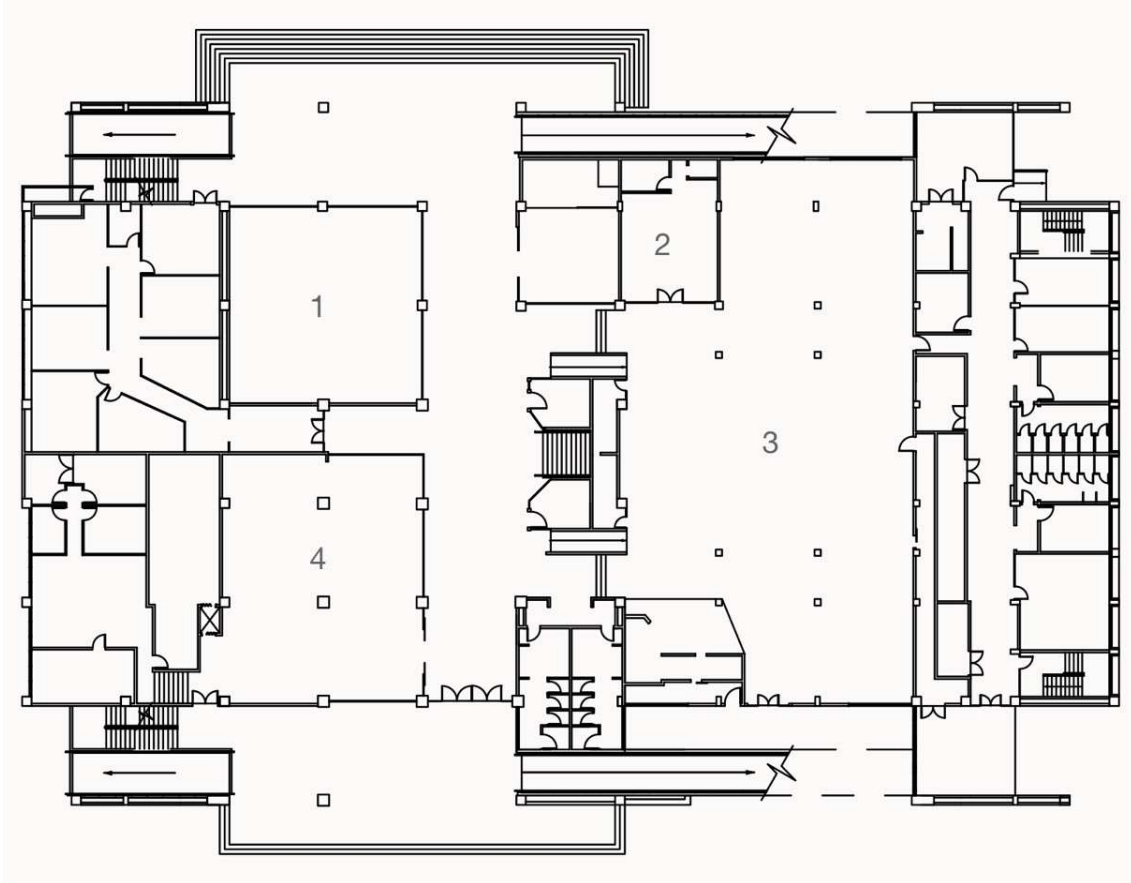


Figure 118. Floor plan of CCEven, as built. 1) Bank branch; 2) University press bookshop; 3) Food court; and 4) Bookshop. Source: Arquivo do Departamento de Projetos de Arquitetura e Engenharia - DPAE-UFSC.



Figure 119. Food court at the CCEven. 2025.

were sublet to a Spanish bank and a commercial bookshop, with the bank occupying the most prominent position on the principal façade.

It is also important to note the role played by foundations in the production of other spatial products on campus, where two related aspects intersect. The first concerns how these foundations conceive their own institutional role within the university. FEESC itself is a telling example. Established in 1966 by Centrais Elétricas de Santa Catarina (CELESC), the foundation defines its purpose as enabling “relevant partnerships for society and the university environment, promoting mutual development and innovation through transparent and excellent management,” while its mission is to “promote scientific, technological, economic and social development through research, teaching and knowledge transfer, serving society in an effective and sustainable way” (FEESC, 2025).

What is striking in these formulations is not only their managerial and instrumental tone, but the absence of any articulated vision of the university as an institution. Rather than positioning itself in relation to the university’s academic, civic, or public mandate, the foundation advances its own agenda within the university, treating it primarily as an operational environment. The second point concerns the architectural typology through which these foundations materialise their presence on campus, and the ways in which these buildings depart from the spatial norms of the university. In the case of FEESC, the foundation occupies a plot at the edge of the university’s Technology Centre, in a building that is physically and symbolically detached from its surroundings. It is a freestanding structure with tightly controlled access, mediated by biometric readers and turnstiles, and marked by architectural and spatial features that contrast sharply with those of the campus at large.

Another foundation present on campus is Certi, an independent, non-profit institution founded in 1984. It operates in research and development and in the provision of specialised technological services for the private sector, government, and the third sector. Although headquartered on the university campus, Certi’s activities extend beyond it. Over the past decades, the foundation has become an active institutional agent in the promotion and consolidation of innovation-oriented regions within the city of



Figure 120. View of the FEESC headquarters on the UFSC main campus. Door with biometric reader. 2025.



Figure 121. View of the FEESC headquarters on the UFSC main campus. 2025.



Figure 122. Certi headquarters on the UFSC main campus. 2024. Source: Certi Foundation.

Florianópolis (Certi Foundation, 2025). The most substantial of these initiatives is Sapiens Park.

Sapiens Park is located in the northern part of Florianópolis, an area designated as a zone of expansion for the technology sector. Conceived as part of a broader innovation corridor, the project brings together educational and technological institutions alongside organisations dedicated to the promotion of science and education. In its official materials, Sapiens Park is presented as a space that combines art, science, and the environment within an innovation-oriented framework. The project occupies more than 400 hectares of land owned by the state of Santa Catarina, and the institutions established on the site benefit from tax incentives, primarily in the form of tax reductions (Cavanus & Massabki, 2020).

The planning rationale behind Sapiens Park is grounded in a strategic model that frames the city itself as an entrepreneurial venture.¹⁴⁷ Florianópolis was selected due to its geographical position in relation to Mercosur countries and its relative proximity to major metropolitan and business centres in southern Brazil. This rationale is further reinforced by narratives emphasising the city's natural landscape, quality-of-life indicators, and the consolidation of a significant technology cluster.

UFSC has progressively consolidated its presence at Sapiens Park through a combination of physical infrastructure, research activity, and institutional initiatives. This involvement takes multiple forms, including the installation of laboratories, the participation of academic staff in ongoing research projects, and the establishment of dedicated centres linked to innovation and technology. One such initiative is the Centro de Inovação,

¹⁴⁷ In this specific conjuncture, strategic planning emerges as the total sublimation of the urban into the logic of the firm. As elucidated by Vainer, this model frames the city as a competitive economic subject, a machine to be calibrated by the parameters of efficiency, market positioning, and corporate rationalisation. In this scenario, "consensus" is revealed as a mechanism of ideological control; by forging agreements between selected public and private elites, the administration presents specific development goals as neutral technical inevitabilities, thereby effectively silencing the dialectic of open political debate. Consequently, what we witness is a fundamental rupture in the ontology of planning. It ceases to be a contested public process and is reorganised into a purely managerial apparatus. Its sole function is to synchronise the physical space of the cities and its institutional investments with the relentless cycle of capital accumulation and the exigencies of entrepreneurial governance. See: Vainer, C. et al. (2000). *Pátria, empresa e mercadoria: Notas sobre a estratégia discursiva do planejamento estratégico urbano. A Cidade Do Pensamento Único: Desmanchando Consensos*, 3, 75-103.

Pesquisa, Empreendedorismo e Tecnologia (InPETU-UFSC, Centre for Innovation, Research, Entrepreneurship, and Technology). Functioning as an interface between the university and the broader innovation environment of Sapiens Park, InPETU is closely associated with UFSC's academic structure. Its activities are supported by the university's teaching and research capacities, while also extending them into applied and entrepreneurial contexts. Academic staff, researchers, and students from UFSC are directly involved in the centre's projects, contributing to research development, technological experimentation, and knowledge transfer (InPETU-UFSC, 2025).

These initiatives can be read as part of the longer process through which UFSC has been building and redefining its territorial presence. What is at stake is not only the scale of investment, but its orientation. Resources are increasingly directed towards activities that connect academic research to business-driven solutions, which in turn reshapes the university's priorities and modes of operation. As UFSC extends part of its activities beyond the main campus, particularly through its involvement in Sapiens Park, the boundaries of what counts as university territory become less clear. New laboratories, centres, and shared facilities introduce programmes that differ from those traditionally associated with teaching and research.

UFSC's investment in campuses beyond its main site has not taken place solely through foundations or projects such as Sapiens Park. Federal programmes have also played a significant role in the university's territorial expansion. At UFSC, initiatives such as REUNI contributed both to the formulation of policies aimed at student retention and to the geographical expansion of the institution across Santa Catarina.¹⁴⁸ In 2009, for instance, new UFSC centres were established in the cities of Araranguá, Blumenau, Curitibanos, and

¹⁴⁸ See chapter four of this thesis, where REUNI is presented.



Figure 123. EFI Longitudinal architectural section. Source: Arquivo do Departamento de Projetos de Arquitetura e Engenharia – DPAE-UFSC.



Figure 124. At the centre of the image, the EFI can be seen in its current location. The building is surrounded by a series of lower structures that were conceived as temporary facilities. 2019. Photo: Felipe Finger. Source: LEUr-UFSC.



Figure 125. General view of the low-rise buildings surrounding the EFI. The sign warns users that part of the building has already been cordoned off for demolition. 2025. Source: UFSC.

Joinville.¹⁴⁹ As Mangrich (2025) notes, REUNI explicitly linked its objectives to the territorial development of federal universities, framing expansion as a mechanism for regional integration. The author also highlights the generally positive interpretation of this process, particularly regarding the intersection of knowledge and practices emerging from diverse local experiences. The programme included, for participating institutions, funds for construction and improvements to physical spaces. At the main campus in Florianópolis, this impact has been felt mainly in the hiring of professors and staff for the university and in some construction projects. One of the most emblematic of these projects is the Espaço Físico Integrado (EFI, Integrated Physical Space) building (Figures 123- 125).

Construction began in 2009. The programme comprised two auditoria and a series of classroom spaces. The building was not formally assigned to a specific department or degree programme, but conceived as a shared facility available to different courses according to demand. This arrangement created conditions for interaction across disciplines that were largely unprecedented on UFSC's main campus. The building has a rectangular footprint of approximately 57 × 22 metres. Its plan can be described as two T-shaped volumes joined at their upper bars. The junction between these two elements forms a central core which, in the project, was partially excavated to create a large light well topped by a skylight. This light well organises the main arrival sequence to the building. Enclosed by internal glazing, it is furnished with benches and functions as a shared transitional space, mediating circulation and informal use within the building.

¹⁴⁹ At first glance, these processes of expansion appeared to offer promising case studies for this research, particularly the UFSC campus in Joinville. In that city, the university is located within a corporate condominium, and the association between academic activity and the business sector is especially explicit, reinforced by Joinville's long-standing industrial tradition. As one of Brazil's most industrialised cities, Joinville has historically developed around manufacturing activities, notably in the metal-mechanical, electrical, and plastics sectors, alongside a strong emphasis on industrial engineering and technical training. Since the mid-twentieth century, it has consolidated its position as a regional industrial hub, hosting both nationally significant firms and export-oriented production. This profile has left clear marks on the city's urban form, labour market, and institutional landscape, particularly in its close ties to technical education, vocational training, and applied research. However, and this is the main reason these cases were not developed further, UFSC units in other cities, especially in Joinville, operate more as centres than as campuses in the strict sense. They are physically concentrated in a limited number of buildings and lack the spatial, infrastructural, and programmatic complexity that characterises a campus environment. Focusing on these cases would therefore significantly constrain the theoretical and methodological scope of the research. Even the expansion associated with Sapiens Park, discussed earlier, would remain an insufficiently broad example and, in spatial terms, markedly different from a university campus.

The first floor, accessed from the higher ground level and not to be confused with the pilotis level, accommodates undergraduate laboratories.¹⁵⁰ The second floor contains an auditorium with seating for approximately 204 people, as well as a classroom slightly larger than the others, arranged in an amphitheatre layout. Above these levels, the building comprises four additional floors, each containing five classrooms. The spatial distribution is asymmetrical: the west wing accommodates three classrooms per floor, while the east wing contains two. Another defining aspect of the project is its scale. In comparison with other university buildings on the campus, the EFI stands out for its greater height and higher built density, marking a departure from the predominantly lower-rise academic fabric that surrounds it.

The project was developed in-house by the university's DPAE. Its construction relies on a system of prefabricated concrete for both structural elements and enclosures, a choice that the architectural team made explicit by leaving these materials exposed in the completed building, perhaps in reference to what Atcon had proposed years earlier, perhaps out of stylistic preference. EFI reflects REUNI's emphasis on expansion through numbers rather than on the qualitative integration of space and programme. The project prioritises the provision of classrooms over a more carefully articulated, multidisciplinary design. As one of the major REUNI-funded buildings on the main campus, it exemplifies a recurring condition in which new facilities emerge as isolated objects within a weakly articulated master plan. This condition is closely tied to REUNI's funding model, which favoured rapid delivery over coordinated spatial planning. The result is a building with a concept that is, in many respects, promising, yet compromised by its location. Situated in an area with limited accessibility, EFI lacks clear pedestrian connections, meaningful integration with the surrounding campus fabric, and, notably, adequate provision for accessibility.

¹⁵⁰ A pilotis floor refers to a ground level that is left largely open and unobstructed, with the building raised above it on a system of columns or stilts (pilotis).

Part three.

Typologies of
social
infrastructure
in university
campuses

10. Theorising social infrastructure

In this third part, our attention shifts to another layer of these interactions, that means considering the typologies of social infrastructures that emerge through the configuration of the university's own systems and relations. Rather than focusing on campus life in a narrow sense, we are concerned here with how these social infrastructures are materially and institutionally structured, and how they mediate between the university's internal operations and its wider urban context. To speak of social infrastructure in universities is to explore which parts of these institutions remain accessible, negotiable, or shared, and how the processes discussed in Part Two converge and sometimes conflict within this sphere of infrastructure typologies. Universities and the social infrastructure in it occupy an ambivalent position, often oscillating between compliance and critique, continuity and change. Their actions can reproduce established orders as easily as they can challenge them. The three cases examined here, each grounded in specific social and urban realities, offer different versions of what social infrastructure can mean also in what concerns their type. Our aim is to identify what connects these variations, what distinguishes them, and how these differences can help refine a broader theoretical understanding of social infrastructure in higher education campuses.

In his book *Heat Wave: A Social Autopsy of Disaster in Chicago* (2002), Klinenberg recounts the events of a deadly summer. The Chicago Times warned: "Heat wave on the way - and it can be a killer." Other newspapers estimated the death toll (Figures 126; 127). As temperatures rose, beaches filled, speedboats left the city, and power cuts left many without electricity or news. Police and fire services struggled to reach high-rise residents, while hospitals stopped admissions. Between 14 and 20 July 1995, 739 people died from heat-related causes, an unprecedented toll in the United States. The sociologist observed starkly different outcomes between two adjacent, demographically similar neighbourhoods in Chicago's West Side: one devastated, the other resilient, more like wealthier districts.

It was precisely this disparity that led him to examine how infrastructure breakdown, together with material and social conditions, shaped vulnerabilities during extreme events.

When many of the physical systems intended to sustain a comfortable life failed during the heat wave, social connections allowed vulnerable people to remain safe. His findings demonstrated how social ecology, intertwined with urban policy, became decisive for public health in times of crisis.

We begin with Klinenberg's account because his work has helped in bringing the concept of social infrastructure to prominence (Enneking et al., 2025). The discussion sparked by Heat Wave was further developed in *Palaces for the People* (2018), where Klinenberg also examined social stratification and its broad impact on public space design and political polarisation, both rooted in a shared distrust of the American political system. Part of such problem occurs because although many of the infrastructural space is today a shared concern between government and private actors, it remains strongly associated with state power and thus the state itself becomes the main target of distrust when systems fail (Hodson & Marvin, 2010).

The usefulness of the concept of social infrastructure lies in its malleability. It is conceived and defined with the understanding that spatial and social relations vary across contexts, requiring different forms of social infrastructure. This explains why Klinenberg's (2018) definition is deliberately broad, encompassing public institutions such as libraries, schools, playgrounds, parks, athletic fields, swimming pools, community gardens, and other green spaces that draw people into the public realm. This breadth reflects the very character of social infrastructure and highlights the difficulty of fixing a precise definition, not least because distinguishing infrastructures based on their social impacts is both ambiguous and contested (Gilmour et al., 2010). In these places, in addition to the accessible physical space that allows them to perform well as a social infrastructure, there is an extensive institutional programme that maintains groups in touch for consecutive weeks and months, promoting social cohesion among people who, outside of these activities, might be isolated. Breckner (2020) stresses the need for a conceptual framework to examine social infrastructure within the urban landscape and highlights that there is a scholar role in assessing their significance.



Figure 126. Front page of the Chicago Sun-Times, 17 July 1995, reporting the escalating death toll during the Chicago heatwave. Source: U.S. National Weather Association.

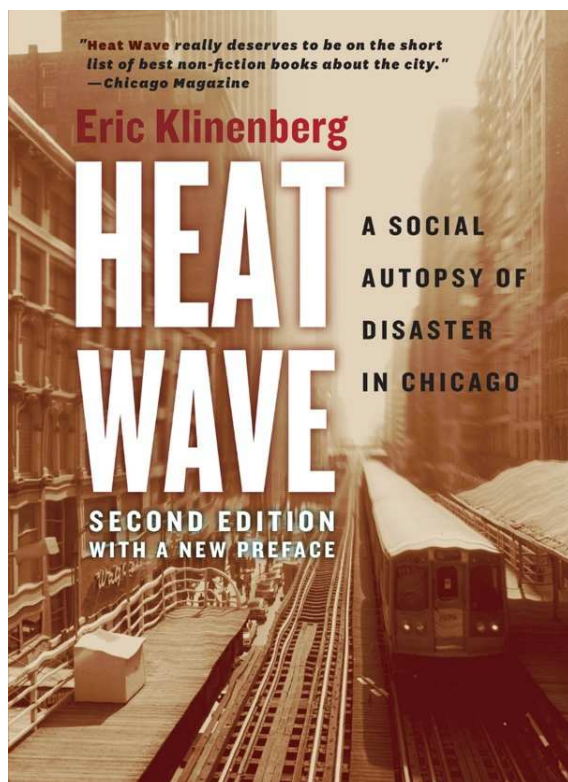


Figure 127. Heat Wave, a social autopsy of disaster in Chicago. Book Cover. Source: University of Chicago Press.

Addressing social infrastructure, the author argue, cannot be confined to urban sociology alone but requires a multidisciplinary perspective that incorporates urbanism and architectural theory.

Klinenberg (2018) also argued that social relations are as vital as traditional hard infrastructure, emphasising that active social networks improve daily life and are essential during crises. He found that during extreme weather events, social connections are critical for survival amidst infrastructure failures like blocked roads and power outages. Simone (2021) also highlighted that examining infrastructure through different lenses helps us understand cities, human dynamics and lived experiences. This tangible interplay between citizens, often without a precise notion of urban occupation and use, reveals the essential role of social infrastructure in urban life. Urban geographers are exploring the concept in an expansive group of studies that are also bringing light to the places in which their interactions occur. They achieve this not only by emphasising the importance of social connections but also by highlighting the central role of places and organisations that support these associations, along with the methodologies to study such environments.

Social infrastructure as a concept appears to be well-established in the Global North. However, its theoretical development in the Global South remains ongoing, despite its introduction in Brazil in the 1990s and occasional mentions in government reports. The term social infrastructure is not exactly new in Brazil. As early as 2010, the Brazilian Instituto de Economia Aplicada (IPEA, Institute of Applied Economic Research) published a report entitled *Social Infrastructure in Brazil*, which already employed the expression in its title (IPEA, 2010). IPEA defined social infrastructure primarily in material-quantitative terms and focused on service provision and physical facilities. In this sense, the study differed from approaches that emphasise the sociability supported by these infrastructures, as its concern lay chiefly with guaranteeing access to essential public services.

Accordingly, IPEA's approach placed emphasis on public services and facilities tied to fundamental social rights. Its definition included:

"[...] social and urban dimensions, with emphasis on issues related to the structuring of urban settlements and the provision of services to the

population, such as access to adequate housing and basic sanitation, education, and health services, to name just a few examples" (IPEA, 2010, p. 22).

IPEA's study also acknowledged the socially constructed nature of the concept of infrastructure through normative, technical, and legislative dimensions. Beyond conceptual and intellectual debates, it brought together the policy instruments demanded by sectors of society, reflected in the Brazilian legal and administrative framework, and set out the requirements for provision and maintenance. Among the key legal frameworks cited are Article 6 of the Federal Constitution, which defines social rights as "education, health, food, work, housing, leisure, security, social security, protection of motherhood and childhood, and assistance to the destitute" (Brasil, 1988), as well as Federal Law 10,257/2001, which implemented the Brazilian Estatuto da Cidade (City Statute). The latter outlines mechanisms for ensuring the social function of property and upholding the right to the city (Brazil, 2001).

Yet alongside quantitative concerns with provision, there is also a need to consider other spatiality, practices, and actions that resonate with the Brazilian reality from an infrastructural perspective. This line of inquiry follows Amin's (Amin, 2014, p. 137) call for "the emergence of a new genre of thought that narrates the social life of a city through its material infrastructure." Using the case of informal settlements in Belo Horizonte, Brazil, Amin shows how everyday interactions among residents are interwoven with broader forms of collective construction. These involve practices of sociability that reinforce ties between community leaders and residents, engagement with organised civil society movements, and how such relations shape the spatial configuration of the settlements. In the same paper, a clear contrast emerges from the comparison between two communities. In the first, infrastructure was developed through collaborative processes involving local actors.

In the second, interventions were largely state-led and introduced forms of infrastructure that diverged from vernacular practices, reshaping patterns of coexistence, contact, and belonging within the habitat. The difference in how residents perceive, maintain, and interpret infrastructure is striking. In the first case, participation and shared responsibility dominate. In the second, residents must contend with the technocratic state interventions,

particularly the disruptions caused by large roads that fragmented the community fabric and by housing schemes poorly suited to local family structures (Amin, 2014).

In Germany, urban planners and scholars are working with the concept for a significant time.¹⁵¹ More recently, initiatives as the Cockpit Social Infrastructure, for example, integrates urban data in a Geographic Information System designed to support experts and local authorities in the cross-district, cross-thematic planning for social infrastructure (Degkwitz et al., 2021). Part of the project's scope deals with the fragmentation of urban SI data, precisely because multiple government and non-government sectors are responsible for producing this data. Since 2016, Berlin's administration also employs the concept as an integrative approach to its public services, mostly through its *Soziale Infrastruktur-Konzepte* (Social Infrastructure Concepts). The term's adoption has been slower, indicating a need for further theoretical grounding in regions where urban challenges often diverge from those in North.

The idea of a social infrastructure framework that deliberately encompasses the public university campus in Brazil offers a counterpoint to scholarly views that address the Global South primarily through the lens of "breakdown, failure, interruption and improvisation" (McFarlane, 2010). It also underscores the need to develop broader and more comprehensive concepts within the social sciences. Latham and Layton (2019) outlined the spaces where it could be studied and the places they identified ranged from public institutions and commercial areas to transit systems and recreational activities, for example. For these authors, Klinenberg's concept of social infrastructure is directly connected to Putnam's (2020) discussion of a "civic infrastructure," sustained by informal social networks, as well as to Oldenburg's (1999) account of "inclusively sociable" spaces, such as restaurants, snack bars, hair salons, cafés, and shops, that foster trust and community. In summary, Latham and Layton define social infrastructure as "the networks of spaces, facilities, institutions, and groups that create resources for social connection." Their work makes an important contribution by integrating what is commonly described as green and blue infrastructures into the broader understanding of social infrastructure. This "public" relationship is tied to the qualities and dimensions of collective life, closely

¹⁵¹ As early as 1978, the term appeared in works such as Cassing & Küppers (1978).

associated with being among others, and necessarily informs policies that shape coexistence among individuals with diverse resources, abilities, backgrounds, and beliefs.

Similar categories also informed one of the most comprehensive studies examining the concept, conducted by the same authors a few years later (Latham & Layton, 2022). Here, they revisited the concept by exploring aspects such as co-presence, sociability and friendship, care and kinship, kinaesthetic practices, and other forms of collective engagement. For each aspect, they provided a list of scholarly works that may be helpful in studying these types of SI. The characteristics of most places they studied can be considered very helpful in approaching infrastructure, as they combine various methods ranging from interviews to ethnographic approaches. The authors emphasised that their typology was not a fixed framework but rather a starting point for further expansion. Furthermore, they acknowledged that the manifestation of these aspects would vary depending on the nature of the SI being studied.

We may relate this to van Laak's (2018) assertion that the intrinsic disparities between infrastructural systems in the Global North and South should impact how we conceive the notion of infrastructure. Beyond the recognisable contrasting material conditions influencing infrastructural creation in both regions, an important dissimilarity concerns how such practices address power asymmetries and contextual subjectivities. According to van Laak, this singularity opens possibilities for addressing and exploring new forms and typologies of infrastructure.

Furthermore, we must engage critically with social infrastructure theories, especially when applying such concepts in different material and social realities (Rehbein, 2011). Addie et al. (2020), for instance, argue that normative narratives of urbanisation from the Global North are challenged by experiences from other parts of the world. Their work calls for greater attention to new formal modes of service provision, emphasising localised experiences that may contribute to infrastructure theory. The recent surge of interest in theorising social infrastructure may also stem from a lack of sustained engagement with the "social" dimension itself, raising questions about who is encompassed within this category. The concern is that, without explicit and thorough definition, the notion of the

“social” risks becoming hollow, potentially flattening or homogenising diverse conditions, which might further obscure that social infrastructures are normatively contested, with different user groups having different norms and agendas (Horton & Penny, 2023).

Within the Latin American context, a number of particularly emblematic examples demonstrate how social infrastructure has been conceived and implemented through coordinated, city-scale strategies. Colombia stands out in this regard, not only for the scope of its interventions but also for the way infrastructure has been mobilised as a tool for social, cultural, and spatial integration, especially in historically marginalised urban areas. The Biblioteca Piloto Pública de Medellín (Pilot Public Library) was established and opened to the public around 1954. In other parts of Colombia, public-private partnerships have developed large public libraries conceived as cultural complexes. These institutions have typically prioritised policies oriented towards the visual arts, museology, and music, while increasingly responding to a broader social agenda. As such, they provide services aimed at supporting diverse communities, including disadvantaged school-age populations, as well as adults and the elderly.

Several municipal library systems incorporated into the National Public Library Network exemplify this approach. One notable case is Biblored in Bogotá, initiated during the mayoralty of Enrique Peñalosa (1998–2001). Its facilities are guided by clearly defined criteria, including strategic urban location, ease of access, open-shelf systems, and an emphasis on high-quality architectural design. These libraries typically integrate additional services, operate with flexible opening hours, and maintain strong connections with other institutional and urban networks.



Figure 128. UVA de la imaginación, San Miguel. Here, the existing water infrastructure has been repurposed to create a multi-functional community centre. As shown, the tanks were opened to accommodate a programme that ranges from open-air theatres and walking trails to exhibition spaces and specialist music rooms. 2018.



Figure 129. Virgilio Barco Library, inaugurated in 2001, is part of the Capital Network of Public Libraries of Bogotá project. 2018.

Medellín is often cited in the literature for the success of the *Proyecto Urbano Integral* (PUI), a programme that brought together a wide range of infrastructural interventions with a clear focus on socio-economic and cultural life (Maclean, 2015).¹⁵² These interventions include schools, public squares, urban lifts, libraries, sports facilities, and community centres. Although Medellín has been widely studied, it remains worthwhile to look more closely at the infrastructural approach adopted in the city. This is not only because of its relevance to discussions of social infrastructure, but also because of the way urban systems are conceived and embedded in everyday life. Rather than operating as isolated technical solutions, these infrastructures are designed as spaces for coexistence, recreation, and cultural activity, and as integral parts of the city's lived environment.

The *Unidade de Vida Articuladas* (UVAs, Articulated Life Units) introduced new qualities to urban water-treatment infrastructure by incorporating services and activities into underprivileged communities that had long lacked access to public leisure and cultural facilities. The initiative was implemented within several water tanks owned by Empresas Públicas de Medellín, the company responsible for the city's water supply. Although these tanks were originally located in areas that were largely unoccupied, they have, over recent decades, become surrounded by informal settlements, many of which were controlled by paramilitary groups for extended periods prior to the interventions. According to Harboe and Geirbo (2021), the fourteen UVAs built operate according to a shared logic: the reservoirs themselves are treated as sculptural elements, while the remainder of the programme is arranged around them, occupying formerly residual or interstitial spaces. The programme of the UVAs is notably diverse, often combining educational, recreational, and cultural facilities. A central aspect of their design process is sustained engagement with the local communities, which takes place throughout all phases of project development and implementation (Harboe & Geirbo, 2021).

¹⁵² Whilst Medellín's strategy of "Social Urbanism" is rightly lauded for knitting the peripheral comunas back into the city fabric via the Metrocable and iconic library parks, this intervention has a double edge. By embedding high-quality design and tourism-friendly infrastructure into previously informal settlements, the state effectively signalled these areas as "safe" for investment, triggering a sharp rise in land values often described as "state-led gentrification". Consequently, the very improvements meant to serve local residents have frequently displaced them through increased rents and real estate speculation, suggesting that the "Medellín Miracle" sometimes prioritised the city's global brand over the housing stability of its most vulnerable communities (Corantin, 2024).

11. Software of social infrastructure at universities

Outreach prospects

It is often assumed that universities in the Global North balance their core functions of teaching and research with an increasing emphasis on the so-called Third Mission. In their comprehensive, though markedly Eurocentric,¹⁵³ literature review on how universities engage with society, Compagnucci and Spigarelli (2020) show that universities are taking on additional activities in response to evolving social and economic challenges, which in turn shapes societal expectations. Yet the concept of the Third Mission remains vague, as do the methodologies and tools for its evaluation and management (Dassoler et al., 2023). One of the central difficulties in defining so-called Third Mission activities lies in their “invisibility” (Henke et al., 2016, p.17, our translation).

According to Henke et al. (2016), third Mission activities are often difficult to identify, and this problem is compounded by the lack of comparable data across universities. The main limitation in this regard is that such activities depend heavily on contextual factors and on the specific organisational objectives of individual institutions. Not all universities share the same goals and priorities, nor do they have equal opportunities to engage in Third Mission initiatives (Henke et al., 2016). The significant spatial potential of universities within the urban context is also scarcely acknowledged in official documents, particularly in relation to its possible interaction with Third Mission practices. With regard to the campus, even in contexts where institutional forms of social interaction are central, it is merely implied as the setting in which other activities take place (Pavan, 2022).

The overall meaning of the Third Mission refers to how stakeholders outside academia interact with universities. It encompasses notions such as the entrepreneurial university and technology transfer partnerships, but it also aims to promote societal well-being, develop human capital, and support social welfare. The Third Mission is broadly analogous to what in Brazil is known as University Extension or University Outreach. Its origins can be traced to nineteenth-century England, with Cambridge University establishing one of the

¹⁵³ “The majority of the papers reviewed focused on Europe (63.26%), Africa (6.12%) and the USA (3.40%) (Compagnucci & Spigarelli, 2020, p.3).

earliest formal extension programmes in 1878. These early initiatives differ considerably from the extension programmes in Brazil today. Paula (2013) places the development of university extension within a wider historical frame, arguing that it emerged at a critical juncture in the evolution of capitalism, following the Paris Commune of 1871 and the rise of the Christian socialist movement in Germany.

At least two distinct traditions underpin the principles of University Outreach (Paula, 2013). The first, rooted in English practices, involved multi-institutional efforts to confront the social consequences of industrial capitalism by offering alternatives to its effects. The second emerged in the United States, where extension placed greater emphasis on technology transfer and closer collaboration between universities and industry, fostering innovation through private-sector partnerships and aligning academic knowledge with economic objectives. In Brazil, significant political and social mobilisation during the 1950s created the conditions for what Paula (2013) identifies as the foundation of contemporary outreach in the country.¹⁵⁴ The literacy movement led by Paulo Freire also became a powerful instrument of political awareness and social mobilisation, supported by multi-institutional collaboration.

Since the Brazilian Federal Government introduced a national higher education evaluation system, the integration of educational values with teaching, research, and University Outreach has been strengthened (Carbonari & Pereira, 2007). From its inception, university extension has been understood through two principal approaches. The first frames extension as a vertical transfer of knowledge, focused on service provision while disregarding the value of popular knowledge and culture. This model is essentially unilateral, emphasising the university's contribution to society but overlooking the reciprocal influence society can exert on academic knowledge. The second, more contemporary approach, reflects a shift towards knowledge exchange through communication, in line with recent policy frameworks such as the National Extension Policy. This perspective builds on Paulo Freire's critique of the term "outreach," advocating communication as a more precise and democratic concept. Freire's model promotes

¹⁵⁴ From worker strikes, the rise of peasant leagues, efforts to control profit remittances, and moves toward greater autonomy in foreign policy.

continuous dialogue between popular and academic knowledge, fostering the democratisation of scientific, technological, and cultural production (Freire, 1979[2021]).

Brazil has a national university outreach policy. The Fórum de Pró-Reitores de Extensão das Instituições Públicas de Educação Superior Brasileiras (FORPROEX, Forum of Pro-Rectors of Extension of Brazilian Public Higher Education Institutions) defines university extension as an interdisciplinary process that is educational, cultural, scientific, and political. Brazilian MEC further emphasises that extension activities disseminate knowledge produced or developed within the institution to the broader community. This exchange promotes dialogue between academic knowledge and other sectors of society, ensuring that the university's mission remains aligned with social needs through teaching and research.

In Brazil, public universities have progressively become crucial mechanisms for democratising access to education and improving quality of life. MEC maintains and finances the federal institutions, which comprise approximately 115 public universities and institutes and constitute a primary channel through which the federal government reaches society. A much smaller number of public universities operate under state administrations and are financed at different levels, according to each state's economic capacity. Despite facing increasing funding constraints, the campuses of Brazilian public universities function as hubs for the provision of public services, making them integral forms of social infrastructure and demonstrating the territorial reach and societal importance of federal universities.

Brazil's federal universities currently enrol more than 1.3 million students across approximately 40,000 undergraduate programmes within a national network of 2,580 institutions. In 2023, higher education institutions offered more than 24 million admission places, of which 77 per cent were allocated to distance learning. Federal universities alone accounted for over 650,000 places, and students admitted through reserved-vacancy programmes achieved completion rates 10 per cent higher than those in general admissions, reaching 51 per cent. Overall, Brazil has 9.9 million students enrolled in higher education, divided almost equally between on-campus and distance-learning programmes (INEP, 2024)

As other authors have already analysed this policy in depth, we will limit our own consideration to a few structural points (Gadotti, 2017). The policy frames university outreach as a driving mechanism of change within both universities and society, aiming to advance social justice and strengthen democracy. Realising this potential requires addressing persistent challenges while making use of new opportunities in both global and national contexts. Public policies are essential in this process, but their success depends significantly on the contribution of public universities, particularly through their outreach initiatives. These institutions are expected to engage actively with governments and society to ensure that outreach efforts generate meaningful and lasting impact.

Brazilian guidelines for university outreach emphasise several core principles. Foremost among these is dialogical interaction, where knowledge exchange with society generates new insights that help confront inequality and social exclusion, fostering a more just, ethical, and democratic society. Interdisciplinarity and inter-professionalism are also central, encouraging collaboration across fields to tackle complex social problems. Another guiding principle is the inseparability of teaching, research, and extension, which reinforces the integration of the university's core functions. Outreach is further expected to influence student training by equipping them with practical skills and a strong sense of social responsibility. These initiatives aim to drive meaningful social transformation by addressing the needs of the wider population, promoting regional development, and strengthening public policies to ensure lasting change (FORPROEX, 2012).

It makes sense, then, to conceive Third Mission and outreach or extension programmes as evolving and contextual concepts. These should not be seen as monolithic entities but rather as sets of practices and procedures tied to geographically specific academic traditions. For this reason, we avoid using the term model, preferring instead to think of them as dispositions embedded in local contexts. Following Easterling, and drawing also on Blackburn (2005) and Heil (2005), we use disposition to mean an inherent tendency within systems that may produce outcomes when triggered by particular circumstances, but that can also remain unexpressed or never materialise at all.

Different approaches to university outreach reveal distinct ways of engaging with society. At one end, the university acts as a benefactor, offering services and resources to address local needs without necessarily engaging with community knowledge or agency. A related view frames the university as a provider of public services, extending research and teaching to respond to societal challenges while often retaining a top-down structure. More contemporary perspectives stress collaboration and reciprocity, with universities and communities co-producing knowledge and developing shared solutions. The difficulty in defining outreach or the so-called Third Pillar reflects how fragile and contested this relationship remains.

Different societies have different needs, and the disposition of institutions to act accordingly depends on this context. In Brazil, deep social inequalities make public universities an infrastructural component, affecting their priorities and purposes. Teaching, research, and university extension are the three constitutional missions of Brazilian public universities. Outreach programmes, however, also reflect the characteristics of the societies they serve. In Latin America, extension has been closely tied to the tradition of popular universities, incorporating a self-critique of the university as an institution. On Brazilian campuses, extension programmes act as important vehicles for the consolidation of social infrastructure. Yet their emergence at a critical juncture in capitalist history also reflects the contradictions of the system, as well as events that continue to challenge the capitalist mode of production (Fraga, 2017).

Fraga (2017) interprets the emergence of university extension practices in Brazil as a reworking of earlier experiences of cultural dissemination and adult worker education that had developed in England during the Industrial Revolution. In addition to this influence, Latin American popular universities, shaped by European initiatives, particularly those in France, and the U.S. land-grant colleges also contributed. The reformist movement in Córdoba, launched by students in Argentina in 1918, sought to democratise higher education by challenging elitism, advocating for academic freedom, and expanding the university's social mission. This reform embedded the idea of the university's responsibility to society into official discourse and intersected with the initiatives of popular universities already emerging across Latin America. Institutions such as the Mexican Popular University

(1912), the Lastarria Popular University in Chile (1918), the González Prada Popular Universities in Peru (1922), and the José Martí Popular University in Cuba (1923) illustrate the distinctive forms that this Latin American experience assumed (Fraga, 2017).

Through a series of congressional measures, the U.S. created a system of publicly funded universities tasked with preparing farmers and engineers, carrying out research with direct applications for agriculture, and working with farming communities to circulate and apply this knowledge (Kopp, 2021). The Morrill Act of 1862 granted more than 400 hectares of public land to finance new Land-Grant colleges, and these institutions reshaped higher education in the United States. They placed academic work in direct dialogue with the realities of agriculture and industry, bringing farm fields, workshops, kitchens, and factories into the scope of legitimate scholarly inquiry.

Unlike earlier universities that reinforced social privilege, Land-Grant colleges defined themselves as “people’s universities” and welcomed students from working backgrounds who had previously been excluded from higher learning (Singh, 2021). The Hatch Act of 1887 reinforced this mission by funding agricultural research, and the Smith-Lever Act of 1914 created the Cooperative Extension Service through a partnership of federal, state, and county governments (McDowell, 2003). According to McDowell (2003), between the 1920s and the end of the Second World War, this system transformed American agriculture in what became known as the “Transition to Science” era.

At the German context, following the university expansion that took place after the Second World War, when universities have often been expected to engage more directly with society and to generate regional impact, activities now associated with “Third Mission” appeared as a mean to secure these needs while also capturing a degree of social legitimacy. Conceptually, “Third Mission” emerges in this context as a somewhat improvised concept. In seeking to define it, Henke et al. (2016) argue that the Third Mission encompasses activities undertaken by universities within the framework of teaching and research, yet not reducible to, or solely defined as, teaching or research (Henke et al., 2016). These activities are characterised by how they involve publics beyond the academic sphere; addressing social development needs that cannot be met

exclusively through conventional teaching and research; and drawing on the resources of research and/or teaching.

Equal chances

Functioning as the operational cornerstone of GUF's mandate for equality, diversity, and inclusion, the Büro für Chancengerechtigkeit (BfCG, Office for Equal Opportunities) works in tandem with the Commissioner for Anti-Discrimination to engineer a university structure that remains critical of exclusion. The BfCG's role is foundational; it erects the necessary scaffolding for students and staff by actively reconciling professional duties with family life through dedicated support infrastructure and counselling. Simultaneously, the office guides individual departments in drafting their own blueprints for equitable practice, acting as the custodian of the institution's ethos to ensure the university culture is consistently built upon the principles of equal opportunity. Our inquiry centres upon the BfCG at GUF, as it possesses a structural integrity distinct from comparable bodies at the partner institutions. Where others may compartmentalise, the BfCG integrates gender, diversity, and anti-discrimination policies into a single, cohesive design. This breadth of scope not only fortifies the organisational culture but renders the BfCG a singularly valuable case study for the analysis of institutional frameworks.

In defining its own remit, the BfCG erects equal opportunities as a strategic pillar fundamental to university participation. This self-conception is decidedly functionalist; the office articulates equality less as a moral imperative and more as a structural necessity for institutional efficacy. Consequently, the discourse adopts a utilitarian and bureaucratic tone, prioritising a certain atmosphere of business case for diversity where human potential is viewed primarily as a resource to be harvested in service of innovative research and a lively teaching culture. By maintaining that the university's flourishing is intrinsically linked to this dual scope of individual and organisational development, the BfCG effectively frames inclusion as a strategic asset designed to maximise the institution's output.

The BfCG defines its action plane for the period 2025–2030 as a collective institutional mandate rather than a top-down administrative directive (BfCG & GUF, 2025a). The text

relies heavily on concepts of legitimacy through process, specifically, that the plan is valid because it was built by the community it serves. The legitimacy of this framework is constructed upon two main pillars. First, the empirical rigour of continuous quality management and external evaluation, and second, a participatory design process that integrated over one hundred stakeholders across all status groups. Thus, the action plane is defined as a cumulative evolution of the previous 2019-2024 structure, stabilised by expert consultation and the explicit coordination of the university's governance hierarchy.

In articulating its vision through the action plane, the BfCG explicitly rejects a normative reliance on simple equal treatment, arguing that such an approach is insufficient to address entrenched disparities. Instead, it advocates for a model of substantive equity, one that explicitly acknowledges the distinct and often unequal starting conditions of university members.¹⁵⁵ Thus, BfCG delineates a matrix of disadvantages, which range from gendered role attributions and socio-economic origin to physical impairments, to advocate for a university capable of positioning itself not as an active agent committed to dismantling systemic obstacles. In such framing, the university assumes responsibility for mitigating the multidimensional societal inequalities that otherwise inhibit individual potential.

The BfCG outlines a comprehensive and stratified operational strategy designed to translate their vision of equity into practice. It employs a targeted methodology where measures are tailored to specific demographic needs, acknowledging that disadvantages require distinct compensations. This approach segments the university community into functional target groups, which includes from executive management to specific cohorts experiencing marginalisation, while simultaneously integrating these efforts through an intersectional lens. The objective is to synthesise these factors into a cohesive strategy, one that accounts for cumulative disadvantages and fosters an environment of true inclusivity.

The BfCG's operational strategy articulates a cohesive vision where equity is advanced through the interplay of structure, culture, and individual agency. At the institutional level, the plan seeks to embed fairness into the very fabric of administration, ensuring that the

¹⁵⁵ As stated in the document, "in doing so, it takes into account the fact that the starting conditions of students and employees can vary greatly," our translation, from the German original: "Dabei berücksichtigt sie die Erkenntnis, dass die Ausgangsbedingungen von Studierenden und Beschäftigten sehr unterschiedlich sein können." (BfCG & GUF, 2025, p.7).

mechanisms of governance and resource allocation are inherently resistant to exclusion. This structural integrity is sustained by a simultaneous commitment to cultural renewal, moving beyond mere compliance to cultivate an ethos of active inclusivity across the academic community. These systemic efforts find their focal point in the individual.

The university aims to actively erode the structural impediments that have long constrained potential, creating a level field for all. In other guidelines, the BfCG reframes the lecture hall and the conference room as primary pedagogical interfaces (BfCG & GUF, 2025b). Accessibility appears as a prerequisite for knowledge transfer. The advocacy for the “Two-Sense Principle” is particularly telling; by requiring information to be delivered through multiple sensory channels, the office effectively challenges the university’s habit of monologic, exclusionary delivery.¹⁵⁶

Another important part of BfCG involves survey work that the office carries out within the university. In 2017, the office released the brochure *Engagiert für Vielfalt* (Committed to diversity), where it frames itself as a curated cross-section rather than an exhaustive inventory, organising the university’s engagement around two strategic poles (BfCG & GUF, 2017). The first, titled Gender & Diversity: Competent and Strong in Teaching and Research, targets the academic core, while the second, Focus on Heterogeneity: Employees in Science and Administration, turns inward to address the workforce infrastructure. By citing a 2011 stocktake of over 150 initiatives, the text illustrates the density of practice across these domains, linking the epistemic mission of the university directly to its personnel policies. Crucially, however, the authors admit to a material stratification within this system. While certain measures are embedded within the permanent budget, others remain dependent on third-party grants. This reveals a hybrid

¹⁵⁶ As stated in the document: “The Two-Sense Principle: Information is provided through at least two senses, such as sight and sound, or sound and touch. This ensures that individuals with different abilities, including those with visual or hearing impairments, can access the information. In the best-case scenario, visual elements are verbalised, and verbal elements are visualised”, our translation, from the German original: “Das Zwei-Sinne-Prinzip: Informationen werden über mindestens zwei Sinne zugänglich, z. B. durch Sehen und Hören oder Hören und Tasten. Dadurch wird sichergestellt, dass Menschen mit unterschiedlichen Fähigkeiten, z. B. Seh- oder Hörbehinderungen, die Informationen wahrnehmen können. Im besten Fall wird beispielsweise auch Visuelles versprachlicht und Versprachlichtes visualisiert.” BfCG & GUF, (2025). Diversitätsgerechte Veranstaltungen planen und durchführen. Goethe-Universität Frankfurt.

operational model, where the continuity of equal opportunities relies on a precarious balance of core funding and external resources.

Another important agent in university organisation, although not exclusive to Westend, is the Studierendenwerke. As public-law bodies within the sphere of indirect state administration, the Studierendenwerke operate at the interface between the state and higher education institutions. Funded by the respective federal states, they combine regulatory responsibilities with the provision of economic and social services for students and, more broadly, for the university community. Although subject to state oversight, they enjoy a degree of organisational autonomy, reflected in participatory governance structures that include student representation alongside other university stakeholders (Hoffmann, 1986). Their operation is characterised by a mixed funding model. Some services are provided on a subsidised basis (including canteens, counselling, and childcare), others are organised according to a cost-recovery principle (most notably student housing), and certain areas generate limited surpluses (such as cafeterias), which are used to support other statutory tasks. Overall, Studierendenwerk function primarily as socio-political instruments rather than profit-oriented enterprises, aimed at sustaining the material conditions of studying.

The Studierendenwerk Frankfurt am Main is a public-law organisation responsible for student welfare services at six universities in the Rhine–Main region, serving approximately 70,000 students. Its activities include the provision of catering and affordable student housing, the administration of state financial aid (BAföG¹⁵⁷), and the delivery of financial, legal, social, and psychosocial counselling. Operating under a non-profit, solidarity-based funding model, its services are financed through public funds, compulsory student contributions, and income from housing and catering operations. While subject to state supervision, it functions according to commercial law and employs staff under the public service collective agreement of the state of Hesse (Studierendenwerk Frankfurt am Main, 2025). Emphasis is placed on supporting structurally vulnerable groups, including low-income students, international students, and students with children.

¹⁵⁷ *Bundesausbildungsförderungsgesetz*, which translates to Federal Training Assistance Act. The term is used to refer to the financial aid provided by the German state to students, which includes both university and secondary school levels, who cannot fully fund their own education.

In Germany, this type of institution has existed since 1921. Established at a time when the student body was grappling with the severe consequences of the First World War—compounded by a catastrophic economic situation and spiralling inflation, the *Wirtschaftshilfe der Deutsche Studentenschaft e.V.* (Financial assistance from the German Student Union) was founded as an umbrella organisation for the various regional self-help initiatives that had emerged during this period (Deutsches Studentenwerk, 2001; Hoffmann, 1986). These early efforts were sustained by a broad coalition comprising students and faculty alongside prominent figures from the spheres of politics and business.

Mitigation and closeness

As we have seen, Manhattanville campus creation has been accompanied by sustained dispute and formalised through a series of legal agreements. Elements of the campus's social infrastructure operate precisely because of these conflicts and the negotiated settlements that produced them. It would therefore be misleading to suggest that the university would have addressed these issues in the absence of the agreements that enabled, and sought to mitigate, the campus's insertion into its surrounding community. What emerges in practice is a clear illustration of the permanently relational condition of infrastructural space, extended here to the domain of social infrastructure.

The Columbia Neighbors (CN) platform provides a clear example of this mode of action. The university presents CN as a multifaceted interface intended to connect the institution with the communities surrounding the Manhattanville, Morningside Heights, and Irving Medical Center campuses. As a form of social infrastructure, the platform operates simultaneously as a community news outlet, an information resource, and a space for social engagement, supporting activities related to service, participation, and local development.

In January 2023, CN was relaunched with a revised mission and a stronger emphasis on community engagement through storytelling. The redesigned platform expanded its content across digital, print, and social media channels, prioritising locally oriented narratives and encouraging collaboration by foregrounding neighbourhood stories,

initiatives, and experiences (CUOPA, 2023). Through this strategy, the university seeks to position itself closer to its neighbours in Upper Manhattan by framing engagement around shared narratives and accessible resources. In addition, CN aggregates information on programmes targeting early childhood, youth, adults, and seniors, addressing areas such as career development, health, wellbeing, and education.

We selected CN in part because of its explicit focus on addressing the challenges and community concerns associated with the establishment of the Manhattanville campus, which allows us to examine how the university seeks to mitigate the impacts of its expansion. The initiative is also characterised by a high degree of publicly accessible documentation, which we draw upon to analyse the narratives through which these mitigation efforts are articulated. These include the production of quarterly newsletters focused on community care and health and wellbeing, alongside information relating to the Columbia Employment Information Centre and other services available to local residents, including tenant legal assistance, all in English and Spanish (CN, 2025).

In the first edition of its newsletters, for instance, Columbia foregrounded on its cover a partnership with residents seeking employment and drew particular attention to the presence of women working on the construction of the Manhattanville campus, notably in the article entitled *Nontraditional Career Paths Lead Women to Manhattanville* (CN, 2016, p.2). That inaugural issue, released in spring 2016, shortly before the opening of the first phases of the Manhattanville campus, devoted a substantial portion of its pages to showcasing university outreach activities aimed at young people. It also included an extensive section highlighting elected officials and community boards associated with the university. The tone established in this initial issue is maintained, with minor variations, across subsequent editions.

These initiatives must, of course, be situated within the broader context in which they operate. In Columbia's case, this context can be traced directly to the agreements the university entered with local government to mitigate the impacts of the construction of the Manhattanville campus, agreements shaped in large part by the community conflicts and resistance discussed in Chapters 2 and 7 of this thesis.



Figure 130. CN Newsletter, winter/spring 2026 English edition. Source: CN.



Figure 131. CN Newsletter, summer/autumn 2025 Spanish edition. Source: CN.

Viewed from this perspective, initiatives such as CN should not be understood as isolated or purely voluntary forms of engagement, but as practices embedded within (and, to a significant extent, structured by) the obligations established under the Community Benefits Agreement (CBA). Columbia signed one such agreement in 2009, formally titled the *West Harlem Community Benefits Agreement* (CU, 2009).

A CBA is commonly understood as the outcome of negotiations between a developer proposing a specific land use and a coalition of community organisations claiming to represent those affected by the development (Been, 2010). We might recognise a CBA as a legally binding contract negotiated between a real estate developer (or project sponsor) and a coalition of community stakeholders, such as neighbourhood associations, labour unions, environmental justice groups, or non-profit organisations, prior to or alongside the approval of a major development project. A CBA sets out specific, enforceable commitments by the developer to provide tangible benefits to the affected local community in exchange for community support of the project, often during zoning changes, public financing approvals, or planning permissions (Salkin, 2007).

As Been cautions, CBAs raise significant governance concerns and should be approached carefully by public authorities, particularly regarding the transparency of negotiations, the representativeness and accountability of negotiating parties, and the legality and enforceability of the commitments undertaken.¹⁵⁸ Read against this backdrop, the CBA signed by Columbia University in relation to the Manhattanville Project carries a set of implications that extend beyond conventional land-use mitigation. First, the scope and structure of the agreement establish an unusually broad understanding of development impacts. Columbia formally recognises eight policy domains centring on housing; employment and economic development; education; environment; transportation; arts and culture; community facilities; and historic preservation. These domains constitute the field of Community Benefits made explicit in the CBA.

¹⁵⁸ CBA's usage has expanded beyond traditional land-use disputes to become a standard mechanism in US economic governance. The Staples Center agreement (2001) is identified as the progenitor of the modern the CBA. In the years since the Los Angeles model was established, CBAs have evolved from ad hoc private negotiations into institutionalised policy instruments, particularly within the energy and financial sectors (Marantz, 2015).

This framing overtly acknowledges that the effects of the Manhattanville Project are multi-scalar and multi-sectoral and exceed the immediate concerns of zoning, construction, or physical form. From a legal standpoint, this breadth allows heterogeneous measures, which range from direct financial contributions to access rights and advisory roles, to be assembled under a single contractual definition, even though their enforceability varies considerably. Conceptually, the agreement marks a shift away from a narrow mitigation logic towards a quasi-welfare and service provision role assumed by a private university operating at the urban scale

One of the most concrete implications of the CBA lies in Columbia's commitment to a fixed monetary contribution of USD 20 million for affordable housing-related purposes. This provision explicitly frames housing as an impact of the project itself, acknowledging the university's role in intensifying displacement pressures and affordability challenges in West Harlem. The inclusion of housing legal assistance alongside more conventional housing measures suggests that the funds may support tenant protection, legal aid, and anti-eviction strategies, rather than being limited to new construction. In this respect, the CBA substitutes for regulatory housing instruments that would otherwise fall under municipal responsibility.

The agreement also relies heavily on non-monetary benefits derived from Columbia's institutional infrastructure. The university commits to providing ongoing, time-bound access to selected facilities, services, and amenities for the local community. While this provision formally opens the campus to its surroundings, it leaves substantial discretion to Columbia regarding the scope, conditions, and durability of such access. Spatially, this arrangement blurs the boundary between a relatively closed academic enclave and a neighbourhood institution, though largely at the level of principle rather than guaranteed spatial rights.

Economic development measures within the CBA underscore its reliance on soft governance mechanisms. Columbia commits to facilitating information flows related to internships, with the aim of encouraging graduate students and faculty advisors to engage with local businesses and the arts community. Notably, the university does not guarantee

placements, procurement, or hiring. Instead, the agreement privileges knowledge exchange and voluntary engagement, producing benefits that are indirect, contingent, and difficult to measure. The CBA also commits Columbia to sustaining long-term institutional relationships with community organisations and to providing ongoing advice, guidance, and expertise across multiple programmes.

The most consequential and symbolically charged commitment in the agreement concerns education. Columbia undertakes to support the creation of a New York City Department of Education public school in West Harlem, conceived as a high-performing demonstration school. The project is framed simultaneously as a site for pedagogical innovation, a community school integrating educational and social services, and a hub for professional development. This commitment situates the university directly within the provision of public education, extending its influence beyond higher education into the urban welfare apparatus.

The agreement places recurring emphasis on Columbia's role as an adviser and intermediary, particularly in relation to small businesses and the integration of the project with the surrounding neighbourhood. In doing so, the university explicitly recognises the risk that the Manhattanville Project could produce socio-spatial separation from West Harlem. Its commitments therefore focus less on fixed outcomes than on facilitative measures intended to promote integration rather than enclosure. While largely declarative and procedural in nature, these provisions are significant insofar as they acknowledge the social costs associated with large-scale institutional expansion and help to frame the project as a negotiated, rather than unilateral, intervention.

12. Typologies of social infrastructure

As we have seen, an influential contribution to the definition of social infrastructure is offered by Latham & Layton (2019), whose work seeks to advance both the theoretical understanding and the empirical study of these spaces. A central concern of their research is the identification of the types of places that can be understood as social infrastructure, alongside the development of methods to recognise and value their social effects. Of relevance is their typological approach, which classifies spaces according to the forms of interaction they enable rather than their formal designation. This thesis aligns with their observation that many such sites are not primarily conceived for social encounter. Instead, they tend to be organised around a specific function, within which social interaction nonetheless proves essential to their effective operation. In this sense, social infrastructures perform a dual role. They consolidate bonds within groups while also enabling forms of exchange across different social positions.

The literature reviewed by Latham Layton identifies a heterogeneous array of spatial typologies. These range from civic and educational institutions, such as libraries, universities, museums, and memorials, to the open public realm of squares and parks. Commercial establishments are equally represented, including markets, hospitality venues, and service-oriented spaces like laundrettes and barbers. The inventory extends to recreational facilities, religious architectures across faiths, and the transitional spaces of transport infrastructure, comprising stations, pavements, and cycle lanes (Latham & Layton, 2019). Currently, geographers and sociologists currently dominate the scholarship on social infrastructure. We argue, however, that the architectural contribution provides a crucial understanding of the typological dimensions of these spaces. To contextualise this, we must revisit the foundational concepts of type and typology.¹⁵⁹

The emergence of type and typology is conventionally traced to Quatremère de Quincy's *Dictionnaire historique d'architecture* (1835). Although the disciplinary status of these concepts has since fluctuated considerably, ranging from uncritical endorsement to methodological rejection. Etymologically, type derives from the Greek verb meaning "to

¹⁵⁹ We initially addressed the concepts of type and typology within our critique of the university campus. See our chapter one, ...And on its learned head it bore a Crown of many towers.

strike", originally referring to the imprint left on coinage; following Gutenberg, the term expanded to denote the physical matrices used in printing (Vidler, 1977a). Under the influence of Enlightenment natural science and its taxonomic ambitions, architectural theorists appropriated this notion as a means of systematising the built environment. The concept of *building type* thus served a dual function. It anchored architectural forms in historically recognised archetypes while ensuring their visual and semantic legibility. Jacques-François Blondel formalised this position in the mid-eighteenth century, arguing that every building required a distinct manner of being determined by its specific function (Moneo, 1978).

By the late eighteenth century, however, a group of architects and theorists, including Viel de Saint-Maux, Étienne-Louis Boullée, Charles de Wailly, and Antoine Vaudoyer, sought to move beyond classification alone. Their ambition was to restore symbolic expression to architecture, a posture that entailed a rejection of the naturalist paradigm popularised by Laugier, which grounded architectural origins in the Primitive Hut (Figure 132).¹⁶⁰ Instead, they posited a divine or metaphysical precedent, which they termed the Received Type.¹⁶¹ Quatremère de Quincy, a young Neo-Classicist operating within this milieu, positioned himself critically against what he perceived as the individualist excesses of his contemporaries. He conceived architecture as a linguistic system governed by strict grammatical rules, rules he believed were being systematically violated by figures such as Boullée, Ledoux, and Viel de Saint-Maux.

¹⁶⁰ Marc-Antoine Laugier introduced the notion of the Primitive Hut in his *Essai sur l'architecture* (1753) as a conceptual point of departure for architectural theory. Rather than proposing a literal historical origin, Laugier used the hut as an abstract construct to illustrate how architecture could arise from basic acts of construction guided by reason and necessity. Reduced to a minimal structural arrangement, (upright supports, a horizontal beam, and a pitched roof) the Primitive Hut is a normative reference with structural legibility, proportional order, and a rejection of arbitrary ornament. In this sense, it functions as a critical benchmark against which architectural form and legitimacy are evaluated.

¹⁶¹ For this circle, the Temple of Solomon, rather than the rustic shelter, constituted the true primordial archetype of architecture (Vidler, 1977).



Figure 132. Frontispiece to Marc-Antoine Laugier's *Essai sur l'architecture*, (1755), by Charles Eisen (1720-1778). Source: WM Commons.

In particular, Quatremère criticised their tendency to detach architectural elements from functional logic in order to serve mystical or symbolic ends. He famously ridiculed the transformation of the pediment from a necessary tectonic feature into a “mysterious triangle” invested with divine meaning. In response, he developed a taxonomy of *character* structured around three levels, which included General Character, expressing a national genre shaped by climate and social customs; Essential Character, embodying a universal grandeur shared across historical epochs; and Relative Character, corresponding to the specific identity required by each individual building type (Vidler, 1977a).

One of Quatremère’s most enduring theoretical contribution lies in his rigorous distinction between type and model (Vidler, 1977b, 1977a). The model, he argued, is an object intended for mechanical repetition, demanding exact execution. The type, by contrast, is an abstract principle; not an image to be copied, but a conceptual germ to be interpreted. As he famously summarised, “all is precise and given in the model; all is vague in the type”. From this distinction followed a fundamental redefinition of architectural authorship. The architect copies the model but acts according to the type. Quatremère sought to elevate architecture above the status of a mechanical trade, preserving it as a liberal art grounded in intellectual invention rather than industrial reproduction.¹⁶²

Writing in the early nineteenth century, Quatremère attempted to restore what he understood as the philosophical purity of the concept of type. He defined it not as a tangible object, but as a pre-existent germ, an abstract origin or primitive cause. In this respect, he partially realigned himself with Laugier’s rationalist doctrines, reaffirming the Primitive Hut as the foundational type of the temple and, by extension, of architecture itself. Crucially, however, Quatremère maintained a strict separation between type and model. The former functioned as an imaginative abstraction, capturing the sentiment and spirit necessary for architectural invention, while the latter represented a material reality

¹⁶² Quatremère codified these principles into a distinct methodological framework. Foremost were the Gradation of Richness and Size, a strategy designed to signal a structure’s societal hierarchy through its relative scale and opulence. This was complemented using Analogical Forms, where physical massing implied inherent moral qualities, such as the defensive weight of a prison or the permeability of a market, alongside Elemental Forms that utilised geometry to express the building’s fundamental nature. Furthermore, he insisted on a Propriety of Construction, demanding that tectonic methods and materials align strictly with function. The system culminated in Decoration and Attributes, a final layer of specificity where symbols, such as the scales of justice, rendered the building’s purpose unmistakably clear. See, again: Vidler, A. (1977).

destined for literal repetition. For Quatremère, adherence to the model risked reducing architectural practice to servile imitation.

Quatremère advanced a conception of type that was fundamentally philosophical rather than directly operative. The ideal type, in his view, remains intangible and is never fully realised in built form; instead, it operates as a nucleus around which architectural meanings and variations accumulate over time. Acknowledging the difficulty of translating such abstractions into professional practice, he introduced Character as a mediating device between theory and social reality. Through what he termed Relative Character, Quatremère argued that each building must articulate a distinct identity grounded in its purpose, use, and social conventions. Unlike the essential type rooted in divine or universal history, this relative dimension was governed by immediate necessity, allowing architectural meaning to emerge from the concrete conditions of modern life.

From these preliminary discussions, we can now turn to the subsequent development of type and typology in architectural theory. For this recapitulation, our primary point of reference will be the influential essay by the architect Rafael Moneo (Moneo, 1978), *On Typology* and his *Typology in the context of three projects: San Sebastian, Lacua, Aranjuez* (Moneo, 2015). For the architect:

“To understand the question of type is to understand the nature of the architectural object today. [...] The architectural object can no longer be considered as a single, isolated event because it is bounded by the world that surrounds it as well as by its history. It extends its life to other objects by virtue of its specific architectural condition, thereby establishing a chain of related events in which it is possible to find common formal structures. If architectural objects allow us to speak about both their singleness and their shared features, then the concept of type is of value, although the old definitions must be modified to accommodate an idea of type that can incorporate even the present state, where, in fact, subtle mechanisms of relationship are observable and suggest typological explanations (Moneo, 1978, p.44).

Rafael Moneo provides a concise and rigorous synopsis of the concept's evolution. We integrate his perspective here, positing that it offers a critical lens through which to examine the typologies of social infrastructure. Moneo (1978; 2015) asserts that any discourse on typology necessitates a simultaneous interrogation of the nature of architecture itself. For him, the definition of architecture as a discipline is mutable and

generational, as each generation is compelled to redefine its essence to address specific contemporary exigencies. The architectural work occupies a paradoxical position, existing simultaneously as a singular work of art and a repeatable tool. As an artistic entity, the building is a unique, irreducible phenomenon. Yet, it also functions as a utilitarian object, he mentions that akin to a vessel or helmet, governed by the logic of craft and problem-solving. It is in this latter state that typology becomes critical, for just as a plate is conceived for reproduction, the essence of this architectural mode relies upon its capacity to be repeated.

The architect proposes a fundamental definition of type as a concept describing a group of objects characterised by a shared formal structure. Importantly, this definition is neither a reductive spatial diagram nor the statistical average of a serial list. Instead, it is grounded in the capacity to categorise objects based on inherent structural affinities. Moneo argues that context determines type as definitively as geometry; architectural form remains indissoluble from its historical moment, construction methodology, and social function. Consequently, type is not a monolithic entity but a complex system of relationships between constituent parts.¹⁶³

Building upon the theories of Quatremère de Quincy, revisited here through the lens of Vidler, Moneo delineates the evolving relationship between the architect and typology. The first radical departure is found in the work of J.N.L. Durand, who dismantled the metaphysical definition of type. Durand deliberately eschewed the term itself, preferring “Genre” to classify groups of buildings. For Durand, architecture was stripped of its mimetic obligation to nature or deep philosophical signification.¹⁶⁴ Instead, the discipline

¹⁶³ To illustrate this, the author cites the evolution of the dome. The essence of this type lies not in the dome itself, but in the structural dialectic Brunelleschi established between the cupola and the lantern. This specific formal consistency proved so resolved that it persisted for three centuries, becoming the paradigmatic type for Renaissance and Baroque ecclesiastical architecture.

¹⁶⁴ Durand synthesised eighteenth-century concepts into a coherent pedagogical methodology. Whilst serving as a professor at the École Polytechnique, he proposed significant advancements in both architectural theory and instruction. During his tenure at the École, Durand engaged with Gaspard Monge, the mathematician responsible for the invention of descriptive geometry. In his theoretical approach, Durand reduced architecture to its fundamental, irreducible elements to establish his teaching method. He posited that from these basic components, architecture could be systematically reassembled through geometry, guided by the principles of function, economy, and beauty.

was reoriented around the concept of composition and the rational arrangement of autonomous elements to satisfy the demands of the programme.¹⁶⁵

A second, radical departure is marked by the Modern Movement, which rejected typology by reframing history as a carceral impediment rather than a foundational resource. Viewing type as a synonym for immobility, or as a set of arbitrary restrictions suffocating the creator, the Modernists sought a clean break. Moneo identifies Mies van der Rohe as the apotheosis of this rejection, where type (a specific social and historical form) is supplanted by space, implying a generic, universal substance. The IIT campus serves as the exemplar of this philosophy (Figures 133;134). It stands as a physical fragment of a conceptual space where the generic form renders function irrelevant; there, a structure may serve indifferently as a chapel or a classroom.¹⁶⁶

The 1960s witnessed a resurgence of typology, driven by a critique of the Modern Movement's failure to grasp the complexity of the city. No longer seen as a collection of isolated objects, the urban environment was conceived as a coherent formal structure defined by historical continuity. Building on this, Giulio Carlo Argan offered a critical re-interpretation of Quatremère de Quincy. Argan effectively secularised the concept, stripping away the Neoplatonic mysticism to render type a pragmatic tool of analysis. Whereas Quatremère viewed type as an a priori absolute, an ideal form existing prior to the building, Argan defined it a posteriori. For Argan, type is a deduction, identified retrospectively through the examination of built reality (Argan, 1969). Alan Colquhoun further advanced this discourse by framing type as a linguistic necessity. He argued that architectural intelligibility is impossible without referencing the past; intelligible forms, or

¹⁶⁵ Moneo explicitly links this theoretical pivot to the institutionalisation of the discipline, specifically the rise of the polytechnics and the École des Beaux-Arts. Under this new pedagogical regime, history ceased to be a source of metaphysical truth and was reduced to a mere repository of fragments. According to Moneo, this commodification explains the ferocity of the nineteenth-century Battle of Styles. With the fundamental logic of architecture homogenised into generic composition, the discipline devolved into a superficial conflict over "costuming", as architects debated which historical skin was the appropriate dress for the structural skeleton.

¹⁶⁶ Conversely, for Moneo, Le Corbusier illustrates the Modernist attempt to transmute Type into the "Industrial Prototype". He embodies the friction between the unique event and the mass-produced object, pursuing a limitless repetition epitomised by the Maison Dom-ino.



Figure 133. Mies van der Rohe at Illinois Institute of Technology. 1949-1952. Photo: IIT College of Architecture.



Figure 134. Robert F. Carr Memorial Chapel of St. Savior, Illinois, project by Mies van der Rohe, 1949-1952. Source: IIT College of Architecture.

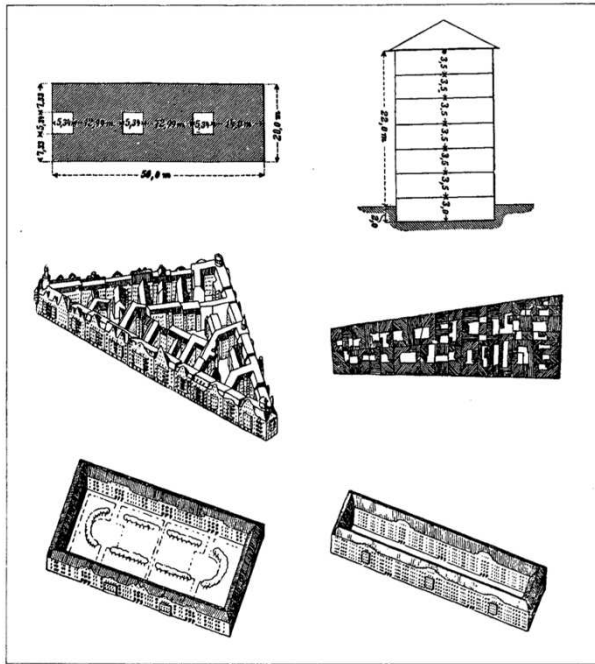


Figure 135. Typological studies that Aldo Rossi conducted on Berlin's architecture. Source: Rossi, A. (1984). *The architecture of the city*. The MIT press.



Figure 136. Aldo Rossi, Teatro veneziano, 1979. Source: Rossi, A. (2010). *A Scientific Autobiography*, reissue. The Mit Press.

types, serve as the requisite vocabulary for communication. Crucially, because these types are arbitrary conventions rather than fixed truths, they remain mutable (Moneo, 1978).

The inevitable outcome of this urban re-evaluation was the rise of morphology and the establishment of a rigorous method for analysing the city's form and structure. In the late 1960s, Aldo Rossi emerged synthesised these disparate threads into a systematic theory. Moneo (1978) posits that Rossi did not merely invent a new theory *ex nihilo*; rather, he amalgamated three major theoretical lineages (Figures 135; 136). He adopted Saverio Muratori's morphological approach, viewing type as the generative force behind the urban fabric. He integrated the traditionalist perspective of architects and writers such as Rogers and Argan, which understood type as a cultural given or inner structure.¹⁶⁷ Finally, he re-anchored these concepts in the philosophical foundations of Quatremère de Quincy, treating type as the permanent logic of reason and nature.

With this theoretical foundation established, we can now address the diverse typologies of social infrastructure that emerge on university campuses. This inquiry compels us to consider how such buildings achieve a high degree of legibility necessary for public engagement, while simultaneously questioning how the specific arrangement of their parts satisfies a complex programmes. The chapter proceeds in three stages. First, it offers an overview of the configurations and types of social infrastructure present at UFSC's main campus, GUF's Westend and Columbia's Manhattanville. It then identifies and examines the types observed across the three campuses, approaching some of them through a functional lens. Central to this discussion is the understanding that social infrastructures, like infrastructures more broadly, are relational in nature. They vary according to context, reflect administrative policies and broader immaterial frameworks and yet remain

¹⁶⁷ Moneo introduces Ernesto Nathan Rogers, a central figure within the Casabella circle, as a critic of the design methodologies that gained prominence in the 1960s. Rogers's critique is grounded in a fundamental opposition between Type and Method. He forcefully rejected the reductive determinism advanced by the so-called Methodologists, who claimed that architectural form could be derived automatically from the exhaustive definition of functional requirements and their correspondence with reality, effectively reducing design to a linear equation in which requirements plus method yield architecture. Rogers argued that architectural form emerges through an entirely opposite methodology. Architectural knowledge, in his view, does not result from the calculation of abstract parameters, but from the recognition and acceptance of types. Types operate as pre-existing frameworks shaped by reality. They constitute the categories through which singular architectural events are classified and made intelligible, and they prevent the discipline from collapsing into a purely technical exercise in problem-solving (Moneo, 1978).

irreducibly material in their spatial and architectural expression. It is important to note that this overview does not purport to be exhaustive; inevitably, certain elements must be omitted. This is necessitated by the vast scope of social infrastructure within these environments, which is characterised not only by its magnitude but also by its inherent fluidity and impermanence.

Here, we aim to address the possibilities and limits of understanding social infrastructure typologies as a means of rearticulating the relationship between universities and society. This perspective draws attention to the policies through which social infrastructure is shaped within universities, including funding arrangements, governance structures, and modes of engagement with surrounding communities. In this sense, administrative practices cannot be treated as external to social infrastructure; they participate directly in its constitution, becoming part of the assemblage through which the university operates. Given the distinct character of the three campuses, we have chosen to focus on the social infrastructures most relevant to each specific site rather than attempting a uniform survey. The resulting analysis should be viewed as complementary, highlighting the particularities of each context, rather than strictly comparative.

UFSC is the largest university in the state of Santa Catarina and hosts some of the most extensive and integrated forms of social infrastructure in the region. Its main campus comprises nearly 60 departments and supports a community of approximately 50,000 people. These social infrastructures are distributed across different departments and, at least at the institutional level, are organised according to a constrained administrative framework. Rather than emphasising departmental affiliation, focusing on what this system does offers a more productive way of acknowledging its plural and relational character.

At UFSC, outreach activities have benefited over 900,000 people annually (DPGI, 2023a). We argue that the potential to enhance the spatial relationship between city and campus lies precisely at the intersection of the institutional programs, the university's territory and how welcoming the latter is for the outside community. Advances in social infrastructure theory have considered service's provision politics and how these services interact with their respective typologies, meaning the actual buildings in which they take place. We

have already had the opportunity to discuss the thematic scope of social infrastructure on campus (Pavan et al., 2023), but expanding on Latham and Layton's (2019) comprehensive analysis of the interplay between typologies and services we may focus on health, culture, education, and sports and leisure to comprehend what is the reach and depth of social infrastructure at UFSC. The University Service Charter is an important document that outlines the principal actions that the university develops (DPGI, 2023b).

At GUF's Westend campus, the social infrastructure appears, particularly in comparison to UFSC, to be significantly less diversified in terms of service provision. As delineated in Chapter 3, this is attributable to GUF's dispersed urban model, which segregates faculties across Frankfurt according to discipline. Consequently, an analysis restricted to the Westend site inevitably suggests a narrower spectrum of amenities. If, however, we extend our analytical scope to the institutional sphere, encompassing the entirety of GUF rather than the Westend campus in isolation, we discern a strategic framework largely predicated on the cultivation of collaborations through a portfolio-based approach:

Our mission is to provide impulses for the development of society, culture, politics and the economy, and to contribute to the future viability of society through successful knowledge and efficient technology transfer, socially oriented continuing education, and opportunities for further qualification. Our Third Mission activities emerge from research and teaching as the two central areas of performance of the university, complement them in a synergistic way, and enrich them. Cooperative relationships with institutions and actors from business, politics, culture, and civil society are always subject to the primacy of academic freedom. We understand cooperation within the framework of the Third Mission as a direct and reciprocal exchange between science and society on an equal footing (GUF, 2021, p.59, our translation¹⁶⁸).

On campus social infrastructure as visions of *Zukunftsfähigkeit* or ability to survive/sustainability. There is no mention to social infrastructure in the general university documents. GUF classifies its academic research-related infrastructures as Central

¹⁶⁸ From the German original: Unsere Mission ist es, Impulse für die Entwicklung der Gesellschaft, Kultur, Politik und Wirtschaft zu geben und durch erfolgreichen Wissens- und effizienten Technologietransfer, gesellschaftsorientierte Weiterbildung und Weiterqualifizierungsangebote zur Zukunftsfähigkeit der Gesellschaft beizutragen. Unsere Aktivitäten der Third Mission gehen aus der Forschung und Lehre als den beiden zentralen Leistungsbereichen der Universität hervor, verhalten sich zu diesen komplementär und synergetisch und bereichern sie. Die Kooperationsbeziehungen mit Institutionen und Akteur*innen aus Wirtschaft, Politik, Kultur und Zivilgesellschaft unterliegen stets dem Primat der Wissenschaftsfreiheit. Wir verstehen Kooperationen im Rahmen der Third Mission als direkten und wechselseitigen Austausch zwischen Wissenschaft und Gesellschaft auf Augenhöhe (GUF, 2021, p.59).

infrastructures, scientific centres with infrastructural functions (high-technology centres), Scientific centres and research centres. Central infrastructures include, among others, the University Computer Centre, StudiumDigitale, the University Library, the scientific workshops, the Science Garden, the Taunus Observatory, the Academy for Educational Research and Teacher Education, and the Goethe Research Academy for Early Career Researchers. Campus social infrastructure may be interpreted as a physical manifestation of *Zukunftsfähigkeit*, the institution's capacity for future viability and sustainability. Yet, and as it happened also at UFSC, explicit references to social infrastructure are notably absent from GUF's general strategic documents. Instead, the university categorises its support systems through a strictly academic and research-oriented lens, distinguishing between Central infrastructures, Scientific centres with infrastructural functions (typically high-technology hubs), and Research centres.

This nomenclature is symptomatic of a specific institutional frame. At GUF, the Third Mission, often the domain of broader social extension, is interpreted primarily through the framework of direct knowledge transfer. Consequently, GUF organises its Third Mission activities around three distinct focal points:

- 1. Cooperation in studies and teaching as well as scientific continuing education*
- 2. Policy and social consulting as well as science communication*
- 3. Knowledge and technology transfer through patents and entrepreneurship" (GUF, 2021, p.60, our translation¹⁶⁹)*

What originated as an endeavour rooted in public initiative and the pursuit of knowledge for social betterment has evolved into what the university now articulates as its Third Mission. This strategy represents the formal integration of societal cooperation alongside the traditional pillars of teaching and research. By prioritising knowledge transfer, technological innovation, and continuing education, the institution seeks to contribute to the *Zukunftsfähigkeit* of society (GUF, 2021).

¹⁶⁹ From the German original: 1. Kooperation in Studium und Lehre sowie wissenschaftliche Weiterbildung; 2. Politik- und Gesellschaftsberatung sowie Wissenschaftskommunikation; 3. Wissens- und Technologietransfer durch Patente und Unternehmertum (GUF, 2021, p.60).

This trajectory points to an ongoing negotiation between the university's historical civic mission and its growing alignment with market-oriented forms of reasoning. At GUF, social responsibility, once closely associated with the emancipatory ideals of public education and civic engagement, is increasingly articulated through concepts such as efficiency, technology transfer, and strategic collaboration with business, political actors, and cultural institutions. As a result, the university gradually shifts from a primarily public intellectual project towards a platform that mediates between knowledge production and the market. The so-called Third Mission is central in formalising this transition. While framed as an extension of teaching and research, it effectively situates the institution more firmly within logics of economic productivity and social optimisation. Society is, thus, positioned simultaneously as beneficiary and stakeholder, and civic ideals are translated into managerial terms, redefining the university's social role as a regulated form of participation in the knowledge economy.

The disciplinary profile of the Westend Campus inevitably limits the interpretive scope, particularly when juxtaposed with UFSC's comprehensive breadth. As previously observed, vital components of GUF's social infrastructure are dispersed throughout the city rather than concentrated at Westend. A similar spatial logic defines the Manhattanville campus, where the compact physical footprint restricts the variety of social infrastructure available for analysis. While the ground plane is activated by various forms of social infrastructure, these are predominantly aligned with the fields of art, culture, and exhibition, a direct reflection of the curricular focus of the campus.

Much like GUF, Columbia maintains a range of university extension programmes, though these are typically administered at the faculty level rather than through a centralised institutional policy. A significant counterpoint to this administrative fragmentation is Columbia Community Outreach, a volunteer initiative that has been independently managed by the student body since 1997 (CCO, 2025). As with the other three cases, at Columbia, there is no explicit reference to the concept of social infrastructure on official documents. Instead, campus spaces and services are organised through more general administrative bodies. Beyond the CN platform discussed earlier, one of the main

structures responsible for systematising these spaces is Columbia University Facilities and Operations (CUFO).

A revealing aspect of CUFO's self-description is its stated commitment to "providing exceptional customer service". The use of the term customer is noteworthy and helps to frame the approach adopted towards the provision of social spaces and services, particularly on the Manhattanville campus. CUFO operates across all Columbia campuses and functions as a central administrative unit responsible for a wide range of everyday services (CUFO, 2025a). The emphasis placed on availability and responsiveness points less to participatory or communal activities and more to priorities of operational reliability, standardisation, and risk management, with user experience articulated through a service-provider model rather than through collective or civic notions of campus life. A significant consequence of this lack of integrated policy is the difficulty in assessing the institutional impact of these activities. Precisely because such initiatives are segmented across disparate faculties and departments, comprehensive data remains elusive. Given this fragmentation, institutional websites serve as a primary source for tracing the interactions between these social infrastructures and society. Yet, precisely because these initiatives operate without a unified policy framework, the available data remains dispersed, offering a scattered rather than comprehensive picture of the university's engagement.

As previously noted, the disparate scales and distinct academic orientations of the three campuses complicate direct comparison. This divergence is most clearly manifested in the domains such as health and sport. In these domains, the UFSC main campus assumes a position of distinct prominence when compared with the other two. When it comes to health services, for example, most of the services the university provides work in partnership or exclusively via the Hospital Universitário (HU; University Hospital) and the Sistema Único de Saúde (SUS; Brazilian Unified Health System), a state-funded system that guarantees healthcare as a universal right. Of the 150 million people who rely exclusively on SUS, 67% are Black (Veiga, 2020). Data from SUS also reveal specific patterns, such as most hospital admissions being by individuals of colour, those with no formal education or

incomplete primary schooling, and individuals with incomes at or below 25% of the minimum wage—approximately €230 or \$250 (IBGE & FIOCRUZ, 2021).¹⁷⁰

Hélio Ferreira Pinto, the architect responsible for the Central Bank headquarters in Brasília, conceived the original design for the HU, though the realised building deviates from his initial scheme (Neckel & Küchler, 2010). The complex comprises a lower southern block housing the outpatient clinics, linked to a series of connected H-shaped towers (Figure 137). This configuration provided a framework for serial expansion, allowing for phased growth as not all towers were constructed at the outset. Any analysis of the HU must address the complicated relationship the building establishes with its environs. This dynamic is defined not only by the sheer scale of the hospital but also by the gradual accretion of support activities along its periphery. Driven by the security demands of the hospital programme, these edge conditions have hardened over time, effectively isolating the complex even as the city developed around it. The result is a site that remains starkly impermeable, offering little engagement with the adjacent streetscape. Internally, however, this hospital layout ends up ignoring an important area of natural protection that borders a watercourse on the campus. This space, dominated by a large car park, ends up becoming an interstitial area (Figure 138).

The HU, the only federal hospital in the state, operates in association with Santa Catarina state. It manages over 10,000 clinical admissions and 45,000 emergency cases annually and serves as a national reference centre for toxicology. Its significance extends beyond healthcare, as it functions as a teaching hospital, showcasing two commendable social aspects: first, the provision of high-quality treatment for SUS patients, which harmonises admirably with the educational process of undergraduate and graduate students. These

¹⁷⁰ For currency conversion, we applied the exchange rates for Euros and US Dollars as of July 30, 2024. Presidential Decree 11.864, December 27, 2023, establishes the current minimum wage.

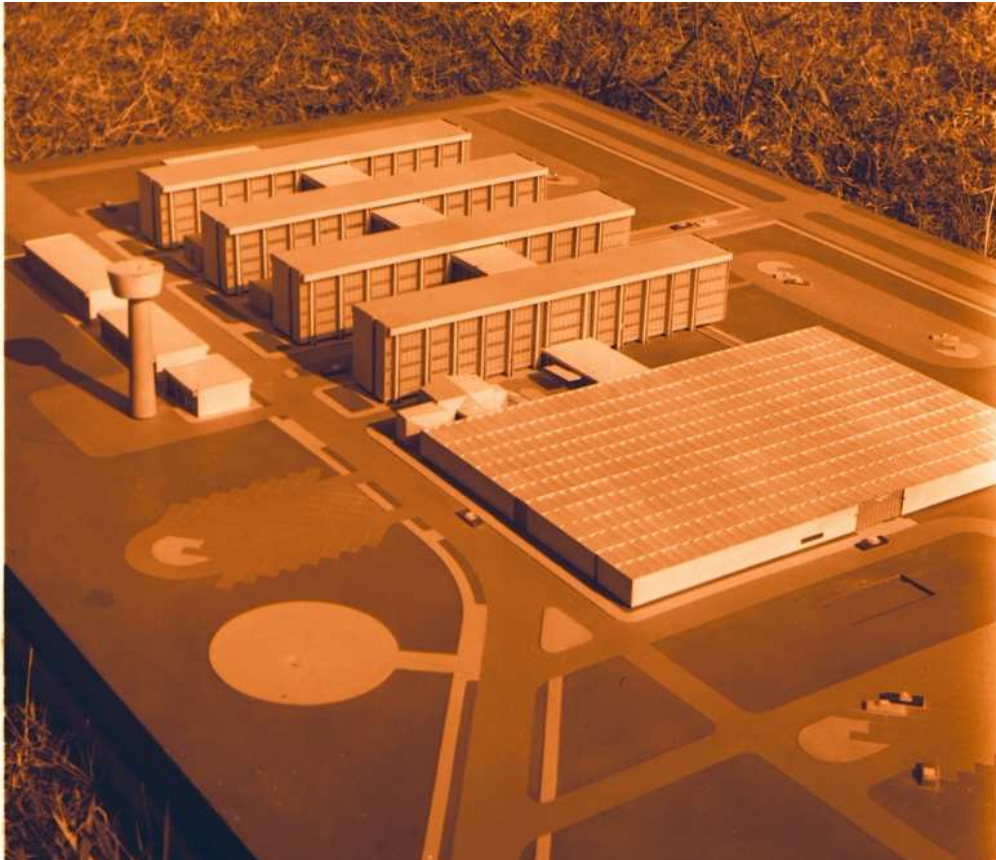


Figure 137. Model of the original design for the UFSC University Hospital. Source: Arquivo do Departamento de Projetos de Arquitetura e Engenharia - DPAE-UFSC



Figure 138. View of the HU as built. The expansive car park on the right borders the hospital, establishing a complex relationship with the watercourse traversing the campus. 2019. Photo: Felipe Finger. Source: LEUr UFSC.

students, learning directly from their patients, gain invaluable practical experience. Second, this interaction starkly highlights the profound wage imbalance and income inequality prevalent in Brazilian society, alongside the evolving demographic profile of Brazilian universities. Historically, the Medicine School attracts students from affluent backgrounds, and even within health courses, it stands out for its similarity to structures of inequality in Brazilian society (Rodrigues, 2024). These students come from markedly different socioeconomic backgrounds and prepare for a profession that, in 2023, at the university hospital offers a starting salary approximately ten times the minimum wage (EBSERH, 2024). The hospital is where this clash meets.

The Clínica Escola Odontologia (CEO; Dentistry Clinics) performed over 33,000 procedures in 2022. CEO primarily focus on secondary and tertiary care, involving greater complexity and requiring more time and materials.¹⁷¹ These services address the university's needs, with students and supervisors monitoring cases, and support municipalities overwhelmed by demand for additional resources and small municipalities without enough installed structure. Also, operating through the Psychological Attention Service, the psychology school clinic fosters the developing and the refining of the professional intervention skills of undergraduate and postgraduate psychology students. Additionally, we may cite the Speech and Language Therapy Clinic and the Pharmacy School (which serves as a pharmacy practice facility), which are also vital in this realm. Despite their crucial roles, both the HU and CEO struggle with significant budgetary problems, which compromise their ability to provide care and affect the health and self-esteem of professionals and patients.

Neither Westend nor Manhattanville is engaged in the provision of clinical healthcare services, although the latter hosts a significant hub for neuroscience research within the JLGSC. The absence of direct patient care facilities at Manhattanville is contingent upon the CUIMC, as we have seen, which is a distinct campus located further north in

¹⁷¹ Primary care refers to general health services and preventive care, secondary care involves specialist treatment after referral, and tertiary care encompasses advanced, highly specialised medical services typically provided in specialised hospitals. In Brazil, these different levels are defined by the SUS guidelines and governmental ordinance. See: Portaria Nº 4.279, 30 de Dezembro 2010 (2010). https://bvsms.saude.gov.br/bvs/saudelegis/gm/2010/prt4279_30_12_2010.html

Washington Heights. As the primary locus for medical education and practice, housing the faculties of medicine, nursing, and public health alongside the New York-Presbyterian Hospital, the CUIMC allows Manhattanville to focus on advanced scientific inquiry while healthcare provision remains consolidated within this specialised northern enclave. At GUF, the Niederrad Campus houses the *Universitätsklinikum Frankfurt* (operating as *Universitätsmedizin Frankfurt*); described as the most modern facility of its kind in Hesse, it physically integrates clinical care with advanced research and pedagogy.¹⁷² Similarly, the Ginnheim Campus accommodates the Institute of Sports Sciences and the Centre for University Sports, establishing a distinct cluster of facilities dedicated to both academic inquiry and recreational activity.

At UFSC's main campus, each semester the university provides around 2,000 opportunities for physical activities, accommodating diverse age groups and individuals with disabilities. These initiatives reflect a commitment to inclusivity and holistic well-being, integrating the campus community across generations and abilities (CDS, UFSC, 2021). The sports facilities occupy a substantial part of the south-eastern campus. Since UFSC's first plan, the position of this equipment has changed little, even though its actual construction only started in the late 1970's, i.e. even before Atcon's *Manual* and its emphasis on positioning such services at the borders. As mentioned, both design and positioning should allow and even encourage citizens to access the campus, to some extent. These activities, led by professionals and held on campus, primarily target the broader community beyond the university, catering to various age groups and specific audiences. In exploring the relationship between sports, the city, and society, scholars have drawn on urban planning and city literature to highlight the social contributions of sport. The academic discourse on

¹⁷² In 1967, the State of Hesse assumed full fiscal jurisdiction over the university and its medical facilities, a transition that saw the municipal clinics of Frankfurt am Main formally reconstituted as the teaching hospitals of Johann Wolfgang Goethe University. The early 1970s marked a period of significant physical expansion, culminating in the commissioning of the central high-rise ward block between 1971 and 1973. Subsequent decades witnessed extensive redevelopment: throughout the 1980s and 1990s, major structural interventions were undertaken across the dermatology, psychiatry, neurology, and paediatrics departments. These works included the demolition of Building 12 and the conversion of Building 21—formerly the surgical wing—into the new dermatology department (a structure eventually demolished in 2012). More recently, the campus morphology was further defined by the inauguration of a new entrance hall and canopy in late 2007, and the completion of the 'House 23 C' extension in 2008. See: Universitätsklinikum Frankfurt. (2014). Ein Jahrhundert wissen um die Gesundheit: Die Geschichte der Frankfurter Universitätsmedizin. Universitätsklinikum Frankfurt. https://www.unimedizin-ffm.de/fileadmin/redakteure/Presse/Jahresberichte/UKF_geschichte_final.pdf

sport addresses its role in enhancing place-making, with a particular focus on how it fosters community engagement and citizenship. Citizenship, in this context, includes its legal definition, but also how it is taught, contested, symbolised, and promoted through sporting activities, contributing to the social fabric of urban life (Pye et al., 2015).

The sports facilities function simultaneously as a dynamic social infrastructure and a physical manifestation of the border tensions defining the campus perimeter. This condition highlights how external hard infrastructure imposes itself upon the campus morphology, particularly regarding the debates over the widening of the adjacent thoroughfare. The structure, which currently disrupts pedestrian continuity, stands as a testament to the fractured relationship between the university and the city, a legacy of fragmented decision-making and a failure to recognise the campus as an integral component of the urban social fabric. The municipal council's road expansion project, which initially promised the integration of public transport, precipitated a contentious public dispute in which the university was frequently cast as an obstacle to progress. Although the institution ultimately agreed to cede the necessary land, the council's subsequent failure to honour its commitments has resulted in ongoing litigation.¹⁷³ The spatial repercussions of this impasse are legible in the forced reconfiguration of campus access points and the strained interface between the university territory and the surrounding community (Figures 139; 140).

The Restaurante Universitário (RU; University Restaurant) serves as both a vital support for students' educational continuity and a significant component of UFSC's social infrastructure. Originally coordinated by the Central Union of Students, the restaurant became university-administered after 1965. Today, the RU is managed by the Dean of Student Affairs as a supplementary unit and it provides affordable meals essential to many students. The RU has maintained the same meal price since 1997. This stability is made possible by substantial university subsidies, alongside the provision of free meals for students from socially vulnerable backgrounds (UFSC, 2025). Designed by architects from UFSC's own Department of Architecture and Urbanism, its current facility was

¹⁷³ We are referring here to the duplication of the road that surrounds the campus. UFSC has documented the process, see more at: <https://dpae.ufsc.br/edu-vieira-cessao-area-ufsc/>



Figure 139. The building, which the city government had pledged to, now partially occupies the pavement. Its occupants must contend with the incessant traffic noise. 2024.



Figure 140. User made a hole in the campus fence. 2024.

constructed between 2010 and 2011. Financed through the REUNI programme with an investment of approximately R\$ 9 million, the building was named Restaurante Universitário Edite Erotides do Nascimento in honour of the institution's first cook (Lisboa, 2011). This infrastructural expansion significantly scaled operations, enabling the service of approximately 10,000 meals daily.

At GUF, catering facilities are woven into the very fabric of the campus, appearing within nearly every major structure to ensure ubiquitous access. Despite this dispersion, the logistical and social focal point remains the Casino and its architectural extension. Generally operated by the Studierendenwerk, this network is anchored by the large-scale Mensa Casino and Mensa Anbau Casino, supported by the Casino Cafeteria and the outdoor Sommergarten. The Casino complex also houses Café SCHWARZ WEISS and a Kaffeebar Alfredo that doubles as a cocktail bar. Beyond this central hub, a constellation of smaller venues serves specific academic clusters, including Café EXPLIZIT, Cafeteria DASEIN, Hoagascht, Café Rotunde, the Café im House of Finance, and a secondary Kaffeebar Alfredo situated within the Hörsaalzentrum.

The casino annex is perhaps one of the most important interventions in Westend regarding canteens. The proposed annex functions as a critical urban interface, negotiating the spatial tension between the extant historic fabric and the newly developed square. By orientating the volume towards both the plaza and the listed southern park, the design anchors itself within a dual context of civic urbanity and protected heritage. Programmatically, the extension that Ferdinand Heide and his team proposed operates as a flexible hybrid, accommodating both daily canteen functions and formal events through a versatile spatial configuration (Figures 141; 142). Crucially, the scheme employs a distinct vertical stratification of circulation to resolve the functional intertwining with the original



Figure 141. View of the casino extension. Photo: Frank Heinen.
Source: Ferdinand Heide

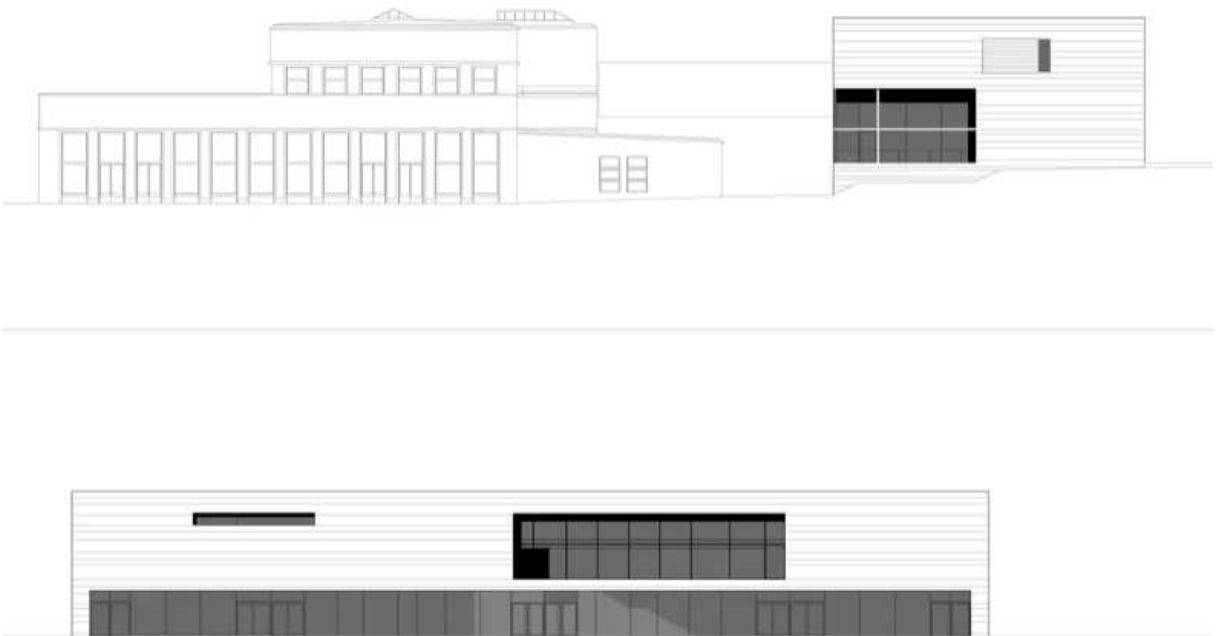


Figure 142. Façade of the casino extension project. Source: Ferdinand Heide.

casino. Whilst a high-level bridge establishes a ceremonial axial entry for patrons, culminating in a gallery that frames views of the central square, logistical operations are deftly concealed within a subterranean link, ensuring the efficient transport of provisions from the existing kitchens without compromising the visitor experience. Formally, there is still a very clear parallel with the Hörsaalzentrum.

On the Manhattanville campus, food establishments are an important part of the fabric. The presence of some of these spaces is even the result of agreements that the university had to make with local businesses that would be adversely affected by the implementation of the campus. Thus, on the ground floor of some of the buildings, there are restaurants, cafés, and small bakeries. One of the most emblematic cases, widely reported by universities and various media outlets, was the reopening of a fast-food restaurant (CUFO, 2025b; Lu, 2025). Although part of a global chain, the outlet operated as a family-run franchise and functioned as a provider of affordable food. Its opening marked the restaurants return to the same site it had occupied prior to the construction of 600 West 125th Street, re-establishing a long-standing neighbourhood fixture for many residents of West Harlem.

This tower occupies a prominent position at the edge of the Manhattanville campus and can itself be read as a significant piece of social infrastructure for housing. At 34 storeys, the building is among the tallest structures on campus, aligning itself with the Manhattan skyline and signalling a shift in Columbia's architectural scale and urban presence.

Designed by Renzo Piano Building Workshop, with CetraRuddy serving as executive architect, the project was initiated in 2017 and is scheduled for full completion in 2025 (Figure 143). The ground floor accommodates retail uses, including a restaurant that replaces one demolished during the construction process, a gesture that encapsulates the campus's transformation through successive cycles of displacement and reinstatement.

Conceived primarily to house faculty, postdoctoral researchers, and students, the building foregrounds, consistent with the rhetoric that justifies virtually the entire Manhattanville complex, principles of sustainability, lightness, and connectivity. Its stepped setbacks enhance airflow and safety while contributing to an animated interface with the

surrounding urban fabric. At street level, the base of the tower extends across nearly the entire perimeter of the site. Transparency and recesses along the first two floors generate a loggia-like condition with glazed enclosures, reinforcing permeability and visual continuity.

At Westend, student housing constitutes an important component of the campus's social infrastructure. There, the residences were included from the outset, forming part of the first phase of the campus project. In the buildings that form the student housing the volumetric strategy breaks down the overall mass into more legible units, organising the programme across a continuous pedestal from which seven distinct residential towers rise (Karlundp Architekten, 2025). The lower plinth operates as the project's collective centre, concentrating administrative spaces and student organisations alongside a range of shared facilities, such as entrance halls, a café, multipurpose rooms, music rehearsal spaces, study areas, and laundry services. Above this base, the residential volumes are arranged vertically, containing the student accommodation, which varies from single units to shared living arrangements (Figure 144).

The development of student housing at UFSC has been defined by fragmentation and conflict rather than continuous institutional planning. Originating in the early 1960s as a rented, female-only facility linked to the Catholic Church, the provision of accommodation remained precarious. The withdrawal of state support in the early 1980s precipitated student occupations, effectively compelling the university to pursue purpose-built on-campus housing (Neckel & Küchler, 2010). Although architectural schemes were selected from the mid-1980s onwards, their implementation was characterised by delays, partial execution, and abandoned initiatives. Consequently, the current complex was only consolidated through incremental construction and reprogramming during the 2000s and 2010s, a period that also saw the introduction of dedicated accommodation for indigenous students. Despite these interventions, overall capacity has declined over time, exposing a persistent disparity between demand and provision. This is an inclusion problem that the university has not yet been able to resolve.



Figure 143. 600 West 125th Street seen from Broadway. 2024.



Figure 144. Student housing at Westend. Source: Karlundp2.

While this material deficit highlights an unresolved struggle regarding student inclusion, the university has demonstrated remarkable foresight in integrating other demographic cohorts through programmatic social infrastructure. A distinct counterpoint to the housing crisis is the Núcleo de Estudos da Terceira Idade (NETI), or Open University for Older Adults. It offers approximately 35 activities for those over 50 years old. It is a pioneering social infrastructure that the university established in the 1980s and has longest tradition of interaction and inclusion within UFSC (NETI-UNAPI, 2024). Integrating older adults indicates that the university is addressing societal issues and promoting an arena for intergenerational integration and social connectivity.

There appears also an urban element because NETI's programmes currently challenge how older adults interact with cities (Gillespie & Fokkema, 2024; Vrkljan et al., 2019). The generational composition of NETI stands in stark contrast to the general university population, where around 60% of undergraduate students are 24 years old or younger (UFSC, 2020). Between the many programmes, NETI offers cognitive training for older people, including learning to use everyday technologies such as smartphones, messaging and digital transport applications.

Additionally, the centre offers workshops for theatre and dance, aiming to enhance both cognitive and social skills. The centre also supports self-organised groups, such as the Abelhinhas Artesãs ("Crafty Bumblebees"), who produce and donate items like clothing for newborns, as well as hats and socks for individuals undergoing cancer treatment. The call for new participants issued by NETI each semester reflects the complexity of its services. In 2024, they implemented affirmative actions for the first time, reserving places specifically for people of colour, indigenous, and *quilombola*¹⁷⁴ communities (NETI-UNAPI, 2024). NETI actively includes older adults, fostering an environment that challenges certain restrictive university policies. Currently, its participants face limitations, as "non-students"

¹⁷⁴ Refers to descendants of quilombo communities, which were formed by enslaved people escaping the violence of enslavement between the 16th and 19th centuries. Today, quilombola communities are ethnic groups, often in rural or urban areas, who define themselves by their connections to land, kinship, territory, ancestry, and cultural practices.

under UFSC's rules, they lack access to key resources as the central library borrowing privileges and the University Restaurant.¹⁷⁵

NETI's addresses both immediate improvements to the quality of life and a deeper understanding of a challenge that is becoming structural in Brazilian society and much of the world. NETI's mission aligns closely with the demographics changes, particularly the country's rapidly ageing population (IBGE, 2023). In the last decade, the population aged 60 and older rose from 11,3% to 14,7% in Brazil, and such change is influencing the economic and social landscapes, with an increased reliance on public and social policies to support the ageing working class (Escorsim, 2021; Galvão, 2023). Thus, NETI's activities might configure a crucial tool in extending national intersectoral approach to policies for older adults, addressing the need for coordinated efforts across sectors to support this growing demographic (Carmo & Guizardi, 2017).

This commitment to intergenerational engagement is mirrored at the opposite end of the lifecycle through the provision of dedicated educational facilities for children. At UFSC, two significant social infrastructure places are the Nursery and the Primary and Secondary School. These institutions have been vital learning environments, particularly for students in education-related courses, though they also benefit students from other disciplines, such as those studying early childhood development in the Nursery. Initially, both were established with the primary aim of serving families within the university community. Today, however, their reach has expanded beyond the campus and family members of the academic community do not have priority in the competitive search for these places. The Primary and Secondary School educates over 1,200 students within its extensive facility on the western side of the campus. Similarly, the Nursery offers more than 200 places each semester (UFSC, 2021, 2022).

A parallel infrastructure of care is evident at GUF, which complements its academic environment with a comprehensive childcare system distributed across its estate. At the Westend site, the Campus Kita is situated in the south-eastern sector, providing 75 places

¹⁷⁵ We are grateful to the staff from NETI for welcoming us and sharing their insights on this matter.

for children from the age of one up to school entry.¹⁷⁶ Distinct from this facility, the university daycare centre located within the Studierendenhaus operates independently of the central university administration (G.-U. F. am M. GUF, 2025b).¹⁷⁷

Unsurprisingly, the social infrastructure across all three campuses is fundamentally anchored in the domains of education and culture. To revisit these elements in detail would, therefore, risk devolving into a redundant enumeration rather than offering further analytical insight. Some, however, deserve attention, and among these we mention the case of libraries.

In addition to the Central Library, UFSC's main campus accommodates six other libraries: the College of Application Sector Library; the Education Sciences Centre Sector Library; the Health Sciences Centre Sector Library; the Sector Library of the Centre for Legal Sciences; and the José Saramago Reading Room. Alongside these, the Documentation and Collection Laboratory of the Department of Architecture and Urbanism (LDA) operates outside the formal library system yet holds a substantial and specialised collection in architecture and urbanism. Most of the sectoral libraries are housed within the buildings of the teaching centres to which they are administratively linked and tend to serve primarily their immediate academic communities, with limited use by external visitors. The only library occupying a purpose-built structure is the Central Library, located along the main axis of the campus. Designed in 1959 by Felipe da Gama D'Eça, the original project consists of a two-storey rectangular volume organised around a central courtyard. Over time, however, the building has been subject to numerous spatial alterations and successive interventions (Teixeira & Yunes, 2016).

At GUF, one of the most consequential changes accompanying the move from Bockenheim to Westend concerns the organisation of the library. At Bockenheim, this role was fulfilled by the Stadt- und Universitätsbibliothek, designed by Ferdinand Kramer and

¹⁷⁶ From the German, Kita stands as *Kindertagesstätte*, a children's day care facility.

¹⁷⁷ Provision extends to the other major campuses: Riedberg accommodates 135 children organised into nine mixed-age groups, while Niederrad offers 130 places, comprising 50 nursery and 80 kindergarten places, including 20 within a newly established facility. At Niederrad, priority access is accorded to the children of clinic employees; however, in the event of under-occupancy, remaining places may be allocated to children from the surrounding district.

completed in 1964 (Figure 146). It embodied a centralised model in which academic and civic functions were deliberately brought together, concentrating collections, users, and intellectual life in a single institutional space. The strategy adopted at Westend departs from this model. What began as a pragmatic response to the growth of collections gradually became tied to the increasing differentiation of disciplines within the university. Instead of a single, shared library, Westend is structured around a series of faculty-based libraries. At Westend, libraries clearly dominate the landscape of what might be described as the campus's more public social infrastructures. Rather than being concentrated in a single facility, this role is distributed across a set of major library buildings, including the Bibliothek Recht und Wirtschaft (BRuW), the Bibliothek Sozialwissenschaften und Psychologie (BSP), the Bibliothek Sprach- und Kulturwissenschaften (BSKW), and the Bibliothekszentrum Geisteswissenschaften (BzG).

While these buildings accommodate extensive holdings, they also spatialise the segmentation of knowledge, standing in tension with earlier ideals of intellectual concentration. Despite this, the libraries remain architecturally and institutionally central. They organise circulation, anchor building ensembles, and play a decisive role in shaping the spatial logic of the campus. There is also a clear typological change here. While Kramer's building was designed as a library, here the different units are housed within the campus buildings, with their modular façades and little identification with public programmes. A noticeable shift can be observed in the interiors of these library spaces. Their carefully designed interiors, closely aligned with the external architectural language of the buildings, adopt a distinctly corporate aesthetic.

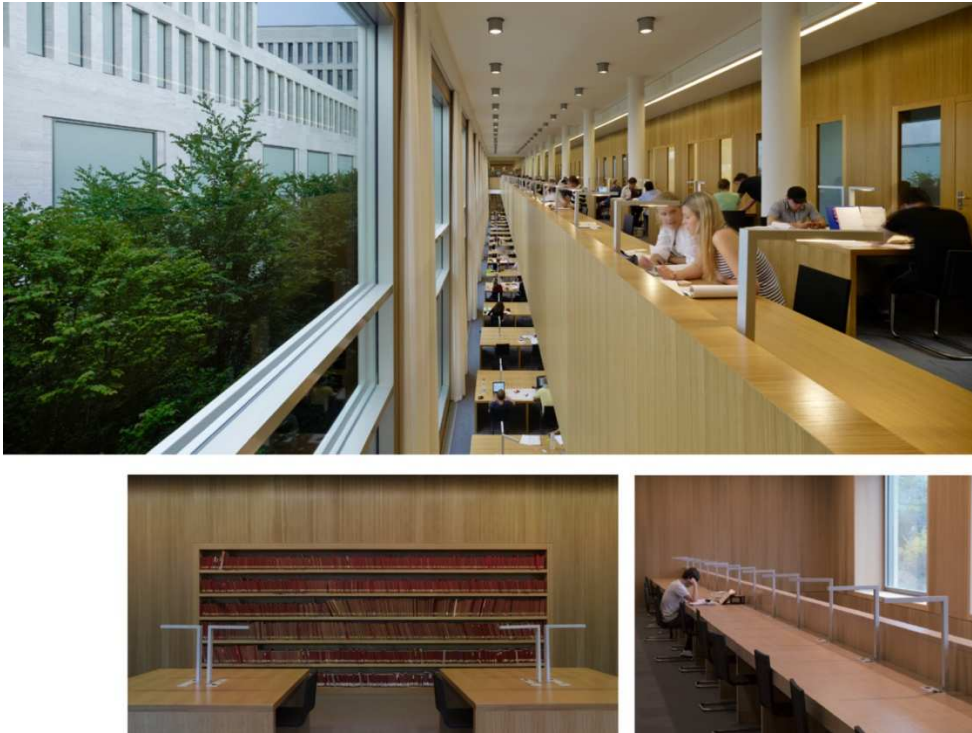


Figure 145. Bibliothek Recht und Wirtschaft. Source: Müller Reimann.



Figure 146. Stadt- und Universitätsbibliothek. Designed by Ferdinand Kramer in 1959. 2024.

High-quality finishes, designer furniture, and meticulously controlled spatial layouts reinforce the same image projected by the Westend campus, with its modular architecture clad in travertine. The BRuW offers a particularly clear illustration of this approach (Figure 145).

At BRuW, the architects sought to create a spatial device that carefully orchestrates forms of attention and withdrawal. At its centre, the interior garden courtyard, marked by double-height voids, functions as a controlled zone of silence and introspection, around which collective and individual modes of study are deliberately distributed. This arrangement does not resolve the tension between concentration and distraction; rather, it stages it. Study unfolds as a calibrated oscillation between immersion and interruption, between the opacity of the page or screen and the visual escape offered by vegetation, light, and the passing presence of others. The public areas are equally calculated in their relationship to the campus. Visual and spatial connections to the exterior are not dissolved into transparency, but carefully framed and measured, preserving a clear threshold between inside and outside. In this sense, the architecture does not aspire to openness as an ideal. Instead, it constructs a disciplined interplay between enclosure and exposure, using spatial hierarchy and visual control to translate institutional order into architectural form (T. Müller & Reimann, 2018).

One distinctive component of Westend's social infrastructure is the Haus der Stille (House of Silence), conceived as a multi-faith space for retreat and reflection. Although the State of Hesse financed its construction, responsibility for its use and programme was deliberately displaced from the state to a heterogeneous body bringing together university representatives, the AStA Committee, members of both theological faculties, and representatives of different religious communities, including Jewish and Muslim groups (GUF, 2025a). This arrangement marks a clear break with the logic that governed the former Bockenheim campus, where religious life was spatially and institutionally concentrated in a single Christian church.

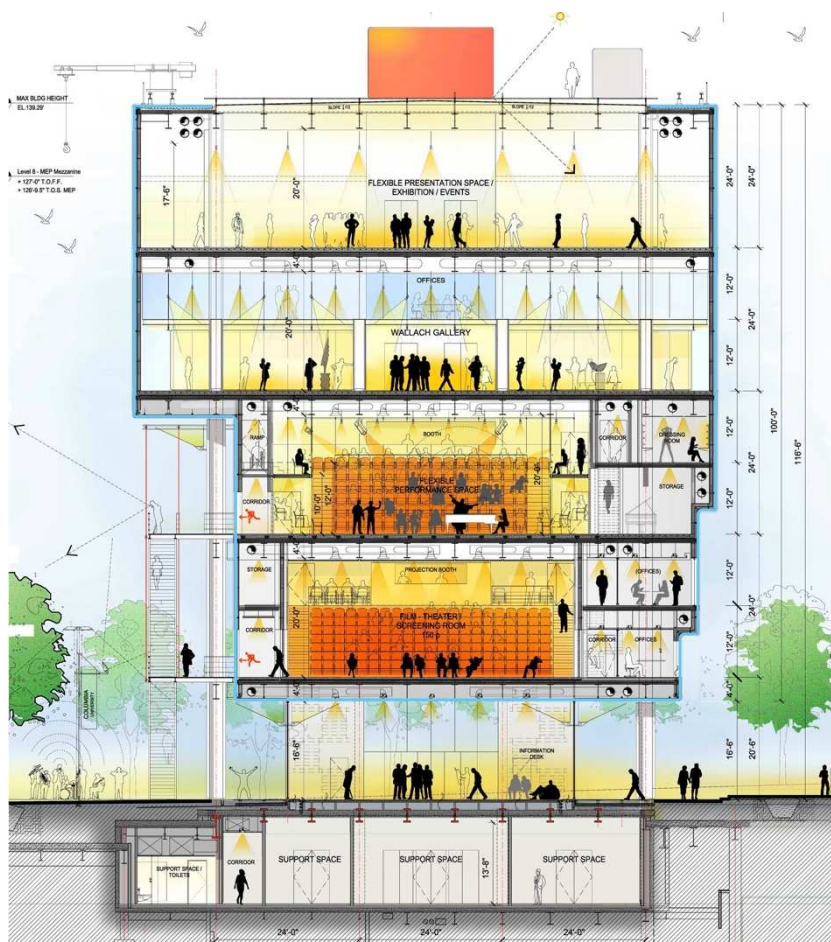




Figure 149. LCfA. RPBW. Photo: Nick Lehoux. Source: Architizer.



Figure 150. LCfA. RPBW. Photo: Nick Lehoux. Source: Architizer.

There, provision for interfaith encounter, or indeed for non-Christian forms of worship, was largely absent. At Westend, by contrast, the ambition was not to multiply denominational spaces but to suspend them altogether. The architectural response is therefore one of studied neutrality. The interior avoids iconography, symbolism, or prescribed orientations, and is furnished only with a sparse set of stools and kneeling benches. Rather than directing belief, the space remains deliberately indeterminate, operating as a container for contemplation rather than its representation. The UFSC main campus also has an ecumenical temple. Constructed in the 1990s and situated within the Praça da Cidadania, it accommodates over 300 people. The facility functions as a dedicated venue for worship, ceremonial observances, and a diverse array of religious activities.

While all three campuses maintain a diverse portfolio of social and cultural facilities, including various galleries and exhibition spaces, Manhattanville distinguishes itself by demonstrating the most cohesively organised infrastructure in this domain. Designed by Frank A. Rooke and constructed in 1909, Prentis Hall was originally conceived as an industrial facility. Structurally, the building employs a steel frame encased in concrete with brick external walls, occupying a corner site with a rectangular footprint of approximately 60 by 30 metres. The massing rises three storeys, across the full plot before stepping back on all sides to form a central two-storey tower element. Architecturally, the hall presents a modern adaptation of the French Renaissance style, distinguished by elaborate terra cotta ornamentation. The decorative programme explicitly references the building's commercial lineage: white milk bottles set against green backgrounds adorn the keystones of the arched windows, while finely modelled cow heads bracket the cornice. Today, the building has been reprogrammed to house the School of the Arts, the Centre for Jazz Studies, and the Computer Music Centre, supporting a curriculum of teaching, events, and studio-based practice.

At Manhattanville, the concepts of spatial product and social infrastructure are not mutually exclusive; rather, they operate in a complementary synthesis, a dynamic most clearly articulated by The Forum and the LCfA. The LCfA integrates performance, exhibition, and public engagement spaces designed to foster a cross-disciplinary exploration of the arts. Its architectural articulation reveals the politics of transparency and

enclosure: at street level, expansive glazing feigns a radical porosity that invites public interaction and challenges the traditional insularity of academic spaces. However, the upper volumes, clad in perforated metal with restricted fenestration, reflect a negotiation between visibility and control, suggesting an aesthetics of openness that coexists uneasily with institutional boundaries (Figures 147; 148). The white exterior of the building contrasts with a few selected elements, such as the lifts, which have been painted in more vibrant colours.

Internally, the programme is stratified into distinct zones of cultural production. The Katharina Otto-Bernstein Screening Room serves as a 150-seat auditorium equipped for both advanced digital and archival formats, anchoring the building's cinematic function. This sits alongside the Miriam & Ira D. Wallach Art Gallery, the university's principal visual arts venue, which bridges the gap between institution and city by presenting contemporary practice alongside research-driven projects. Ascending further, the Flexible Performance Space is dedicated to experimental theatre, utilising large, glazed apertures to establish a visual dialogue with the Hudson River and Riverside Viaduct. The sequence culminates in The Lantern, a top-lit forum designed for public exchange that hosts a broad spectrum of events, physically centring intellectual debate within the building's apex.

Situated adjacent to the JLGSC, the LCfA is articulated as a stepped volume, its ground floor footprint visibly constricted beneath the upper storeys. The south façade addresses a dry square of indeterminate function, effectively generating a void before the gallery. Within this context, RPBW reiterates the rhetoric of transparency; strategic glazing and permeable elements establish a visual dialogue between the building's interior and the city beyond (RBPW, 2019). Save for the exhibition hall, all spaces are oriented southwards, framing views of the Small Square and the surrounding urban landscape. By night, the architects state, these apertures transform the structure into a beacon of activity, revealing the performances and events within. This luminosity is managed by a sophisticated shading apparatus, comprising motorised blinds and a skylight grid that modulate daylight to suit specific artistic requirements.

Social infrastructure on the university campus cannot be reduced to a residual category of amenities, nor to a static set of building types. Rather, it manifests as a relational field where architectural form, administrative logic, and historical trajectory converge. By re-articulating the concept of type, traversing the distance from Quatremère de Quincy's philosophical abstractions to Moneo's situated definitions, we secure a theoretical lens capable of deciphering the heterogeneous, non-canonical spaces through which the university mediates its civic engagement.

Across the three campuses, social infrastructure manifests less as a coherent system than as a negotiated assemblage. While moulded by funding regimes, governance structures, and political economies, these forms remain irreducibly material in their architectural expression. The omission of 'social infrastructure' from official documentation at UFSC, GUF, and Columbia betrays the degree to which these spaces operate at the margins of formal planning discourse, even as they anchor the university's social vitality. Typology, therefore, serves not as a taxonomic endpoint but as an analytical optic, illuminating how shared pressures, whether neoliberal governance, managerial rationalisation, and urban integration, precipitate divergent spatial resolutions.

Social infrastructures engage in a reciprocal act of formation: they actively construct the campus environment even as they are constructed within it. By delineating patterns of access and encounter, they give physical form to evolving institutional definitions of public responsibility and knowledge production. Spanning housing, cultural venues, and spaces of care, these infrastructures lay bare the friction between the university's historic civic vocation and its contemporary market alignments. Our approach in this chapter encourages a re-reading of university social infrastructure. It situates architectural analysis within broader debates on infrastructure without abandoning the discipline's concern for form, materiality, and spatial organisation. The cases discussed here do not aspire to completeness; rather, they establish a framework in which social infrastructure can be understood as a central mediator between the university and the city. This shift is consequential. It redirects the discussion away from typological taxonomy towards the political conditions under which campuses are governed and, more broadly, towards the unsettled future of the university.

Conclusion

In *Del rigor en la ciencia*, Jorge Luis Borges (1960 [2012]) reflects on the limits of representation through the parable of a vanished civilisation. The story follows an Empire in which cartography became an obsession with exactitude. As the ambitions of the mapmakers grew, their maps expanded until they reached a perfect correspondence with the territory itself: a representation at a scale of 1:1. Subsequent generations, more pragmatic than their predecessors, eventually recognised that such precision rendered the map unusable. The vast artefact was abandoned, left to decay alongside the land it sought to duplicate. Borges's short text offers a concise lesson on the epistemic value of abstraction. Representation gains utility not through exhaustive detail, but through selection and distance. To orient oneself within a landscape, it is unnecessary to reproduce every feature; what matters is the articulation of relations, hierarchies, and structures. When representation collapses into total equivalence, it ceases to clarify and instead obscures, offering no analytical leverage.

This thesis deliberately set out to engage with a broad and heterogeneous field. Acknowledging this breadth is not an exercise in justification, but a recognition that scope itself became one of the project's methodological instruments. The ambition to read campuses as infrastructural assemblages required engaging with architecture, governance, policy, funding mechanisms, and everyday practices simultaneously. The breadth of the inquiry proved to be its principal strength, even as it inevitably defined the limits of what could be explored in detail.

Universities retain a privileged position in narrating their own histories, often through commemorative volumes and institutional self-representations that emphasise continuity, excellence, and progress (Winling, 2010). As Ridder-Symoens (2006) brilliantly notes, the historical itineraries of universities strongly shape how these institutions perceive their past, present, and future. Yet the narratives embedded in their physical spaces frequently diverge from these curated accounts. Architecture, infrastructure, and spatial organisation tell a different story, one that does not always and necessarily align with official memory or institutional rhetoric.

This research approached the university campus as infrastructure, and from this standpoint unfolded the conceptual and analytical tensions that structure contemporary higher education. Infrastructure is understood here as non-monolithic and relational, responding to neoliberal pressures in differentiated ways. In some instances, it absorbs and reproduces market-oriented rationalities; in others, it actively constructs distinct variants of neoliberal governance through spatial, technical, and administrative means. The buildings examined range from high-profile projects by internationally recognised architects to quasi-bureaucratic constructions embedded in internal administrative regimes and signed by anonymous institutional actors.

Viewing campuses through an infrastructural lens requires treating them as socio-technical objects saturated with political, social, and symbolic tensions. Within contemporary higher education, these tensions are increasingly shaped by neoliberal logics that prioritise growth, competitiveness, and optimisation. There is little evidence to suggest that universities, as institutions, are moving towards alternative paradigms that challenge these imperatives. Instead, campuses assume a dual role as they are both operational supports for academic activity and urban artefacts that materialise broader economic and ideological frameworks.

Architectural discourse within universities increasingly mirrors infrastructural rhetoric. Concepts such as flow, connectivity, transparency, and circulation are mobilised to legitimise spatial interventions, echoing the language of logistics and systems management. These ideas frame efficiency not only as functional performance but as the minimisation of friction, understood as conflict, redundancy, or resistance. Infrastructure, in this sense, becomes a tool for regulating social relations as much as for enabling movement or exchange.

The relationship between spatial product and social infrastructure within universities cannot be reduced to a simple opposition. University spaces consistently resist clear categorisation, operating simultaneously as instruments of institutional representation and as sites of social reproduction and engagement. While economic interest zones may exemplify near-archetypal spatial products, as Easterling has shown, university

infrastructure occupies a more ambiguous terrain. Analysing campuses through infrastructure theory, particularly in dialogue with Science and Technology Studies, allows these spaces to be understood not as neutral containers but as active mediators of institutional practice, political values, and urban life.

Across the three case studies, distinct strategies for managing friction become apparent. At Columbia, architectural transparency is realised through extensive glazing and open layouts, projecting ideals of accessibility and accountability while often masking mechanisms of exclusion. This transparency operates both materially and symbolically, reinforcing a technical assertiveness that functions as a form of architectural legitimisation. At GUF, physical interconnection takes precedence. Split slabs and staggered floor plates dissolve strict vertical hierarchies, producing fluid transitions and an architecture that spatially manages institutional complexity. At UFSC, efficiency is achieved less through spatial articulation than through protocols and administrative coordination, reflecting a governance-driven approach aligned with performance metrics and managerial control.

Material conditions across the campuses differ sharply. In 2023, UFSC operated with a capital and maintenance budget of approximately R\$17 million (under €3 million) for its entire network (UFSC, 2023). By contrast, a single building at GUF's Westend Campus—the SKW—required an investment of €102 million, while Columbia's Manhattanville Business School complex exceeded \$600 million. These disparities do not merely reflect economic inequality; they reveal how a shared neoliberal logic is translated into materially divergent infrastructural realities. This thesis therefore adopts a lens of complementarity, focusing not on comparison through equivalence, but on how different institutions respond to similar pressures under unequal conditions.

Social infrastructure and spatial product function here as analytical devices that make visible the values embedded in university campuses. Although their material forms may overlap, the distinction between them is defined less by architecture than by institutional ideology, governance, and funding structures. Social infrastructure remains contingent upon how "the social" is conceptualised—whether as democratic inclusion, public service, or managed participation in the knowledge economy. These conceptualisations are always

constrained by material conditions, producing markedly different outcomes across national and institutional contexts.

This thesis demonstrates that infrastructures on university campuses are simultaneously constructed by institutional arrangements and actively participate in constructing the campus and the university itself. Understanding these interactions as relational allows infrastructure to be read not as background support, but as a formative force in shaping academic life, governance, and urban engagement. The decision to analyse these processes through the lens of neoliberalism reflects not a theoretical imposition, but the identification of an increasingly consolidated mode of operation within contemporary higher education. Through this lens, the campus emerges as a critical site where material, social, and political dimensions intersect, revealing how universities are continuously made—and remade—through infrastructure.

We sought to demonstrate how material and immaterial dimensions are inseparable in the contemporary production of campuses, a difficulty that is intrinsic to thinking about infrastructure as a concept that operates across heterogeneous scales and objects. The idea of the university is not stable or singular; it is continuously reconstituted through multiple worlds of knowledge. As Martin (2021) notes, each scale—from the relationship between the university and society to the internal interactions between faculties and disciplines—rests on specific material and historical conditions. The resilience of these institutions lies precisely in this ongoing movement of transition and redefinition.

Within this landscape, neoliberalism introduces a new set of physical, administrative, symbolic, and epistemological boundaries. It reshapes the conditions under which knowledge is produced, reorganises infrastructures, and enforces market-oriented metrics that increasingly structure academic life. There are, inevitably, paths that this study has not taken. A more granular examination of each campus would reveal additional layers of complexity, sufficient to sustain individual works. Nevertheless, we chose to consider the campuses together and through the lens of spatial products to render visible parallel realities. Though geographically and institutionally distant, these cases speak to one another by demonstrating how similar pressures give rise to distinct infrastructural

responses. This comparative gesture reinforces a critical reading of university architecture, displaces the focus from the isolated building to the broader assemblage in which it operates, and situates the discussion alongside recent advances in infrastructure studies across related disciplines.

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