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PLAYING MIND GAMES

An investigation into how university design can enhance academic performance without compromising mental health

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Bodies & Building Studio

Figure 1: Bodies & Buildings Milan, Interconnectivity map

This research explores the potential of architectural design to enhance ‘sustainable academic performance’ by looking beyond the traditional university design strategies, within the context of a future economics university building in the heart of Milan. The city’s unique blend of fast-paced economic and cultural dynamism and slow-paced aperitivo culture makes it a city of temporalities and flexibility. This study critiques the predominant focus in our society on either maximizing performance while disregarding mental health, or enhancing well-being to the point of overlooking productivity, highlighting a gap between the ‘hustle culture’ and the ‘wellness culture’. Supported by numerous research in environmental psychology, it proposes a design framework that integrates both performance-enhancing and well-being-enhancing design strategies, aligned with the principles of the Attention Restoration Theory, to create a space that promotes ‘sustainable academic performance’ for both neurotypical and neurodivergent users in the academic context. Through literature review, case studies, surveys, geotagging and analysing everything through the lens of culture, the study will propose the redesign of the Bocconi University Via Roentgen Building, aiming to create a new typology of economics university building that promotes a healthier lifestyle.

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RESEARCH PLAN

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Figure 2: Identity of Milan Collage

1. Introduction

1.1 Thesis Topic

Milan pulses with a sense of endless motion. It is a city of temporalities, where events are permanently taking place, constantly attracting large numbers of tourists. It is a flexible city, a space for tourists as much as a home for residents. It is a city of performances and a city of excellence, the global capital of fashion and design, the most culturally influential city in Italy, a UNESCO City of Literature, one of the most influential financial hubs in Italy, has a university in the top 8% of global universities of excellence and many more (Global Fashion Industry Statistics, 2022; Lynn, 2024; Milan, n.d; QS University Ranking: Politecnico di Milano reaches its highest ever position, 2024). It is also the city of the aperitivo culture, which serves as a social response to the extended working hours commonly observed in the Milanese working environment, a trend that has shown an upward trajectory over the past decade (Italy: average weekly working hours 2023 | Statista, n.d.).

Our society is currently caught in a pendulum motion between the ongoing ‘hustle culture’, a trend defined by long working hours and the relentless pursuit of continuous productivity and excellence at the cost of health, well-being and social connections; and the social media ‘wellness culture’, that focuses on mental health and self-improvement, promoting an idealized healthy lifestyle, athletic bodies and mental health peaks, happiness and contentment, but often overlooking the importance of productivity (Athifah Chairunnisah & Lilawati Kurnia, 2023; Marks et al., 2020). Current social trends seem to be, however, ignoring the space in between the ‘hustle culture’ and ‘wellness culture’. This research aims to explore this space and how it can be promoted through architecture in the context of the future economic university building.

1.2 Problem Statement

Starting with the 1950s, there has been considerable focus on the relationship between architecture and its effects on the human mind, a field known today as environmental psychology (Bonnes & Carrus, 2017). Much of this research examines how architectural design can influence mental health and enhance performance in corporate and academic settings. Studies in environmental psychology that focus on how architecture can improve performance or productivity often highlight the connection between heightened alertness and increased productivity levels. This sense of alertness can often be enhanced through design elements, such as the use of colder and more intense lighting (Jain, 2022; Lok et al., 2018; Lewinski, 2015). However, when examined from the perspective of mental health and how it is influenced by architecture, it becomes apparent that long exposure to high-intensity lightning can lead to disruptions to the individual’s circadian rhythm, which leads to poor sleep quality, mood disorders, disrupted cortisol secretion and, consequently, a decline in mental health (Walker et al., 2020).

Similarly to the ‘hustle culture’ and ‘wellness culture’ problematisation, current research tends to concentrate on either utilising architecture to create a positive environment or leveraging design to maximize individual efficiency. This is particularly evident in the design of university buildings, which often prioritizes enhanced productivity and the creation of an appropriate medium for achieving academic performance, which is one of the crucial factors determining the university’s ranking. However, striving for academic performance is problematic, as the notion of academic performance is flawed on its own. Academic performance is a quantifiable term that can be defined as the following, according to Adewale et al.(2021):

academic performance
/əˈkædəmɪk pərˈfɔːrməns/
noun

1. The level of success and accomplishments attained by students in their educational pursuits. It encompasses a range of outcomes, including grades, test scores, academic awards, completion of coursework, and participation in extracurricular activities.

This definition, however, does not include the temporality and the human dimension, therefore the increased focus on it during the design stages leads to the creation of spaces that do not benefit the individual's mental health. In this research, a new, similarly quantifiable, definition of academic success is proposed:

sustainable academic performance
/səˈsteɪnəbl əˈkædəmɪk pərˈfɔːrməns/
noun

1. A consistent level of academic performance that can be maintained over time without compromising mental health or well-being, allowing for a healthy balance between educational pursuits and personal life.

The proposed definition allows for the exploration of the undiscovered space that lies between performance and mental health in the academic environment of the economics university building and leads to the following research question:

1.3 Research Question

How to design the future economics university building for sustainable academic performance?

The concept of sustainable academic performance encompasses two key dimensions: academic performance and mental health. Designing a space that encourages this type of academic achievment implies finding a balance between architectural features that enhance performance and the ones that promote well-being. However, this approach will not generate a universal design solution, as every individual is unique with distinct needs. Thus, it is crucial to ask: "For whom, specifically, is this economics university building designed?" Sustainable academic performance is largely contingent upon recognizing the diversity of minds and abilities and creating the appropriate medium for each user to flourish. Therefore, it is essential to create a variety of learning spaces that cater to the diverse requirements of both neurodivergent and neurotypical individuals. This aspect leads to the sub-question:

To what extent can learning spaces be individualized to meet the diverse needs of users while maintaining programmatic efficiency?

Figure 3: Ambition Collage

2. Research Framework

2.1 Theoretical Framework

In this study, a dual theoretical approach will be employed, synthesizing concepts from environmental psychology that examine both the influence of architecture on performance and mental health. The objective is to explore how university environments can enhance sustainable academic performance by integrating design strategies derived from both theoretical frameworks.

Numerous studies have investigated the relationship between architecture and performance or productivity, both in academic and occupational settings. Notable studies, including those conducted by Lok et al. (2018), Jain (2022), Al Horr et al. (2016), and Boray et al. (1989) associate light with the level of alertness and, therefore, the ability to focus and overall productivity, indicating that enhancements in illuminance are associated with increased alertness, even in the night-time. However, it is essential to recognize that while stimulating alertness in the latter part of the day can prove beneficial, it may also cause disruptions in the circadian rhythm, resulting in a progressive decline in mental health (Evans, 2003; Walker et al., 2020). Natural-lit environments positively impact, however, both academic performance, with students performing 20 per cent better in classrooms with natural lighting, and mental health and the regulation of the circadian rhythm. (Channon, 2019; Evans, 2003; Lewinski, 2015; Salary et al., 2018; Walker et al., 2020). Furthermore, performance can also be stimulated through design features such as seat arrangement, comfort, colour and the presence of biophilic elements (Adewale et al., 2021; Jain, 2022; Adamson & Thatcher, 2018; Al Horr et al., 2016; Lewinski, 2015; Salary et al., 2018).

Factors such as adequate thermal comfort, air quality and acoustic insulation are similarly linked to both productivity and mental health, as deficiencies in these areas contribute to diminished productivity and well-being (Adewale et al., 2021; Costa et al., 2019; Jain, 2022; Lewinski, 2015).

Research by Channon (2019), Evans (2003), Hooper et al. (2023), and Kirmayer & Pedersen (2015) further describes the connections between architectural design and mental health, highlighting critical physical characteristics of built environments that are associated with well-being, such as the layout of the room, legibility, high ceilings, spaciousness and level of control over one's environment and the availability of spaces for both solitude and for large groups.

The Attention Restoration Theory (ART), conceived by Rachel and Stephen Kaplan in the 1980s, serves as a conceptual bridge between the two primary themes of this study. According to ART, exposure to natural environments can significantly help restore cognitive resources depleted by focused mental effort. By integrating restorative elements such as greenery, water elements or natural light, spaces can improve focus and reduce mental fatigue (Asim et al., 2023; Berto, 2014; Kaplan, 2001). This theory is relevant to the core theoretical frameworks of this study, as it highlights how the restoration of directed attention enhances focus and performance, while also reducing mental fatigue, creating a restorative environment. The integration of this theory within the research framework is particularly vital, as students are particularly prone to psychological distress and the development of mental health issues (Asim et al., 2023). This issue is particularly noticeable in Italy, where a study by Porru et al. in 2020 showed that **"78.5% of the respondents experienced psychological distress, of which 21.3% mild, 21.1% moderate, and 36.1% severe levels." (p. 955).**

A redefined academic environment that blends design strategies for performance maximisation, well-being-related design features and restorative elements could create a balanced atmosphere for students, allowing them to pursue high academic performance for a long time without the detrimental effects of sustained stress, and therefore, create a space that promotes sustainable academic performance.

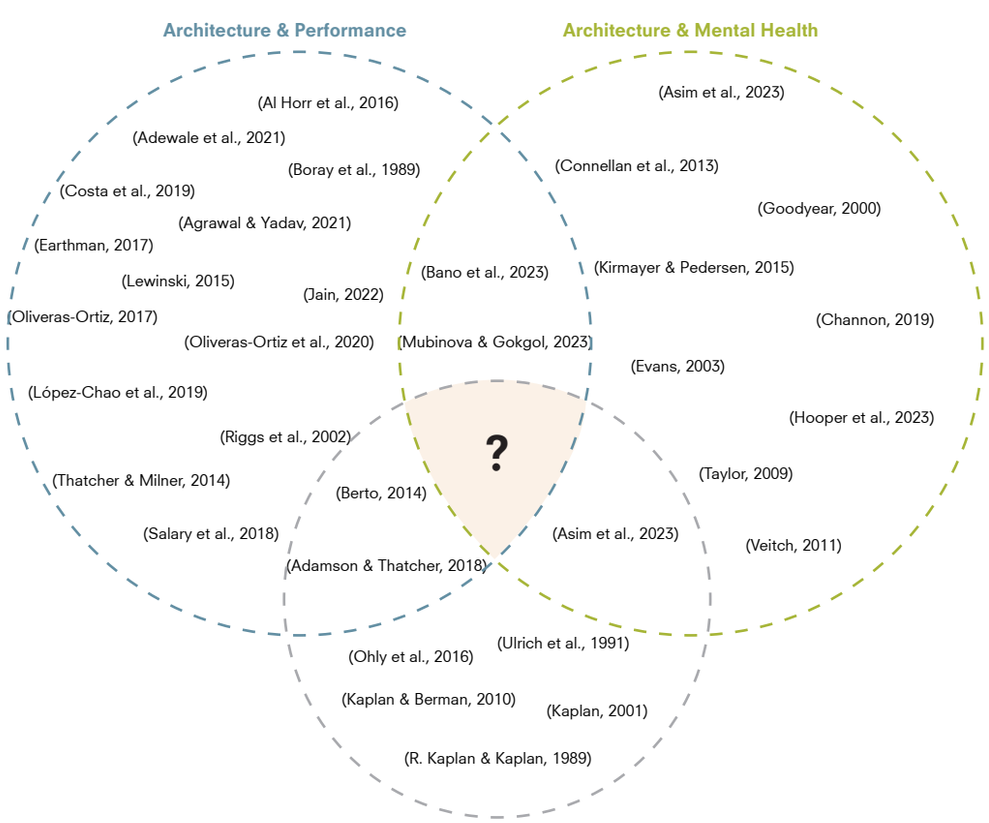


Figure 4: Research Framework diagram

Figure 5: “Addressing the needs of the individual”, Thesis Topic Collage

2.2 Relevance

This study’s relevance extends beyond Milan, as it addresses universal questions of academic performance, mental health, and the current approach to designing university buildings. It explores the ongoing pendulum movement from the ‘hustle culture’ to ‘wellness culture’ and proposes a new way of looking at academic performance. By emphasizing mental health alongside achievement, the notion of sustainable academic performance aligns with growing societal recognition of the importance of wellness in academic and professional life.

Promoting sustainable academic performance in the university context requires creating learning and working environments that enhance both performance and well-being, adapted to the diverse users’ needs. Currently, however, many of these spaces are designed with a one-size-fits-all approach, primarily reflecting the needs of the neurotypical individual. However, as pointed out by Armstrong (2015), the ideal neurotypical person does **not** exist. As Goldberg (2023) elaborates in his article **“neurotypical refers to the majority of the human population that exhibits common, typical neuronal phenotypes that fall close to the mean of the Gaussian. Neurodivergent refers to a minority of the population that express statistically less common (atypical) neuronal and cognitive phenotypes that fall at the tails of the Gaussian distribution”**(p. 974). It is estimated that around 20% of the population falls in this neurodivergent category (Goldberg, 2023). Consequently, the idealized notion of a universal working and learning space fails to realistically accommodate individual needs. Our minds are unique, and so are our needs, and the environment in which we learn or work should support this diversity of needs. As Alexander Den Heijer points out:

“**When a flower doesn’t bloom, you fix the environment in which it grows, not the flower”**.

This project seeks to architecturally challenge traditional design principles for both learning and working environments, proposing variations that are adapted to the multiplicity of user needs, while maintaining programmatic efficiency. Addressing neurodiversity through design is about empowering all individuals to take control of their environments, enabling them to select spaces that best suit their needs at a specific time, rather than merely creating separate spaces for neurodivergent groups.

3. Research Methods

To address the research question and determine the site's, program's, and client's particularities, this study will use a mixed-methods approach.

3.1 Site

In connection to the general methodology employed by the Complex Projects Studio, this study will use the same site as the Bocconi University Building from Via Roentgen, creating a hypothetical scenario where the university building designed by Grafton Architects was never constructed after the winning of the competition in 2002. This approach enables the project to be situated within an established academic campus, thereby facilitating a comprehensive site analysis that incorporates factors relevant to the academic environment.

3.2 Programme

By utilising the above-mentioned research method, a comparison can be established between the existing building and the proposed design in terms of its effects on students' and employees' mental health and productivity. This assessment will be further enhanced through the implementation of surveys aimed at both students and faculty members, designed to gather qualitative and quantitative data on their experiences within the university's academic environment. Specifically, the questions will explore the effects the Grafton Architects building has on their performance, well-being and mental restoration. Utilising this research method will also result in the establishment of programmatic needs for the future economics university, determining the needs of students that remain unaddressed by the Via Roentgen Building.

Another method which will be employed in this study to collect stories and programmatic needs of the building will be geotagging. This will involve analysing social media posts related to the Bocconi University buildings to identify the most frequented locations on campus and the emotions and stories associated with these spaces. For instance, many students choose to take photos on their graduation day at a particular spot within the university, which subsequently becomes an emblem of the institution itself. However, it raises the question: do these images serve as a way to celebrate cherished memories from their academic journey, or do they signify the ending of years marked by mental health struggles, sleepless nights, and stress? In this case, should the future economics university forcefully fabricate a single iconic location for these pictures, or prioritize the establishment of multiple positive spaces, that allow students to choose places associated with joyful memories?

A comprehensive literature review on the influence architecture has on mental health, respectively individual performance, will contribute to the development of the programmatic requirements for the university building designed to enhance sustainable academic achievement. Additionally, case studies will be analysed in this paper, exploring various approaches to creating working and learning spaces that accommodate diverse abilities and needs on the spectrum of neurodiversity, as well as spaces that focus on maximising productivity, respectively promoting well-being.

3.3 Client

Primarily, the client and stakeholders of the project will be determined based on the competition held in 2002. In addition to this, as this research starts from the observation of ongoing cultural trends, it will also aim to understand the academic building environment through the lens of Milanese culture, specifically, the temporality aspect of Milan's culture, utilising this lens to establish possible programmatic, as well as client particularities. The concept of 'temporality', which reflects the city's constant state of activity and change, as well as the antithesis between the slow-paced and fast-paced

life of Milan, will be central to analysing the survey data.

Moreover, this redesign of the Bocconi University building will revolve around a key architectural element, the fountain, as a main creative driver of the project. While it may not directly dictate programmatic needs, it will significantly influence the building's design composition. This architectural element was selected to harmonize with the project's other components, embodying Milan's cultural essence. It acts as a metaphor for the city's historical identity as the "City of Waters," and as an illustration of the fast-paced, slow-paced antithesis, from the moving bodies of water to the stillness of ponds. Additionally, it supports the research's theoretical framework, as it is considered a restorative element in the Attention Restoration Theory created by Stephen and Rachel Kaplan in the 1980s. Moreover, it supports various cooling strategies, adapting the building to withstand the extreme heat conditions typical of Milan's summers.

Thesis Topic

What lies in-between ‘hustle culture’ and ‘wellness culture’? How can performance be maximised without compromising one’s mental health?

Problem Statement

The current design of university buildings focuses on either maximising performance or mental health, but never both. A shift toward ‘sustainable academic performance’ advocating for a balance between productivity and well-being is essential in order to design healthier academic environments.

Research Question

How can the design of the future Economics University building enhance sustainable academic performance?

Theoretical Framework

Environmental Psychology & Performance

Environmental Psychology & Mental Health

Attention Restoration Theory

Methodology

Site

Programme

Client

Literature Review

Case Studies

Geotagging

Survey

Culture Lens

Hypothetical Bocconi Via Roentgen Building

Architecture & Performance → Design Strategies

Architecture & Mental Health → Design Strategies

Attention Restoration Theory → Design Strategies

Architecture for neurodiversity → Design Strategies

Architecture for neurodiversity → Design Strategies

Collection of stories and places → User needs

Collection of stories and places → User needs

Client Requirements Design Strategy

Site, Programme & Client Requirements

General Design Strategies for Sustainable Academic Performance

Design Strategies

Design Proposal

Conclusion

The purpose of this study is to re-evaluate the design of working and learning spaces, particularly within the context of an economics university building. It recognises the shortcomings in the current way we view academic performance and encourages looking beyond the conventional standardization of work and learning environments and the one-size-fits-all approach commonly employed in academic space design. By acknowledging the differences in needs and abilities of the users, this design approach empowers individuals to take control of their environments, enabling them to select spaces that best suit their needs. While the design itself may not alleviate the stress that academic programs impose on students and staff, it can create a healthier setting in which individuals can effectively navigate these challenges.

The envisioned outcome of this research is a new theoretical approach to the concept of ‘academic performance’, proposing a new definition that encaptures the temporality and mental health dimensions, creating the ‘sustainable academic performance’ approach. Additionally, this research proposes a new typology of economics university building, one that caters to individual needs while promoting the above-mentioned sustainable academic performance, a new way of designing academic spaces: **the Milan way.**

RESEARCH

02

Figure 6: Programme comparison between the Bocconi University, the Michael Kirby Building Macquarie University and the Harvard University Science and Engineering Complex

1. Case Studies

1.1 Programme

A comparison was made between the Bocconi Via Roentgen Building and two other similar university buildings that each accommodate the university's departments, as well as event spaces and learning areas, with the goal of determining the programmatic strengths of the Milanese university as well as highlighting potential areas that could be improved in the redesign proposal. The Harvard University Science and Engineering Complex, designed by Behnisch Architekten in 2021, also covers a similarly large area (50500m2) and hosts the majority of academic laboratories and departments, with office and lab space comprising 39.7% of the total surface. Nevertheless, despite the large staff area, the hallways constitute only 9.8% of the building's layout, reflecting an emphasis on an open circulation zone. In contrast, the Grafton Architects building features an office area of only 15.8%, yet hallways account for 28% of the total surface area, being the main circulation area type for floors 1-5. The Michael Kirby Building Macquarie University, designed by Hassell Studio in 2023, has, in comparison to the other two universities, a more balanced approach to accommodating learning spaces, staff areas, break rooms, and circulation zones. For 10.9% office space and 18.9% classrooms, the building provides 11.1% break spaces and 4.1% meeting areas, demonstrating a clear focus on the user's mental health. Furthermore, this layout prioritizes an open circulation area, with hallways taking up only 5.1% of the overall area. In contrast, Bocconi University features no classrooms, and for a percentage of 15.8% of office areas, it only provides 8.4% meeting rooms and special rooms such as break areas and storage spaces.

1.2 Addressing neurodiversity

The current approach to lecture room design is having one space that tends to focus primarily on acoustics and capacity, treating its

Figure 7: Francisco Giner de los Ríos Foundation | Amid Cero9 | 2015

users as a mere number rather than individuals with their particular needs. This project focuses predominantly on the user's needs and seeks other ways to design such spaces, challenging the conventional norms. One example of such a design is the Francisco Giner de los Ríos Foundation, designed by Amid Cero9 in 2015, where the lecture room features both isolated spaces for smaller groups and a larger area with a traditional lecture room layout, effectively addressing the diverse needs of its users when it comes to acoustic and visual sensitivity, as well as social and focus differences. The goal of addressing neurodiversity through design for learning and working spaces is not to separate users and isolate them based on their abilities and needs but rather to empower all individuals to take control of their environments, enabling them to select spaces that best suit their needs.

Figure 8: Bocconi University Via Roentgen Building | Grafton architects

2. Hypothetical Bocconi Via Roentgen Building scenario

In accordance with the methodology suggested by Complex Projects Graduation Studio, the proposed design will be located on the same site as the Via Roentgen Building of Bocconi University. This hypothetical framework posits that Grafton Architects won the competition for the building's design in 2002; however, it remains unconstructed. Such an approach provides crucial insights into the site's context, programmatic demands, and the requirements of the client.

The Bocconi University was founded in 1902 by the entrepreneur Luigi Bocconi, 39 years after the establishment of the first university in Milano, Politecnico di Milano. Originally situated within the confines of the Hispanic Wall, the university relocated to its current location on the southern side of the city in 1937, largely due to its need for expansion and spatial constraints imposed by the municipality's ownership of nearby buildings. Currently, Bocconi University is a leading economic institution on a global scale, partnering with schools in 55 countries and having a large number of courses ranked by subject in the top 25 worldwide, including Business and Management, Marketing and Social Sciences and Management.

As a private institution, Bocconi University has witnessed continuous expansion, with one of its latest constructions being the Via Roentgen Building, designed by Grafton Architects after winning the "Bocconi 2000" competition in 2002 and subsequently completed in 2008. The project brief was clear in terms of the spatial requirements, calling for a 1.000-seat auditorium for large-scale events, 880 offices to accommodate a total of 1.000 academic staff, a foyer, meeting rooms and underground parking for up to 200 vehicles.

The building designed by Grafton Architects occupies a significant position adjacent to Viale Bligny and Via Roentgen, addressing the streets with its monumental façade. The solid stone border from Viale Bligny and Via Roentgen creates both an acoustic and a solar barrier, creating a microclimate behind it. Moreover, the ground floor is designed as a porous space that connects the university with the city through its choice of materials and interplay between solid and transparent surfaces. Due to this, the material selection plays a crucial role in defining the building's character. The use of concrete as the primary material conveys the idea of solidity and permanence, aligning with the university's aspirations as a leading centre of knowledge and stability. The textured terrazzo surfaces create a play of light and shadow, enhancing the visual depth of the façade. Additionally, glass is used extensively to promote transparency and openness and to encourage the interaction between the institution and the surrounding urban fabric, reinforcing the theme of integration with the city.

One of the central concepts that enabled the Irish architects to win the competition was this interplay created between the university and the city. Grafton Architects envisioned the building as a "Window of Milan", promoting the constant exchange between the two. This idea is also supported by the building's plan, where the ground floor is completely accessible to the public and features a large window that invites engagement from the surrounding urban environment. Through it, the foyer can be seen as a space that serves as both an exhibition and hosts various events, including those associated with Milan Fashion Week. The architects drew inspiration from the Italian tradition of civic architecture, notably the palazzi, which typically exhibit a central courtyard that serves as a focus point for social exchange.

The upper floorplans are characterised by an interplay of courtyards that facilitate the reflection of natural light throughout the interior spaces. However, this organisation results in the offices being compartmentalised as a succession of enclosed spaces situated along a long series of intersecting hallways, which, compared to the design of the lower levels, does not promote connection between the scholars utilising these spaces. Additionally, the building incorporates five

seminar rooms and a 150-square-meter library, which are predominantly orientated towards PhD students and staff. This results in a disconnection between the Bachelor's and Master's students, who account for the majority of the 15.000 students of the university, and the Via Roentgen Building, as they have no need to engage with the building outside of events and their graduation. This maximises the perceptual barrier between the staff and the students and limits opportunities for spontaneous, meaningful interactions.

Analysing the programmatic diagram reveals a significant allocation of building space to circulation spaces, which add up to approximately 64,8% of the total area and include the hallways, vertical circulation cores and open circulation areas. In contrast, the working environment comprises only 24.2%, while learning spaces constitute a mere 7.1% of the building. This imbalance between learning and working spaces further highlights that the interaction between academic staff and students is not spatially encouraged, as the design is primarily focused on hosting the institution's departments rather than fostering a vibrant, student-inclusive environment.

The university actively engages with the city through various hosted events, such as the Milan Fashion Week or the Bocconi Art Gallery. Moreover, analysing the academic calendar displays a constant interplay between slow-paced and fast-paced periods, between studying periods and holidays, and exam seasons. The main Opening Ceremony of the Year, which happens in the second half of October, marks the beginning of the academic year for most courses, which primarily end in July during the primary graduation days. Additional graduation events occur in April, October, and late November. The main examination periods take place in January and June, each lasting the entire month, while a supplementary exam session occurs between August and September, extending over two weeks.

The primary client for this project was Nicolo Di Blasi, representing Luigi Bocconi University, in collaboration with the Ministry of Education, Universities, and Research. The aspirations of Bocconi University are

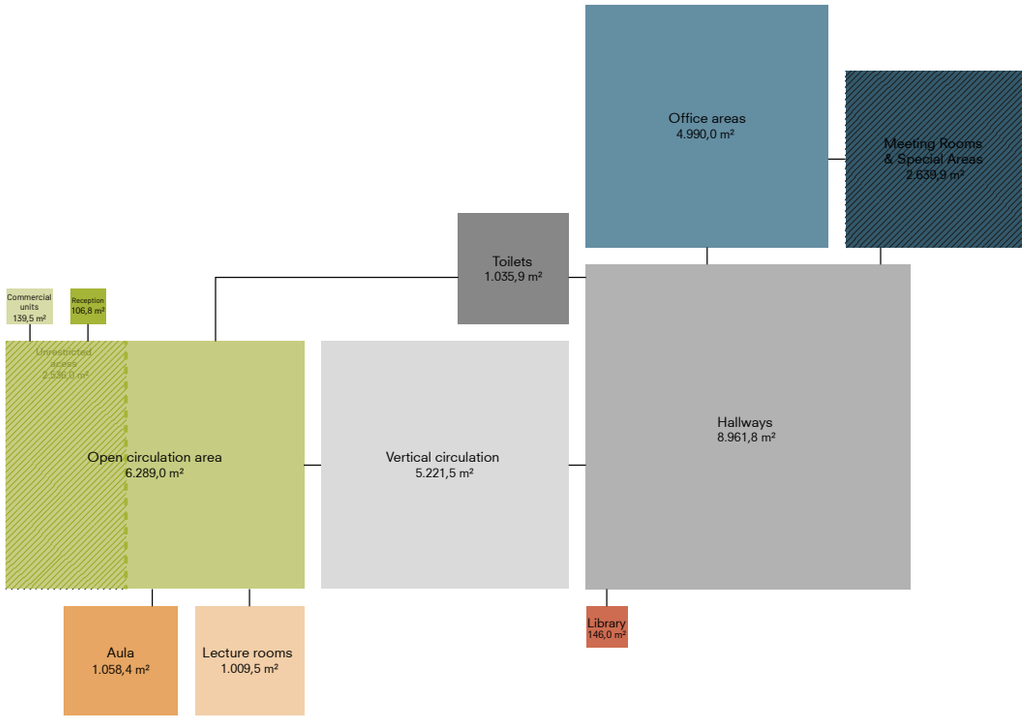


Figure 9: Via Roentgen Building existing programme

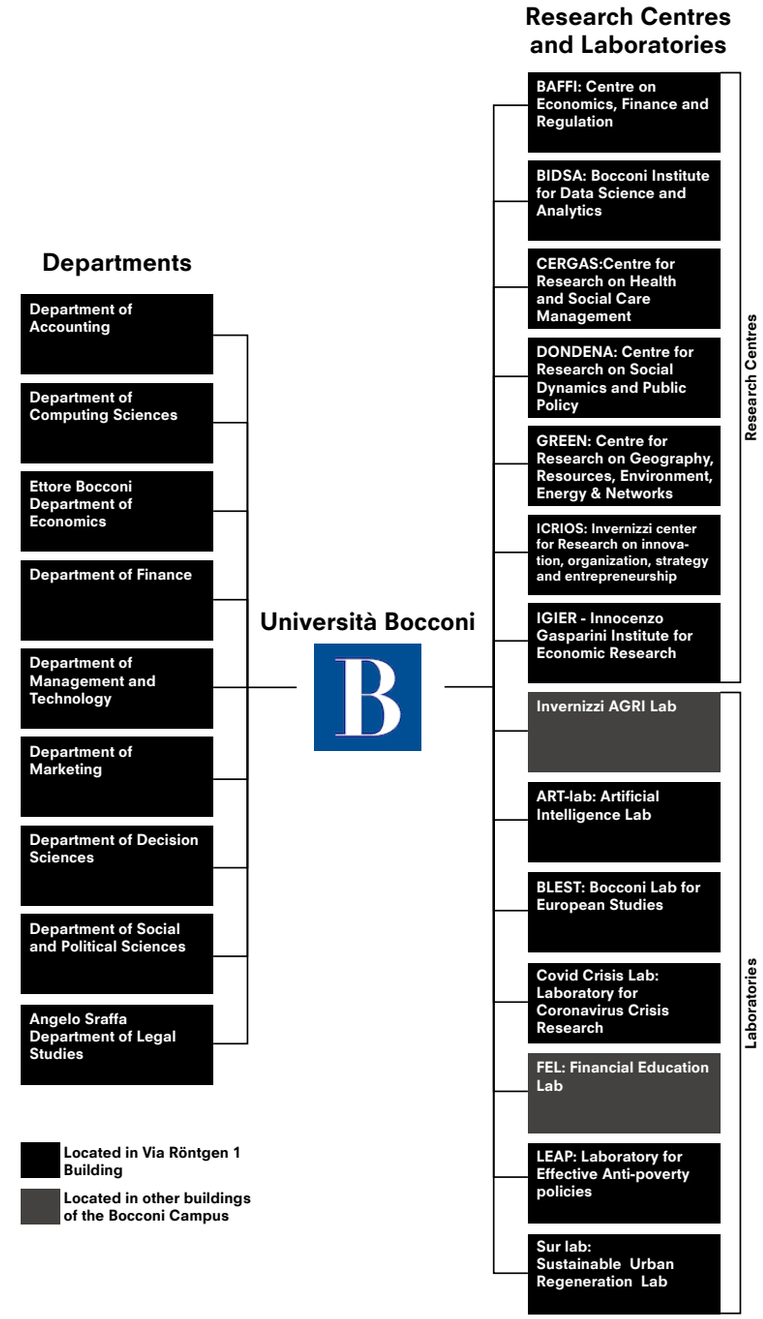


Figure 10: Bocconi University departments, research centres and laboratories

outlined in the Vision 2030 document, which articulates six key goals for the current decade. The university aspires to be a leading independent institution in the social sciences, advancing knowledge through rigorous research while delivering transformative, high-quality learning experiences. Committed to social mobility, inclusivity, diversity, and sustainability, the university fosters innovation and entrepreneurship while engaging stakeholders to create meaningful impact.

Figure 11: "How do you really feel about Bocconi?" survey visualisation

3. Interviews & Survey

To assess the programmatic needs of the users, nine brief anonymous interviews were conducted with master's and bachelor's students, alongside one survey addressed to both staff members and students. The first striking fact that resulted from the interviews was that 100% of the interviewed people said that they never go to the Via Roentgen Building, as there is no learning space for them there, being a building used mainly by PhD students and staff. Additionally, all respondents highlighted the insufficient study spaces on the Bocconi campus, particularly within the library. One student remarked, "During exam sessions, the library opens at 8:30 and at 7:50, there is already a queue going outside" (Student 6). Furthermore, as noted by three respondents, multiple courses require group work. However, the rooms dedicated to groups in the library are insufficient. Consequently, during exam periods, the main library is overcrowded and noticeably noisy since many groups struggle to find separate rooms for their collaboration, which can be particularly distracting for some individuals. One interviewed student indicated that they could only use the library at night due to the high noise levels and distractions during the day. When asked about the interaction between students and tourists in the Bocconi Via Roentgen Building, which the architects refer to as a "place of exchange," Student 2 stated "There is not a lot of interaction between the tourists and the students. During Fashion Week, for example, there are events in the Foyer, but it's not for everyone, you need to be invited to participate. If I'm honest, I don't know anyone who was invited, so in my opinion, tourists and students don't really interact".

Additionally, the students were asked to share their thoughts on the current academic calendar at Bocconi University. While three students indicated that the structure of the courses does not particularly trouble them, as exams would invariably be stressful regardless of timing, four others noted that there is room for improvement. Student 4 expressed a preference for having both a mid-term exam

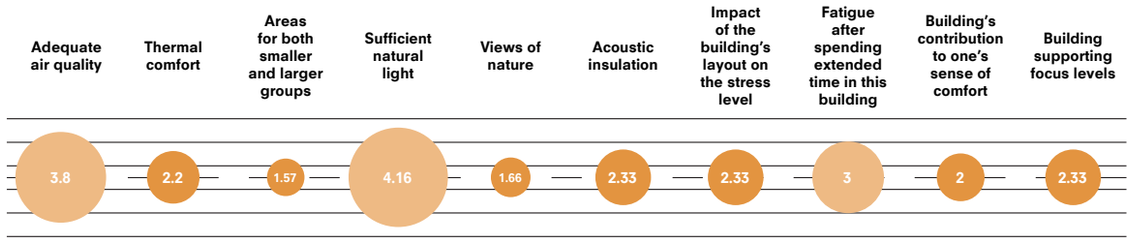
and a final exam, suggesting that this would help alleviate the pressure during the exam season, while two other students mentioned that they would prefer having exams before the winter break so they could enjoy the holidays without the looming stress of upcoming assessments. Lastly, Student 7 mentioned that they would prefer having more flexibility regarding exam dates to accommodate other life priorities.

The survey examined the factors affecting users' mental health and the design elements that either facilitate or hinder focus and academic performance. Firstly, respondents were asked to rate various features of their working or learning environments on a scale from 1 to 5, with 5 representing the highest quality. When analysing the results, all averages lower than 3, indicative of a neutral sentiment, were highlighted to emphasise aspects that need improvement. This analysis revealed that neither the Bocconi Library nor the Via Roentgen Building are positive spaces supporting prolonged focus states. Specifically, the survey indicated that the university's main library suffers from significant deficiencies, including a lack of thermal comfort, inadequate spaces for both large and small groups, limited views of nature and insufficient acoustic insulation, which are all essential for creating learning environments that positively impact well-being. Additionally, the building's layout appears to intensify users' stress levels, and the overall space fails to provide comfort, which is vital for enhancing students' focus. A similar situation is observed regarding the feedback from the workspaces in the Via Roentgen Building. The building suffers from a lack of thermal comfort, insufficient spaces for both small and large groups, inadequate acoustic insulation, limited views of nature, and a lack of natural light, all of which contribute to an unhealthy work environment. Furthermore, a significant number of respondents reported feeling fatigued after prolonged periods spent in the building, noting that the working conditions hinder their productivity and fail to provide a sense of comfort.

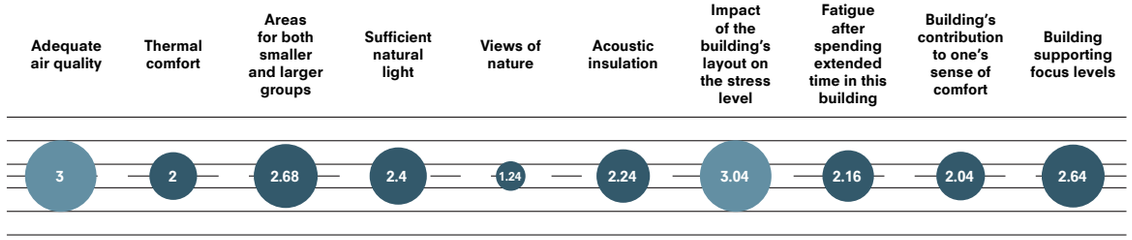
In the next section of the survey, respondents described particularities of the building they appreciated or disliked. Regarding general features of the building, eight people expressed satisfaction with the spaciousness of their offices and desks. Other positive features mentioned by three respondents were the privacy offered by the individual working areas and the building's aesthetics, while four users highlighted that they appreciated being close to their peers. On the other end of the survey results, a significant number of respondents complained about the office temperature, with fourteen individuals noting that their work environment is poorly insulated and excessively cold during winter months. Additionally, nine individuals highlighted the lack of direct sunlight in their working areas, while four people pointed out that the monotony and choice of materials, combined with the lack of natural light, contribute to a depressing atmosphere. Other negative aspects of the building mentioned in the survey were the lack of spaces that promote spontaneous interactions among users, as well as poor air circulation and overall subpar air quality.

Focusing on aspects that positively impact the respondent's mental health, the results were rather grim. Four individuals indicated that no feature of the building positively impacts their mental health, while six noted that the sole benefit of their work environment is the opportunity to interact with colleagues. On the negative side of the graph, more characteristics were indicated as detrimental to the user's mental health. The most significant issues highlighted include the lack of colour and monotony of the building, insufficient social spaces and the lack of natural light. Additionally, the users complained about the lack of greenery in the building, as well as the distance from the restrooms and the poor air quality. Regarding the building's impact over one's focus, several positive common points emerged from the survey, including the good acoustic insulation, minimal distractions within the offices, and the availability of shared office spaces, which further demonstrate the diversity of users' needs. On the other hand, factors that hinder focus and productivity include temperature issues, insufficient natural light, the distance to restrooms, and a lack of break areas.

Bocconi Library through the eyes of the users



Via Roentgen through the eyes of the users



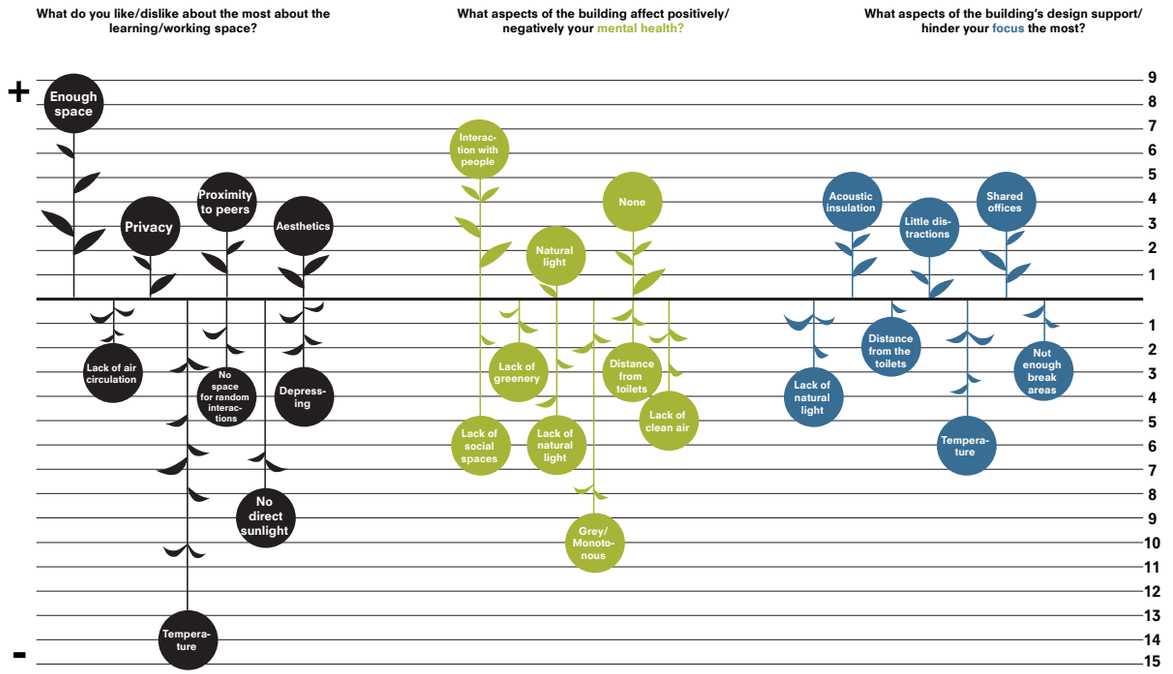
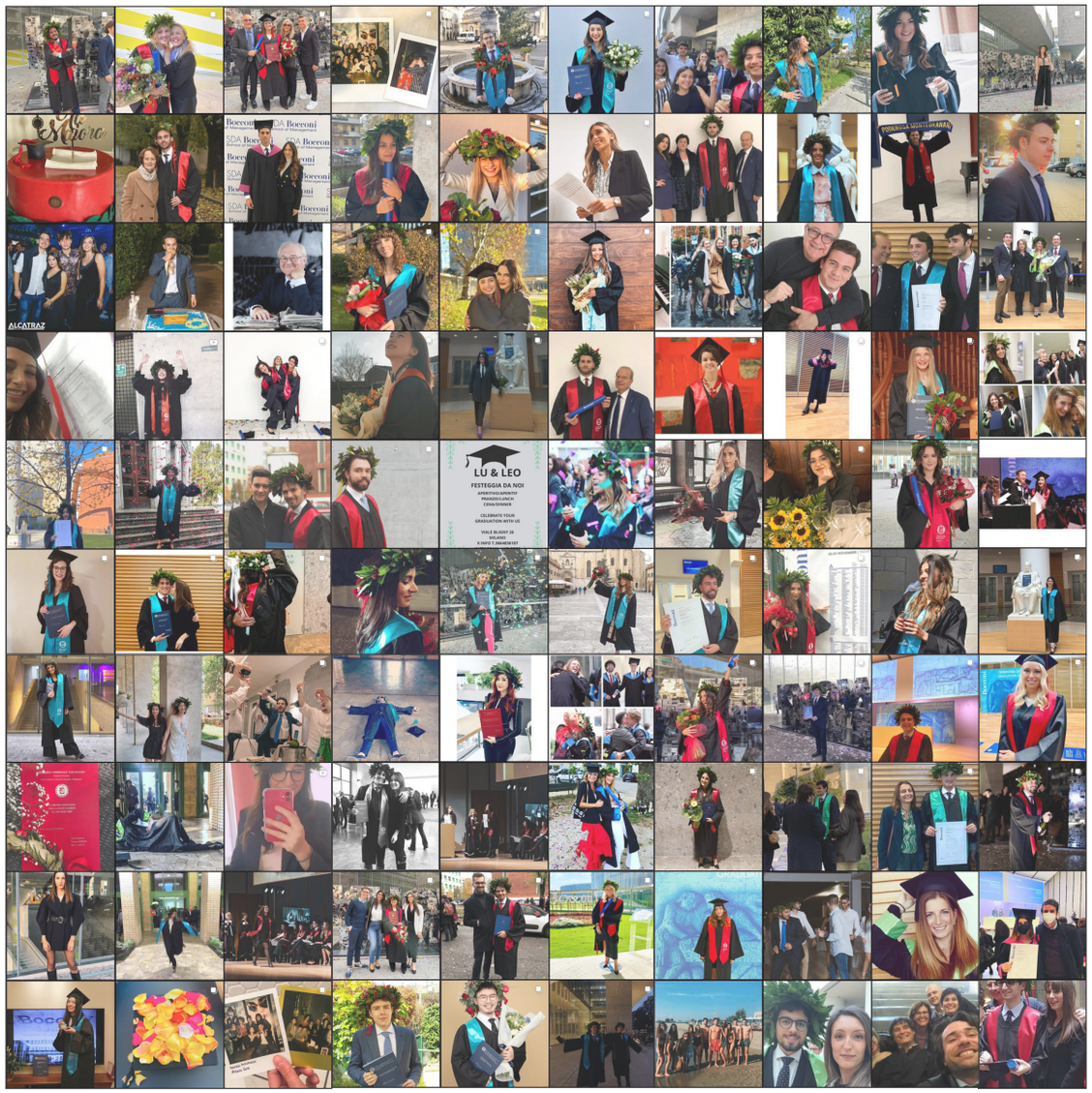


Figure 12: "How do you really feel about Bocconi?" survey analysis

4. Geotagging

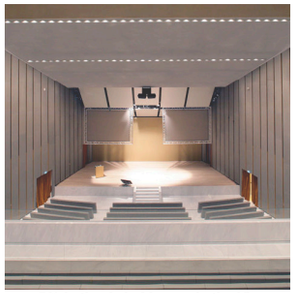
Geotagging was employed to identify the most memorable locations for students within the Bocconi Campus. On Instagram, the hashtags #bocconi, #bocconiuniversity, and #unibocconi stand out as the most significant, with 113.000, 23.300, and over 14.600 posts, respectively, highlighting the university's strong presence on social media. When focusing specifically on student experiences, #bocconilife has over 1.000 posts, and #bocconigraduation has over 500.

As one of the most notable events in which the university interacts with the city, the most recent 100 posts related to graduation ceremonies were analysed. The most meaningful location was the "Knowledge That Matters" emblem of the university, with one in every five pictures being taken there. Following that, the Aula Magna in the Via Roentgen Building and the statue of Ferdinando Bocconi in the Velodromo Building each appear in 5% of these posts. It is clear that while master's and bachelor's students may not frequent the Via Roentgen Building outside of events, the Grafton Architects building serves as a significant symbol of their university experience, a fact that will be considered in the redesign proposal of the building.



20% in front of the Via Roentgen Building

5% in front of the statue of Ferdinando Bocconi in the Velodromo Building



5% in the Aula Magma in the Via Roentgen Building

Figure 13: Geotagging collage

DESIGN BRIEF

03

1. Site

With a continuously growing influx of tourists in the city, the proposed university design, along with the other eight connected public buildings, plays a vital role in reshaping the Milanese tourist landscape to avoid the current overtourism and the imminent Disneyfication of the city centre. The building must ensure that the city stays visible, adaptive, and responsive to the current challenges, by creating spaces designed to host events of different scales to help alleviate pressure from the city centre and reclaim space for residents. Additionally, to counteract the invisibility of research events in Milan throughout the year, the Via Roentgen Building should enhance the visibility of events within the Bocconi campus, serving as a "knowledge exchange" hub for the city. This goal can be achieved by incorporating one of the five proposed design elements: courtyard, promenade, rooftop, interactive wall, porta or by introducing a comparable strategy to increase event visibility. Finally, it is vital for the proposal to align with the city charcter.

On a neighbourhood scale, the Via Roentgen Building serves as the first point of contact for people arriving from the city centre. As such, it is crucial for the building to function as a connector between the city and the campus, rather than as a barrier separating the two entities. Additionally, it is essential to establish a clear pathway linking the Porta Lodovica tram station with the rest of the Bocconi Campus to ensure the visibility and accessability of the university. Furthermore, there is a residential building located directly across from the Bocconi university site on Via Roentgen, which must not be disturbed by the building's redesign. Therefore, no direct views from the building proposal into the residential building are permitted.

On a building scale, the proposal should include access to parking spaces from both Via Roentgen and Viale Bligny, while also implementing strategies to minimize noise coming from the tram lines located along the northern border of the site. Moreover, the site should incorporate greenery, to enhance the green space ratio within the campus and promote a restorative and positive learning and working environment. By introducing a park within the site, the proposal can provide a venue for outdoor events while ensuring their visibility. Additionally, responding to the users' and clients' needs, the proposal needs to be an emblem of the Bocconi university. This includes creating spaces for graduation celebrations, allowing students to commemorate their achievements in a meaningful setting, rather than merely in front of a generic emblem of the institution with which they may have limited interaction.

Have a building that acts like an "knowledge exchange" centre

Create event spaces that allows for a reduction in the event density from the city centre

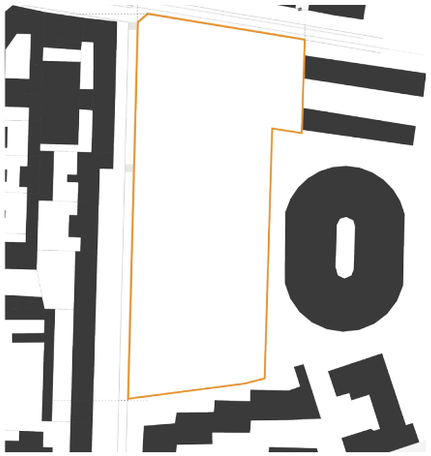
Improve visibility of research events

Maintain the city character

Preserve the privacy of the neighbouring residential buildings

Create a circulation path connecting the tram station with the rest of the Bocconi Campus

The building needs to act as a connector between the campus and the city



Create a new emblematic location for the Bocconi University

Create a graduation location

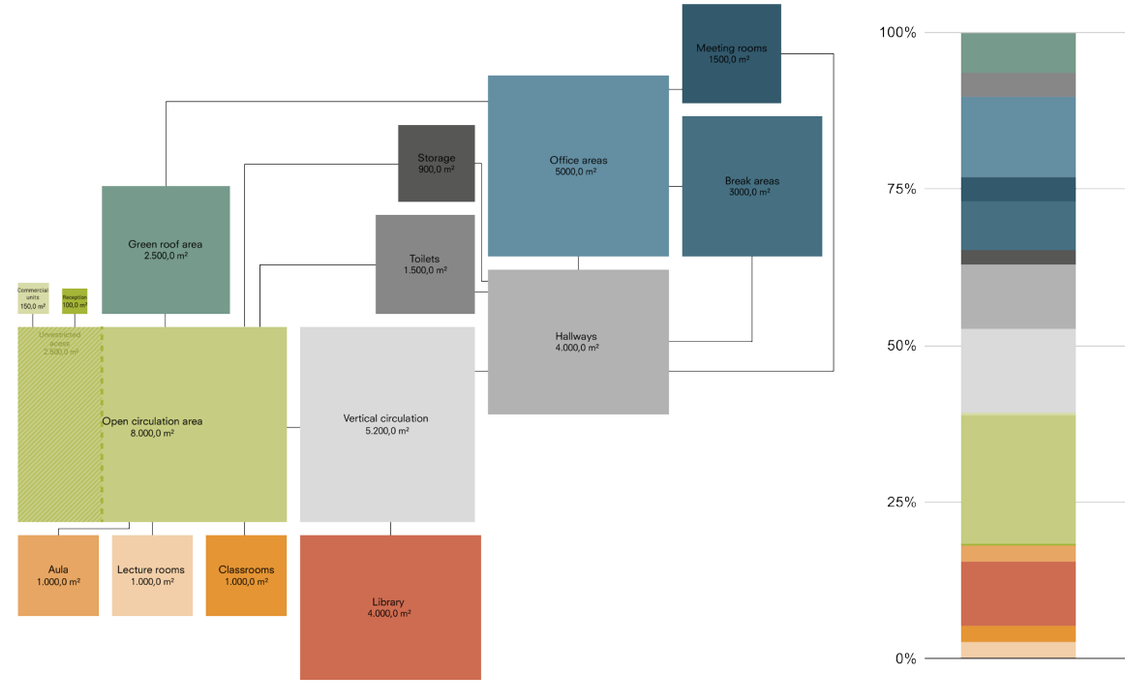
Access to parking from both Via Roentgen and V.le Bligny

Introduce greenery

Minimise the noise coming from V.le Bligny

2. Programme

Responding to the users' needs expressed in the survey, the design proposal of the Via Roentgen Building aims to preserve the existing programmatic framework while implementing several key enhancements. Firstly, spaces that encourage social interaction and promote well-being in the workplace, such as break areas, coffee spaces and community kitchens, will be expanded. Moreover, the number of restrooms per floor will be increased to make the layout more accessible, and the library space will be converted from a limited area designated for PhD candidates and faculty



into a comprehensive 4.000 square meters library accessible to all university users.

Secondly, the existing circulation areas will be reconfigured. The current hallway grid will be reduced, decreasing this type of circulation space from 28.36% to 10.30% of the total surface. Instead, open circulation spaces will be favoured, as they promote a relaxed atmosphere and facilitate spontaneous interactions among users. Additionally, the number of parking spaces will be reduced from 200 to 125, thereby promoting a decrease in vehicular traffic within Milan and optimising underutilised building areas.

In addition to the existing programme, the revised proposal seeks to introduce additional learning environments to minimise the perceptual distance between the academic staff and students while reducing the pressure on the limited learning spaces in the main library during exam seasons. Therefore, the plan should include classrooms, PC laboratories, self-study areas, collaboration spaces and open kitchenettes. Additional spaces that promote health and relaxation should be introduced to the programme, including lobbies, phone booths and creative spaces for each department, research centre and laboratory, alongside shared amenities such as nursing rooms, prayer rooms, and gaming rooms. Overall, the above-mentioned changes should increase the programme by around 15%.

The overarching objective of the Via Roentgen Building design is to create a positive, inclusive, and restorative environment that supports sustainable academic and work performance. Spaces designed for extended use must be inclusive and responsive to a diverse range of needs, including sensory sensitivities, social differences, focus difficulties and the need for movement. In addressing sensory differences, the new working and learning environments should be adapted to visual, auditory and tactile hypo- and hypersensitivities. To address social differences, the design should offer users agency in determining their preferred levels of social interaction, from retreat spaces to

focus areas surrounded by social spaces and finally to having vibrant collaboration zones.

Recognising the diverse focus differences and the need for movement experienced by many individuals, the space should accommodate both hyperfocused states and focus difficulties while providing both space for movement and active furniture. Thus, the learning and working environments should include the following four main categories: focus, collaboration, retreat and community. Each category will feature both individual and social subzones and will accommodate both hypo- and hypersensitivities. It is important to mention that the goal of subdividing areas based on needs is not to isolate neurodiverse individuals but to acknowledge that, while only 20% of the population is estimated to be neurodivergent, the neurotypical individual does not exist, all individuals possessing varying degrees of differential needs. Therefore, the space subdivision should empower all users to take control of their environments, enabling them to select spaces that best suit their needs at a specific time.

Bocconi University

Ministry of Culture

Ministry of Education, University and Research

3. Clients

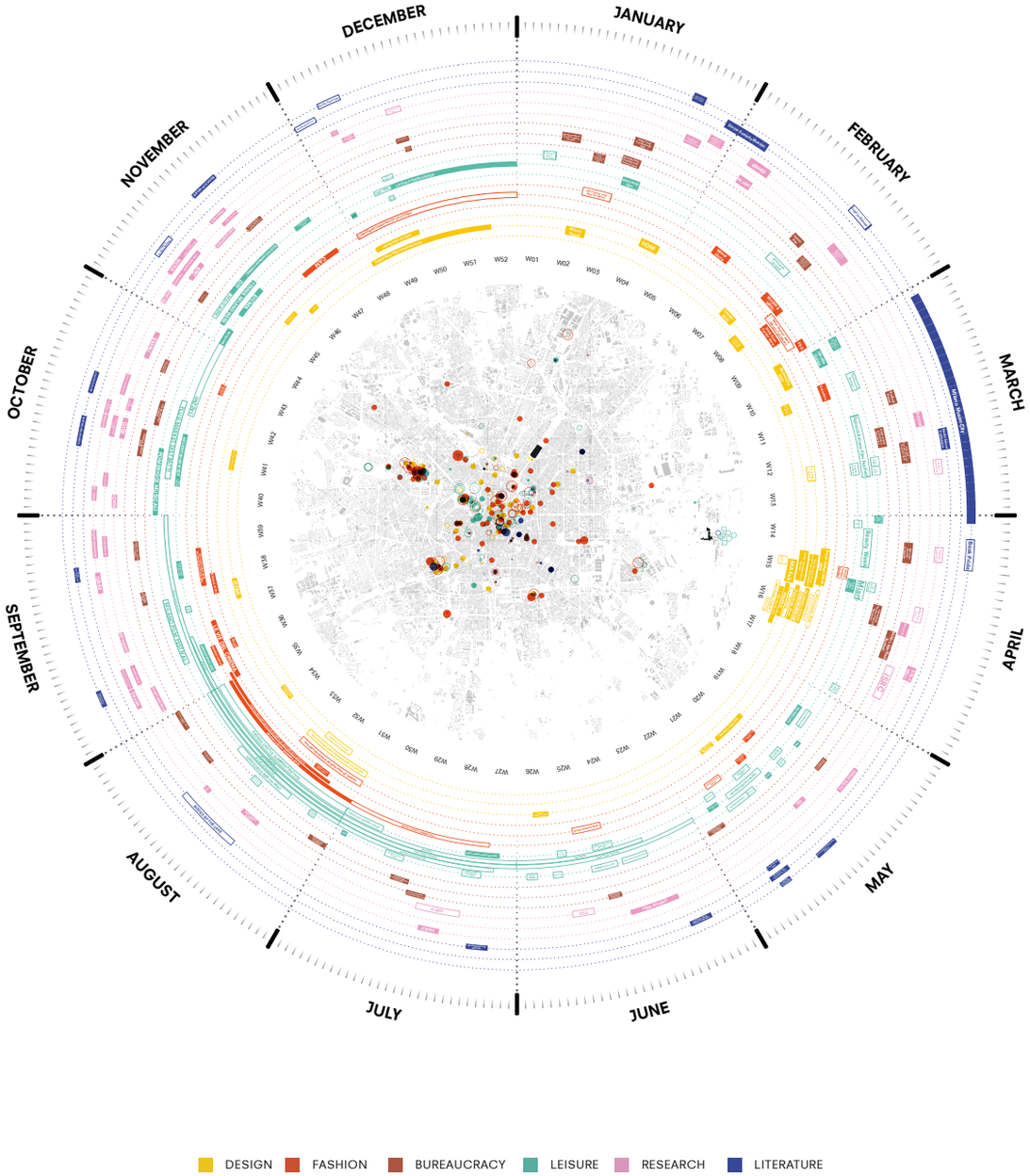
The project's main client is Luigi Bocconi University, represented by Nicolo Di Blasi. Its ambitions are reflected by the document "Vision 2030", which outlines six key goals for the current decade. The university aspires to be a leading independent institution in the social sciences, advancing knowledge through rigorous research while delivering transformative, high-quality learning experiences. Committed to social mobility, inclusivity, diversity, and sustainability, the university fosters innovation and entrepreneurship while engaging stakeholders to create meaningful impact. The proposed design should support sustainable academic performance, improving the university's ranking in terms of student satisfaction. Moreover, it should include event spaces and host different events in order to attract investors. Additionally, the design has to be sustainable, inclusive and equitable.

The secondary client involved in this initiative is the Ministry of Culture. Its aspirations transcend the scale of the building, focusing on protecting the city of Milan against the adverse effects of overtourism and the phenomenon of 'Disneyfication' in the city centre, which comes as a result of the increasing number of annual tourists. The city's character must be preserved. Therefore, a calendar booklet of events and places will be employed in order to analyse peak periods at risk for overcrowding due to events, which risks compromising accessibility for residents. By juxtaposing this data with the academic calendar of Bocconi University, the project aims to identify events that might be relocated from the city centre to the university campus. Moreover, as Milan is a city of courtyards and exclusive events, and noting that the majority of research-related events are invisible, the project seeks to enhance the visibility of these events, integrating them more into the Milanese eventscape. The anticipated outcome is to attract investment through increased visibility of events hosted at Bocconi University.

The third client engaged in the redesign proposal for the Via Roentgen building is the Min-

istry of Education, University and Research. Despite an upward trend, the employment rate of recent tertiary graduates between 20 and 34 years old is still more than 10% lower than the European average. Therefore, the Ministry of Education, University and Research aims to create new opportunities for students to get in contact with the professional environment in Milan and at Bocconi University specifically to increase their employment chances. Additionally, the concerningly high rate of psychological distress registered among university students has to be decreased in a healthy society. However, this should not significantly decrease the academic performance. Therefore, new design strategies supporting sustainable academic design will be employed in this project by utilising both strategies proposed by environmental psychology focusing on mental health and academic performance, as well as restorative design strategies proposed by the Attention Restoration Theory. Finally, the academic calendar of Milanese educational institutions has to be redeveloped to reduce the high levels of stress during exam sessions and to better integrate research events into Milan's eventscape and urban fabric.

MILAN YEARLY CALENDAR



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