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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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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 nighttime. 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.

RESEARCH FRAMEWORK

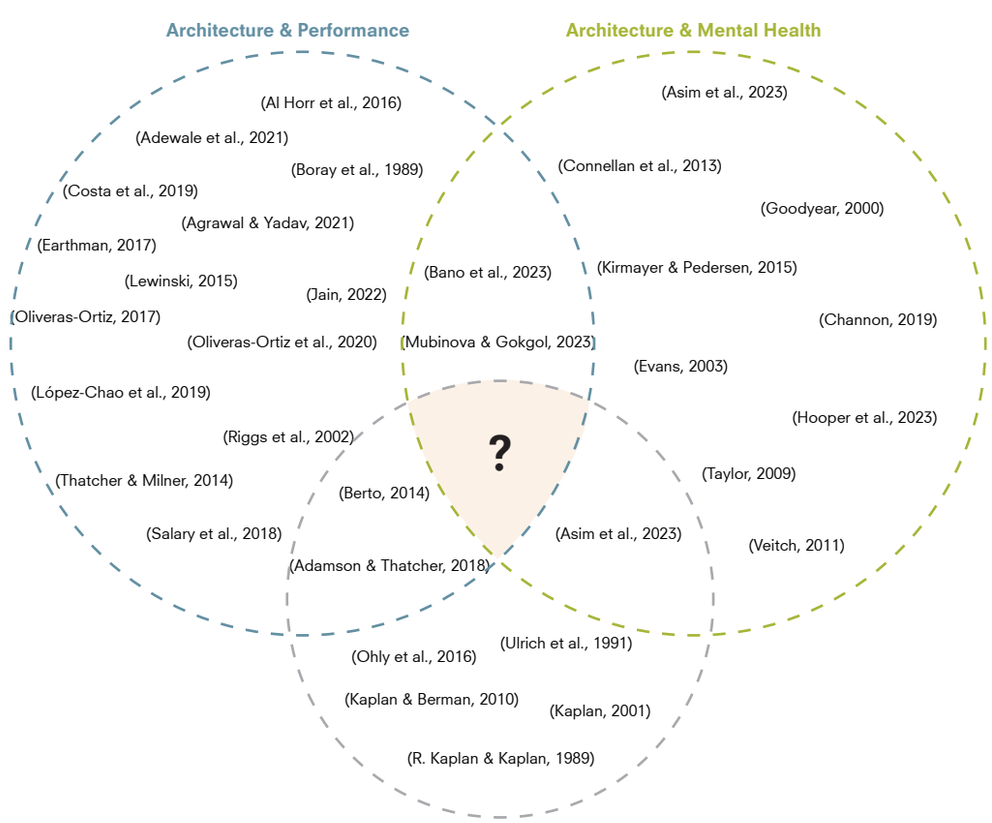

Figure 4: Research Framework diagram

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

Hyphothethical Bocconi Via Roentgen Building

Architecture & Performance

Architecture & Mental Health

Attention Restoration Theory

Architecture for neurodiversity

Architecture for neurodiversity

Collection of stories and places

Collection of stories and places

Client Requirements Design Strategy

Site, Programme & Client Requirements

Design Strategies

Design Strategies

Design Strategies

Design Strategies

User needs

User needs

General Design Strategies for Sustainable Academic Performance

Design Startegies

Design Proposal

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.**

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