Enhancing Mental Health and Learning Outcomes using Biophilic Design in Post-Secondary Educational Settings

Devika Roy

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Abstract

Biophilic design is an approach to architecture that seeks to connect building occupants more closely to nature by incorporating natural elements such as plants, daylight, water features, and organic forms into built environments. Biophilic design, which integrates elements of nature into architectural spaces, has gained recognition for its potential to enhance mental well-being and learning outcomes. This Major Research Project (MRP) investigates the impact of biophilic design elements in educational environments, focusing on classrooms libraries and study spaces within post-secondary institutions. The study is inspired by personal experiences with family members who face invisible disabilities, combined with the rise in mental health challenges during the COVID-19 lockdown, where the absence of stimulating and natural environments exacerbated issues like anxiety and depression. The study employs a mixed-methods approach, incorporating case studies, interviews, and prototype testing within an academic setting. Thematic and statistical analysis will evaluate how biophilic elements such as natural lighting, greenery, and spatial layouts, influence participants' mental well-being and academic performance. By understanding the impact of design on users' mental health, this research seeks to contribute to the growing body of knowledge in inclusive, mental-health-centred architecture. Through the practical application of these insights, the project offers recommendations for educators, architects, and policymakers, with the goal of creating more supportive, sustainable learning environments that prioritize mental well-being and inclusivity.

Keywords

Biophilic Design, Architecture, Inclusive Design, Educational Environments, Mental Well-being, Sustainable Learning Spaces, Greenery and Natural Lighting, Invisible Disabilities, Human-Centric Design

Acknowledgements

I would like to express my heartfelt gratitude to my parents. My dad, Mr. Amit Roy, despite being visually impaired, has been a constant source of strength. His emphasis on well-being and encouragement to connect with nature during tough times has profoundly influenced my life and research and my mom Mrs. Sangeeta Roy, navigating life with schizophrenia, I owe my interest in mental health advocacy. Her background in botany and love for nature have shaped my research on biophilic design and well-being.

Special thanks to my undergraduate research guide, Ar. Mansha Samreen, whose mentorship during my thesis on enhancing blind schools in India fuelled my passion for inclusive design. I am also grateful to my teachers at OCAD University: Prof. Jutta Treviranus, Bryn Ludlow, and Jess Mitchell, for creating a supportive environment in the Inclusive Design program. Their encouragement allowed me to grow and pursue a mental health-centred Major Research Project (MRP).

Lastly, I extend my deepest gratitude to my research advisor, Professor Colleen Reid. Her support and guidance have been incredibly important in shaping my Major Research Project (MRP). She provided valuable insights into architecture and design and helped me with everything from citations to formatting. I truly appreciate her patience and encouragement, as well as her belief in my work. She has made this journey not only possible but also very meaningful for me.

I dedicate this Major Research Project to the faculty, staff and students at OCAD University. Your insightful feedback and contributions through survey responses and prototype testing have been essential in shaping this work. I hope that the innovative biophilic design strategies developed through this project will benefit you in creating supportive and nurturing environments.

I also dedicate this project to my parents, whose love for nature and dedication to mental health advocacy have inspired me to pursue this path. Your influence has driven me to spread awareness and cultivate a deeper understanding of the connection between our surroundings and well-being.

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1. Introduction

1.1 Background and Context

Biophilic design, a concept introduced by Edward O. Wilson, emphasizes humanity's innate connection to nature and its critical role in promoting well-being (Wilson, 1984). In the context of educational environments, the integration of biophilic elements such as natural lighting, greenery, and spatial designs has shown potential in improving mental health and cognitive performance. This design philosophy responds to the prevalence of mental health issues among students in post-secondary institutions. For instance, in a national survey of Canadian postsecondary students using university mental health services, 95% reported being overwhelmed and exhausted, 83.7% reported anxiety, 86% were depressed, and 81% experienced loneliness (Moghimi et al.).

In recent years, the urgency to address these challenges has grown, especially with the onset of the COVID-19 pandemic. A study conducted by the Canadian Alliance of Student Associations (CASA) found that three-quarters of student respondents reported that their mental health has been negatively impacted by the COVID-19 pandemic, on par with 2021 levels (“The New Abnormal”). Prolonged isolation, limited access to outdoor spaces, and increased digital interactions have intensified mental health struggles, underscoring the need for environments that promote psychological well-being. By promoting environments that reconnect students with nature, biophilic design not only supports academic success but also enhances the overall well-being of students and staff, creating healthier and more effective learning environments (“Biophilic Landscaping in Educational Spaces”).

1.2 Personal Motivation

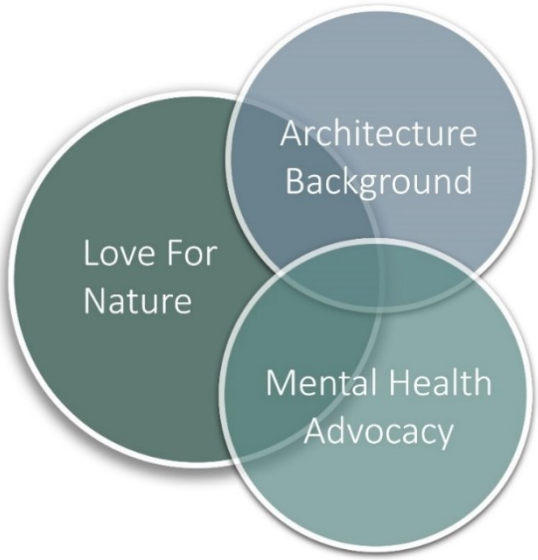

Image 1: Diagram showing 3 main reasons of personal motivation for this project. Image by the author.

This research is deeply motivated by my personal experiences with mental health challenges within my family, particularly my father, who is visually impaired, and my mother, who lives with schizophrenia. These experiences have instilled in me a strong desire to improve environments that support mental health, especially in academic settings. The COVID-19 lockdown highlighted the crucial role that well-designed spaces play in mental well-being, as many individuals experienced increased anxiety and isolation due to the lack of natural, stimulating environments.

My background in architecture, coupled with my love for nature, has further influenced my approach to this research. I believe that biophilic design, which integrates nature into architectural spaces, can promote improved mental health and enhance the learning experience in educational environments. By studying the impact of biophilic design in post-secondary institutions, I aim to contribute to the development of spaces that not only enhance academic performance but also promote emotional well-being.

1.3 Research Objectives and Hypothesis

This research explores the impact of biophilic design elements in post-secondary educational settings, focusing on how natural lighting, greenery, and spatial layouts can enhance mental health and

improve learning outcomes for students, staff, and faculty. The research will employ a mixed-methods approach, incorporating a literature review of existing studies on biophilic design, case studies of educational spaces, and prototype development.

A prototype integrating biophilic design principles will be created and tested with students, faculty, and staff. Feedback will be gathered through surveys, including both open-ended questions to gather detailed insights and demographic questions for contextualization. This process will help assess how these design features influence user experiences and perceptions, ultimately aiming to create more supportive, inclusive learning environments that prioritize mental health and well-being.

1.4 Hypothesis:

Biophilic design elements in educational spaces will positively influence mental health and enhance learning outcomes for students, staff, and faculty.

2. Literature Review

2.1 The Role of Nature in Well-being

Biophilic design integrates natural elements into built environments, creating spaces that promote psychological and physiological well-being. This design approach is particularly effective in reducing stress, enhancing mood, and improving cognitive performance, making it ideal for educational settings like schools and universities (Browning & Determan, 2024). According to a study by Browning & Determan, Image 2 illustrates how various biophilic design patterns contribute to occupant well-being and academic performance, highlighting three broad categories of patterns:

A. **Natural Elements:** These include the integration of plants, water, and natural textures. These elements can help reduce stress, lower anxiety levels, and improve focus, creating a calm and restorative environment (Browning & Determan, 2024).

B. **Views of Nature:** Providing access to views of the outdoors, such as green spaces or natural landscapes, has been shown to lower psychological stress and improve mood (Gillis &

Gatersleben, 2015). This category promotes positive emotional responses and supports mental restoration, helping occupants feel more engaged and connected to their environment.

C. **Daylight and Natural Ventilation:** Access to natural light is known to regulate circadian rhythms, which in turn enhances sleep quality and cognitive function. Additionally, natural ventilation helps improve air quality, contributing to overall well-being (Browning & Determan, 2024).

These biophilic design elements create restorative environments that support mental health, ultimately leading to better learning outcomes. By facilitating a connection to nature within educational spaces, institutions can enhance the holistic well-being of students, faculty, and staff, helping them thrive both academically and emotionally.

15 Patterns with Positive Health Outcomes

	Biophilic Pattern	Stress Reduction	Cognitive Performance	Emotion, Mood & Preference
Nature in the Space	Visual Connection with Nature	Heart rate, Blood pressure, Parasympathetic system activity	Mental engagement, Attentiveness	Attitude, Neurological rumination, Motivation, Future discounting
	Non-Visual Connection with Nature	Blood pressure, Stress hormones	Cognitive performance, Creativity	Perceived mental health, Tranquility, Pain management
	Non-Rhythmic Sensory Stimuli	Heart rate, Systolic blood pressure, Sympathetic nervous system		Dwell time, Behavioral attention and exploration
	Thermal & Airflow Variability	Comfort	Task performance, Productivity	Preceived temporal and spatial pleasure (alliesthesia)
	Presence of Water	Overall stress, Heart rate, Blood pressure	Cognitive performance, Creativity	Positive emotion, Tranquility
	Dynamic & Diffuse Light	Circadian system functioning, Visual comfort	Cognitive performance Behavioral performance	Attitude, Overall happiness
	Connection w/ Natural Systems	Overall health		Perception of environment
Natural Analogues	Biomorphic Forms & Patterns	Stress recovery	Learning outcomes	View preference
	Material Connection with Nature	Heart rate variability, Comfort, Calming, Blood pressure, Stress hormones	Task performance, Creativity	Material preference
	Complexity & Order	Perceptual and physiological stress responses	Environmental navigation, Learning outcomes, Mental relaxation	View preference
Nature of the Space	Prospect	Overall stress, Perceived safety, Comfort		Visual interest, Fatigue, Irritation, Boredom
	Refuge	Perceived safety		Visual preference
	Mystery			Pleasure response, Visual preference
	Risk/Peril			Pleasure response
	Awe	Stress related symptoms		Pro-social behavior, Attitude, Overall happiness

Image 2: Terrapin Bright Green, 15 patterns of biophilic design and associated outcomes. Image from Browning & Determan, 2024.

2.2 Existing Studies on Impact of Biophilic Design on Educational Spaces

2.2.1 Study 1: The Impact of Biophilic Learning Spaces on Student Success (CGD Architects, 2019)

A. Study 1 Aim:

The study aims to evaluate how biophilic design elements in learning environments influence student success, with a focus on cognitive, emotional, and academic performance. It emphasizes the importance of integrating natural elements into classrooms to improve well-being and engagement. Key design principles explored include *view to nature, dynamic and diffused lighting,* and *biomorphic forms and patterns.*

B. Study 1 Methodology:

The researchers transformed a regular learning space into a biophilic classroom prototype by implementing interventions across three design categories:

a) *View to Nature:* Large windows provided expansive views of greenery, while indoor plants complemented the visual connection to the outdoors.

View of the Garden at the Biophilic Classroom *Patrick Ross Photography*

Image 3: View of the Garden of the Biophilic Classroom. Image from CGD Architects, 2019.

b) *Dynamic and Diffused Lighting*: Lighting systems were calibrated to mimic the natural progression of daylight, creating an optimal learning atmosphere.

Image 4: Motorized shades with prints of trees. Image from CGD Architects, 2019.

c) *Biomorphic Forms and Patterns:* Classroom furniture, flooring, and wall designs featured organic forms and natural motifs to evoke a sense of connection to the environment.

Image 5: Biomorphic Patterns-Carpet & Wall colour and ceiling patterns. Image from CGD Architects, 2019.

Each element was measured for its impact on student behaviour, mood, and performance through pre- and post-intervention surveys, observational studies, and academic performance tracking.

C. Study 1 Results:

The study concluded that classrooms integrating biophilic design saw a significant improvement in student engagement, cognitive functioning, and overall satisfaction with their learning environment. The introduction of natural views reduced stress levels, dynamic lighting improved focus, and organic patterns

enhanced creativity. These findings underscore the transformative potential of biophilic design in creating holistic, supportive educational spaces:

a) **Stress Reduction:** Only 35% of students reported high stress in the biophilic classroom compared to 67% in the control classroom.

b) **Positive Perceptions:** Students felt “more relaxed,” “calm,” and better able to focus, enjoying math lessons more and engaging deeply.

c) **Teacher’s Experience:** Features like natural views and decluttered space reduced the teacher’s anxiety, improving her effectiveness.

d) **Academic Outcomes:** Math test scores improved three times more in the biophilic classroom, with 7.2% more students performing at grade level after seven months.

These results highlight biophilic design's ability to enhance well-being, behaviour, and academic performance.

2.2.2 Study 2: Bracing Biophilia: When Biophilic Design Promotes Pupil’s Attentional Performance, Perceived Restorativeness, and Affiliation with Nature (Barbiero et al., 2021)

A. Study 2 Aim:

This study aims to evaluate the psychological and cognitive benefits of biophilic design in educational spaces. It specifically investigates how biophilic elements like natural views and naturalistic designs can enhance students’ attentional performance, perceptions of restorativeness, and emotional connection to nature.

B. Study 2 Methodology:

The researchers implemented biophilic design elements in a classroom setting to explore their impact on students. Key interventions included:

a) **Nature Connection:** Students were provided with direct views of nature through windows and natural elements integrated into the classroom, such as plants and natural motifs in furniture and decorations.

Image 6: Creation of exploration spaces. Brown cork decoration panels with stabilised lichen inserted for tactile and olfactory exploration. Image from Barbiero et al., 2021.

b) **Restorative Features:** The classroom was designed with calming elements such as soft lighting and spatial layout that encouraged relaxation and focus.

Image 7: Details of classroom after the “requalification”. Image from Barbiero et al., 2021.

c) **Natural Materials and Colours:** The use of natural materials (wood, stone) and calming colour schemes, such as greens and earth tones, was integrated to evoke a connection to nature and promote a sense of calm.

The study employed a mixed-methods approach, utilizing surveys to assess students' perceptions of attentional performance, restorativeness, and their connection to nature, as well as objective cognitive tests to measure performance changes.

C. Study Results:

The findings highlight the significant psychological benefits of biophilic design on student performance and well-being:

a) **Attentional Performance:** Students exposed to biophilic design showed significant improvement in attentional focus compared to those in conventional classrooms.

b) **Restorative Effects:** Students reported higher levels of perceived restorativeness in the biophilic classrooms, with many students noting that the design helped them feel more relaxed and able to concentrate.

c) **Nature Affiliation:** There was a noticeable increase in students' sense of connection to nature, with many students expressing a positive emotional response to the presence of natural elements in the classroom.

d) **Teacher Perception:** Teachers also noted an improvement in student behaviour, particularly in terms of reduced restlessness and increased engagement during lessons.

These results underscore the importance of integrating nature and natural elements into classroom design to improve both cognitive performance and emotional well-being in students.

2.3 Analysis of the Studies:

The findings from the two studies on biophilic design provide significant insights that align with and strengthen the focus of my research on the impact of biophilic elements in educational settings. Study 1 (CGD Architects, 2019) demonstrates how natural elements, such as views of nature, dynamic lighting, and organic forms, contribute to improved student engagement, stress reduction, and academic performance. The significant reduction in student stress and the improvement in math test scores, along with the positive perceptions of both students and teachers, offer compelling evidence of the benefits of biophilic design. Similarly, Study 2 (Barbiero et al., 2021) explores the cognitive and emotional advantages of biophilic design, specifically focusing on attentional performance, perceived restorativeness, and affiliation with nature. These findings emphasize the restorative effects of natural elements and their ability to enhance focus and concentration. Together, these studies support the

hypothesis that biophilic design can improve student well-being and performance, reinforcing the relevance of incorporating such elements into classroom settings for my research.

3. Methods

3.1 Research Framework

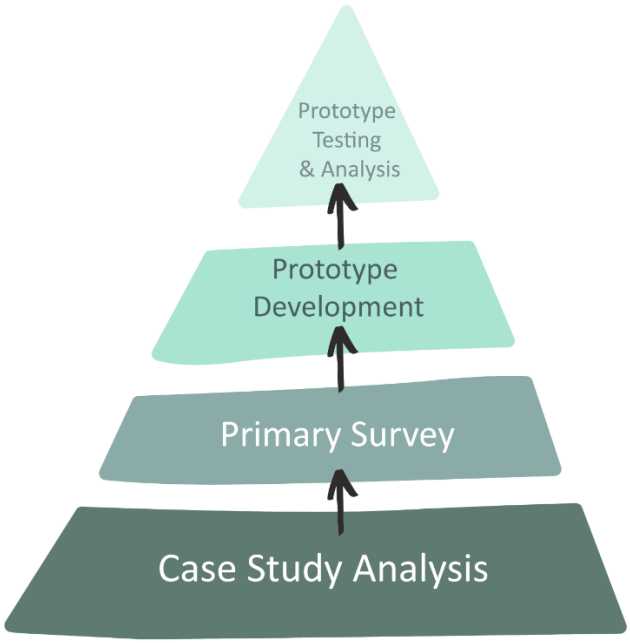

Image 8: Research Framework Diagram. Image by the author.

This research employs a comprehensive mixed-methods approach to explore the integration of biophilic design elements in educational environments, assessing their effects on mental well-being, focus, and learning outcomes. The framework is organized into four key stages:

3.1.1 Case Study Analysis

A. **Objective:** Analyse existing educational spaces incorporating biophilic design.

B. **Activities:**

   a. Visit or review virtual tours of educational settings such as libraries and classrooms.

b. Document observations through photographs and notes of biophilic design elements like natural views, dynamic lighting, and organic patterns.

C. **Duration:** Approximately 3 hours per case study.

D. **Data Analysis:** Conduct thematic analysis to identify recurring biophilic design features and assess their impact on well-being and learning.

3.1.2. Primary Survey

A. **Objective:** Gather baseline data on perceptions of biophilic design from students, staff, and faculty.

B. **Activities:**

a. Distribute a digital survey via platforms like Google Forms or SurveyMonkey.

b. Include closed and open-ended questions to explore participants' experiences and expectations of biophilic design's impact.

C. **Duration:** 15–20 minutes per respondent.

D. **Data Analysis:**

a. Perform qualitative analysis to identify themes in open-ended responses.

b. Use quantitative analysis to evaluate perceived impacts on mental well-being, focus, and academic engagement.

3.1.3 Biophilic Design Prototype Development

A. **Objective:** Develop a prototype space incorporating insights from the case studies and surveys.

B. **Activities:**

a. Transform a frequently used campus space, such as a classroom or lounge, by integrating biophilic design elements (e.g., greenery, daylighting, and natural materials).

C. **Duration:** Approximately 2–3 weeks for design and implementation.

3.1.4. Prototype Testing and Analysis

A. **Objective:** Assess the prototype's effectiveness through participant engagement.

B. **Activities:**

   a. Participants use the prototype space and complete a secondary survey detailing their experiences.

   b. Collect observational data during the prototype use.

C. **Duration:** A few hours over several days per participant.

D. **Data Analysis:**

   a. **Qualitative:** Examine feedback from survey responses and observations to evaluate user perceptions.

   b. **Quantitative:** Compare pre- and post-intervention survey data to statistically measure changes in mental well-being and learning outcomes.

This structured framework ensures a thorough investigation of biophilic design's potential to enhance educational environments, contributing valuable insights for future research and practical application in design.

3.2 Case Studies

3.2.1 Live Case Studies:

A. Case Study 1: The Sheldon & Tracy Levy Student Learning Centre (SLC) at Toronto Metropolitan University

The Sheldon & Tracy Levy Student Learning Centre (SLC) at Toronto Metropolitan University, designed by Snøhetta and Zeidler Partnership Architects, is an eight-story, 155,000-square-foot modern facility. Located at the prominent intersection of Yonge and Gould Streets, it serves as a dynamic hub for student activities, learning, and creativity. The exterior's angular glass façade is visually striking, with intricate geometric patterns that reflect Toronto's vibrant cityscape. Internally, the thematic floors cater to

different activities, including quiet study, collaborative spaces, and informal gathering zones (*Sheldon & Tracy Levy Student Learning Centre*).

A.1 Biophilic Design Features

a) Natural Light and Visual Connectivity:

- The glass façade allows for abundant natural light, reducing artificial lighting use and enhancing well-being.
- Expansive windows offer panoramic views of the city, creating a direct connection to the outdoors.

Image 9: Expansive windows offering panoramic views at the SLC. Image by the author.

b) Thematic Floors Reflecting Nature:

- Each floor incorporates nature-inspired themes, such as the garden, sky, and beach, represented through colour palettes in shades of green, blue, and yellow.
- Walls and furniture adopt these tones, cultivating an immersive environment aligned with biophilic principles.

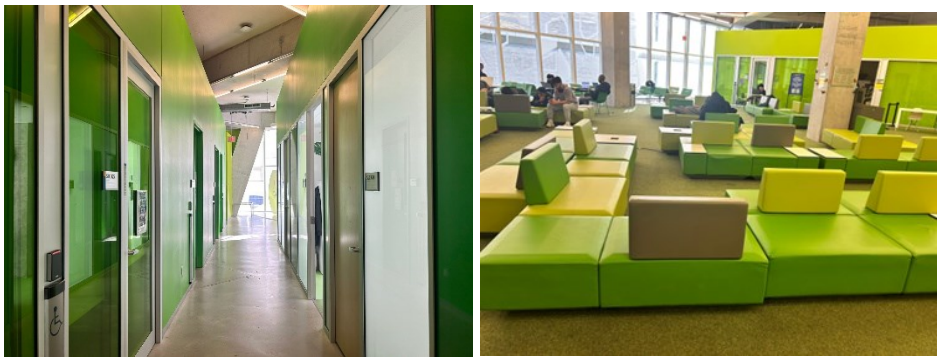

Image 10: 4th floor at the SLC adopted shades of green to represent "The Garden" theme for the respective floor. Image by the author.

c) Personification of Indoor Plants:

- Indoor plants are given names like *Walter*, *Ben*, *Pita*, *Vanilla*, and *Jerry*. This practice of naming plants personifies them, reflecting care and nurturing, which can enhance emotional connection to nature.

Image 11: Personification of indoor plants. Image by the author.

d) Views and Sunlit Seating:

- Strategically placed seating directly faces the large wall-sized windows, offering opportunities for students to relax and enjoy urban views.
- Sun shading devices minimize glare and reflect playful patterns within the interiors.

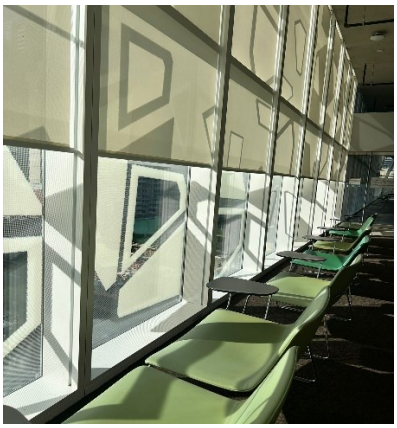

Image 12: Sun shading devices minimizing glare and creating playful patterns using shadows. Image by the author.

e) Artwork and Textural Elements:

- The staircase shaft/well features intricate chalk drawings depicting natural elements, adding artistic and organic touches that invite exploration and interaction.
- Exposed concrete columns, ceilings, and walls of stone bricks bring raw, natural textures into the built environment, reinforcing a connection to earth elements.

Image 13: Intricate chalk drawings depicting natural elements. Image by the author.

Image 14: Exposed walls made of stone bricks and natural textures. Image by the author.

f) Use of Natural Materials:

- Wooden panels are integrated into furniture and ceiling designs, offering warmth and enhancing the tactile experience.
- Furniture and surfaces celebrate natural patterns and grains, adding to the sensory connection with nature.

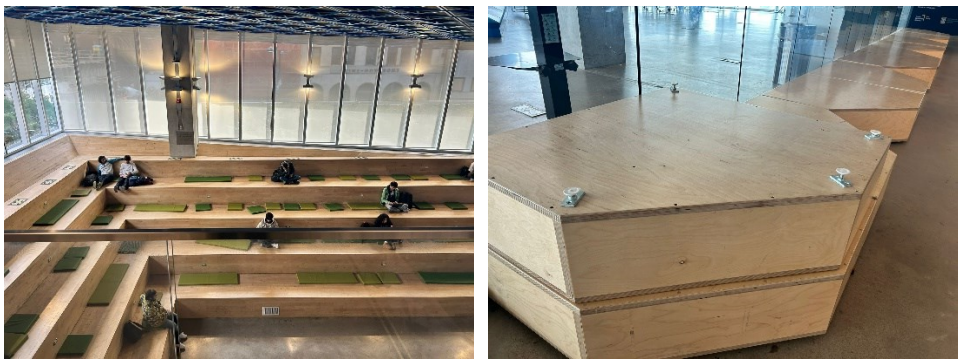

Image 15: Interactive furniture made of wood. Images by the author.

g) Indirect Biophilic Influences:

- Framed images and photographs of vegetation, plants, and flowers are displayed throughout the building, serving as an indirect reference to nature. This visual stimulation is known to evoke biophilic responses, positively impacting focus and relaxation.

Image 16: Framed images of plants. Image by the author.

By integrating these features, the SLC exemplifies a holistic biophilic design approach, combining direct and indirect connections to nature, organic materials, and community-focused design to enhance mental well-being, creativity, and learning outcomes. These practices align with the goals of creating inclusive, engaging, and supportive educational spaces.

B. Case Study 2: Toronto Public Library-Fort York Branch, Toronto

The Fort York Branch Library in Toronto, designed by KPMB Architects, represents a striking fusion of modern architectural principles and the historical context of the Fort York area. The building's form is inspired by the nearby fort's ramparts, offering a modern, trapezoidal structure that connects with both the site's past and its present-day urban surroundings. It serves as an important cultural space, providing a community hub and a place for both education and engagement with the area's heritage (“Fort York Branch Library / KPMB Architects”).

B.1 Biophilic Design Features

a) **Natural Surroundings**: The library is surrounded by lush greenery, with numerous trees and planters adorned with pebbles, offering a natural and calming environment. Natural green walls and permeable floor paver tiles enhance the connection between the built environment and nature, promoting biodiversity and a sustainable ecosystem while encouraging a restorative experience for visitors.

Image 17: Planters and green walls surrounding the library building. Images by the author.

b) **Wooden Elements**: The use of wood is a prominent feature within the building, seen in the ceilings made of wooden panels and the staircase constructed entirely from wooden materials, including stringers, soffits, and railings. The use of wood connects the interior to nature by creating an organic, tactile experience and reinforcing a sense of warmth and comfort in the space.

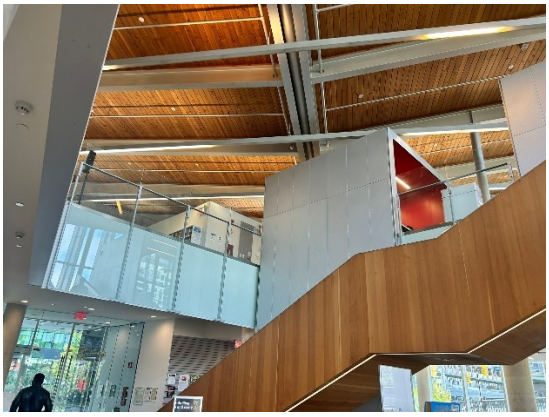

Image 18: Use of wood as a prominent material for the interiors of the library building. Image by the author.

c) **Maximized Daylight and Sun Shading**: The library features massive windows that bring in an abundance of natural light, which is key for both sustainability and biophilic design. To mitigate glare and enhance user comfort, the windows are equipped with vertical perforated sun-shading louvres. These elements help reduce the building's energy consumption by minimizing the need for artificial lighting, while also enhancing occupants' well-being by ensuring optimal daylight exposure and providing a dynamic visual connection to the outside.

Image 19: Use of massive windows for connection with nature and outside seating made of natural materials like concrete. Images by the author.

By combining these features, the Fort York Branch Library creates an environment that not only supports the community's educational needs but also promotes mental well-being, sustainability, and a deep connection to nature and history. Through thoughtful biophilic design interventions, the library serves as a model for how modern architecture can integrate natural elements to enhance the experience of those who use the space.

C. Case Study 3: The Instructional Centre at the University of Toronto Mississauga (UTM)

The Instructional Centre at University of Toronto Mississauga (UTM), designed by Perkins + Will, is an innovative academic facility that encourages collaborative learning. With a focus on creating flexible, interactive spaces, the building integrates biophilic design elements to foster both physical and mental well-being while promoting sustainability (“University of Toronto Instructional Centre / Perkins+Will”).

C.1 Biophilic Design Features and Practices

a) **Natural Views and Orientation**: The building strategically places seating areas facing large windows that provide expansive views of the surrounding greenery, enhancing occupants' connection to nature. Additionally, some seating areas directly face the building's green roof through massive glass walls, allowing occupants to enjoy the soothing presence of greenery indoors and outdoors.

Image 20: Seating areas directly facing massive windows connecting with outside nature and the building's green roof. Images by the author.

b) **Dedicated Reflection Space**: A designated reflection space offers an environment for meditation or personal reflection. This space is separated by partition screens adorned with patterns inspired by green leaves, promoting tranquillity and mindfulness. The design of this space supports mental well-being by encouraging quiet, restorative activities without the distraction of food or noise.

Image 21: Designated reflective space with interactive seating, views of nature and use of biophilic patterns. Images by the author.

c) **Use of Natural Materials**: Many elements of the building's interior, such as tables, seats, ceilings, and doors, are constructed with wooden panels, enhancing the tactile experience of nature inside the building. The wood surfaces contribute to a warm and calming atmosphere while maintaining a sustainable and natural aesthetic.

Image 22: Wood used as a prominent material inside the building. Images by the author.

c) **Nature-Inspired Lighting**: The hanging lamps in the building feature patterns reminiscent of stones, reinforcing the biophilic theme and connecting the occupants with natural elements even in their lighting fixtures. These lamps provide a subtle, organic touch that aligns with the overall design philosophy.

Image 23: Nature pattern inspired lamp. Image by the author.

d) **Copper Panels with Earthy Tones**: Some of the exterior and interior wall finishes incorporate pre-painted copper panels painted in a rugged sea green colour. This subtle colour palette evokes the feeling of being in a natural environment, like near the ocean, reinforcing the building's biophilic connection to the outdoors.

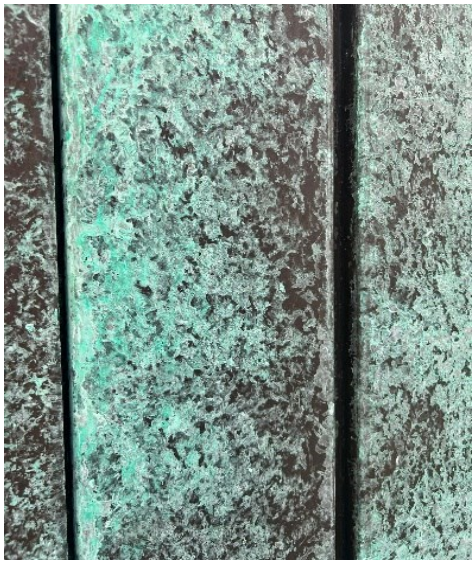

Image 24: Wall finishes with natural-earthy tones. Image by the author.

e) **Strategic Plant Placement**: The building's surroundings are enhanced by the thoughtful placement of plants like florist's chrysanthemums, cabbage palms, and New Guinea impatiens, which are positioned on natural rock benches outside. This design choice not only contributes to the aesthetics of the space but also supports biodiversity and improves air quality.

Image 25: Plants like florist's chrysanthemums, cabbage palms, and New Guinea impatiens, are positioned on natural rock benches outside. Images by the author.

These biophilic features, combined with a focus on natural light, materials, and sustainability, create a building environment that enhances the well-being of its occupants and promotes a deep

connection to nature. The Instructional Centre serves as a model for integrating biophilic design into educational spaces, supporting the physical, mental, and cognitive health of students, staff, and faculty.

3.3 Case Study Analysis

During the case study site visits, several common biophilic design features were identified:

a) **Green Walls and Indoor Plants:** Educational spaces incorporated green walls with potted plants or vines, creating a calming environment and improving indoor air quality. Greenery was commonly placed near seating areas to promote relaxation and reduce stress.

b) **Natural Materials:** Spaces with wooden furniture and textured rugs provided a warm and comfortable atmosphere, creating a welcoming and inclusive learning environment.

c) **Water Features:** Areas with small water elements, such as fountains or aquariums, introduced a sense of tranquillity and helped reduce mental fatigue.

d) **Flexible Seating Areas:** Comfortable seating arrangements, such as wooden chairs paired with soft-textured rugs, created inviting spaces that encouraged interaction and collaboration.

e) **Use of Natural Light:** Spaces that maximized natural light through large windows contributed to improved mood and productivity.

These observations informed the design choices for the biophilic prototype space, ensuring that the selected elements aligned with proven approaches to enhancing mental well-being and learning outcomes.

3.4 Procurement Planning

Procurement planning for this project involves budgeting and acquiring materials to create a biophilic prototype space within the campus. The total budget for procurement is $850, received from the OCAD University MRP funds. The purchases were planned based on insights from case studies, ensuring that selected elements promote well-being and align with biophilic design principles. Additionally, due to the high cost of low-maintenance plants such as ZZ plants, snake plants, or rubber plants, some OCAD campus plants will be relocated for use in the prototype with faculty permission.

3.4.1 Budget Allocation:

A. Prototype Development Budget ($780):

a) **Comfy Seating Area with Natural Elements ($280):** Two wooden chairs and a textured natural-fibre rug to create a warm, inviting space inspired by case study findings on natural materials enhancing comfort.

b) **DIY Water Tank with Plants, Sand, and Pebbles ($80):** A small water feature to evoke tranquillity.

c) **Wooden Fence for a Small Green Wall ($100):** A natural vertical element to promote air quality and aesthetics.

d) **Column Redesign with Greenery ($40):** A decorative column with green vines to bring nature into the space.

e) **Artificial Green Vines/Garlands ($50):** For creating a cohesive, plant-rich environment with low maintenance.

f) **Real Potted Plants ($160):** Utilize plants requiring low maintenance e.g., snake plants, ZZ plants or rubber plants.

g) **Small Canvas Paintings ($20):** Paintings depicting natural elements, inspired by case studies, to evoke a sense of nature and enhance the prototype space.

h) **Adhesives and Supplies ($50):** Rug fitters, hooks, and painter's tape for securing design elements.

B. Survey and Travel Expenses ($80):

a) **Survey Prints ($60):** Printing costs for pre- and post-intervention surveys to collect participant feedback.

b) **Travel ($20):** Public transit costs for GTA case study visits.

3.4.2 Procurement Strategy:

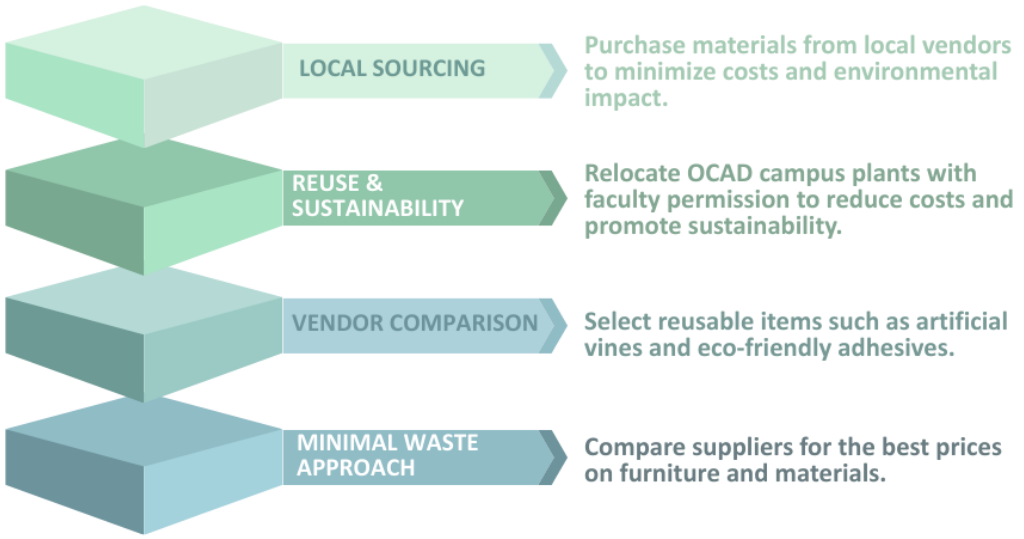

Image 26: Procurement Strategy Diagram. Image by the author.

a) **Local Sourcing:** Purchase materials from local vendors to minimize costs and environmental impact.

b) **Reuse and Sustainability:** Relocate OCAD campus plants with faculty permission to reduce costs and promote sustainability.

c) **Vendor Comparison:** Compare suppliers for the best prices on furniture and materials.

d) **Minimal Waste Approach:** Select reusable items such as artificial vines and eco-friendly adhesives.

This procurement plan outlines a strategic and efficient use of the $850 MRP fund, ensuring that every element contributes meaningfully to the creation of a biophilic space that aligns with my research goals.

3.5 Participant Recruitment

Participant recruitment for this study would be conducted following the guidelines outlined in the approved Research Ethics Board (REB) application. The recruitment process aims to reach a diverse group of participants from the OCAD University community while ensuring accessibility, inclusivity, and ethical engagement.

3.5.1 Target Participants and Sample Size:

The study would involve approximately **20 to 40 participants**, including students, staff, and faculty from OCAD University. This sample size is considered appropriate for gathering both qualitative and quantitative data to analyse how biophilic design elements affect mental well-being and learning outcomes. Although the group size is relatively small, it is suitable for collecting detailed and meaningful feedback from participants.

3.5.2 Participant Eligibility and Criteria:

a) **Inclusion Criteria:** Participants must be **18 years or older** and affiliated with OCAD University as students, staff, or faculty. The study is open to individuals with both **visible and invisible disabilities** to ensure a broad range of perspectives.

b) **Exclusion Criteria:** Individuals under the age of 18 would not be included, as the research focuses on post-secondary educational settings within the OCAD University campus.

3.5.3 Recruitment Strategies:

To ensure broad visibility and accessibility, a combination of digital, print, and in-person methods would be used to reach potential participants. These strategies are designed to engage a diverse group within the campus community:

a) **Posters and Flyers:** posters and flyers would be displayed on campus bulletin boards and in high-traffic areas such as student lounges, academic buildings, libraries, and cafeterias. These materials would include details about the study, eligibility criteria, and participation instructions.

b) **Direct Email Invitations:** Emails would be sent to students, staff, and faculty through OCAD University's official mailing lists. The emails would include information about the study, the consent process, and a link to the survey for participation.

c) **Social media and Online Platforms:** Digital flyers would be shared through OCAD University's official social media channels (e.g., Instagram, Facebook) to extend outreach within the university community.

d) **In-Person Outreach:** I would distribute flyers in person and invite individuals directly to participate, especially in areas near the prototype space or other common gathering spots on campus.

3.5.4 Screening and Consent Process:

Participants would self-screen through a digital consent form, which outlines eligibility criteria, including age and OCAD University affiliation. The primary survey would include eligibility questions to confirm participants meet these requirements, ensuring that only those who qualify proceed. Informed consent would be obtained digitally through the survey platform, where participants must review and agree to the terms before participating in the study. This process ensures transparency, protects participant rights, and maintains ethical standards throughout the research. This recruitment plan is designed to be inclusive, accessible, and transparent, ensuring that participants clearly understand the purpose of the study and their role in contributing valuable insights.

3.6 Survey Methodology

3.6.1 Survey Overview:

The survey process consists of two phases: the **Primary Survey (Pre-Prototype Survey)** and the **Secondary Survey (Post-Prototype Feedback Survey).** Both surveys aim to gather insights on participants' experiences, perceptions, and expectations regarding mental well-being, biophilic design, and the impact of the prototype space. Each survey includes a **consent section** at the beginning, ensuring participants are informed about the study, their rights, and how their responses will be used before proceeding.

3.6.2 Primary Survey: Pre-Prototype Survey

The primary survey is designed to explore participants' experiences with mental health, their awareness of biophilic design, and their expectations for a nature-inspired space on campus. It also aims to raise awareness about the connection between natural environments and well-being, particularly considering the mental health challenges many experienced during the COVID-19 lockdown. The feedback collected will directly inform the design of the prototype space.

A. Focus Areas:

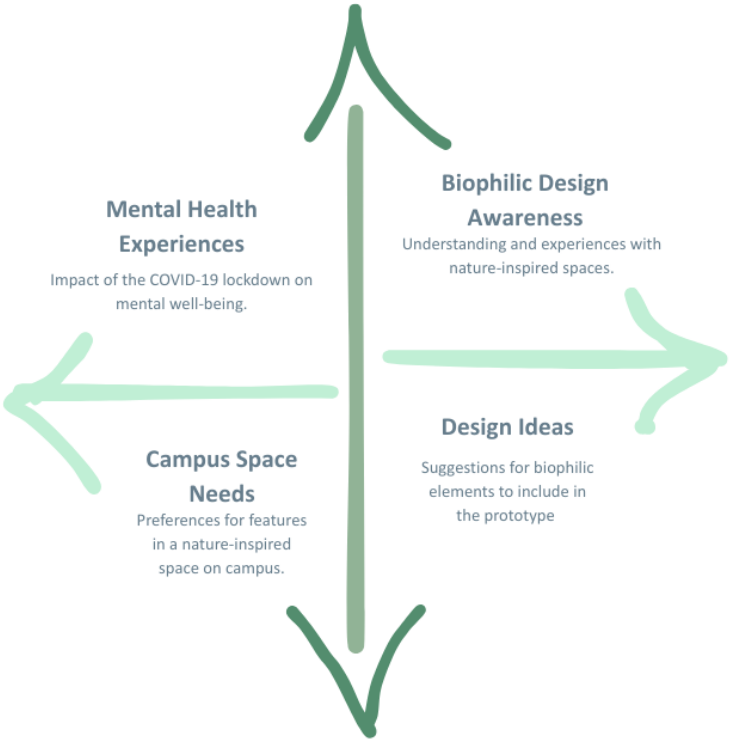

Image 27: Diagram depicting focus areas of conducted Survey. Image by the author.

a) **Mental Health Experiences:** Impact of the COVID-19 lockdown on mental well-being.

b) **Biophilic Design Awareness:** Understanding and experiences with nature-inspired spaces.

c) **Campus Space Needs:** Preferences for features in a nature-inspired space on campus.

d) **Design Ideas:** Suggestions for biophilic elements to include in the prototype (e.g., plants, seating, or lighting).

e) **Target Audience:** OCAD University students, staff, and faculty.

f) **Format:** Multiple-choice, Likert Scale and open-ended questions.

3.6.3 Secondary Survey: Post-Prototype Feedback Survey

The secondary survey is a **user feedback survey**, conducted after participants have experienced the biophilic prototype space. It aims to assess the space's effectiveness in supporting mental well-being and learning outcomes while gathering suggestions for improvement.

A. Focus Areas:

a) **User Experience:** Overall experience while using the space.

b) **Impact on Well-being:** Whether the space helped reduce stress or improve mood in any way.

c) **Biophilic Design Feedback:** Opinions on the design elements, such as plants, waterscape, and seating.

d) **Suggestions for Improvement:** Ideas to enhance the space further.

e) **Target Audience:** Participants who used the biophilic prototype space.

Format: Multiple-choice, Likert scale and open-ended questions.

3.6.4 Consent Process:

Both surveys include a **mandatory consent section** at the beginning, explaining the purpose of the study, participant rights, and how their responses will be used. Participants must agree to the terms before proceeding with the survey. This survey process aims to collect valuable insights while promoting awareness of biophilic design and its impact on mental well-being. The results will directly inform the analysis and contribute to improving the prototype space.

3.7 Primary Survey Analysis

3.7.1 Introduction

To assess the role of biophilic design in educational environments, a primary survey was conducted among OCAD University students, staff, and alumni. The survey aimed to identify learning environment preferences, mental health challenges, experiences with biophilic design, and evaluations of MCA-101—the prototype location for this study. A total of 30 responses were recorded, providing quantitative and qualitative insights into the effectiveness of biophilic elements in supporting mental well-being and learning. The findings from this survey form the foundation for the design interventions proposed for MCA-101.

3.7.2 Participant Demographics

The survey included a diverse group of respondents, mainly composed of graduate students, and represented different educational and professional backgrounds.

Table 1: Demographic Breakdown for primary survey.

CATEGORY	SUB-CATEGORY	PERCENTAGE
Age Group	18-20	3.33%
	20-29	70.00%
	30-39	20.00%
	40-49	6.67%
Gender	Female	66.67%
	Male	30.00%
	Non-Binary	3.33%
Affiliation With OCAD	Graduate Student	67.86%
	Undergraduate Student	17.86%
	Staff	3.57%
	Alumni	14.29%

3.7.3 Survey responses

A. Learning Environment Preferences: The survey results show a strong preference for biophilic learning environments, with 60% of participants favouring spaces that include natural daylight, greenery, and flexible furniture. An additional 30% preferred natural elements complemented by water features, while only a small portion i.e. 10% of respondents preferred artificial lighting and conventional classroom setups.

B. Mental Health, Disabilities, and COVID-19 Impact:

a) The survey revealed a high prevalence of stress, anxiety, and depression among participants, reinforcing the need for supportive educational spaces. Mental Health Conditions Percentage: Anxiety 60.71%, Stress 57.14%, Depression 42.86%, ADHD 28.57%, PTSD 14.29%.

b) Disability Identification Percentage: Invisible Disability 39.29%, Visible Disability 10.71%, No Disability 50.00%.

c) COVID-19 Impact Percentage: Increased isolation or loneliness 50%, Struggled with remote learning 35.71%, Accessed mental health support 17.86%.

C. Awareness and Impact of Biophilic Design:

Participants were asked about their knowledge and experience with biophilic design and its impact on their focus and well-being.

a) Biophilic Design Awareness Percentage: Indoor plants/green walls 92.86%, Natural lighting 82.14%, Water features 67.86%.

b) Experience with Biophilic Design Percentage: Studied/worked in biophilic spaces 89.29%, Found biophilic spaces beneficial for focus and mood 78.57%, Consider biophilic design extremely important 53.57%.

D. Evaluation of MCA-101 and Suggested Improvements:

Participants were asked to assess MCA-101, the designated space for the biophilic prototype, in terms of its current design, accessibility, and effectiveness in supporting mental well-being.

a) Rating Biophilic Elements in MCA-101: Poor 39.29%, Fair 28.57%, Excellent 3.57%.

b) Mental Well-Being/mood impact percentage in MCA-101: Felt neutral about mood 46.43%, Felt stressed or anxious 7.14%, Found space moderately beneficial 46.43%.

c) Suggested Improvements for MCA-101: More furniture types 57.14%, Change in furniture layout 53.57%, More natural materials 35.71%, Inclusion of water features 21.43%.

E. Key Takeaways and Design Implications:

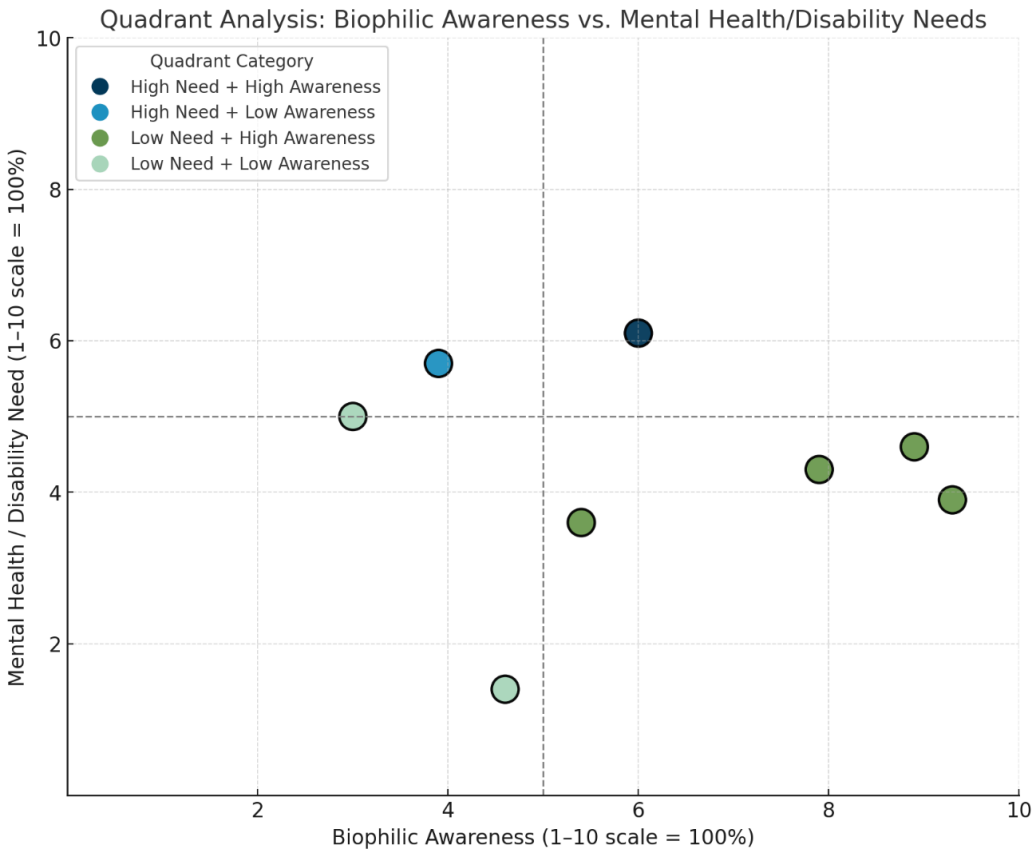

Image 28: Participant Grouping by Mental Health Needs and Biophilic Awareness. Awareness gaps among high-need individuals highlight the importance of targeted interventions like MCA-101. Image by the author.

The survey findings, supported by the quadrant scatter plot (Image 28), highlight a strong opportunity for a biophilic intervention in MCA-101. Participants expressed clear preferences for greenery and flexible furniture, which are currently lacking in the space. Mental health challenges like anxiety, stress, and depression were widely reported, especially among graduate students and women. While biophilic design is valued, the quadrant analysis revealed a gap—many participants with high mental health needs remain in the low awareness group, missing out on potential benefits.

The proposed intervention addresses this by introducing:

- Indoor greenery
- Flexible, user-responsive furniture layouts

This design aims to shift more individuals into the “high awareness” quadrant, ensuring those who need support the most can access and benefit from biophilic elements. MCA-101 thus becomes a scalable model for improving mental well-being through inclusive spatial design.

3.7.4 Verbatim Response Analysis

Image 29: Illustration showing how empathy and biophilic design together nurture mental well-being, symbolizing growth through nature and human connection—reflecting key insights from participant responses. Image by the author.

To supplement the quantitative analysis, verbatim responses were collected from participants and analysed thematically. These responses provide deeper insights into the experiences of individuals regarding mental health, biophilic awareness, and the impact of the lockdown.

A. Mental Health Awareness & Gender Trends: Women provided a higher percentage of qualitative responses on mental health challenges, particularly anxiety and stress.

a) *"During the lockdown, I felt extremely isolated, and being indoors all the time worsened my anxiety."* - [Pseudonym: Sarah, 25, Graduate Student]

b) *"Natural spaces help me calm down, especially when I feel overwhelmed by coursework and deadlines."* - [Pseudonym: Aisha, 28, Graduate Student]

c) *"I think universities underestimate how much stress students go through. Having greenery around makes me feel like I can breathe again."* - [Pseudonym: Mia, 32, Alumni]

B. Lockdown Experiences & Biophilic Design Necessity: Participants across age groups reflected on the challenges of remote learning and isolation.

a) *"Studying in a tiny apartment during COVID made me feel caged. I realized how much I needed nature to focus."* - [Pseudonym: Daniel, 30, Alumni]

b) *"Remote learning was unbearable. The lack of outdoor exposure affected my motivation."* - [Pseudonym: Jason, 22, Undergraduate Student]

c) *"After COVID, I appreciate any space with greenery—it instantly makes me feel more relaxed and connected."* - [Pseudonym: Emma, 35, Staff]

C. Age-Related Insights: Participants aged 20-29 reported the highest levels of stress and a stronger preference for biophilic design interventions.

a) *"I never realized how much I needed plants and sunlight until I had to study from home in a dark room for months."* - [Pseudonym: Kevin, 27, Graduate Student]

b) *"Younger students might not notice, but as you get older, you really feel the effects of a bad environment on your mental health."* - [Pseudonym: James, 40, Staff]

These responses reinforce the need for biophilic interventions in learning spaces, particularly in the post-pandemic context where mental health and environmental design are closely interlinked.

4. Prototype Development

4.1 Introduction

The development of the biophilic prototype stems directly from the insights gathered through both the primary and secondary surveys, along with a theoretical foundation grounded in inclusive and

sustainable design. The prototype aims to address the pressing mental health needs of students, staff, and faculty by creating a nature-inspired space within the OCAD University campus—specifically MCA-101.

This initiative responds to the strong participant feedback highlighting the importance of daylight, greenery, flexible furniture, and calming environmental elements. Mental health challenges exacerbated by the COVID-19 pandemic—such as stress, anxiety, and isolation—were prevalent themes in both the quantitative and qualitative findings. The design also aligns with the OCAD Facilities Accessibility Design Standards (FADS), ensuring that the space is accessible, safe, and respectful of institutional guidelines. The prototype is a temporary spatial transformation intended to demonstrate the impact of biophilic design on mental well-being in academic settings. It will be fully dismantled, and the space restored after the user testing and feedback period.

4.2 Development Phase

The design of the prototype space translates the survey insights and theoretical principles into a functional, aesthetically calming biophilic environment. Drafted in AutoCAD, the proposed layout strategically integrates natural elements while maintaining circulation flow, visual openness, and compliance with OCAD's safety and accessibility policies.

4.2.1 Key components of the prototype:

a) A **seating area** with two wooden chairs and a small side table, positioned for informal use and rest.

b) A **series of canvas sheets** mounted behind the seating area, painted with **natural elements like flowers**, to evoke feelings of connection to nature.

c) A **green wall**, self-supported and independent of any structural surfaces, featuring layered artificial greenery and a wooden sign reading *"Biophilic Zone."*

d) A **transformed column** wrapped in greenery using non-damaging methods like painter's tape and foam board backing.

e) A **small decorative water tank** with artificial aquatic elements (e.g., coral, sand, and plants), providing visual and sensory engagement.

f) A **natural-toned rug** with a safe, non-slip backing and cushioned support to enhance comfort and warmth.

All materials used are lightweight, removable, and suitable for public environments. The layout avoids obstructing exits, signage, switches, or lighting, and adheres strictly to FADS clearance guidelines. The images below represent the AutoCAD drawing of the proposed layout of the prototype, and the actual photographs of the elements after the prototype was fully installed.

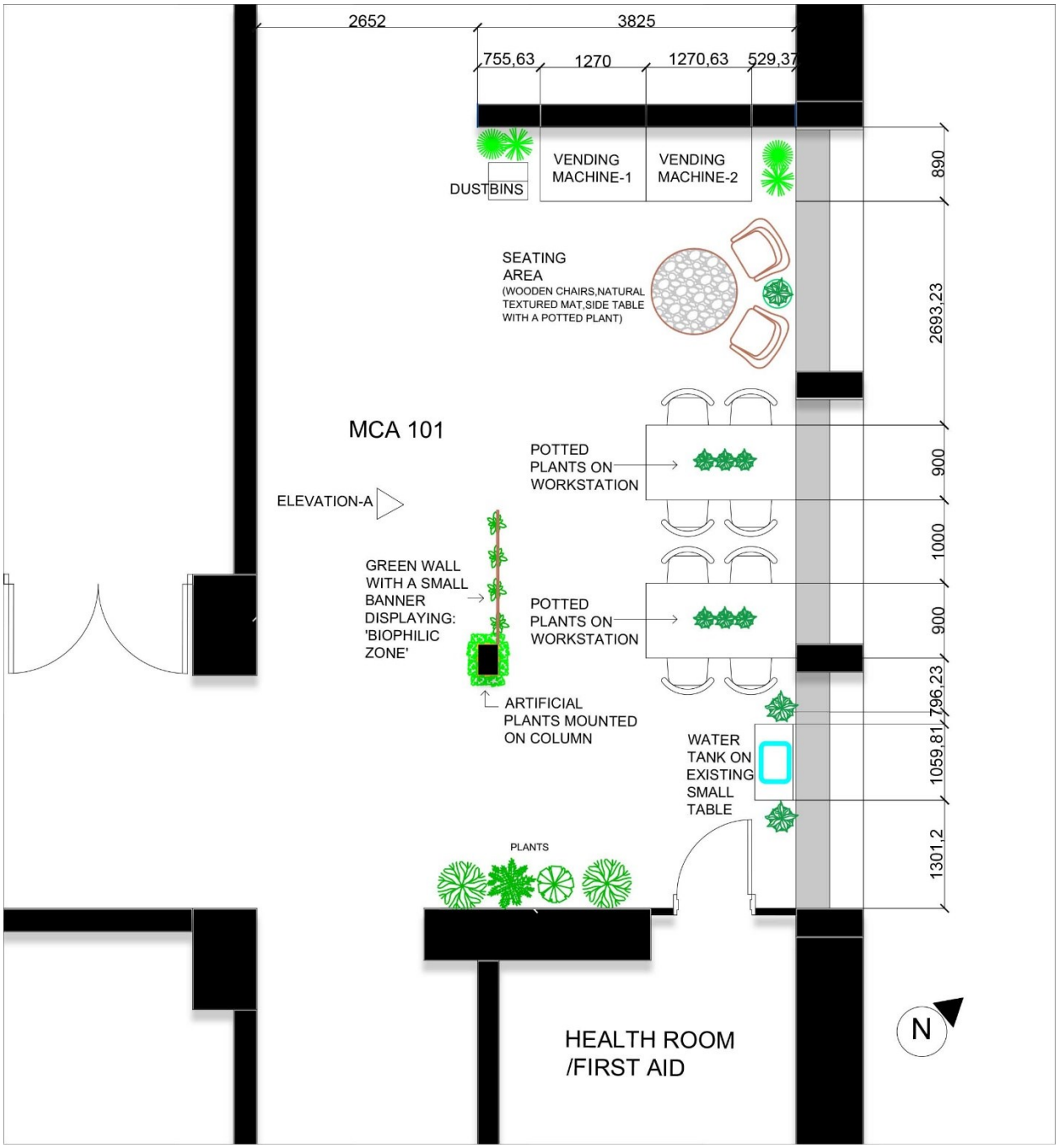

Image 30: Prototype proposal layout drafted on AutoCAD and rendered on Photoshop. Image by the author.

Image 31: Green Wall and Seating Area. Images by the author.

Image 32: Placement of potted snake plant and Water Tank. Images by the author.

4.3 Secondary Survey Analysis

4.3.1 Introduction

To further evaluate the effectiveness of biophilic design interventions implemented in MCA-101, a secondary survey was conducted among OCAD University students, staff, and alumni. The survey focused on assessing changes in perceptions of mental well-being, mood, and productivity post-intervention. A total of 21 responses were collected, offering detailed quantitative and qualitative insights into the redesigned biophilic space (see Appendix B.1 for survey questions).

4.3.2 Participant Demographics

Participants represented diverse demographics, predominantly graduate students and individuals aged 20-29.

Table 2: Demographic Breakdown for Secondary survey.

CATEGORY	SUB-CATEGORY	PERCENTAGE
Age Group	18-20	9.52%
	20-29	71.43%
	30-39	14.29%
	40-49	4.76%
Gender	Female	76.19%
	Male	14.29%
	Non-Binary	9.52%
Affiliation With OCAD	Graduate Student	52.38%
	Undergraduate Student	28.57%
	Staff	4.76%
	Alumni	9.52%
	Other (Part-time Janitor)	4.76%

4.3.3 Survey Responses

A. Mental Health, Disabilities, and Workspace Utilization: The survey indicated prevalent mental health issues, with stress (76.19%), depression (71.43%), anxiety (57.14%), and ADHD (42.86%) being the most common conditions reported. Nearly half (47.62%) of respondents identified as having an invisible disability. Regular weekly and monthly usage of MCA-101 was common (38.1% each).

B. Evaluation of MCA-101 Redesign: Respondents rated the atmosphere of MCA-101 significantly higher post-redesign, with most ratings (42.86%) at 8 out of 10, compared to pre-redesign ratings that predominantly ranged from 4 to 6. Biophilic elements noticed prominently included indoor plants (71.43%), natural light, water features, and living walls (28.57% each).

C. Effectiveness of Biophilic Elements: Most participants rated biophilic elements highly effective (ratings of 8 or higher accounted for 66.67%). Respondents reported improved moods after using the redesigned space, with 28.57% rating their mood improvement as a perfect 10. Additionally, 90.48% felt the redesigned space significantly enhanced their mental well-being compared to the previous setup.

D. Focus and Preference: Participants reported improved concentration in the redesigned space, with 57.14% indicating their focus was "better." An overwhelming 80.95% expressed a strong preference for regularly studying or working in biophilically designed environments.

4.3.4 Quadrant Analysis of the Survey Responses

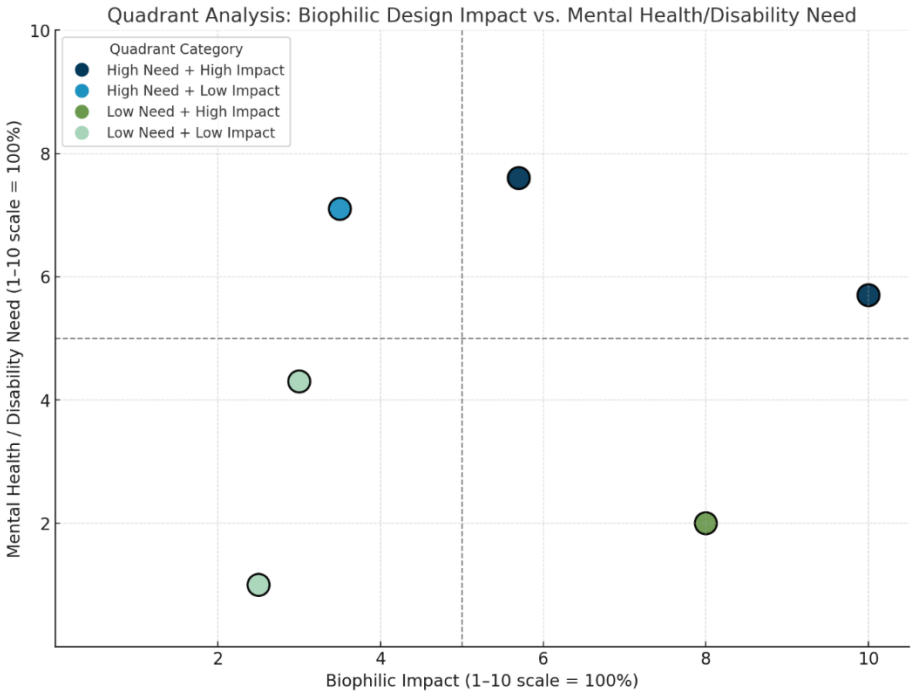

Image 33: Mental Health Needs vs. Biophilic Impact in MCA-101. Most high-need participants reported strong positive outcomes, supporting the intervention's effectiveness. Image by the author.

The quadrant analysis maps participants' mental health or disability needs against the perceived impact of the MCA-101 redesign. Most high-need participants reported strong positive outcomes, reinforcing the effectiveness of biophilic design elements in supporting well-being.

A smaller group with high needs experienced lower impact, suggesting that while the redesign was broadly successful, future iterations could further address diverse emotional and accessibility needs. This analysis highlights the value of biophilic spaces while pointing toward opportunities for more inclusive, adaptive design.

4.3.5 Verbatim Response Analysis

Qualitative feedback reinforced quantitative findings, highlighting strong appreciation for biophilic elements, especially indoor plants and green walls. Notable insights included:

A. Positive Impact on Mental Health:

a) "The presence of plants enhances the study environment, fostering greater concentration and focus." – (Pseudonym: Maya, 28, Product Designer)

b) "The biophilic design additions help in reducing stress levels while reading." – (Pseudonym: Arjun, 29, Designer)

c) "Being in contact with nature features makes me feel at home." – (Pseudonym: Sofia, 26, Industrial Designer)

B. Design Appreciation:

a) "The plants!!! I love the inclusion of greenery; it really adds comfort and relaxation." – (Pseudonym: Oliver, 27, Artist)

b) "The column with wood feature and leaf decorations looks pretty. The wooden chairs are comfortable and look good." – (Pseudonym: Priya, 32, Teaching Assistant)

c) "It's more welcoming after redesigning." – (Pseudonym: Aditi, 25, Architect)

C. Areas for Improvement:

a) "Can have more sunlight; tables need more space." – (Pseudonym: Julia, 42, Cleaning and Maintenance)

b) "Could have more plants." – (Pseudonym: Jamie, 28, Designer)

c) "It does feel a little busy visually, but I still find that within acceptable amounts." – (Pseudonym: Alex, 27, Artist)

D. Key Takeaways and Future Recommendations:

a) The redesigned MCA-101 appeared to positively influence mental well-being, mood, and productivity for most participants.

b) Participants strongly prefer biophilic spaces, validating the effectiveness of biophilic elements.

c) Future designs could benefit from incorporating suggestions for increased natural lighting, acoustic improvements, and spatial arrangements to maximize usability and comfort.

These insights will guide ongoing and future biophilic interventions to optimize educational spaces for mental health and productivity.

5. Discussion

5.1 Findings and Interpretation

Image 34: Illustration representing the role of research in simplifying complex mental health challenges—symbolizing how biophilic design findings aim to ease stress and improve well-being. Image by the author.

This section presents an in-depth interpretation of the primary and secondary survey results, prototype feedback, and thematic insights gathered from participant responses.

The findings demonstrate a strong preference for biophilic elements—particularly natural lighting, greenery, and flexible seating arrangements—in learning environments. The quantitative data indicated that participants rated their mood, focus, and overall mental well-being significantly higher after engaging with the biophilic prototype space. For instance, 66.67% rated biophilic elements 8 or higher on effectiveness, and 80.95% expressed a preference to regularly work in such spaces.

Qualitative responses supported this trend, highlighting personal experiences of anxiety, stress, and isolation, especially during COVID-19 lockdowns. Participants frequently described how elements like plants, daylight, and nature-inspired visuals helped them feel calmer, more grounded, and better able to concentrate.

A notable demographic trend was that graduate students and women participants were more vocal about mental health struggles, and the 20–29 age group showed the highest preference for biophilic spaces. These findings validate the hypothesis that integrating biophilic design in academic spaces positively impacts mental well-being and learning engagement.

5.2 Implications for Mental Health and Learning

The results of this research have critical implications for how universities design and manage their learning spaces. The high rates of anxiety, stress, and depression—combined with the clear benefits participants experienced in the redesigned MCA-101 space—point to a growing need for mental health-sensitive spatial design.

Biophilic interventions can serve as low-cost, high-impact strategies to enhance psychological comfort, reduce stress, and improve academic performance. Students using the biophilic prototype reported improved focus (57.14%) and enhanced mood, with nearly a third giving a perfect score of 10 for mood improvement.

This indicates that biophilic environments are not merely aesthetic upgrades—they are essential supports for inclusive, mentally supportive learning ecosystems.

Implementing nature-inspired elements in libraries, studios, classrooms, and even staff lounges could help normalize mental health care through spatial design. These findings can inform future OCAD Facility Accessibility Design Standards (OCAD FADs) updates, wellness programming, and academic planning across educational institutions.

5.3 Limitations of the Study

While the research provides valuable insights, there are several limitations that must be acknowledged:

A. **Sample Size and Scope:** The surveys were limited to OCAD University students, staff, and alumni, which may not fully represent broader educational demographics.

B. **Short-Term Feedback:** The post-prototype survey responses reflect short-term experiences. Long-term mental health benefits of biophilic design would require longitudinal studies.

C. **Time and Budget Constraints:** The prototype was designed under significant time and financial limitations, influencing material choices and limiting the use of real plants.

D. **Self-Selection Bias:** Participants who chose to respond may already have a positive disposition toward nature and wellness, which could affect the balance of responses.

E. **Environmental Variables:** The study could not fully control for external factors (noise, crowding, lighting changes) that might have influenced participant experiences.

Despite these limitations, the consistency in participant responses and alignment with existing literature strengthens the reliability and relevance of the findings.

6. Future Work

6.1 Recommendations for Further Research

Future studies can expand this research in several meaningful directions:

A. **Longitudinal Impact:** Investigate the long-term mental health and academic performance benefits of biophilic design through extended observation.

B. **Multisensory Biophilic Elements:** Explore how soundscapes, scents, and tactile elements further enhance well-being in learning environments.

C. **Cross-Institutional Studies:** Conduct similar interventions across different universities or disciplines to understand demographic and contextual differences.

D. **Quantitative-Qualitative Fusion:** Include physiological data (e.g., heart rate, concentration tracking) to complement self-reported responses.

E. **Accessibility-Centred Biophilic Design:** Investigate how biophilic design can be adapted to specifically support students with various physical and invisible disabilities.

6.2 Potential Applications of Findings

The insights from this study can be applied in both academic and institutional settings:

A. **Campus Design Guidelines:** Inform FADS revisions or university space planning with biophilic design principles to prioritize mental health.

B. **Wellness Zones:** Guide the creation of dedicated wellness or “recharge” zones in libraries, studios, and common areas.

C. **Faculty and Staff Training:** Encourage educators to integrate biophilic design ideas into studio/classroom setups.

D. **Policy Influence:** Provide evidence for student well-being policies that include environmental factors.

E. **DIY Prototype Kits:** Inspire low-cost, modular biophilic interventions that students or departments can implement independently.

7. Conclusion: From Research to Realization

This project began as a personal journey rooted in my lived experiences with mental health and invisible disabilities and evolved into a research initiative that bridged biophilic design with inclusive education. Through developing, implementing, and analysing a real-world prototype within a post-secondary setting, I’ve gained valuable insights into how even small spatial changes can profoundly impact well-being, focus, and belonging.

One surprising takeaway was the degree of enthusiasm and emotional connection participants expressed toward nature-inspired elements — many used words like “calming,” “motivating,” and “safe” without prompting. It reinforced for me that biophilic design is not just aesthetically pleasing but psychologically supportive, especially for neurodivergent or disabled individuals who may already face overstimulation or isolation in conventional academic spaces.

On a personal level, however, I experienced some disappointment with the prototype installation. Due to transportation, time, and budget constraints, I was unable to integrate elements that were very important to me—like ample natural sunlight and a greater variety of real plants. Several items I sourced online were different from what I had expected in terms of scale or material. I had hoped to leave the prototype in place for several months, but that wasn’t feasible within this timeline.

Despite these setbacks, something unexpected and encouraging happened during the installation. While I was still making final refinements, students started interacting with the space and complimenting it. To my surprise, many of them couldn’t even tell the difference between the real and artificial plants — instead, they simply responded to the overall feeling the space evoked. This affirmed that even within constraints, thoughtful design can spark meaningful experiences.

Ultimately, this project has deepened my belief that design is a powerful tool for healing, accessibility, and inclusion. It also reminded me that no prototype is ever perfect — but even imperfect iterations can generate impact, invite dialogue, and move us closer to more equitable educational environments.

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10. Appendices

10.1 Appendix A: Reference Extracts from OCAD Facility Accessibility Design Standards *(OCAD University FADs, 13)*

10.1.1 Flooring and surface level standards used for entrance mat design

A. Carpets or carpet tile shall:

- be securely fixed.
- where used, have a dense cushion underlay, underpad or other backing.
- have a level loop, textured loop, level cut pile, or level cut/uncut pile texture with a maximum pad and pile height of 13 mm (1/2 in.); and
- have exposed edges fastened to floor surfaces with trim conforming to Table 4.1.2.

Vertical Rise	Edge Treatment
0 to 6 mm (0 - 1/4 in.)	May be vertical
6.1 mm to 13 mm (9/32 in. - 1/2 in.)	Bevel, maximum slope 1:2
Over 13 mm (over 1/2 in.)	Treat as sloped floor, *ramp*, or *curb ramp*

Table 4.1.2
Changes in Level

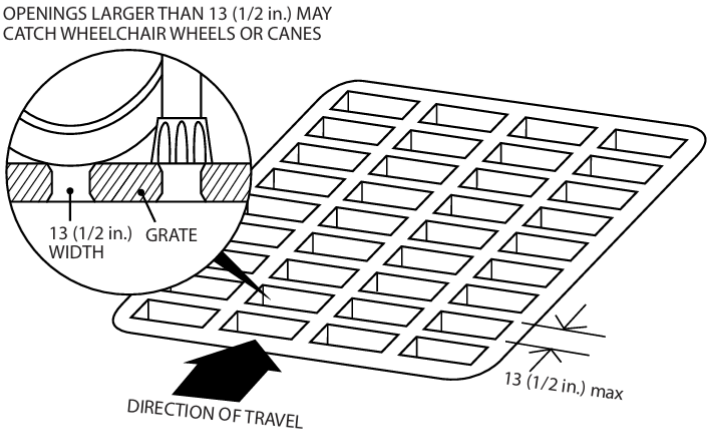


Figure 4.1.2.2
Grills and Gratings

Image 35: Figure 4.1.2.2 & Table 4.1.2. Image from OCAD University FADs, 13.

10.1.2 Column safety and protrusion standards applied in prototype layout

- The creation of pathways free from protruding objects or freestanding obstacles is important to all facility users. An object protruding from a wall above the detection range of a cane is dangerous for persons individual with a visual impairment or a pedestrian distracted by a conversation. The underside of stairways is a common overhead hazard. Temporary construction barriers can also be hazardous if their lower edge is too high to be detected by a person using a long white cane for mobility. Detectable warning surfaces around freestanding obstacles, such as light standards, are advantageous to anyone using a pathway.
- Objects protruding from walls with their leading edges between 680 mm (26-3/4 in.) and 2100 mm (82-3/4 in.) from the floor shall protrude not more than 100 mm (4 in.) into pedestrian areas, such as walkways, halls, corridors, passageways or aisles.
- Objects attached to a wall with their leading edges at or below 680 mm (26-3/4 in.) from the floor may protrude any amount. Freestanding objects shall not have any overhang of more than 300 mm (11-3/4 in.) between 680 mm (26-3/4 in.) and 2100 mm (82-3/4 in.) from the ground or floor.
- The maximum height of the bottom edge of freestanding objects with a space of more than 300 mm (11-3/4 in.) between supports shall be 680 mm (26-3/4 in.) from the ground or floor.

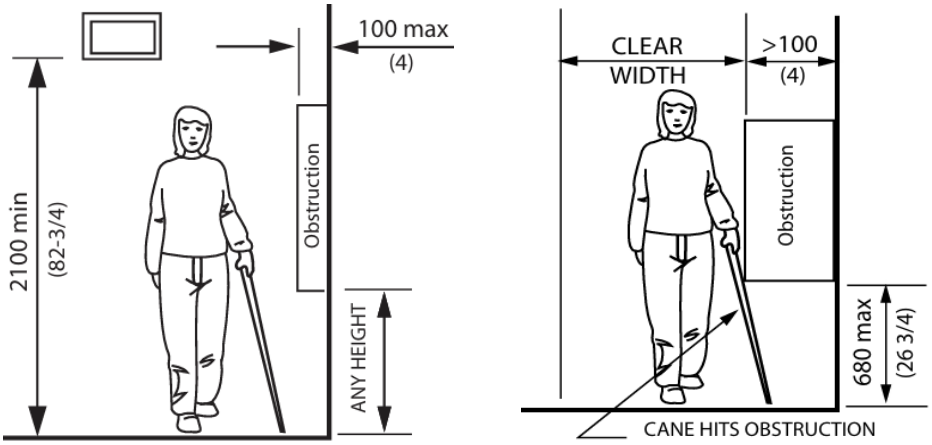


Figure 4.1.3.2
Limits of Protruding Objects

Figure 4.1.3.1
Limits of Protruding Objects

Image 36: Figure 4.1.3.1 & figure 4.1.3.2. Images from OCAD University FADs, 13.

10.2 Appendix B: Participant Engagement

10.2.1 Illustration for all participant facing documents

The image below, titled *Campus Meets Nature*, was used consistently across all participant-facing materials, including recruitment posters, flyers, the primary and secondary surveys, and the official OCADU Instagram page for the study.

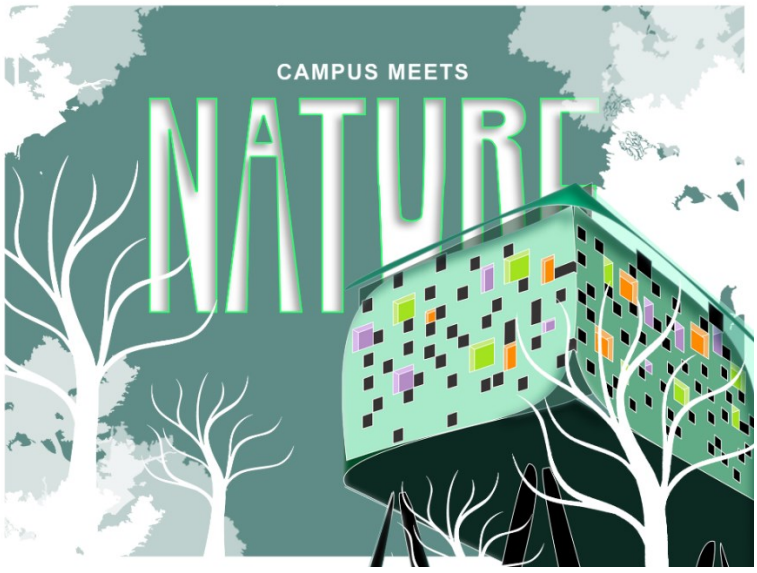


Image 37: Illustration for all participant facing documents. Image by the author.

10.2.2 Primary Survey Questions

Final Survey Question	Answer Options
Q. Gender?	• Male • Non-Binary • Other-Specify
Q. What is your Age?	• 18-20 • 20-29 • 30-39 • 40-49 • 50-59 • 60+
Q. What is your role in OCAD University?	• Undergrad Student • Grad Student • Staff • Administrator • Permanent Faculty • Non-permanent faculty • Technician • TA • Research assistant • Other-Specify
Q. What is your Gender?	• Female • Male • Non-Binary • Other-Specify
Q. Your Education Level?	• High school degree or equivalent (e.g., GED) • College diploma • Bachelor's degree • Graduate degree (e.g., Masters, PhD, M.D) • Other-Specify
Q. What is your occupational sector, if employed?	• Education • Healthcare/Medical • Technology/IT • Finance/Banking • Government/Public Service • Nonprofit/NGO • Retail/Hospitality • Manufacturing/Industrial • Arts/Entertainment/Media • Legal Services • Transportation/Logistics • Construction/Real Estate • Science/Research

	• Agriculture/Food Industry • Consulting/Professional Services • Self-employed/Freelance • Other-Specify
Q. Do you have any physical disabilities? (Select all that apply):	• Mobility impairment (e.g., wheelchair user, difficulty walking) • Visual impairment (e.g., blindness, low vision) • Hearing impairment (e.g., deafness, hearing loss) • Chronic pain or fatigue (e.g., fibromyalgia, chronic fatigue syndrome) • Neurological conditions (e.g., multiple sclerosis, epilepsy) • Musculoskeletal conditions (e.g., arthritis, back pain) • Gastro-intestinal disease, impairment • None • Not sure • Prefer not to say • Other-Specify
Q. Do you have any invisible disabilities? *(An invisible disability is a condition that affects a person's functioning but is not immediately visible to others, such as mental health disorders, chronic illnesses, or learning disabilities)* Select all that apply.	• Anxiety • Depression • Stress • ADHD (Attention-Deficit/Hyperactivity Disorder) • Bipolar Disorder • PTSD (Post-Traumatic Stress Disorder) • Eating Disorders • Sleep Disorders • Does not apply • Not sure • Prefer not to say • Other-Specify
Q. Mental Health Impact during COVID-19 pandemic:	• Experienced increased anxiety • Experienced increased depression • Experienced increased stress • Experienced no significant change • Other-Specify
Q. Educational/Work Experience during COVID-19 pandemic:	• Shifted to remote learning/work • Experienced difficulties with remote learning/work • Experienced improvements in remote learning/work • Had to take a leave or defer studies/work • No significant change in educational/work situation • Other-Specify
Q. Social Impact during COVID-19 pandemic:	• Experienced increased isolation or loneliness • Maintained social connections through virtual means

	• Maintained social connections through other means • Experienced difficulties maintaining social connections • No significant change in social interactions • Other-Specify
Q. Financial Impact during COVID-19 pandemic:	• Experienced financial difficulties • Experienced financial stability or improvements • No significant financial impact • Other-Specify
Q. Any Lifestyle Changes during COVID-19 pandemic:	• Made positive lifestyle changes (e.g., diet, exercise) • Experienced negative lifestyle changes • Developed new hobbies or interests • Withdrew from hobbies and interests • No significant lifestyle changes • Other-Specify
Q. Did you access Support and Resources?	• Accessed mental health support or resources • Accessed educational or work-related support or resources • Accessed religious affiliation support or resources • Did not access additional support or resources • Other-Specify
Q. Adaptation to home environment during lockdown:	• Made significant changes to the home environment (e.g., workspaces, leisure areas) • Found it challenging to adapt home environment for lockdown needs • No significant changes made to the home environment • Other-Specify
Q. On a scale of 1 to 10, how challenging was the lockdown situation for you, with 1 being "Not at all challenging" and 10 being "Extremely challenging"?	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10
Q. Please explain why you rated the lockdown situation as you did. What specific factors contributed to your rating?	_____
Q. Did your educational experience include lessons or activities focused on mental health and well-being (e.g., stress management,	• Yes

mindfulness, emotional regulation)?	• No • Not sure • Prefer not to say
Q. If yes, was it in Secondary School, Elementary School, or Higher Education?	• Secondary school • Elementary school • Higher education • Other
Q. What topics related to mental health and well-being were covered?	• Stress management • Mindfulness • Emotional regulation • Mental health awareness • Other
Q. How important do you think incorporating biophilic design elements is for enhancing mental well-being in educational spaces? (1 is least important, 10 is most important)	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10
Q. How important do you think incorporating natural elements (plants, sunlight, water features) in educational spaces is for improving mental health and well-being or learning outcomes in everyone?	• Extremely important • Very important • Moderately important • Slightly important • Not important at all
Q. Have you ever studied or worked in an environment that used natural design elements (e.g., indoor plants, natural light, outdoor views)?	• Yes • No • Not sure
Q. If yes, how did the presence of these biophilic design elements impact your focus, mood, or mental well-being?	• It greatly improved my well-being • It somewhat improved my well-being • It had no noticeable impact • It somewhat worsened my well-being • It greatly worsened my well-being
Q. How often do you use outdoor spaces (e.g., gardens, parks) at your educational institution to take breaks or relax?	• Daily • A few times a week • Once a week • Rarely • Never

Q. Would you prefer educational spaces that emphasize sustainability and mental health through design (e.g., using renewable materials, incorporating green spaces) over traditional environments?	• Strongly prefer • Somewhat prefer • No preference • Somewhat prefer traditional spaces • Strongly prefer traditional spaces
Q. How familiar were you with the concept of biophilia before this survey? (Biophilia means affection towards nature)	• Very familiar • Somewhat familiar • Heard of it but not familiar • Not familiar at all • Prefer not to say
Q. How familiar are you with biophilic design (design principles that integrate natural elements into built environments to enhance well-being)?	• Very familiar • Somewhat familiar • Heard of it but not familiar • Not familiar at all • Prefer not to say
Q. Which of the following biophilic design elements are you aware of or have seen implemented in spaces? (Select all that apply)	• Indoor plants or green walls • Natural lighting • Water features (e.g., fountains, aquariums) • Natural materials (e.g., wood, stone) • Views of nature (e.g., windows overlooking green spaces) • Textures and patterns inspired by nature • Natural ventilation • None of the above
Q. How important do you think incorporating biophilic design elements is for enhancing mental well-being in educational spaces? (1 is least important, 10 is most important)	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10
Answer the rest based on these images: Map:	Image:

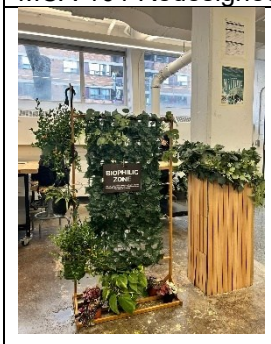
	
Q. What is your frequency of use of this physical workspace-MCA 101?	• Daily • Weekly • Monthly • Never
Q. If you use this space, what time of the day do you use this space?	• Morning (6 AM - 10 AM) • Late Morning (10 AM - 12 PM) • Afternoon (12 PM - 4 PM) • Late Afternoon (4 PM - 6 PM) • Evening (6 PM - 9 PM) • Night (9 PM - 12 AM) • Varies (No specific time)
Q. On a scale of 1-10, how well does the current workspace (MCA-101) support your sense of community/culture?	• 1 – Not at all supportive • 2 – Slightly supportive • 3 – Moderately supportive • 4 – Somewhat supportive • 5 – Neutral • 6 – Fairly supportive • 7 – Very supportive • 8 – Extremely supportive • 9 – Highly supportive • 10 – Perfectly supportive
Q. How well does MCA-101 support your needs if you have ongoing mental health issues/ invisible disabilities?	• Extremely Well • Very Well • Moderately Well • Slightly Well • Not at All Well • Not Applicable
Q. Describe your general mood while using the space MCA-101:	• Calm and relaxed • Focused and productive • Happy and content • Neutral (neither positive nor negative) • Stressed or anxious • Distracted or unfocused • Energized and motivated • Tired or fatigued

Q. On a scale of 1-6, how would you rate the overall physical environment of MCA-101?	• 1 – Very Poor • 2 – Poor • 3 – Fair • 4 – Good • 5 – Very Good • 6 – Excellent
Q. Do you feel that MCA-101 has sufficient natural elements (e.g., plants, natural light, waterscapes)?	• Yes • No • Not Sure
Q. On a scale of 1-10, how would you rate the presence and quality of biophilic elements (natural elements) in MCA-101?	• 1 – Very Poor • 2 – Poor • 3 – Fair • 4 – Good • 5 – Very Good • 6 – Excellent • 7 – Superior • 8 – Outstanding • 9 – Exceptional • 10 – Perfect
Q. How often do you feel stressed or anxious while using MCA-101?	• Always • Often • Sometimes • Rarely • Never
Q. On a scale of 1-10, how would you rate the impact of MCA-101 on your mental health or mood?	• 1 – Very Negative Impact • 2 – Negative Impact • 3 – Slightly Negative Impact • 4 – Neutral • 5 – Slightly Positive Impact • 6 – Positive Impact • 7 – Very Positive Impact • 8 – Excellent Impact • 9 – Outstanding Impact • 10 – Perfect Impact
Q. How does the physical layout of MCA-101 impact your productivity and stress levels?	• Very Positively • Somewhat Positively • Neutral • Somewhat Negatively • Very Negatively
Q. How well does MCA-101 support your needs if you have physical disabilities?	• Extremely Well • Very Well • Moderately Well • Slightly Well

	• Not at All Well • Not Applicable
Q. How does the physical layout of MCA-101 impact your productivity and stress levels?	• Very Positively • Somewhat Positively • Neutral • Somewhat Negatively • Very Negatively
Q. Which addition of elements would most improve your experience in MCA-101?	• More indoor plants • Natural light • Water features • Outdoor views • Natural materials • Change in furniture layout • Addition of more furniture types
Q. On a scale of 1-10, how would you rate the impact of MCA-101 on your mental health or mood?	• 1 – Very Negative Impact • 2 – Negative Impact • 3 – Slightly Negative Impact • 4 – Neutral • 5 – Slightly Positive Impact • 6 – Positive Impact • 7 – Very Positive Impact • 8 – Excellent Impact • 9 – Outstanding Impact • 10 – Perfect Impact
Q. How often do you feel stressed or anxious while using MCA-101?	• Always • Often • Sometimes • Rarely • Never
Q. What changes would you suggest improving MCA-101? Please rank the following changes from 1 (most preferred) to 5 (least preferred):	• More natural light • Increased number of indoor plants • Improved air quality • Better noise or temperature control • Change in layout or more furniture options
Q. What are your expectations of the current space (MCA-101) being converted into a biophilic activated space? Give a few suggestions if possible (regarding the addition of biophilic elements- for ex: more furniture options made of natural elements, change of physical layout, addition of natural sounds, addition of plants and water bodies etc.)	_____ _____ _____
Q. Any other comments you would like the researcher to know?	

10.2.3 Secondary Survey Questions

Survey Question	Answer Options
Q. Gender	• Male • Non-Binary • Other-Specify
Q. What is your Age?	• 18-20 • 20-29 • 30-39 • 40-49 • 50-59 • 60+
Q. What is your role in OCAD University?	• Undergrad Student • Grad Student • Staff • Administrator • Permanent Faculty • Non-permanent faculty • Technician • TA • Research assistant • Other-Specify
Q. What is your Gender?	• Female • Male • Non-Binary • Other-Specify
Q. Your Education Level?	• High school degree or equivalent (e.g., GED) • College diploma • Bachelor's degree • Graduate degree (e.g., Masters, PhD, M.D) • Other-Specify
Q. What is your occupational sector, if employed?	• Education • Healthcare/Medical • Technology/IT • Finance/Banking • Government/Public Service • Nonprofit/NGO • Retail/Hospitality • Manufacturing/Industrial • Arts/Entertainment/Media • Legal Services • Transportation/Logistics

	• Construction/Real Estate • Science/Research • Agriculture/Food Industry • Consulting/Professional Services • Self-employed/Freelance • Other-Specify
Q. Do you identify having an invisible disability? *(An invisible disability is a condition that affects a person's functioning but is not immediately visible to others, such as mental health disorders, chronic illnesses, or learning disabilities)* Select all that may apply.	• No, I do not identify as having a disability • Yes, I have a visible disability • Yes, I have an invisible (non-visible) disability • Prefer not to say • Experience during the COVID-19 pandemic:
Q. If yes, what are the ongoing mental health issues you are experiencing? (Select all that apply)	• Anxiety • Depression • Stress • ADHD (Attention-Deficit/Hyperactivity Disorder) • Bipolar Disorder • PTSD (Post-Traumatic Stress Disorder) • Eating Disorders • Sleep Disorders • None • Not sure • Prefer not to say • Other-Specify
Answer carefully based on these images below: Map:  MCA-101 Redesigned images:	
 	 
Q. What is your frequency of use of this physical workspace-MCA 101?	• Daily

	• Weekly • Monthly • Never
Q. If you use this space, what time of the day do you use this space?	• Morning (6 AM - 10 AM) • Late Morning (10 AM - 12 PM) • Afternoon (12 PM - 4 PM) • Late Afternoon (4 PM - 6 PM) • Evening (6 PM - 9 PM) • Night (9 PM - 12 AM) • Varies (No specific time)
Q. On a scale of 1-10, how would you rate the overall atmosphere of the MCA-101 space before the redesign? (1 being very poor and 10 being excellent)	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10
Q. On a scale of 1-10, how would you rate the overall atmosphere of the MCA-101 space after the redesign? (1 being very poor and 10 being excellent)	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10
Q. Which biophilic design elements did you notice in the space? (Please select all that apply)	• Natural light • Indoor plants • Water features • Natural materials (wood, stone, etc.) • Views of nature • Other (please specify) • None
Q. On a scale of 1-10, how effective do you believe these biophilic elements were in enhancing your experience in the space? (1 being not effective and 10 being extremely effective)	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

	• 9 • 10
Q. On a scale of 1-10, how would you rate your mood before using the redesigned space?	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10
Q. On a scale of 1-10, how would you rate your mood after using the redesigned space?	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10
Q. Did you find the redesigned space to be more conducive to your mental well-being compared to the previous setup?	• Yes • No • Unsure
Q. How did the new design impact your focus and concentration while using the space?	• Much Worse • Worse • No Change • Better • Much Better
Q. If you could, would you choose to study or work in a biophilic-designed environment regularly?	• Yes, definitely • Maybe • No, probably not
Q. On a scale of 1-10, how likely are you to recommend this redesigned space to others?	• 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10

Q. Would you be interested in using this space again in the future?	• Yes • No • Maybe
Q. What did you dislike the most about the redesigned MCA101 space?	_____
Q. What did you like the most about the redesigned MCA101 space?	_____
Q. Any additional comments or suggestions regarding the biophilic elements and overall experience in the MCA-101 space?	_____

10.2.4 Primary Survey Responses by the Participants

	A	B	C	D	E	F	G	H	I	J	K
1	What is your Age?	What is your role in OCAD University?	What is your Gender?	Your Education Level?	What is your occupational sector?	Please specify the occupation	Do you currently experience any ongoing mental health issues? (Select all that apply)	Do you identify as having a Visible or Invisible disability or any severe health condition?	If yes, what health conditions do you have? Select All that may apply.	Mental Health Impact during COVID-19 pandemic:	Educational/Work Experience during COVID-19 pandemic:
2	40-49	Undergrad Student	Male	High school degree or equivalent (e.g., GED)	Construction/Real Estate	Pool landscape, and commercial/residential construction	Stress	Yes, I have a visible disability	Chronic pain or illness (e.g., arthritis, fibromyalgia, multiple sclerosis)	Experienced increased anxiety	No significant change in educational/work situation
3	20-29	Grad Student	Female	Bachelor's degree	Self-employed/Freelance	Graphic design	Depression, Stress, ADHD (Attention-Deficit/Hyperactivity Disorder), Eating Disorders, Sleep Disorders	Yes, I have an invisible (non-visible) disability	Depression	Experienced increased anxiety	Shifted to remote learning/work
4	20-29	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Arts/Entertainment/ Media	Designer	Depression, Not sure	No, I do not identify as having a disability		Experienced increased anxiety	Shifted to remote learning/work
5	40-49	Grad Student	Female	Bachelor's degree	Arts/Entertainment/ Media	Community artist	Bipolar Disorder	Yes, I have an invisible (non-visible) disability	Bipolar disorder	Experienced increased stress	Shifted to remote learning/work
6	20-29	Grad Student	Female	Bachelor's degree	Engineering, Building Science	Building Science Engineering Consultant	Anxiety, Depression, Stress, ADHD (Attention-Deficit/Hyperactivity Disorder), Bipolar Disorder, PTSD (Post-Traumatic Stress Disorder), Eating Disorders, Sleep Disorders	Yes, I have a visible disability, Yes, I have an invisible (non-visible) disability	Mobility issues, ADHD/ASD, Anxiety, Depression, Bipolar, PTSD, Borderline Personality Disorder (BPD)	Increased all of the above	Experienced difficulties with remote learning/work
7	20-29	Grad Student	Male	Bachelor's degree	Arts/Entertainment/ Media	Motion Graphic Designer	Not sure	No, I do not identify as having a disability		Experienced increased anxiety	Shifted to remote learning/work
	20-29	Undergrad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Arts/Entertainment/ Media	Student	ADHD (Attention-Deficit/Hyperactivity Disorder), Bipolar Disorder, PTSD (Post-	Yes, I have an invisible (non-visible) disability	Your form is only accepting one answer but I have Bipolar, Gastrointestinal disorder, ADHD,	Experienced increased depression	Experienced difficulties with remote learning/work

Image 38: Primary Survey Responses by participants 1-7.

	L	M	N	O	P	Q	R	S	T
1	Social Impact during COVID-19 pandemic:	Financial Impact during COVID-19 pandemic:	Any Lifestyle Changes during COVID-19 pandemic:	Did you access Support and Resources?	Adaptation to home environment during lockdown	On a scale of 1 to 10, how challenging was the lockdown situation for you,	Please explain why you rated the lockdown situation as you did. What specific factors contributed to your rating?	Q. Did your educational experience include lessons or activities focused on mental health and well-being (e.g.,	Q. If yes, was it in Secondary School, Elementary School, or Higher Education?
2	Experienced difficulties maintaining social connections	No significant financial impact	No significant lifestyle changes	Did not access additional support or resources	Did not find home environment much challenging	6	To this day the whole Covid experiance dosn't sit right with me. Im not an "anti-vaxer" but based on my feelings towards this extremly piculiar situation, did not take the vax eventhough being indigenous the Canadian Government	No	Secondary school
3	Experienced difficulties maintaining social connections	No significant financial impact	Developed new hobbies or interests	Did not access additional support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas)	5	Feel lonely and lack of being consistently around with family	Yes	Higher education
4	Experienced increased isolation or loneliness	Experienced financial difficulties	No significant lifestyle changes	Did not access additional support or resources	Found it challenging to adapt home environment for lockdown needs	5	Not being able to meet friend and hangout in places	Yes	Higher education
5	Experienced increased isolation or loneliness	No significant financial impact	No significant lifestyle changes	Did not access additional support or resources	Found it challenging to adapt home environment for lockdown needs	7	Hard to work and learn online. Lonely.	Not sure	Work
6	Experienced difficulties maintaining social connections	Experienced financial difficulties	Made significant lifestyle changes (e.g., diet, exercise)	Did not access additional support or resources	Found it challenging to adapt home environment for lockdown needs	9	While I struggled mentally and socially, I lost 40 lbs from a healthier diet and I saw a new psychiatrist which put my on meds that began to help my mental/cognitive disabilities.	No	Therapy
7	Experienced increased isolation or loneliness	No significant financial impact	No significant lifestyle changes	Did not access additional support or resources	Found it challenging to adapt home environment for lockdown needs	6	It was challenging at first but gradually got used to it	No	None
	Experienced increased isolation or loneliness	Experienced financial stability or improvements	Made significant lifestyle changes (e.g., diet, exercise)	Accessed mental health support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas), Found it challenging to adapt		Isolation, extreme sleep disturbances and depression.		Higher education

Image 39: Primary Survey Responses by participants 1-7.

	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	or related to mental health and well-being were covered?	educational experience did not include mental health	important do you think it is to include mental	Please explain why you chose your rating. Feel free to	think incorporating natural elements (plants, sunlight, water features) in	studied or worked in an environment that used natural design elements	biophilic design elements impact your focus, mood, or mental well-being?	outdoor spaces (e.g., gardens, parks) at your educational institution to take	educational spaces that emphasize sustainability and mental health	with the concept of biophilia (the inherent human tendency to seek	with biophilic design (design principles that integrate natural elements into built
2	Stress management				Extremely important	Yes	It somewhat improved my well-being	Daily	Strongly prefer	Very familiar	Somewhat familiar
3	Stress management				Moderately important	Yes	It somewhat worsened my well-being	Once a week	Somewhat prefer	Somewhat familiar	Not familiar at all
4	Mindfulness				Extremely important	Yes	It greatly improved my well-being	A few times a week	Strongly prefer	Heard of it but not familiar	Heard of it but not familiar
5	Stress management				Extremely important	Yes	It greatly improved my well-being	Rarely	Strongly prefer	Not familiar at all	Not familiar at all
6	All of the above				Moderately important	Yes	It somewhat improved my well-being	Rarely	Strongly prefer	Very familiar	Very familiar
7	None				Very important	Yes	It somewhat improved my well-being	Rarely	Somewhat prefer	Heard of it but not familiar	Heard of it but not familiar
	Emotional regulation				Extremely important	Yes	It greatly improved my well-being	A few times a week	Strongly prefer	Very familiar	Very familiar

Image 40: : Primary Survey Responses by participants 1-7.

	AF	AG	AH	AI	AJ	AK	AL	AM
1	implemented in spaces? (Select all that apply)	think incorporating biophilic design elements is for enhancing mental	would you rate your overall	you consider mental health to be on a scale of 1 to 10, with 1 being	(Go to the map mentioned below to find out the title of the room if required) Mention 2-3 spaces if possible.	your frequency of use of this	time of the day do you use this space?	how well does the current workspace (MCA-101) support your
2	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces)	Extremely important	9	10	woodshop, studio	Monthly	Varies (No specific time)	1 – Not at all supportive
3	Indoor plants or green walls, Views of nature (e.g., windows overlooking green spaces)	Extremely important	6	9	The second floor lounge in 100 McCaul. The self study place on 8th floor in 215 Richmond St West. The inclusive design studio on 4th floor on 230 Richmond St West	Barely use this place	Evening (6 PM - 9 PM)	4 – Somewhat supportive
4	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	8	10		Monthly	Afternoon (12 PM - 4 PM)	7 – Very supportive
5	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature	Extremely important	2	10		Never	Varies (No specific time)	5 – Neutral
6	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Moderately important	9	9	7th floor grad student lounge, 4th floor inclusive design studio	Never	Varies (No specific time)	1 – Not at all supportive
7	Indoor plants or green walls, Natural lighting, Natural materials (e.g., wood, stone), Water features (e.g., fountains, aquariums), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Very important	5	8		Never used	Varies (No specific time)	5 – Neutral
	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	8	10		Weekly	Late Morning (10 AM - 12 PM), Afternoon (12 PM - 4 PM)	3 – Moderately supportive

Image 41: Primary Survey Responses by participants 1-7.

	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1	community/culture-oriented features you would like to see in the workspace (MCA-101) ? Or any suggestions to make the	MCA-101 support your needs if you have any	general mood while using the space MCA-101:	how would you rate the overall physical environment of	feel that MCA-101 has sufficien	scale of 1-10, how would	often do you feel stressed or	you find the aspects of MCA-101 for your work or mental well-being?	feel natural elements (e.g., plants, views of	MCA-101 support your needs if you have an	physical layout of MCA-101 impact your productivity and stress levels?	suggest to improve MCA-101 based on the picture shown before?
2	indigenous art, sustainable foods pictures.	Very Well	Neutral (neither positive nor negative)	4 – Good	No	3 – Fair	Rarely	Moderately Beneficial	Somewhat Positively	Moderately Well	Neutral	Water features, More indoor plants, Natural light, Natural materials, Outdoor views, Change in furniture layout, Addition of more furniture types
3	Having self served water machine and snack machine	Slightly Well	Happy and content	4 – Good	Yes	4 – Good	Rarely	Slightly Beneficial	Somewhat Negatively	Moderately Well	Somewhat Negatively	Natural light, Water features, Outdoor views, More indoor plants, Natural materials, Change in furniture layout, Addition of more furniture types
4	N/a	Moderately Well	Calm and relaxed, Happy and content	4 – Good	Yes	3 – Fair	Rarely	Slightly Beneficial	Somewhat Positively	Not Applicable	Neutral	Natural light, Change in furniture layout, More indoor plants, Outdoor views, Natural materials, Addition of more furniture types, Water features
5	None	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	No	3 – Fair	Never	Not at All Beneficial	Neutral	Not Applicable	Neutral	More indoor plants, Natural light, Water features, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types
6	I don't use this space	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	Not Sure	2 – Poor	Never	Not at All Beneficial	Neutral	Not Applicable	Neutral	Natural light, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types, More indoor plants, Water features
7	I have never used the space. It is hard for me to make suggestions	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	No	3 – Fair	Never	Moderately Beneficial	Neutral	Not Applicable	Neutral	Natural light, More indoor plants, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types, Water features
	Plants would be nice, but not so many that it obstructs natural light	Slightly Well	Stressed or anxious	4 – Good	No	2 – Poor	Sometimes	Slightly Beneficial	Neutral	Moderately Well	Neutral	More indoor plants, Natural materials, Natural light, Water features, Outdoor views, Change in furniture layout, Addition of more furniture types

Image 42: Primary Survey Responses by participants 1-7.

	AZ	BA	BB	BC	BD
1	**What are your expectations from the current space (MCA-101) being converted into a biophilic activated space? Give a few suggestions if possible**	**Any other comments you would like the researcher to know?**	**On a scale of 1-10, how would you rate the impact of MCA-101 on your**	**How often do you experience changes in your mood while using MCA-101**	**What changes would you suggest to improve MCA-101?**
2	water feature, sunlight study, plant study. what makes sense	thanks	4 – Neutral	Never	Increased number of indoor plants, Improved air quality, More natural light, Change in layout or more furniture options, Better noise or temperature control
3	More quiet, more space, better temperatures, more natural like birds animals(simulated)	N/A	7 – Very Positive Impact	Sometimes	More natural light, Improved air quality, Better noise or temperature control, Increased number of indoor plants, Change in layout or more furniture options
4	Change of physical layout and better light installation	I think the concern of Feng Shui might be similiar to biophillia you mentioned	4 – Neutral	Rarely	Increased number of indoor plants, Improved air quality, Better noise or temperature control, More natural light, Change in layout or more furniture options
5	None	None	4 – Neutral	Never	More natural light, Increased number of indoor plants, Improved air quality, Better noise or temperature control, Change in layout or more furniture options
6	I am not familiar with this space. Acousitc design is a big consideration for invisible disabilities and occupant comfort.	This space didn't apply to me, I've never been to it before	4 – Neutral	Never	More natural light, Better noise or temperature control, Change in layout or more furniture options, Improved air quality, Increased number of indoor plants
7	Never been to ur used MCA 101. But judging by the photo, I think the room can be potentially improved by bringing in more natural light and plants. Room layout and furniture placement could also be improved.	None	4 – Neutral	Sometimes	More natural light, Increased number of indoor plants, Improved air quality, Change in layout or more furniture options, Better noise or temperature control
	More sound dampening would be nice	Nope	4 – Neutral	Sometimes	Increased number of indoor plants, Improved air quality, Better noise or temperature control, More natural light, Change in layout or more furniture options

Image 43: Primary Survey Responses by participants 1-7.

	A	B	C	D	E	F	G	H	I	J	K
8	20-29	Undergrad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Arts/Entertainment/ Media	Student	ADHD (Attention-Deficit/Hyperactivity Disorder), Bipolar Disorder, PTSD (Post-Traumatic Stress Disorder), Sleep Disorders, Stress, Depression,	Yes, I have an invisible (non-visible) disability	Your form is only accepting one answer but I have Bipolar, Gastrointestinal disorder, ADHD, Anxiety, Depression, and PTSD	Experienced increased depression	Experienced difficulties with remote learning/work
9	20-29	Grad Student	Non-Binary	Graduate degree (e.g., Masters, PhD, M.D)	Nonprofit/NGO	Student/membership engagement	Anxiety, Depression, Stress, PTSD (Post-Traumatic Stress Disorder)	Yes, I have an invisible (non-visible) disability	Anxiety disorder	Experienced increased anxiety	Experienced improvements in remote learning/work
10	18-20	Undergrad Student	Male	High school degree or equivalent (e.g., GED)	Finance/Banking	Art student as of now	Stress, Anxiety	No, I do not identify as having a disability		Experienced increased depression	Had to take a leave or defer studies/work
11	30-39	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Education	College Instructor	ADHD (Attention-Deficit/Hyperactivity Disorder), Sleep Disorders	No, I do not identify as having a disability	Attention deficit hyperactivity disorder (ADHD)	Experienced increased anxiety	Shifted to remote learning/work
12	20-29	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Design	Designer	Anxiety, Depression, PTSD (Post-Traumatic Stress Disorder)	Yes, I have a visible disability	Depression, anxiety,ptsd,migraines	Experienced increased stress	Shifted to remote learning/work
13	20-29	Alumni	Male	Bachelor's degree	Architecture	Architect	None	No, I do not identify as having a disability		Experienced increased depression	Shifted to remote learning/work
14	20-29	Grad Student	Female	Bachelor's degree	Industrial design	Industrial designer	Anxiety, Depression, Stress	Yes, I have an invisible (non-visible) disability	Depression, Anxiety disorder	Experienced increased anxiety	Shifted to remote learning/work, Experienced difficulties with remote learning/work
	30-39	Undergrad Student	Male	College diploma	Retail/Hospitality	Customer service representative	Depression, Anxiety, Stress	Yes, I have an invisible (non-visible) disability	Obsessive-compulsive disorder (OCD), Depression, Anxiety disorder	Experienced increased stress, Experienced increased depression, Experienced	Shifted to remote learning/work, Experienced difficulties with remote learning/work, Experienced improvements in remote

Image 44: Primary Survey Responses by participants 8-14.

	K	L	M	N	O	P	Q
8	Experienced difficulties with remote learning/work	Experienced increased isolation or loneliness	Experienced financial stability or improvements	Made significant lifestyle changes (e.g., diet, exercise)	Accessed mental health support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas), Found it challenging to adapt home environment for lockdown needs	9
9	Experienced improvements in remote learning/work	Experienced increased isolation or loneliness	Experienced financial stability or improvements	Made significant lifestyle changes (e.g., diet, exercise)	Accessed mental health support or resources	Found it challenging to adapt home environment for lockdown needs	7
10	Had to take a leave or defer studies/work	Experienced difficulties maintaining social connections	Experienced financial stability or improvements	Made significant lifestyle changes (e.g., diet, exercise)	Did not access additional support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas)	8
11	Shifted to remote learning/work	Experienced increased isolation or loneliness	Experienced financial stability or improvements	Developed new hobbies or interests	Did not access additional support or resources	Found it challenging to adapt home environment for lockdown needs	6
12	Shifted to remote learning/work	Experienced difficulties maintaining social connections	No significant financial impact	Made significant lifestyle changes (e.g., diet, exercise)	Could not access	Found it challenging to adapt home environment for lockdown needs	9
13	Shifted to remote learning/work	Experienced increased isolation or loneliness	Experienced financial difficulties	Developed new hobbies or interests	Wanted to but could not	Made significant changes to home environment (e.g., workspaces, leisure areas)	5
14	Shifted to remote learning/work, Experienced difficulties with remote learning/work	Maintained social connections through virtual means, Experienced increased isolation or loneliness	No significant financial impact	Developed new hobbies or interests	Did not access additional support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas)	7
	Shifted to remote learning/work, Experienced difficulties with remote learning/work, Experienced improvements in remote learning/work	Experienced increased isolation or loneliness, Maintained social connections through virtual means	Experienced financial difficulties, Experienced financial stability or improvements	Made significant lifestyle changes (e.g., diet, exercise)	Wanted to but could not	Made significant changes to home environment (e.g., workspaces, leisure areas), Found it challenging to adapt home environment for lockdown needs	

Image 45: Primary Survey Responses by participants 8-14.

	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
		No											
8	Isolation, extreme sleep disturbances and depression.	Yes	Higher education	Emotional regulation				Extremely important	Yes	It greatly improved my well-being	A few times a week	Strongly prefer	Very familiar
9	I was living in student housing in a cold basement with one other person. Little light and no yard to go out really. We could go days without being outside. It was very depressing	Yes	Higher education	Mindfulness				Extremely important	Yes	It somewhat improved my well-being	A few times a week	Strongly prefer	Heard of it but not familiar
10	Just the situation as in whole, and some family issues which gained quickly on us.	Yes	Secondary school	Mental health awareness				Very important	Yes	It somewhat improved my well-being	A few times a week	Strongly prefer	Not familiar at all
11	Lockdowns were not as challenging when I was "in it", but coming out, I realized the scope of my anxiety and how much my capacity for stress and socializing had changed and impacted me.	No	na	na				Very important	Yes	It greatly improved my well-being	Rarely	Strongly prefer	Somewhat familiar
12	Because of family problems, lockdown situation led me to face them hence giving me more stress	No	none	none				Very important	Yes	It somewhat improved my well-being	A few times a week	Strongly prefer	Very familiar
13	It was indubitably tough but I was able to cope up with the dynamics by getting myself involved in activities like yoga, meditation, learning about new concepts and questioning what has been taught.	Yes	NA/None	Mental health awareness	Yes	5 - Extremely important	Well-being consists of physical, emotional, mental and financial stability. Hence every aspect is important to focus upon.	Extremely important	Yes	It greatly improved my well-being	A few times a week	Strongly prefer	Very familiar
14	I am an introvert, so I did not find challenging being isolated. However, it was my last year in undergrad, so it was difficult adapting to online learning and balancing that with the thing I had to do at home (cooking, taking care or my dog, among others)	No	NA/None	NA/None	Yes	5 - Extremely important	I have struggled a lot with mental health since I was a kid and I did not know how to ask for help, I felt like I couldn't. With proper awareness, I would have started therapy earlier.	Extremely important	No	It had no noticeable impact	Rarely	Strongly prefer	Somewhat familiar
	The enforced pandemic restrictions (e.g. social distancing, no travel, etc.) made it challenging to manage my personal life, work, and school.		NA/None	NA/None	Yes	5 - Extremely important	I find that conversations around mental health peaked during the pandemic, but the effects continue to linger post-pandemic. This is more so true for individuals who were already struggling with mental health issues before the pandemic.	Very important	Yes	It greatly improved my well-being	Once a week	Strongly prefer	Very familiar

Image 46: Primary Survey Responses by participants 8-14.

	AE	AF	AG	AH	AI	AJ	AK	AL
8	Very familiar	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	8	10		Weekly	Late Morning (10 AM - 12 PM), Afternoon (12 PM - 4 PM)
9	Heard of it but not familiar	Indoor plants or green walls, Water features (e.g., fountains, aquariums)	Extremely important	5	10	The grad studies lounge and the main INCD classroom I think room 303	Never	Varies (No specific time)
10	Somewhat familiar	Indoor plants or green walls, Views of nature (e.g., windows overlooking green spaces), Natural ventilation	Very important	2	8	Painting studios at the 4th floor	Never	Varies (No specific time)
11	Somewhat familiar	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	8	10		never	Varies (No specific time)
12	Very familiar	Indoor plants or green walls, Views of nature (e.g., windows overlooking green spaces), Natural materials (e.g., wood, stone), Textures and patterns inspired by nature	Extremely important	9	9	INCD Room, Cafeteria, Lecture Hall	once in months	Varies (No specific time)
13	Very familiar	Textures and patterns inspired by nature, Views of nature (e.g., windows overlooking green spaces), Natural materials (e.g., wood, stone), Water features (e.g., fountains, aquariums), Natural lighting, Indoor plants or green walls, Natural ventilation	Extremely important	4	5	N/A	None/NA	Varies (No specific time)
14	Somewhat familiar	Natural lighting, Indoor plants or green walls, Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature	Extremely important	4	5	Inclusive Design Studio at 205 Richmond St.	None/NA	N/A
	Very familiar	Indoor plants or green walls, Natural lighting, Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature	Very important	4	5	MCA 271, MCA 476, Commons space on 3rd floor in George A. Reid Wing	None/NA	N/A

Image 47: Primary Survey Responses by participants 8-14.

	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
8	3 – Moderately supportive	Plants would be nice, but not so many that it obstructs natural light	Slightly Well	Stressed or anxious	4 – Good	No	2 – Poor	Sometimes	Slightly Beneficial	Neutral	Moderately Well	Neutral	More indoor plants, Natural materials, Natural light, Water features, Outdoor views, Change in furniture layout, Addition of more furniture types	More sound dampening would be nice
9	5 – Neutral	NA	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	Not Sure	5 – Very Good	Never	Moderately Beneficial	Neutral	Not Applicable	Neutral	More indoor plants, Natural light, Outdoor views, Natural materials, Water features, Change in furniture layout, Addition of more furniture types	I don't really use the space
10	6 – Fairly supportive	Maybe more livelier in a way	Moderately Well	Neutral (neither positive nor negative)	3 – Fair	Yes	3 – Fair	Rarely	Moderately Beneficial	Neutral	Not Applicable	Neutral	Natural light, Change in furniture layout, Water features, Outdoor views, Natural materials, More indoor plants, Addition of more furniture types	Wooden furnitures Less white paint Use of indoor plants New Window frame for more natural light
11	5 – Neutral	I don't use it	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	Not Sure	4 – Good	Sometimes	Moderately Beneficial	Neutral	Moderately Well	Neutral	More indoor plants, Natural light, Water features, Natural materials, Outdoor views, Change in furniture layout, Addition of more furniture types	na
12	5 – Neutral	na	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	Not Sure	4 – Good	Never	Moderately Beneficial	Neutral	Moderately Well	Neutral	More indoor plants, Natural light, Water features, Natural materials, Outdoor views, Change in furniture layout, Addition of more furniture types	More plants
13	8 – Extremely supportive	NA	Not Applicable	Neutral (neither positive nor negative or N/A)	0-Not Applicable	Not Sure	2 – Poor	N/A	Not at All Beneficial/NA	Very Positively	Not Applicable	Neutral/NA	More indoor plants, Water features, Outdoor views, Natural light, Natural materials, Change in furniture layout, Addition of more furniture types	You already know what to do.
14	1 – Not at all supportive/Not Applicable	Have different kind of chairs/tables.	Not at All Well	Neutral (neither positive nor negative or N/A)	2 – Poor	No	2 – Poor	N/A	Not at All Beneficial/NA	Neutral/NA	Not Applicable	Somewhat Negatively	Natural light, Addition of more furniture types, Change in furniture layout, Outdoor views, Natural materials, More indoor plants, Water features	Adding plants and actually take care of them. Having a multisensoral area where people can go and hear / see / smell things that remind them about natural features.
	1 – Not at all supportive/Not Applicable	n/a	Not Applicable	Neutral (neither positive nor negative or N/A)	0-Not Applicable	No	2 – Poor	N/A	Not at All Beneficial/NA	Neutral/NA	Not Applicable	Neutral/NA	Addition of more furniture types, More indoor plants, Natural materials, Change in furniture layout, Natural light, Water features, Outdoor views	I never worked in that particular space, but I walked by it a couple of times. From what I remember, the space felt sterile and was noisy (I could easily hear sounds coming from adjacent rooms).

Image 48: Primary Survey Responses by participants 8-14.

	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
8	3 – Moderately supportive	Plants would be nice, but not so many that it obstructs natural light	Slightly Well	Stressed or anxious	4 – Good	No	2 – Poor	Sometimes	Slightly Beneficial	Neutral	Moderately Well	Neutral	More indoor plants, Natural materials, Natural light, Water features, Outdoor views, Change in furniture layout, Addition of more furniture types	More sound dampening would be nice
9	5 – Neutral	NA	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	Not Sure	5 – Very Good	Never	Moderately Beneficial	Neutral	Not Applicable	Neutral	More indoor plants, Natural light, Outdoor views, Natural materials, Water features, Change in furniture layout, Addition of more furniture types	I don't really use the space
10	6 – Fairly supportive	Maybe more livelier in a way	Moderately Well	Neutral (neither positive nor negative)	3 – Fair	Yes	3 – Fair	Rarely	Moderately Beneficial	Neutral	Not Applicable	Neutral	Natural light, Change in furniture layout, Water features, Outdoor views, Natural materials, More indoor plants, Addition of more furniture types	Wooden furnitures Less white paint Use of indoor plants New Window frame for more natural light
11	5 – Neutral	I don't use it	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	Not Sure	4 – Good	Sometimes	Moderately Beneficial	Neutral	Moderately Well	Neutral	More indoor plants, Natural light, Water features, Natural materials, Outdoor views, Change in furniture layout, Addition of more furniture types	na
12	5 – Neutral	na	Not Applicable	Neutral (neither positive nor negative)	3 – Fair	Not Sure	4 – Good	Never	Moderately Beneficial	Neutral	Moderately Well	Neutral	More indoor plants, Natural light, Water features, Natural materials, Outdoor views, Change in furniture layout, Addition of more furniture types	More plants
13	8 – Extremely supportive	NA	Not Applicable	Neutral (neither positive nor negative or N/A)	0-Not Applicable	Not Sure	2 – Poor	N/A	Not at All Beneficial/NA	Very Positively	Not Applicable	Neutral/NA	More indoor plants, Water features, Outdoor views, Natural light, Natural materials, Change in furniture layout, Addition of more furniture types	You already know what to do.
14	1 – Not at all supportive/Not Applicable	Have different kind of chairs/tables.	Not at All Well	Neutral (neither positive nor negative or N/A)	2 – Poor	No	2 – Poor	N/A	Not at All Beneficial/NA	Neutral/NA	Not Applicable	Somewhat Negatively	Natural light, Addition of more furniture types, Change in furniture layout, Outdoor views, Natural materials, More indoor plants, Water features	Adding plants and actually take care of them. Having a multisensoral area where people can go and hear / see / smell things that remind them about natural features.
15	1 – Not at all supportive/Not Applicable	n/a	Not Applicable	Neutral (neither positive nor negative or N/A)	0-Not Applicable	No	2 – Poor	N/A	Not at All Beneficial/NA	Neutral/NA	Not Applicable	Neutral/NA	Addition of more furniture types, More indoor plants, Natural materials, Change in furniture layout, Natural light, Water features, Outdoor views	I never worked in that particular space, but I walked by it a couple of times. From what I remember, the space felt sterile and was noisy (I could easily hear sounds coming from adjacent rooms).

Image 49: Primary Survey Responses by participants 8-14.

	BA	BB	BC	BD
8	Nope	4 – Neutral	Sometimes	Increased number of indoor plants, Improved air quality, Better noise or temperature control, More natural light, Change in layout or more furniture options
9	NA	5 – Slightly Positive Impact	Sometimes	Improved air quality, More natural light, Increased number of indoor plants, Better noise or temperature control, Change in layout or more furniture options
10	N/A	5 – Slightly Positive Impact	Sometimes	More natural light, Change in layout or more furniture options, Increased number of indoor plants, Improved air quality, Better noise or temperature control
11	na	4 – Neutral	Sometimes	More natural light, Increased number of indoor plants, Change in layout or more furniture options, Improved air quality, Better noise or temperature control
12	no	6 – Positive Impact	Sometimes	Increased number of indoor plants, Improved air quality, More natural light, Better noise or temperature control, Change in layout or more furniture options
13	Try to incorporate natural plants because they have a peculiar smell that relaxes human by affirming them that they are close to the nature which calms their nervous system and affects mental, emotional well being.			
14	The building in McCaul St. is a good place to focus, but not everyone goes there, specially not grad students.			
15	N/A			

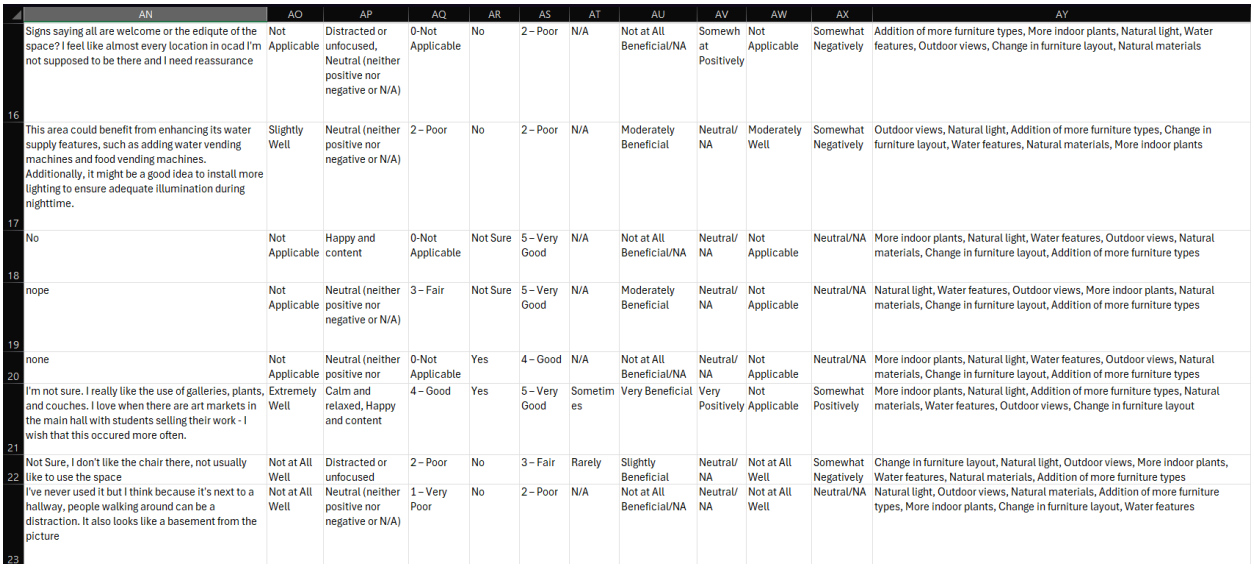
Image 50: Primary Survey Responses by participants 8-14.

	A	B	C	D	E	F	G	H	I	J
16	20-29	Undergrad Student	Female	Bachelor's degree	Graduation fine art with HBFA from York , current illustration student at ocad	Design (illustration first year)	Anxiety, Depression, Stress	Yes, I have an invisible (non-visible) disability	Learning disability (e.g., dyslexia, dysgraphia, dyscalculia), Anxiety disorder, Depression	Experienced increased anxiety, Experienced increased depression, Experienced increased stress
17	20-29	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Technology/IT	UI/UX Design	Anxiety, Stress, Depression	No, I do not identify as having a disability	Anxiety disorder, Depression	Experienced increased depression, Experienced increased anxiety
18	20-29	Alumni	Male	Graduate degree (e.g., Masters, PhD, M.D)	Technology/IT	Designer	Stress	No, I do not identify as having a disability		Experienced increased stress
19	30-39	Grad Student	Female	Bachelor's degree	Technology/IT	UX designer	Anxiety	No, I do not identify as having a disability		Experienced no significant change
20	30-39	Grad Student	Female	Bachelor's degree	Arts/Entertainment/ Media	Product Designer	None	No, I do not identify as having a disability	Prefer not to disclose	Experienced no significant change
21	20-29	Grad Student	Female	Bachelor's degree	Healthcare/Medical	Design for Health Student	None	No, I do not identify as having a disability		None
22	20-29	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Arts/Entertainment/ Media	Designer	Anxiety, ADHD (Attention-Deficit/Hyperactivity Disorder)	Yes, I have an invisible (non-visible) disability	Autism spectrum disorder (ASD), Anxiety disorder	Experienced no significant change
	20-29	Grad Student	Female	Bachelor's degree	Technology/IT	UX designer	Anxiety, Depression, ADHD (Attention-Deficit/Hyperactivity Disorder), Sleep Disorders, Stress	Yes, I have an invisible (non-visible) disability	Attention deficit hyperactivity disorder (ADHD), Depression	Experienced increased depression

Image 51: Primary Survey Responses by participants 15-22.

	AV	AW	AX	AY	AZ	BA	BB
16	Somewhat Positively	Not Applicable	Somewhat Negatively	Addition of more furniture types, More indoor plants, Natural light, Water features, Outdoor views, Change in furniture layout, Natural materials	Put up signs that say all welcome , who's aloud to use the place, paint the walls a different colour, something calming , make it a more casual looking space it feels very stale	I'm dylexic if I spelled something wrong or my wording isn't clear I'm happy to awnser questions about my responses it's totally possible I misunderstood certain questions	
17	Neutral/ NA	Moderately Well	Somewhat Negatively	Outdoor views, Natural light, Addition of more furniture types, Change in furniture layout, Water features, Natural materials, More indoor plants	I believe this space could be improved by adding more leisure-oriented furniture or background elements, such as relaxing posters and comfortable work areas (seating). It could be designed as a space where people can interact with each other while still ensuring privacy.	N/A	
18	Neutral/ NA	Not Applicable	Neutral/NA	More indoor plants, Natural light, Water features, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types	Na	Not used MCA 101	
19	Neutral/ NA	Not Applicable	Neutral/NA	Natural light, Water features, Outdoor views, More indoor plants, Natural materials, Change in furniture layout, Addition of more furniture types	none	none	
20	Neutral/ NA	Not Applicable	Neutral/NA	More indoor plants, Natural light, Water features, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types	I have never used this space. Hence, I do not have first-hand experience in this area.	none	
21	Very Positively	Not Applicable	Somewhat Positively	More indoor plants, Natural light, Addition of more furniture types, Natural materials, Water features, Outdoor views, Change in furniture layout	I like the idea of potentially building community around it - getting students to work together to nuture the space. This is a key component of community gardens and I think could potentially be woven into the philosophy behind	None	
22	Neutral/ NA	Not at All Well	Somewhat Negatively	Change in furniture layout, Natural light, Outdoor views, More indoor plants, Water features, Natural materials, Addition of more furniture types	Maybe could have better chairs	No	
23	Neutral/ NA	Not at All Well	Neutral/NA	Natural light, Outdoor views, Natural materials, Addition of more furniture types, More indoor plants, Change in furniture layout, Water features	Make the vibes more casual and relaxing. Add soft materials (cushions for example)	N/A	

Image 52: Primary Survey Responses by participants 15-22.



	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
16	Signs saying all are welcome or the ediqute of the space? I feel like almost every location in ocad I'm not supposed to be there and I need reassurance	Not Applicable	Distracted or unfocused, Neutral (neither positive nor negative or N/A)	0-Not Applicable	No	2 – Poor	N/A	Not at All Beneficial/NA	Somewh at Positively	Not Applicable	Somewhat Negatively	Addition of more furniture types, More indoor plants, Natural light, Water features, Outdoor views, Change in furniture layout, Natural materials
17	This area could benefit from enhancing its water supply features, such as adding water vending machines and food vending machines. Additionally, it might be a good idea to install more lighting to ensure adequate illumination during nighttime.	Slightly Well	Neutral (neither positive nor negative or N/A)	2 – Poor	No	2 – Poor	N/A	Moderately Beneficial	Neutral/ NA	Moderately Well	Somewhat Negatively	Outdoor views, Natural light, Addition of more furniture types, Change in furniture layout, Water features, Natural materials, More indoor plants
18	No	Not Applicable	Happy and content	0-Not Applicable	Not Sure	5 – Very Good	N/A	Not at All Beneficial/NA	Neutral/ NA	Not Applicable	Neutral/NA	More indoor plants, Natural light, Water features, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types
19	nope	Not Applicable	Neutral (neither positive nor negative or N/A)	3 – Fair	Not Sure	5 – Very Good	N/A	Moderately Beneficial	Neutral/ NA	Not Applicable	Neutral/NA	Natural light, Water features, Outdoor views, More indoor plants, Natural materials, Change in furniture layout, Addition of more furniture types
20	none	Not Applicable	Neutral (neither positive nor	0-Not Applicable	Yes	4 – Good	N/A	Not at All Beneficial/NA	Neutral/ NA	Not Applicable	Neutral/NA	More indoor plants, Natural light, Water features, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types
21	I'm not sure. I really like the use of galleries, plants, and couches. I love when there are art markets in the main hall with students selling their work - I wish that this occured more often.	Extremely Well	Calm and relaxed, Happy and content	4 – Good	Yes	5 – Very Good	Sometim es	Very Beneficial	Very Positively	Not Applicable	Somewhat Positively	More indoor plants, Natural light, Addition of more furniture types, Natural materials, Water features, Outdoor views, Change in furniture layout
22	Not Sure, I don't like the chair there, not usually like to use the space	Not at All Well	Distracted or unfocused	2 – Poor	No	3 – Fair	Rarely	Slightly Beneficial	Neutral/ NA	Not at All Well	Somewhat Negatively	Change in furniture layout, Natural light, Outdoor views, More indoor plants, Water features, Natural materials, Addition of more furniture types
23	I've never used it but I think because it's next to a hallway, people walking around can be a distraction. It also looks like a basement from the picture	Not at All Well	Neutral (neither positive nor negative or N/A)	1 – Very Poor	No	2 – Poor	N/A	Not at All Beneficial/NA	Neutral/ NA	Not at All Well	Neutral/NA	Natural light, Outdoor views, Natural materials, Addition of more furniture types, More indoor plants, Change in furniture layout, Water features

Image 53: Primary Survey Responses by participants 15-22.

	AF	AG	AH	AI	AJ	AK	AL	AM
16	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces)	Moderately important	2	5	100 mccaul lobby 6th floor, grange park	None/NA	N/A	1 – Not at all supportive/Not Applicable
17	Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Indoor plants or green walls, Views of nature (e.g., windows overlooking green spaces)	Moderately important	2	4	205 Richmond St (social & study spaces / microwaves), Main BLdg (social & Study spaces)	None/NA	N/A	8 – Extremely supportive
18	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Moderately important	2	5		None/NA	N/A	4 – Somewhat supportive
19	Natural lighting, Natural materials (e.g., wood, stone), Natural ventilation, Indoor plants or green walls	Moderately important	3	3	Library, washrooms, lecture rooms	None/NA	N/A	5 – Neutral
20	Natural lighting	Very important	4	4	7th Floor Lounge and Washroom, Class rooms in 3rd Floor	None/NA	N/A	1 – Not at all supportive/Not
21	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	5	5	Grange Park, The Great Hall, Hoover Library	Weekly	Late Afternoon (4 PM - 6 PM), Afternoon (12 PM - 4 PM), Late Morning (10 AM - 12 PM), Evening (6 PM - 9 PM)	10 – Perfectly supportive
22	Natural lighting, Indoor plants or green walls, Natural ventilation	Slightly important	1	4	205 Richmond W-420, 199 Richmond W-Onsite Gallery, Library	Monthly	Late Afternoon (4 PM - 6 PM), Evening (6 PM - 9 PM)	5 – Neutral
23	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Textures and patterns inspired by nature, Views of nature (e.g., windows overlooking green spaces), Natural materials (e.g., wood, stone)	Very important	3	5	Graduate building (RHA), 230 Richmond W (RHB)'s 6th floor (student wellness center), Annex building (library, learning space)	None/NA	N/A	5 – Neutral
	Natural lighting, Indoor plants or green walls, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	4	5	Library, and the garden behind main campus	None/NA	N/A	5 – Neutral

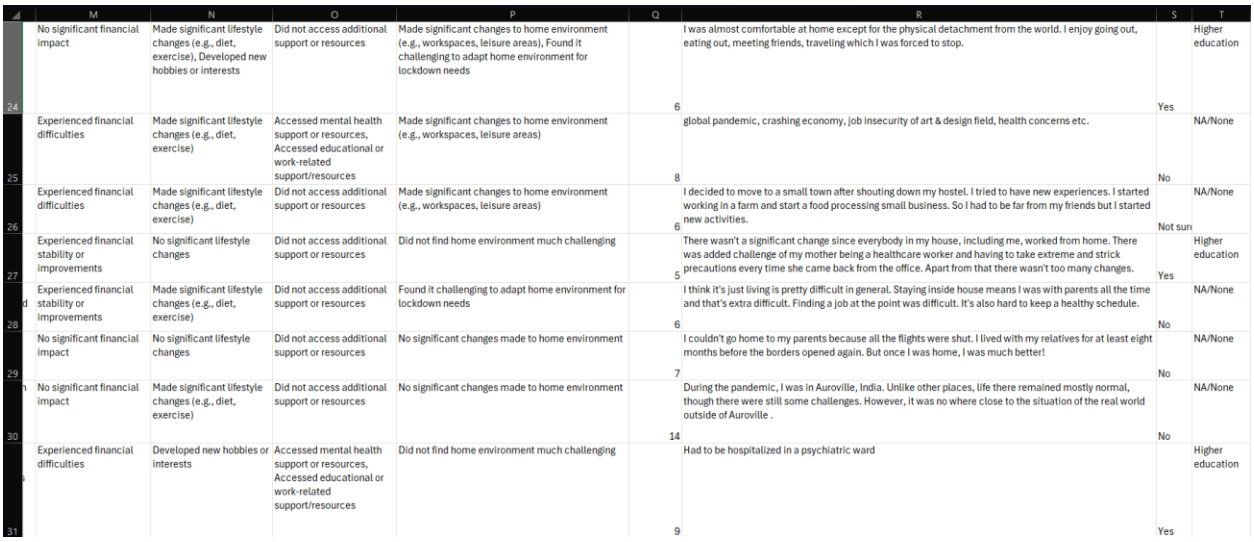
Image 54: Primary Survey Responses by participants 15-22.

	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
16	No	NA/None	NA/None	Not Sure	3 - Moderately important	I think making people aware of resources is important but presenting things like yoga or quiet mindfulness time as beneficial for everyone simply isn't accurate. There were times I was forced to take part in yoga (not covid related) and it made my anxiety worse. So listing potential solutions (theiripy resources, how to maintain self care etc) is essential but forcing everyone to take part in mindfulness sessions/ yoga is not helpful for a lot of people. Most of us know what works for us.	Moderately important	Yes	It somewhat improved my well-being	Rarely	Somewhat prefer	Not familiar at all	Heard of it but not familiar
17	Yes	Secondary school	Mental health awareness	Yes	4 - Very important	I chose "very important" for this option because, although I consider myself someone with relatively strong mental resilience and the ability to recover quickly, I have heard of cases where students from different schools were deeply affected by mental health issues and stress, sometimes leading to suicide or significant disruptions in their lives. Therefore, I believe this is a matter of great importance.	Slightly important	Yes	It somewhat improved my well-being	Once a week	Somewhat prefer	Heard of it but not familiar	Heard of it but not familiar
18	Yes	Secondary school	Emotional regulation	Yes	5 - Extremely important	It is highly important for kids to know how to deal w it from a young age	Moderately important	Yes	It had no noticeable impact	Rarely	Strongly prefer	Heard of it but not familiar	Heard of it but not familiar
19	No	NA/None	NA/None	No	3 - Moderately important	a portion of technical education is to understand and learn to tackle under pressure, if mental health is in center the relaxed environment could lead to people not understanding the importance of the role. But at the same time pressure shouldnt be to much that put a person's life at risk	Moderately important	No	It had no noticeable impact	Daily	Somewhat prefer	Somewhat familiar	Somewhat familiar
20	Yes	Secondary school	Mindfulness	Yes	4 - Very important	The environment decides our emotion in a lot of ways	Very important	Yes	It somewhat improved my well-being	Rarely	Somewhat prefer	Somewhat familiar	Somewhat familiar
21	Yes	Higher education	Mental health awareness	Yes	4 - Very important	I work with undergrad students and so many are experiencing mental health issues and yet they all feel so alone. I think it needs to be normalized so that people know they have others who can help them cope.	Extremely important	Yes	It greatly improved my well-being	Daily	Strongly prefer	Very familiar	Very familiar
22	No	NA/None	NA/None	Yes	4 - Very important	Quite important to provide students to have some tools to navigate through tough time.	Moderately important	Yes	It somewhat improved my well-being	A few times a week	Somewhat prefer	Not familiar at all	Not familiar at all
23	Yes	Higher education	Mental health awareness	Yes	5 - Extremely important	I didn't have mental health education in my high school back then but high schools in China are extremely stressful and that experience left me traumatized and depressed for years while I didn't even know I had depression until the 3rd years of university. My cousin who is 18 now had mental health lecture giving to both students and parents so he and his family were both aware of the mental struggles he has been through and I felt lucky for him.	Slightly important	Yes	It somewhat improved my well-being	Rarely	Strongly prefer	Heard of it but not familiar	Not familiar at all
		Higher education	Mindfulness	Yes	5 - Extremely important	Nonetheless it should be a part of stress management dealing with academics	Extremely important	Yes	It greatly improved my well-being	A few times a week	Strongly prefer	Very familiar	Very familiar

Image 55: Primary Survey Responses by participants 15-22.

	L	M	N	O	P	Q	R
16	Experienced increased isolation or loneliness, Experienced difficulties maintaining social connections	Experienced financial difficulties	Developed new hobbies or interests	Did not access additional support or resources, Wanted to but could not	Found it challenging to adapt home environment for lockdown needs	10	I had just lost most of my friends, and was starting at a new school (uni). The friends I had left lived far and were always busy so we couldn't do a social distance get together or call and I had no opportunity to make new friends because of the lockdown. I have social and generalized anxiety disorder, so hearing all the scary things happening in the world and being left alone with my thoughts wasn't the best for my mental health. Trying to get back to normal when restrictions lifted for the final time I found nearly impossible. I still struggle to start and maintain meaningful relationships because of how much progress I lost in lockdown
17	Maintained social connections through virtual means	No significant financial impact	Made significant lifestyle changes (e.g., diet, exercise)	Did not access additional support or resources, Wanted to but could not	Did not find home environment much challenging	3	For an indoor person like me, socializing and engaging in activities at home pose no stress at all—in fact, they can even be relaxing, but only when it's voluntary. I must admit, during the COVID-19 pandemic, deliberately reducing the time spent going out or attending in-person classes brought on a sense of pressure. I even suspect that I developed depression during this period (which could also have been influenced by the stress of job hunting and studying for graduation). On top of that, the lack of outdoor activities led to noticeable weight gain—a situation experienced by at least four other people around me.
18	Maintained social connections through virtual means	No significant financial impact	Made significant lifestyle changes (e.g., diet, exercise)	Did not access additional support or resources	Did not find home environment much challenging	3	Nothing really changed, just the fact that each member of the family who usually met at the dinner is now always around.
19	Maintained social connections through virtual means, No significant change in social interactions	Experienced financial stability or improvements	Made significant lifestyle changes (e.g., diet, exercise), Developed new hobbies or interests	Did not access additional support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas), Did not find home environment much challenging	3	Nothing much was changed, except extra attention to avoid germs. Adapted to the lifestyle pretty quickly
20	No significant change in social interactions	No significant financial impact	No significant lifestyle changes	Did not access additional support or resources	No significant changes made to home environment	7	Health issues of family members were a concern, due to their advanced age.
21	Experienced increased isolation or loneliness, Maintained social connections through virtual means	No significant financial impact	Made significant lifestyle changes (e.g., diet, exercise)	Accessed mental health support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas)	6	I was always able to be at home with people (whether it be friends or family) and my employment and income remained secure. I never got very sick and didn't lose any friends or family to COVID. I did get lonely though, and yearned for life where I could go out and spend time with people.
22	Maintained social connections through virtual means	No significant financial impact	No significant lifestyle changes	Accessed educational or work-related support/resources	No significant changes made to home environment	3	Not too hard for me to access education and others
23	Experienced increased isolation or loneliness	No significant financial impact	Made significant lifestyle changes (e.g., diet, exercise), Developed new hobbies or interests	Accessed mental health support or resources	No significant changes made to home environment	7	Access to entertainment activities and healthcare was limited. Staying at home with parents got me more tensions with them. I did my undergrad outside of my hometown so I couldn't meet my classmates and felt isolated in the learning experience.

Image 56: Primary Survey Responses by participants 15-22.

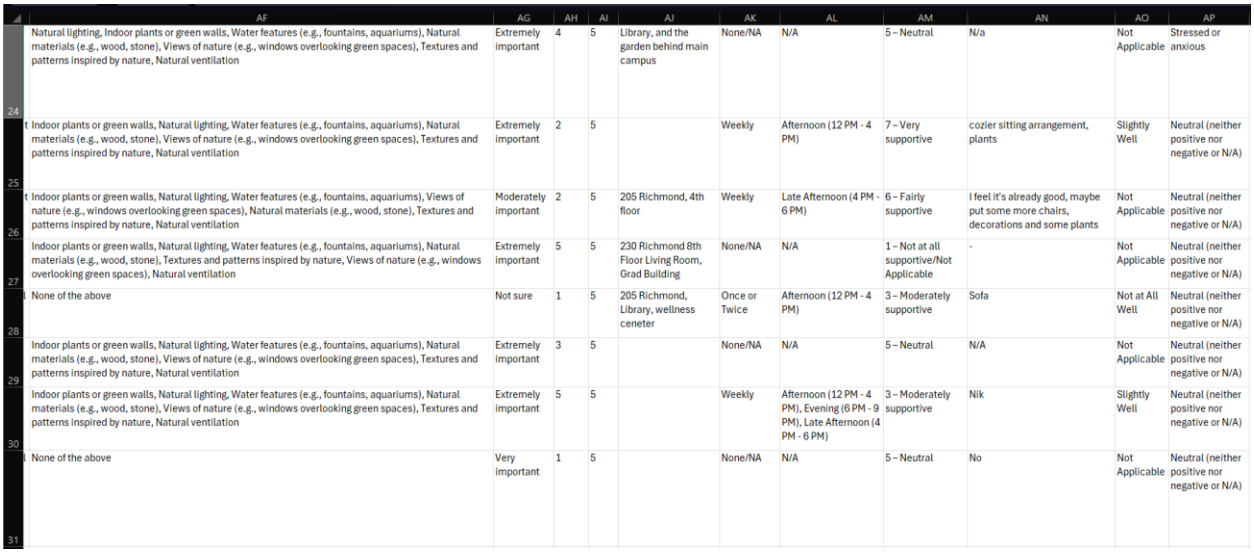


	M	N	O	P	Q	R	S	T
24	No significant financial impact	Made significant lifestyle changes (e.g., diet, exercise), Developed new hobbies or interests	Did not access additional support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas), Found it challenging to adapt home environment for lockdown needs	6	I was almost comfortable at home except for the physical detachment from the world. I enjoy going out, eating out, meeting friends, traveling which I was forced to stop.	Yes	Higher education
25	Experienced financial difficulties	Made significant lifestyle changes (e.g., diet, exercise)	Accessed mental health support or resources, Accessed educational or work-related support/resources	Made significant changes to home environment (e.g., workspaces, leisure areas)	8	global pandemic, crashing economy, job insecurity of art & design field, health concerns etc.	No	NA/None
26	Experienced financial difficulties	Made significant lifestyle changes (e.g., diet, exercise)	Did not access additional support or resources	Made significant changes to home environment (e.g., workspaces, leisure areas)	6	I decided to move to a small town after shouting down my hostel. I tried to have new experiences. I started working in a farm and start a food processing small business. So I had to be far from my friends but I started new activities.	Not sur	NA/None
27	Experienced financial stability or improvements	No significant lifestyle changes	Did not access additional support or resources	Did not find home environment much challenging	5	There wasn't a significant change since everybody in my house, including me, worked from home. There was added challenge of my mother being a healthcare worker and having to take extreme and strick precautions every time she came back from the office. Apart from that there wasn't too many changes.	Yes	Higher education
28	Experienced financial stability or improvements	Made significant lifestyle changes (e.g., diet, exercise)	Did not access additional support or resources	Found it challenging to adapt home environment for lockdown needs	6	I think it's just living is pretty difficult in general. Staying inside house means I was with parents all the time and that's extra difficult. Finding a job at the point was difficult. It's also hard to keep a healthy schedule.	No	NA/None
29	No significant financial impact	No significant lifestyle changes	Did not access additional support or resources	No significant changes made to home environment	7	I couldn't go home to my parents because all the flights were shut. I lived with my relatives for at least eight months before the borders opened again. But once I was home, I was much better!	No	NA/None
30	No significant financial impact	Made significant lifestyle changes (e.g., diet, exercise)	Did not access additional support or resources	No significant changes made to home environment	14	During the pandemic, I was in Auroville, India. Unlike other places, life there remained mostly normal, though there were still some challenges. However, it was no where close to the situation of the real world outside of Auroville .	No	NA/None
31	Experienced financial difficulties	Developed new hobbies or interests	Accessed mental health support or resources, Accessed educational or work-related support/resources	Did not find home environment much challenging	9	Had to be hospitalized in a psychiatric ward	Yes	Higher education

Image 57: Primary Survey Responses by participants 23-30.

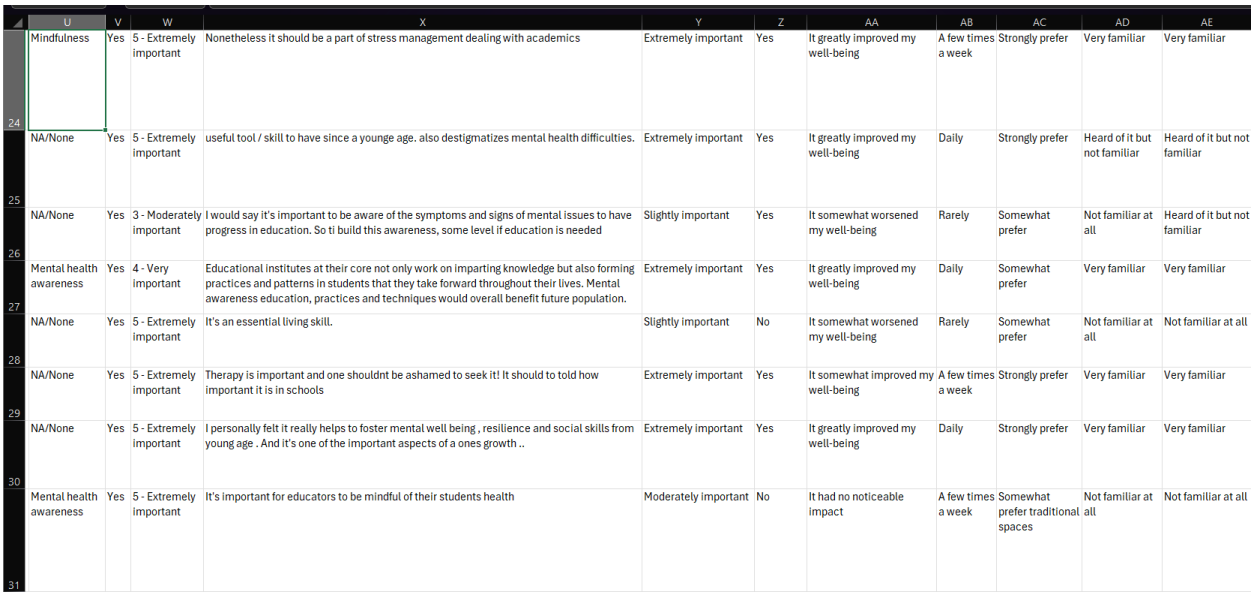
	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
24	0-Not Applicable	No	2 – Poor	N/A	Not at All Beneficial/NA	Very Positively	Not Applicable	Somewhat Negatively	Natural light, Water features, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types, More indoor plants	N/a	N/a
25	3 – Fair	No	3 – Fair	N/A	Moderately Beneficial	Very Positively	Slightly Well	Neutral/NA	Addition of more furniture types, More indoor plants, Natural light, Outdoor views, Change in furniture layout, Natural materials, Water features	cozier sitting arrangement, customizable and accessible furniture which you can move around, more plants, natural light, SAD lamp for winter months.	na
26	2 – Poor	No	2 – Poor	Rarely	Moderately Beneficial	Neutral/ NA	Slightly Well	Neutral/NA	Change in furniture layout, Addition of more furniture types, More indoor plants, Natural light, Outdoor views, Natural materials, Water features	More sits and use more natural elements and some decorative elements.	NA
27	3 – Fair	Not Sure	6 – Excellent	N/A	Moderately Beneficial	Neutral/ NA	Not Applicable	Neutral/NA	Natural light, Water features, More indoor plants, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types	Haven't visited the space to provide an informed answer.	MCA-101 isn't a space I have ever visited.
28	3 – Fair	No	2 – Poor	N/A	Moderately Beneficial	Neutral/ NA	Not at All Well	Neutral/NA	Water features, More indoor plants, Outdoor views, Natural materials, Natural light, Change in furniture layout, Addition of more furniture types	Definitely more sofa. Hopefully a good separation inbetween working space. More lighting will be appreciated.	Can any other spaces on second and third floor be explored?
29	3 – Fair	Not Sure	3 – Fair	N/A	Moderately Beneficial	Neutral/ NA	Not Applicable	Neutral/NA	Natural light, Outdoor views, More indoor plants, Change in furniture layout, Water features, Natural materials, Addition of more furniture types	If dividers were to be used anywhere, one could add planters in those dividers	N/A
30	3 – Fair	No	4 – Good	Never	Moderately Beneficial	Very Positively	Not Applicable	Neutral/NA	Outdoor views, Change in furniture layout, Addition of more furniture types, Natural materials, Water features, More indoor plants, Natural light	Use of natural materials . I think creating a focal point with a living green wall or vertical garden to the space can help to improve .	Nil
31	0-Not Applicable	Not Sure	1 – Very Poor	N/A	Not at All Beneficial/NA	Neutral/ NA	Not Applicable	Neutral/NA	More indoor plants, Natural light, Water features, Outdoor views, Natural materials, Change in furniture layout, Addition of more furniture types	N/A	No

Image 58: Primary Survey Responses by participants 23-30.



	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
24	Natural lighting, Indoor plants or green walls, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	4	5	Library, and the garden behind main campus	None/NA	N/A	5 – Neutral	N/a	Not Applicable	Stressed or anxious
25	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	2	5		Weekly	Afternoon (12 PM - 4 PM)	7 – Very supportive	cozier sitting arrangement, plants	Slightly Well	Neutral (neither positive nor negative or N/A)
26	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Views of nature (e.g., windows overlooking green spaces), Natural materials (e.g., wood, stone), Textures and patterns inspired by nature, Natural ventilation	Moderately important	2	5	205 Richmond, 4th floor	Weekly	Late Afternoon (4 PM - 6 PM)	6 – Fairly supportive	I feel it's already good, maybe put some more chairs, decorations and some plants	Not Applicable	Neutral (neither positive nor negative or N/A)
27	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Textures and patterns inspired by nature, Views of nature (e.g., windows overlooking green spaces), Natural ventilation	Extremely important	5	5	230 Richmond 8th Floor Living Room, Grad Building	None/NA	N/A	1 – Not at all supportive/Not Applicable	-	Not Applicable	Neutral (neither positive nor negative or N/A)
28	None of the above	Not sure	1	5	205 Richmond, Library, wellness ceneter	Once or Twice	Afternoon (12 PM - 4 PM)	3 – Moderately supportive	Sofa	Not at All Well	Neutral (neither positive nor negative or N/A)
29	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	3	5		None/NA	N/A	5 – Neutral	N/A	Not Applicable	Neutral (neither positive nor negative or N/A)
30	Indoor plants or green walls, Natural lighting, Water features (e.g., fountains, aquariums), Natural materials (e.g., wood, stone), Views of nature (e.g., windows overlooking green spaces), Textures and patterns inspired by nature, Natural ventilation	Extremely important	5	5		Weekly	Afternoon (12 PM - 4 PM), Evening (6 PM - 9 PM), Late Afternoon (4 PM - 6 PM)	3 – Moderately supportive	Nik	Slightly Well	Neutral (neither positive nor negative or N/A)
31	None of the above	Very important	1	5		None/NA	N/A	5 – Neutral	No	Not Applicable	Neutral (neither positive nor negative or N/A)

Image 59: Primary Survey Responses by participants 23-30.



	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
24	Mindfulness	Yes	5 - Extremely important	Nonetheless it should be a part of stress management dealing with academics	Extremely important	Yes	It greatly improved my well-being	A few times a week	Strongly prefer	Very familiar	Very familiar
25	NA/None	Yes	5 - Extremely important	useful tool / skill to have since a younge age. also destigmatizes mental health difficulties.	Extremely important	Yes	It greatly improved my well-being	Daily	Strongly prefer	Heard of it but not familiar	Heard of it but not familiar
26	NA/None	Yes	3 - Moderately important	I would say it's important to be aware of the symptoms and signs of mental issues to have progress in education. So ti build this awareness, some level if education is needed	Slightly important	Yes	It somewhat worsened my well-being	Rarely	Somewhat prefer	Not familiar at all	Heard of it but not familiar
27	Mental health awareness	Yes	4 - Very important	Educational institutes at their core not only work on imparting knowledge but also forming practices and patterns in students that they take forward throughout their lives. Mental awareness education, practices and techniques would overall benefit future population.	Extremely important	Yes	It greatly improved my well-being	Daily	Somewhat prefer	Very familiar	Very familiar
28	NA/None	Yes	5 - Extremely important	It's an essential living skill.	Slightly important	No	It somewhat worsened my well-being	Rarely	Somewhat prefer	Not familiar at all	Not familiar at all
29	NA/None	Yes	5 - Extremely important	Therapy is important and one shouldnt be ashamed to seek it! It should to told how important it is in schools	Extremely important	Yes	It somewhat improved my well-being	A few times a week	Strongly prefer	Very familiar	Very familiar
30	NA/None	Yes	5 - Extremely important	I personally felt it really helps to foster mental well being , resilience and social skills from young age . And it's one of the important aspects of a ones growth ..	Extremely important	Yes	It greatly improved my well-being	Daily	Strongly prefer	Very familiar	Very familiar
31	Mental health awareness	Yes	5 - Extremely important	It's important for educators to be mindful of their students health	Moderately important	No	It had no noticeable impact	A few times a week	Somewhat prefer traditional spaces	Not familiar at all	Not familiar at all

Image 60: Primary Survey Responses by participants 23-30.

10.2.5 Secondary Survey Responses by the Participants

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	What is your Age?	What is your role in OCAD University?	What is your Gender?	Your Education Level?	What is your occupational sector?	Please specify the occupation	Do you currently experience any ongoing mental health issues? (Select all that apply)	Do you identify as having a Visible or Invisible disability or any severe health condition?	If yes, what health conditions do you have? Select All that may apply.	What spaces do you mostly use at OCADU? (Go to the map mentioned below to find out the title of the room if required) Mention 2-3 spaces if possible.	What is your frequency of use of this physical workspace- MCA 101?	If you use this space, what time of the day do you use this space?	On a scale of 1-10, how would you rate the overall atmosphere of the MCA-101 space before the modifications?	On a scale of 1-10, how would you rate the overall atmosphere of the MCA-101 space after the redesign?	Which biophilic design elements did you notice in the space?
2	20-29	Undergrad Student	Female	High school degree or equivalent (e.g., GED)	Education	Children's art tutor	Depression, Stress	Prefer not to say		MCA 101, MCA 274	Weekly	Afternoon (12 PM - 4 PM)	6	8	Indoor plants
3	20-29	Undergrad Student	Female	Bachelor's degree	Arts/Entertainment/Media	Visual arts	Depression, ADHD (Attention-Deficit/Hyperactivity Disorder)	Yes, I have an invisible (non-visible) disability	Attention deficit hyperactivity disorder (ADHD), Depression	4 Floor and First floor	Monthly	Late Morning (10 AM - 12 PM), Afternoon (12 PM - 4 PM)	3	9	Indoor plants
4	18-20	Undergrad Student	Female	High school degree or equivalent (e.g., GED)	Student	Student	Stress	No, I do not identify as having a disability		In the main building I use the sixth floor computer lab, the fifth floor thesis desks, in the annex building I use the social hubs, and I use the ocad print shop	Monthly	Morning (6 AM - 10 AM)	6	8	Indoor plants
	20-29	Grad Student	Female	Bachelor's degree	Design	Industrial designer	Anxiety, Depression	No, I do not identify as having a disability		Inclusive design studio (4th floor at 205 Richmond), and the graduate students lounge (7th floor at 205 Richmond)	None/NA	N/A	3	7	Natural materials (wood, stone, etc.)

Image 61: Secondary Survey Responses by participants 1-4.

	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	Which biophilic design elements did you notice in the space?	On a scale of 1-10, how effective do you believe these biophilic elements were in enhancing your experience in the space?	Q. On a scale of 1-10, how would you rate your mood before using the redesigned space?	Q. On a scale of 1-10, how would you rate your mood after using the redesigned space?	Q. Did you find the redesigned space to be more conducive to your mental well-being compared to the previous setup?	How did the new design impact your focus and concentration while using the space?	If you could, would you choose to study or work in a biophilic-designed environment regularly?	What did you like most about the redesigned MCA-101 space?	What did you dislike the most about the redesigned MCA101 space?	Any additional comments or suggestions regarding the biophilic elements and overall experience in the MCA-101 space?	On a scale of 1-10, how likely are you to recommend the redesigned space to others?	Would you be interested in using the redesigned space again in the future?
2	Indoor plants	7	6	7	Yes	No Change	Yes, definitely	Wall plants	Potted plants took up table space	Less plants on the table; I know people who need the space for bigger projects	5	Yes
3	Indoor plants	10	5	8	Unsure	Better	Yes, definitely	Greenery	Nothing?	Would like to see hanging plants too	10	Yes
4	Indoor plants	7	5	7	Yes	No Change	Maybe	The green made the space more vibrant and colourful	Dsappointing to notice the plants and wood panelling around the structural beam	It looked nicer, would be a more enjoyable upgrade if the features were actually organic	6	Sure
	Natural materials (wood, stone, etc.)	8	5	8	Yes	Better	Yes, definitely	Being in contact with nature features makes me feel at home	Nothing	Maybe adding a plant with a fragrance for a multisensorial experience	9	Yes, definitely

Image 62: Secondary Survey Responses by participants 1-4.

	A	B	C	D	E	F	G	H	I	J	K	L	M
6	20-29	Grad Student	Female	Bachelor's degree	Arts/Entertainment/Media	Designer	Anxiety, Depression, Stress, PTSD (Post-Traumatic Stress Disorder), Eating Disorders, Sleep Disorders	Yes, I have an invisible (non-visible) disability	Depression, Post-traumatic stress disorder (PTSD), Migraines, Gastrointestinal disorders (e.g., irritable bowel syndrome, Crohn's disease)	INCD room (203 Richmond Street), Student Wellness Centre, main campus MCA 101	Weekly	Afternoon (12 PM - 4 PM), Late Afternoon (4 PM - 6 PM)	6
7	20-29	Grad Student	Female	Bachelor's degree	Technology/IT	UX Designer	Anxiety, Depression, ADHD (Attention-Deficit/Hyperactivity Disorder), Stress, Sleep Disorders	Yes, I have an invisible (non-visible) disability	Learning disability (e.g., dyslexia, dysgraphia, dyscalculia), Attention deficit hyperactivity disorder (ADHD), Depression		Monthly	Night (9 PM - 12 AM)	4
8	30-39	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Technology/IT	Product Designer	Depression, ADHD (Attention-Deficit/Hyperactivity Disorder), Stress	No, I do not identify as having a disability	Learning disability (e.g., dyslexia, dysgraphia, dyscalculia), Attention deficit hyperactivity disorder (ADHD), Migraines	Library	None/NA	Varies (No specific time)	9
9	20-29	Alumni	Female	College diploma	Retail/Hospitality	Chef	Anxiety, Depression, ADHD (Attention-Deficit/Hyperactivity Disorder)	Yes, I have an invisible (non-visible) disability	Attention deficit hyperactivity disorder (ADHD), Anxiety disorder, Depression	Social and study place	None/NA	N/A	6
10	20-29	Grad Student	Male	Bachelor's degree	Construction/Real Estate	Designer	Anxiety, Depression, Stress, Sleep Disorders, Eating Disorders	No, I do not identify as having a disability			Weekly	Late Morning (10 AM - 12 PM)	5
	20-29	Undergrad Student	Male	College diploma	Self-employed/Freelance	Artist	Anxiety, Depression, ADHD (Attention-Deficit/Hyperactivity Disorder), PTSD (Post-Traumatic Stress Disorder), Sleep Disorders, Stress	Yes, I have an invisible (non-visible) disability	Hearing impairment (e.g., deafness, hard of hearing), Learning disability (e.g., dyslexia, dysgraphia, dyscalculia), Autism spectrum disorder (ASD), Attention deficit hyperactivity disorder (ADHD), Depression, Post-traumatic stress disorder (PTSD), Anxiety disorder, Migraines	MCA 251, MCA 101, MCA 106	Weekly	Late Morning (10 AM - 12 PM), Late Afternoon (4 PM - 6 PM), Evening (6 PM - 9 PM), Varies (No specific time)	4

Image 63: Secondary Survey Responses by participants 5-10.

	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
6	9	Water features	9	9	10	Yes	Better	Yes, definitely	Plants	All plants can be natural	Not sure	10	yes
7	7	Indoor plants	7	3	7	Yes	Better	Yes, definitely	The little shelf with the vines and leaves that blocks the space a bit from the hallway	Maybe the plants on the floor. I feel like they barely have sunshine exposure. Could be put higher up maybe.	Not sure if you tried the therapy lamp that is supposed to mimic sunlight in the long winter. Not sure if it works for everyone but could be a good thing to have in the study zone	9	Yes
8	9	Indoor plants	6	10	10	Yes	Better	Yes, definitely	The presence of plants enhances the study environment, fostering greater concentration and focus.	Nothing	none	10	yes
9	10	Indoor plants	9	5	10	Yes	Much Better	Yes, definitely	The use of indoor plants , fishtank and living wall	NA	NA	10	YES
10	9	Indoor plants	9	5	9	Yes	Much Better	Yes, definitely	Selective use of plants to make the space more appealing	There could have been more plants	The biophilic design additions help in reducing stress levels while reading.	10	Definitely
	10	Indoor plants	10	4	10	Yes	Better	Yes, definitely	The plants!!! I love the inclusion of greenery, it really adds comfort and relaxation.	It does feel a little busy visually, but I still find that within acceptable amounts.	Keep up the awesome work! It looks great!	10	Yes, absolutely!

Image 64: Secondary Survey Responses by participants 5-10.

	A	B	C	D	E	F	G	H	I	J	K	L	M
11	20-29	Undergrad Student	Male	College diploma	Self-employed/Freelance	Artist	Anxiety, Depression, ADHD (Attention-Deficit/Hyperactivity Disorder), PTSD (Post-Traumatic Stress Disorder), Sleep Disorders, Stress	Yes, I have an invisible (non-visible) disability	Hearing impairment (e.g., deafness, hard of hearing), Learning disability (e.g., dyslexia, dysgraphia, dyscalculia), Autism spectrum disorder (ASD), Attention deficit hyperactivity disorder (ADHD), Depression, Post-traumatic stress disorder (PTSD), Anxiety disorder, Migraines	MCA 251, MCA 101, MCA 106	Weekly	Late Morning (10 AM - 12 PM), Late Afternoon (4 PM - 6 PM), Evening (6 PM - 9 PM), Varies (No specific time)	4
12	20-29	Grad Student	Female	Bachelor's degree	Self-employed/Freelance	Architect	Stress	No, I do not identify as having a disability	Prefer not to disclose		Weekly	Late Afternoon (4 PM - 6 PM)	7
13	20-29	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Arts/Entertainment/Media	UIUX	Anxiety	No, I do not identify as having a disability		205 Richmond	None/NA	Evening (6 PM - 9 PM)	8
14	20-29	Grad Student	Female	Graduate degree (e.g., Masters, PhD, M.D)	Arts/Entertainment/Media	Graphic designer	Stress, Depression, Anxiety, Eating Disorders	No, I do not identify as having a disability		Printing studio, inclusive design lab, open study space on 6th floor	Monthly	Afternoon (12 PM - 4 PM)	7
15	18-20	Undergrad Student	Female	High school degree or equivalent (e.g., GED)	Education	just student	Stress	No, I do not identify as having a disability		Mca 190, 170, 264	Weekly	Afternoon (12 PM - 4 PM)	5
16	30-39	Grad Student	Non-Binary	Bachelor's degree	Government/Public Service	Coordinator	Anxiety, Depression, Stress, ADHD (Attention-Deficit/Hyperactivity Disorder), PTSD (Post-Traumatic Stress Disorder)	Yes, I have an invisible (non-visible) disability	Anxiety disorder, Depression, Post-traumatic stress disorder (PTSD), Obsessive-compulsive disorder (OCD), Migraines		None/NA	N/A	4
	20-29	Grad Student	Female	Bachelor's degree	Student	Student	Anxiety, Depression, Stress, ADHD (Attention-Deficit/Hyperactivity Disorder), Sleep Disorders	Yes, I have an invisible (non-visible) disability	Anxiety disorder, Attention deficit hyperactivity disorder (ADHD), Sensory processing disorder	205 Richmond 6 floor DF studio	Monthly	Night (9 PM - 12 AM)	4

Image 65: Secondary Survey Responses by participants 11-16.

	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
11	10	Indoor plants	10	4	10	Yes	Better	Yes, definitely	The plants!!! I love the inclusion of greenery, it really adds comfort and relaxation.	It does feel a little busy visually, but I still find that within acceptable amounts.	Keep up the awesome work! It looks great!	10	Yes, absolutely!
12	8	Natural light	5	5	7	Yes	Much Better	Yes, definitely	Its more welcoming after redesigning	Everything is good, seating should be there like breakout zones	Like i said breakout zones for discussion and hangout	10	Yes for sure
13	8	Natural materials (wood, stone, etc.)	7	9	9	Yes	Better	Maybe	Plants and more sets	Unchanged furniture	Maybe more wall design	8	Yes
14	7	Natural light	9	7	9	Yes	Better	Yes, definitely	More plants	N/A	Fragrance might help	10	yes
15	8	Living walls (green walls or vertical gardens)	8	8	9	Yes	Better	Yes, definitely	The wood and vertical garden	maybe the table plants, they may impact usage of the tables	Maybe do wall or hanging plants rather than taking up space on the tables	7	Yea
16	8	Indoor plants	8	4	8	Yes	Better	Yes, definitely	Plants on the tables	I would have liked even more bio Philip elements	None	7	Yes, definitely!
	6	Indoor plants	6	4	6	Unsure	No Change	Maybe	Shelfs	Plant on table, taking up space	Cushion for chairs?	6	Yes

Image 66: Secondary Survey Responses by participants 11-16.

	A	B	C	D	E	F	G	H	I	J	K	L	M
16							Traumatic Stress Disorder)						
17	20-29	Grad Student	Female	Bachelor's degree	Student	Student	Anxiety, Depression, Stress, ADHD (Attention-Deficit/Hyperactivity	Yes, I have an invisible (non-visible) disability	Anxiety disorder, Attention deficit hyperactivity disorder (ADHD), Sensory processing disorder	205 Richmond 6 floor DF studio	Monthly	Night (9 PM - 12 AM)	4
18	20-29	Alumni	Non-Binary	Graduate degree (e.g., Masters, PhD, M.D)	Self-employed/Freelance	Design	Anxiety, Depression, Stress	No, I do not identify as having a disability	Prefer not to disclose	Cafeteria	Monthly	Varies (No specific time)	4
19	40-49	Janitor	Female	High school degree or equivalent (e.g., GED)	Self-employed/Freelance	Cleaning and maintenance	Stress, ADHD (Attention-Deficit/Hyperactivity Disorder), Prefer not to say	Yes, I have an invisible (non-visible) disability	Chronic pain or illness (e.g., arthritis, fibromyalgia, multiple sclerosis), Neurological condition (e.g., epilepsy, Parkinson's disease)	Mca 101	Monthly	Morning (6 AM - 10 AM)	3
20	20-29	Grad Student	Male	Bachelor's degree	Arts/Enterta inment/Media	Student	Eating Disorders, Sleep Disorders, Stress	Yes, I have a visible disability	Depression, Migraines	Mca 101	Weekly	Varies (No specific time)	5
21	20-29	Undergrad Student	Female	Bachelor's degree	Arts/Enterta inment/Media	Arts student	Depression, Sleep Disorders, ADHD (Attention-Deficit/Hyperactivity Disorder)	Yes, I have an invisible (non-visible) disability	Depression, Migraines	MCA101, Cafeteria, classrooms	Monthly	Night (9 PM - 12 AM), Varies (No specific time)	2
22	30-39	Staff	Female	Graduate degree (e.g., Masters, PhD, M.D)	Consulting/ Professional Services	Teaching assistant	Depression, Stress, Anxiety, Eating Disorders, Sleep Disorders	Yes, I have an invisible (non-visible) disability	Anxiety disorder, Depression, Obsessive-compulsive disorder (OCD), Migraines	MCA101	Weekly	Afternoon (12 PM - 4 PM)	5

Image 67: Secondary Survey Responses by participants 17-21.

	N	O	P	Q	R	S	T	U	V
16									
17	6	Indoor plants	6	4	6	Unsure	No Change	Maybe	Shelfs
18	9	Natural materials (wood, stone, etc.), Natural light, Living walls (green walls or vertical gardens), Indoor plants, Nature-inspired patterns or textures (e.g., biomimicry in design elements), Views of nature, Water features, Organic shapes and forms (curved or non-linear designs)	8	8	8	Yes	Better	Maybe	Everything
19	7	Water features, Views of nature, Living walls (green walls or vertical gardens), Indoor plants, Organic shapes and forms (curved or non-linear designs), Natural light, Natural materials (wood, stone, etc.), Earthy color palette (greens, browns, blues, etc.)	9	5	9	Yes	Much Better	Yes, definitely	Water feature
20	8	Indoor plants, Living walls (green walls or vertical gardens), Water features, Earthy color palette (greens, browns, blues, etc.), Views of nature	8	6	8	Yes	Better	Yes, definitely	Paintings of nature
21	8	Indoor plants, Water features, Natural light, Earthy color palette (greens, browns, blues, etc.), Nature-inspired patterns or textures (e.g., biomimicry in design elements), Use of sustainable or reclaimed materials, Views of nature, Natural materials (wood, stone, etc.), Living walls (green walls or vertical gardens)	10	10	10	Yes	Much Better	Yes, definitely	Green wall
22	8	Living walls (green walls or vertical gardens), Indoor plants, Natural materials (wood, stone, etc.), Earthy color palette (greens, browns, blues, etc.), Water features, Views of nature, Natural light	10	5	10	Yes	Much Better	Yes, definitely	The column with wood feature and leaf decorations look pretty. The wooden chairs are comfortable and look good. But ofcourse plants are the best feature, the more the better for sure

Image 68: Secondary Survey Responses by participants 17-21.

	Q	R	S	T	U	V	W	X	Y	Z
16										
17		6	Unsure	No Change	Maybe	Shelfs	Plant on table, taking up space	Cushion for chairs?	6	Yes
18		8	Yes	Better	Maybe	Everything	Could have more plants	No	9	
19		9	Yes	Much Better	Yes, definitely	Water feature	Can have more sunlight, tables need more space	No	10	
20		8	Yes	Better	Yes, definitely	Paintings of nature	None	None	10	
21		10	Yes	Much Better	Yes, definitely	Green wall	Could have more features and for longer	I feel depressed at all times but in such a space it makes me feel less exhausted I guess, I feel a bit fresh-if that makes any sense. Would have loved to see more nature patterns and maybe more of the natural material furniture. Love the wooden chair concept next to the vending machine and the paintings of flowers behind it.	10	
22		10	Yes	Much Better	Yes, definitely	The column with wood feature and leaf decorations look pretty. The wooden chairs are comfortable and look good. But ofcourse plants are the best feature, the more the better for sure	Sometimes it is crowded and I wish some noise cancellation could be done	No	10	

Image 69: Secondary Survey Responses by participants 17-21.