

Decentralizing the City

*Altered Paradigms of the Workspace
in a Post-Pandemic Society*

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Abstract

The COVID-19 pandemic that began in 2020 resulted in unprecedented change worldwide. Today, we are grappling with defining new paths forward toward a new normal. The pandemic has affected the way we work in such a fundamental way that the future of work remains uncertain.

Drawing from historical analyses and design research, this thesis will speculate what the future workplace might look like while exploring considerations of health and safety pertaining to pandemic resilience be accommodated in the design of a workspace. Additionally, it will anticipate how the decentralization of work in urban centers may affect the surrounding metropolitan regions as the paradigm of work is altered. The societal disruption will act as a reset button that drives the architectural re-imagining of the workspace while simultaneously interrogating urban planning practices and implementing a strategy that synthesizes both remote work and the densification of suburban sprawl in a post-pandemic society.

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Key Terms

Building Density The amount of buildings of varying uses in a geographical region or specified parcel of land (ie. Buildings per Hectare).

Residential Density The amount of residential buildings in a geographical region or specified parcel of land (ie. Buildings per Hectare). This varies based on types of construction allowed which is often resultant of strict municipal zoning.

Population Density The amount of people living in a geographical region or specified parcel of land (ie. people per hectare). This amount may vary depending on the building type and density of residential spaces.

Metropolitan Region/Metropolis A dense urban center surrounding by areas of other use and of lesser density. Outside of the urban core, commercial clusters, office parks, and sprawling suburban developments can be seen throughout the region.

Polycentric Similar to the concept of decentralization, polycentric is an entity with many centers of importance.

Co-Working An office-style space where independent members of different organizations, freelance workers, and other individuals may convene to conduct work in an office environment. This type of space is meant for those who do not have access to an office space of their own, or are looking for a space to work alongside others in a communal setting.

Digital Communications Technology that facilitates communication in a multitude of mediums. Platforms such as Zoom, Microsoft Teams, and Slack Messenger, are some of the predominant tools for workplace communication from remote locations.

Pandemic A viral outbreak that has spread across a large area, often a global event.

Endemic A virus, disease, or condition that is prevalent and circulating in society with no inevitable ending.

Community Engagement Encouraging social interaction between individuals that results in the creation of a feeling of community, or a sense of belonging to a greater whole.

Social Ties The connections one has with others on a daily basis. These ties may not be strong ties such as close friends and family members, but can be with a barista at the local coffee shop, colleagues at work, or the acquaintances one interacts with on a semi-regular basis.

Human Scale The act of designing a space in the interest of the individual, at the scale of the human rather than the urban scale, or the scale of the automobile. Human scaled design should be optimized for human use above all other considerations.

Walkability The degree to which one can walk from their home to amenity spaces in close proximity.

Suburban Sprawl Large developments of single-family housing typologies, often placed on large parcels of land with plenty of yard space and a dedicated driveway for each house to provide parking for several cars. Within these developments, there is often exclusively buildings of the same typology with little to no amenity spaces.

Introduction

Over the past few years, society has undergone various monumental shifts that have ultimately changed and reshaped societal norms and values. The COVID-19 pandemic forced many into confinement within their homes in an attempt to mitigate the spread of a virus with unknown severity and consequences. In the following months, experts continued to study the virus, governments issued varying degrees of stay-at-home mandates that required many to work from home. This resulted in companies being forced to accommodate for this transition to remote work. This transition created a need for innovation in digital communications tools that helped bridge the physical divide and facilitate communication within the workforce. Platforms such as Zoom, TeamViewer, and various others were heavily utilized throughout the pandemic. Development in the area of virtual work and communications continues to grow even as we begin to return back to a new normal, with companies such as Meta (Facebook) expanding into the market of virtual reality technology.

The catalyzation of these various forms of digital communications technology has provided companies with the opportunity for a new methodology of work, remote and hybrid systems of work. Companies that adopt these models are able to downsize centralized office spaces, thus significantly decreasing costs on rent and other associated costs that come with a large office space. However, those that have been forced to work from home have also realized a variety of negative factors when it comes to physical and mental health. There must be a new framework for the future of workplace design that takes inspiration and wisdom from the eras of office design leading up to the pandemic that is able to accommodate remote work, as well as the growing need for increased health and safety standards in the workplace.

This transition to a new way of work parallels the ongoing need for sustainable urban design and building practices. The opportunities afforded by transitioning to a hybrid style of work creates an opportunity to bring the place of work closer to the employees. Decentralizing the core office in the city and distributing networks of satellite offices through neighbouring towns can create new micro-cores of density that could ultimately reduce traffic throughout the city as well as enhance the quality of life of the employees. This thesis will conduct a brief analysis of the historical shifts in office design leading up to the contemporary, pre-pandemic office, as well as looking at urban design strategies in the reformation and densification of the outdated suburban model to inform the conceptual design of the office of the future.

the History of Work

Part i

Reflections of Society

the History of Work

Office Design

The contemporary office is a result of countless evolutions that have taken place since the emergence of office spaces in 1726 in London. These offices were established to accommodate the expanding levels of trade and growing need for administration and organization of paperwork. While this may have been one of the first recorded notions of an office, this research will be focusing on several significant evolutions beginning from the early 20th century and leading up to the contemporary office of 2020.¹

As it is with architecture and urban design, the transformations of the office throughout the 20th century and up to modern times was a result of shifting societal values and the adaptation to significant global events. The following research of part 1 will provide a summary of several influential styles of office design along with some of the impacts on the design based on the economic and cultural values and norms experienced in the societies of their respective era's. It is imperative to review the history and transitions of office design as we map the trajectory of the office of the future in a post-pandemic society.

Taylorism

Early 20th Century

The early 20th century saw the rise of the first modern offices. This style of office emphasized efficiency in a rigid, linear layout of desks and enclosed office spaces. The center of the space was filled with rows upon rows of desks that would enable management to monitor employees from the periphery. Following the scientific principles of work created by professional mechanical engineer Frank Taylor, whose ultimate goal was to maximize industrial efficiency in the office workspace, desks were arranged to resemble the factory assembly line, organizing spaces of work into a hierarchy of efficiency. The concept of Taylorism became an organizational form of work at the beginning of the 19th century; the layout of the office space reflected the emphasis on institutional and industrial organization ^{2 3 4}

“Taylorism can be defined as the bureaucratization of the structure of control, but not the employment relationship.” ⁵

Reflections of Society

Significant technological advancements in transportation occurred throughout the early twentieth century. The electric streetcar along with the increasing use of personal vehicles acted as catalysts for the expansion of residential development outside the boundaries of the city, thus creating neighbourhoods in the surrounding geographical areas leading to the suburban model of urban planning. ⁶

Pacific Electric, a streetcar company, was founded in 1901 and transported more than 250,000 passengers in Los Angeles over more than 1000 miles of track each day by 1920. This novel method of mass public transportation along with the growing usage of personal vehicles set the foundation for the future models of the western city and suburban developments. The focus of this period on productivity and efficiency is evidently reflected in the layout and design of the Taylorism office spaces.⁷

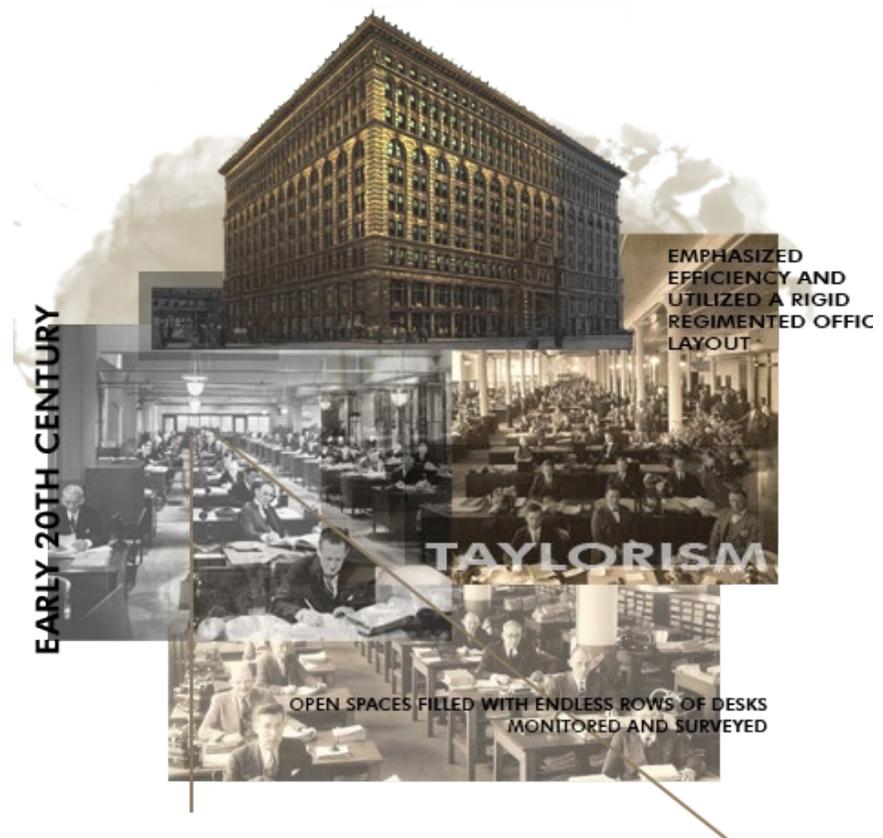


Figure 1.01: Taylorism

Burolandschaft

1960 +

This method of office design evolved in Germany in the 1960's by Eberhard and Wolfgang Schnelle and was based off the open-plan offices developed in the USA in the 1940's. This method of design dramatically changed the Taylorism-influenced styles established in the United States by adopted a more socially democratic layout that encouraged social interaction and engagement between all members of the office. The name Burolandschaft translates to 'Office Landscape', which is demonstrated in its less rigid approach with loose partitions consisting of vegetation and furniture. Desks and teams were organized in a much more organic fashion than the Taylorism era of design, with staff sitting alongside management working together in a collective group emphasizing collaboration and socialization. Definitive barriers that promoted hierarchies of power were dissolved in this new method of work that flattened the separations of power bringing management to the same level as the employees. This reduction in the divisions based on hierarchy lead to this novel typology of office design and organization being known as a socially democratic workplace. ^{9 10}

"It created a prototype workspace that promised a society on equal terms, a pluralistic community, and a self-organizing form of governance." ¹¹

Reflections of Society

The creation of the Burolandschaft office design occurred in a time of rebuilding across Europe and shifting socio-cultural and socio-economic values. In this post world war II society, the economy was rebounding and emphasis was placed on the knowledge economies. Innovations in technology were at the forefront of these shifts to the knowledge economy, resulting in a new ideological framework by Buch and Ton focusing on a “new thought model of cybernetics that facilitated a far reaching re-structuring of European society” through the use of automation and rationalization to precede the leisure society. This office reflected the aspirations of a societal democratic shift though its dissolution of barriers and flattening of hierarchies within the space to promote equality within the community of the work-space. ¹²

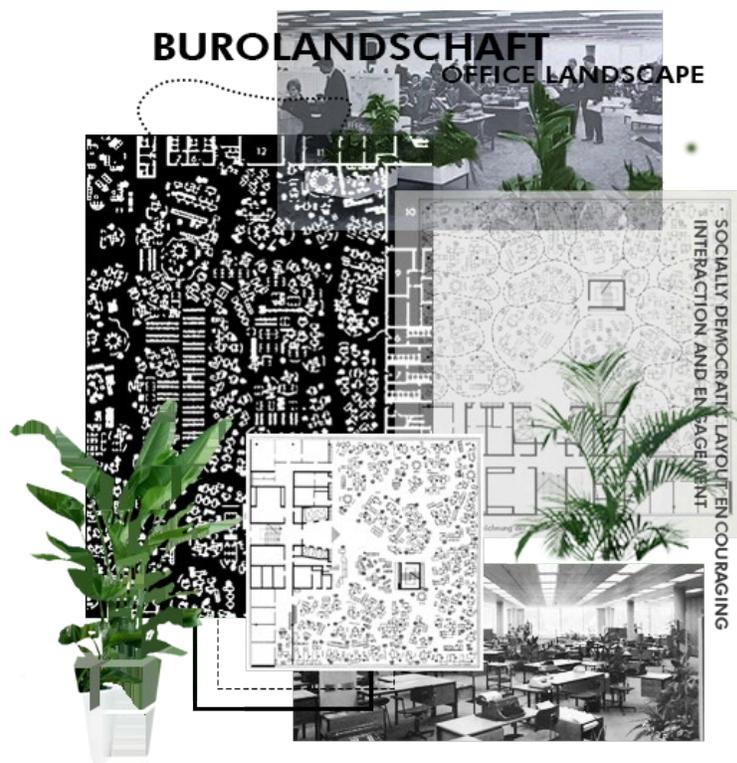


Figure 1.02: Burolandschaft

the Action Office

1970 +

This style of office design emerged as an evolution of the Büro-landschaft typology. The general layout retained remnants of the organic structure while incorporating the use of privacy enclosures designed by Robert Propst that would create a wider variety of alternative work settings. Emphasis was placed more on meeting rooms as the individual worker was now more isolated within these privacy barriers. A higher degree of privacy was valued as more and more women entered the workforce, which is what led to the design of a 3-sided semi-open compartment of vertical divisions to denote individual space. This individual space gave the employee more autonomy and freedom to personalize their space and make it their own. ^{13 14 15}

“The office, then, primarily should be a mind-oriented living space.” ¹⁶

- Robert Propst & George Nelson

Reflections of Society

The 1970's were a period of restlessness and questioning of traditional authority. People sought means of self-expression and significant change was on the rise with the liberation of women through the feminist movement. One of their primary goals was gender equity in wages as more women were joining the workforce. This significant societal change led to the need for the aforementioned privacy barriers utilized in the Action Office, along with the seeking of self-expression resulting in individualizing one's personal space and sense of ownership in their place of work. ¹⁷



Figure 1.03: the Action Office

the Cubicle Farm

1980 +

The availability of cheap and effective modular walls paired with an increased focus on profitability at the expense of working conditions led to this era of office design. The partitions of the Action Office were modified and heightened creating a labyrinth of tall confinements where one would spend their days working. Robert Propst, the creator of the Action Office design, had this to say about the evolution and utilization of his creation; “Not all organizations are intelligent and progressive. Lots are run by crass people who can take the same kind of equipment and create hellholes. They make little bitty cubicles and stuff people in them. Barren, rat-hole places.” In large installations where the panels reached heights of 6’, the employee was often unable to even see over the top. ^{18 19}

“Not all organizations are intelligent and progressive. Lots are run by crass people who can take the same kind of equipment and create hellholes. They make little bitty cubicles and stuff people in them. Barren, rat-hole places.”

- Robert Propst

Reflections of Society

The 1980's were defined by political and social conservatism. Republican leader Ronald Reagan was in power, his administrations core values to reduce federal bureaucracy and regulations to allow American business to return to capitalist centered practices. Goods were produced for mass-consumption and consumerism, and this idea of mass-consumerism was reflected in the design of the cubicle farm. The employees were commodities of the company they belonged to and were expected to strive for success, maintaining the values of the capitalist society. ²⁰

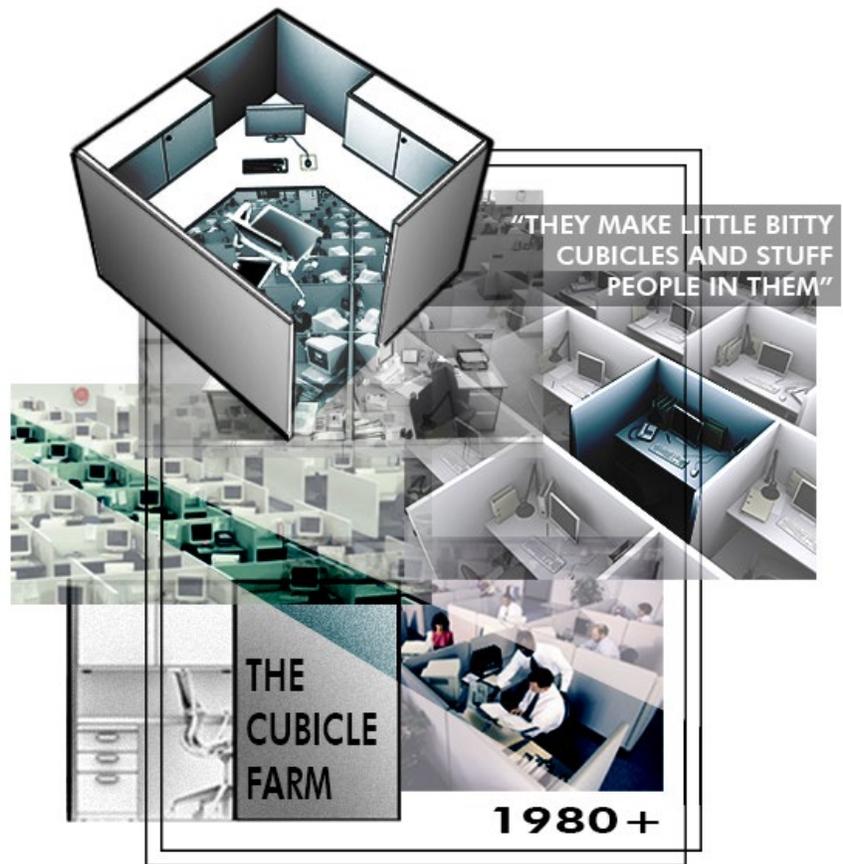


Figure 1.04: the Cubicle Farm

the Late 20th Century Office

2000 +

During the early 2000s, technology in the workplace was on the rise. The era of the internet business was beginning, with technology companies boasting unconventional and informal spaces focusing on attracting the youth of the work force. The office environments in this sector perpetuated the image of youthful exuberance with bean bag chairs, pool tables, and other amenities similar to those seen in the tech offices of today. When the dot-com bubble burst in the early 2000s, this style off office design began to fade away. ²¹

However, this trend of design sparked the aspirations of a space much less drab and dull than what was currently existing in the post-cubicle farm space. Many offices aside from the early tech-based firms were plastered with varying levels of neutral tones of white, brown, and grey.

Another paradigm of office work, 'Hotelling', was expanding at the global scale paralleling the innovations in technology that allowed staff more flexibility by being able to transition between non-assigned flexible workstations.

Reflections of Society

One outcome informing the organization of the office program sought from the nomadic ability to move between fixed spaces dissolved the individual space, thus establishing the need for secure personal storage. Generation Y was infiltrating the workforce during this decade, their openness and willingness to embrace these new methods or work being one of the main factors in the adoption of a more flexible, peripatetic style of work.²² The office began to adopt a variety of different design styles that paralleled the shifts in societal values, with increasing use of media and technology bringing about a more globalized set of values and standards.



Figure 1.05: the late 20th Century Office

Pre-COVID Office

2020 +

Even before COVID impacted the design world,, the office was undergoing great transformation. Innovation has been needed to meet the needs of an increasingly technologically inclined society. The boundaries between work and home life were already becoming delineated as advancements in technology progressed to allow for a more flexible organization of work. Companies fighting for the best employees would prioritize design in the workspace that would attract highly talented candidates. The traditional use of walls is being replaced by alternative methods of special separation using glass or natural materials to create a less formalized layout that encourages collaboration. Increasing portability of technology creates less of a need for a fixed physical space to work resulting in a more flexible, hybrid style of work where the employee can be mobile rather than being shackled to the same desk every day.

The early 21st century cannot be summed up by one specific style of office design. For some companies, such as the tech giants in Silicon Valley, the budget to implement these fanciful design strategies is much higher than the average company, thus influencing these highly progressive office designs chalked full of amenities in a seemingly utopic space. Companies like Google, for example, portray an idea of what it is like to work for them through media. An image is painted of happy employees working in an office of bright, vibrant colours, pods to nap in, and free snacks and coffee from the organic café. ²³

Reflections of Society

The paradigm of work has been continuing to shift, paralleling the increasing employee-centered values of office design. Co-Working spaces are on the rise as the need to work in an office decreases as technology continues to improve. These spaces allow for a diverse mix of people a space to work in proximity to one another and establish a sense of community while working independently. The trajectory of work prior to the COVID-19 pandemic has created the foundations for what the future of work may look like. While there were many progressive and innovative offices on the rise, the pandemic forced a much wider range of companies to accommodate for virtual communication tools that enable remote work, which may continue in a post-COVID society.²⁴



Figure 1.06: the Pre-COVID Office

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Societal Disruption

Part ii

Status of Work

the COVID-19 Pandemic

2020 +

Throughout history there have been countless events or disruptions that alter society, forcing those impacted to react and adjust to accommodate for necessary change, whether it be a temporary shift or permanent advancement. The ongoing COVID-19 pandemic continues to shape the socio-economic and cultural structures on a global scale. Supply chains and production lines are still recovering from the disruptions, entire sectors of business such as aviation, tourism, and hospitality faced intense hardship, and small businesses faced a significant struggle.

Companies had to adapt to this new challenge as their employees were forced home to live in self-isolation. This accelerated the usage of digital communications technology throughout society through the use of software and platforms such as Zoom, TeamViewer, etc. The ability for employees to connect with one another and continue to conduct their business efficiently and effectively was imperative to avoid a potential economic collapse. This paradigm shift to remote work established an intangible digital network that replaced the physical office space, sowing the seeds of a new era of work in the digital age, one that delineated the boundaries of a centralized physical workspace.

As we begin to return to a stage of some degree of normalcy, we can look back at the several phases and transitions throughout the time of the pandemic to maintain wisdom in the face of a future pandemic. We can use this knowledge when designing spaces in the future, specifically those for work when considering future global events. Even now, with the COVID virus persistently active, it is likely that this pandemic will transition to **endemic** status, thus requiring design considerations to promote health and wellness in the face of another serious outbreak in the future. ¹ The initial lock-down forcing many to work in isolation from home has enlightened us to both the benefits as well as the negative effects of working from home. The benefits have been widely accepted and will result in more methods of remote work in the future, however, we must consider the negative effects as we move forward with the design, organization, and integration of remote working spaces.



Figure 2.01: Headlines

Working from Home

As employees were confined to their homes, companies had to adjust their strategies and daily routines to accommodate the new era of remote work. This new need was a massive opportunity for technology companies to capitalize on the need for communications platforms, screen sharing programs, and other remote working tools to provide a seamless transition to replicate the ease of communication in a remote setting.

Those working from home quickly realized the positive possibilities that arise when the commute is eliminated. They now have more time in the day that can be spent freely instead of sitting in traffic, money saved on gas and eating out, and utilizing the other advantages of having a flexible schedule. Traffic was significantly reduced as the need for many to commute to their places of work was eliminated along with a relative decrease from emissions resulting in various environmental benefits.

NEW PARADIGM OF WORK

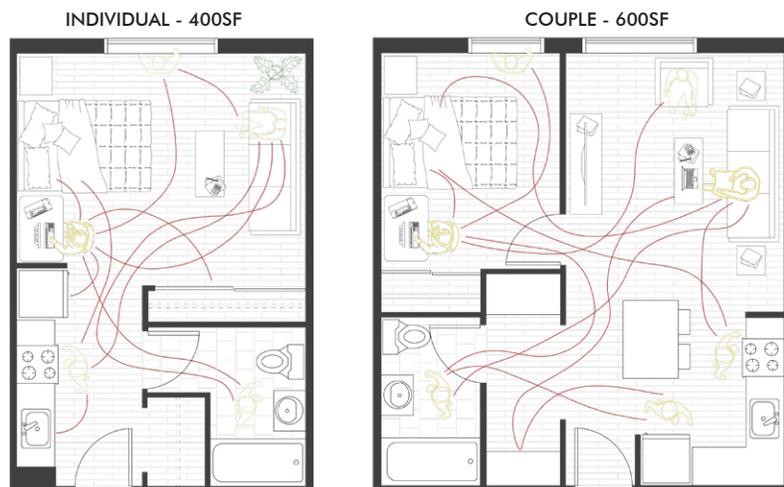


Figure 2.02: Living in Isolation

Unfortunately, as time has progressed and remote work continued, a plethora of negative factors became apparent. These negative repercussions will have to be addressed over the coming years, as a large percentage of the workforce that is able to work from home would like to continue this mode, at least in some kind of hybridized capacity.



Figure 2.03: Families in Isolation

**30% of office
workers never
want to return.²**

**60% say that they
want to stay on a
hybrid model.³**

Repercussions

Throughout the pandemic, self-assessed productivity has either remained the same or has improved.⁴ However, this is at the cost of a healthy work life balance. As more begin to adopt the hybrid or remote methods of work, harmful effects, both mental and physical, will continue unless these issues are addressed.

One of the main things missing throughout the pandemic when living in isolation is the lack of quotidian exchanges one experiences over the course of a typical day. One may grab a coffee in the morning before work and chat with the barista, or head to the gym where they see the same receptionist and fellow gym-goers every morning. While these social connections may seem redundant and weak, they are important to form a feeling of belonging and a sense of community. A study conducted by Gillian M. Sandstrom and Elizabeth W. Dunn found that when one interacts with people outside of their direct social network, their feelings of belonging and happiness are increased. The connections one has with members of their community are considered “Weak Ties”⁵.

Burnout, isolation, and loneliness were some of the most significant effects felt by those working in isolation from a central office. These negative effects on one’s mental health were not only experienced by those living alone, but also with those living with roommates or families as their weak ties with the community were severed. Working from home meant working either in the same room, or adjacent to where you sleep, eat, and spend your personal time. While this could save the average commuter hours a day commuting to work, it isolated the individual from the community. When one is experiencing levels of loneliness, they’re susceptible to wider ranges of deleterious health concerns with more negative effects on health than obesity.^{6 7}

Burnout was another significant problem experienced by many, as the hours spent working would begin to bleed into the hours spent relaxing. With no routine providing a boundary between work and personal time, it was difficult for the employee to balance the two.

“Both work and family life require a considerable amount of time spent on each, resulting in one inevitable spilling over into the other. This is supported by ongoing negotiations faced by dual-earner couples when it comes to coordinating work schedules, the division of household labour, and career-prioritizing decisions.”⁸

Based on the research above, it is evident that a threshold is needed that separates to some degree one’s work and personal life. Where this barrier be tangible or intangible, some sort of transitional space should be implemented to create a sense of change between work and personal time. In addition to the threshold, a need for communal spaces arise for those that will continue working remotely or in a hybrid typology of work to maintain the integral community ties.

A communal office environment is where one establishes not just work connections, but facilitates quotidian exchanges and social ties.

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the Future of Work

Part iii

Reflections of Society

Decentralizing the City

New Networks of the Workspace

A major shift in the way we work is underway, however, this shift has the potential to inform far-reaching changes to urban development and the way we organize and plan our cities. Remote work technologies and the broad corporate acceptance of remote work have resulted in a new digital infrastructure that will allow many employees to continue working from home or in some kind of remote capacity. The need for a large centralized office core located in a city is in question, however, as mentioned previously in regards to one's health and wellness, the importance of a physical space to work remains imperative.

One organizational strategy that has recently emerged into view is called the 'hub and spoke' model. This model of workplace organization essentially designates the large, central office space as the hub, and anywhere else that is located in a different geographical location where an employee may work is considered to be one of the spokes. The amount of spokes is indefinite, the system insinuating that the employees are working in a hybrid system bouncing between the central office space and the spokes.¹

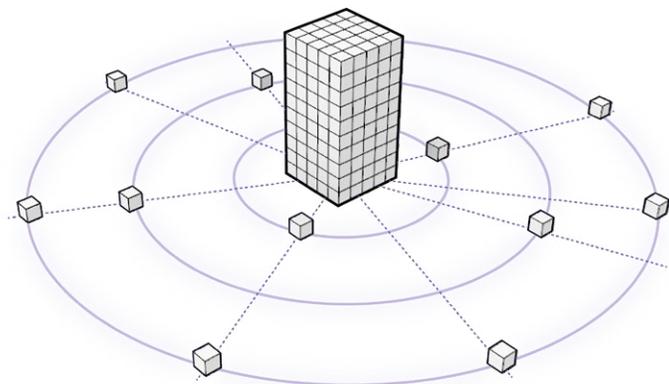


Figure 3.01: Hub and Spoke Model

Decentralizing the City

In an alternative form of this ideology, we may start to observe the dissolution of these large central office hubs in expensive city centers to be used exclusively as a central meeting space. This would shift emphasis to the implementation of networks of fixed satellite spaces sprawling throughout the less expensive geographical regions adjacent to the city and beyond. Not only does the implementation of remote offices save money leasing space in a cheaper area, but it can also improve resilience to future regional or global disruptions that may affect one geographical region while the others remain accessible. In addition to the benefits to the companies implementing this strategy, the employees may also see improvements in their quality of life at work. ²³

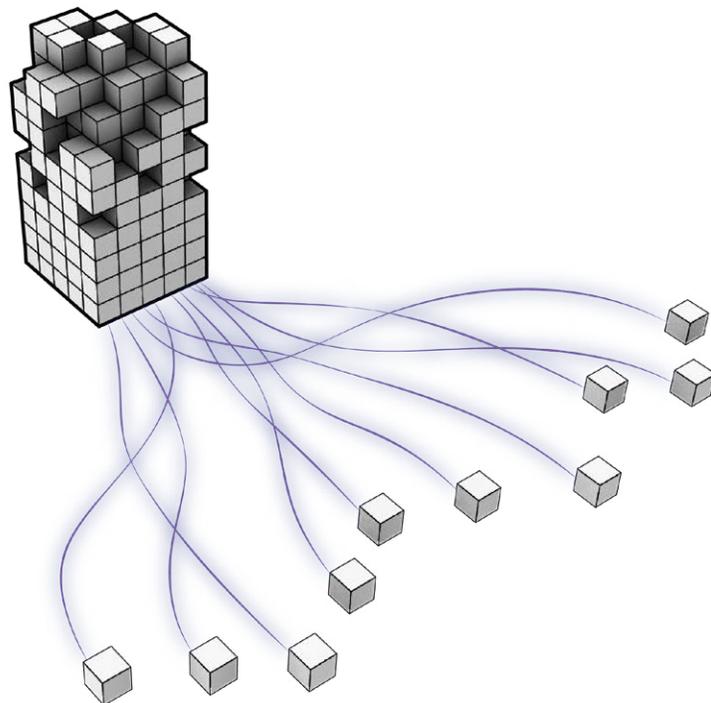


Figure 3.02: Satellite Workspaces

Decentralizing the City

Establishing a new paradigm of office design and organization brings forth an opportunity to create a space focused on employee health and wellness to improve the overall vitality of the occupants resulting in higher standards of work and life. Employees would have a space to work alongside those in their company from close geographical regions instead of being restricted to a department or a specific team within a large office.

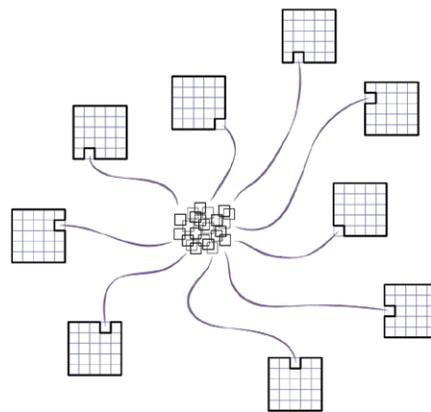


Figure 3.03: Each Office Loses One Module

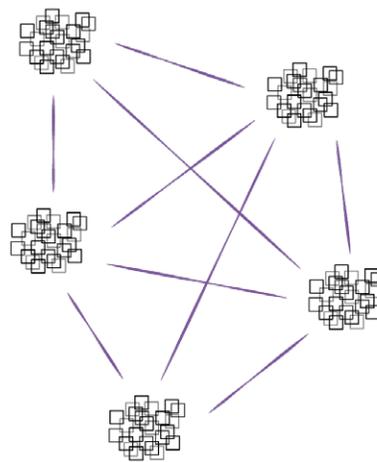


Figure 3.04: Modules are Collected

This model also connects members of different companies working alongside each other in adjacent spaces that house a diverse mix of work typologies to foster a strong feeling of community. Practical planning in the placement of these satellite spaces may also work to stimulate the local economies of the neighbouring communities in addition to improving the urban landscape and streetscape.⁴

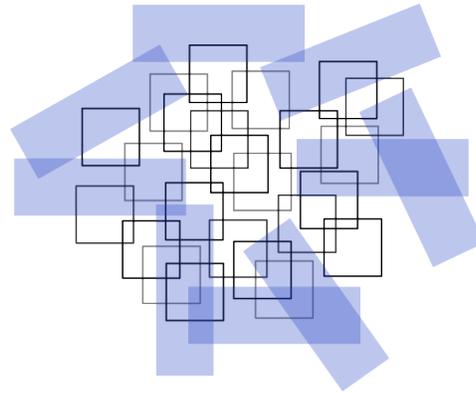


Figure 3.05: Residential Density Integrated

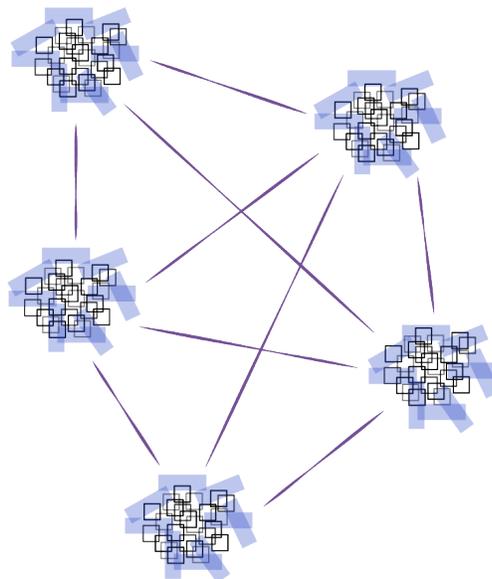


Figure 3.06: Formation of Networks of Mixed Density

the Future of Office Design

2022 +

As we continue to navigate through this multi-year pandemic, we can use our experiences and societal transformations to imagine what the future of work may become. The current trajectory of the coronavirus pandemic appears that it may become endemic and the need for design to accommodate future disruptions is apparent. Innovations and the widespread acceptance and adoption of digital communications technology for remote work have enabled some types of work to be done either entirely remotely or in a hybrid system. As companies start downsizing centralized office spaces and implement networks of satellite offices, we may start seeing clusters of these remote spaces together similar to the current format of office parks or work campuses. However, we also now know how important community engagement is as well as social interaction, so it is imperative that these nuances in office design incorporate these considerations in creating a neighbourhood-like environment that promotes diversity and inclusion.

These novel spaces of office design should prioritize the health and wellness of the occupants. These buildings should contain a diverse mix of use, not exclusive to office workers but to encompass a wider degree of job types. Childcare facilities, retail and commercial spaces, and institutional adjacencies could provide this mix of use beneficial to the creation of a working **community**. The design should encourage collaboration and creativity and give the occupants a place of belonging while utilizing systems that provide a healthy and resilient environment in the case of a future pandemic.

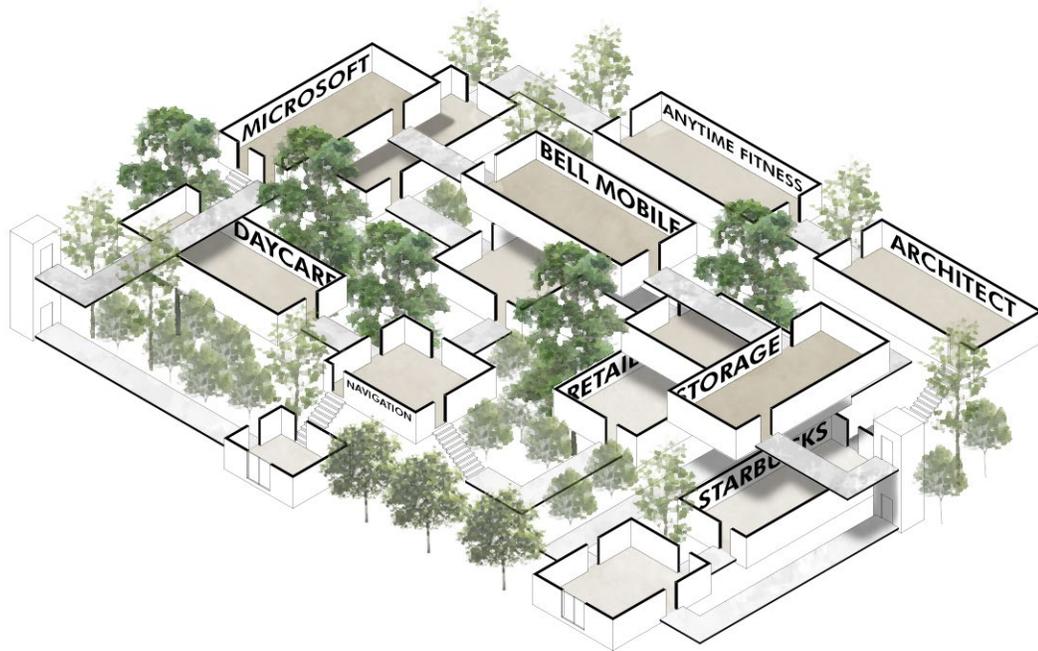


Figure 3.07: Anatomy of the Workplace of the Future

Considerations for Pandemic Resilience

Permanent + Temporary Design Interventions

The pandemic of COVID-19 struck an unprepared, complacent society in terms of resilience and awareness in the case of a viral global outbreak. Methods of design and spatial planning had to be created quickly to accommodate safety measures to slow the spread of the virus. These once temporary interventions on traditional architectural design are now becoming more permanent, the design and implementation continuing to improve from their state at conception.

After the initial stages of self-isolation and months of uncertainty, many places began to re-open as society began to adjust to a new normal. However, this new normal included many new barriers that had to be implemented in existing spaces, both material and immaterial, that would prevent the spread of the virus. Physical barriers were placed in places of interpersonal encounters and an invisible bubble with a 6' radius prevented those from getting too close physically to one another. The Work Trend Index survey, conducted by research firm Edelman Data x Intelligence, collected data from 31,092 workers from January 12 to 15 in 2021. This survey found that 66% of leaders claimed their company is considering enabling hybrid work, and 73% of employees want flexible remote options.⁵ As hybrid working systems continue, we must remember the learning experiences of this pandemic and to retain the wisdom in the case of another future pandemic that has the potential to be much more dangerous.

The 6' Bubble: Primary circulation routes in the more public spaces of buildings should accommodate enough space to allow for one to pass another with at least 6' of the distance between them. This isn't imperative everywhere, as long as the more narrow circulation routes are able to be converted to one-way traffic corridors if needed. ⁶

Integrated Sanitary Stations While washing ones hands with soap and water is the optimal way to stay sanitized, providing sanitary/disinfectant stations throughout the building will allow for a more flexible and quick method of personal sanitization for the occupants.

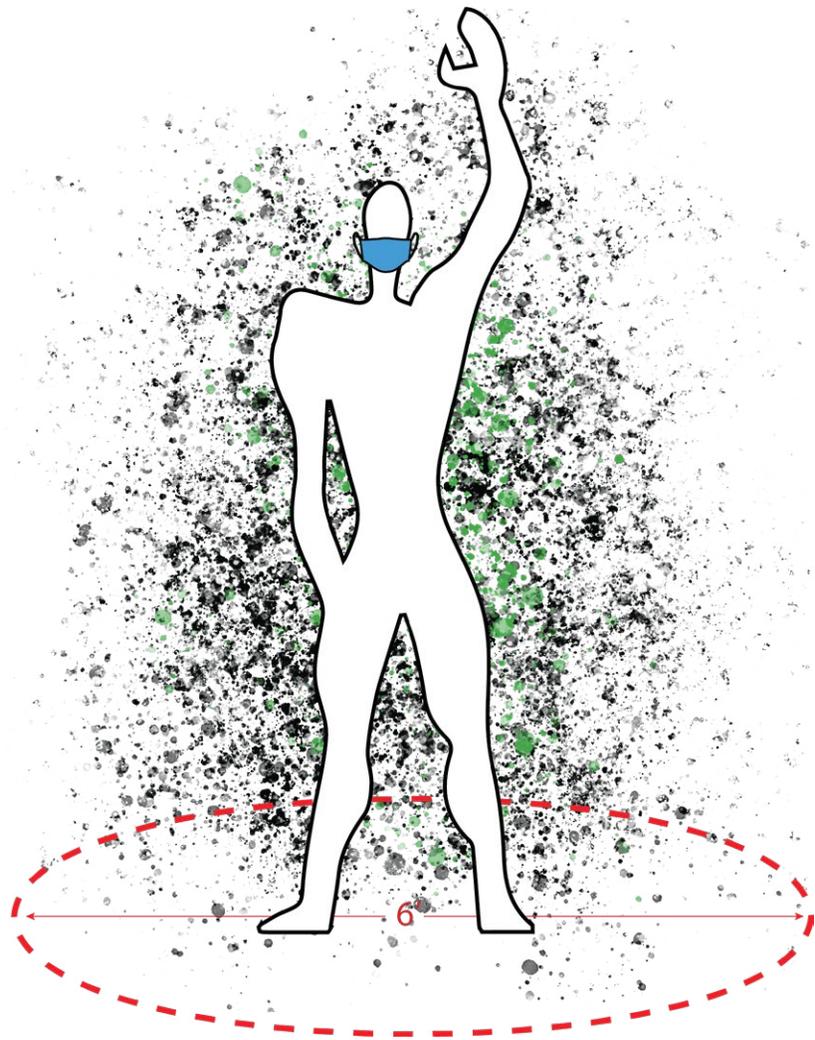


Figure 3.08: New Scales of Space

One-Way Circulation Routes As many circulatory paths within buildings are not within the acceptable distance to allow two people to pass while maintaining a distance of 6' apart, the ability to convert specific paths to one-way traffic routes is important. Therefore, it is important to have circular routes, or connections between each direction to allow for consistent and easy circulation.

Limiting Physical Contact: The implementation of automated systems within the built environment is imperative to prevent occupants from touching potentially contaminated surfaces. Automatic doors (or removing doors altogether), windows, and bathroom fixtures should be automated so that one doesn't have to physically touch anything if not necessary.

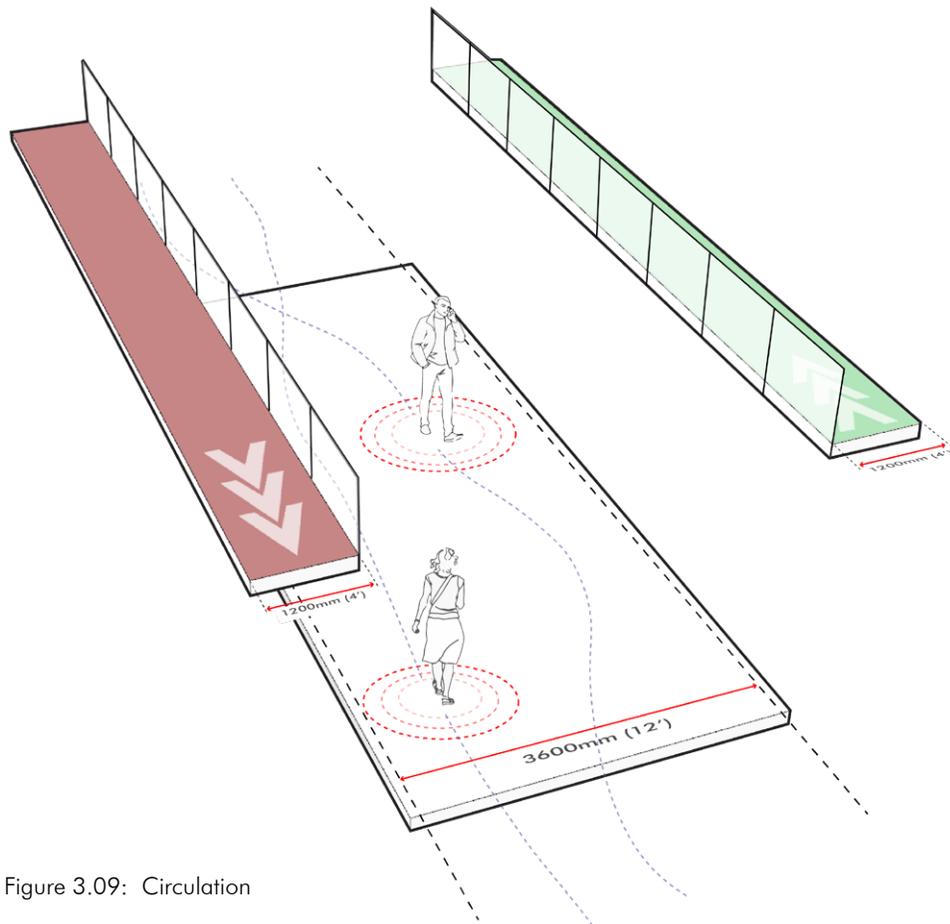


Figure 3.09: Circulation

Flexible Workstation Dividers: Implementing flexible, movable dividers between areas of workstations would allow the occupants of the space to divide the spaces based on need. If there is no need for division, the dividers can be lifted or concealed and the space kept open. If necessary dividers can be fixed in place to provide the necessary separation and blockage of moving particles.

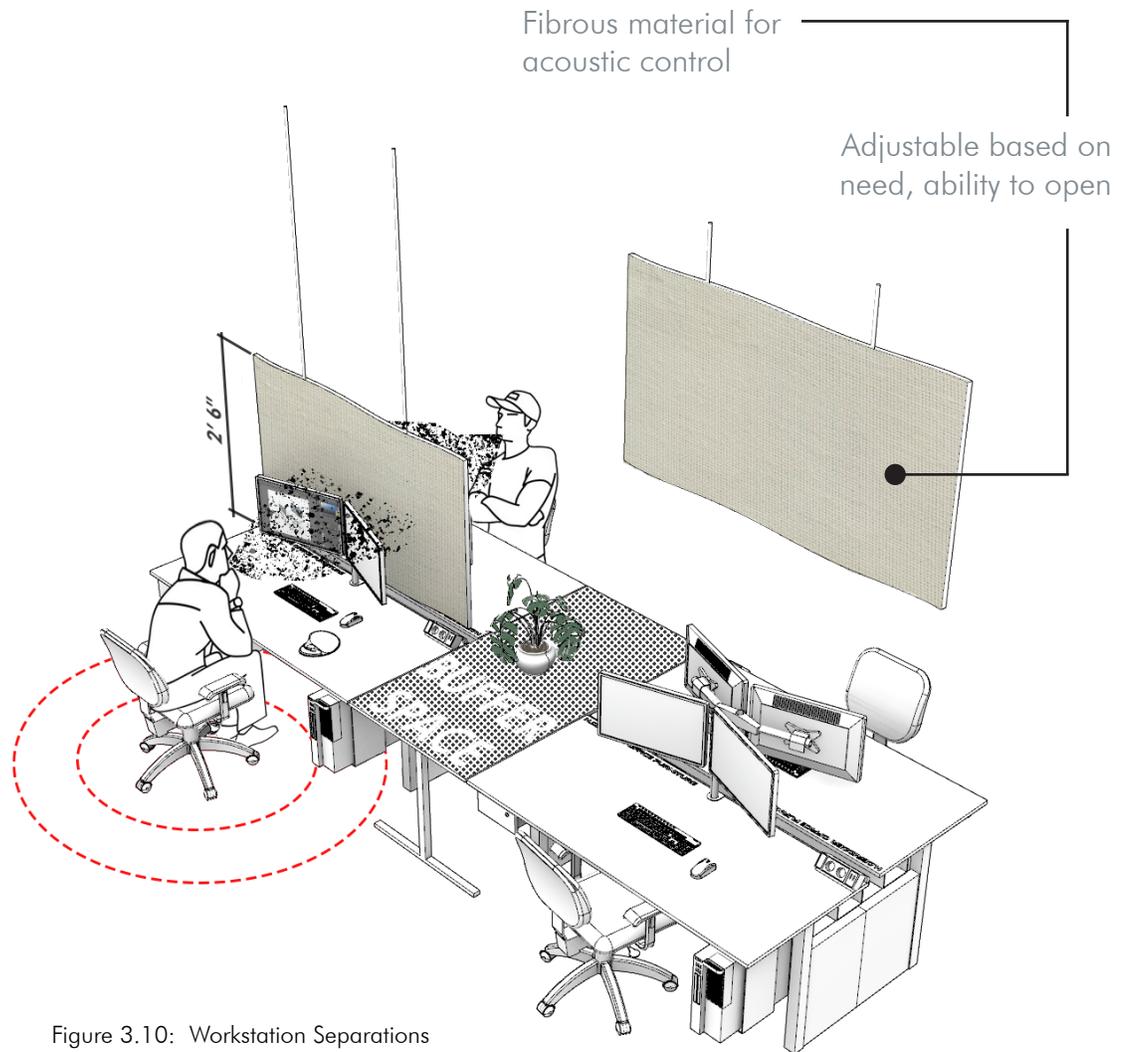


Figure 3.10: Workstation Separations

Ultraviolet Germicidal Radiation Ultraviolet germicidal irradiation, or UVGI, uses ultraviolet energy to kill viral, bacterial, and fungal organisms. The UV energy utilized in these systems uses shorter wavelengths that results in less of a risk to human health, however, fixtures should still be installed in a way that prevents direct exposure to the occupants of the space. This type of deterrent is often saved for uses of high-priority, however, as the technology progresses it may become standard in designing for future pandemic resilience. ⁷

Increased Air Circulation Maintaining a healthy indoor air quality is imperative to clear interior spaces of airborne particles that may be harmful to the occupants. Increasing air circulation can help dissipate these particles; this could be achieved through mechanical means to pressurize spaces that are more compact and highly occupied to force air out of the space to ventilated zones. Passive means of cross ventilation may also be utilized, as long as the depth of the room does not exceed 5 times the room height. ⁸

Controlled Humidity Conditions When humidity conditions within a building are outside of the 40% to 60% relative humidity range, the potential for the spread of viruses is much more serious. Effective humidity controls will be imperative in the future of office design. ⁹

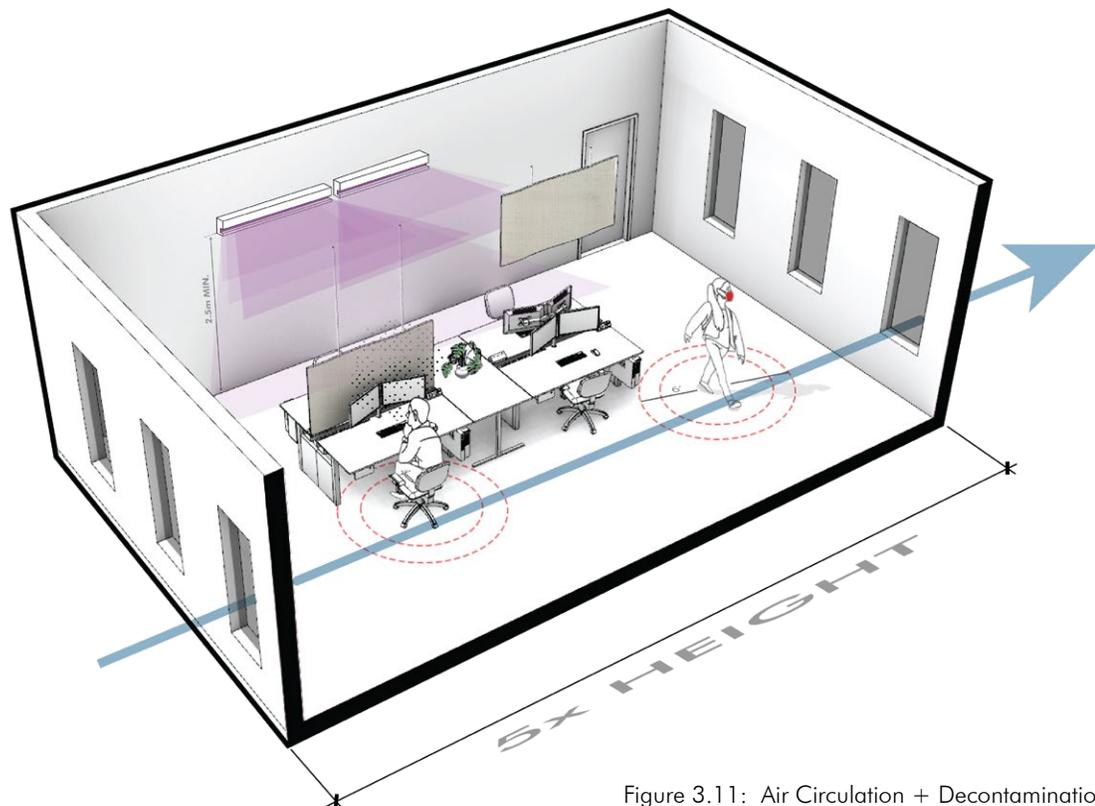


Figure 3.11: Air Circulation + Decontamination

Biophilic Design While person to person social connections is imperative in maintaining ones well-being, so is a connection to elements of nature. There is evidence that when one experiences the natural world, improvements can be seen in lowering stress, improving cognitive functions, and overall well-being. Adding these natural elements in a building through the use of plants, living green walls, plenty of natural light, and soft, organic materials such as wood, will help maintain this connection to nature in the built environment. ¹⁰

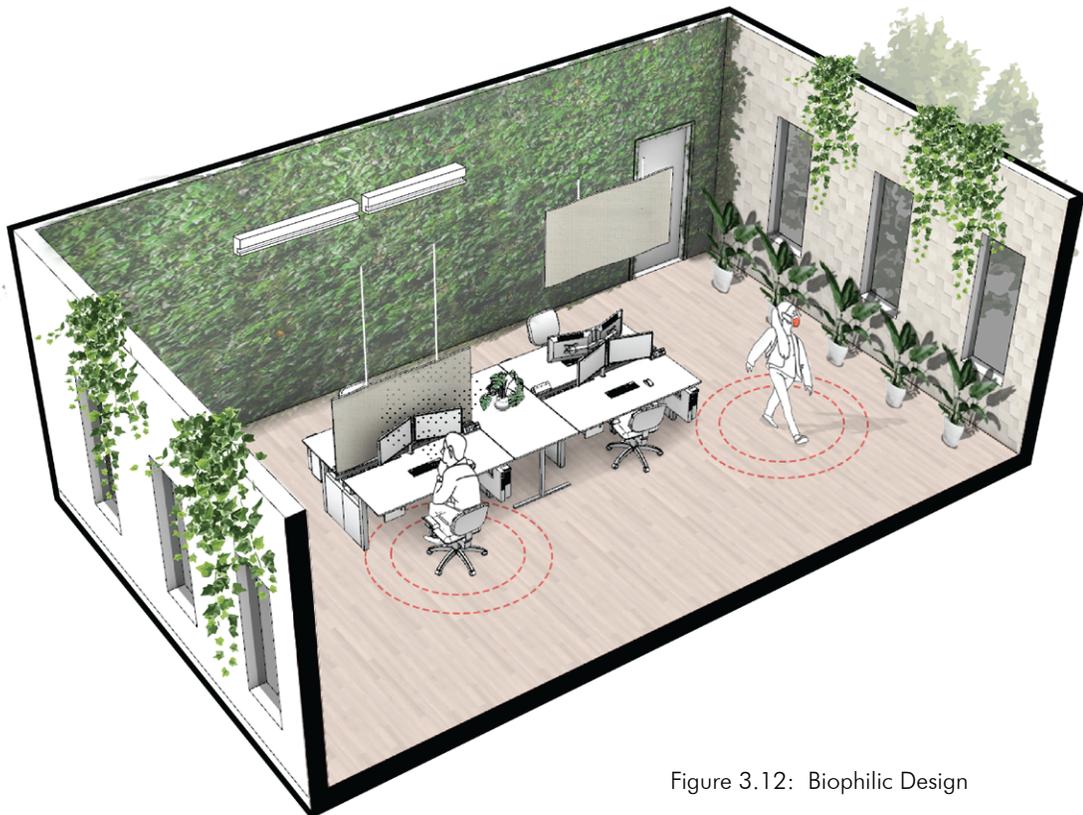


Figure 3.12: Biophilic Design

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Suburban Reformation

Part iv

the 15-Minute City

Suburban Reformation

Densification

The sprawling suburban neighbourhoods that proliferate outside the city centers are fundamentally unsustainable. The suburban model of development is a remnant of a society that was in the process of forming centered around the growing manufacturing of personal vehicles in the early 20th century. By building housing outside of the city, one could have a large amount of land with a spacious house to call their own, while still being able to work in a dense city where places of work were concentrated. Within the sprawl, building typologies were separated into clusters that were hard to access without the use of personal vehicles, such as shopping centers, office parks, and civic institutions.¹

However, we are now faced with challenges in achieving density with single-family homes spread out at the scale currently present. The distances created between ones house and the amenities required for daily life as well as other institutional and commercial spaces results in a high dependency on cars as well as a great distance that must be traversed for goods and services to supply these areas, in addition to the inefficient use of infra-

“The city will be a part of the country. I shall live 30 miles from my office in one direction, under a pine tree; my secretary will live 30 miles away from it too, in the other direction, under another pine tree.”

**“We shall use up tires, wear out road surfaces and gears, consume oil and gasoline. All of which will necessitate a great deal of work..
Enough for all.”**

– Le Corbusier, *The Radiant City* (1967)

Although there may be some who oppose the notion of densifying the suburbs through the implementation of monotonous towers resulting in a hard-scape urban fabric, this does not have to be the case. High-density and high-rise are not synonymous with one another; density can be achieved through the implementation of low-rise, high-density developments that maintain a sense of community and retain large amounts of green space for public use. By replacing single-family homes that are divided by large gardens and yards with higher density townhouses combined with just a couple stories of condominium units of varying sizes, these small parcels of land could triple in both **building and occupant density**. Increasing density by this amount would open the developed areas to the benefits of density, such as increasing social spaces, improving efficiency of infrastructure use, sustainability and environmental benefits, opportunities for mass public transportation, and a more diverse mix of use of the buildings in the area as opposed to exclusively residential spaces.

One of the main issues that come with densification is gentrification. How can one densify an existing suburban neighbourhood without displacing those that currently live there or without inherently changing the culture and character of said neighbourhoods? This is a point of contention among many and must be resolved, however, this thesis is simply noting the benefits of bringing density into the suburbs for the purpose of the future of work satellite spaces. In the future, as the densification of the suburbs proceeds, policies should be revised and enacted, and the communities engaged to create a plan that works for all stakeholders involved.

the 15-Minute City

The 15-minute city is a conceptual ideology of urban design that encourages walkability in the urban setting by assuring that necessary amenities are within a short (up to 15 minutes) walking distance from where one resides. This method of urban planning was created by French-Columbian scientist Carlos Moreno and popularized by Parisian Mayor Anne Hidalgo to reduce the automobile dependence and to encourage an urban landscape designed at the human scale.³

This strategy is much more manageable to implement in European cities that are already highly densified and designed for a pre-automobile world, however, bringing this strategy to the blanketing suburban sprawl of North American cities may be much more challenging. We must first begin to add density wherever possible in the existing suburban neighbourhoods to enable this method of urban planning.

The benefits of implementing the 15-Minute city ideologies as we begin to densify the suburbs are substantial. Living within an acceptable walking distance from all of one's daily needs promotes a healthy and less sedentary life than that of a car dependent society. Not only that, but it encourages one to have more social interactions with others in the community, even weak interactions such as exchanging basic pleasantries that otherwise wouldn't have occurred while isolated in a vehicle.

The reduction of automobile dependency comes with a variety of positive outcomes mentioned previously in the densification section. However, one issue arises when considering the accessibility needs of the community when determining what a 15-Minute radius really is, as everyone's levels of mobility differ and this ideology is meant to be a proponent of inclusion.

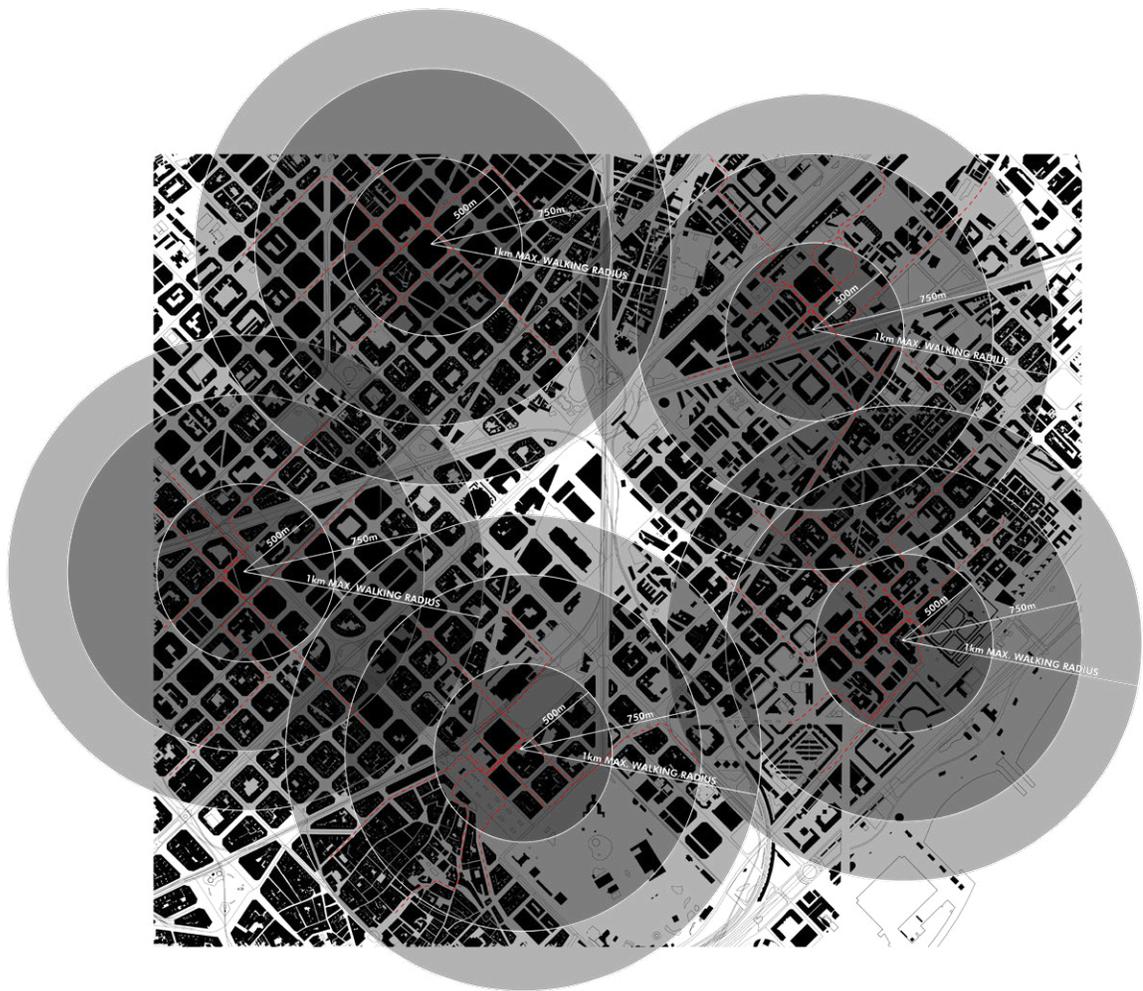


Figure 4.01: 15-Minute City Diagram

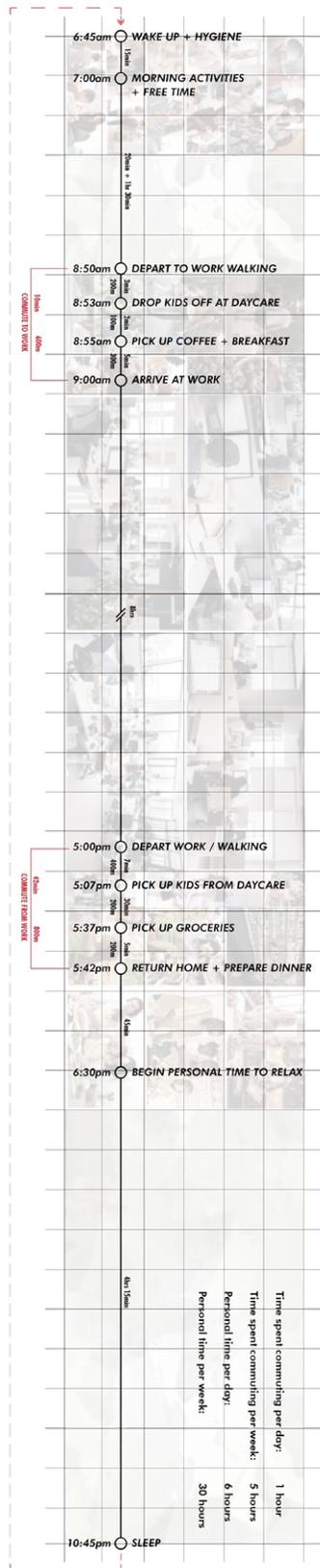


Figure 4.02: Walkable Scale

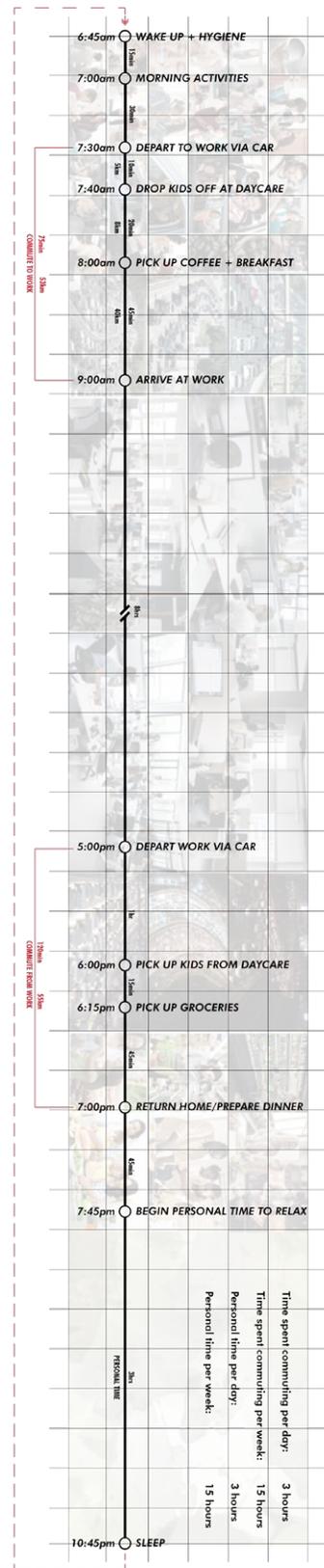


Figure 4.03: Automobile Scale

Existing Planning Practices

Urban planning practices are often delayed in meeting the needs of present society. The bureaucracy of changing codes and zoning legislature is a time consuming process and often the needs for these changes will inevitable change by the time these amendments are official. The image below shows a master plan that will be implemented in Surrey, BC, depicting the redevelopment of single-family detached housing to mostly low density townhouses. The site is centered around a mixed use development at the core to create a main street that is dense with amenities and residential elements are relegated to the periphery. The further out you go from the dense center, the less dense the plan becomes. However, in this instance, even the density surrounding the core is only medium to low density townhouses. While this is a small step in the right direction in achieving walkability, it doesn't bring nearly enough people into the zone that could completely support these local businesses, and the amenities are so localized that those living in the outskirts of this plan maintain their dependence on personal vehicles.

This plan is barely an improvement from what is currently existing. We should be planning our urban spaces for what might be necessary in 15 years time instead of for what was valued or expected 10 years ago. By flooding this area with medium to low density townhouses, the area is essentially being locked for the life span of these homes and will not be able to reach a greater density until that time. At some point in the future, if this area retains potential for further densification, the buildings that will be built will all have to be demolished, creating an unnecessary amount of wasted material from their short lifespans.

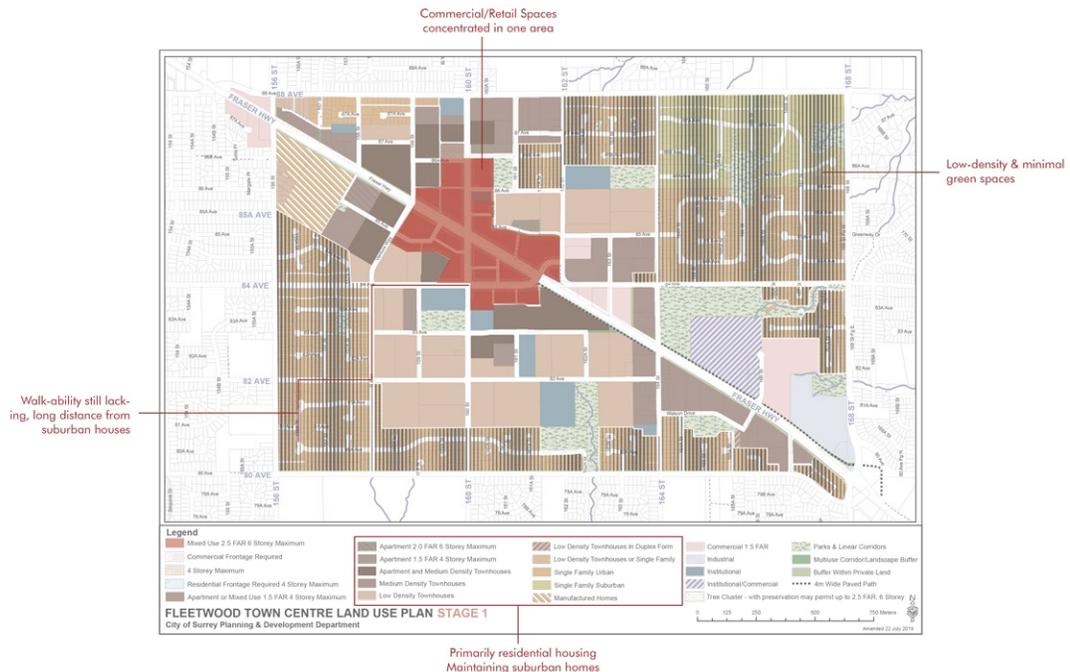


Figure 4.04: Surrey (Fleetwood) Master Plan

Influential Figures

Congress of New Urbanism (CNU)

The Congress for the New Urbanism is an organization of public and private sector leaders, community activists, and multidisciplinary professionals.⁴ One of the main missions of the Congress of New Urbanism is to “champion walkable urbanism.”⁵ It is a well-known fact that the traditional suburban model of development is fundamentally unsustainable and new methods are imperative; New Urbanists seek to create these solutions. Their goals of creating walkable and sustainable communities and the respective strategies of implementation are Utopian and ideological, many of those goals broad and open-ended. In their published Charter of New Urbanism, Second Edition, they outline a wide variety of urban design strategies and plans that aim to tackle the densification of the suburban sprawl and promote healthier and more sustainable guidelines and policies for the future of development.⁶ Some of their proposed strategies, such as transit oriented development, do have some merit and could be pursued, however, their perspectives often seen fairly idealistic.

One of the goals laid out in the Charter of New Urbanism states that by developing dense areas in existing suburban spaces, they’re “creating opportunities for people who live in the neighbourhood to start their own business or to acquire franchises.”⁷ This concept simply caters to the mid to high income households in the area while defining an economic division. The strategies proposed by the CNU are often utopic in nature and often see the planner as the highest power, with the urban spaces forming around their design and guidelines. They seek to control and change the development over time in the ideological community. They believe that the changes they make should change the demographics and characteristics of an area, which would inherently adjust the culture and economy of the community in return.^{8,9}

Influential Figures

Michael Sorkin

Michael Sorkin was an architect who was vocal about urban design and the use of architecture to promote social change and equity. While one sentiment is shared between Sorkin and the New Urbanists, that the suburbs are fundamentally unsustainable and outdated, Sorkin has differing opinions when it comes to the fundamentals of urban planning. He believes that the development and growth of a city or community should be more informal, the ultimate right to the city and its forms belonging to the citizen. He was also a proponent of urban density and all the associated benefits.¹⁰

Issues and opportunities arise in synergies between these two approaches. How can density be created to make a walkable urban fabric while also promoting community engagement and allowing future development and growth to occur organically with self-determination? Finding this synthesis in policy and planning are imperative to move forward in the redevelopment and retrofit of the existing suburban model and imagining the implications of future workplace typologies on suburban development.

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Site and Context

Part v

Vancouver, BC

Context

The site chosen to test implementing densification and new paradigms of work is located in the Lower Mainland of British Columbia. The land that is available for development in this region is strictly limited by geographical factors, with mountains traversing through the north and east boundaries, the United States border along the south and the Pacific Ocean on the west. The limited land along with several other factors has resulted in significant inflation in the cost of real estate making it unaffordable for most people to live in and near the main city of Vancouver.

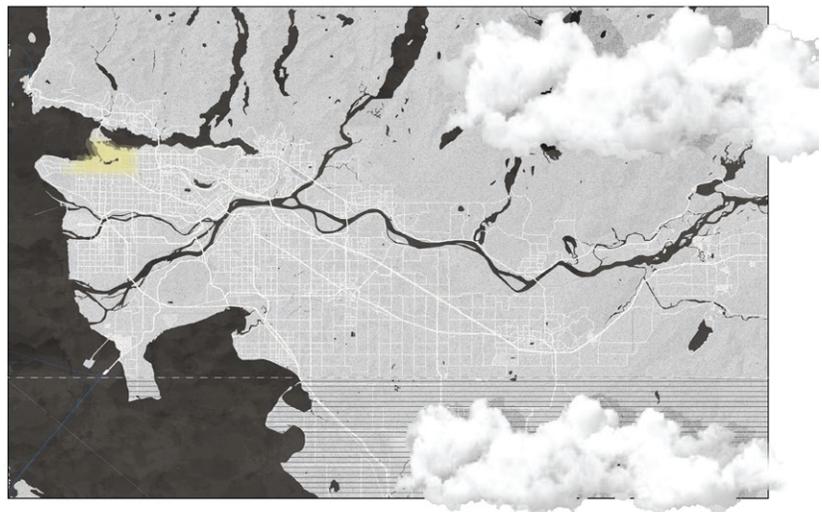


Figure 5.01: Site Location

Commuting

This map indicates some of the main cities and towns throughout the lower mainland where many commute daily to the central downtown core of Vancouver. Due to the geographical location of the urban center, the surrounding suburbs sprawl out towards the south and primarily the east. As Vancouver is located along the west coast, all of the traffic must travel along just a few main highways and bridges to get there, which often results in major delays during times of rush hour.

The cost of living is significantly lower than in the city, which is why many people are willing to sacrifice 10-12 hours a week to commute to live somewhere more affordable. The implementation of the satellite office ideology mentioned previously in the future of work section would allow those who live in these outlying regions a much shorter commute to their place or work, which would significantly alleviate the traffic on the main highways.



Figure 5.02: Commuting Map

Cost Distribution & Site

Downtown Vancouver and the surrounding areas are some of the most expensive places to live in all of Canada.¹ The further out you get from the city, the more affordable the cost of living becomes. Bringing work out of the city decreases the need for one to live near the downtown core, thus creating opportunities for one to live close to a place of work in an affordable setting. Even if one is working in a more hybridized system, commuting just one or two days a week and living somewhere much more affordable would be a tempting trade for many.²

The site for this work is located within the City of Surrey, in a smaller region called Fleetwood. Many factors contributed to this decision, one main one evident in the map displayed is the land value compared to the areas surrounding downtown. In addition, it is also an area that has succumbed to suburban sprawl and low-density development, with poor walkability and a very high dependence on vehicles for daily transportation needs. This typology of housing is outdated and inefficient, and this thesis will look at this as a model for what we should be aiming to achieve in future urban and suburban developments that accommodates the implementation of satellite office spaces.

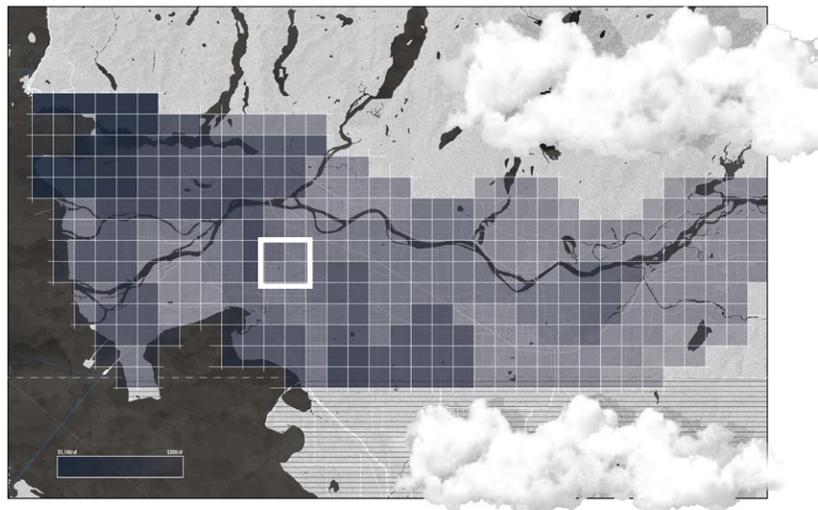


Figure 5.03: Cost of Living

Site Density

Density is paramount in creating a walkable community. It promotes sociability, efficient infrastructure environmental benefits, enhances efficiency in mass public transportation, and provides a more diverse mix of use. Unfortunately, that is not the case in many suburban communities throughout North America, where the dependence on cars for transportation is evident. We now must move forward to push plans for higher density, in particular, more low-rise high-density developments that promote community engagement. The image of Fleetwood shows a figure ground plan that represents the residential single-family houses currently built.

European cities, on the other hand, were largely designed at the human scale in an era prior to the invention and mass production of vehicles for transportation. In European cities and communities, you'll find significantly higher low-rise density that spreads across a large amount of land. This model promotes walkability and a healthier overall lifestyle, with busy streets and plenty of interpersonal interaction. The image of Barcelona is also a figure-ground plan such as the one made for Fleetwood, however, here you can really see the difference in density. While it can be argued that one is a city and one is the suburbs that isn't in a close proximity to an urban center, the sentiment remains the same. Barcelona is made of relatively low-rise developments, which is feasible to achieve in the redevelopment of the suburbs over time as a step-in future densification.

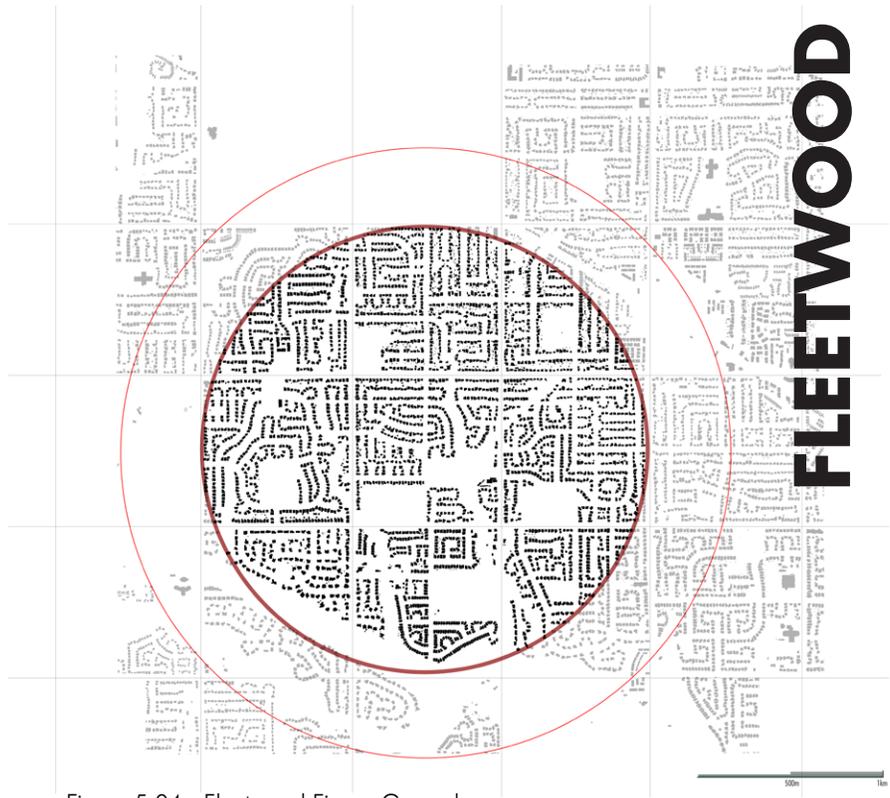


Figure 5.04: Fleetwood Figure Ground



Figure 5.05: Barcelona Figure Ground

Site Amenities + Transport

Almost all the existing amenities within the site of study are educational institutions ranging from elementary schools to high schools. This makes the area great for families to reside in, however, the area is severely lacking those amenities needed for daily activities within walking distance. The nearest cluster of other spaces that include a grocery store are in the upper right hand corner along Fraser highway, which is only accessible to walk to for a few residences in closer proximity. The neighbourhood must be highly dependent on cars due to this lack of any useful commercial and retail spaces.

There are a few main bus routes that run through and adjacent to the site. The site is flanked and intersected by a few arterial roads, which is very useful when needing to drive everywhere however it encourages vehicular traffic and deters walkability. The number of roads transecting the site should be reduced or re-purposed to promote alternative modes of transportation, such as cycling or taking other methods of transit. A future SkyTrain extension will run along Fraser highway; this is one of the greatest benefits of the site as it will connect this walkable district with others in addition to making commuting downtown through the means of public transportation much easier.

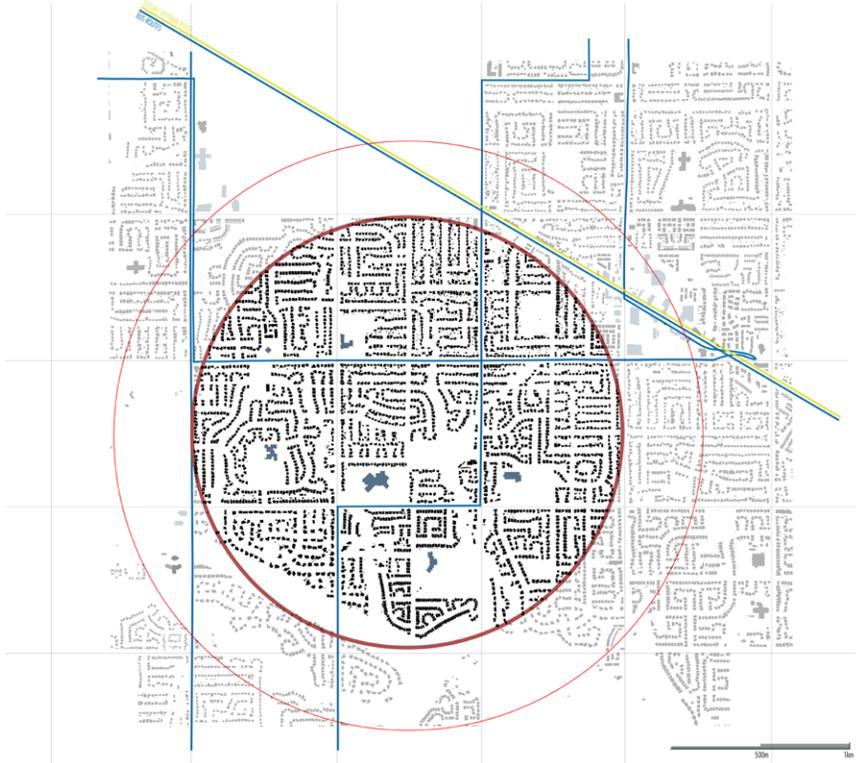


Figure 5.06: Existing Public Transportation

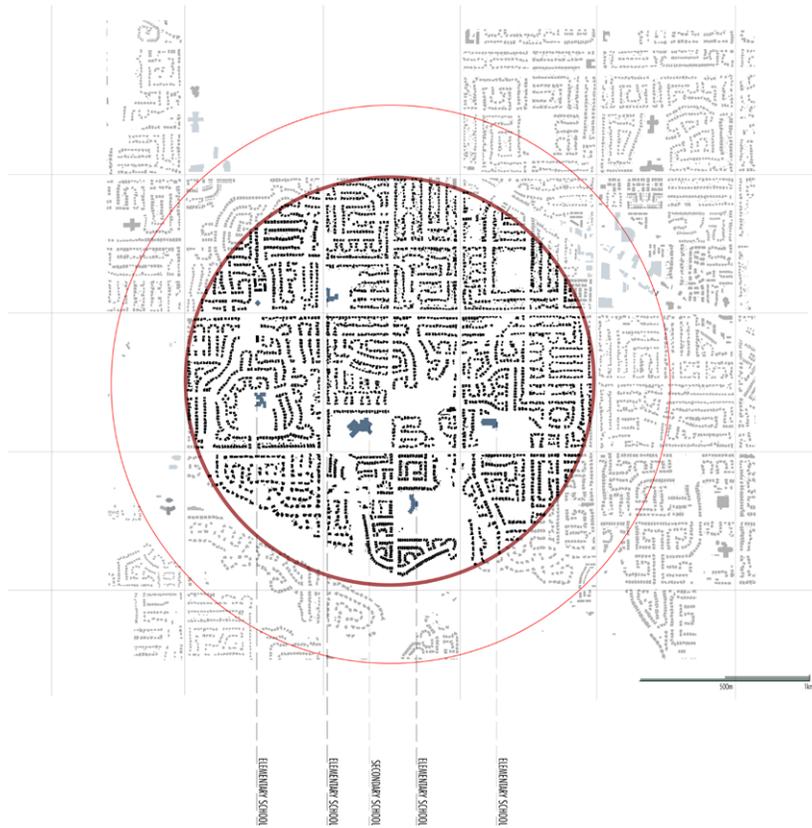


Figure 5.07: Amenities on Site

Site Documentation

The main typology of housing found throughout the site of study are detached single-family homes, often two stories in height and with front and rear yards. Most houses also have a large garage accompanied by a long wide driveway and several cars parked around the house. Upon observation of the area, the front yards appear to be well maintained by seldom used. Most houses had some type of garden observable in the front yard, as well as one or two trees. One that lives in this area would expect a living space that's upwards of 2,500 square feet with plenty of extra space outside, something that is more difficult, although not impossible, to achieve when densifying a neighbourhood.



Figure 5.08: Typical Housing Typology

Further observations included the amount of not only cars, but trailers, boats, and other alternative large objects stored on the driveways of each house. The neighbourhood's reliance on vehicles is evident in plain view as it can be assumed that most of the time when the residents are of the age to drive, they acquire their own means for transportation. Another interesting instance in this neighbourhood was a barbershop that was retrofitted within the garage one a residence. While not necessarily legal in this area as per the local zoning bylaws, an relaxation of these rules could encourage others to host private businesses from within their homes thus bringing access to amenities within walking distance from their neighbours.

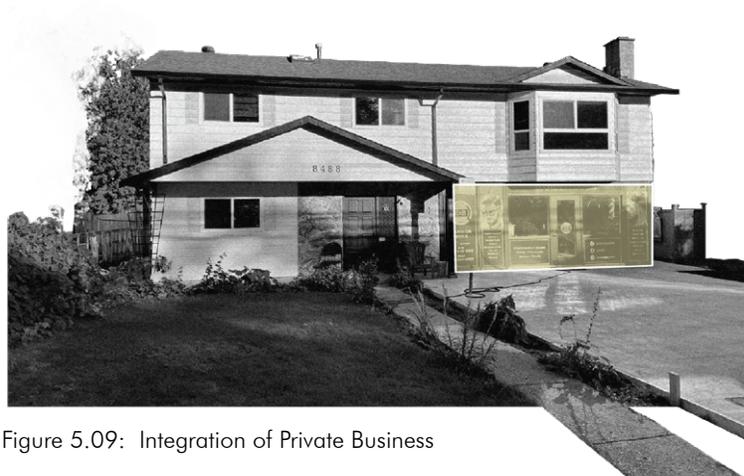


Figure 5.09: Integration of Private Business



Figure 5.10: Automobile Dependency

Endnotes | Part v

1. Statista Research Department. "Most expensive cities to rent 2-bedroom apartment in Canada as of June 2021 (in Canadian dollars)" in Statista Residential Real Estate (June 2021)
2. Robert Hogue. "Which is Canada's most expensive market? The answer just changed." In RBC Economics. (February 4, 2022)

the District

Part vi

Urban Intervention

the District

This next part will begin to define the boundaries of the site which will henceforth be referred to as the District. The outer boundaries of the District (see Figure 5.01) are roughly 2.4km squared, however, the District is broken down further into a hierarchy of spaces consisting of smaller and more manageable parcels of land. By working with smaller parcels of land, the design can be focused on the human scale resulting in more intimate design decisions throughout the process. The primary boundaries is those of the District, while the secondary boundaries divide the district into thirds creating strips of what could be considered “superblocks”. The parcelization of this land continues by dividing each superblock into thirds that encompass the

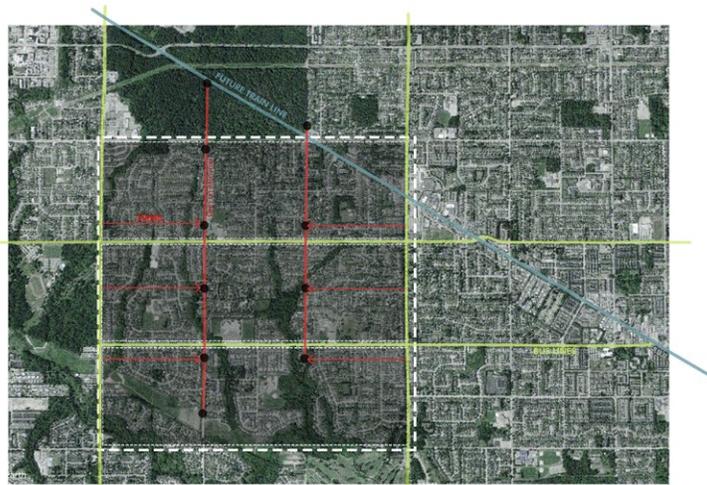


Figure 6.01: District Map

The future Skytrain line will pass diagonally across the top of the District, which will be integral to the prosperity as it will provide the connection between this District and any others in the future as well as existing urban centers. In order to improve accessibility, at least one LRT will be implemented to carry commuters across each superblock along a north south route that will terminate in proximity of the future Skytrain station. While the construction and operation of an LRT is a significant expenditure, the future plans of density will be much over the realm of what is necessary to support this type of mass transportation. ¹

Most existing bus routes will be re-routed along arterial roads adjacent to the district, however, two will remain cutting through to provide lateral transit for the occupants and to not impede on the existing flow of traffic along these arterial roads. The public transportation routes, both the LRT and bus routes, are designed so that from any point one must only have to walk a maximum of 10 minutes from where they live to arrive at a station.

For this study, the central parcel of the district will be considered in further detail. Area's of retention and preservation are identified to maintain and improve biodiversity, and circulation routes are assessed. Circulation and accessibility for both automobile and pedestrian traffic is of utmost priority to provide a seamless and safe space for movement in a human-centered environment. The existing roads dedicated to vehicular access are to be retained wherever possible to maintain the existing infrastructure; the development and densification of the district in the next phase will utilize the existing residential sites.

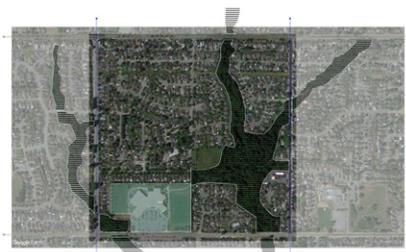


Figure 6.02: Areas of Retention and Preservation



Figure 6.03: Automobile Circulation



Figure 6.04: Pedestrian Circulation

Zoning Transitions

The facilitation of densification in an existing suburban neighbourhood requires extensive evolution and revisions of existing building codes and zoning bylaws. The current zoning pertaining to this area specifically is for low-density single-family residential building typologies with a maximum density of 2.5 dwelling units per hectare and a maximum lot coverage of 40%. These are two key components that must be revised to achieve a higher density of mixed use spaces to promote walkability.



Figure 6.05: Existing

One of the first steps will be to revise the zoning to allow for residential homes to contain commercial and retain uses to introduce useful amenities within the neighbourhood that provide minor improvements to the walkability of the neighbourhood.

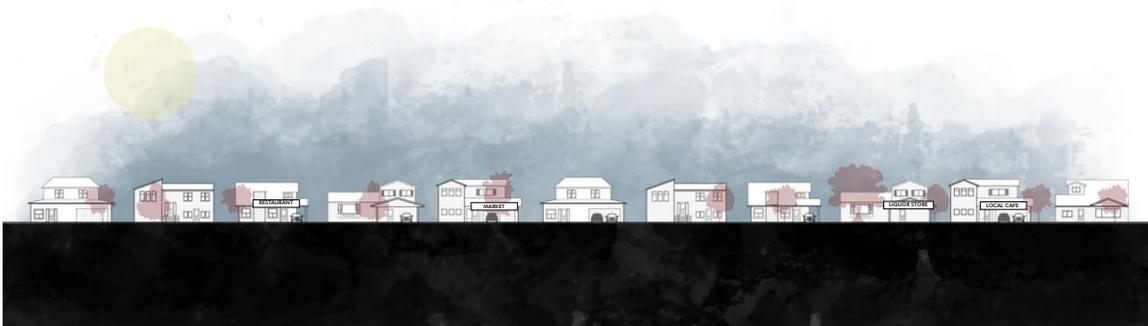


Figure 6.06: Initial Re-Zoning Phase

Further steps and revisions in zoning take place over time to allow the District to grow and densify gradually in a way that doesn't force the current residences out of their homes. The intent is to develop a diverse mix of building typologies to enhance the diversity of demographics in the area replacing the existing and exclusively single-family homes. The sizes of these single family homes may still be incorporated within these highly dense developments, however, they will be adjacent to a wider variety of living units and other amenity spaces.



Figure 6.07: Density Rezoning Phase

Eventually, the side will be comprised of high-density buildings of various different uses and typologies, while maintaining a relatively low-rise of no more than 18 meters in height to maintain the intimacy of the streetscape.



Figure 6.08: Final Rezoning Phase

Phasing Progression

The site will undergo temporal transformations that will bring density and diversity of use and demographics to the site over time. The ultimate goal is to provide a framework that can encourage and guide the flow of development while allowing for self-determination of the community throughout the process. While densification is a necessary in the unsustainable suburban realm, it is important to take necessary precautions to avoid or traverse issues of gentrification in these communities.

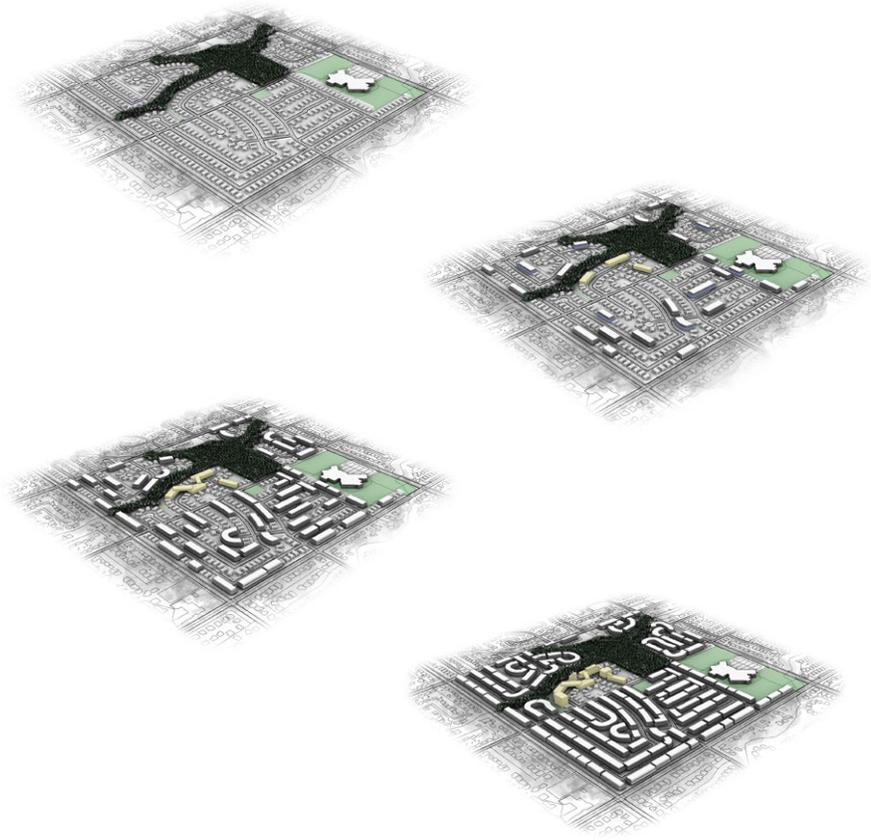


Figure 6.09: Phasing of Development

This thesis is simply highlighting the positive attributes that arise with densification and how the models of the future of work would thrive in a dense urban realm, however, it is also true that densification may not always be the solution.

Site Location within District

The specific site chosen for the theoretical implementation of a conceptual paradigm of the future of work is located in the center of the District parcel. While the location of the site is arbitrary, this area was large enough to organize a diverse mix of use of both commercial and retail within the building surrounded by dense residential spaces. There was also opportunities to test ideas of pedestrian and vehicular circulation strategies both through and adjacent to the site.

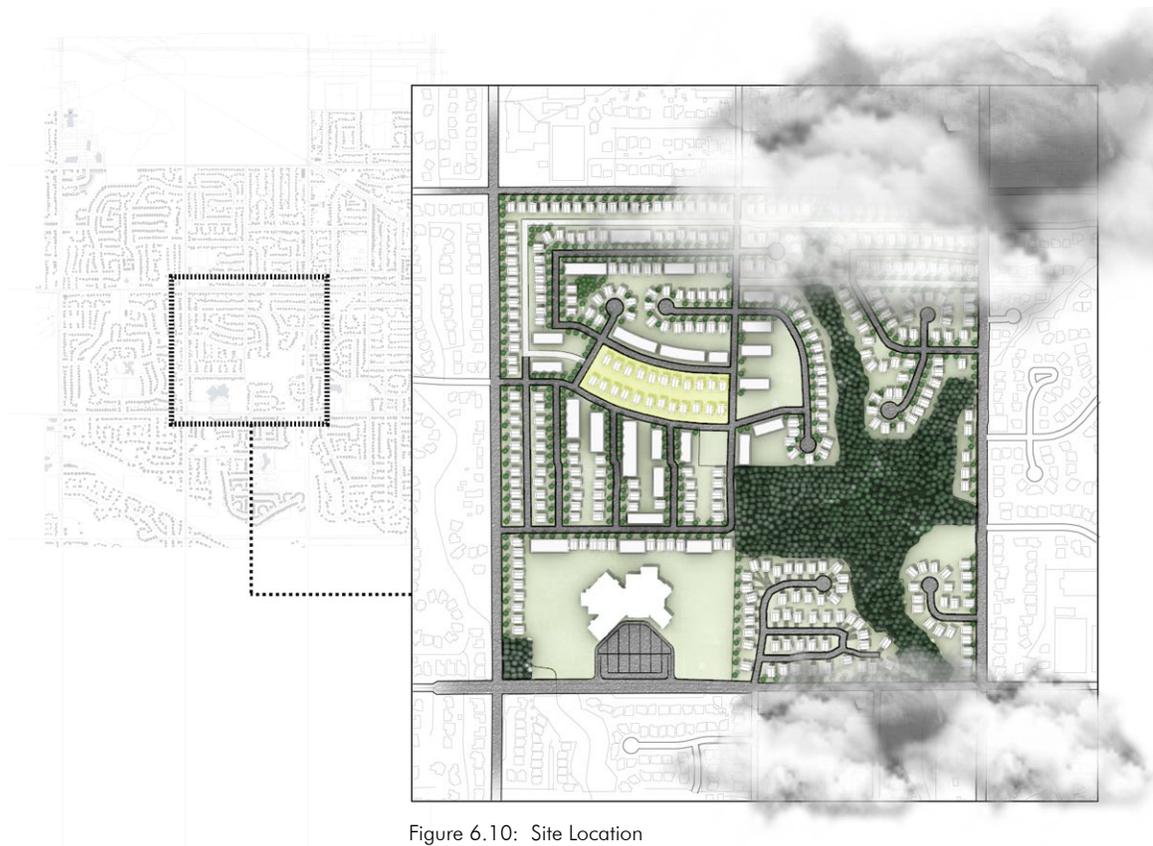


Figure 6.10: Site Location

Endnotes | Part vi

1. British Columbia Government. "Surrey Langley SkyTrain Project – Project Overview", in British Columbia: Transportation and Infrastructure (Accessed October 2021)

Conceptual Office Typology

Part vii

the Future of Work

Conceptual Massing

This building that will act as a conceptual prototype for the future workspace of a post-pandemic society. As mentioned in Part iii, the decentralization of concentrated office core and implementation of satellite spaces may become commonplace in the near future. This building will act as a amalgamation of these independent spaces; it will form a collective space that bridges the gap between companies and other types of work within a space that fosters a **sense of community**.¹

The architectural language of the building will represent a collective of nodes of space that have been removed from their respective buildings in the central business districts of the city. They are combined on site to create a collective and diverse mix of space that reflects the needs of the surrounding communities.

The amalgamated volumes are organized into two bars of program that are separated by a tall, open, airy atrium space that will act as the primary circulation corridor. The widths of the program bars are all within the optimal widths for efficient cross-ventilation and the tall atrium will utilize the stack effect to exhaust the contaminated air and excess heat from the space. The convergence of these spaces creates unique moments within the building, resulting in niches and nooks that provide a feeling of ownership and belonging as one becomes more familiar with the inner workings of the spaces inside.²

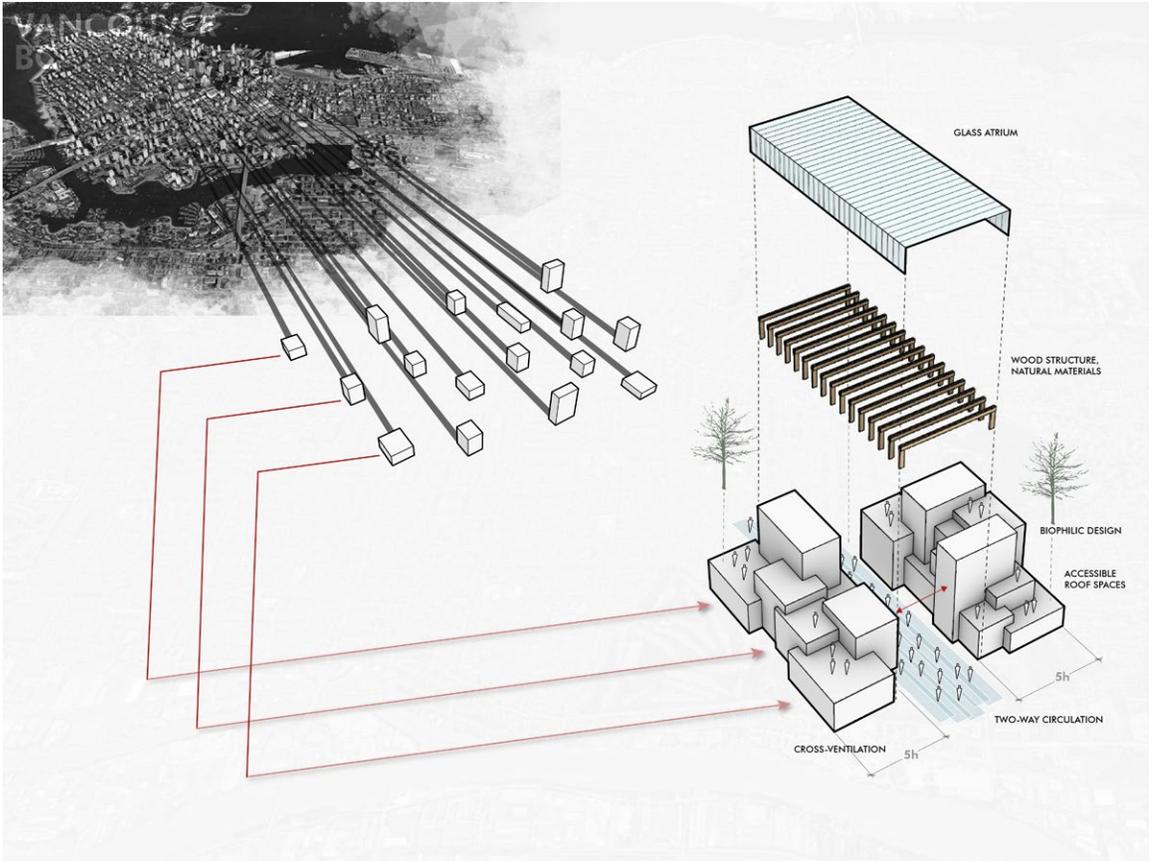


Figure 7.01: Massing Strategy

Site Plan

As mentioned in Part vi, the site of the conceptual future of work building typology is located in the central parcel of the district. There are two individual buildings of collected volumes that are transected by a green-way that is dedicated to external pedestrian movement through the district parcel. This circulatory spine allows one to walk, cycle, or use an alternative method of personal transportation, while maintaining a separation from roads designated for automobile use. Surrounding the workspaces are buildings of residential and mixed use typologies that would bring low-rise density over time in the adjacent areas.

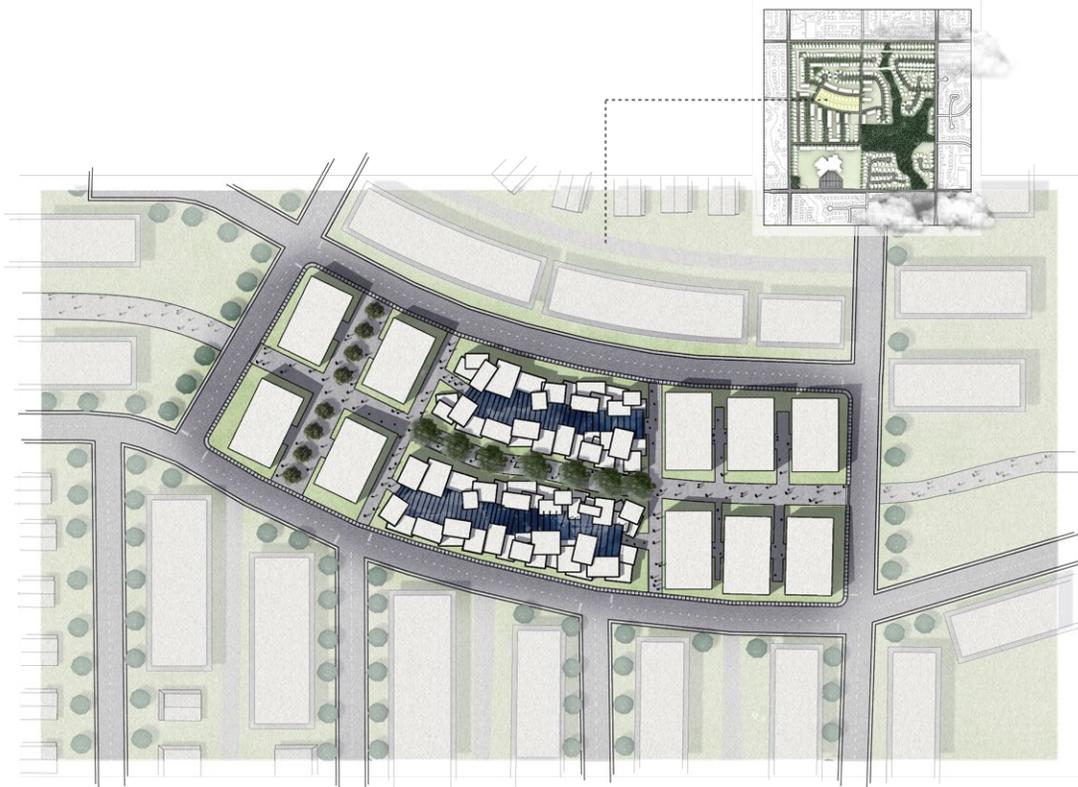


Figure 7.02: Site Plan

Site Section

The long section demonstrates these exterior circulatory paths from a different perspective. The blocks themselves are arranged at optimal widths for passive ventilation, and one way circulation routes are stacked above the primary circulation corridors within each building. The building blocks act as barriers that isolate the pedestrian green-way from the automobile traffic that surrounds the site.

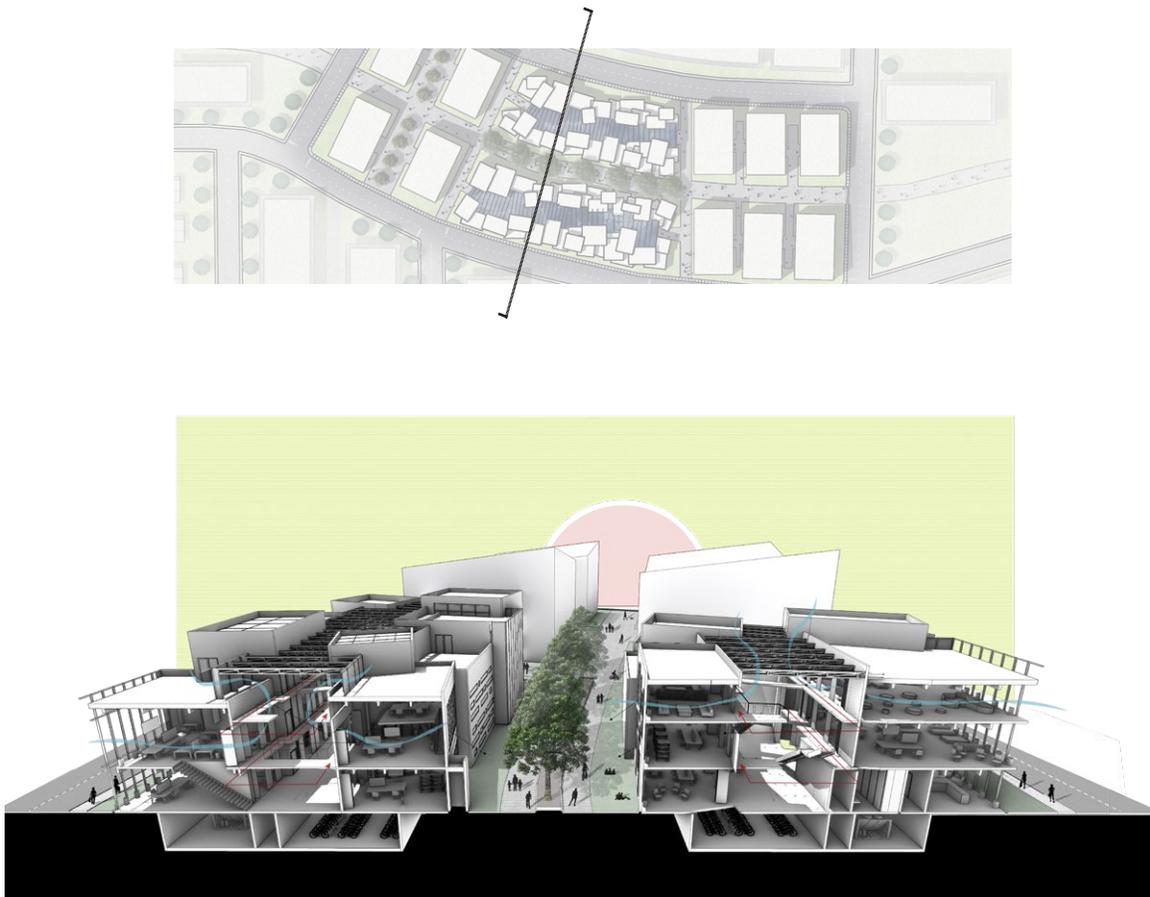


Figure 7.03: Site Section

Program

The program of each building is intended to provide spaces that cover a wide range of needs that serve the surrounding community. To achieve this, these spaces are arranged in a variety of sizes that range from extra small to large. These scales are applied to every type of space, for example, there may be several places to purchase food or coffee that range from a simple small coffee stand or juice bar to a large, sit-down cafe that serves a range of food and beverages. There are small office spaces available for those who only need space for 2-4 employees and large office spaces that can serve up to 20.

To further encourage a diverse use of the space and to accommodate many categories of work, there is a wide range of program use. From childcare facilities to retail spaces, medical health services, and physical and mental health facilities, this building should serve many living in the surrounding communities.

This project is centered on ongoing technological advancements that made remote work possible, so spaces dedicated to technology are also imperative. Some of these spaces include a server room for those leasing space that may not have access to their own servers, or rentable VR stations that one can access to communicate with others working in more distant remote facilities.

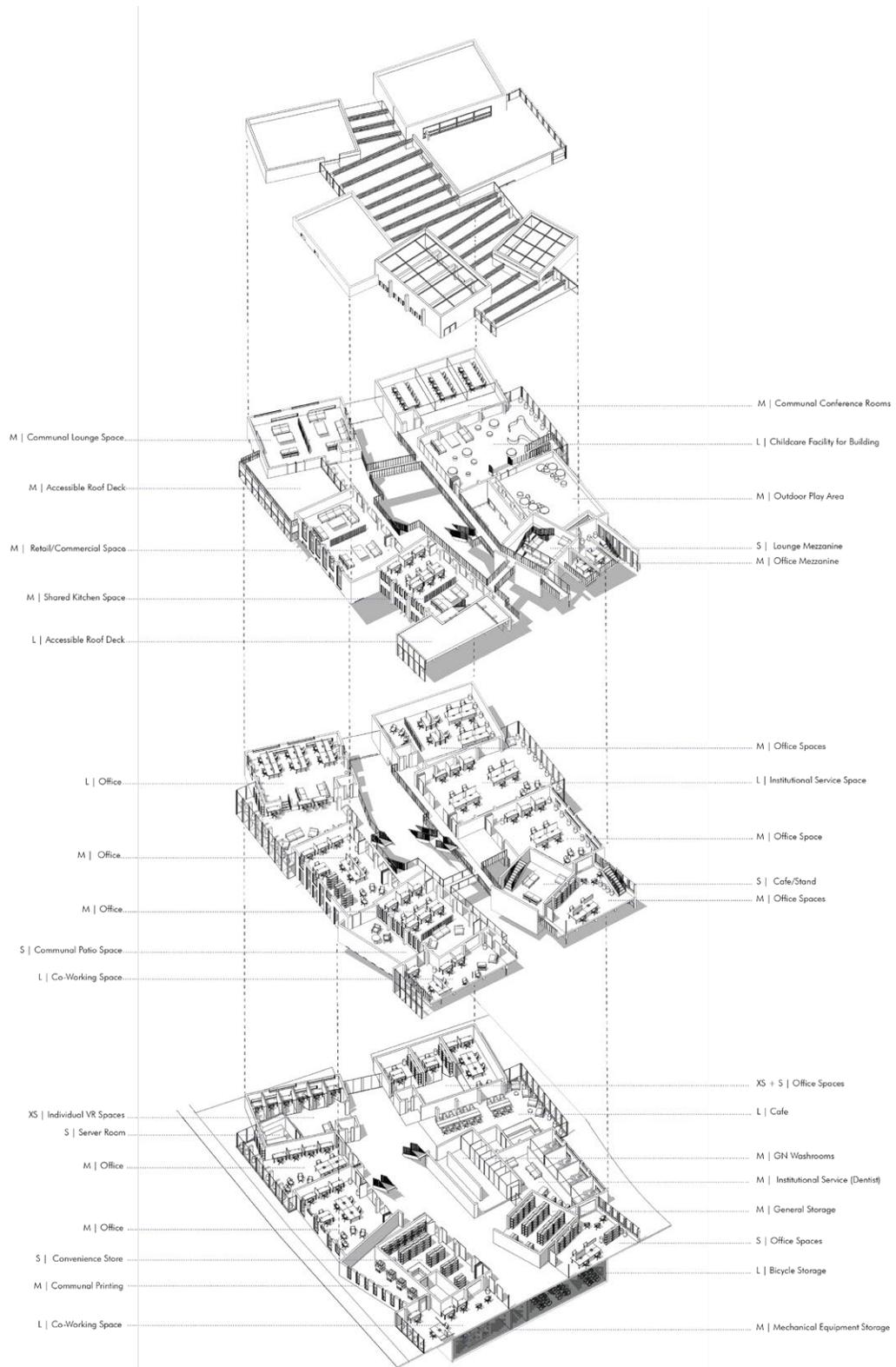


Figure 7.03: Axonometric Program Diagram

Building Section (South Block)

The blocks of program are transected by a central circulatory space that is light, airy, and open, with a large skylight above. This primary circulatory space is wide enough to allow for occupants to maintain a 6' bubble in the case of a future pandemic, while the flanking program provides moments of physical and visual connections with others in the space.

Creating many opportunities for visual connections across the space is important to strengthen the sense of community in cases where direct contact is unwelcome. Members of various companies can look across the space and see others, creating weak ties with other members of their daily community as mentioned in part ii. These visual connections can help maintain the feeling of community in a future pandemic when physical distancing and isolation may be imperative.

The open, central space allows for each linear block of program to be an appropriate width to efficiently ventilate the occupied spaces. This constant flow of air will be imperative to maintain a healthy environment clear of dangerous airborne particles. By pressurizing the occupied spaces and by utilizing the stack effect, air will naturally be forced into and up the central atrium and be exhausted out of the building. Natural materials and plentiful vegetation can be seen throughout the building to enhance ones well-being through the use of biophilic design.

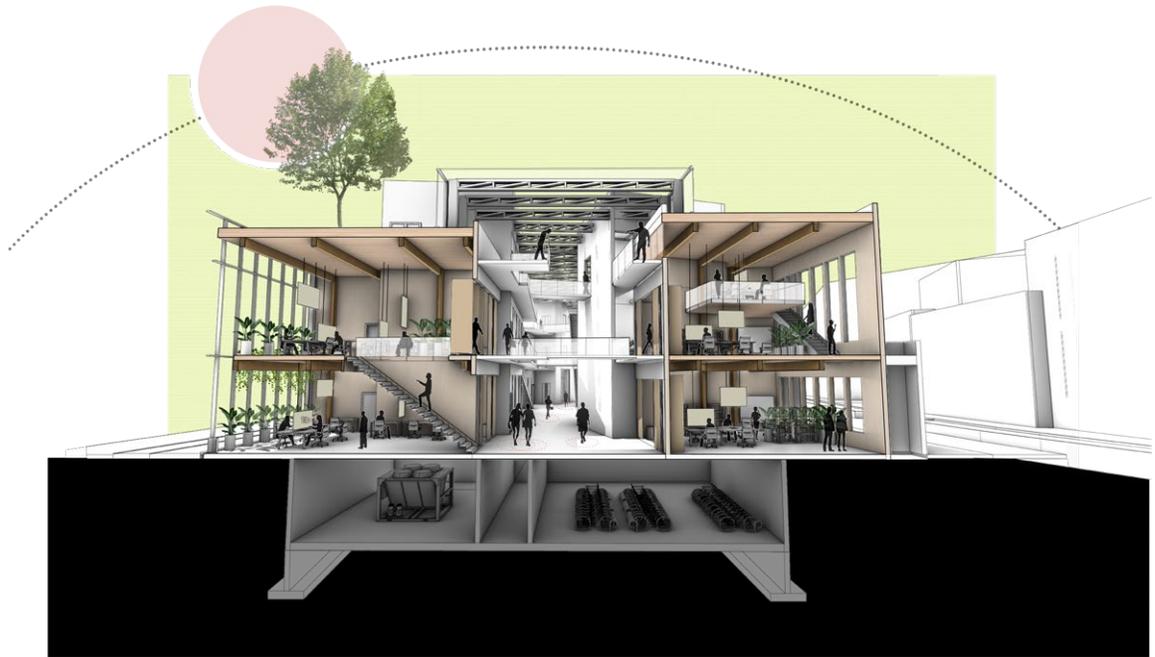
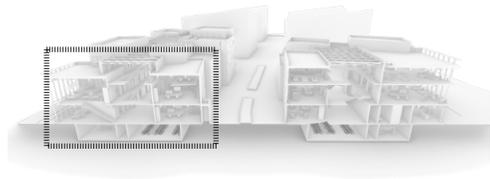


Figure 7.05: South Block Section

Pandemic Resilient Design

This building will utilize the design considerations outlined in part ii. Variations of flexible dividers will be implemented that are either suspended from the ceiling and able to lower if needed, and others will be movable partitions. The dividers will be composed of a porous, fibrous material so that they are able to act as acoustic controls when not in use for viral deterrence.

The office space below is 7m wide, which is well below the ratio necessary for cross-ventilation. This allows a constant flow of air from the operable exterior windows as well as from mechanical louvers integrated within the facade, through the space, and exhausted from the atrium ceiling.

Circulation along the inside face of the space can be designated for one way pedestrian traffic if necessary, while the primary corridor below will provide ample space for two-way circulation. Plenty of vegetation can be found throughout the building to promote health and wellness, coupled with natural light and radiant heating and cooling to maximize occupant comfort.

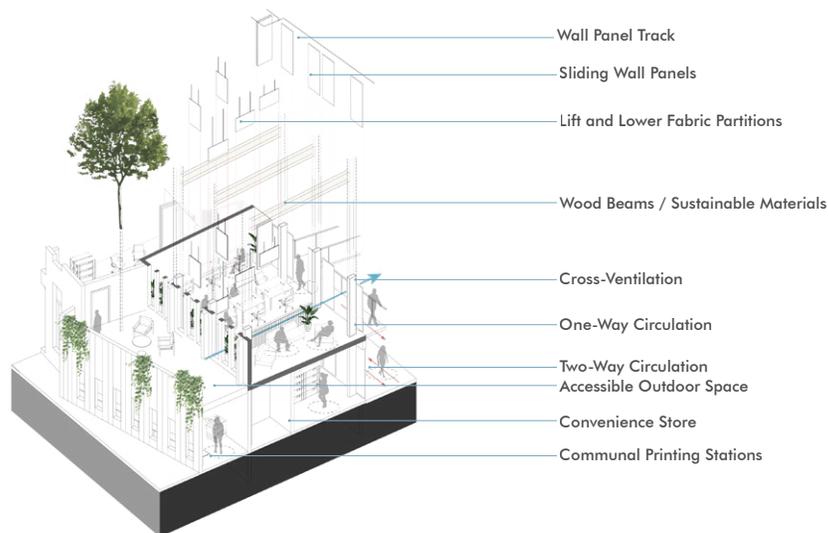


Figure 7.06: Office Unit - Pandemic Resilience Labeled

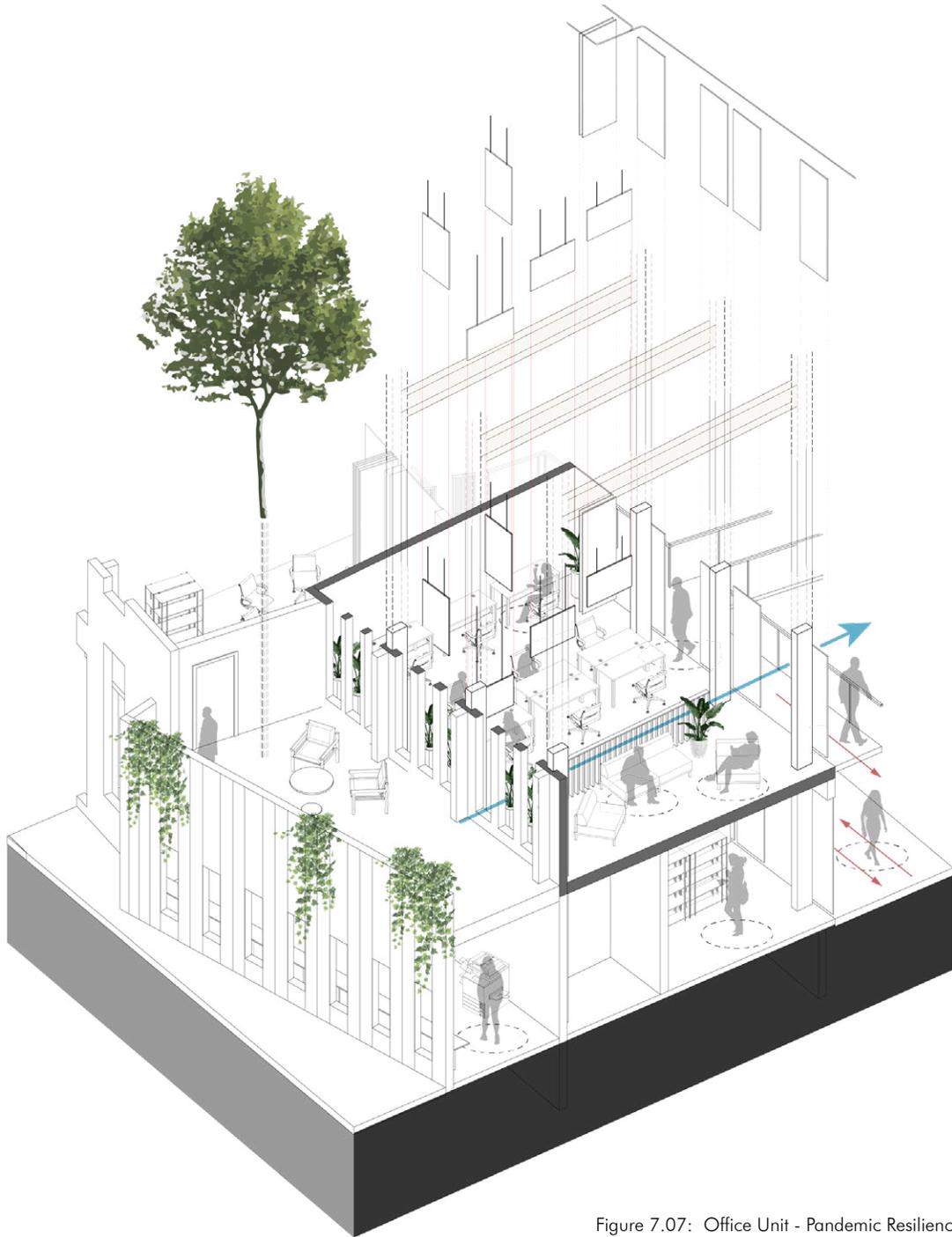


Figure 7.07: Office Unit - Pandemic Resilience

Endnotes | Part vii

1. Myerson, Jeremy, and Philip Ross. 2003. 21st century office. London: Laurence King Pub.
2. Myerson, Jeremy, and Philip Ross. 2006. Radical office design. New York: Abbeville Press.
- 3.
- 4.
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Conclusion

Next Steps

Forecasting the Workspace

The COVID-19 pandemic has created a significant disruption in the daily functions of society that will inevitably result in widespread change as time progresses. The catalyzation of the adoption of digital communications technology for remote work has created a new paradigm of work that allows for the decentralization and relocation of the traditional office space. We can use this event as a starting point for the implementation of nuances in development that is able to encourage more diversity and inclusion within the fundamentally unsustainable model of suburban sprawl through the use of restrained densification encouraging community self-determination.

The intent is to provide a diverse mix of building typologies along with various levels of residential space that would allow for a diverse demographic mix. The concept of the collections of satellite workspaces would be integrated within these dense neighborhoods and would serve the nearby communities, therefore representing the diversity of the community within the workspace.

This workspace of the future is meant to act as a collective, as community within a community. The quotidian exchanges lost during the isolation of the pandemic will be encouraged within the space, and in the case of a future event or pandemics, the space will accommodate safeguards for pandemic resilience. The health and wellness of the community should be of the highest priority when designing these novel building typologies.

Predictions on how the future of work may evolve are full of speculation, however, we it is still to early to tell what will become cemented in a post-pandemic society. This thesis simply suggests some potential outcomes for a variety of categories that reestablish the sense of community that was lost, as well as encourage health and wellness moving forward in a sustainability centered manner.



Figure 8.01: Networks of the Future

Epilogue

The values of the workforce have transitioned and evolved throughout the pandemic; many of these newfound values will be retained as we progress towards a new normal. Rigid work schedules have become far more informal as remote work became commonplace, which inevitably resulted in challenges in maintaining a healthy work-life balance. However, the benefits of remote work were realized when the daily commute was eliminated, and those working from home were able to spend more time with their families or just extend their personal time outside of work. However, one of the most significant values of the society that was lost during the pandemic was a feeling of community and belonging. The extent of the importance of this value may not have been realized prior to the pandemic, but the time spent isolated has enlightened many to how valuable human-to-human social interaction is on a daily basis. Health and wellness are going to be one of the top priorities in the design of future workspaces in order to provide those returning to a physical place of work in some capacity with a place they feel comfortable and safe. This is imperative to create a safe environment with contingencies for pandemic resilience if the need arises in the face of a future pandemic that maintains the social connections that were lost during the COVID-19 pandemic.

Only recently has the unemployment rate fallen to a level lower than before the pandemic started. Throughout the period of the pandemic, however, unemployment in Canada was as high as 13.7%; this was the highest it has been in decades.^{1 2} Companies were in the process of figuring out the logistics of implementing systems of remote work, and places that served people directly had to close operations while society attempted to navigate the severity of this emerging pandemic. As we continue to adjust to the new normal, we can learn from these experiences to better mitigate the effects of a potential future pandemic. Design should be accommodative for all those affected by the 87

Only recently has the unemployment rate fallen to a level lower than before the pandemic started. Throughout the period of the pandemic, however, unemployment in Canada was as high as 13.7%; this was the highest it has been in decades.^{1 2} Companies were in the process of figuring out the logistics of implementing systems of remote work, and places that served people directly had to close operations while society attempted to navigate the severity of this emerging pandemic. As we continue to adjust to the new normal, we can learn from these experiences to better mitigate the effects of a potential future pandemic. Design should be accommodative for all those affected by the pandemic across a wide variety of work typologies to assist those in need caused these significant changes in the workforce.

Through thoughtful and prescriptive design, these negative effects can be circumvented in the case of a future pandemic or another significant event that affects the workforce. A program that promotes a diverse mix of use within the building is imperative to make the space accessible to as many as possible without excluding specific groups. Everyone that has been affected by the pandemic in one way or another should have access to these spaces to navigate through the evolutions of work as well as to maintain a degree of resiliency in the face of a future disruption so that they are able to keep their job.

Transitioning the suburbs from single-use to mixed-use to enable accessible walkability is a significant undertaking. This process should be done in small steps over time by testing the implementation of zoning transitions that allow for private businesses to operate in exclusively residential neighbourhoods. While these changes would improve the economic strength and bring density to these areas, they may also bring underlying tones of gentrification. However, due to the nature of the suburbs being fundamentally unsustainable, it is imperative that changes are made to integrate building typologies that one needs on a daily basis within the suburban fabric to reduce the dependency on automobiles and bring forth the various benefits that come with densification.

Endnotes | Conclusion

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