

Adolescent Development: Creative art making strategies for well-being

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Abstract

This Master of Interior Design practicum investigated how an art based makerspace in Winnipeg Manitoba, can support adolescents through their development in achieving holistic well-being. The practicum explored the benefits of art through its identity as a biological behavior, educational experience, and therapeutic expression. Through these definitions of art, the actual process of making becomes significant to the development of adolescents. Due to the project location and surrounding community, the makerspace acknowledged and incorporated Indigenous land-based art making. Unlike many current makerspaces focusing on advanced technology, this practicum focuses on the humanely intrinsic need to handmade, as a way for adolescents to connect and communicate with one another. In support of this concept, The Constructivist Learning Theory was explored, promoting learning about art through direct experiences, or hands-on learning. Inspired by the field of art therapy, strategies of creative art making were explored. An approach known as the Expressive Therapies Continuum created a design concept for the stages in which adolescents process the art created within the space. Such strategies of creative art making informed the approach to art making activities and wellness opportunities. The practicum considers the needs of developing adolescents by providing the opportunity to build trusted connections and a sense of identity in a comfortably engaging environment.

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Chapter 1: Introduction

1.1 Project Overview

According to Annual Statistics (2017), over the span of five years 25.4% of Manitobans aged 10 and older receive medical care for mental illnesses categorized as, mood and anxiety, substance abuse, personality disorder, or schizophrenia (p. 33). Specific to adolescents, an estimated 20% will experience an episode of major depression by the age of eighteen (Lewis & Simons, 2009, p. 4). A growing body of evidence (Garber, 2019; Malchiodi, 2011; Moon, 2012) suggests that the process of creating and exploring art can facilitate psychological development, emotional conflict, and self-exploration, offering an opportunity for reduced mental illness in adolescents. Due to the practicum project timeframe, scope, and interests, a focus was kept on holistic approaches to adolescent well-being, as opposed to preventative perspectives on mental illness.

Inspired by art therapy practices, the practicum project focused on promoting well-being through protective factors contrary to clinical approaches, within the context of Winnipeg, Manitoba. With limited research on the influence of art therapy practices in built environments, a comprehensive literature review was conducted to acknowledge the benefits of art making and their experiential contexts for adolescent populations. The American Art Therapy Association (2017) defines art therapy as a therapeutic means of encouraging self-esteem and self-awareness, emotional conflict resolution, social skills, behavior management, problem solving, and reduced anxiety. This definition supports the exploration of physical art making as an opportunity to provide aesthetic enjoyment and a sense of achievement for adolescent accomplishment, purpose, and confidence. Opposing technological activities, handmaking activities, processes,

and environments, will focus the practicum on non-temporal visual arts, emphasizing the importance of hand making.

Specific to the practicum project site in Manitoba, there is a lack of making spaces focused on art and influenced by art therapy, for adolescents to freely create art and build community. Additionally, focus on Indigenous decolonization, or the continual process of understanding settler privilege, treaty education, historical trauma, and current realities of this people group, must be acknowledged within the local context of Winnipeg (Vivian, 2018, p. 43). To contribute to reconciliation, a focus on building relationships between Indigenous and non-Indigenous practitioners allows a collaborative point of view, leading to telling and receiving of stories between the two groups (Vivian, 2018). Approached through a decolonized lens, reconciliation may be encouraged by the Seven Sacred teachings of orally spread traditional forms of knowledge, which include respect, courage, humility, wisdom, love, honesty, and truth (Vivian, 2018, p. 45). Research indicates (“Imagine Creative”, 2017) that a higher degree of engagement with arts and culture leads to a higher level of well-being and greater understanding of one’s self (p. 7). The relationship between creativity and well-being is deeply valued by Indigenous populations and holds enormous promise, pointing to art therapy as the bridge (Vivian, 2018, p. 44). In addition, individuals seek out cultural experience for intrinsic reasons, including joy, engagement, and increased self-awareness, which builds self-confidence and resiliency (“Imagine Creative”, 2017, p. 7). Resiliency within the context of Indigenous reconciliation focuses on diversifying and legitimizing different ways of knowing, and is strengthened by community, ceremony, and language (Vivian, 2018, p. 46). The practicum project promotes the beneficial importance of maintaining physical art making within a community for adolescents, while proposing the influence of art therapy as an enhancement to

merging Indigenous and non-Indigenous relations. The consideration of relationships between various local communities is a journey, not a destination, yet art making becomes a visual and metaphorical unifying aspect (Vivian, 2018, 43).

1.2 Key Terms

Adolescence

There is no standard definition of adolescence, however The American Psychological Association (2002) describes it as the time in an individual's life from the onset of puberty until reaching economic independence (p. 1). Although chronological age is just one way of defining adolescents, for the purposes of the practicum project adolescents are defined to be between the ages of 10 and 18 (APA, 2002, p. 1). Early adolescence includes ages 10-13, middle adolescence ages 14-17, and late adolescence to follow (Moon, 2012, 18).

Art

The term art is broad in definition, often used to describe a wide range of activities or processes. Historically art was referred to as a craft or skill characterizing any object or activity performed by an individual (Dissanayake, 1995a, p. 40). Art may widely refer to skill, beauty and pleasure, an object's sensual quality, fulfilled sense experience, ordering or harmonizing, innovation, new perspective, the urge to beautify, self-expression, communication, significance, make-believe, or heightened experience (Dissanayake, 1990, p. 36).

Well-being

Overall well-being can be defined as a state of happiness, health, or prosperity (Merriam-Webster, n.d.) It is a complex concept often used in the field of human development to describe an internal state of pleasure or happiness (Gomez-Lopez et al., 2019, p. 2). Well-being consists of more than just happiness, as it is not an outcome or final state but rather a process of fulfilling human potentials (Gomez-Lopez et al., 2019, p. 2).

1.3 Research Questions

The subsequent chapters investigate topics directed by the following research questions. These questions aim to focus numerous explorations, potential data, and concepts informing the final design, relative to the subject of protective adolescent development and increased well-being through handmade art processes.

1. What are the user needs of a makerspace, to support adolescent development and well-being?

The exploration of strategies of creative art making was important to the practicum project to determine which activities could support adolescent development and well-being. Three projects analyzed in *Chapter 4.0 Precedent Analysis* outline the strengths and weaknesses of current art making spaces that applied to creative making as an individual and communal therapeutic process.

2. What strategies and narratives from creative making can inform the design of a space that supports adolescent development and well-being?

Concepts relative to the actual process of art making influenced the programming of the built environment. These explorations helped to understand how adolescents perceive art making, creating guidelines for the final design.

3. How can the synthesis of research on adolescent development, creative art making strategies, and current makerspaces conceptually translate into the three-dimensional design of an art based adolescent makerspace?

Adolescent development focuses on the need for individuals to create a personalized sense of identity. Creative art making strategies offer this exploration for adolescents, and while contemporary makerspaces emphasize technological processes and programs, the practicum project offers a space to focus on the intrinsic desire for handmaking.

1.4 Project Limitations

Project limitations include the determined age range of primary users, the definition of well-being, the activities provided, and developmental considerations. Due to the broad definition of children and youth, the project utilized a narrower scope by focusing on adolescents ranging from 10 to 18 years of age. The chosen demographic was also selected based on site specific research supporting the need for this typology in Winnipeg.

Although well-being can be defined across various contexts such as political, economic, social, and cultural means, for efficiency, the project focused on the broad achievement of healthy development in adolescents through the built environment.

Activities relating to handmade art processes provided include drawing, painting, textiles, ceramics, and woodworking. Within these areas, activities related to Indigenous land-based

techniques are also encouraged, such as basket weaving, beading, and carving. This decision was based on the need for tangible art making to be the focus for supporting adolescent well-being, and a connection to the history of art and the selected site.

To keep the project within a manageable scope, developmental disorders that may be present within the selected demographic were not specifically addressed. This topic of research would have been further explored had the project timeline and physical size allowed for.

1.5 Summary of Chapters

This practicum document is organized into eight sections to illustrate the process leading to the design of a makerspace, Make It. The introduction provides a contextual overview of the project background and the need for an art based makerspace in Winnipeg, including its purpose, key terms, inquiries, and limitations.

Chapter 2.0 *Adolescent Development & Well-Being* outlines the stages of adolescent development with focus on overall well-being and healthy development. Emphasis on the rise of mental health concerns focuses the practicum project on the need for protective development factors through a well-being approach.

Chapter 3.0 *Literature Review* explores three theoretical views supporting the benefits of art making as a means of strengthening adolescent well-being. Topics include art as a biological behavior, an educational experience, and a therapeutic expression. Strategies for creative art making and the evolution of makerspaces are explored. Investigation of these ideas in relation to adolescent perception and development informed the outcome of the project.

Chapter 4.0 *Precedent Analysis* examines three existing interiors and programs with characteristics related to art making, adolescent education, and wellness. The precedent analysis

informed the project program relating back to the theories researched in the literature review. The three interiors reviewed include Open Works Makerspace, Plymouth School of Creative Arts, and the Creative Growth Art Center. The review of each precedent discusses specific design principles, program elements, and conceptual notions influencing the final design.

Chapter 5.0 *Site Analysis* provides a detailed overview of the project site and building, 165 McDermot Avenue in Winnipeg, Manitoba. An extensive review of the history and community of the Exchange District geographically contextualizes the final design. The selected heritage building required careful consideration for preservation of character defining qualities and details.

Chapter 6.0 *Design Program* contains an analysis of human factors, and functional and aesthetic requirements needed within the space. The program provides parameters to ensure the proposed project is successful both functionally and aesthetically for all user needs.

Chapter 7.0 *Design Proposal* illustrates the design outcome of the practicum project including the concept behind the design. This section includes the building floor plans, elevations, interior details, and perspectives, to visualize the final design considerations and atmosphere.

Chapter 8.0 *Conclusion* reflects on the strengths and weaknesses of the project. Learned experiences, limitations to the project, and future recommendations are reviewed. The conclusion provides an overall summary and revisits the principal research questions.

Chapter 2: Adolescent Development & Well-Being

2.1 Adolescent Development

There are an estimated 83,405 adolescents aged 10 to 18 in Winnipeg, Manitoba, becoming increasingly diverse each year (“Census Profile,” 2019). Winnipeg’s fastest growing population, as well as Canada as a whole, are urban Indigenous people, which includes those who identify as First Nations, Metis or Inuit, or Treaty Indians, and New Canadians (Axworthy et al., 2016). Notably, a large portion of Winnipeg’s children and youth live in the inner city, with almost a quarter of residents in the area aged 0 to 19 years of age (McCracken et al., 2013). Of this inner city population, approximately 30% of those between the ages of 10 and 18 are Indigenous people or new immigrants (“Census Profile,” 2019). The Child and Youth Report (2017) categorizes adolescents into two stages of development which include middle childhood ages 6 to 14 years old, and youth ages 15 to 19 years old (p. 28). Middle childhood is characterized by the onset of puberty and those learning to build relationships and manage conflict (Child and Youth Report, 2017, p. 105). The onset of puberty in contemporary adolescents is becoming earlier, as they face an increasingly modernizing world with continually changing expectations and opportunities (National Academics, 2019). Youth are characterized by those building intimate relationships, often experiencing tremendous psychosocial change such as new expectations, developing identity, and learning to manage more complex conflicts (Child and Youth Report, 2017, p. 154).

Reaching healthy development at both stages can be associated with either risk factors or protective factors, found in individuals, surrounding families, or communities (Child and Youth Report, 2017, p. 27). Risk factors are defined as characteristics, experiences, or events associated with an increased likelihood of negative outcomes, whereas protective factors are associated with

an increased likelihood of positive outcomes (Child and Youth Report, 2017, p. 27). Adolescents become vulnerable in their development when protective factors are reduced or when there are insufficient resources available to cope with stressful circumstances (Child and Youth Report, 2017, p. 27). The American Psychological Association (2002) provides an overview of characteristics for healthy adolescent development such as physical, cognitive, emotional, social, behavioral, and the contexts in which they are encouraged (p. 2) Healthy development is considered flourishing when adolescents experience high levels of these characteristics, such as good health, education, positive socialization, and supportive relationships (National Academics, 2019). The practicum project focuses on the overall development of adolescents as it relates to *Chapter 3.0 Literature Review*, handmaking art as an opportunity to contribute to adolescent well-being.

All contexts in which adolescents develop affect the experimentation of new behaviors as they transition to adulthood, with cognitive developments often becoming more dramatic than any outward physical changes (APA, 2002, p. 11). Exploratory behaviors in adolescents allows them to shape their identities, manage decision making skills, and develop realistic views of themselves and those around them (APA, 2002, p. 29). Through exploration adolescents require guidance from trusted adults to contribute to rational decision making about areas of life such as college, occupation, or finances (APA, 2002, p. 11). Positive, stable, and nurturing relationships are essential to healthy development as adolescents do not always successfully manage or regulate their abilities and emotions (Child and Youth Report, 2017, p. 154). Adult guidance can help adolescents understand both positive and negative emotions and their effect on thinking and behavior (APA, 2002, p. 12). Cognitive development provides the background for moral development and reasoning, referring to one's sense of value and ethical behavior (APA, 2002,

p. 13). Moral development can be promoted through community volunteering, while providing adolescents with a sense of meaning and associated positive long-term outcomes (APA, 2002, p. 13). Therefore, the built environment should foster relationship building and an opportunity to develop and maintain trusted friendships and mentors.

Through cognitive advancements in learning to cope with stress and relating to others, an important component of development is the emotional ability to establish a realistic and coherent sense of identity (APA, 2002, p. 15). Although the formation of identity does not necessarily start or end during adolescence, it is the first time adolescents consciously illustrate this ability (APA, 2002, p. 15). Attaining a sense of identity includes two concepts, self-concept which is one's set beliefs about themselves, and self-esteem which is how one feels about their self-concept (APA, 2002, p. 15). Low self-esteem can be an indicator of abnormal development, occurring when there is a gap between an individual's perceived self-concept and what they believe it should be (APA, 2002, p. 16). Low self-esteem can be identified if an adolescent feels depressed, lacks energy, dislike's their appearance, feels insecure or inadequate often, maintains unrealistic expectations of themselves, actively doubts the future, is excessively shy, or is submissive to others wants and desires (APA, 2002, p. 15). A positive indicator of an adolescent feeling safe and secure in expressing their identity is the ability to experiment and explore (APA, 2002, p. 15). Many areas of development affect the ability to attain a sense of identity and vary among the stages of adolescence, however as previously noted, the ability to experiment is an important aiding process. Emotional developments like attaining a sense of identity, support adolescent's emotional intelligence involving skills for managing stress and exhibiting sensitivity and relating to others, such as maintaining friendships (APA, 2002, p. 17). Through these emotional development's adolescents learn to recognize and manage emotion, develop empathy,

constructively resolve conflict, and cooperate (APA, 2002, p. 17). Overall, adolescent's interpretation of self significantly depends on their experiences, emotional influences, and fostered opportunity to build a positive sense of identity.

Social development is also significant in adolescents, relating to their surrounding contexts such as peers, family, school, work, and the community (APA, 2002, p. 21). Positive social contexts provide protective development factors, even when an adolescent has previously experienced adversity (National Academics, 2019, p. 43). During adolescence greater independence is gained requiring strong relationships outside of the family. Relative to the practicum project, neighborhood stability is important, including a community rich in resources to support and provide opportunity for an adolescent (APA, 2002, p. 26). Resources should provide safety and stability, both major concerns for inner city youth, including opportunities for employment and the presence of adult professionals with strong positive emotional attachments to the adolescents (APA, 2002, p. 26). This was important to the practicum project to ensure strong safe relationships between adolescents and adults are fostered, offering support, strengthening the community, and increasing user's overall quality of life.

2.2 Adolescent Well-Being

In both middle childhood and youth stages of development, the health and well-being of adolescents is defined through four outcome goals provided by the Healthy Child Manitoba Act, which include physical and emotional health, safety and security, successful learning, and social engagement and responsibility (Child and Youth Report, 2017, p. 28). As defined by The World Health Organization, health is a state of complete physical, mental, and social well-being (Child and Youth Report, 2017, p.28). Concerns in mental health and behavioral issues such as anxiety

and depression are more frequently recognized during middle childhood and become more significant during the youth developmental stage (Child and Youth Report, 2017, p. 116). An estimated 80% of all anxiety and mood disorders first emerge in adolescence, defined by the Manitoba Centre for Health Policy as a broad body of disorders such as depressive, bipolar, and anxiety (Child and Youth Report, 2017, p. 118). Specific to Manitoba, it is important to note that the adverse childhood experiences and levels of perceived discrimination experienced by First Nations people contributes to their likelihood of experiencing depression, twice that of the national average (McCracken et al., 2013). As noted by the Child and Youth Report (2017), mental health is a state of well-being not merely the absence of mental illness, where adolescents begin to realize their potential, become satisfied, cope with stress, work productively, discover a sense of belonging and purpose, and contribute to their communities (p. 170). The rise of mental health concerns in adolescents becomes important to consider, as reaching a complete state of health for adolescents to thrive includes their mental well-being.

The concept of adolescent health and well-being goes beyond mental illness, involving highly complex interactions between an adolescent's genetics, family interactions, and wider social environment (Child and Youth Report, 2017, p.27). Previously defined as a process of fulfillment, well-being becomes the aim of reaching high levels of positive affect and degrees of satisfaction with life (Gomez-Lopez et al., 2019, p. 1). Well-being also consists of more than just happiness, known as the eudaimonic view of well-being (Gomez-Lopez et al., 2019, p. 2). According to this view the following categories of achievement make up well-being; autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance (Gomez-Lopez et al., 2019, p. 2). In an effort to achieve positive functioning in these areas individuals become aware of their limitations and aim to make interpersonal

relationships, become self-determined, make the most of their talents in achieving goals, manage their environment to meet personal needs, and find meaning in the efforts they make, all among challenges they will encounter (Gomez-Lopez et al., 2019, p. 2). The positive outcomes suggested from a eudaimonic view of well-being indicate a long term actualization of well-being, through the cumulative and enduring nature (Gomez-Lopez et al., 2019, p. 2). A significant factor for adolescents is creating positive relationships, such as with parents and peers, forming positive assets in their lives (Gomez-Lopez et al., 2019, p. 3). Strong positive relationships are known to increase an individual's quality of life and can aid in the absence of loneliness which often prevents well-being (Gomez-Lopez et al., 2019, p. 3). Through feelings of mastery, competence, and pleasing relationships, adolescents are more likely to feel satisfied and meaningful (Gomez-Lopez et al., 2019, p. 3). Further eudaimonic outcomes of well-being can provide lasting resources for adolescents and lead to more fulfilled and stable levels of overall well-being (Gomez-Lopez et al., 2019, p. 3).

2.3 Conclusion

Defining adolescent development and wellbeing is significant to the practicum project in order to provide a built environment supporting this demographic through protective development factors. Youth can often be portrayed as troubled or misguided, suggesting that they are the problem, as opposed to the systems and circumstances in which they find themselves (McCracken et al., 2013). It is important to interrupt negative patterns that may become normalized, and support youth by increasing their options to opportunities (McCracken et al., 2013). Experiences and behaviors adapted in adolescents including patterns of well-being can have long-term effects lasting into adulthood (Child and Youth Report, 2017, p. 9). Although

adolescents become more capable and independent throughout their development, they still require supportive and nurturing groups to thrive (Child and Youth Report, 2017, p. 154). They begin to evolve through transitions of development, and communities can help prepare them for these transitions (Child and Youth Report, 2017, p. 154). Overall social structures, relationships, and interactions, together with built environmental influences, can provide an opportunity to positively shape the sensitive developmental trajectory of adolescents (National Academics, 2019, p. 93)

Chapter 3: Literature Review

3.1 Introduction

The literature review provides an exploration of the benefits of art making, which was significant in observing arts ability to contribute to adolescent development. Through its identity as a biological behavior, an educational experience, and a therapeutic expression, art making supportively contributes to adolescent well-being. Intrinsic to our human nature is the desire to handmake and even more complexly, to make artfully (Dissanayake, 1990). Art making provides a social continuity to life through continued experiential learning and interaction with physical objects where emotion can be interrupted and resolved through reflection. Therapeutic qualities of art are also significant in demonstrating the support artful making can provide for adolescent development and well-being. These benefits guided the practicum project to focus on stages in which adolescents make or are willing to make, and how they process their creations. The growing Maker Movement emphasizes a return to the intrinsic human desire to handmake, providing an opportunity for concepts explored in the literature review to guide the design of an engaging environment encouraging positive adolescent development and well-being.

3.2 Benefits of Art Making

3.2.1 Art as a Biological Behavior

Art is understood to be a cultural phenomenon, yet at the core it is biological (Dissanayake, 1990, p. 4). The bio-evolutionary view of art suggested by Ellen Dissanayake (1990), proposes art as a general behavior and characteristic of humankind, going beyond artifacts and products or qualities of these to include toolmaking, symbolization, language, and the development of culture (p. 6). This behavior of art provides an inclusive definition for both making and experiencing art, an active

achievement and feeling (Dissanayake, 1990, p. 8). Three defining characteristics of art suggest its selective value, supporting its evolutionary behavioral development: (1) Art is ubiquitous and found universally in every society, suggesting its contribution to the evolutionary strength of our species, (2) Art is essential for numerous human activities, suggesting its survival value through continued effort to participate in these activities, and (3) Art is a source of pleasure, not an advantageous evolutionary behavior left to chance (Dissanayake, 1990, p. 6).

This behavior of art is a result of the humanly inherent pleasure found in making (Dissanayake, 1995b, p. 40). It sets social norms and modifies individual life experiences by connecting oneself to others through shared goals and meaning (Griffin, 2011).

Handmaking is embedded into our human nature as the earliest humans were crafts people, handling and using becoming ways of connecting and communicating with one another (Dissanayake, 1995b, p. 41). Both humans and objects embody meaning, yet the ability of handmaking mediates the necessary connection between the two (Dissanayake, 1995b, p. 41). Like the adaptive development of an infant's need to communicate with their hands, they search for increased control and coordination to master the use of their hands as they mature (Dissanayake, 1995b, p. 41). Individuals learn that exploring through tactility has an effect on the world, first accidentally as an infant, then deliberately through planning and prediction as they cognitively develop (Dissanayake, 1995b, p. 41). It is this engagement with the real world and emphasis on the process of making that connects us to our human heritage. Through the rise of civilization, biological needs related to a behavior of art have not been fulfilled as completely or comprehensively as social groups who have remained connected to the environments in

which they evolved (Dissanayake, 1990, p. 197). Humans crave the perishing historic origin of art, the embodiment and reinforcement of socially shared significances as the act of making becomes special (Dissanayake, 1990, p. 200)

Although the historic development of a behavior of art has been evolutionarily, socially, and culturally important, it is the notion of making art special that denotes its beneficial significance (Dissanayake, 1995a, p. 56). The selective value of art can be summarized into the fundamental behavioral tendency referred to as making special. Through past expressions of making special, communities create a deep connected sense of origin, purpose, and value (Griffin, 2011, p. 28). For instance, in Indigenous communities, making special further connects individuals to their ancestors, becoming a restorative and reclamation of traditional forms of making (Barajas-Lopez & Bang, 2018). Art as a behavior rests on the idea that there is a universally inherited human nature to make some objects and activities special, becoming an individual's definition of art (Dissanayake, 1990, p. 92). Reclaiming traditional forms of making, like those practiced by Indigenous communities, nurtures the way in which their relationship with natural surroundings are manifested, extending their learning and relations to become personal and meaningful (Barajas-Lopez & Bang, 2018, p. 10). Indigenous values of making grounded in culture, identity, and power, and emphasized through materiality and personal truth in activity, aesthetics, and imaginative processes of creation, support the concept of making special (Barajas-Lopez & Bang, 2018, p.8). It is the intent or deliberateness, apart from utility, of making special that provides a specialness to art that without one's action or regard would not exist (Dissanayake, 1990, p. 92). This emphasizes the adolescent's part in the design of a makerspace, centered around their

needs and intentions. The term special denotes a positive sense of care and concern implemented into the process of making, as opposed to art which often assumes a sense of rarity, prestige, uselessness, or hierarchy (Dissanayake, 1995a, p. 53). The beneficial significance of making special can be summarized through its implications (Dissanayake, 1990):

1. It explains how a concept of art encompasses variety and even contradictions. It frequently changes with no limit or ending (p. 58).
2. It resists the need to define specific examples as art. An individual establishes whether to appreciate or attempt to appreciate specialness (p. 58).
3. It provides aesthetic intention to art. Everything is not art, but everything has the *potential* to be (p. 58).
4. It emphasizes art as physically, sensuously, and emotionally satisfying and pleasurable to humans (p. 59).
5. It is an intrinsic need. The behavior of art is more essential than the work of art (p. 59).
6. It engages human feelings and like-minded societies through valued and validated experiences (p. 61).
7. It is related to religion, the extra-ordinary and outside ordinary life (p. 63).

These implications support the notion that the human intrinsic need to make is not enough, but that making must be done art-fully (Dissanayake, 1995b, p. 42). They

support the beneficial nature of art, or making special, and opportunity for adolescent well-being through an active behavior directly related to human feeling and emotion. Making special is recorded as one of the most common experiences to produce feelings of ecstasy, the feeling connected to a loss of time, place, worldliness, desire, sorrow, sin, self, and sense (Dissanayake, 1990, p. 157). Non-temporal arts selected for the design of the makerspace, such as painting and ceramics, give a form to shape and contain these feelings, providing a compelling opportunity for adolescents to bring forth feelings and display them (Dissanayake, 1995a, p. 46). Visual art making unifies participating individuals and preserves knowledge to be passed to successive generations (Griffin, 2011, p 24). Focusing on the importance of making special specifically through processes of handmaking, and illuminating technological forms of creation from the program, was integral to the final design. In a technologically saturated society, making through tactile engagement with the real world allows adolescents to gain independence and confidence, realizing their personal choices have the power to make their lives meaningful (Garber et al., 2019, p. 1).

An emerging concept known as New Materialism emphasizes experience beyond works, through interaction between people and objects as tactile and kinesthetic (Garber, 2019, p. 9). Sensory experiences of making special contribute to adolescent development through complex and subtle aspects of the mind, supporting personal qualities like patience, discipline, and conceptual growth, fostering meaning and intimate experiences (Garber, 2019, p. 13). These authentic and primitive sensitivities to making suggest that material matter is significant to human life. As art becomes meaningful to the adolescent it becomes pleasurable, supporting the need to focus communities on the genuine

meaning of art, nature, purpose, and value. Handmaking becomes an opportunity to encourage adolescent's sense of self through personal articulation, achievement, and expression of value (Dissanayake, 1995b, p. 45).

3.2.2 Art as an Educational Experience

The practicum project provides a learning environment focused on handmaking processes, merging the experience of making special with education. Art as a behavior is further explored in relation to educational environments supported by John Dewey's philosophy of education and ideas of progressive education encouraging individual development and social enlargement. Like art, educational learning is a humanly intrinsic need which provides a social continuity to life through continued experience (Dewey, 1916, p. 7). Dewey's progressive educational views such as true education being the result of experience, supported the development of the Constructivist Learning Theory, often referred to as the theory of cognitive development (Ültanır, 2012).

The Constructivist Learning Theory suggests that knowledge is constructed through the learner themselves, allowing them to individually and socially establish meaning (Hein, 1991). Principles of this theory include a focus on sensory learning, personally constructed meanings, engaging the mind with hands-on processes, interaction with others, contextualisation, continuity, and personal motivation (Hein, 1991). The idea of building an individual's knowledge is emphasized as opposed to passively receiving information (Ültanır, 2012, p. 207). Constructivist learning environments are democratic in nature, defined by instructor emphasis on collaborative learning, authentic learner centered individual and group work, and individuals as active constructors of knowledge

through self-monitoring (Ültanır, 2012, p. 205). Democratic educational communities provide intellectual freedom and exploration of diverse gifts and interests (Dewey, 1916, p. 191). They provide the structure for teaching creativity, allowing individuals to construct their own sense of purpose, scope, and program (Besgen et al., 2015, p. 430). Deliberativeness and purpose are individually composed, necessary to creatively inspire, as passively learning a skill does not promote meaning and continuity (Dewey, 1916). It is much more than training the mind, involving a wider social and individual construction, to enlarge and better one's life and appreciation of environment ("Educational Writings," 1916). Creative education shifts from verbally sharing information, to an experience of community building and collaboration (Dewey, 1916).

The constructivist educational model supports the program of the practicum by encouraging self-directed learning for adolescents. According to Dewey's philosophy, student active participation and self-direction is critical in emphasizing the contents of the experience as more important than the subject-matter (Ültanır, 2012, p. 201). Through enhanced experience, self-direction fosters self-realization and personal identity (Ültanır, 2012, p. 201). Education is connected to action, where knowledge and ideas are built on meaningful and important experiences of the learner (Ültanır, 2012, p. 207). Adolescents build on skills and techniques as a means to achieve personal goals in a collaborative setting, instead of isolated expertise (Ültanır, 2012, p. 207). Knowledge is also gained through social contexts and diminished boundaries between educational environments and the real world (Ültanır, 2012, p. 206). Influenced by the Constructivist Learning Theory, the design aims to provide authentic experiences for adolescents to actively

construct their own sense of identity, as it is neither fixed nor transitional (Ültanır, 2012, p. 206).

Constructivist learning goals can benefit adolescent development as they promote experience with knowledge construction, appreciation of new perspectives, realistic contexts, ownership and personal voice, collaborative social experience, various modes of representation, and reflection (Hein, 1991). In relation to the built environment, Dewey suggests that the setting of experimental processes like making special, be formalistic and distracting in an attempt to remove the user from present life concerns and replace them with fulfilled attitudes towards current problems or concerns that may be faced in adulthood (“Educational Writings,” 1916, p. 15). Adolescents interaction with this type of environment encourages their understanding of self, including personal perspectives and characteristics (Ültanır, 2012, p. 205). Focus on experiential making promotes art as an experience with physical objects where emotion can be interrupted and resolved through reflection (Dewey, 1934). Experiential or kinesthetic learning and the power of physical touch evidentially arouses sensory curiosity (Thorp, 2018). Traditional approaches to education have focused on logical or verbal learning, however integral to adolescent development is the engagement of multiple intelligences such as creativity and practical abilities, as opposed to focusing only on analytical shortcomings (APA, 2002, p. 12). As the pathway to learning is developed by adolescents at varying rates, art making promotes the freedom to discover and problem solve while placing value on the process over the final product (Shanshan, 2016). Learning through constructivist environments is a process built externally, independent of abilities or talent (Ültanır, 2012, p. 199). The Constructivist Learning Theory supports the notion that education or knowledge has no

definitive end and the idea that creative art making is a positive educational experience for adolescents to thrive.

3.2.3 Art as Therapy

The activity of art making or the product of that activity such as an object, was recognized as having healing potential in the 19th century (Packard, 1980, p.11). During this time theorists including John Dewey began to write about the ability of art to aid in reaching a fully harmonized self (Packard, 1980, p.11). The therapeutic quality of art is prominently observed within the field of art therapy, a hybrid of art and psychology. Art therapy rests on the notion that creative art making processes are healing and life enhancing and offer a form of non-verbal communication of thoughts and feelings (Nguyen, 2015, p. 29). It encompasses the analysis of art as a means of providing information to the individual and creativity as a healing and rejuvenating cause for the distressed mind (Packard, 1980, p. 11). The concept of art *as* therapy, opposed to psychotherapy, was offered by Edith Kramer, one of the pioneers of art therapy. Her ideas promoted the concept that the art of making itself allows individuals the opportunity to recreate primary experiences for resolve, becoming more important than interpreting the final product (Nguyen, 2015, p. 31). The therapeutic quality of art therefore lies in the act of creating. Emphasis on the art process allows art to become a therapeutic expression, the core of therapeutic opportunity, as opposed to a by-product of psychotherapy. Viewing art as therapy narrows the scope of the practicum project to an environment focused on wellness over therapy, by emphasizing the beneficial therapeutic aspects of the process of art making.

Art making is therapeutic in its ability to bring an individual's attention to a present sensual experience, removing them from the current stresses and challenges of reality (Moon, 2012). Art expression can aid in bridging sensory and definitive memories of a stressful event, as an alternative narrative is created for the individual to explore emotions which are connected to those memories (Malchiodi, 2002). Repetitive reward driven activities like art making are connected to the cortical area of the brain and have been known to reduce depression and anxiety (Malchiodi, 2002). For example, the regularly experienced positive enjoyment found in drawing, painting, textiles, ceramics, and woodworking, can improve an individual's mood (Malchiodi, 2002). These approaches have the capacity to reach elements of experience, thought, and emotion, that cannot always be verbally reached (Malchiodi, 2002). As noted by Dewey (1934), the arts would not exist if all life's meanings could be adequately expressed through words (p. 74). Specific to adolescents, art making is a therapeutic expression as it provides a means of connection, support, and meaning (Malchiodi, 2002, p. 242). Adolescents are given the opportunity to symbolically communicate inner and outer experiences that words may not depict, or that they are not willing or comfortable to verbally share (Malchiodi, 2002, p. 243). Acceptance and recognition of an adolescent's artful creation is an essential component of its therapeutic capacity (Malchiodi, 2002, p. 244). As adolescents are coping with developmental milestones and stresses, art making offers a nonthreatening outlet to release and understand their current needs (Malchiodi, 2002, p. 246). Malchiodi (2002) notes that experimentation with art making is significant to growth, maturation, and self-expression during adolescent developmental stages (p. 246). It also supports critical areas of therapeutic relief involving perceptual, emotional,

imaginal, social, physical and spiritual factors, imperative to overall well-being (Malchiodi, 2002, p. 246).

Successful examples of Indigenous-focused making support the idea of art as therapy, becoming a framework for decolonization and best practice. This acknowledgment works to prevent Indigenous erasure by focusing on resurgence of their perspectives of making (Barajas-Lopez & Bang, 2018). Implications of reclaimed traditional Indigenous making and sharing through therapeutic programs have been recorded as nurturing to human-nature relations and community relationships, and create new possibilities toward equity in making for self-determination (Barajas-Lopez & Bang, 2018, p. 18). As an example, clay making in Indigenous communities connects individuals to inner trauma, narrated through the chemical process of making and interactions with water, soil, and clay (Barajas-Lopez & Bang, 2018). Healing and meditative self reflection is demonstrated in the intention behind each piece of work, often inspired by the practice of Indigenous storytelling, and the purpose it will serve to the individual and their community (Barajas-Lopez & Bang, 2018, p. 12). Indigenous value in art as a holistic approach to healing, highlights cultural expression as vital for a sense of identity, communication, support, and revitalization, and is considered integral to everyday life (Weinberg, 2018, p. 17). A culturally responsive approach to art as therapy must also consider critical analysis of Indigenous educational injustice and philosophy, historical approaches to making as a diverse activity, and inquiry of socio-political values and purposes of making, to support these youth in a therapeutic learning environment (Barajas-Lopez & Bang, 2018, p. 8).

Building on the idea of art making as an educational experience, it is significant to note that the relationships built within this experience differentiate therapy from education (Nguyen, 2015, p. 30). The environment must foster relationships that allow the individual to voluntarily expose themselves to others (Nguyen, 2015, p. 30). Additionally, the relationship between Indigenous and non-Indigenous people must be carefully considered, to combat the historical mistrust between these two communities (Weinberg, 2018, p. 14). Non-indigenous individuals must be educated on Indigenous traditions, cultural practices, historical intergenerational trauma, and the barriers to a traditional circle of caring within families and communities (Weinberg, 2018, p. 14). The freedom to gain knowledge, or the education of art making, is an essential goal in therapy (Packard, 1980, p. 11). Art making provides a therapeutic opportunity for adolescents to freely choose options for their educational experience rather than a real life experience (Packard, 1980, p.11). Through this freedom of choice adolescents gain knowledge of themselves, supporting more rational decision making and applications (Packard, 1980, p. 11). As noted by Malchiodi (2002), the role of adults in providing therapeutic support is only to encourage communication and interaction, note processes, or intervene when an individual or group requires assistance (p. 356). It is essential for non-Indigenous leaders to partner with Indigenous mentors, in an effort to gain sensitivity in therapeutic support for a community of Indigenous adolescents (Weinberg, 2018, p. 14). The practicum emphasizes that art as therapy is an empathetic approach to empower and motivate adolescents in the therapeutic process of art making.

3.3 Strategies of Creative Art Making

An integral component to the practicum project was identifying strategies of creative art making to inform the final design. Through these strategies, artistic expression as a humanly intrinsic desire is emphasized while combating an increasingly industrialized society. Artistic processes can be institutional, logical, or conceptual, encouraging an individual to explore shapes, structures, and quantitative or qualitative features of their environment (Besgen et al., 2015). Within these explorations, individuals begin to construct a set of rules in which they can comprehend elements and principles of creating and develop a personal form of expression by discovering their own abilities (Besgen et al., 2015). Creative art making then provides a cognitive settlement for individual perception, knowledge, and opinion, in combination with aesthetic realisation (Besgen et al., 2015).

Drawing on the field of art therapy, expressive art making techniques offer an opportunity for individuals to better understand their inner selves while, relieving pressure, stress, and tension, and becoming a basis for discovery or change (Snyder, 1997). They embody characteristics of art previously explored, including art as a biological behavior, educational experience, and therapeutic expression, and emphasize the tactile importance of art making. Various approaches to expressive art making include finger painting, squiggle drawings, drawing members of a group, blob and wet paper techniques, and mask-making (Snyder, 1997, p. 76). They offer the therapeutic outlet for creative making, emphasizing focus on the entire process as opposed to the final product (“Expressive Arts,” 2020). Expressive art making differs from traditional art therapy practices as it draws on various forms of art and heavily relies on utilizing multiple senses (“Expressive Arts,” 2020). According to Moon (2012), art making becomes therapeutically successful when an individual is connected to the creative process through sight,

sound, and movement, in addition to physical touch (p. 90). Exploration of the senses is encouraged through expressive art making, becoming a protective development factor, or increased likelihood of positive outcome for adolescents. As noted in *Chapter 2.0 Adolescent Development and Well-being*, exploratory opportunities encourage adolescents to shape their identity, increasing feelings of satisfaction and meaning through experiences of mastery and capability.

3.3.1 Expressive Therapies Continuum

The Expressive Therapies Continuum (ETC) offers an approach to creative functioning of expressive art making techniques. ETC was first proposed by Kagin and Lusebrink in 1978, providing one the of the only extensive frameworks for evaluating the use of various art materials and processes in art therapy, with focus on the product, process, and person (Malchiodi, 2002, p. 29). The art making process is emphasized and promotes a sequence for adolescents to further their development while becoming active participants in expressive art making. The ETC identifies three stages in which adolescents can indirectly process art making, diminishing the need for a direct therapist. It is the responsibility of the adolescent to learn the deep unconscious meaning of their creation, only aided through technical knowledge and emotional support of a trusted adult (Nguyen, 2015). The stages include; (1) Kinesthetic or sensory, (2) Perceptual or affective, and (3) Cognitive or symbolic, with a fourth creative level occurring throughout all stages (Malchiodi, 2002, p.29). The creative level synthesizes all stages providing opportunity for self-actualization and resourceful interactions with one's environment (Hinz, 2015, p. 46). The kinesthetic or sensory level corresponds to the

sensorimotor stage of development, focusing on bodily action or movement as a means of releasing energy (Nguyen, 2015, p. 35). Through interaction with art media, adolescents experience external tactile sensations producing feelings of relaxation and stability (Nguyen, 2015, p. 35). The perceptual or affective level corresponds to developments in identifying emotions, managing emotional states, and assisting appropriate expression of emotions (Nguyen, 2015, p. 35). This stage focuses on the opportunity to create structural qualities of expression, such as defining boundaries and differentiating forms, which encourage an appropriate representation of both inner and external experiences (Nguyen, 2015, p. 35). The cognitive or symbolic level corresponds to formal operational thought development, or complex information processing, focusing on symbolic representation of feelings, thoughts, and events (Nguyen, 2015, p. 36). Adolescents begin to think outside their own experience through analytical, sequential, and logical thought (Nguyen, 2015, p. 36).

Experiencing a sense of flow through these stages, adolescents may feel an altered sense of time, peak moments of joy, and long-lasting periods of well-being, becoming a therapeutic endeavour (Hinz, 2015, p. 46). *Table 1: Expressive Therapies Continuum: Stages of Processing* outlines the first three stages in relation to wellness opportunities and practical art making activities, which influenced the practicum program. Well functioning individuals are able to gather information and process it through all stages (Hinz, 2015, p. 44). ETC aids adolescent well-being as they are taught about various art media properties and functions as a means of releasing emotions and energy, the ability to discuss their needs, and increasing their personal awareness (Hinz, 2015, p. 49). This is significant as emotions are used in decision making, memory functioning, and motivating

behavior (Nguyen, 2015, p. 35). There are additional phases drawn from art therapy offered by Moon (2012) which influence creative processes adolescents may take: (1) Resistance, where an individual may have feelings of being overwhelmed or fearful, (2) Imagining, where ideas emerge, (3) Immersion, where excitement and energy is experienced, and (4) Letting go, where individuals feel a sense of ownership and can begin to self reflect (p. 99). The digression of stages and strategies in which adolescents creatively make, including ETC, were conceptually implemented into the final design.

Table 1: Expressive Therapies Continuum: Stages of Processing

Focus	ETC Stage	Wellness Opportunities	Making Activities
<ul style="list-style-type: none"> _ Action _ Sensation _ Movement _ Tactility _ Process _ Expressive 	Kinesthetic	<ul style="list-style-type: none"> _ Discover, value, express inner sensations _ Increased sense of relaxation 	<ul style="list-style-type: none"> _ Scribbling on large paper _ Hard clay
	Sensory	<ul style="list-style-type: none"> _ Increased tolerance for internal and external sensations _ Regain control of behavior 	<ul style="list-style-type: none"> _ Finger painting, blending pastels _ Textiles _ Wet Clay
<ul style="list-style-type: none"> _ Boundary _ Form _ Accuracy _ Representation _ Perception 	Perceptual	<ul style="list-style-type: none"> _ Increased internal organization of emotions _ Learning to take another's perspective _ Reduced stress by focus on formal elements 	<ul style="list-style-type: none"> _ Line, shape, pattern drawing _ Contour drawing
	Affective	<ul style="list-style-type: none"> _ Clarity of thought _ Increased self-awareness _ Understanding purpose or function of emotions 	<ul style="list-style-type: none"> _ Paint a feeling
<ul style="list-style-type: none"> _ Sophistication _ Intuitive _ Thought _ Abstraction _ Analytical 	Cognitive	<ul style="list-style-type: none"> _ Increased decision making skills _ Increased planning or problem solving abilities _ Promotes cause and effect thinking 	<ul style="list-style-type: none"> _ Image Collage
	Symbolic	<ul style="list-style-type: none"> _ Deepened personal/universal meaning is found _ Increased ambiguity _ Ability to find meaning in suffering 	<ul style="list-style-type: none"> _ Abstract painting _ Sponge or blot painting _ Mask-making _ Self-portraiture

3.4 The Maker Movement

Creative strategies of art making have grown into the wider global phenomenon known as The Maker Movement. Similar to progressive educational views of Dewey, this 21st century progression offers an alternative for emerging trends in education such as innovative learning through collaboration, exploration, and working with one's hands. Founded in 2005, The Maker Movement embodies concepts of experiential education and combats an accelerating digital world through a community of like-minded individuals focused on experimentation, creativity, physical making, and discovery for all ages (Feeney, 2016). The grassroots initiative derives from a cross between movements such as DIY, STEM, and hacker culture, evolving into an open community of experimentation where dependence on electronic devices is diminished (Feeney, 2016). Constructivist learning supports The Maker Movement through its emphasis on learning by conceptualized processes of being, doing, knowing, and becoming (Shanshan, 2016). True learning succeeds through making that can be shown, discussed, admired, and responded to by physical touch (Shanshan, 2016). Drawing on concepts of progressive education like the Constructivist Learning Theory, affirming that learners construct physical experience as a way of providing alternative interpretation for human thought and growth, The Maker Movement has contributed to the formation of Makerspace typologies, supporting Dewey's belief in the continual process of a lifetime of learning (Thorp, 2018).

3.4.1 Makerspaces

A Makerspace is an intrinsic concept, where innovative learning promotes creative outlets and engaging ways for learning both academically and socially (Shanshan, 2016). This typology diminishes the need for traditional clinical art therapy processes by encouraging self-led handmaking. Makerspaces become an outlet for

strategies of creative making, influencing the practicum process through emphasize on spaces for adolescents to observe, play, explore, test, and respond to making. Experiential and interactive learning through physical making has the potential to keep adolescents engaged in their practice and demonstrate their learnings (Feeney, 2016). Integral to the practicum design was the idea that knowledge in the practices of art are individually built through consciously making special and not simply passed on verbally by an adult, with a focus on continual learning over cognitive abilities or final products. Makerspaces define learning as a dynamic relationship to one's self, setting, and activity, encouraging adolescents to build their sense of identity (Shanshan, 2016).

Four indicators of Makerspace learning were integral to the final design for encouraging positive factors in adolescents. They include engagement, intentionality, innovation, and solidarity, with the common goal of encouraging adolescent to discover themselves, creatively explore, and confront or overcome challenges within the context of making (Shanshan, 2016). These activities require flexible space for thinking, opportunities for group collaboration, brainstorming surfaces for process development and iterations of making, independent and group workspace, with adaptability as a focus for all areas (Feeney, 2016). Positive development factors for adolescents can be increased by providing them with various options in their decision making so that multiple choices can be considered (APA, 2002, p. 12). Authenticity is promoted through personal experience with new concepts and materials, building deep learning and meaning (Thorp, 2018). A Makerspace becomes an alternative space between the home or school for adolescents to informally meet and build relationships while building a deep

sense of worth (Shanshan, 2016). Approaches to making emphasized by The Maker Movement are manifested into the conceptual approach of the final design.

Indigenous influence on the design structure and context of a makerspace can be achieved through four principles which include, refusing Indigenous erasure, promoting knowledge diverse in content and character, focusing on key forms of Indigenous teachings, and cultivating observational practices (Barajas-Lopez & Bang, 2018, p. 10). Making is considered an Indigenous technology, continually growing within their communities, supporting sustainability and dynamic relationality (Barajas-Lopez & Bang, 2018, p. 10). Storytelling and walking or movement are examples of Indigenous technologies, to be conceptually implemented into the design of a makerspace (Barajas-Lopez & Bang, 2018, p. 10). Storytelling allows the expression of feelings, ways of being, and elder connection, while walking promotes heightened observation and appreciation for the present moment (Barajas-Lopez & Bang, 2018, p. 9). These Indigenous makerspace design principles support sensemaking and engagement of making as a humanizing way to contribute to one's own community (Barajas-Lopez & Bang, 2018, p. 10). Indigenous narratives implemented into a makerspace, centralize Indigenous adolescent's knowledge systems as continual, thriving, and self-generating, while supporting the repeal of Indigenous decolonization (Barajas-Lopez & Bang, 2018, p. 18).

Relative to the built environment, Makerspaces allow adolescents the freedom for various types of making, emphasizing collaborative learning in diminishing hierarchy between learning spaces and administrative or teaching spaces. Moon (2012) suggests three principles for the design structure of a therapeutic art making environment to

benefit adolescents. Firstly, the space must be safe, promoted through a sense of place and adaptability, providing an open environment for exploration and self-expression (Moon, 2012, p. 149). Free materials and surrounding inspirational artwork encourage expression and adolescent engagement in individualized ways (Moon, 2012, p. 149). For example, filling walls with artwork to become a living gallery encourages changing, deconstructing, and reforming the inspirational space (Moon, 2012, p. 149). Visibility into creative learning areas can aid in creating a less intimidating environment for adolescents as they are not confined to a single space and can gain a sense of the purpose and layout before committing to enter or participate (Thorp, 2018). Like the various ecosystems in which Indigenous communities and their previous generations have engaged with, adolescents require various modes of making to select from (Barajas-Lopez & Bang, 2018, p. 10). The second characteristic of a therapeutic art making environment is predictability (Moon, 2012, p. 163). This builds on a sense of safety and can be influenced through organization of space, easily accessible materials kept in the same place, and consistency with ritual daily activities (Moon, 2012, p. 163). Areas of learning through making should be clearly defined and intentionally organized yet non-linear, conceptually promoting freedom of activity choice (Thorp, 2018). Thirdly, the environment should focus on making art while establishing relationships, emphasized through visual, tactile, kinetic and aural engagement (Moon, 2012, p. 167). Openness promotes socialization including both personal and intimate observation, reflection, and contemplation, while movement is important for kinesthetic learners to explore through investigation and discovering by touch (Thorp, 2018). Furniture options that promote fidgeting or movement can help to stimulate the brain, for example those on wheels or

easily engaging (Thorp, 2018). Kramer's concept of art *as* therapy supports the value of art making and the relationships that grow from the shared experience as equal parts (Moon, 2012, p. 167). The concept of constructivist learning through trial and error, and The Maker Movement community of collaboration, emphasised the final makerspace typology.

3.5 Conclusion

In the design of a makerspace the experience of creative art making previously defined as making special becomes significant as a protective development factor for adolescents. The survival value of art is evident in populations around the world as individuals continue to make and respond to art, reinforcing the idea that its behavior is a choice of adaptation necessary for survival (Dissanayake, 1995a, p 35). An overview of theories outlined in the literature review are displayed in *Table 2: Theories and Design Implications*. Supporting adolescent development, handmade art offers a positive educational experience and therapeutic expression for building self identity in reaching a complete state of physical, mental, and social well-being. The Expressive Therapies Continuum offers strategies for creative art making and methods of processing to encourage wellness opportunities. The emerging typology of Makerspaces offers a sustainable community for adolescents to experiment in their search for self identity and create positive guiding relationships with trusted adults, imperative to adolescent development and well-being.

Table 2: Theories and Design Implications

Theory	Theorist	Concept	Application
Making Special	Ellen Dissanayake	Humans have an inherent desire to make and find pleasure in doing so.	<ul style="list-style-type: none"> _ Art making is experiential, culture developing, haptic, made personal + special
Constructivist Learning Theory	John Dewey	Humans have an inherent desire to learn and do so through actively constructing knowledge and engaging the mind with hands-on processes.	<ul style="list-style-type: none"> _ Self-directed making _ Emphasis on the experience/process over the final product _ Collaborative environment
Art <i>as</i> Therapy	Edith Kramer	Humans experience therapeutic life enhancing qualities through the direct act of creating and making art.	<ul style="list-style-type: none"> _ Repetitive reward driven activities _ Freedom of activities + materials for voluntary exploration
Expressive Therapies Continuum	Kagin & Lusebrink	Individuals process art making through various stages which offer therapeutic and wellness opportunities in development.	<ul style="list-style-type: none"> _ Provide a flow through expressive art techniques for a growing sequence of internal processing _ Stimulate multiple senses
Maker Movement	Dale Dougherty	Innovative creative learning is enhanced through community engagement and the opportunity for humans to collectively experiment, explore, play, test, and respond to making.	<ul style="list-style-type: none"> _ Community spaces and sense of openness for interaction + relationship building _ Clearly defined intentional areas for making to ensure security + safety

Chapter 4: Precedent Analysis

4.1 Introduction

Three precedents were analyzed to inform the makerspace design, in addition to the literature review. The selection of precedents identified interiors based on their relevance to the concept of handmaking as an opportunity for sustaining well-being in adolescents. Each case study provides insight on the current art-making practices available for adolescents and their benefits within larger communities. Open Works is a makerspace encouraging community revitalization and connection for all ages, returning to the humanly intrinsic desire to handmake. Plymouth School of Creative Arts relates to the educational experience of art making providing a comfortable, safe, supportive environment for artistic expression, encouraging students to build their self-identity. The Creative Growth Center aims to provide therapeutic support, affirming the concept of art as therapy and encouraging artful expression as a basic human right.

4.2 Art as a Biological Behavior: Open Works Makerspace

Location: Baltimore, Maryland

Year: 2016

Architect: Quinn Evans

Size: 34,000 sq. ft.

Open Works is the sixth largest makerspace in the United States, a non-for-profit organization driven by the belief that everyone is a maker (“Open Works,” 2019). Defining a makerspace as the opportunity for hands-on learning, this precedent was selected due to its conceptual approach to restore the site’s historic manufacturing legacy and return to old ways of making, relating to the idea of art as a biological behavior (“Open Works,” 2019). Baltimore is known as America’s

original maker city, housing the first railroad and largest steel mill, yet over numerous years traditional ways of making have diminished (“Open Works: Make Space,” 2019). In the heart of an emerging artistic community, Open Works is an anchor in re-connecting traditional innovation with creativity for business start-ups, individual artists, and craftspeople of all ages and socio-economic backgrounds (“Open Works,” 2019). By providing unique equipment and opportunities that would otherwise be unavailable or unaffordable to their users, Open Works encourages the ability to collaborate and experiment (Figure 1). This resonated with the practicum project, as many adolescents in Winnipeg’s inner city face enormous economic disadvantages and educational barriers, preventing them access to these types of programs. As outlined in *Chapter 2.0 Adolescent Development and Well-being*, adolescents can be supported through encouraged exploratory behavior, as well as nurturing groups and guidance from trusted adults (Child and Youth Report, 2017, p. 154). The makerspace typology is a precedent for adolescents’ opportunity to experiment in the creation of their sense of identity, building confidence and peer relationships, and becoming a protective development factor.

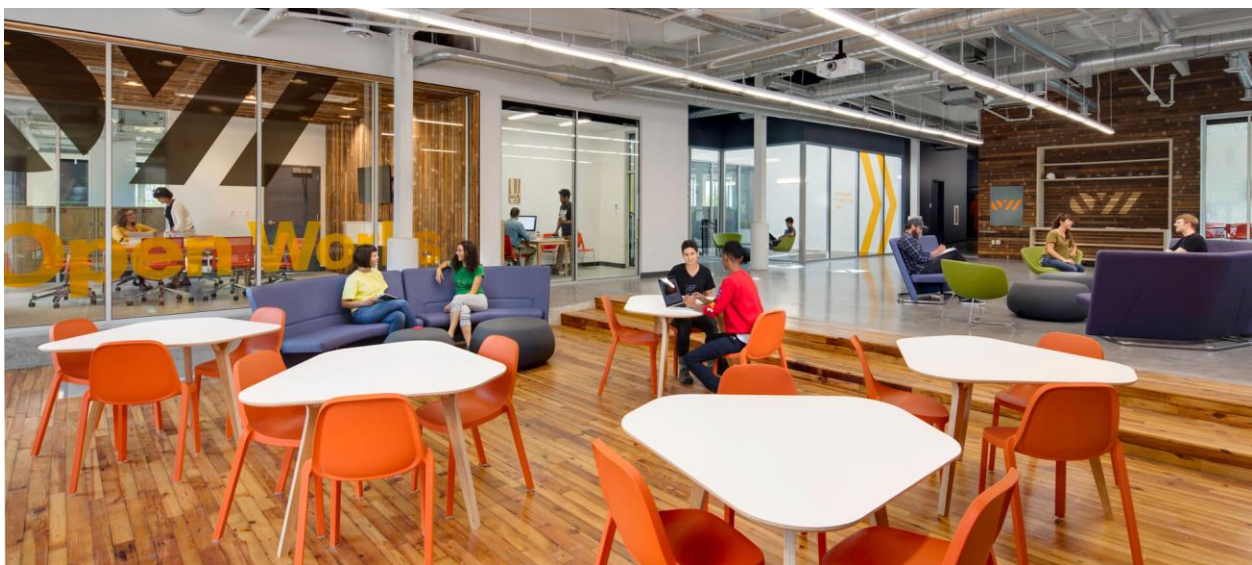


Figure 1: Open Works Interior

Chapter 6.0 Design Program was influenced by relationships between programmed spaces at Open Works seen in *Figure 2*, locating more clean high-tech areas near the public space and industrial programs on the lower level (“Open Works,” 2019). Ample micro-studios are also provided for rentable individual workspace enabling various types of spaces for practicing and maintaining craft (“Open Works,” 2019). Community oriented spaces such as a café and lounge are accommodated and open to the public, offering artist gatherings and collaborations (“Open Works,” 2019). In addition, a large outdoor porch seen in *Figure 3* allows for viewing of outdoor maker fairs and performances held on the surrounding grounds, welcoming the community and fostering connections with the makers (“Open Works,” 2019). This influenced Make It’s street level connections to the community through views into the public spaces and feature displays, as social well-being contributes to a state of overall health (Child and Youth Report, 2017). The openness of Open Works in showcasing user creations and inviting the community to participate, offers a platform for adolescents to create a sense of identity in sharing their achievements.

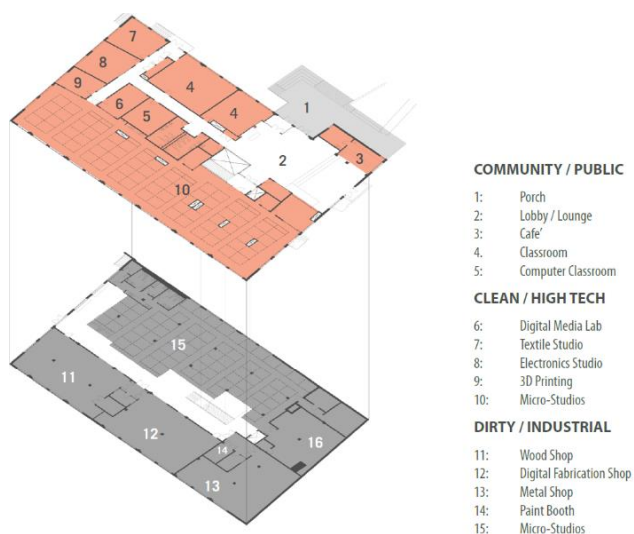


Figure 2: Open Works Axonometric

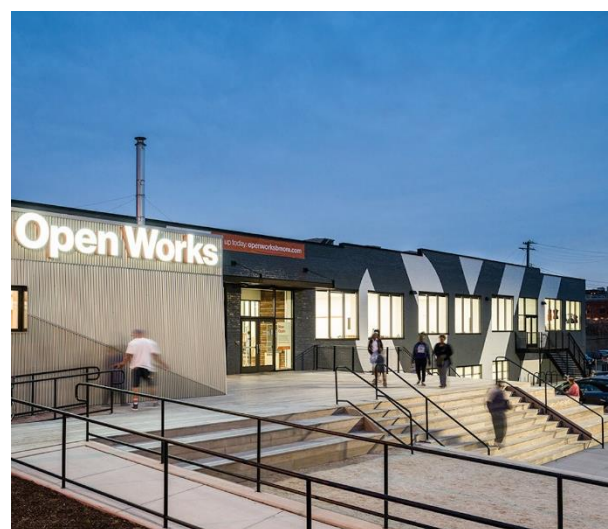


Figure 3: Open Works Porch

The practicum design was also inspired by the interior aesthetic of Open Works, where windows were added to provide additional natural light, including a skylight at the central staircase (“Open Works,” 2019). The concept of making is carried throughout the space, with custom designed and fabricated cabinetry and wood furnishings provided by makers at Open Works (“Open Works,” 2019). The flooring throughout is kept raw and all the architectural wood used for accent walls and flooring were salvaged from local row houses (“Open Works,” 2019). This regional connection unites the user with the site’s history, and conceptually connects them with the surrounding community providing a sense of familiarity, important to ensuring a therapeutic environment. The buildings furniture is kept flexible, including the micro-studios which include an overhead framework for mounting lighting fixtures, cable management systems, and potential acoustic ceiling tiles (“Open Works,” 2019). These customizable workspaces encourage freedom, experimentation, and personalization, and provided a precedent for the individual studios in Make It. As noted by Moon (2012), a therapeutic art making environment can be promoted through safety and predictability. The opportunity to personalise one’s work environment ensures their comfort and personal spatial needs may be met, encouraging a built sense of identity and place. The overall inclusion of tactile finishes and moveable furnishings encourages a sensory environment, which can encourage relationships built through visual, tactile, kinetic, and aural engagement (Moon, 2012).

4.3 Art as an Educational Experience: Plymouth School of Creative Arts

Location: Plymouth, United Kingdom

Year: 2015

Architect: Feilden Clegg Bradely Studios

Size: 74, 486 sq. ft.

The Plymouth School of Creative Arts was designed as a school for making things, ideas, and art, a product of the response to declining arts and creative programs currently represented in schools (“Plymouth School,” 2019a). The school maintains a similar goal to the practicum project by promoting creative learning as an opportunity for users to build an individual sense of identity, thus promoting future goals, meaning, and self-worth. Located in an urban setting, The Plymouth School of Creative Arts is democratic in nature aiming to merge experience with education and therefore representative of a constructivist learning environment. Creative arts offered at the school were selected for their increased depth of learning and diversity, and are not technologically focused, including theatre, dance, and music, which all require hands-on physically interactive experiences (“Plymouth School,” 2019b). The school is a physical manifestation of Dewey’s philosophy of education discussed in *Chapter 3.0 Literature Review*, depicting innovative approaches to creative learning. Referred to as a team teaching philosophy, the school encourages knowledge and creativity to flow between teachers and peers (“Plymouth School,” 2019b). By focusing on authentic experiences and diminishing the gap between individuals and teachers, students are supported through active and collaborative learning. This is furthered by the school’s main approach to encourage ‘making together’ and evident in the various types of spaces to create seen in *Figure 4*, *Figure 5*, and *Figure 6* (“Plymouth School,” 2019a). For example, science and design labs enable students to become the scientist or designer

themselves as opposed to following instructions from a superior (“Plymouth School,” 2019a). The freedom of activities and non-hierarchical role of teachers promotes self determination and motivation, allowing students to find meaning in their own personal efforts. As outlined in *Chapter 2.0 Adolescent Development and Well-being*, a sense of mastery, competence, and positive relationship building, which is promoted in self-directed hands-on learning, strengthens feelings of satisfaction and meaning for individuals. Guidance from trusted adults, significant for adolescent development, is offered by the school while maintaining growth for independence and decision making. Dewey (1916) suggests experiential education, offered through art processes, as a social continuity and potential for constructed meaning to life. With a goal to secure student’s ambitions through purposeful learning, the school relates to the practicum as a positive

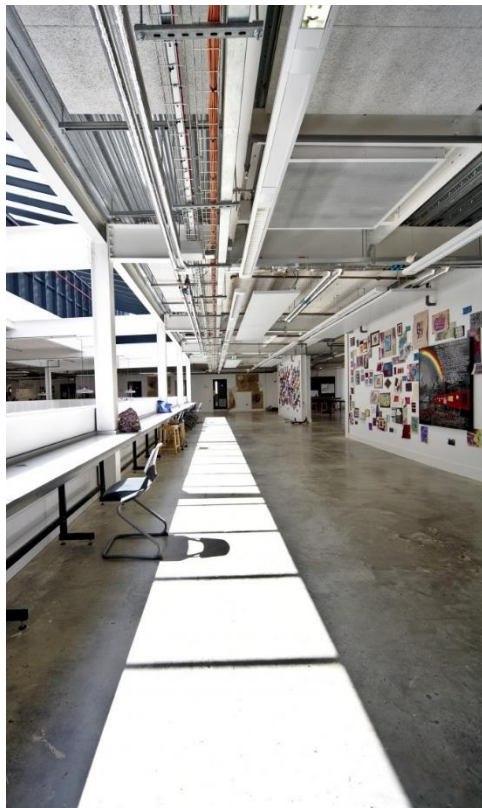


Figure 4: Plymouth School Class Studios



Figure 5: Plymouth School Community Space



Figure 6: Plymouth School Make Space

development factor for creativity to foster individual value, identity, culture, community, and prosperity (“Plymouth School,” 2019a).

This structure of learning offered by the school influenced the practicum project, as it related to the Expressive Therapies Continuum discussed in *Chapter 3.0 Literature Review*. Similar to the sequence in which adolescents process art making, the school is organized into phases of learning. Students begin by learning in supported environments with large studio space and high ratios of adult support, naturally building curiosity (“Plymouth School,” 2019a). Next, they gain access to a wider range of teachers and in some curriculum areas more specialized techniques are offered, focusing on increasing students’ confidence to lead their own learning (“Plymouth School,” 2019a). Abstract themes are increasingly introduced, encouraging staff and students to collectively investigate these ideas, further building on the individuals self guided learning and exploration (“Plymouth School,” 2019a). In later phases, students have the option to gain qualifications where they may be further recognized, driven by their future personal career paths, education, and life ambitions (“Plymouth School,” 2019a). This influenced the inclusion of interns from the University of Manitoba and the University of Winnipeg in the practicum project. The interns can offer peer mentoring and beneficial connections for youth looking to expand their knowledge on future opportunities in various aspects of life. The phases represented at The Plymouth School of Creative Arts reflect the practicum project, as users moves through the building, they experience similar studio environments and connections with staff and volunteers. Additionally, the schools connection to serving the community through open weekend hours and wide ranging supportive activities, influenced the programming of the practicum project.

Also referred to as The Red House, the schools design features a strong color scheme to physically represent a creative and aspirational approach to learning (“Plymouth School,” 2019a). Red accents as wayfinding are characteristic of Moon’s (2012) emphasis on predictability by visually organizing and clearly defining spaces, contributing to a sense of safety within a therapeutic art making environment. Aesthetically industrial in character, The Red House design offers varying heights, light, and scales throughout to stimulate students and enhance the teaching environment (“Plymouth School,” 2019b). This approach to interior design reflects research by Moon (2012), suggesting that an individual becomes connected to creative processes through sight, sound, and movement. Similar features were implemented into the practicum project design as an opportunity to engage numerous senses, supported by expressive art making techniques which rely on the utilization of multiple senses (“Expressive Arts,” 2020). Materials and finishes at The Plymouth School of Creative Arts are simplistic and robust to maintain openness, encouraging sharing, freedom, and experimentation, which are integral components of adolescent development (“Plymouth School,” 2019a). Surrounding inspirational artwork displayed throughout the public spaces to encourage expression and engagement, reflect similar ideas supported by Moon (2012), and the authenticity of materials reflect his emphasis on tactile engagement. Spaces are divided based on opportunities for making and performance such as a theatre, dance studio, recording studio, and making workshops (“Plymouth School,” 2019a). Without the inclusion of a specific art room, art is to be made and encouraged in each space and subject of learning, whether it be physical making, performing, or discovering (“Plymouth School,” 2019b). This philosophy manifested into open class studios, spacious classrooms, and interlocking spaces seen in *Figure 7*, maintaining site lines through major spaces and influenced by the value of clarity and legibility for users, creating a unique teaching atmosphere (“Plymouth

1. Main Entrance
2. Dining Area & Community Space
3. Culinary Art
4. Kitchen
5. Classbase
6. Phase 1 & 2 Entrance
7. Main Hall
8. Music / Activity / Drama Studio
9. Recording Studio
10. Display of Work

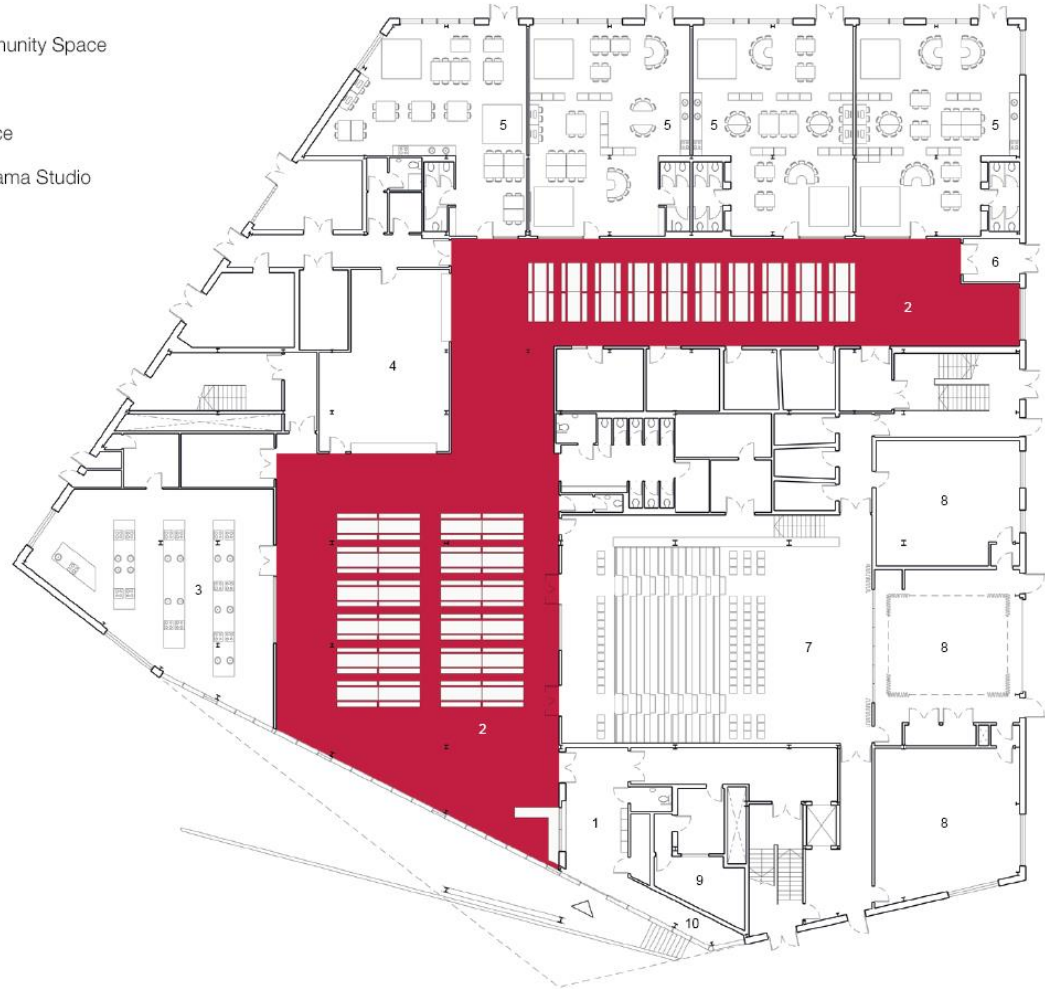


Figure 7: Plymouth School Ground Floor Plan

School,” 2019b). As noted by Moon (2012) visibility into creative learning areas of a therapeutic environment allow a less intimidating atmosphere. The final practicum design was inspired by this concept in correlation with the Expressive Therapies Continuum, to clearly define areas of making for safety and security, while maintaining a flow between areas of processing and the non-linear growth of developing adolescents. The school’s rooftop garden and outdoor play area influenced the practicum project’s connection to the outdoors and surrounding context. The Red House is shared with community groups after hours, reflecting on the diversity and strength of the partnerships supporting the school (“Plymouth School,” 2019b). Through its design, The

Plymouth School of Creative Arts is a sustainable precedent for the environment, economy, and surrounding community.

4.4 Art as Therapy: Creative Growth Art Center

Location: Oakland, California

Year: Early 2000's

Size: 12, 000 sq. ft.

The concept of art as therapy is represented in the Creative Growth Art Center, a non-for-profit organization dedicated to providing support for artists with developmental, intellectual, and physical disabilities. The former auto repair shop was converted into a studio space in the early 2000's, now hosting over 150 artists working in a variety of media types such as painting, drawing, ceramics, woodworking, and fiber arts, seen in *Figure 8* ("Creative Growth," n.d.). Most programs are available for ages 22 years old and up, with Saturday youth programs for ages 16 to 22. Art itself is offered as a therapeutic opportunity for users, supportive of Kramer's view of art as therapy discussed in *Chapter 3.0 Literature Review*. Unlike the previous precedents analysed, Open Works and The Plymouth School of Creative Arts, there are no technological activities or additional educational offerings at Creative Growth. The organization and resulting programming of the space focuses on wellness opportunities as opposed to disabilities or psychotherapy, often the case with traditional art therapy precedents. Through the Creative Growth Center, an artist's attention is turned to the present sensual experience, removing them from the current stresses and challenges of reality, a therapeutic quality of art (Moon, 2012).



Figure 8: Creative Growth Art Center

Promoting an opportunity for the artists to create their own sense of identity and self worth, the studio environment exhibits professionalism and offers gallery exhibition for creations to be sold, many of which have been exhibited in collections and institutions in the surrounding area (“Creative Growth,” n.d.). As previously asserted, acceptance and recognition of an individual’s artful creation is an essential component in its therapeutic capacity (Malchiodi, 2002). Through developmental milestones and stresses, art making offers a nonthreatening outlet to release and understand current needs (Malchiodi, 2002). Art is the leading factor of the facility, to provide a path for artists to express themselves and contribute to the surrounding community (“Creative Growth,” n.d.). Modeling a creative community, the organization challenges assumptions of inclusivity in arts and culture, and encourages art making as a fundamental human expression entitling all people to its tools of communication. Through making artists are given the opportunity to symbolically communicate inner and outer experiences that may not be verbally accessible. The artists are self-taught, supporting the constructivist approach to hands-on sensory learning and the opportunity for users to develop personal motivations, independence, and meaning. Studio staff are working professional artists

who are there to help and support individual artist's visions when required. As noted in *Chapter 2.0 Adolescent Development and Well-Being*, social developments are significant in aiding individuals, which can be provided through strong relationships outside of family, neighbourhood stability, and protective safe resources.

The practicum design presented in *Chapter 7.0 Design Proposal* was inspired by the concept of communal art making at Creative Growth. This precedent illustrates the importance of communal making as there are no individual artist studios. Supporting the practicum project, Creative Growth is a representation of the ability of individuals to create a sense of identity without a permanent workspace, through focusing on the art making. This reflects research that flexibility and adaptability can support creative exploration, as individuals can sit at different workspaces each day (Shanshan, 2016). The studios at Creative Growth are positioned on the main floor near the entry, and visible from street level. This spatial relationship was not sought after in the practicum design. To ensure a sense of safety, adolescent making areas at Make It are located on floors requiring secured access and less visual distraction than street level. Additionally, moving through communal spaces without programming increases adolescents level of comfort in the environment, and helps to diminish the resistance they may face before imagining and immersing in creative making processes (Moon, 2012). The overall openness and group nature of the center requires attention be drawn to predictability and organization of materials, as noted by Moon (2012), a principle design structure of a therapeutic art making environment. Spatial adjacencies such as these were analysed at Creative Growth, influencing the focus on organization and adjacency to materials in the design of Make It. Creative Growth strongly represents the conceptual idea of art as therapy, and was an integral precedent to the

practicum project illustrating how the interior can embody wellness and holistic approaches to art education and making as opposed to therapy.

4.5 Summary: Design Guidelines

The precedents analyzed were chosen for their encouragement of art, thriving examples of the opportunity to promote user development. Comparisons among the precedents and the literature review were utilized to inform design guidelines in creating a meaningful Makerspace that supports adolescents. Specific applications are outlined in *Table 3: Precedent Spatial Implications*.

Table 3: Precedent Spatial Implications

Precedent	Typology	Concept	Application
Open Works	Makerspace	<ul style="list-style-type: none"> _ Return to handmaking processes _ Encourage experimentation _ Build community and confidence 	<ul style="list-style-type: none"> _ Program offering various handmaking processes _ Flexibility / personalization in furniture choices and activity types to increase self-identity _ Space for sharing creative expression
Plymouth School of Creative Art	Primary School	<ul style="list-style-type: none"> _ Promote experiential art _ Bold and youthful design style _ Merge education with experience _ Artful experience in each space 	<ul style="list-style-type: none"> _ Provide opportunity for various artful experiences _ Scale of activities inform furniture / vertical space _ Provide youthful atmosphere _ Familiar details for points of reference during experimentation _ Colorful wayfinding and space designation _ Varying ceiling heights
Creative Growth Center	Studio / Gallery	<ul style="list-style-type: none"> _ Create sense of identity _ Connect to the larger community _ Provide meaningful recognition 	<ul style="list-style-type: none"> _ Maximize user control / support individual needs _ Space for gallery / exhibition to the public _ Collaborative studio sizes for supporting staff

Chapter 5: Site

5.1 Introduction

This section of the practicum project provides a detailed description of the selected site and its surrounding areas. In order to meet the needs of the client and selected demographic, the site required proximity to Winnipeg's urban adolescents. Based on conditions set through theories explored in the literature review, Make It is located at 165 McDermot Street in the Exchange District of Winnipeg, Manitoba.

5.2 Site Selection and Analysis

As more than half of Manitoba's adolescents live in urban communities and the prevalence of mood and anxiety disorders are higher in these areas, The Exchange District was chosen for the site as it is located in downtown Winnipeg (Child and Youth Report, 2017). It is also a region of Winnipeg's inner city, and worth noting, an area with higher populations of Indigenous and new comer populations (McCracken et al., 2013). Designated in 1997 as a National Historic Site, the Exchange District is a mixed-use area renowned for its artistic community, covering approximately 20 city blocks and home to North America's largest and best preserved turn-of-the-century heritage buildings ("About The Exchange," 2020). Common surrounding amenities exclusive to the Exchange District include boutiques, local restaurants, art galleries, art studios, and workspaces, including cultural Manitoban venues such as the Centennial Concert Hall, The Royal Manitoba Theatre Center, The Manitoba Museum, and the Pantages Playhouse Theatre ("About The Exchange," 2020). The area also hosts many events and festivals such as Culture Days Manitoba, Nuit Blanche, Jazz Festival, First Fridays, and Fringe Festival ("About The Exchange," 2020). Art galleries within the area include Urban

Shaman, which is an Indigenous artist-run centre promoting Indigenous art, and Ace Art Inc., exhibiting contemporary art with a focus on emerging artists. Proximity to such galleries offers an opportunity for youth outreach and inspiration for post secondary endeavours. The selected site allows for immersion into a creative and diverse community related to arts and culture, also located near the University of Winnipeg downtown campus allowing connection to individuals relative in age.

5.2.1 Opportunities and Constraints of the Site

The criteria for the site selection were based on providing a connection to culture and art through existing amenities located within the facilities proximity, as shown in *Figure 9*. Also significant to the practicum project was access to the site, specifically for adolescents, as represented in *Figure 10*.



Figure 9: Map of Amenities in the Exchange



- Major Route
- Bike Lane
- 🚌 Bus Stop
- River

Figure 10: Surrounding Paths

Opportunities to the Site

- Daytime public area for safety
- Regional uniqueness
- Near major bus routes for adolescents unable to drive
- Walkable + bikeable area
- Culturally rich area
- Connection to other art-related spaces + educational facilities for adolescents
- Parking for visitors + staff on North side of the building

Constraints to the Site

- Central location may be noisy for certain art processes
- Neighboring buildings obstruct views towards Red River

5.3 Building Selection

The building selected for the project, previously known as the Galpern Building, is located at the intersection of McDermot Avenue and Rorie Street. The six-story building reflects a Chicago School architectural style seen in *Figure 11* (“Galpern Building,” n.d.). This style was the result of shifting away from Romanesque-influenced style, becoming more restrained and known as commercial architecture (“Galpern Building,” n.d.). Features reflective of the Chicago School style include its classical detailing, rich materials, deep rectangular form, symmetrical flat front façade, flat roof, and rectangular openings (“Galpern Building,” n.d.). Its tall profile stands out next to its neighbors, creating a visual anchor contrasting its surroundings.

Constructed in 1906 by architect John H.G. Russell, the building intention was to be a simple functional warehouse for James Porter and Company, a wholesale firm selling china and



Figure 11: Galpern Building South East Façade



Figure 12: Galpern Building North Façade

ceramics to retailers across the prairies (“165 McDermot,” 1985). Historically connecting to the idea of making, the solid brick warehouse accommodated areas for showroom, offices, storage, and services. During this time the company was the first of its size to cater exclusively to this market in Winnipeg (“165 McDermot,” 1985). Later the building housed Galpern Candy Company, who’s logo is still recognizable on the North building façade seen in *Figure 12*, selling fine candies and chocolates (“165 McDermot,” 1985). Both businesses were local, representing an era when small local companies held a strong position in the economy of the prairies (“165 McDermot,” 1985). The building is historically related to the practicum project in its programming as a building who housed numerous hand crafted products, connecting to values of craftsmanship and the art of making.

Located on the East side of Main Street, a close connection to the Red River and green space along the river is maintained. The building is not visible from Main Street, providing a sense of privacy for those participating in art sessions and a quieter atmosphere than buildings closer to Winnipeg's main intersection. Located on the street corner, there are large windows detailed with limestone at street level on three sides of the building, allowing natural light into the main floor and creating a close visual connection to those inside. Winnipeg's only therapeutic arts training center in central Canada, the Wheat Institute, is located down the street at 70 Arthur Street ("Wheat," n.d.). This connects Make It with a near by organization consisting of art studio space and individuals training to teach therapeutic art practices and gaining diplomas in expressive arts or art therapy.

Designated as a Winnipeg Landmark Heritage Structure, the building is classified as a Grade III building regarded for special architectural or historical interest ("List of Historical Resources," 2017). Heritage value is defined as the aesthetic, historic, scientific, cultural, social, or spiritual importance or significance for past, present, and future generations ("Standards and Guidelines," 2010, p. 5). The Grade III objectives for building conservation which were considered in the design proposal include ("List of Historical Resources," 2017):

1. Prevent demolition, removal, alteration or repair of the building, erection or structure unless and until shown to be necessary to the satisfaction of the Designated Committee in cases of removal, alteration, or repair and Council in the case of demolition.
2. Regulate any necessary demolition, removal, alteration or repair of the building, erection or structure so as to preserve the special architectural or historical interest as far as possible.

3. Record, or preserve where possible, components deemed to have special architectural or historical interest prior to, or in the course of, any necessary demolition, removal, alteration or repair.

Exterior components with special architectural and historical interest to be preserved include the character defining elements of the Chicago School architectural style such as materials, forms, and spatial configurations, maintaining the visual relationship to surrounding designated heritage commercial sites (“Galpern Building,” n.d.). Natural local materials on the exterior of the building such as limestone and course red brick provide inspiration to be carried through to the interior. Further defining conservation, the action of rehabilitation will be implemented as a process of continuing contemporary use of the historic building while protecting its heritage value (“Standards and Guidelines”, 2010, p.17). Rehabilitation is considered when (“Standards and Guidelines”, 2010, p.16):

1. Repair or replacement of deteriorated features is necessary
2. Alterations or additions to the historic place are planned for a new or continued use
3. Depiction during a particular period in its history is not appropriate

5.3.1 Opportunities and Constraints of the Building

The building location indicated in *Figure 13* was based on preferred and required criteria, to ensure a unique experience and space for accommodating the needs of adolescents throughout the processes of handmaking.

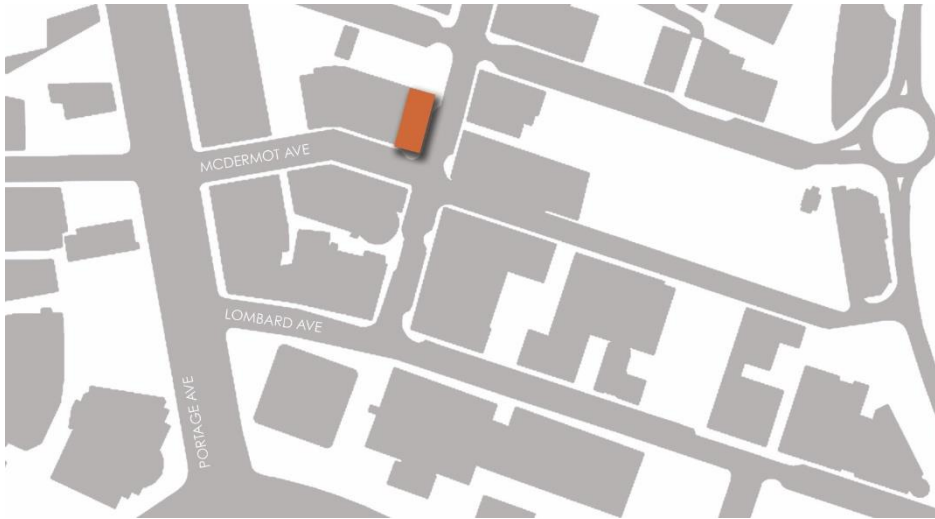


Figure 13: McDermot Streep Map Context

Building Opportunities

- Located on street corner providing many windows
- Connection to ground level for outdoor showcasing and display
- South facing windows
- Walkable distance to Red River and green space
- Regional materiality
- Vertical space development
- Historical connection to making
- Not too vulnerable
- Back lane for delivery of supplies
- Parking on North side near staff entrance

Building Constraints

- Grade III heritage building objectives
- No window openings on the West side

5.4 Building Analysis

Based on the site and building conditions, and those presented through theories explored in the literature review, the practicum project was located at 165 McDermot Avenue. As a designated historic site, exterior architectural elements such as window openings and original building details were upheld in the final design. This contributed to maintaining the buildings sense of character and its connection to the history of making, promoting opportunity for art



Figure 14: Interior Characteristics

creation. Prominent interior character defining details include South facing windows which direct light longitudinally through the building, wood beams, aprons, and sills, and exposed light coloured brick shown in *Figure 14*. These features were maintained and accentuated in the final design, as they inspired and guided the material and finish selections while embodying tactile qualities. The symmetrical proportions of the building and their manifestation inside informed the design by providing a grid for spatial planning and directed the overall architectural language. Together the site and building analysis conceptually represented in *Figure 15* inspired the direction of the interior aesthetic, connecting users to the culturally rich heritage of the stimulating surrounding area. An ease of transition into the space is maintained to provide a sense of consistency for developing adolescents and furthering feelings of safety. Users will be connected to the positive experiences of historic handmaking and unique architectural elements representative of the art and culture prevalent in the Exchange District of Winnipeg.

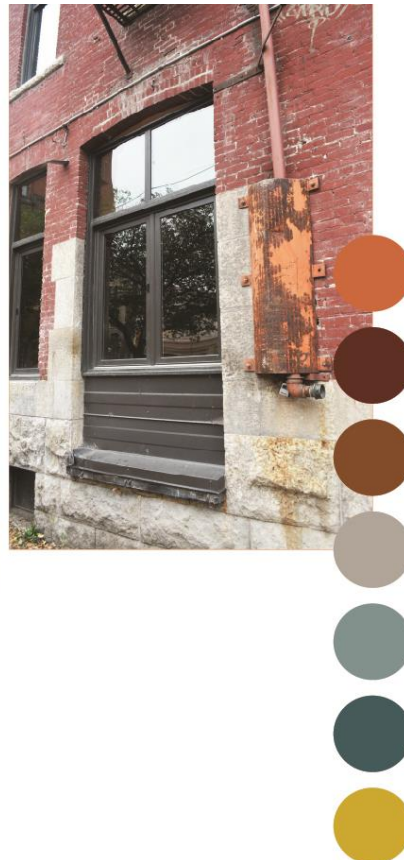


Figure 15: Site and Building Analysis

Chapter 6: Design Program

6.1 Client Profile

The hypothetically proposed client is the St. Norbert Art Centre, a non-for-profit organization focused on building community through cultural, environmental, and spiritual preservation of its historic site, a Trappist Monastery (“About Us”, 2014). The client houses art therapy and expressive arts diplomas and certificate programs by Wheat Institute, the only therapeutic arts training program in the central Canadian prairies (“Wheat,” n.d.). The makerspace will be funded through donations from the St. Norbert community and those surrounding. Revenue will be generated through group class tuition or workshop-based tuition, and retail sales. A portion of costs will be reliant on independent and corporate donations. For further funding, communal spaces will be available for rent by the surrounding community for special events.

6.2 User Profile

The user profiles provide a list of the primary, secondary and tertiary users at Make It. Each profile details the hypothetical needs of the users that were considered and addressed in the design. Adolescents aged 10-18 are the primary users, and each design consideration pertains to these developing individuals. Noting the multicultural abundance of this primary user, specifically Winnipeg’s rapidly growing urban Indigenous population, the design aims to integrate all cultural, spiritual, religious views, genders, and races, ensuring all users are accepted within the space. Cultural preservation of the site through cultural-based learning and education will be encouraged through programs led by Indigenous staff members and volunteers. These role models can help to build authentic relationships, culturally relevant programming, and

holistic approaches to maintain the richness of the surrounding community's ancestry (Axworthy et al., 2016). Users were also based on the art making activities offered and staff required to supervise or maintain these which include drawing, painting, textiles, ceramics, and woodworking. As outlined in *Chapter 2.0 Adolescent Development & Well-Being*, guidance from trusted adults is important for adolescent development, with resources providing safety and stability to ensure strong positive emotional relationships are built.

Primary Users:

- Adolescents (Age 10-18)
- Class Instructors
- Volunteers
- Interns from Manitoban Universities
- Administration Staff
- Facility Director

Secondary Users:

- Visitors
- Retail Staff
- Cafe Staff
- Cleaning Staff

Tertiary Users:

- Delivery Workers
- Custodial Staff
- Maintenance Staff

6.2.1 Primary User's Activities and Needs

Table 4: Primary Users Behavioral Needs

Users	Quantity	Activities	Frequency
Adolescents (Age 10-18)	~ 180	<ul style="list-style-type: none"> _ Attend classes, social activities _ Participate in making activities, utilize open studios _ Land-based art education 	<ul style="list-style-type: none"> _ Daily _ Mon.–Fri. 3:30 – 21:00 _ Sat. 11:00 – 21:00
Instructors	5 (on staff as scheduled)	<ul style="list-style-type: none"> _ Teach group classes, plan programs, offer private sessions, supervise adolescent making activities _ Offer making support and build relationships _ Expertise (have a bachelor's degree or diploma from an accredited institution in related fields) _ Participate in mentorship between Indigenous + non-Indigenous colleagues 	<ul style="list-style-type: none"> _ Daily scheduled classes during drop-in hours _ Daily scheduled classes during administrative hours
Volunteers	6	<ul style="list-style-type: none"> _ Assist classes, build connections, supervise 	<ul style="list-style-type: none"> _ Daily, full time
Interns	3	<ul style="list-style-type: none"> _ Offer making support and build relationships _ Supervise adolescent making activities 	<ul style="list-style-type: none"> _ Mon.–Fri. 3:30 – 21:00 _ Sat. 11:00 – 21:00
Administration Staff	2	<ul style="list-style-type: none"> _ Computer based workplace tasks _ Check-in adolescents _ Organize registration, group bookings / events 	<ul style="list-style-type: none"> _ Daily, full time _ Mon.–Fri. 8:30 – 17:00 _ Sat. 11:00 – 17:00
Facility Director	1	<ul style="list-style-type: none"> _ Computer based workplace tasks _ Oversee management of all programs 	<ul style="list-style-type: none"> _ Daily, full time _ Mon.–Fri. 3:30 – 21:00 _ Sat. 11:00 – 17:00

Table 5: Primary Users Psychological Needs

Users	Values	Aesthetic Preferences	Privacy Needs
Adolescents (Age 10-18)	<ul style="list-style-type: none"> _ Receiving respect _ Feeling valued _ Honesty _ Free expression 	<ul style="list-style-type: none"> _ Views to exterior _ Personalization / control _ Non-institutional _ Gender-neutral 	<ul style="list-style-type: none"> _ Personal belonging storage _ Semi-private options for creativity _ Public space for group interactions
Instructors	<ul style="list-style-type: none"> _ Sensitivity _ Accommodating _ Respect 	<ul style="list-style-type: none"> _ Focused environment _ Organized and clean _ Gender-neutral 	<ul style="list-style-type: none"> _ Personal belonging storage _ Private areas for private sessions _ Semi-private space for group classes
Volunteers	<ul style="list-style-type: none"> _ Mentorship _ Approachability _ Community focus 	<ul style="list-style-type: none"> _ Sight lines into making spaces _ Collaborative _ Gender-neutral 	<ul style="list-style-type: none"> _ Personal belonging storage _ Semi-private space for building safe/stable relationships
Administration Staff	<ul style="list-style-type: none"> _ Inspiring _ Adolescent focus 	<ul style="list-style-type: none"> _ Focused environment _ Organized and clean 	<ul style="list-style-type: none"> _ Personal belonging storage _ Private space for focused work
Facility Director	<ul style="list-style-type: none"> _ Dedication _ Approachability _ Communication 	<ul style="list-style-type: none"> _ Sight lines to making spaces _ Centrally located 	<ul style="list-style-type: none"> _ Personal + confidential storage _ Access to all spaces _ Private space for focused work

Table 6: Primary Users Spatial Needs

Users	Visual	Cognitive	Mobility
Adolescents (Age 10-18)	<ul style="list-style-type: none"> _ Views to exterior _ Natural light _ Views to making areas _ Non-isolated 	<ul style="list-style-type: none"> _ Stimulating and inspirational _ Sense of belonging / identity _ Balance of quiet / loud areas _ Creative learning space 	<ul style="list-style-type: none"> _ Freedom to move between activities _ Non-obstructed _ Clear wayfinding _ Safe and secure
Instructors	<ul style="list-style-type: none"> _ Well-lit workspace _ Views within class spaces 	<ul style="list-style-type: none"> _ Inspirational space _ Efficient work environment _ Controlled acoustics 	<ul style="list-style-type: none"> _ Mobility around teaching surfaces _ Flexible movement of adolescents _ Reconfigurable space
Volunteers	<ul style="list-style-type: none"> _ Views to making areas 	<ul style="list-style-type: none"> _ Motivating space 	<ul style="list-style-type: none"> _ Adaptability, flexibility
Administration Staff	<ul style="list-style-type: none"> _ Well-lit workspace _ Access to surveillance 	<ul style="list-style-type: none"> _ Efficiency, organization _ Controlled acoustics 	<ul style="list-style-type: none"> _ Area to move at work surface
Facility Director	<ul style="list-style-type: none"> _ Well-lit workspace 	<ul style="list-style-type: none"> _ Efficiency, organization _ Controlled acoustics 	<ul style="list-style-type: none"> _ Adaptability, flexibility

6.3 Spatial Requirements and Adjacencies

The following list provides an overview of the spaces provided at Make It, with desired direct and indirect adjacencies organized in *Figure 16*:

Public Spaces:

- Entry
- Lobby
- Communal / Flexible Use
- Retail
- Public Washroom
- Exhibition Space
- Cafe Lounge
- Phone Area

Adolescent Centered Spaces:

- Ceramic Area
- Clay / Glaze Room
- Kiln Room
- Painting Area
- Drawing Area
- Woodworking Area
- Textiles Area
- Multimedia Studio
- Micro-Studios
- Collage
- Works in progress

Staff Spaces:

- Staff Office
- Staff Area
- Meeting Room
- Staff Washroom
- Staff Shower

Storage and Maintenance:

- Storage
- Janitor Closet
- Mechanical Room
- Electrical Room

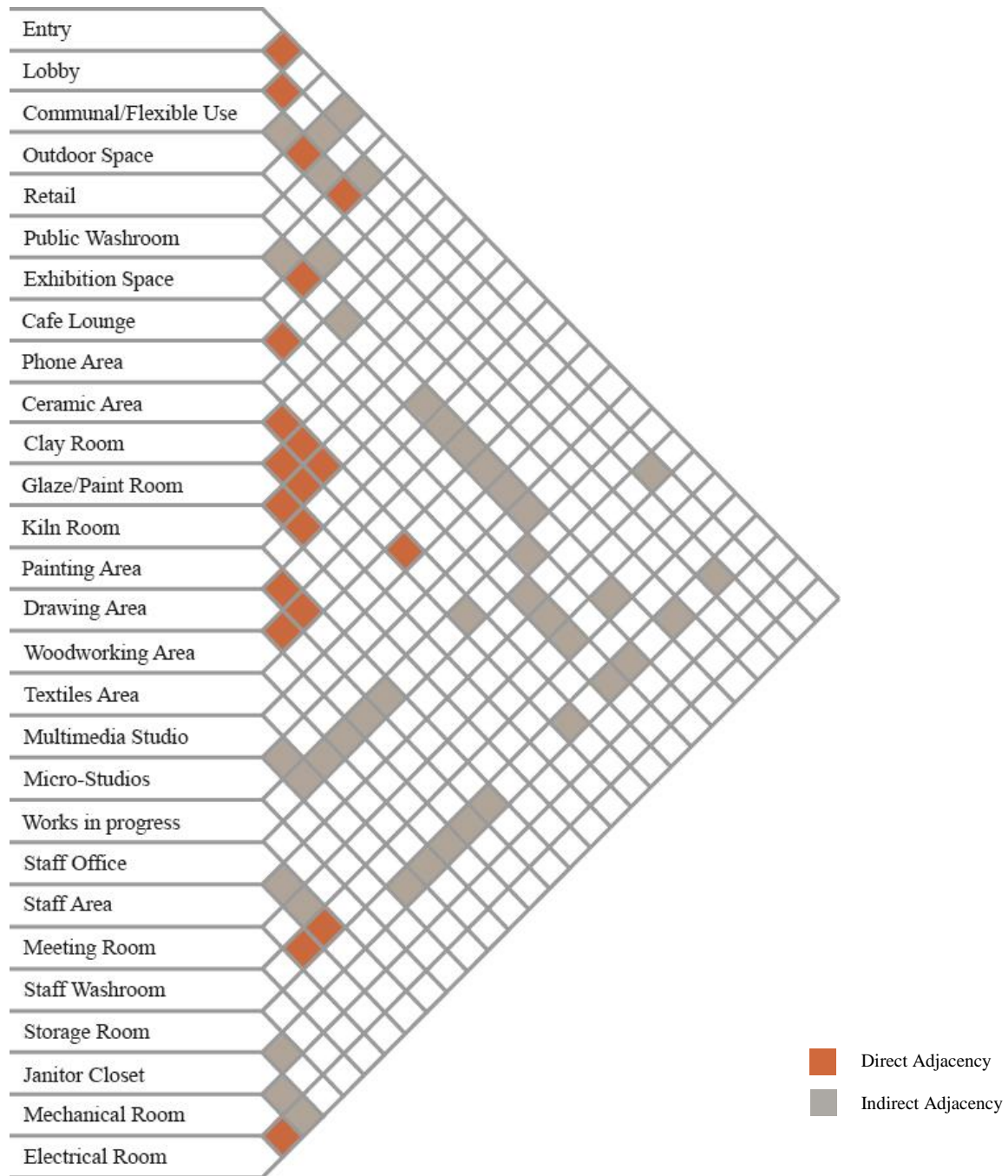


Figure 16: Adjacency Matrix

6.4 Program

Table 7: Function / Furniture, Fixtures, and Equipment / Atmospheric Qualities

Public Spaces:

Space	Function	FF&E	Atmospheric Qualities	Square Footage
Entry	_ Transition from interior to exterior	Open space for circulation	Natural transition Durable, easy cleanability	150 sq. ft.
Lobby	_ Main greeting area to receive and direct users	Check-in technology Storage for daily visitors	Welcoming, accessible Durable, easy cleanability Organized	200 sq. ft.
Communal / Flexible Use	_ Event space _ Group meeting or lecture space	Open reconfigurable individual/group furniture Tables Seating surfaces Presentation opportunities	Communal Openness Durable, easy cleanability Bright and bold Social	560 sq. ft.
Outdoor Space	_ Outdoor exhibition	Outdoor secured displays	Community inclusion Well maintained Bright and inspiring	500 sq. ft.
Retail	_ Display art for sale	Interact machine Transaction work surface Wrapping/bagging material Wall hanging systems Open shelving Display units both built-in and reconfigurable	Customizable lighting options Sit lines maintained throughout Eclectic backdrop for art Neutral coloured display units Organized Durable, easy cleanability Easy to navigate	200 sq. ft.
Public W/C	_ Universal gender inclusive and accessible w/c	Low flushing toilet Mirror Touch free soap dispenser Hand dryer Sink system with faucet Grab bars	Accessible Anti-bacterial Non-porous Durable, easy cleanability Mildew resistant Slip resistant	60 sq. ft. per (240 x 4 floors + 120 x 1 floor = 1,080 total)
Exhibition Space	_ Indoor Exhibition	Wall hanging systems Display units reconfigurable Plinths Mobile display cabinets	Customizable lighting options Eclectic backdrop for art Neutral coloured plinths Organized	600 sq. ft.
Café Lounge	_ Guest/community area for relaxation and connection _ Baked goods and non-alcoholic drinks for purchase _ Area for home-made food to be prepared	Open reconfigurable individual/group furniture Eating surfaces Soft seating options Sink, refrigerator, stovetop Microwave (2) Baked goods display Interact machine Transaction surface Dry + refrigerated storage Garbage disposal	Customizable lighting options Welcoming, accessible Warm materials Durable, easy cleanability Social and casual Youthful Focal point Local materials/maker creations	1,700 sq. ft.
Phone Area	_ Area for private calls	Sit-stand work surface Seating surface	Quiet, sound-proof Semi-private	60 sq. ft.

Adolescent Centered Spaces:

Space	Function	FF&E	Atmospheric Qualities	Square Footage
Ceramic Area	_ Hands-on teaching and making using ceramics	Open reconfigurable individual/group work surfaces Electric pottery wheel (6) Clay prep table Seating surfaces Open shelving Garbage disposal	Well ventilated and lit Openness, organized Durable non-porous surfaces Inspirational, youthful Freeing, expressive Non-hierarchical	1000 sq. ft.
Glaze / Clay Room	_ Clay mixing _ Dry clay storage _ Glaze storage _ Chemical storage	Mixing equipment Scale, work surface Closed shelving Lockable cabinets Garbage disposal	Well ventilated and lit Acoustic control Durable non-porous surfaces Slip resistant	150 sq. ft.
Kiln Room	_ Greenware firing _ Storage for drying	Electric kiln 24" X 30" (3) Open shelving	Well ventilated and lit Acoustic control Durable non-porous surfaces Heat resistant	160 sq. ft.
Painting Area	_ Hands-on teaching and making using paint materials	Open reconfigurable individual/group work surfaces Easels of varying size (6) Painting ledge Sink, cleaning area Seating surfaces Closed material storage Pin-up opportunities Garbage disposal	Well ventilated Natural light Openness, organized Non-porous surfaces Inspirational, youthful Non-hierarchical	700 sq. ft.
Drawing Area	_ Hands-on teaching and making using drawing materials	Reconfigurable individual / group work surfaces (18) Light table Drawing ledge Seating surfaces Closed material storage Pin-up opportunities Garbage disposal	Well ventilated Natural light Openness, organized Non-porous surfaces Inspirational, youthful Non-hierarchical	700 sq. ft.
Woodworking Area	_ Hands-on teaching and making using woodworking	Open reconfigurable individual/group work surfaces (4) Hand-held etching tools Seating surfaces Closed material storage Garbage disposal	Well ventilated and lit Organized Acoustic control Durable surfaces Inspirational, youthful Non-hierarchical	1000 sq. ft.
Textiles Area	_ Hands-on teaching and making using textiles	Large expanses of open reconfigurable individual/group work surfaces Sewing machine (4) Mannequins Table loom (3) Seating surfaces Closed material storage Pin-up opportunities Garbage disposal	Well ventilated Natural light Openness, organized Inspirational, youthful Freeing, expressive Non-hierarchical	700 sq. ft.

Multimedia Studio	_ Group making using various media types	Large expanses of open reconfigurable individual/group work surfaces Seating surfaces Closed material storage Large weaving table (2) Pin-up opportunities Garbage disposal	Focused Inspirational Structured Reflective	1000 sq. ft.
Micro-Studios	_ Individual making using various media types	Individual stationary work surfaces Seating surfaces Pin-up opportunities	Intimate Customizable Semi-private Natural light	1000 sq. ft.
Collage	_ Collage/mask making	Stationary work surfaces Seating surfaces Closed material storage	Intimate Semi-private Reflective	200 sq. ft.
Works in progress	_ Communal display or drying space	Reconfigurable display Pin-up opportunities	Public, transparent Encouraging and supportive Inspirational	160 sq. ft.

Staff Spaces:

Space	Function	FF&E	Atmospheric Qualities	Square Footage
Staff Office	_ Shared working space for admin. staff and facility director	Work surfaces (3) Ergonomic chair (3) Closed storage for records Lockable personal storage	Quietness Indirect light Acoustic control Non-hierarchical	450 sq. ft.
Staff Area	_ Space for staff and volunteers to recuperate	Tables Soft seating	Relaxing, comfortable Warm lighting Secure Acoustic control	200 sq. ft.
Staff Shower	_ Universal gender inclusive and accessible shower room for staff/volunteers	Accessible shower Shower seat Mirror Grab bars	Secure, private Acoustic control Focused	80 sq. ft.
Staff W/C	_ Universal gender inclusive and accessible w/c for staff/volunteers	Low flushing toilet Mirror Touch free soap dispenser Hand dryer Sink system with faucet Grab bars	Accessible Anti-bacterial Non-porous Durable, easy cleanability Mildew resistant Slip resistant	60 sq. ft.

Storage and Maintenance:

Space	Function	FF&E	Atmospheric Qualities	Square Footage
Storage Room	_ Store materials	Open shelving	Private, clean, organized, secure	1255 sq. ft.
Janitor Closet	_ Maintenance area	Mop sink, floor drain	Durable, easy cleanability	75 sq. ft.
Mechanical Room	_ Service area/storage	Industrial equipment N.I.C.	Well lit, out of public site	500 sq. ft.
Electrical Room	_ Service area/storage	Industrial equipment N.I.C.	Well lit, out of public site	500 sq. ft.

Total square footage: [(6 floors)(2,400) = 14, 440] + circulation = 21,600 sq. ft.

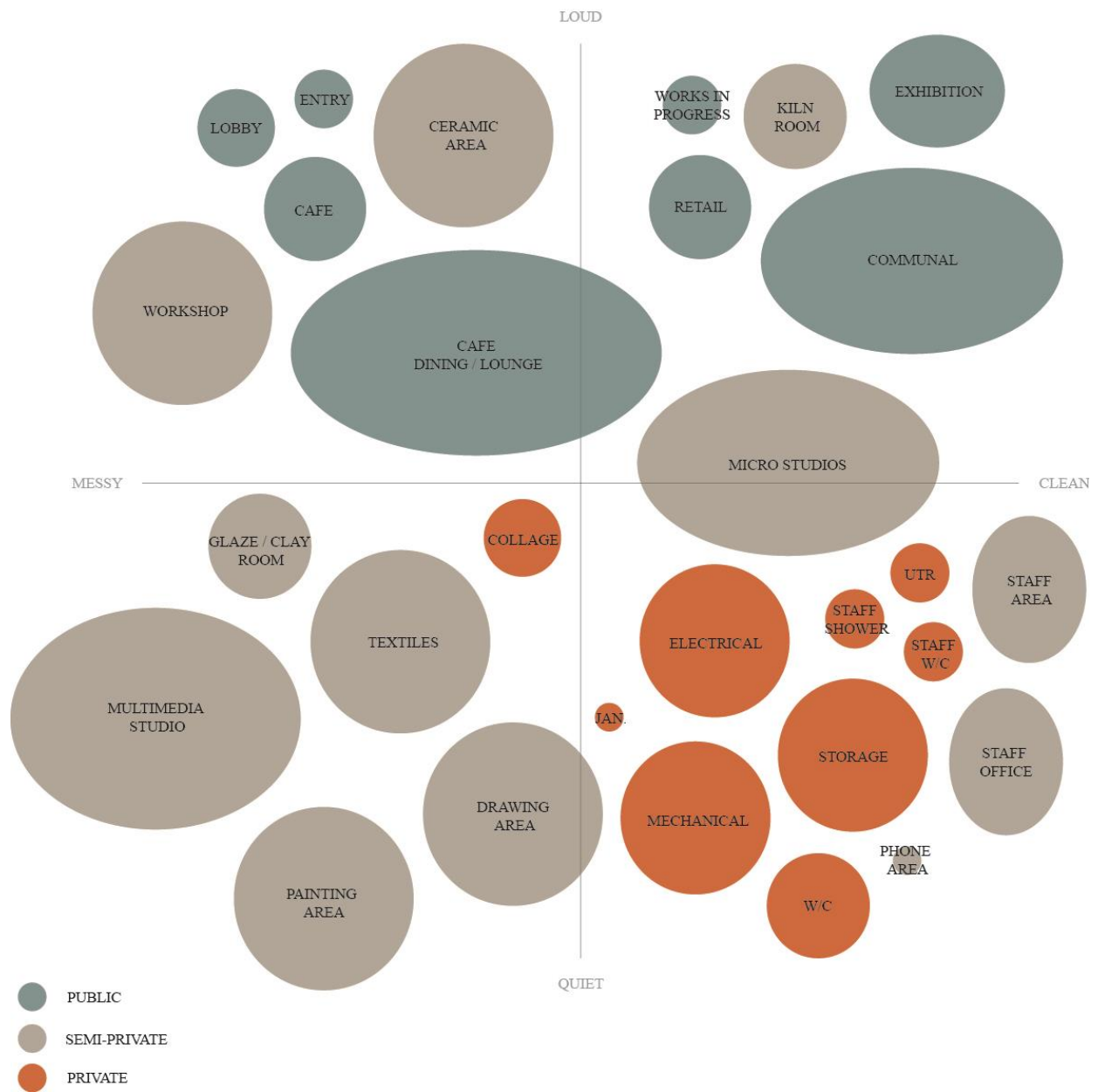


Figure 17: Zoning Diagram

Chapter 7: Design Proposal

7.1 Introduction

The design chapter details the adolescent centered makerspace design, Make It. The purpose of Make It was to support adolescent development and well-being through hands-on artful making. The advancement of adolescent well-being was achieved through the programming of activities related to handmade art processes, supporting holistic development. The scope of the practicum included the interior design of six of the seven floors in the building selected.

The following design was based on analysis of the previous chapters, and information gathered on the overall topic of adolescent development and well-being, specific to Winnipeg's demographic. Design elements which informed the design are discussed, including concepts which were incorporated into the design, and the development of the conceptual design language. Inspiration for the design language derived from the linear aesthetic of the existing building. Structural architectural elements lay points of reference and predictability for which each making activity can freely take place, representing security and stability, while allowing self-exploration and experimentation within these set areas. Interior expressions are drawn from the existing building and extracted into various locations, influencing space planning and room definition.

7.2 Spatial Configuration

The planning approach derived from the Expressive Therapies Continuum theory discussed in *Chapter 3.0 Literature Review*. Additionally, each floor conceptually represents the phases of creative making offered by Moon (2012), which include Resistance, Imagining,

Immersion, and Letting Go. These phases evolved into the following words, to conceptually direct the atmosphere and nature of each floor, shown in *Figure 18*:

Level 0: Prepare

Level 1: Contemplate

Level 2: Imagine

Level 3: Collaborate

Level 4: Immerse

Level 5: Inspire

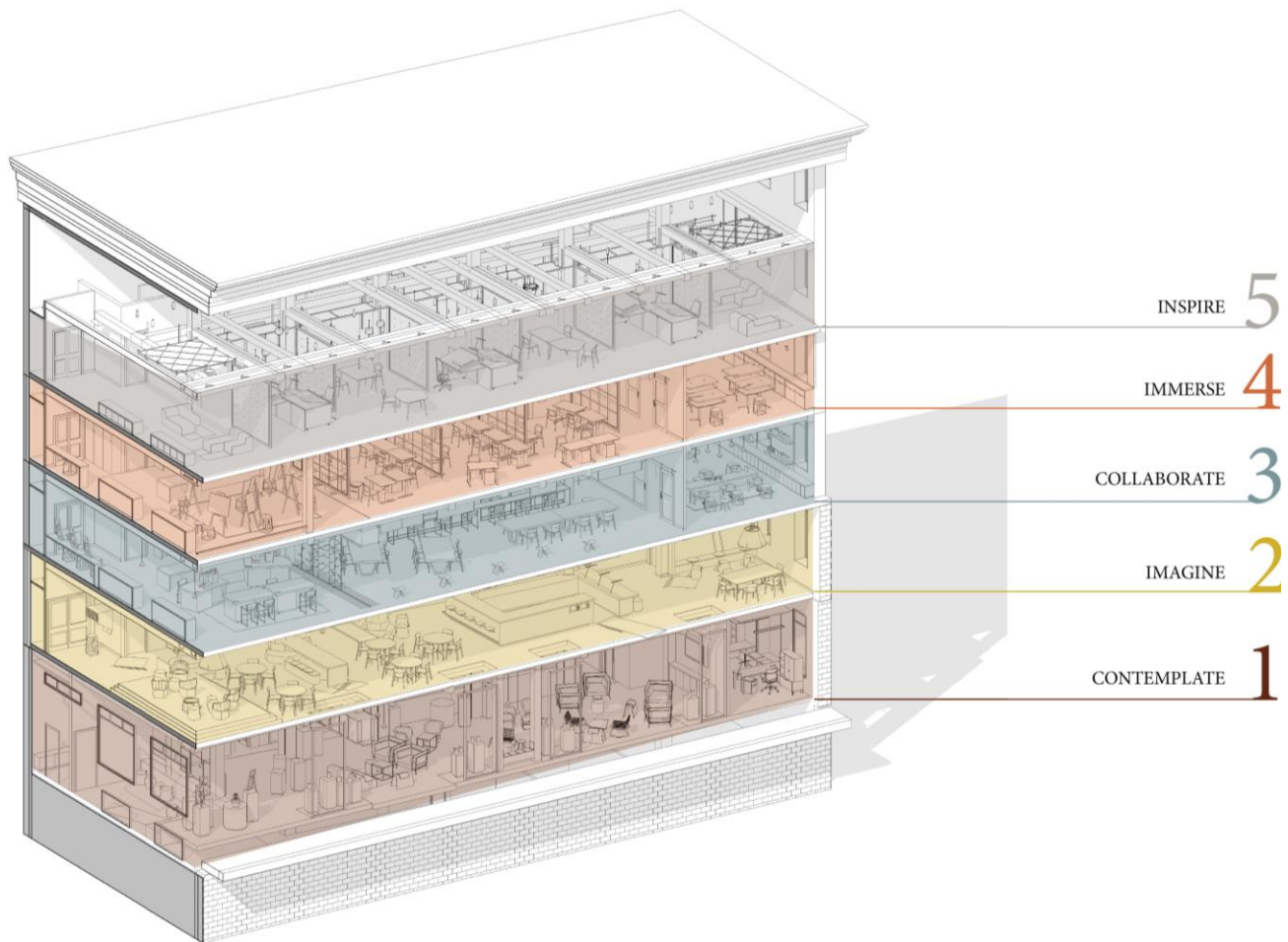


Figure 18: Concept Section Perspective

This approach influenced the hand making activities that would be accommodated on Level 3, Level 4, and Level 5. Level 3 being the imaginative, or kinesthetic and sensory floor, focuses on semi-private activities which are often directed by an instructor. Atmospheric qualities of this phase conceptually include sensation, movement, tactility, action, freedom and expression. Activities include free scribbling, drawing, sculpting, weaving, or sewing. Level 4 is the immersive, or perceptual and affective floor, focusing on more private individual activities where an instructor may move freely around the room for guidance as needed. Boundary, form, accuracy, representation, and focus are the conceptual atmospheric qualities of this level. Activities include painting, line drawing, tracing, woodblock printmaking, and wood etching. The last floor for hand making activities is the most private. Level 5 provides an opportunity for adolescent to inspire their peers, representing the cognitive or symbolic floor. Activities such as collaging, mask making, and abstract painting are facilitated. Level 5 embodies stillness, reflection, abstraction, thought, and initiative.

Another important driving factor in the spatial planning was the inclusion of a ceiling feature replicated on each floor. This concept derived from the precedent study, which noted that familiar details of reference are beneficial for experimentation. The ceiling feature becomes a detail of reference on each floor, and upon arrival users are offered an additional point of reference at eye level, introducing them to the nature of activities on that specific floor. The custom details at eye level, which coincide with the conceptual name of each floor, include:

Level 1: Displays

Level 2: Soft Seating

Level 3: Works in Progress

Level 4: Pin-Ups

Level 5: Storage / Open Materials

7.3 Design Development

The final design of Make It is illustrated in a series of floor plans, reflected ceiling plans, building sections, exterior elevations, interior elevations, rendered perspectives, and interior details. As previously discussed, the major concepts and design process was an outcome of numerous interior design and theoretical ideas explored.

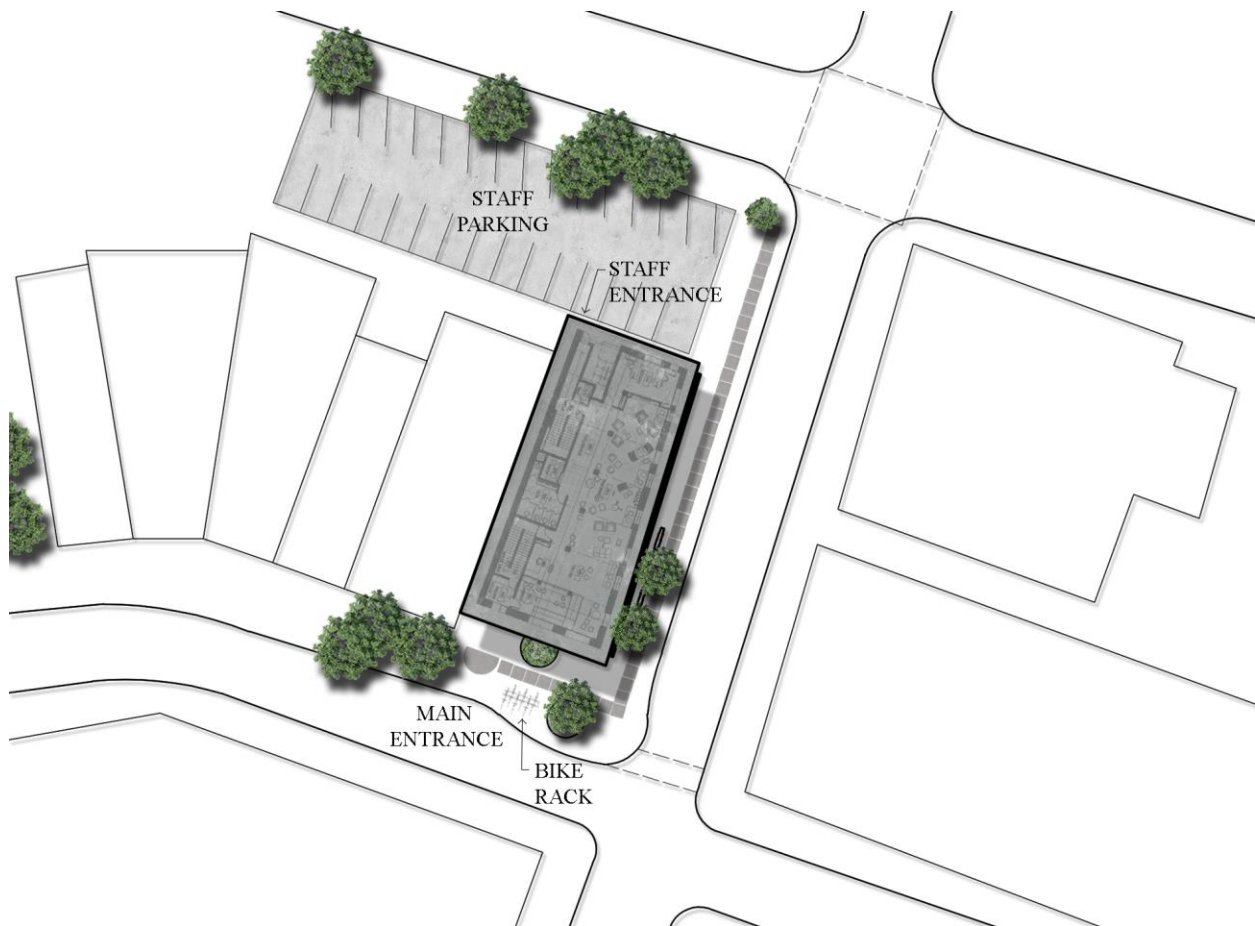


Figure 19: Site Plan

Scale: Not to Scale

Approach

Figure 19 illustrates Make Its access and relation to the surrounding community in Winnipeg's exchange. It was important for the project to utilise the buildings opportunities previously noted, such as the south facing windows and connection to ground level for showcasing and display. The connection to the community, inspired by the precedent study, translated into maintaining and accentuating the window displays and raised stone ledge along the East elevation. Showcasing their creations, adolescents are offered a platform to create a strengthened sense of identity and worth in sharing their achievements. *Figure 23* illustrates the view into Make Its first floor from the stone walkway during evening hours.



Figure 20: Exterior South Elevation | Scale: Not to Scale

Elevations adapted from 5468796 Architecture, 2014.

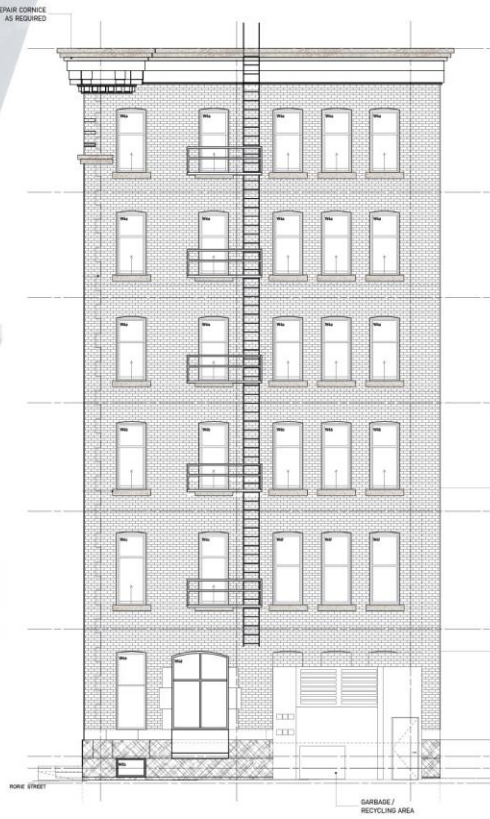


Figure 21: Exterior North Elevation | Scale: Not to Scale



Figure 22: Exterior East Elevation | Scale: Not to Scale



Figure 23: Display Exterior Perspective



Figure 24: Rendered Floor Plan – Level 1

Scale: Not to Scale



Figure 25: Communal Space Perspective – Level 1



Figure 26: Elevation A: Communal Space East Elevation

Scale: Not to Scale



Figure 27: Elevation B: Communal Space North Elevation

Scale: Not to Scale

As previously noted, an ease of transition into Make It was important as the first stage of creative making is often resistance. Level 1 offers an opportunity for adolescents to contemplate as they are introduced to the building and nature of activities, through the artwork on display. The lobby allows seating for adolescents to wait for classes or public transit. Exposed material selections and space planning offer a sense of consistency from the exterior for developing adolescents, while feelings of safety through authenticity are strengthened. The exhibition of moveable plinths along the East elevation provides a direct connection to the public. The ceiling feature allows artwork to be hung above eye level, providing a less intimidating opportunity to display. The repetitive aesthetic works to illuminate hierarchy between pieces and contribute to the safe nature of displaying creations. Artwork hung in one interconnected line also visually and metaphorically bridges a community of Indigenous and non-Indigenous makers.



Figure 28: Rendered Floor Plan – Level 2

Scale: Not to Scale

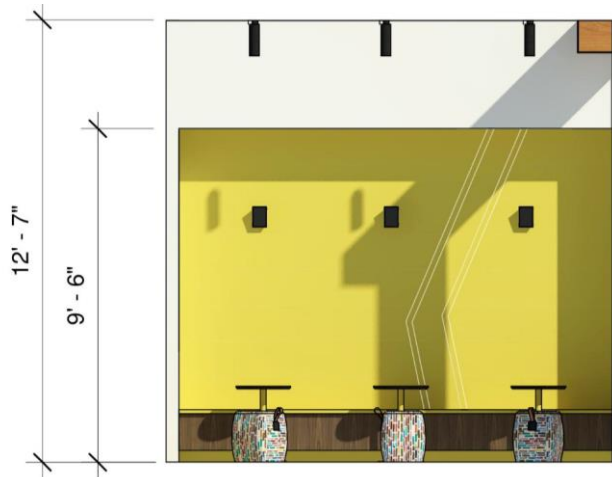


Figure 29: Elevation C: Meeting West Elevation

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Level 2 features vibrant colours, derived from the site analysis, to stimulate and inspire. There is a subtle connection to the first floor through glass floor features, building on the concept of trust encouraged through various viewpoints. The spaces provided allow for building personal connections and encourages adolescents to imagine their contribution and purpose within a larger community. The openness allows for trusted relationships to flourish and encourages staff members to connect to the users through a communal eating space named The Canteen. Here all users are welcome to purchase small snack items and beverages or prepare their own packed food. This area provides a point of reference for individuals new to the space, allowing them to be greeted by staff or volunteers and have a place to sit upon entry, before gaining comfort and confidence to move throughout the space. As a shared space for both adolescents and staff or volunteers, The Canteen encourages a non-hierarchical nature. The soft seating area is located at the most desirable corner of the building with views to both exterior streets. Various types of seating arrangements allow for informal meetings and user choice in seating selections.



Figure 30: The Canteen Perspective – Level 2



Figure 31: Rendered Floor Plan – Level 3

Scale: Not to Scale



Figure 32: Making Space Perspective – Level 3



Figure 33: Elevation D: Making Space West Elevation

Scale: Not to Scale

The third floor space planning was centered around the concept of collaboration in making with semi-private activities often directed by an instructor. Upon entry users are greeted by an interchangeable storage system with works of progress displayed to encourage identity exploration, bringing together making activities on this floor. Flexibility accommodates various groups, personal desired visual adjacencies, and teaching styles. The East elevation features an expressive art wall where adolescents can freely draw or paint directly on the surface. The ceiling allows interchangeable canvas display above the storage system or hung and slid throughout the room, shown in *Figure 32*. Community style tables encourage peer collaboration and allow an instructor to teach groups if required. The textiles area features moveable millwork units above a custom carpet printed with Indigenous art for increased acoustic control. The moveable material storage increases user interaction, tactility, and control in selecting their making supplies, shown in *Figure 34*. The ceramic area features sliding doors for acoustic control and a custom ceiling feature showcasing hanging ceramic creations, shown in *Figure 35*. Exploration is supported through moveable tables, stackable chairs, and open shelving.



Figure 34: Textiles Perspective – Level 3



Figure 35: Ceramic Area Perspective – Level 3



Figure 36: Rendered Floor Plan – Level 4

Scale: Not to Scale



Figure 37: Painting Perspective – Level 4



Figure 38: Elevation E: Drawing Area East Elevation

Scale: Not to Scale

Level 4 encourages individual development through increased spatial boundaries and individual seating. Guidance is provided upon request as adolescents make in an immersive environment with increased personal control of activity choice. The painting area is located near the most natural light and encourages freedom through moveable furniture and various locations for painting to occur. The drawing area features sit-stand desks with personal storage below for self-directed learning, faced inward to heighten the immersive atmosphere. Peer interaction is prevalent through the studio style nature of the space and illuminates feelings of isolation. Semi-private partitions allow pin-ups and divide the space while maintaining natural light through the length of the building, shown in *Figure 37*. As shown in *Figure 38*, the walls feature a similar metal mesh for artwork and drawings to be easily attached and interchanged. The workshop embodies the immersive concept of this floor through a feature wood block ceiling. The heaviness grounds the room and inspires through a reflection of material, while providing acoustic control. Sensory tactile qualities are maintained through the use of live edges and natural materials. Again, exploration is supported through moveable tables, stackable chairs, and open shelving, as individuals visually connect with their options of materials and tools.



Figure 39: Workshop Perspective – Level 4



Figure 40: Rendered Floor Plan – Level 5

Scale: Not to Scale



Figure 41: Multimedia Studios Perspective – Level 5

Level 5 encourages symbolic information processing through non-verbal sharing of thoughts and feelings. This floor is the most private in nature and reflects the cognitive Letting Go phase of creative making (Moon, 2012). Located on the top floor it allows a quietness and decreased level of distraction. Features include rentable micro-studios for late adolescents, more exclusive making tools such as large looms, moveable soft seating, and creations hung throughout the ceiling. Customization was important for users to create their desired making space as they build a sense of identity. This was provided through moveable wall partitions for pin-ups and privacy, moveable millwork desks, and personally controlled pendant lights, shown in *Figure 41*. The walls and ceilings feature a metal mesh similar to Level 4, for artwork, drawings, collages, or masks to be easily attached and interchanged. The open display of making provides inspiration to younger youth. As adolescents sit in the lounge areas they are immersed by the surrounding display, representing the appreciation of peers and new perspectives.

Vertical Study

As you move through the building the programming on each floor becomes quieter and more private, illustrated by the building sections. *Figure 42* illustrates the features upon entry of each floor as it cuts through each public pathway. Level 1 houses communal space for all primary, secondary, and tertiary users. Level 2 also hosts communal space, and areas for longer durations of habitation, with activities based on community building. This floor allows large group meetings for community organizations or after hour events. Level 3 includes the collaborative making processes, while more individual focused studios on Level 4 are quieter in nature. Level 5 provides space for adolescents to disconnect from the adversity and difficulty that may be associated with ground level.

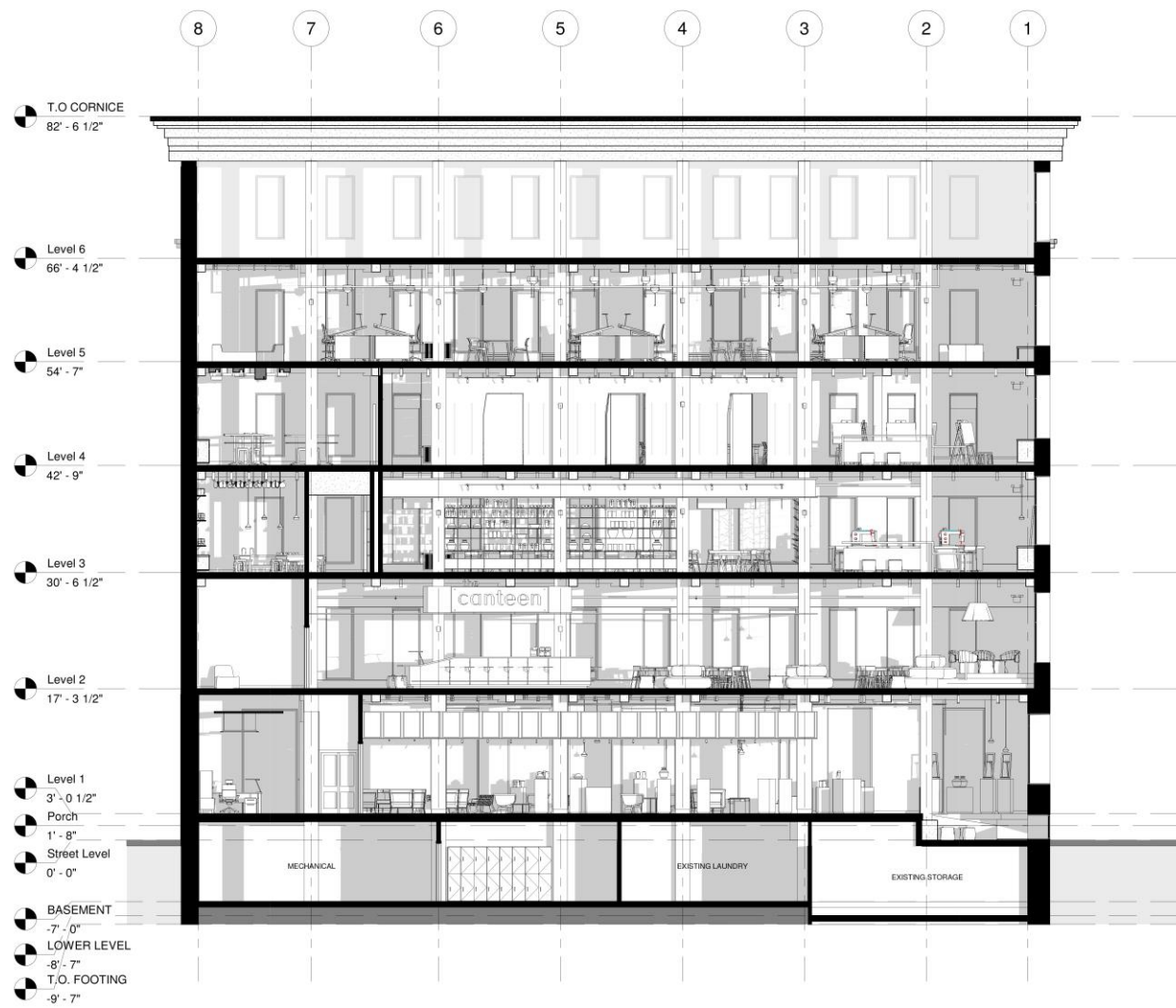


Figure 42: Section A: North-South Building Section

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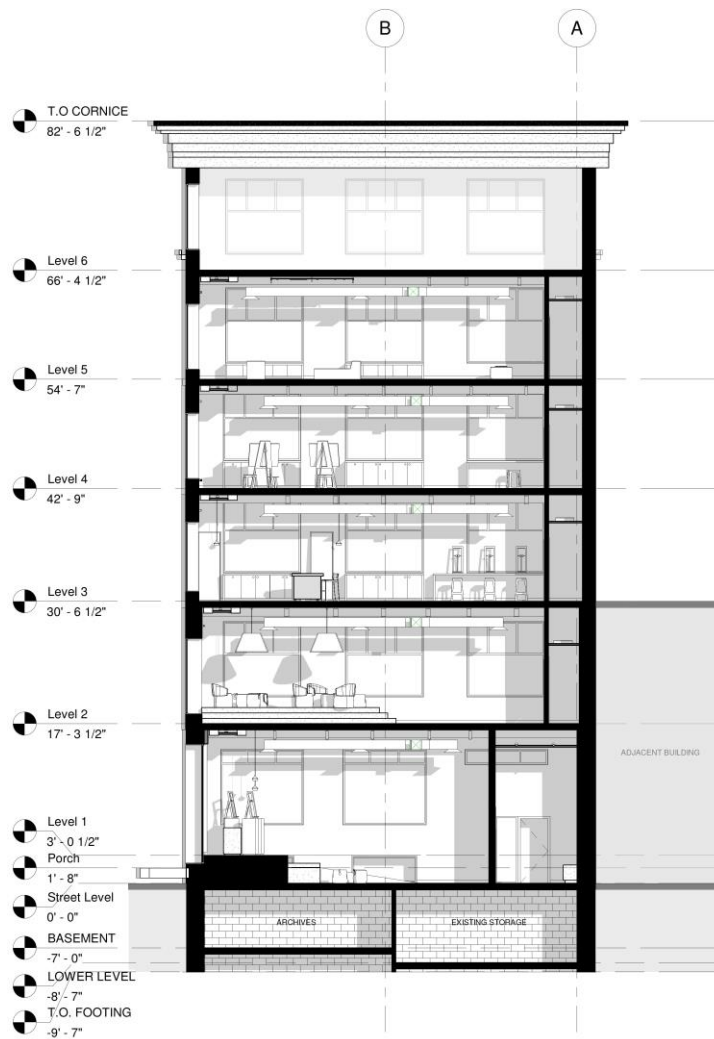


Figure 43: Section B: East-West Building Section

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Figure 44: Axonometric Perspective

Chapter 8: Conclusion

8.1 Summary

This practicum project utilized multiple approaches to understand adolescent development and creative art making strategies for well-being. The resulting design highlights creative art processing, influencing a Makerspace for adolescents. The design proposal demonstrates how the development and well-being of adolescents can be supported within the design of the built environment.

Research questions presented at the beginning of the practicum guided the research and influenced design principles. Returning to these questions after the course of investigation, the following conclusions were drawn:

1. What are the user needs of a makerspace, to support adolescent development and well-being?

The user demographic was defined through an in-depth exploration of adolescent development, relating their needs to those of a makerspace. Strategies for creative art and an exploration of the philosophy and physical design of existing makerspaces determined the making activities chosen for the practicum project. The research indicated that the environmental design structure should be safe, open for exploration and self-expression, have predictable points of reference, and focus on making art while establishing relationships. The research also revealed that many user needs were psychological in nature, such as building relationships, building confidence, or increasing one's sense of identity. This required a focus on the practicum programming including hypothetical staff qualifications, cultural-based



Indigenous making techniques, and connections to surrounding community programs. Acknowledging the prominent Indigenous demographic, it was significant to emphasize the importance of Indigenous and non-Indigenous leaders working together to honour the importance of Indigenous wisdom and worldviews within the makerspace. The experience of Indigenous mentors, as well as Indigenous centered supervision and services, was highlighted as a user need.

2. What strategies and narratives from creative making can inform the design of a space that supports adolescent development and well-being?

Deriving from the field of art therapy, the narrative of Expressive Therapies Continuum most heavily informed the design. This theory suggests various stages of art processing, which aided in understanding how adolescents perceive art making, creating guidelines for the final design. As identity is a key component to the development of adolescents, user control and choice in the environment was important to consider. In addition, conversations with professional art therapists and adolescent case studies provided various supplementary narratives to inform the design.

3. How can the synthesis of research on adolescent development, creative art making strategies, and current makerspaces conceptually translate into the three-dimensional design of an art based adolescent makerspace?

As previously noted, adolescent development strongly relies on the opportunity and ability of an individual to create a personalized sense of identity and creative art making strategies offer this exploration. While contemporary makerspaces emphasize technological processes and programs, the practicum project

focuses on the intrinsic desire for handmaking. Conceptually, the synthesis of art processing and a search for identity informed the three-dimensional space. Although this synthesis was the guiding factor, the environment was heavily impacted by the existing structure of the building, including the site, materials, and limitations.

8.2 Future Recommendations

The information presented in this practicum continues to evolve and over time will become outdated. Design recommendations may be updated and expanded on as new research is conducted in numerous areas, including adolescent development, site statistics, and art as therapy.

A prominent challenge throughout the practicum project was the focus on well-being as opposed to preventative clinical or medically therapeutic environments. Many existing art making environments are preventative in nature, offering support for individuals identified as mentally unstable or requiring assistance. The research emphasized art making within hospitals, schools, and libraries, while the practicum imposed a shifting focus to large scale self-directed art making environments. The practicum focused on conceptually implementing the idea of an art therapy room into an entire makerspace, with holistic well-being at the core.

Another challenge was the difficulty finding makerspaces that were not technological in nature. To overcome this challenge the scope of research was broadened to include various types of learning spaces and studio environments. These findings were then applied to the maker movement's philosophies and character as a support for adolescent development. Makerspaces as an emerging typology will require future research on adolescents who have used these environments, to learn what strengths and weaknesses are facilitated.

Additionally, constant increase in technology will continually challenge the practicum's focus on handmaking and a return to human tactile artful desires. Although technological advancement may provide improvements on features like security systems or lighting and temperature controls, it conceptually contradicts focus on a handmade makerspace and would not influence changing face-to-face adolescent check-in or the natural tactile materials and tools located throughout the space. Overall, these challenges strengthened the modern theoretical framework and inventiveness of the practicum project.

Limitations were present due to the scope and information available. Existing ceiling plans for the building selected were unable to be obtained. This resulted in a ceiling design based on approximate information and would have required consultation for the development of HVAC systems to accommodate ventilation for pottery, woodworking, and painting. Due to the project scope and timeline, the seventh floor of the selected building was left vacant. Upon further design, this floor could house artist residents, large meeting space, or additional educational studios.

Although the practicum did not focus on Indigenous decolonization, given the context of the site, it was significant to acknowledge historic European colonization which has impacted generations of Indigenous peoples. As an individual without Indigenous descent, the goal of the practicum was to sensitively highlight historic inadequacies of the Canadian justice system on Indigenous peoples and generations of trauma caused by extensive destructive events. The practicum recognizes ongoing systems of abuse and separation of Indigenous people from their family, culture, language, and practices. It aims to combat these realities through a makerspace integrated with sensitivity and appreciation for the continued strength and resiliency of Indigenous communities. Indigenous worldviews of relational, collectivist, and communal ideas

inspired the practicum project. Upon further research, new methodologies of art therapy based on Indigenous philosophies of healing and land-based learning would be explored.

Returning to the project rationale, research began as an exploration into the significance of art. Having chosen to pursue a career connected to artful creation, it was personally valuable to research the beneficial importance and history of art. Encouraged by human desires to be connected to art, further research led to art therapy and practical or research based ways in which it benefits individuals and communities. A focus on an adolescent demographic was motivated by personal experiences, having volunteered with outreach programs through various local inner-city organizations. Growing to value this age group, the endeavours of this practicum project have solidified the importance of art based activities for adolescent development and well-being, while providing personal motivation for a tangible artfully driven profession.

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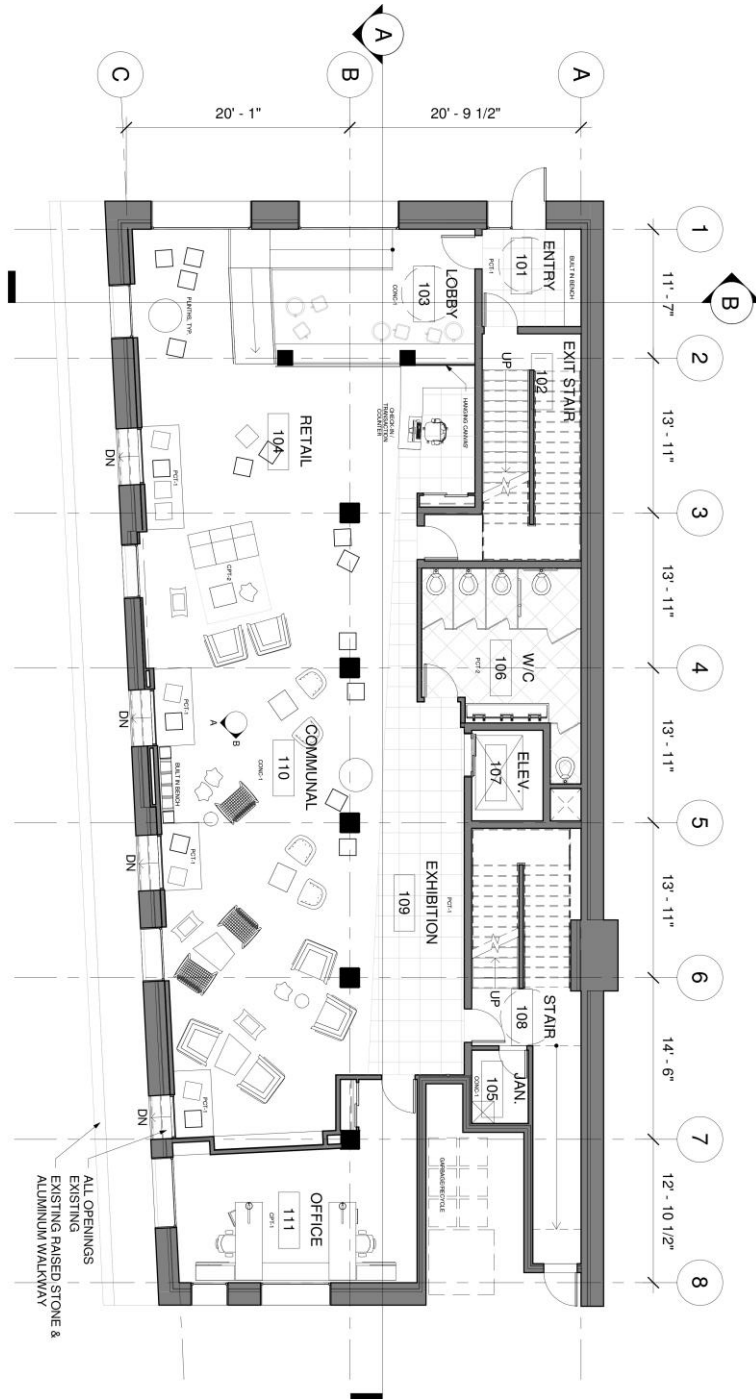
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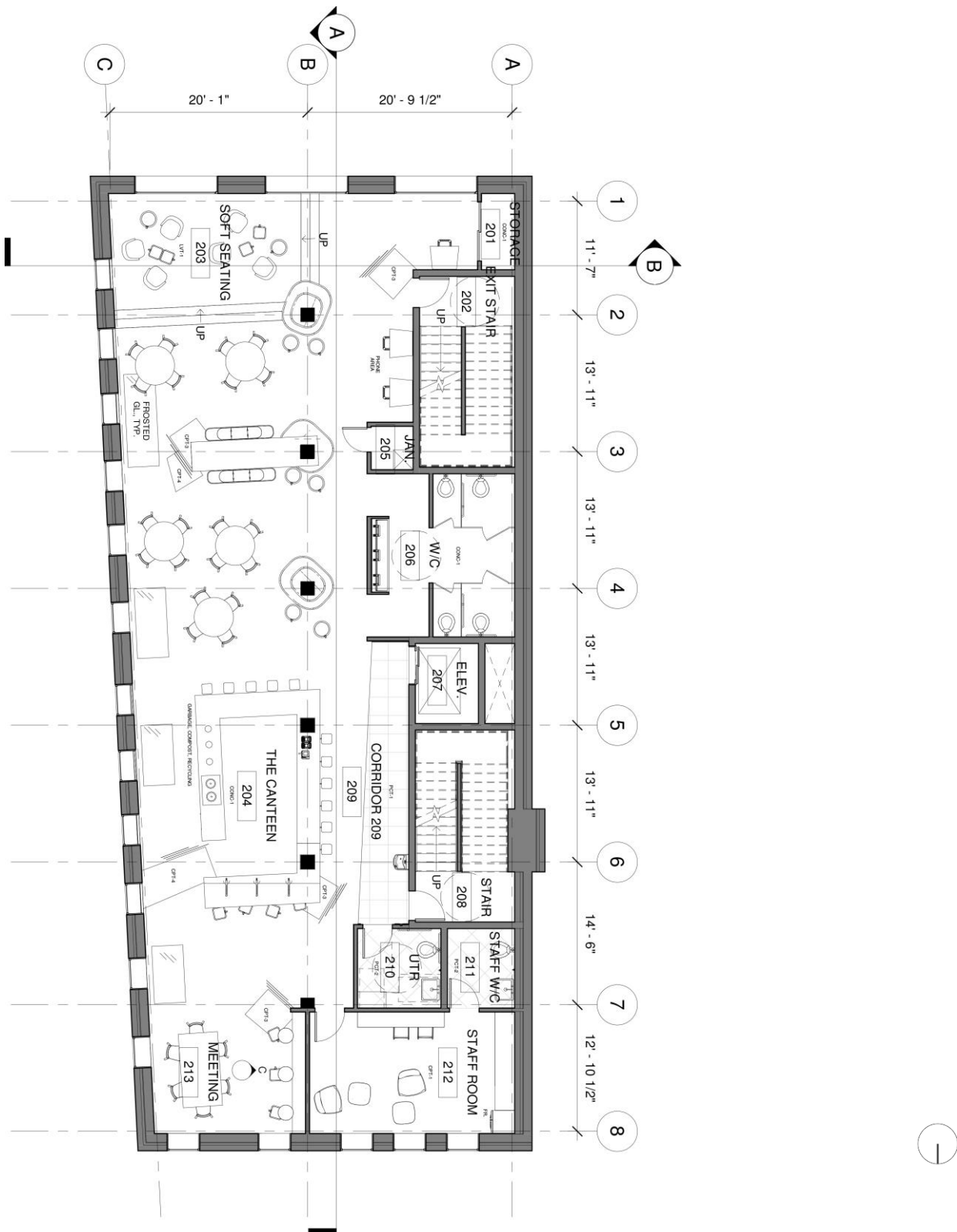
Appendix A: Technical Drawings

A.1 Floor Plans



Floor Plan – Level 1

Scale: Not to Scale



Floor Plan – Level 2

Scale: Not to Scale



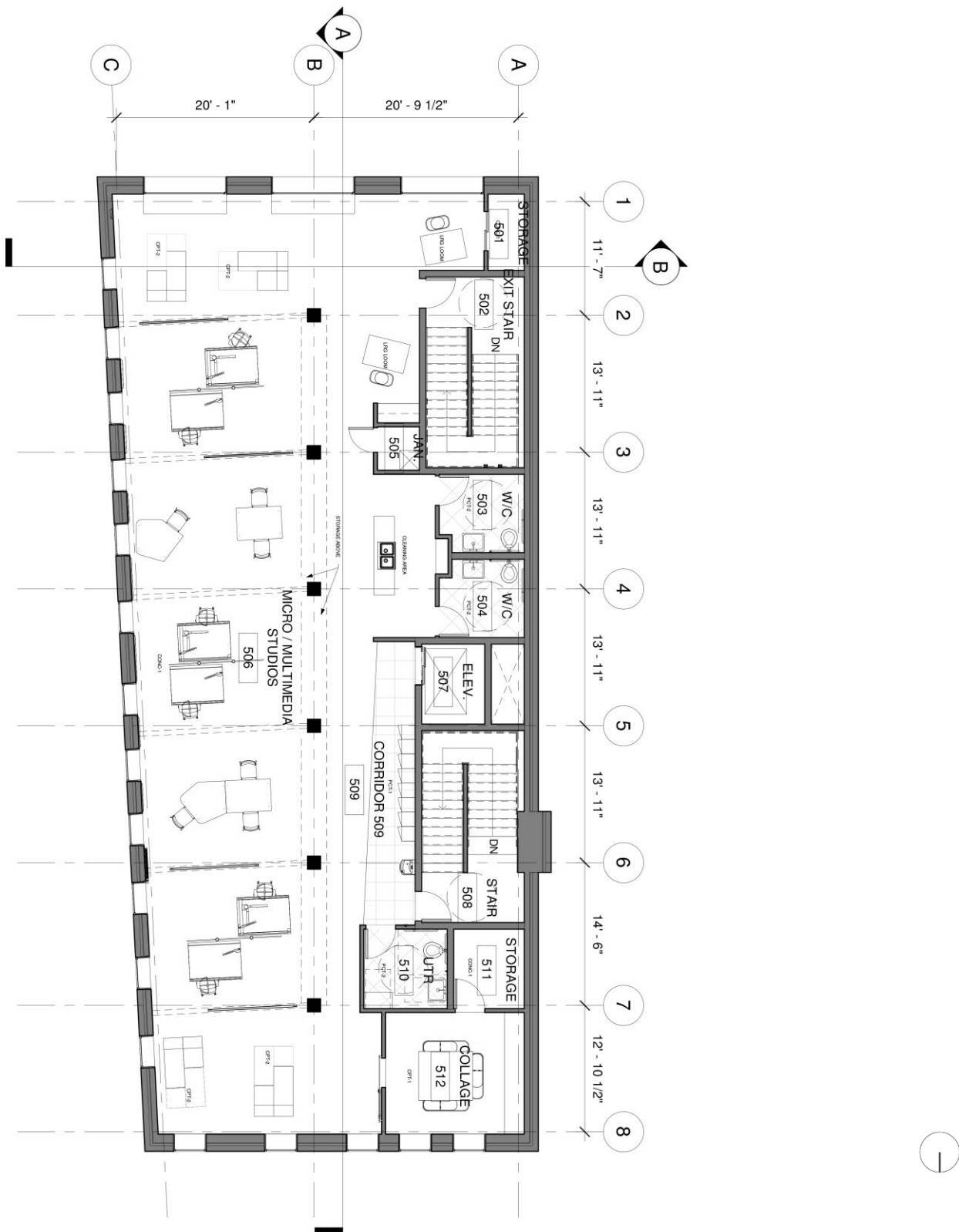
Floor Plan – Level 3

Scale: Not to Scale



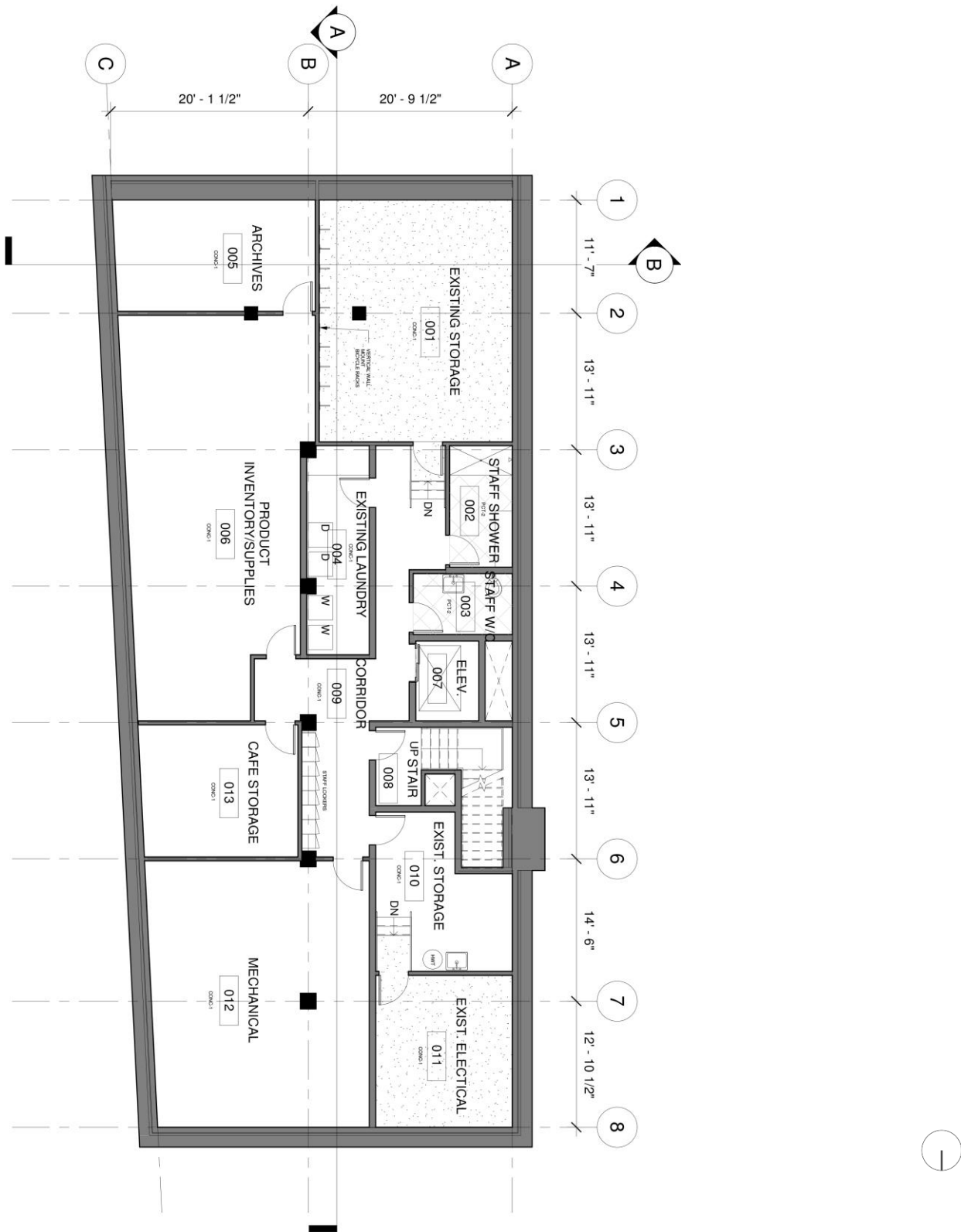
Floor Plan – Level 4

Scale: Not to Scale



Floor Plan – Level 5

Scale: Not to Scale
















Floor Plan – Level 0

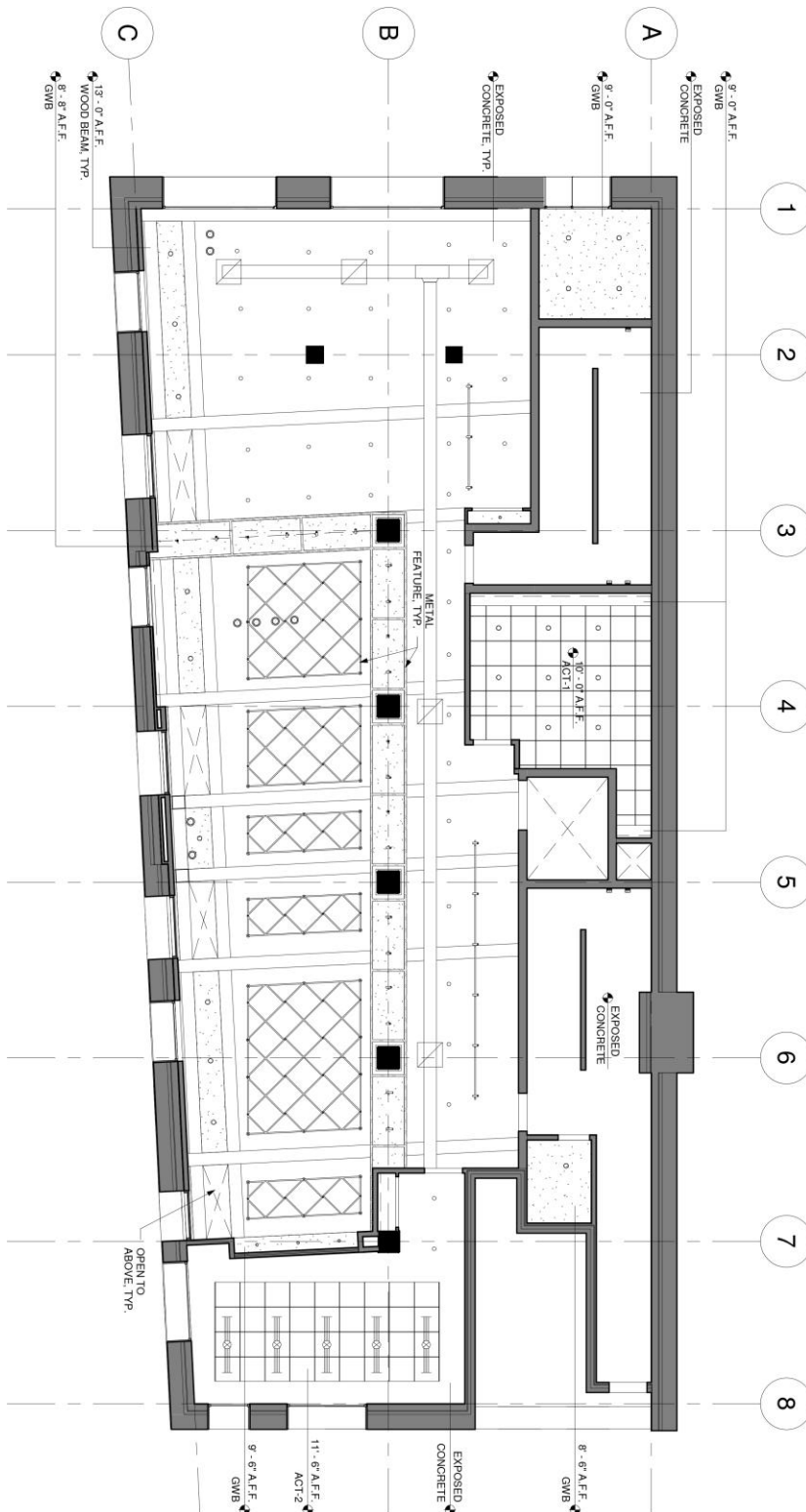
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A.2 Reflected Ceiling Plans

Reflected Ceiling Plan Legends

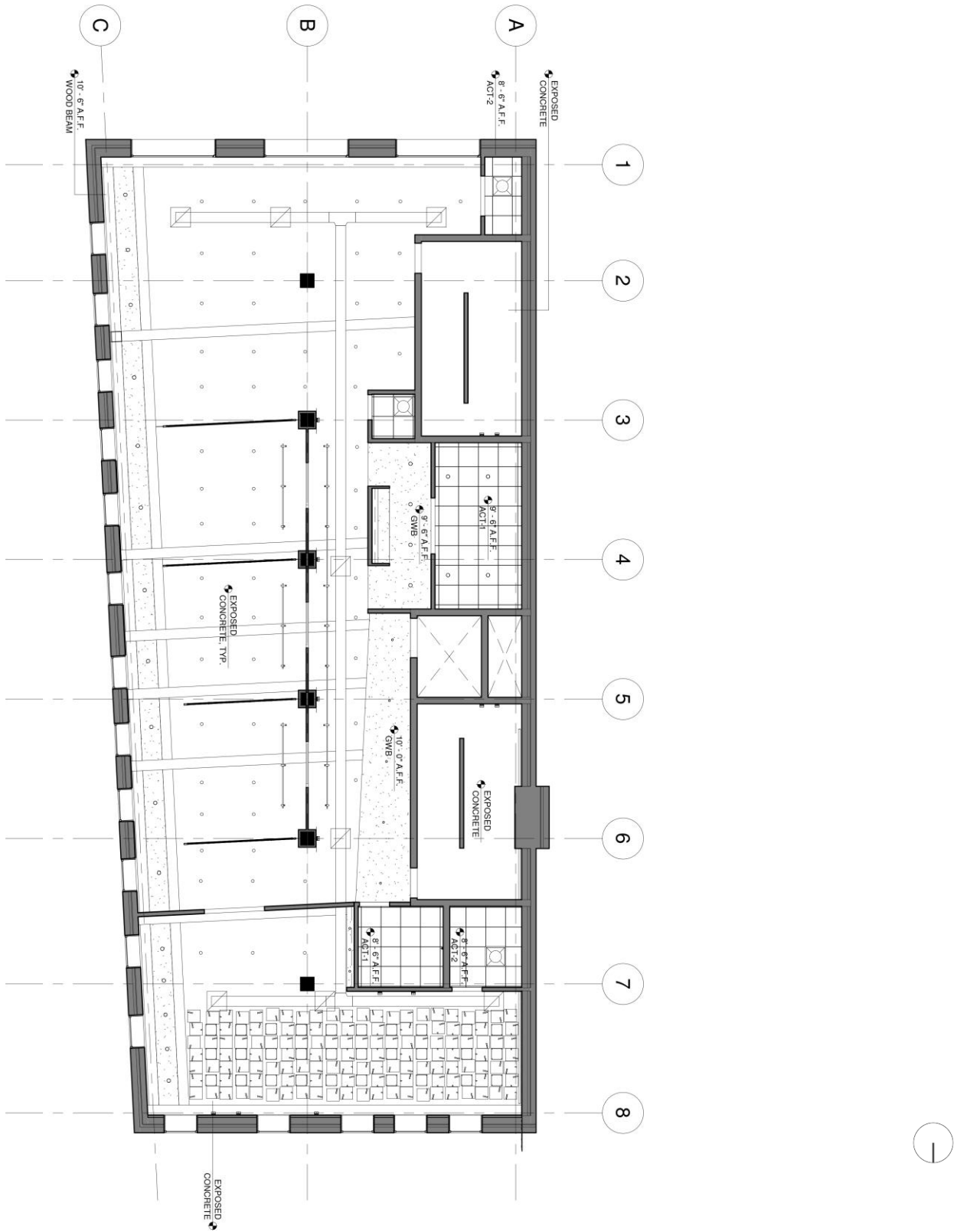
SYMBOL LEGEND			
BLOCK:	DETAILS:	BLOCK:	DETAILS:
	HVAC RETURN		PENDANT
	SUSPENDED LED TROFFER		LED TROFFER
	2" RECESSED DOWNLIGHT		LED LINEAR LIGHTING
	4" RECESSED DOWNLIGHT		WALL SCONCE
	6" SURFACE MOUNTED DOWNLIGHT		TRACK LIGHTING
	PENDANT		PENDANT
	SUSPENDED LED TROFFER		

FINISH LEGEND	
SYMBOL:	DETAILS:
	GWB
	ACT
	SUSPENDED METAL



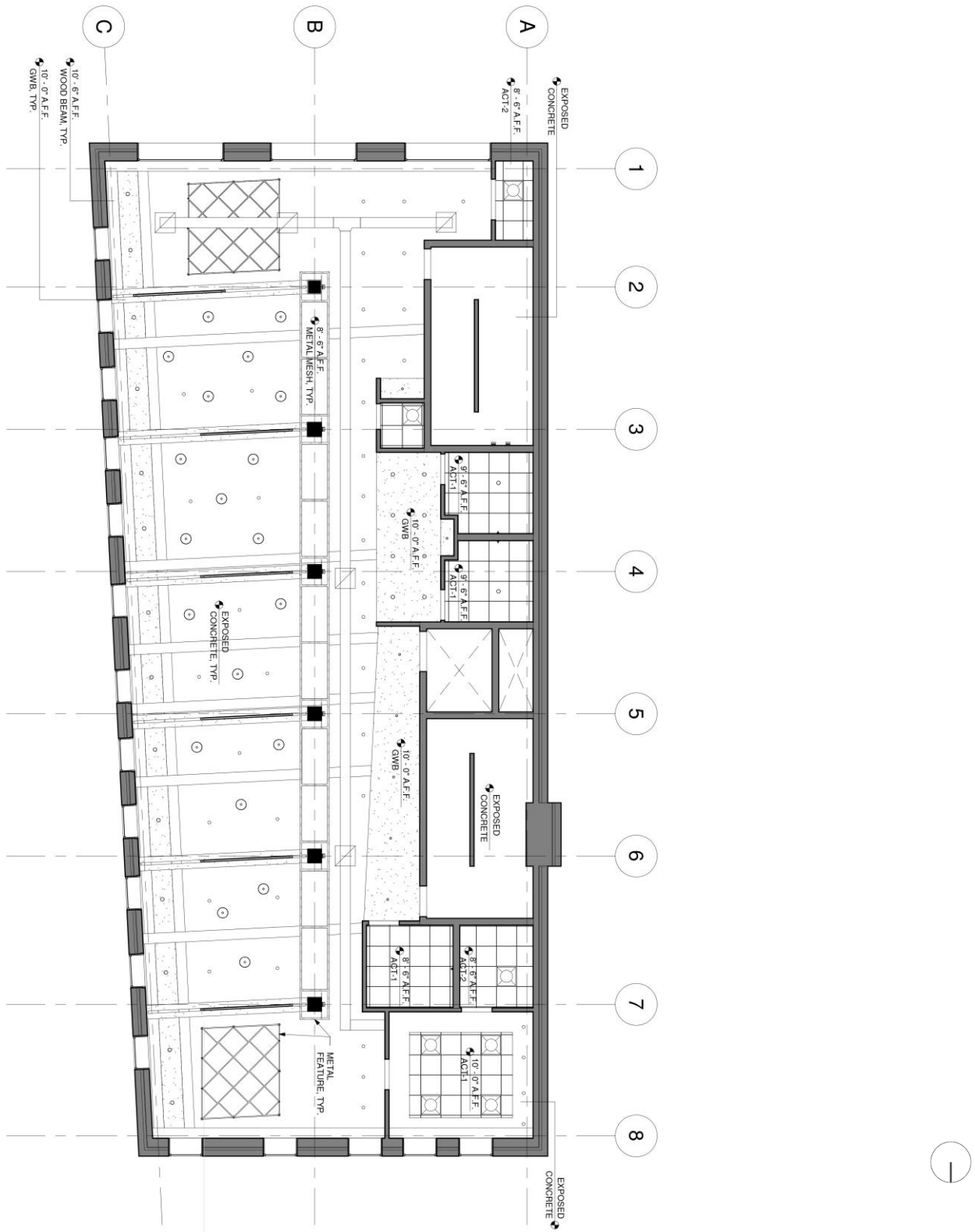
Reflected Ceiling Plan – Level 1

Scale: Not to Scale



Reflected Ceiling Plan – Level 4

Scale: Not to Scale

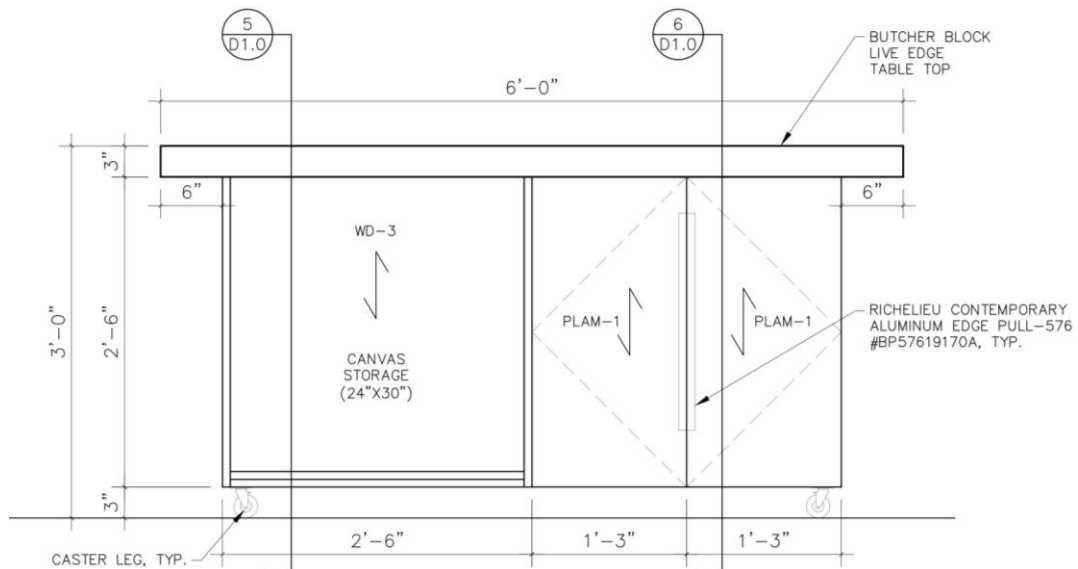
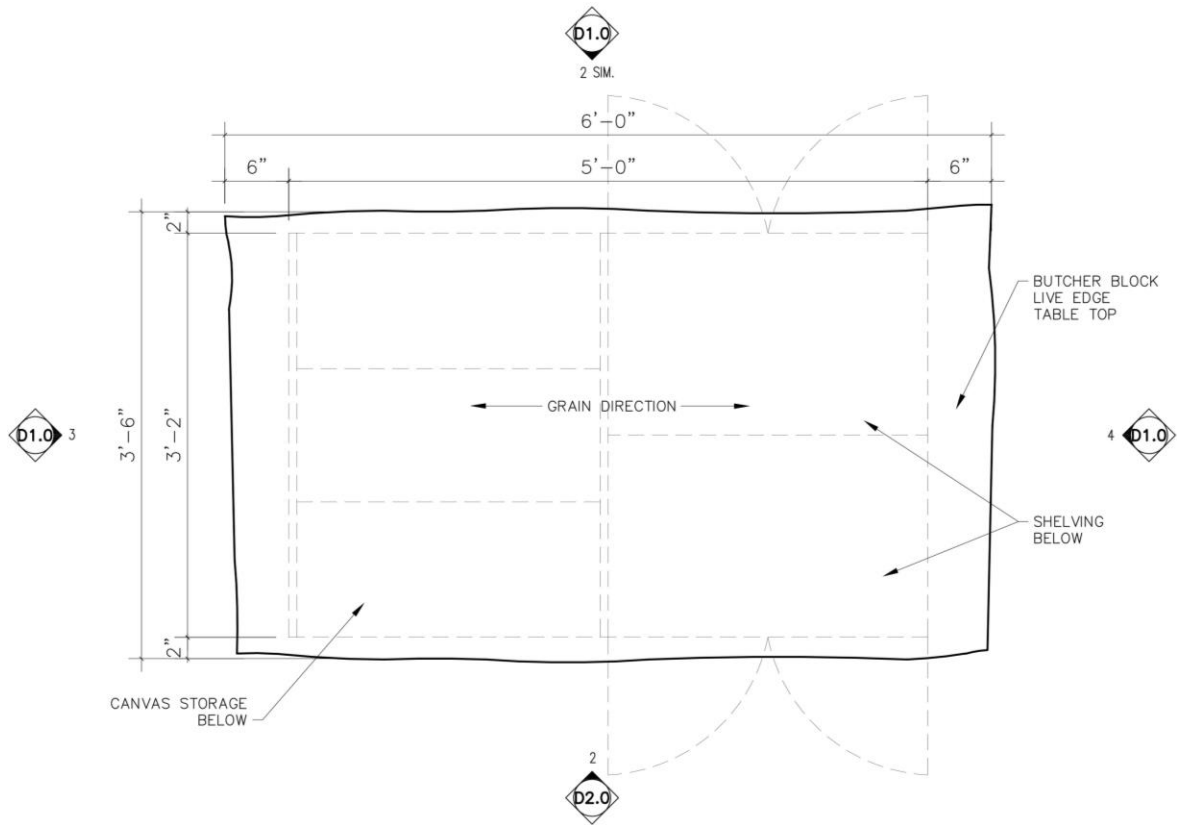


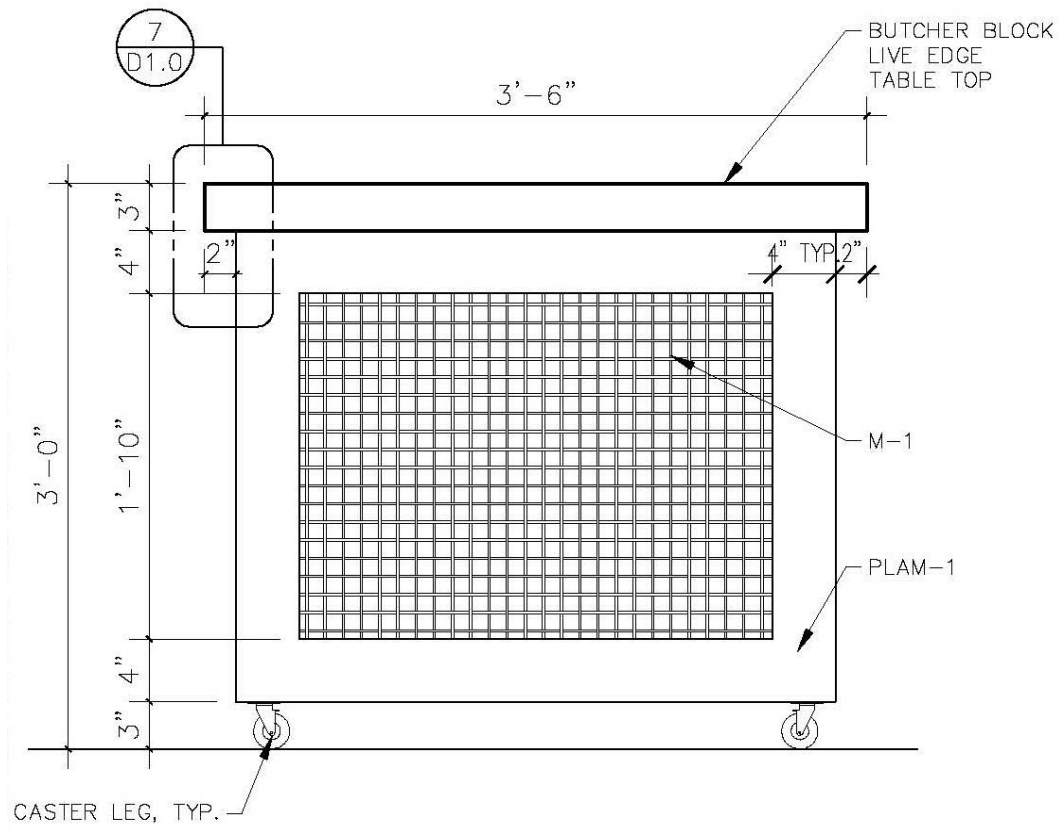
Reflected Ceiling Plan – Level 5

Scale: Not to Scale

A.3 Details

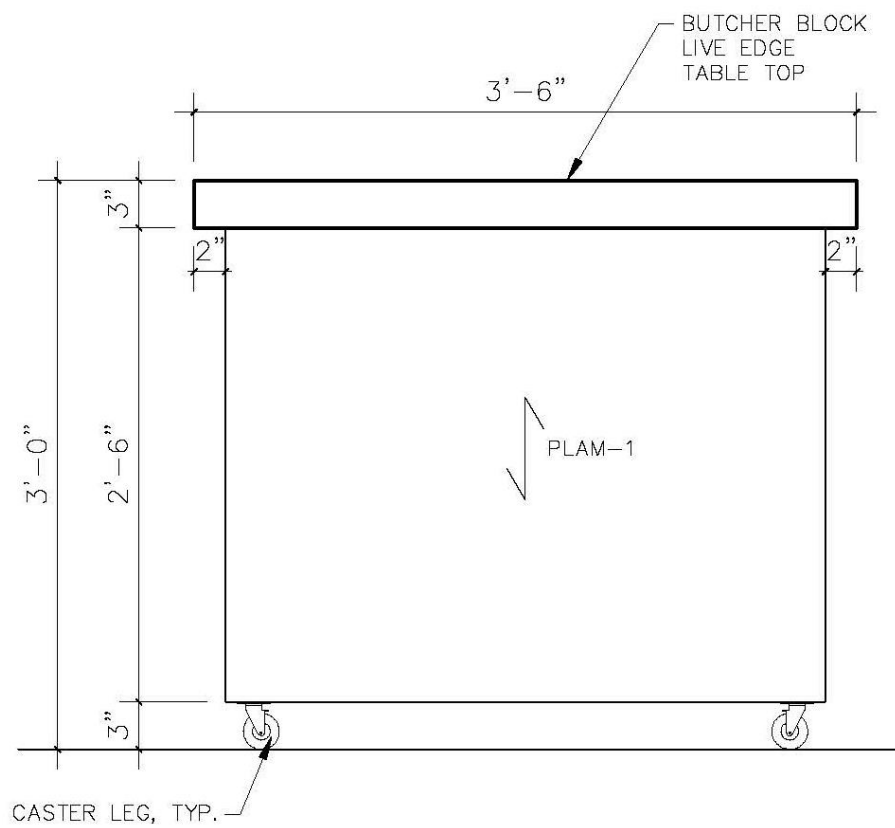
The following detail represents the moveable worktables located throughout Make It.





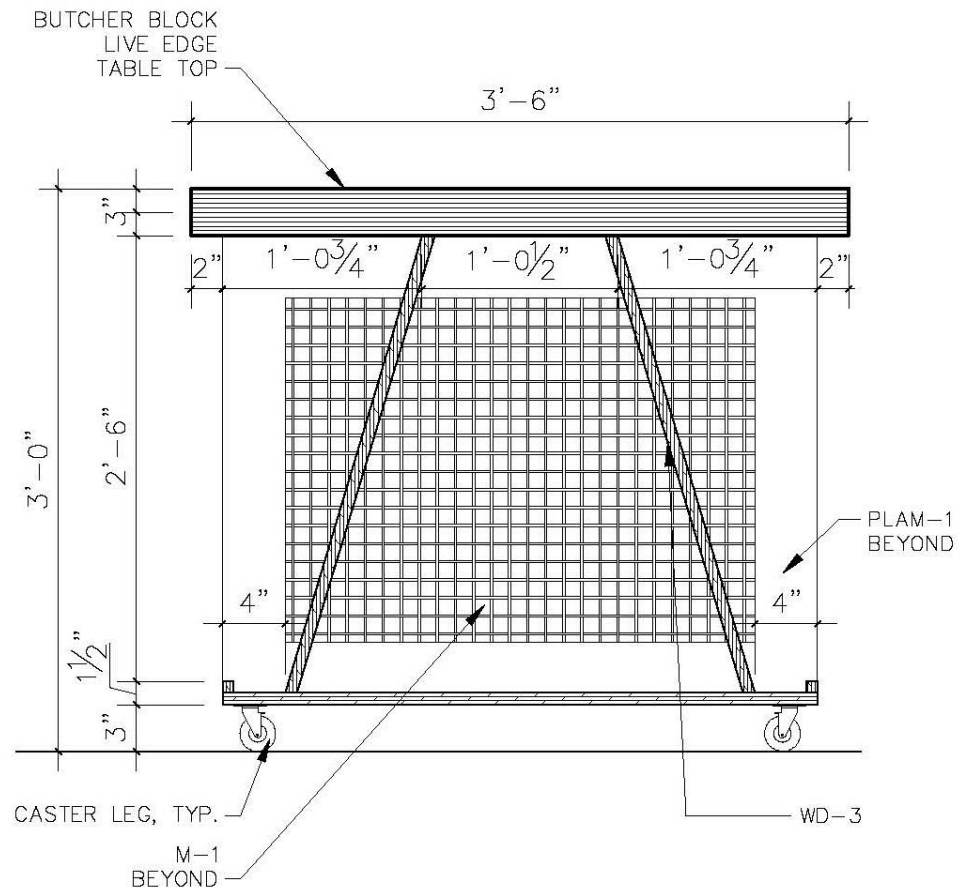
Detail 1.0 - 3: Elevation

Scale: 1" = 1' - 0"



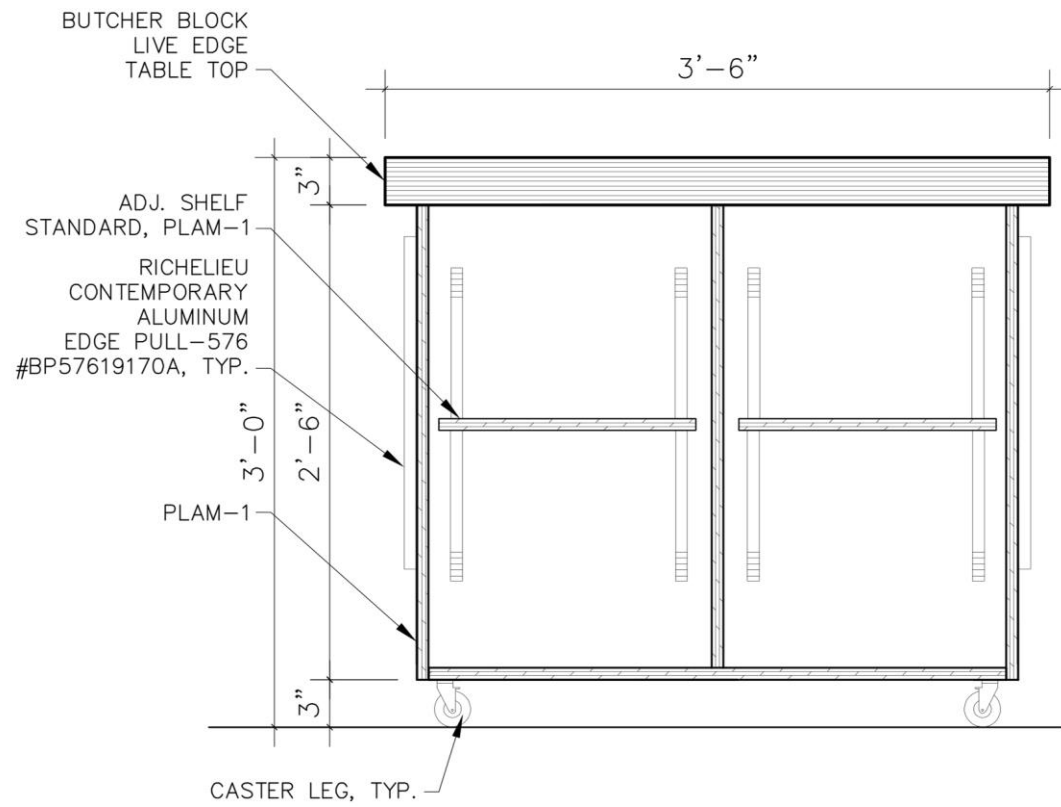
Detail 1.0 – 4: Elevation

Scale: 1" = 1' – 0"



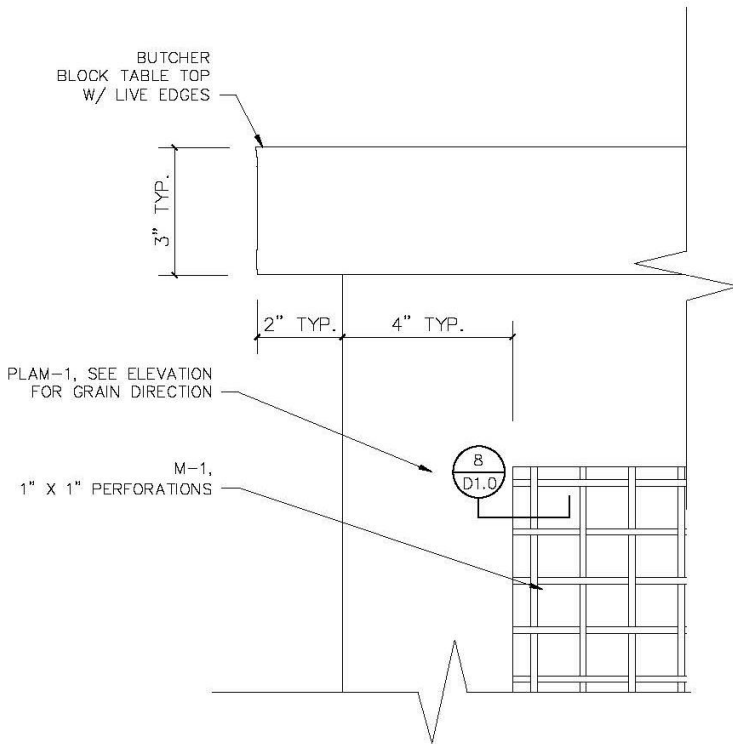
Detail 1.0 - 5: Section

Scale: 1" = 1' - 0"



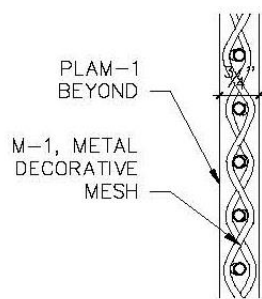
Detail 1.0 – 6: Section

Scale: 1" = 1' – 0"



Detail 1.0 – 7: Detail

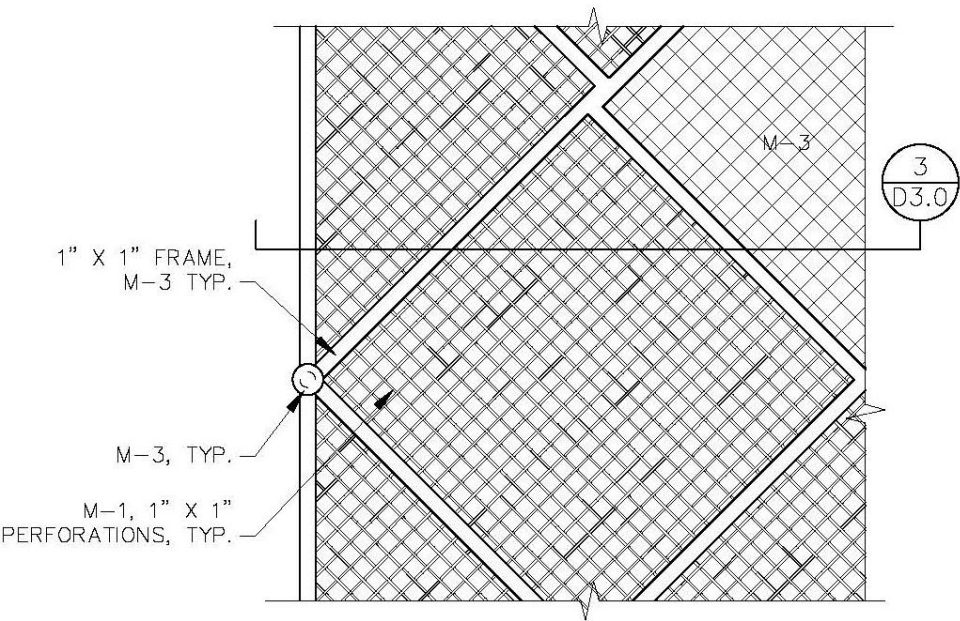
Scale: 3" = 1' – 0"



Detail 1.0 – 8: Detail

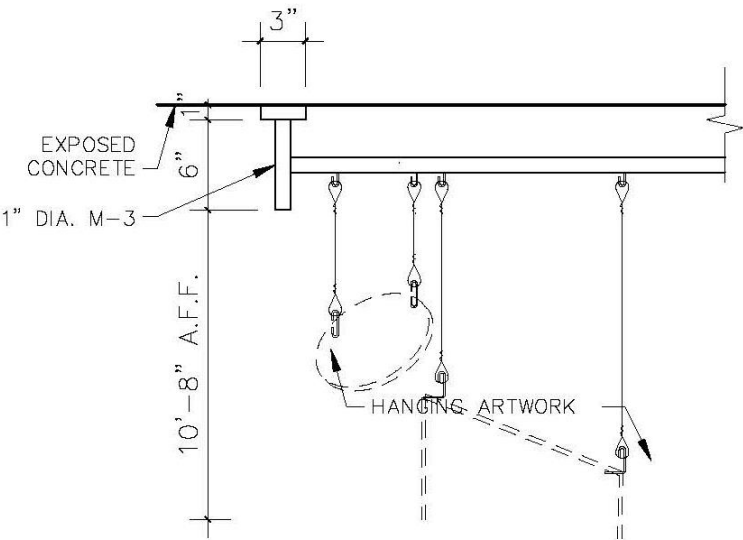
Scale: 3" = 1' – 0"

The following detail represents the metal ceiling feature on the fifth floor.



Detail 3.0 – 1: Plan

Scale: NTS



Detail 3.0 – 2: Elevation

Scale: 1" = 1' – 0"

Appendix B: Materials and Finishes

B.1 Material Schedule

Material Schedule					
Abbreviation	Material	Distributor	Product Name	Code	Colour
Flooring:					
PCT-1	Porcelain Tile	Julian Tile	Studio 60	B36	White
PCT-2	Porcelain Tile	Julian Tile	Studio 60	B36	Graphite
PCT-3	Porcelain Tile	Shaw Floors	Resurgence Mix	TG19D 00591	Opal
CONC-1	Concrete Sealant	Sika	Sika Film	-	Aggregate
LVT-1	Luxury Vinyl Tile	Shaw Floors	Reside 12 Mil	4094V 94740	Retreat
WP-1	Reclaimed WD Plank	Local wood flooring.	-	-	White Ash
CPT-1	Carpet Tile	Shaw Contract	Living Systems Source	5T315 05405	Oceans
CPT-2	Rug	Haworth	Bandas Space	-	Varies
CPT-3	Carpet Tile	Shaw Contract	Color Frame Tile	5T081 81211	Glowing
CPT-4	Carpet Tile	Shaw Contract	Color Frame Tile	5T081 81675	Mojo
CPT-5	Carpet Tile	Shaw Contract	Custom		
Walls:					
RB-1	Rubber Wall Base	Johnsonite	Traditional Vinyl 6"	440034063	Thunder
PT-1	Paint	Pantone	-	11-0602	Snow White
PT-2	Paint	Pantone	-	14-0952	Spicy Mustard
PT-3	Paint	Pantone	-	10 C	Cool Gray
PT-4	Paint	Pantone	-	11-0601	Bright White
WT-1	Wall Tile – Mosaic	Appiani	Metallica	MTLC412	Acciaio
WT-2	Wall Tile – Ceramic	Ceratec Tile	Habitat	25399	Cala Glacier
VWC-1	Vinyl Wall Covering	Metro Wallcovering	Custom Digital Print	-	-
VWC-2	Vinyl Wall Covering	Metro Wallcovering	Custom Digital Print	-	-
BR-1	Brick	-	Exist. interior brick.	-	-
BR-2	Brick	I-XL Building Products	To match exist. exterior.	-	-
BR-3	Brick	I-XL Building Products	Tundra Brick	BRF-0001	Chalk Dust
Ceilings:					
ACT-1	Acoustic Ceiling Tile	Armstrong Ceiling	Metalworks Tin	56005	Artisan Silver
ACT-2	Acoustic Ceiling Tile	Armstrong Ceiling	Calla Square Lay-In	2820	White

Material Schedule Cont.					
Abbreviation	Material	Distributor	Product Name	Code	Colour
Millwork:					
QZ-1	Quartz	Cambria Quartz	-	-	Charlestown
QZ-2	Quartz	Cambria Quartz	-	-	Smithfield
QZ-3	Quartz	Caesarstone	Metropolitan Collection	4033	Concrete
PLAM-1	Plastic Laminate	Wilsonart	High Pressure Laminate	Y0431-60	Glacier Aspen
PLAM-2	Plastic Laminate	Wilsonart	High Pressure Laminate	Y0274-22	Cornflower Milk Paint
PLAM-3	Plastic Laminate	Wilsonart	High Pressure Laminate	4882-38	Oiled Soapstone
WD-1	Wood Stain	-	To match sample stain.	-	Walnut
WD-2	Wood Stain	-	To match sample stain.	-	Cherry
WD-3	Wood Stain	-	To match sample stain.	-	Light Oak
Furnishing:					
FB-1	Fabric	Blu Dot	Thurmond	-	Charcoal
FB-2	Fabric	Blu Dot	Thurmond	-	Citron
FB-3	Fabric	Blu Dot	Thurmond	-	Wheat
FB-4	Fabric – Leather	Maharam	Tinge	700010-006	Lavish
FB-5	Fabric – Leather	Maharam	Tinge	700010-002	Clementine
FB-6	Fabric – Vinyl	Maharam	Lariat	440401-002	Russet
FB-7	Fabric	Haworth	Bandas Space	ZN-A01	Dark Grey
FB-8	Fabric	Haworth	Bandas Space	ZN-C03	Medium Orange
FB-9	Fabric	Haworth	Bandas Space	ZN-C01	Green
FB-10	Fabric	Maharam	Buoyant	511280-006	Aquarium
FB-11	Fabric	Maharam	Etch	466502-002	Ochre
FB-12	Fabric	Maharam	Custom Digital Print	-	Multicolour
FB-13	Fabric	Loom Décor	Global Charming	-	Cinder
Other:					
M-1	Metal Mesh	GKD Metal Fabrics	Metal Decorative Mesh	Delta 16	Stainless Steel
M-2	Metal Frame	-	Custom	-	Iron
M-3	Metal Ceiling Feature	-	Custom	-	Bronze

B.2 FF&E Selections



B.3 Room Finish Schedule

Room Finish Schedule								
No.	Room Name	Floor Finish	Base	Wall Finish				Ceiling Finish
				North	East	South	West	
001	EXIST. STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
002	STAFF SHOWER	PCT-2	PCT-2	PT-1	PT-1	WT-1	PT-1	GWB-PT-4
003	STAFF W/C	PCT-2	PCT-2	PT-1	PT-1	PT-1	PT-1	GWB-PT-4
004	EXIST. LAUNDRY	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	GWB-PT-4
005	ARCHIVES	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
006	INVENTORY	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
007	ELEVATOR	PCT-1	PCT-1	See manufacturer for finish options.				
008	STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
009	CORRIDOR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
010	EXIST. STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
011	EXIST. ELECTRICAL	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
012	MECHANICAL	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
013	STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
101	ENTRY	PCT-1	PCT-1	PT-1	PT-1	BR-2	BR-2	GWB-PT-4
102	EXIT STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
103	LOBBY	CONC-1	RB-1	-	-	BR-2	PT-1	EXPOSED
104	RETAIL	CONC-1	RB-1	PT-1	PCT-1	BR-2	PT-1	EXPOSED
105	JANITOR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	GWB-PT-4
106	W/C	PCT-2	PCT-2	PT-1	PT-1	WT-2	PT-1	ACT-1
107	ELEVATOR	PCT-1	PCT-1	See manufacturer for finish options.				
108	STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
109	EXHIBITION	PCT-1	PCT-1	PT-1	-	PT-1	PT-1	EXPOSED
110	COMMUNAL	CONC-1	PCT-1	BR-1	PCT-1	-	PT-1	M-3
111	OFFICE	CPT-1	CPT-1	PT-1	PT-1	PT-1	PT-1	ACT-2
201	STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2
202	EXIT STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
203	SOFT SEATING	LVT-1	RB-1	-	VWC-1	BR-2	-	EXPOSED
204	THE CANTEEN	CONC-1	RB-1	PT-1	VWC-1	-	-	M-3
205	JANITOR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2

Room Finish Schedule Cont.								
No.	Room Name	Floor Finish	Base	Wall Finish				Ceiling Finish
				North	East	South	West	
206	W/C	CONC-1	PCT-2	PT-1	PT-1	PT-1	WT-2	ACT-1
207	ELEVATOR	PCT-1	PCT-1	See manufacturer for finish options.				
208	STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
209	CORRIDOR	PCT-1	PCT-1	PT-1	-	PT-1	PT-1	GWB-PT-4
210	UTR	PCT-2	PCT-2	PT-1	PT-1	PT-1	PT-1	ACT-1
211	STAFF W/C	PCT-2	PCT-2	PT-1	PT-1	PT-1	PT-1	ACT-1
212	STAFF ROOM	CPT-1	CPT-1	BR-1	PT-3	PT-1	WT-2	EXPOSED
213	MEETING	CONC-1	RB-1	BR-2	VWC-1	PT-1	PT-2	EXPOSED
301	STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2
302	EXIT STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
303	TEXTILES	CPT-5	RB-1	PT-1	BR-2 / M-1	BR-2	PT-1	EXPOSED
304	MAKING	CONC-1	RB-1	PT-3	BR-2 / M-1	-	-	EXPOSED
305	JANITOR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2
306	W/C	CONC-1	PCT-2	PT-1	PT-1	PT-1	WT-2	ACT-1
307	ELEVATOR	PCT-1	PCT-1	See manufacturer for finish options.				
308	STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
309	CORRIDOR	PCT-1	PCT-1	PT-1	-	PT-1	PT-1	GWB-PT-4
310	UTR	PCT-2	PCT-2	PT-1	PT-1	PT-1	PT-1	ACT-1
311	KILN ROOM	CONC-1	RB-1	PT-1	PT-1	PT-1	BR-2	ACT-2
312	CLAY / GLAZE	CONC-1	RB-1	PT-1	PT-1	PT-1	BR-2	ACT-2
313	CERAMIC AREA	CONC-1	RB-1	BR-3	BR-2	PT-1	PT-1	EXPOSED
401	STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2
402	EXIT STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
403	PAINTING AREA	PCT-3	RB-1	PT-1	BR-2 / M-1	BR-2	PT-1	EXPOSED
404	DRAWING AREA	CONC-1	RB-1	PT-3	BR-2 / M-1	-	-	EXPOSED
405	JANITOR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2
406	W/C	CONC-1	PCT-2	PT-1	PT-1	PT-1	WT-2	ACT-1
407	ELEVATOR	PCT-1	PCT-1	See manufacturer for finish options.				
408	STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
409	CORRIDOR	PCT-1	PCT-1	PT-1	-	PT-1	PT-1	GWB-PT-4
410	UTR	PCT-2	PCT-2	PT-1	PT-1	PT-1	PT-1	ACT-1

Room Finish Schedule Cont.								
No.	Room Name	Floor Finish	Base	Wall Finish				Ceiling Finish
				North	East	South	West	
411	STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	BR-2	ACT-2
412	WORKSHOP	CONC-1	RB-1	BR-3	BR-2	PT-1	VWC-2	WD-1
501	STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2
502	EXIT STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
503	W/C	PCT-2	PCT-2	PT-1	PT-1	PT-1	WT-2	ACT-1
504	W/C	PCT-2	PCT-2	PT-1	PT-1	PT-1	WT-2	ACT-1
505	JANITOR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	ACT-2
506	STUDIOS	CONC-1	RB-1	BR-2	BR-2 / M-1	BR-2	PT-1	EXPOSED
507	ELEVATOR	CONC-1	PCT-1	See manufacturer for finish options.				
508	STAIR	CONC-1	RB-1	PT-1	PT-1	PT-1	PT-1	EXPOSED
509	CORRIDOR	PCT-1	PCT-1	PT-1	-	PT-1	PT-1	GWB-PT-4
510	UTR	PCT-2	PCT-2	PT-1	PT-1	PT-1	PT-1	ACT-1
511	STORAGE	CONC-1	RB-1	PT-1	PT-1	PT-1	BR-2	ACT-2
512	COLLAGE	CPT-1	CPT-1	PT-1	PT-1	PT-1	BR-2	ACT-1

Appendix C: Building Code Review

The following code review is excerpted from the 2015 National Building Code of Canada as it pertains to the practicum project:

3.1 General

Major Occupancy: GROUP A DIVISION 2, UP TO 6 STOREY'S, ANY AREA, SPRINKLERED

Building Area: 21, 600

Building Height: 6 STOREY

Building Protection: SPRINKLERED

Building Facing: 3 STREETS

Building Construction: NON-COMBUSTIBLE CONSTRUCTION

Floor Assemblies: FIRE RESISTANCE RATING NOT LESS THAN 1 HR

Walls and Columns: FIRE RESISTANCE RATING NOT LESS THAN 1 HR

3.1.17.1 Occupant Load Determination:

Level 1 Total Occupant Load = 125 Persons ($m^2/person$)

Level 2 Total Occupant Load = 181 Persons ($m^2/person$)

Level 3 Total Occupant Load = 172 Persons ($m^2/person$)

Level 4 Total Occupant Load = 140 Persons ($m^2/person$)

Level 5 Total Occupant Load = 46 Persons ($m^2/person$)

Level 0 Total Occupant Load = 6 Persons ($m^2/person$)

3.2 Building Fire Safety

3.2.2.10 Streets:

Every building shall face a street located in conformance with the requirements of Articles 3.2.5.4 and 3.2.5.5. for access routes.

3.2.5.4 Access Routes:

A building which is more than 3 storeys in building height or more than 600 m^2 in building area shall be provided with access routes for fire department vehicles

- a) to the building face having a principal entrance, and
- b) to each building face having access openings for firefighting as required by Articles 3.2.5.1 and 3.2.5.2.

3.2.5.5 Location of Access Routes:

Access routes required by Articles 3.2.5.4 shall be located so that the principal entrance and every access opening required by Articles 3.2.5.1 and 3.2.5.2 are located not less than 3 m and not more than 15 m from the closest portion of the access route required for fire department use, measured horizontally from the face of the building.

3.4 Exits

3.4.2.1 Minimum Number of Exits:

Every floor area intended for occupancy shall be served by at least 2 exits as per 3.4.2.1(1).

3.4.2.3 Distance between Exits:

The least distance between two exits from a floor area shall be one half the maximum diagonal dimension of the floor area, but need not be more than 9m for a floor area having a public corridor.

Max. diagonal distance = 31.7m

Min. distance between exits = $31.7\text{m} / 2 = 15.85\text{m}$

3.4.2.5 Location of Exits:

If more than one exit is required from a floor area, the exits shall be located so that the travel distance to at least one exist shall be not more than 30m in an assembly occupancy as per 3.4.2.5(f).

3.7 Health Requirements

3.7.2.2 Water Closets

The number of water closets required for assembly occupancies shall conform to Table 3.7.2.2. - A.

Level 1: 62 Males	2	
62 Females	3	= 5 total
Level 2: 90 Males	2	
90 Females	4	= 6 total
Level 3: 86 Males	2	
86 Females	4	= 6 total
Level 4: 70 Males	2	

70 Females	3	= 5 total
Level 5: 23 Males	1	
23 Females	1	= 2 total

Level 0: (4) Both sexes are permitted to be served by a single water closet if the occupant load in an occupancy referred to in Sentence (6), (10), (12), (13), (14) or (16) is not more than 10.

3.7.2.3 Lavatories

At least one lavatory shall be provided in a room containing one or 2 water closets or urinals, and at least one additional lavatory shall be provided for each additional 2 water closets or urinals.

3.8 Barrier Free Design

3.8.1.3 Barrier Free Path of Travel:

The unobstructed width of a barrier free path of travel shall be not less than 1100mm as per 3.8.1.3(1).

3.8.1.3 Barrier Free Path of Travel:

A washroom in a storey to which a barrier free path of travel is required shall be barrier free as per 3.8.2.3(1).