Accelerating esports Professionalism: Designing for Player Well-Being

by

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A Practicum submitted to the
Faculty of Graduate and Postdoctoral Studies
of the University of Manitoba
in partial fulfilment of the requirements of the degree of

Master of Interior Design

Department of Interior Design
Faculty of Architecture
University of Manitoba
Winnipeg

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Abstract

esports, or Electronic Sports, is accelerating into one of the fastest growing professional sports in the world. With extreme ease of access for both viewers and players, esports is on track to reach a peak viewership of 577 million by 2024, containing a viewbase of 291.6 million casual viewers and 285.7 dedicated viewers.[1] As the esports profession starts reaching maturity, the surrounding infrastructure is still infantile in its conception. This practicum proposes to invite changes into how designing for esports is thought out and achieved through targeting various elements that appear lacking within current esports infrastructure. Utilizing theories such as Environmental context, cognitive load and periodization, this practicum aims to provide a space dedicated to the professional athletes for superior practice conditions and the ability to further hone their skills. In conjunction with the above theories, Interior Design principles, such as ergonomics and anthropometrics, will provide ample help to alleviate the ongoing risk of physical and mental injuries seen within the profession. Lastly, an in depth look at the current facilities and their negative attributes will be conducted in order to further advance the design of the new facility. Using the above principles, this practicum aims to elevate the spaces esports professionals currently inhabit by providing an overhaul on how esports facilities have been designed. Resulting improvements can include enhanced training atmospheres, as well as reduced physical and mental ailments. These changes will continue to propel Professional esports towards success by including purposefully designed spaces, contrary to the systems we currently see.

[1] Werner Geyser, “The Incredible Growth of eSports [+ eSports Statistics],” Influencer Marketing Hub, last modified January 30, 2024, https://influencermarketinghub.com/esports-stats/#toc-0.

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Acknowledgments

Through my long journey in this process, there have been many individuals who have helped support and guide me. I wish to express my thanks, in no particular order to all those individuals who have been on the receiving end of this madness.

Jason Shields, for your continued support and faith in me to complete the program. I know it was never easy, and I kept you on your toes waiting, very, **very** patiently, for work to trickle in. Your continued enthusiasm in the project kept the flickering flame alive when I was ready to throw in the towel. Thank you for always providing kind guidance and words of support, being available as often as you were and feedback and thoughts on the entire process.

Dr. Cynthia Karpan, for your support throughout the process. It was a long time ago in which I asked you to be on the committee and you supported me through the struggles I had by providing feedback and support as needed. Thank you for your extended patience and consideration, and your time teaching us as a professor. It was truly an honour to learn from you.

Dr Celine Latulipe, for being available and jumping into the committee when asked. I sincerely appreciate you taking on this role despite having your own students to mentor. Thank you for providing an outside perspective on the project, allowing me to consider other perspectives on the project that may have been missed otherwise.

Tijen Roshko, your guidance and jovial spirit pushed me to develop my skills in the undergraduate program. You pushed me to exceed expectations and have a higher ceiling of design. Your words of encouragement to enter into the Masters program helped me further my education and ability. I also cherish the moments spent being a teaching assistant by your side as not only did that provide further experience to elevate my design skills, it provided laughter and camaraderie during those times. Thank you for believing in me and pushing me to strive for the best design. I cannot understate the impact you've had on my design career.

To my colleagues at Sputnik Architecture, I know it's been a long time since joining you to the completion of this project, and most of it done in the background, but your guidance and friendship has helped me grow as a designer daily. It's been wonderful to work with you all.

I would also like to thank my family for their support, care and jokes on my behalf. Your unwavering support allowed me to make it to the end of this process, even though you claimed you wouldn't care if I didn't finish. You supported me through the tough times

when I was struggling and provided guidance as requested. It is because of you that I remained somewhat sane during this process and lo and behold, I think I finally figured it out this weekend!

To my cast of fellow studio members, Kara Aiello, Haley Littleford and Kian Wong. It may have taken me a while to finally catch up to you all, but I'm finally there. Our struggles together made the long nights and big efforts worth it. Thanks for being my friend.

Finally, to my life partner Emily. Words cannot express the appreciation I have for your support and care. You walked with me through the darkest moments when I was struggling and provided me support to keep working at it. Your consistent care and attention helped me to manage the difficult times. I honestly couldn't have had a better person at my side to go through all this. Thank you for allowing me to lean on you for discussing design decisions, trivial questions about the smallest of details and all the aspects of the process. Our little team, with Lemon and Stella, was the greatest supporting cast I could ask for. You have helped me grow as a person and become a more rounded individual. I sincerely thank you for everything.

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Key Terms

esports - a multiplayer video game played competitively for spectators, typically by professional gamers.[2] (Also known as Electronic Sports)

Team Homes / gaming houses - A living arrangement for professional esports players to live and train under the same roof.

MOBA - Stands for Massive Online Battle Arena. Is one genre of video games in which two teams fight strategically on a predetermined battlefield. This is one genre of games that often has the most draw within the esports world.

RTS - Real Time Strategy. Another video game genre often associated with one versus one games.

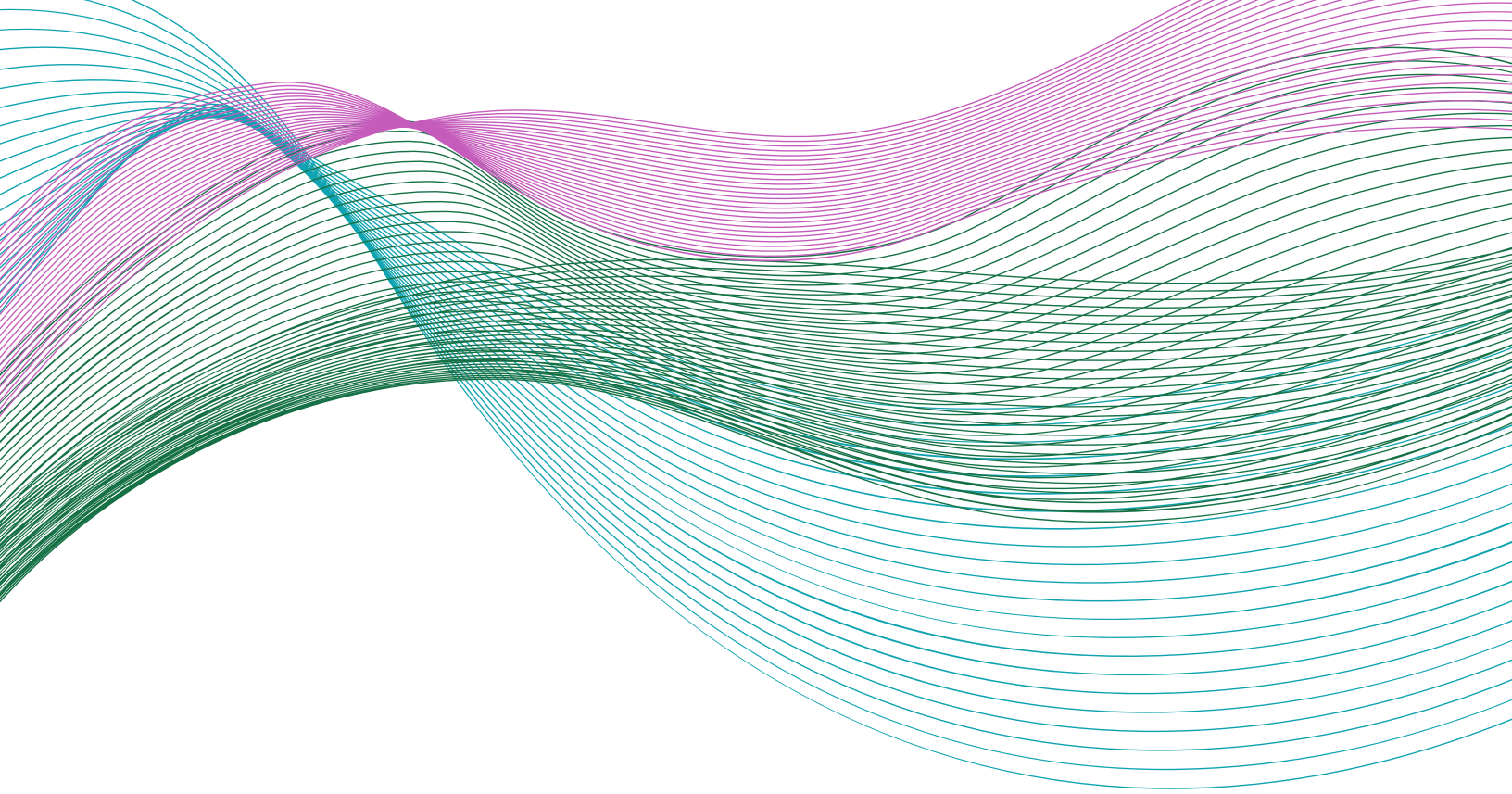
FPS - First Person Shooter. A genre often associated with guns and other weaponry, where players play with a first person perspective. i.e. action experienced through the characters eyes or perspective.

BR - Battle Royal. A genre where combatants are within an arena, battling to be the last player or team alive.

Environmental Psychology - Study of the interaction of human behavior on the physical built setting.

“Stage” games - The professional matches that make up the regular season / playoffs. Usually played on stage in front of a live audience.

[2] "esports." *Lexico.com* 2020. https://www.lexico.com/en/definition/e-sport (15 May 2020).



1.0 PROJECT OVERVIEW

1.1 INTRODUCTION
1.2 RATIONAL
1.3 STATEMENT OF INVESTIGATION
1.4 OBJECTIVES
1.5 QUESTIONS OF INQUIRY

1.1 Introduction

esports has become one of the fastest growing professional sports in the world. As of 2022, esports has a global market value eclipsing 1.38 billion U.S. dollars.[3] It's currently estimated that revenues will grow to reach 1.87 billion USD by 2025.[4] Viewership is estimated to eclipse 577 million by 2024 with a viewbase made up of approximately 291.6 million casual viewers and 285.7 million dedicated esports viewers. On top of this growth, it is also estimated that global awareness of esports is expected to reach over 2 billion people.[5] In 2021, the World Championship for League of Legends peaked at 73.8 million concurrent viewers, an increase of 60.33% from the previous year's viewership of 436 million peak concurrent viewers, who tuned in via various streaming services such as Twitch and Youtube.[6] Comparatively the NFL's superbowl, of the same year, boasted 96.4 million viewers on NFL's digital properties and CBS.[7] With such growth, esports is now being considered for the Olympics and is being picked up by sports organizations around the world. The proposed typology for this practicum is a mixed use building, amalgamating a corporate office, public retail and entertainment space with an esports training facility. The inhabitants would coexist within the facility and consist of the corporate staff, the professional esports players, coaching staff and occasional public guests. The facility would include practice space, areas for analysis, recreational hangout zones for the organization, corporate offices and public spaces for

[3] Christina Gough, "Revenue of the Global eSports Market 2020-2025," Statista, December 13, 2023, https://www.statista.com/statistics/490522/global-esports-market-revenue/.
[4] Gough, "eSports Market."
[5] Geyser "Incredible Growth."
[6] Geyser.
[7] Ed Dixon, "2022 Super Bowl Viewing Figures Rise 16% to 112.3m for NBC," SportsPro Media, February 16, 2022, https://www.sportspromedia.com/news/2022-super-bowl-tv-ratings-nbc-streaming-nfl/.

retail and viewing. The aim of the project is to provide a healthy lifestyle system within the facility for both the players and staff. The location proposed would be 310 Ross Avenue, near the Exchange district of Downtown Winnipeg, Manitoba. This location provides good foot traffic and is close proximity to social hubs such as the Forks Market, Downtown Portage and Main, and the Cube, located in the heart of the exchange district. As esports continues to grow in popularity, the traditional sports approach to franchising is becoming more developed in the esports landscape, and providing a purpose built space for the teams, fans and operations will be the first step in bringing that growth to Winnipeg.

1.2 Rational

Paris Saint-Germain, often known better as PSG, one of the best French soccer clubs, have delved into the esports scene with teams in different game genres such as League of legends and Dota 2.[8] They were not the first, nor the last, as other major brands, such as Red Bull, software companies like Alienware and Asus, and celebrities, like DJ Steve Aoki, have also invested into esports with sponsorships or the purchasing of their own teams.[9] With the pace in which esports is establishing itself, the infrastructure surrounding it has yet to experience the same amount of leveling up. Currently, professional players or teams play out of what is known informally as “team houses” or “gaming houses”. Though there are some teams that have started building

[8] Teh Wi-Liam, “Traditional Sporting Organisations with their own eSports Teams,” GosuGamers, June 21, 2021, https://www.gosugamers.net/features/54530-traditional-sporting-organisations-with-their-own-esports-teams.https://www.gosugamers.net/features/54530-traditional-sporting-organisations-with-their-own-esports-teams.
[9] Riad Chikhani, “The 3 Types of eSports Investor: Sports Teams, Celebrities, and Moguls,” VentureBeat, May 15, 2018, https://venturebeat.com/esports/the-3-types-of-esports-investor-sports-teams-celebrities-and-moguls/.

or created more purpose built facilities for esports, the majority of those utilize a corporate typology to their spatial layouts, which doesn't provide the proper atmosphere required for professional players and staff. Physical and mental injuries are well documented within the scene, and cases of burnout often arise due to the high level of stress and workload professional players put in.[10] There is a clear need for esports facilities to be purpose built for the players and staff to inhabit, in order to reduce physical and mental ailments, and provide a healthy working atmosphere. Examples exist within traditional sports training facilities, but as esports doesn't share the same physical conditions, traditional facilities are not ideal. esports needs to provide the best atmosphere for players to develop and train. The stage is set for dedicated esports facilities to develop and evolve as the scene matures. Providing the proper spaces will not only create a healthy and safe atmosphere for all parties, it will further legitimize esports as a publicly perceived sport, which will only further incentivise growth within the scene.

1.3 Statement of Investigation

Originally, esports teams often utilized "team homes" to house and train their players. These houses were often typical domestic interiors, adapted to fit the needs of the players. Bedrooms were turned into dorms with bunk beds, living rooms into offices, stacked with tables and computers and all the members of the team shared the remainder of the house and its amenities. Living, practicing and analyzing within the

[10] Joanne DiFrancisco-Donoghue, Jerry Balentine, Gordon Schmidt, and Hallie Zwibel, "Managing the Health of the eSport Athlete: An Integrated Health Management Model" *BMJ Open Sport & Exercise Medicine*, January 10, 2019, https://doi.org/10.1136/bmjsem-2018-000467.

same building has shown to cause stress and lead to burnout for professional esports players.[11] This burnout results in physical injuries and mental issues such as irritability, decreased confidence, lack of enjoyment, inconsistent performance, excuses for poor play, and inability to concentrate.[12] One of the solutions to this problem is the creation of a work life / home life balance incorporating training facilities. These facilities can be utilized for the work life of the teams, where they practice and train in close proximity to other teams from different game genres and the corporate staff for the teams organization. The downside with these spaces however is that they were designed for video game enthusiasts, by video game enthusiasts, with little regard for the spatial planning, ergonomics or functionality of the space. It's a lot of technology crammed into spaces, with a futuristic aesthetic, neon lighting and modern decor. Another major issue is the physical health of players. Players surveyed who practiced between three to ten hours a day complained the most frequently about eye strain, with 56% reporting the issue.[13] 42% reported neck and back pain whilst 36% reported wrist and 32% claimed hand pain.[14] Among those surveyed, 40% did not participate in any physical exercise and only 2% sought medical attention.[15]

1.4 Objectives

The goal of this practicum is to design a facility for both the training of professional esports athletes and associated staff that is conducive to better preparing

[11] Dan Himmelstein, "Burnout in eSports," Acer, 2019, https://www.acer.com/ac/en/US/content/training-room/article/burnout-in-esports.
[12] Himmelstein "Burnout in eSports."
[13] DiFrancisco-Donoghue, Balentine, Schmidt, and Zwibel, "Managing Health."
[14] DiFrancisco-Donoghue, Balentine, Schmidt, and Zwibel.
[15] DiFrancisco-Donoghue, Balentine, Schmidt, and Zwibel.

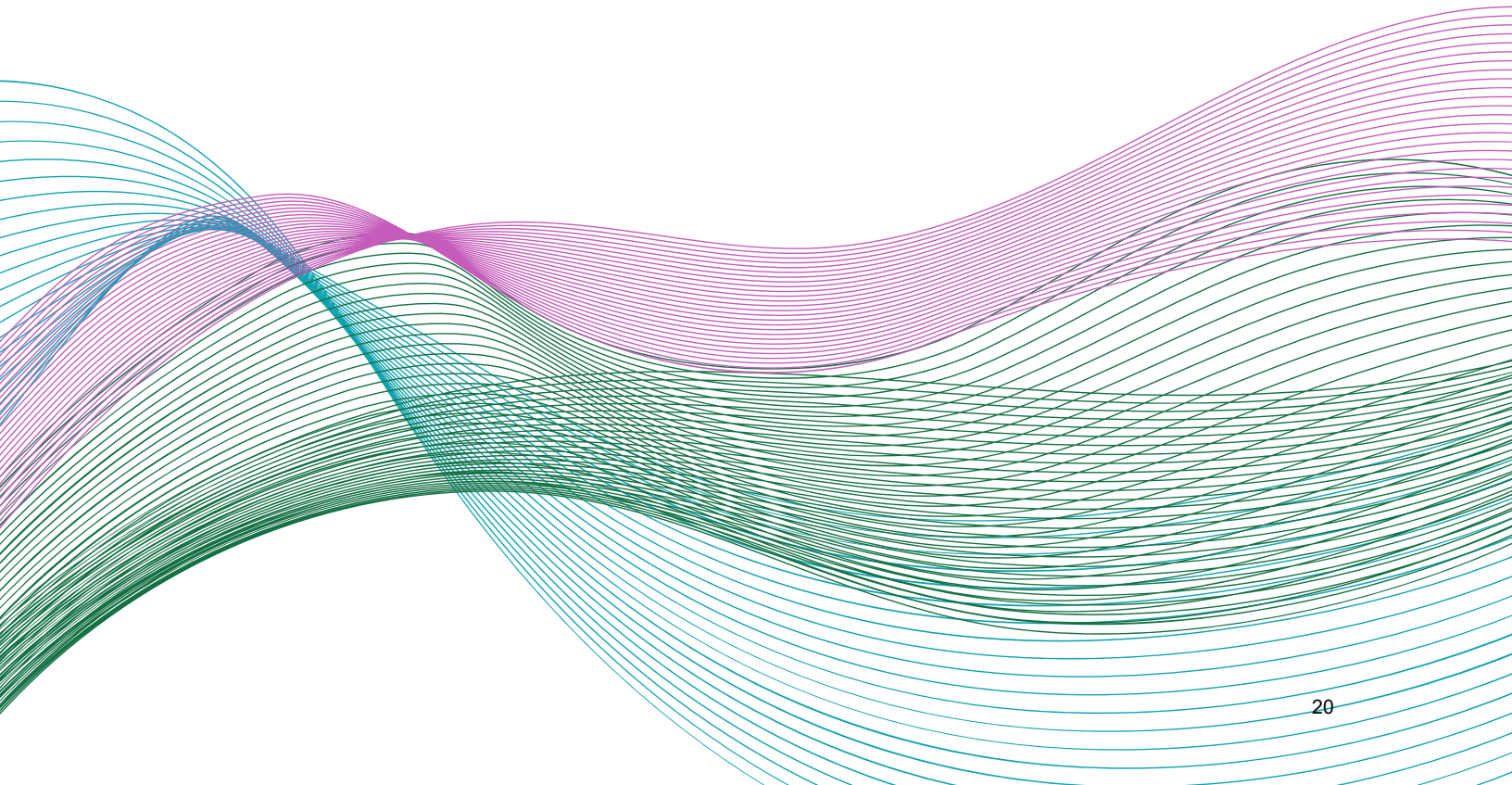
the athletes for professional matches and improving their overall health and well being as compared to current facilities. In order to achieve a supportive and healthy atmosphere, theories of cognitive load will help balance the mental and physical demands by interspersing training spaces around rest spaces within the facility. Additionally, attention to both ergonomics and anthropometrics will be considered in order to reduce physical ailments of the players. *The theory of environmental psychology will be tapped into in order to generate better proposed spaces for the players and staff and their relationships to the built spaces*. Training spaces will be created using the theory of environmental context, that are on par with professional “stage” settings, in order to produce better training results for the players . Lastly, the differing typologies within an esports facility will be blended in order to produce a conducive space for both players and staff to excel within the facility.

1.5 Questions Of Inquiry

1) What aspects of Interior Design can improve the overall health and well being of the professional athletes / coaches / staff in an esports setting?
2) What techniques or theories work in conjunction with interior design to promote an atmosphere that is conducive to better training and therefore, better professional results for the team in competitions?
3) How can using the theory of environmental recall and the study of human behavior in the built environment change how individuals respond to the interiors to positively benefit them?

2.0 LITERATURE REVIEW

2.1 THEORY OF ENVIRONMENTAL RECALL
2.2 PERIODIZATION AND COGNITIVE LOAD



2.1 Theory of Environmental Recall

2.1.1 Environmental Recall Defined

Conventional wisdom often dictates that it takes approximately ten thousand hours to learn a new skill to mastery. In contrast, the 20-hour rule, proposed by Josh Kaufman, offers that with dedicated and focused practice, one can become relatively decent at a new skill in about twenty hours.[16] That is a lot of hours, or relatively very few, to begin to learn, and master, a new ability. Professional athletes often dedicate their early lives to the pursuit of this mastery, spending much more than 10,000 hours in order to become the elite of their chosen sports. The commitment required to become elite often requires the athletes to “breathe the sport”, or see things that others cannot. This behavior is practiced daily, hourly, and repeatedly within environments purpose built to provide the athlete the ability to focus and spend the dedicated time to hone their craft. They learn within this environment in hopes to replicate those behaviors at crucial times within similar environments to win competitive games against other elite talents. It can be said that learning in different environments can often have different outcomes. Some may provide a better quality of atmosphere to influence the learning outcome, while others may be detrimental to the learning process via distractions such as visual or auditory stimuli. As the human mind is a confounding entity to examine and explore, the human psyche can provide contextual information that can be stored during all facets of activity. The ability to recall that information, whether positive or negative, can often be influenced by interior design and as such provide the subconscious ability to

[16] Josh Kaufman, *The First 20 Hours: How to Learn Anything…Fast!* (New York: Penguin Group, 2014), chap. 1, sec. “Quality, Not Quantity,” Kindle.

assist in a learning environment. The theory of Environmental Recall, sometimes referred to as environmental context, is the study of this idea.

Environmental Recall can be summarized as an adage stating that if one practices within the same environment in which they test or perform in, they will produce a better result than if the practice had been elsewhere. Godden and Baddeley reference the philosopher John Locke, who tells the story of a young man who learns to dance in a room with an old chest.[17] This old chest gets so ingrained in the young man's routine, that when he dances in the room with it, he is an excellent dancer, but if the chest is removed, or the performance is done in a room with no chest, he can no longer perform well.[18] Through this example, it can become evident how interiors fit into the idea of environmental recall. If a simple chest, and its ability to be placed, or removed within a room, can have such a significant change to the ability of the performer, what other environmental factors can have an effect?

2.1.2 Environmental Recall and the “esports Environment”

In a study done by Egstrom et al, in 1972, Divers were used to perform a test utilizing two vastly different environments and their ability to recall learned information.[19] Divers were asked to learn a list of words, one for on land, and one for in the water, which were then recalled in their respective environments. In addition, the same lists were also recalled in the opposite environment to determine if the context dependent

[17] D.R Godden and A.D. Baddeley, “Context-dependent Memory in Two Natural Environments: On Land and Underwater,” *British Journal of Psychology*, vol. 66, issue 3 (August 1975): 325-331, https://doi.org/10.1111/j.2044-8295.1975.tb01468.x.
[18] Godden and Baddeley, “Context-dependent Memory.”
[19] G.H Egstrom et al., “Underwater Work Performance and Work Tolerance,” *Biotechnology Laboratory Technical Report*, no. 51 (September 1972).

lists would be recalled to a similar level or not.[20] This provided four unique conditions for the testing: learn Dry, test Dry; learn Dry, test wet; learn wet, test wet; and learn wet, test dry.[21] Godden and Baddeley referenced this same study, arguing that if environmental recall was a true phenomenon, then performance when in the same environment, should produce a better result, than if the opposite was true.[22] Keeping true to the hypothesis, the results of this study did confirm that, when learning in either a dry or wet environment, recall was better in the same environment.[23] Interestingly, this study also showed that there was little to no difference in recalling information from the opposite environment compared to each other. Godden and Baddeley argued that though the results showed that learning and recalling in the same environment did produce a better result, there were still shortcomings to consider. These included the notion that diving is an unpredictable event, at the mercy of the weather, and conditions had to be met to provide optimal conditions.[24] It can be argued that this unpredictability, or lack of control, would cause issues in recalling the lists, and in some cases, such as the experiment performed by Egstrom et al, delays were required, due to weather issues.[25] In a final conclusion, shared by both Egstrom et al, and Godden and Baddeley in their review of the experiment, gave truth to the notion that environmental context does indeed provide a benefit, if testing within the same environment is done. esports, like this experiment, takes place in a vastly different environment than one of normal

[20] G.H Egstrom et al., “Underwater Work Performance.”
[21] Godden and Baddeley
[22] Godden and Baddeley
[23] G.H Egstrom et al.
[24] Godden and Baddeley
[25] Godden and Baddeley

conditions. Existing solely online, esports is a virtual world. As such, it likens itself to the conditions found within the water portion of the experiment. Godden and Baddeley described that the conditions found within the water were alien when compared to the normality that is the land.[26] On land, the individual can relate to everyday life and experience, whereas underwater, the diver is weightless and has restricted vision.[27] In similarity to the underwater environment, the world of esports creates a divide between the physical player, and the character that they play within a virtual world. The players themselves physically exist within the real world. They are located within an interior space, sometimes larger or sometimes smaller. They sit at chairs, at a desk, looking at a monitor and using physical inputs to move or perform actions. This likens the environment to that of the land where players are comfortable, can share experiences and memories from everyday life. This is contrasted with the virtual character that exists in the virtual realm. The players characters are weightless, their vision is obscured and limited through the scope of the characters view, or the use of in-game elements such as fog of war. Much more like the underwater environment described by Godden and Baddeley, this represents a different environment than that of everyday life. The major difference between the experiment by Egstom et al, and esports, is that within esports, both of these distinct environments are being employed at the same time.There is the physical location of the player, and the atmosphere in which they sit, and there is the virtual environment, which can alter and change with different aspects of certain games.

[26] Godden and Baddeley
[27] Godden and Baddeley

For the sake of this thesis, this environment will be called the “esports environment”. One could consider this environment more akin to the experiments in which learning dry and testing wet, or vice versa, was done, though in actuality, it is its own variable realm requiring learning to be processed from both distinct environments. This amalgamation of the two environments, creates a singular learning environment out of the two distinct parallel environments. It sets an intriguing precedent for the esports environment as there are both physical atmospheric conditions imposed on the player, such as heat, sound, etc, and virtual atmospheric conditions, such as sound and visual stimuli all occurring at one time. It can be argued that the player and the character, though existing in different environments, actually meld together into one entity when recalling information from the esports environment.

2.1.3 Environmental Recall and its Context

In a different experiment, Smith, Glenburg and Bjork discussed the meaning of context, in regards to environmental recall. Similar to Godden and Baddeley, Smith et al agreed that the ability to recall information is influenced by the environment, but further wanted to explore the idea of context in regards to differences in other elements aside from location.[28] Smith et al conducted five different experiments, with the last two focused on location and surroundings. Once again, the results showed that environmental context played an important role as those who tested in the same environments would score almost 50% better than those tested in a different location.[29]

[28] Steven M. Smith, Arthur Glenberg, and Robert A. Bjork, “Environmental Context and Human Memory,” *Memory & Cognition,* vol. 6 (July 1978): 342-353, https://doi.org/10.3758/BF03197465.
[29] Smith, Glenberg, and Bjork, “Environmental Context.”

One of the major differences that was exposed in the studies that were done by smith et al, was that context did not just relate to the physical location. Consideration was taken to understand the specific processes of recall in conjunction with the environmental context in which the participants were tested.[30] Two distinct retrieval processes; retrieval and delimitation, the act of parsing through an entire set of information, and an associative hierarchical chaining, an organizing structure to a chosen search set, were looked at, in order to see if the environmental context influenced these processes.[31] Smith et al argued that the decision to look at these two retrieval processes were not to test their individual qualities, but rather to understand if one or both would be positively or negatively influenced by the environmental context. In both cases, it was found that the environmental context did indeed influence these processes.[32] The study by smith et al. Unlike the study by Egstrom et al. delved deeper into the learning process of the individual to determine its results, which started to examine the mental state and processes occurring in the individual's brain, rather than just one's ability to recall information in an environment.

In regards to the esports environment, the nature of the map or playing area can change drastically from game to game. Whether this be due to in-game utilities, such as smoke grenades, or in-game features, like fog of war, the map can change distinctly from moment to moment. In comparison to traditional sports, it would be the same as the defensive squad on a football field reading the opposing offensive teams play based on their lineup. In both cases, there is information that is known to the players, but some

[30] Smith, Glenberg, and Bjork.
[31] Smith, Glenberg, and Bjork.
[32] Smith, Glenberg, and Bjork.

information that is hidden or obscured so as not to be so easily deciphered. The research done by Smith et al, shows the mental processes ongoing during these moments are critical to succeeding. esports professionals have to gauge where their opponents are on the map, while lacking vision of them, using information available to the team or individual at that moment. That information can range from general knowledge of various “timings”, the idea that certain moves made in certain games will occur at variable times, to voice communications from teammates giving information that can relate to opponents locations. In the above cases, the players would be using a similar retrieval process to retrieval and delimitation. These processes, in conjunction with the esports atmosphere, start to form the context that Smith et al propose is important to understand.

2.1.4 Environmental Recall and Episodic Memories

As the studies for environmental recall became more sophisticated, more research was undertaken into the memory of individuals and how a person learns within the environment they inhabit. Nick Goddard suggests that context and memory storage are concerned with the state of an individual, i.e. one's mood, and the location where the learning or memory was initially processed.[33] Goddard argued that a person in an unhappy mental state, may be more likely to recall negative information, whereas a person in a happy mental state, is more likely to recall positive information. [34] In addition to the mental state, Goddard also discusses how stress and anxiety can alter the

[33] Nick Goddard, “Context and Memory Storage,” in *Core Psychiatry (Third Edition)*,ed. Pádraig Wright, Julian Stern and Michael Phelan (Edinburgh: Harcourt Publishers Limited, 2012), 70, https://doi.org/10.1016/B978-0-7020-3397-1.00005-7.
[34] Goddard, “Context and Memory Storage.”

memories that get encoded into the memory of the individual.[35] Williams et al, classify these types of memories as episodic memories, and discuss the power that these memories, whether positive or negative, can have.[36] An episodic memory is a combination of all of an individual's past experiences in a particular place or with a particular person. Williams et al, likened an episodic memory to having the ability to transport us back in time, allowing for reflection and re-experiencing of a past moment.[37] This allows the individual to utilize these memories to assist in carving a new path with current decisions or change predictions of future experiences. In esports, and traditional sports, the amount of time dedicated by the athlete to honing their skills will be incorporated into these episodic memories. As such, both positive and negative moments will be reflected in the episodic memory. Williams et al argue that most people have emotional experiences, and the memories that are more likely to be retained are the ones that get our hearts racing or elicit a positive or negative reaction.[38] In addition to this, Williams et al argue that negative moments are more likely to be recalled than more neutral memories.[39] esports can have many of these moments, whether that be the adrenaline from making the big play, or the crushing sting of defeat in a crucial match. These moments can also come in the form of stressful training sessions, negative interactions with teammates, comments made by fans on forums and over-training, all of which occur more often behind the scenes of professional esports,

[35] Goddard.
[36] Samantha E. Williams, Jaclyn H. Ford, and Elizabeth A. Kensinger, “The Power of Negative and Positive Episodic Memories,” *Cognitive, Affective, & Behavioral Neuroscience,* vol. 22 (June 2022): 869-903, https://doi.org/10.3758/s13415-022-01013-z.
[37] Williams, Ford, and Kensinger, “Episodic Memories.”
[38] Williams, Ford, and Kensinger.
[39] Williams, Ford, and Kensinger.

rather than the more public facing moments of the professional matches or interviews. It would not be remiss to akin esports to the plethora of examples within the traditional sports world of both negative and positive moments affecting athletes. As is often the case within both esports and traditional sports, the positive moments and the champions of various leagues are easier forgotten, where as the negative moments, i.e the 13th man for Saskatchewan Roughriders the within the Canadian Football League, or the intense pressure put on the Toronto Maple Leafs of the National Hockey League to make it past the first round of playoffs, are more likely to follow players and fans alike. Williams et al describes this as the durability of the negative memory.[40] Williams et al argue that an individual may not remember what they had for lunch two weeks prior, but if a coworker tripped or hair was found within their food, that negative experience would be likely to remain longer than neutral ones.[41] Williams et al go on to further describe episodic memories as being defined by the contextual elements.[42] In essence, the environmental context for these memories are core attributes that can make the recall of these moments occur. As such, when deciphering the esports environment, and the episodic memories players may have created, care must be taken to understand when or if such interactions are occurring and how they can affect the atmosphere of the teams.

[40] Williams, Ford, and Kensinger.
[41] Williams, Ford, and Kensinger.
[42] Williams, Ford, and Kensinger.

2.1.5 Long term, Short Term and Memory Encoding in regards to Environmental Recall

Environmental recall takes place within the human cerebral cortex. As such, in order to understand exactly what environmental recall is, we need to discuss the various memory types that are used while processing information and how memories are encoded. Nelson Cowan describes long term memory as the vast store of knowledge and record of prior events.[43] It is the recollection of short term memories that often are associated when people recall memories.[44] Short term, is the intake process of a moment. Cowan describes short term memory as the brain's ability to hold a limited amount of information for a limited time.[45] Both of these types of memories work in conjunction with another, as they transfer information to one another, though most transfers go from short to long rather than vice versa. Cowan argues that short term memory can be thought of as having a capacity and temporal storage before it can no longer intake information.[46] Further to the description of short term memory, Cowan describes a third memory type, that of working memory. Working memory is the application of short term memory for everyday tasks to assist in remembering whether a certain step has been performed.[47] At any given moment, all three of these memory types are being employed to varying degrees. In esports, the training of one's skills and ability to perform those skills is a combination of the short term memory performing those tasks and the long term committing those movements to memory. As

[43] Nelson Cowan, "What are the Differences Between Long-term, Short-term, and Working Memory?," *Prog Brain Res,* vol. 169 (March 2009): 323-338, doi: 10.1016/S0079-6123(07)00020-9.
[44] Cowan, "Differences Between Memory."
[45] Cowan.
[46] Cowan.
[47] Cowan.

environmental recall takes information from all sources during its original context, the three memory types are utilized while encoding the memory, allowing for its recall at a later date. The encoded memory is the experience of all the memory types amalgamated into both short and long term memories. In short, it is the ability to give context to a memory or experience. As we encode memories, various information is taken in context with them. These may be subconscious or conscious elements, such as sight, sound, smell, etc, and are unique for each individual. Williams et al argue that the emotions of an individual, especially when those emotions are negative, heavily influence the encoding process.[48] Bowen, Kark and Kensinger further this argument with the use of the module NEVER Forget.[49] This model, which stands for Negative Emotional Valence Enhances Recapitulation, states that upon retrieval of a negative memory, the brain has reconfigured itself to be in a state similar to how it was upon encoding that memory. As these studies show that the negative memories are often recalled easier, as compared to their neutral counterparts, Williams et al describe a process to help adjust or navigate those encoding moments.That process is described by Williams et al as cognitive reappraisal.[50] This is the act of re-processing an experience to make it less negative. By doing so, the individual can use the power of episodic memories, and the staying power of negative memories discussed by Williams et al as a tool to better remember things like critique or lessons from negative moments. In addition to encoding, Williams et al argue that the memories created from those

[48] Williams, Ford, and Kensinger.
[49] Holly J. Bowen, Eric C. Fields, and Elizabeth A. Kensinger, "Prior Emotional Context Modulates Early Event-Related Potentials to Neutral Retrieval Cues," *Journal of Cognitive Neuroscience,* vol.31, issue 11 (November 2019): 1755-1767, https://doi.org/10.1162/jocn_a_01451.
[50] Williams, Ford, and Kensinger.

encoding can also be regulated with the same reappraisal process, allowing for less-emotional reactions to memories in time.[51]Such a tool would be invaluable to use while discussing environmental recall within esports. It would provide the ability for players to reconstruct memories and take lessons from them instead of causing further stress and negative emotions. Williams et al also discuss the power of positive episodic memories, and how similar to negative episodic memories in their formation, are long lasting and accessible.[52] One of the major differences however is that positive events come to our mind more frequently, often without any prompt, and are associative, which leads to an increased chance that another positive memory will follow.[53]

As with any type of memory, all things are not equal, and different individuals have different levels of ability to encode memories. As such, it must be considered that all emotional encoding of memories will be different for various individuals and those individuals may not be able to process or regulate those memories at any given time. Within the esports environment, individuals will undergo these encoding moments, taking differing outcomes from each moment. The contextual clues that are encoded during these moments from the environment will help with the recall later on, and allow for regulation using the cognitive reappraisal process.

2.1.6 Environmental Recall and esports (How it applies to esports)

esports, similar to traditional sports, very often have powerful differences in the conditions in which practice and competitive matches or games take place. Much like

[51] Williams, Ford, and Kensinger.
[52] Williams, Ford, and Kensinger.
[53] Williams, Ford, and Kensinger.

the two different locations used in the experiment by Egstrom et al, esports training and esports professional matches vary heavily in their atmosphere and conditions. On one side, practice mostly takes place within a private and enclosed space, in which only members of the team and coaching staff are present. Contradictory to that, competitive matches against other teams are infused with heavy stimuli such as visuals from passionate or rowdy spectators and fans as well as the auditory stimulus that comes from chants, cheers and boos that often are heard at professional sporting events.This dynamic, ever changing atmosphere can be electric and exciting, but can also provide “jitters”, nerves or distractions for professional players. It is with these differing atmospheres that the esports environment is made. As such, individual players will have various reactions to the two unique worlds. Where one individual may be able to handle the external stimuli of the professional match setting, another may struggle to perform to their normal level due to anxiety. One possible solution that can help alleviate this struggle would be the use of Environmental recall.

There have been many moments with both esports and traditional sports, in which a team did not perform to expectations or failed to meet expectations within a championship game. This can be attributed to many various factors, such as illness of a player, how a team plays on the day, and more, but it would be beneficial to be able to better prepare players for those matches. Employing the idea of environmental recall would help to alleviate the stress of the changing environment between practice and professional games. As noted prior, changing the environmental context between one's study or practice and one's test or play, can negatively impact the memories encoded

during these moments. If it is seen as detrimental to have a change in location, or change in the atmosphere for practice and professional games, then why do almost all traditional sports and esports still employ the same tactics which lead to this result? It can be argued that different practice regimens employed by different leagues offer varying degrees of detriment. For example, in the NBA (National Basketball Association), NHL (National Hockey League), MLB (Major League Baseball), and NFL (National Football League), all teams will often utilize their home arenas or stadiums to practice in. As such, they are accidentally employing the idea of environmental recall with their practice, but the level of employment is minimal at best. In all of these cases, there is a large missing factor of the audience and spectators producing auditory and visual stimuli that is present on a professional game day. Within esports, this change becomes even more drastic. As esports practice often takes place in their own facilities or game houses, there is a massive disconnect between the practice and the play. It misses the energy of live spectators, the rumble of the commentators, the seats are different, the desks are not the same, and the environment in which is practiced within shares very little in common with that of the stage games. One thing that is shared, is the virtual world in which the game takes place. Since this is an online virtual element, the conditions in which the player's characters perform will not change due to a different location. All of the abilities of the characters will remain the same, and can be performed at the same level in either location, but the difference in the physical environment can be the influential factor. Environmental Recall has the ability to influence this drastic difference and allow for players to obtain better results from practice if the conditions of

both the stage games environment and the practice environment exhibit similar ambience. The benefits of employing environmental recall can result in teams having optimal training conditions, which would lead to better results professionally. Additionally, it will help rookies to be better prepared for the chaotic energy that may be present during professional matches. By implicating environmental recall in the practice regime for esports, teams would see a rise in on stage play, which can have multiplicative effects for the teams brand, fan base, merch sales and more.

2.1.7 How Environmental Recall is Applied

Current esports training facilities don't provide a good training space for players. In a gaming house, often the biggest room, the living room, is a mashed together mix of desks and tables for the players to play at. Other gaming houses provide a better suited room, filled with the same desks, chairs and setups for each player. Some organizations have even gone to the expense of adding these training areas into their operational buildings, providing the players their own space to practice within the interior of the building. In all these cases, the space provided is adequate at best, and does not provide the most optimal training conditions. As most professional matches are played within an arena or dedicated space run by the league, the focus will be put on the training space in which the players occupy more than 3/4th the time.

During an esports professional match, the players have to be playing at their peak. In many games there is an element of "snowballing", the idea that once a lead is taken in a game, it will keep getting bigger and bigger as the "ball" rolls down the hill or as the game carries on. With such a slim margin of error for players, it is essential that

distractions do not take away from their ability to perform and practice. In order to apply the theory of environmental recall to the interior of the practice area, the conditions of the professional match must be looked at and a discussion around which elements can be replicated should occur. Within a professional match there are major environmental conditions and minor environmental conditions. The major conditions are elements that are always influx and lively. This includes visual stimuli of the crowds movement, signs or team flags being waved, and the moving lighting within the arena. Additionally to this, there are the auditory stimuli such as the crowds cheers and jeers, and the live play by play casters commentating for the fans. This wave of noise can come at the players during crucial moments, or after a big play is made, causing a rumble of sound that may cause an uptick in the nerves of a player. The minor conditions are elements that are controlled and can be replicated much easier. These would include monitor sizes, desk heights, chair types, lighting conditions, gaming peripherals like headsets, and the physical aspects of where a player sits in relation to their teammates. In essence, these are the elements that make up the esports environment. In using environmental recall, one of the first things that could be tackled would be to determine the replicability of the esports environment in which the players play in.

In esports, all tournament matches and professional games take place on a stage. These stages can come in many different forms and can even be designed to reduce ambient noise. In these cases, the players play within a glass booth, in which often one wall is made up of glazing facing the audience. These booths are designed to have noise reduction elements built into the walls rather than having open baffling within

the booth itself. Other tournaments forgo the booth, but still have the teams facing the audience. The last condition is when the teams are the central element to the arena, facing each other in the middle, while the crowd surrounds them either on three or all four sides. The desks in which the players sit are often spaced out with around two to three feet between each player. In taking the theory of environmental recall, it would be useful to provide a practice room that mimics these conditions. The desks should be spaced in such a way similar to the layout of a stage game. Depending on the game genre, tournament directors would be able to provide the typical desk layout. Similar seating apparatus could be purchased and monitor heights matched to the same conditions. By doing so, the training room provides the same setup and feeling of the stage conditions, while occupying a different space. The training room itself can then be considered on how it can best match either the open air stage setup or the booth setup. If the practice space is put into an enclosed room, though it may be private, it likely won't provide the optimal training results. Instead glazing could be added to the fourth wall, with frosted glazing or one way glazing so as not to provide a visual distraction for the players when practicing. As distractions such as glare, and other visual stimuli can take a players mind and eyes off of the screen, breaking their connection and communication, visual elements, such as paint, logos and information within the practice room should be neutral and not pull the players' gaze. In order to acclimate the players to the major condition of visual stimuli, additional technology may be employed to mimic the audience and its movement to provide some form of visual stimuli in the

practice room on the wall behind the players monitors, or have the ability to create some distracting stimuli in a practice session in order to mimic the professional match setting.

After care has been taken to match the physical sitting conditions, the audible stimuli can be included. The complexity esports training facility provides a very good solution for this with the ability to pump in white noise or crowd noises into the practice room while the players are training. As it is much harder to design for audible distractions from a crowd, the focus would be put on designing the space to be sound proof for the team so when practicing, no unnatural noises would be able to cause distractions. This can be done with acoustic baffling, or by adding materials with a high stc ratings to dampen the rooms sound. In doing these small yet subtle changes, the training room will be able to better prepare the individuals for the esports environment that is present during live games.

The second application of environmental recall references the idea and power of the Episodic memories described by Williams et al. esports professionals are often young of age, and as such, it is not unheard of for players to have blow ups or frustration outbursts. If these moments were to occur in the practice room, it can lead to negative emotions being encoded into the memory, causing the training session to have a tainted element. This may lead to players recalling the outburst over the practiced elements thus leading to a negative training output. As the research done by Williams et al proves the idea that negative memories are heavily influential during the encoding of memories, it would be of benefit to provide a separate room or area for the players to congregate after playing practice matches. This area would act as a transition from the

esports environment to the coaching environment. By utilizing the environmental recall theory in this way, coaches and players can have a separate environment to sort out differences or coach players through the use of video reviews. This would also have the added benefit that if the practice room is very similar to that of stage practice, these negative moments will once again not be recalled during the onstage games, allowing for the training to kick in during the time when it is needed most.

Using the theory of environmental recall to create different environments throughout the space does not need to only apply to the practice and coaching rooms of the esports teams. It can also be used to provide transitions from places of work and places of relaxation. Similar to providing a room for coaching, a room for mental rest or an area for recreation can provide similar benefits. In these areas, having the ability to recall other memories of relaxation from a similar environment would allow for the individuals to recollect on positive memories or allow the individual to use the method of cognitive reappraisal by Williams et al, to recall negative moments and remove some of the emotional elements, making these harsh memories less detrimental to the players mental health.

The esports environment also can be influenced by environmental recall. Though this mix of both the physical and virtual environments is harder to manipulate, as players continue to put hours of practice into their respective games, they will come to feel this melded environment and be able to relate their experiences within it better. This is often thought of as “game knowledge” or “knowing the map”. By creating a space that

relates further to this environment, player mechanics can become sharper alongside their ability to shotcall within the professional games.

As each space gets designed within the scope of this thesis, environmental recall can have a part to play. Whether that is via material choices to help provide calming context, or biophilic elements, it can help to influence the overall encoding processes of every moment the individual has while occupying the space. It can be a strong tool to utilize, especially in the context of the often highly stressful world of esports. If used correctly it will not only lead to better practice results, better training opportunities, and the ability for the players to take more out of their practice, but also allow for the opportunity to create better atmospheres in esports training facilities that can have mental health benefits for players.

2.2 Periodization and Cognitive Load

2.2.1 The Theory of Periodization

The top tier of athletes are some of the best at their respective sports and they spend countless hours training to be prepared for competitive moments. For any activity, the ways in which athletes train varies depending on their given sport. Additionally, every athlete will trend towards a training style that suits them best. Sarah Kaufman, a retired MMA fighter turned coach, argues that those who train without a training structure, often find themselves training in the middle of their abilities i.e. at a medium level.[54] There may be time with maximum effort exhausted, while at other moments the effort may dwindle to the minimum. In general, it can be assumed that the

[54] Sarah Kaufmann, “What is Training Periodization,” Training Peaks, accessed February 16, 2024, https://www.trainingpeaks.com/blog/what-is-training-periodization/.

middle level of effort will be exhausted for any training session. To be elite athletes, the training structure must be optimized to receive the most benefit from those sessions. This is where Periodization comes into play.

There are many different definitions of Periodization, but for the purpose of this thesis, the definition by Daniel Lorensz, Michael P. Reiman and John C. Walker will be used. Lorensz et al defined periodization as a planned manipulation of training variables to maximize training adaptations and prevent overtraining syndrome.[55] To simplify, it is a training structure that focuses on efficient training in a cyclical method.[56] Some of the earliest noted examples of periodization being used in training was done by Forbes Carlisle, an Australian swim coach in 1955.[57] This methodology was then followed again in the early 1960's by Fred Wilt, in track and fields, and again in 1968 by James "Doc" Counsilman, a well known swimmer at the time.[58] In each case that periodization was used, it was conforming to the theory of G.A.S. by Hans Selye.

G.A.S or General Adaptation Syndrome was a theory developed by Selye that describes the physiological changes in which the body undertakes when under stress.[59] It was first discussed by Seyle after he noticed physiological changes in rats, undergoing an experiment in which they were exposed to stressful events.[60] Selye argued there were three distinct stages observed when responding to stress; Alarm,

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[55] Daniel Lorenz and Scot Morrison, "Current Concepts in Periodization of Strength and Conditioning for the Sports Physical Therapist," *Int J Sport Phys Ther,* vol. 10, issue 6 (November 2010): 734-747, PMID: 26618056; PMCID: PMC4637911.
[56] John Kiely, "Periodization Theory: Confronting an Inconvenient Truth," *Sports Medicine*, vol. 48 (November 2018): 753-764, https://doi.org/10.1007/s40279-017-0823-y.
[57] Valencia Higuera, "What is General Adaptation Syndrome?," Healthline, October 6, 2018, https://www.healthline.com/health/general-adaptation-syndrome#takeaway.
[58] Higuera, "General Adaptation Syndrome."
[59] Higuera.
[60] Higuera.

resistance and exhaustion.[61] The first stage is the body's reaction to the onset of stress. Often this is associated with “fight or flight”, a natural reaction where the heart rate increases, your glands release a stress hormone, cortisol, and a boost of adrenaline increases your energy.[62] The second stage of resistance has two levels of action. The first occurs after the initial stage, in which the body begins to repair itself from the stressful event. While the body stays on alert, the heart rate and blood pressure begin to return to normal levels.[63] At this point one of two situations occur; the stress will be processed and the body continues to normalize, or the stress is not properly processed and the body starts to undergo an adaptation in order to manage the stress.[64] In the second scenario, the body remains with a high blood pressure and continues to release the stress hormone.[65] Signs that the body is within this stage can include irritability, frustration and poor concentration.[66] If no relief is found to the stress for an extended period of time, it can lead to the third stage, the exhaustion stage. Undergoing stress for long periods of time, i.e. chronic stress, will start to drain the individual of their physical, emotional and mental energy.[67] Exhaustion can showcase itself in fatigue, burnout, depression, anxiety and decreased stress tolerance as well as lowering the strength of the immune system and putting oneself at risk of stress-related illness.[68] The G.A.S

[61] Higuera.
[62] Higuera.
[63] Higuera.
[64] Higuera.
[65] Higuera.
[66] Higuera.
[67] Higuera.
[68] Higuera.

system argued the importance for understanding the levels of stress a body was undergoing in order to prevent the negative effects that stress can apply on the body.

As stress and periodization are linked, the picture of periodization within esports starts to reveal itself better. esports is known for being a stressful environment. Part of this is due to its adolescence as a professional sport, in which the coaching systems and awareness within the sport is still developing. The second part shares the attributes of traditional sports in which the focus is on performing well within a professional match. Selyes' G.A.S. theory plays an important part of periodization due to the knowledge that stress can cause mental fatigue, irritability and insomnia.[69] Many players in esports deal with the exhaustion stage effects on the body like burnout, depression and anxiety. In one of esports major games, League of Legends, a major scandal recently took place that shows the lack of periodization within esports, and how it can have an effect on both the public perception of esports and internal policies that must be overhauled to make esports more professional. A contracted player for one of the organizations that fields a team in the LCS (League of Legends Championship Series) was dealing with anxiety, burnout, fatigue, and most of the signs of the exhaustion stage.[70] The player was struggling to handle the public criticism of their performance and the stress of competitive play.[71] This stress compounded until the physical ramifications on their body started causing illness and the eventual outcome of the individual ending their playing

[69] Higuera.
[70] Arsh Goyal, "Incompetence and Mismanagement: The Full Story of Danny and Evil Geniuses," Medium, March 4, 2023, https://medium.com/@arshgoyal13/incompetence-and-mismanagement-the-full-story-of-danny-and-evil-geniuses-12626f55088d.
[71] Goyal, "Danny and Evil Geniuses."

career and leaving the league entirely.[72] It can be argued that the use of periodization would have assisted in this situation, had the player been given the ability to take time for the body to recover, rather than dealing with the stress for a long period of time, the resulting impact may have been lessened or altogether prevented. Selyes' G.A.S theory presents the ability to catch stressors and understand their impacts in order to try to alleviate the problems before the detrimental stages set in. John Kiely discusses how Mel Siff, a famous sport science scholar, described Periodization as the management of stress.[73] Kiely continues to argue that since periodization began to develop in the world of sports in the early 60's, stress concepts have always been used as justification for periodizations validity.[74]This is important when relating periodization to esports as the general use case scenario for periodization is often associated with physical training, i.e. muscular or endurance training. In contrast to traditional sports, esports utilizes minimal amounts of physical exertion, only relying on the athletes hands, eyes and mind to play the game. As such, the periodization model for esports requires an adjustment to focus on the mental training and physical stamina that is required to play for the long periods of time in which an esports match takes place.

Kiely suggests that the G.A.S model by Selye isn't fundamentally correct in regards to the modern periodization discussion.[75] There is some truth to it, but as further understanding of stressors and psycho-emotional considerations are taken into context, a differing model of Periodization emerges. Kiely argued that Selyes' GAS model

[72] Goyal.
[73] Kiely, "Periodization Theory."
[74] Kiely.
[75] Kiely.

started to undergo challenges when Seyle sought to find the initial trigger for the alarm response, called the first mediator.[76] Seyles' belief that stress was "*a purely physiological and medical phenomenon*", was debated by psychologists as they argued the stress response was "*a mismatch between individuals' perceptions of the demands of the task, and their perceptions of their resources for coping with them".*[77] With the proof of Seyles' theory diminishing, a new theory was proposed in 1988 by Sterling and Eyer, the concept of Allostasis.[78] This concept built itself on the idea that in order to facilitate a standard physiological state, organisms would anticipate their needs before they arise via various neurological, biological and immunological conditions.[79] In contrast to Selyes' GAS model, Allostasis determines the brain as the lead actor in doling out responses to challenges.[80] As such, the first mediator can be proposed as the change in emotional state due to an individual's sensory or cognitive triggers.[81] Kiely argues that in relation to periodization, the initial actions of the task at hand are the primary instigators of this emotional state.[82] Combined with the updating of Selye's GAS model, this model can lead to better understanding of the adaptations the body makes in response to training, and the intertwining of peripheral psycho-emotional influences.[83] It is this combination of the G.A.S. model from Selye, and Kielys' reframing of performance planning that is the ideal model for esports. Kiely argues that in order to

[76] Kiely.
[77] Alan F. Stokes and Kirsten Kite, *Flight Stress: Stress, Fatigue, and Performance in Aviation* (London: Routledge, 2017), https://doi.org/10.4324/9781315255200.
[78] Kiely.
[79] Kiely.
[80] Kiely.
[81] Kiely.
[82] Kiely.
[83] Kiely.

get the best out of periodization, the athletes' understanding, and belief in the plan is paramount.[84] Kiely describes that in order to adapt periodization with an athlete's individual emotional states, a sense of ownership and purpose should be instilled in the plan.[85] In addition, Kiely argues for feedback opportunities to be given, in order to enable a more robust understanding of the training regimen and to allow for grievances, concerns or opinions to be aired.[86] In summary, a full buy in by the athlete is going to provide the best results for periodization.

2.2.2 The Theory of Cognitive Load

How an individual recalls a moment in time is often broken down into segments of information based on the body's senses. It could be in the form of a smell, such as the ocean's scent, or in the form of a feeling, like the wind flowing through one's hair. Regardless of the stimuli that is absorbed, the body takes that moment and commits it to memory. Through this information, the individual is able to better understand each experience they happen upon. This is the notion of human cognition.[87] It is with these experiences that an individual forms the basis of their decision making and how they behave in reaction to different experiences. However, in any given moment, there is a plethora of stimuli to respond too. Whether consciously known or not, the body's senses take in information at a rapid pace. How this gets filtered down into usable data for the brain and how to better format intake of this information, is an important tool that can

[84] Kiely.
[85] Kiely.
[86] Kiely.
[87] "What is Cognition?" Cambridge Cognition, August 19, 2015, https://cambridgecognition.com/what-is-cognition/.

assist in creating better environments for learning or training. The idea of controlling or filtering the amount of information gathered is called the Theory of Cognitive Load.

Within any moment of time, the amount of information being processed by an individual is expansive. The body's senses work in conjunction with one another, downloading details of information and sending them to the brain. In esports, there is a heavy reliance on the input of visual and auditory stigma to formulate the decisions a player makes in the fraction of time before acting. In order to better train an individual on how to respond to this information, the tool of cognitive load theory can be utilized. As such, the theory of cognitive load can be thought of as an instructional design in the development of athletes.[88] First discussed in the late 1980's by Hans Sweller, cognitive load theory is the idea that an individual can only intake or load a few pieces of information at any given time.[89] Sweller takes the ideas of the Atkinson and Shiffrin memory model, proposed in 1968, when discussing the types of memory being used in relation to cognitive load theory.[90] The Atkinson and Shiffrin memory model proposes that there are three main types of memory in regards to human cognition; sensory register, short term store and long term store.[91] Atkinson and Shiffrin believed that these three memory types acted as separate components that formed a semi-linear progression from one to another. The first point of entry for any form of sensory stimulus

[88] John Sweller, "Cognitive Load Theory, Learning Difficulty, and Instructional Design," *Learning and Instruction,* vol. 4, issue 4 (July 15, 2002): 295-312, https://doi.org/10.1016/0959-4752(94)90003-5.
[89] Sweller, "Instructional Design."
[90] John Sweller, "Working Memory, Long-term Memory, and Instructional Design," *Journal of Applied Research in Memory and Cognition,* vol. 5, issue 4 (December 19, 2015): 360-367, https://doi.org/10.1016/j.jarmac.2015.12.002.
[91] R.C Atkinson and R.M Shiffrin, "Human Memory: A Proposed System and its Control Processes," in *The Psychology of Learning and Motivation,* vol. 2, ed. K.W Spence and J.T Spence (New York: Academic Press, 1968), 89-195.

is the sensory register.[92] Though it was believed to be the first intake port, Atkinson and Shiffrin argued that the sensory register acted more akin to that of a buffer, rather than a gathering point of information, preventing the vast amount of stimuli from overwhelming the individual.[93] Bruce Goldstein further proposed that even though the sensory register is singular in name, there are multiple storages for each individual sense.[94] Atkinson & Shiffrin argued that since this component acts similar to a buffer, the sensory register doesn't fully process any of the information gathered, but rather holds onto and detects the different stimuli, directing them into each sensory register.[95] Though there are five major senses of the body, the vast majority of research has been applied to the senses of sight and hearing. Iconic memory, derived from visual stimuli, and echoic memory, which is related to the sense of hearing or auditory stimuli. Iconic memory is only limited to the cone of vision of the individual.[96] Shape, size, color and other visual stimuli are taken in and put into the sensory store for sight. This information is retained for a miniscule amount of time, only lingering for half a second to a second at most before it decays.[97] In contrast, the pitch, rhythm or pitch of echoic sensory input can linger for one and a half to five seconds overall.[98] Once the stimuli reaches the sensory information area, some will be moved onward, while the rest will decay and be forgotten. It is in this step that the brain helps to filter out the irrelevant information,

[92] Atkinson and Shiffrin, "Human Memory."
[93] Atkinson and Shiffrin.
[94] E. Bruce Goldstein, *Cognitive Psychology: Connecting Mind, Research, and Everyday Experience* (Boston: Cengage, 2019).
[95] Atkinson and Shiffrin.
[96] Max Coltheart, C. David Lea, and Keith Thompson, "In Defence of Iconic Memory," *Quarterly Journal of Experimental Psychology,* vol. 26, issue 4 (November 1974): 633-641, https://doi.org/10.1080/14640747408400456.
[97] George Sperling, "The Information Available in Brief Visual Presentations," *Psychological Monographs General and Applied,* vol. 74, issue 11 (1960): 1-29, https://doi.org/10.1037/h0093759.
[98] Ulric Neisser, *Cognitive Psychology* (New York: Appleton-Century-Crofts, 1967).

forgetting it, and the relevant information is gathered into what is known as working memory or short term storage.[99] Working memory, according to Sweller, is the cognitive powerhouse dedicated to rapid perceptual and linguistic processing.[100] Sweller argues this is a limited resource that acts as a filter for long term memory. In contrast to short term memory, long term memory acts as a permanent storage for information. In the Atkinson-Shiffrin memory model, the working memory or short term storage, retrieves various pieces of information from long term memory, makes a duplicate of that information, and then proceeds to manipulate or adjust that information with the new input gathered.[101] They argue that input that stays in short term memory for longer periods of time, i.e, continuous stimuli exposure, produces better connections to previous information gathered in the long term memory and as such will create stronger connections for future recall.[102] Sweller further relates to long term memory by discussing schema, an organizational structure of information first introduced in 1932 by Jean Piaget.[103] These schemas act similar to file folders of information, combining relevant information into categories that can be recalled and help the individual interact with new information.[104] As the individual ages, more connections can be made to various pieces of information, allowing further understanding of information being taken in. As cognitive load theory continued to expand in academia, Sweller incorporated the

[99] Sweller, “Working Memory.”
[100] Sweller, “Working Memory.”
[101] Atkinson and Shiffrin.
[102] Atkinson and Shiffrin.
[103] Sweller, “Working Memory.”’
[104] Sweller, “Working Memory.”

idea of primary and secondary knowledge from evolutionary psychologist David Geary.[105]

In order to understand Gearys' adoption into the theory of cognitive load, basic contextual information on evolutionary psychology is prudent. Evolutionary psychology can be summarized as the study of how an individual learns to process and think from infancy. It examines the behavior of individuals in order to formulate how the human species has adapted over time to survive to this day.[106] Gearys' theory, proposed in the late 2000s, sought to differentiate the two types of human knowledge acquisition.[107] These are the biologically primary and biologically secondary abilities.[108] Geary argued that primary abilities are biologically ingrained in human psychology.[109] These are the things that naturally each individual learns from the onset of birth, such as facial recognition, spatial navigation, etc. Geary proposes that our mechanisms over time have adapted to acquire these behaviors in order to survive the local conditions.[110] It is thus implied that the primary abilities of humans are not equivalent across the globe, but differ in order to provide survivability in various geographical contexts. In contrast to the primary, Geary suggests the secondary knowledge acquisition applies to learning that has come more recently in human history.[111] This would be in reference to academics like reading and writing and mathematics. These secondary abilities are not learned

[105] John Sweller, "Cognitive Load Theory," in *Psychology of Learning and Motivation,* vol. 55, ed. Jose P. Mestre and Brian H. Ross (New York: Academic Press, 2011): 37-76, https://doi.org/10.1016/B978-0-12-387691-1.00002-8.
[106] Evolutionary Psychology," Psychology Today, accessed on February 16, 2024, https://www.psychologytoday.com/ca/basics/evolutionary-psychology.
[107] Florence Lespiau and Andre Tricot, "Primary vs. Secondary Knowledge Contents in Reasoning: Motivated and Efficient vs. Overburdened," *Acta Psychologica,* vol. 227 (July 2022), https://doi.org/10.1016/j.actpsy.2022.103610.
[108] Lespiau and Tricot, "Primary vs. Secondary."
[109] Lespiau and Tricot.
[110] Lespiau and Tricot.
[111] Lespiau and Tricot.

naturally and often require special contexts in order to acquire the knowledge, such as schools, classes, etc. Geary further argues that these secondary abilities require effort and demands working memory in order for the successful integration of knowledge.[112] Though it was thought that the relation of the theory of cognitive load and Geary's theory applied to both primary and secondary abilities, Florence Lespiau and Andre Tricot argue differently. Lespiau and Tricot propose that since our cognitive abilities have evolved over time to allow us to easily integrate primary abilities, rather than secondary, there would be little to no working memory required in order to perceive this information.[113] In contrast, secondary abilities, as Geary has decreed, is knowledge that is not primarily ingrained from birth, and as such there is no prior evolution to provide the inherent knowledge. Lespiau and Tricot suggest that since there is no prior evolution, nor is there necessarily the motivation, the cognitive load theory would therefore only apply to secondary knowledge, which is knowledge gained through exerting effort to obtain.[114] By adding Gearys' theory, Sweller furthered the theory of cognitive load to be utilized as a teaching tool for secondary knowledge and abilities.

As secondary knowledge needs to be taught, rather than innately learned, the tool of cognitive load theory can be applied in order to understand how the learning process takes place and how it is affected by the contextual conditions surrounding an individual. Sweller argues that working memory is finite.[115] There are only so many stimuli or pieces of information that can be held onto at a given moment. In contrast, the

[112] Lespiau and Tricot.
[113] Lespiau and Tricot.
[114] Lespiau and Tricot.
[115] Sweller, "Working Memory."

long term memory is infinite. So long as the individual is able to create more synapses, knowledge can be acquired infinitely. It should be considered however that though long term memory can be thought of as infinite, it does not automatically mean that all information within long term memory can be referenced. Synapse connections may deteriorate over time as the individual ages, thus leaving certain pieces of information stranded. Working memory is argued to hold or intake approximately three to seven pieces of information at a given time.[116] It works in conjunction with long term memory transferring information back and forth in order to relate new information with known information. This relationship of working memory and long term memory can be seen through the various cognitive loads. Sweller discusses three different types of cognitive load; that of the intrinsic, extraneous and germane loads.[117] The intrinsic load can be thought of as the internal cognitive workings of an individual. It is represented by the complexity of a task or piece of information that is attempted to be learned, the amount of new elements within that information, and the ability to relate or the interaction between those elements and the individual's long term memory.[118] Extraneous load is the opposite of the intrinsic load. It is the outside factors affecting the ability of the individual to intake new information.[119] This can be caused by external factors to the area of learning, such as outdoor atmospheric sounds from traffic, pedestrians, etc, to elements that reduce the ability of the individual to focus on the lesson at hand, such as

[116] Sweller, “Working Memory.”
[117] Sweller, “Cognitive Load Theory.”
[118] 3 Minute Ed Theory, “Cognitive Load Theory 3 - Intrinsic, Extraneous, Germane,” YouTube Video, July 25, 2018, https://www.youtube.com/watch?v=IkH0EGYqWO0.
[119] 3 Minute Ed Theory, “Cognitive Load Theory 3.”

poor fonts, monotone speaking or complicated fonts.[120] In essence, the extraneous load can be considered any distractions that could come into play that do not contribute to the learning goal. This is due to our brains having to then spend resources in order to deal with these distractions, taking away from the few processing stations of working memory available at that given time. The final load proposed by Sweller is the Germane load. The germane load is the capacity of the individual to integrate the new information with the existing knowledge.[121] It can be thought of as the "lightbulb" that goes off in your head when a connection is made. It acts as a culmination of the information being taken in, processed by the working memory, and then related to information schema in the long term storage to adapt and create a new folder of information with the connecting elements. There has been debate put forth by scholars such as Slava Kalyuga that only the first two loads are pertinent when it comes to processing new information.[122] Though this is argued by both Sweller and Meyer, who suggest that the germane load allows for better information dissemination materials to be created that have a focus on deep processing as well as the transmission of knowledge.[123] Regardless of the stance taken, the importance is put squarely on the shoulders of the intrinsic and extraneous loads to be properly managed in order to get the most benefit. If one were to equate the ability of an individual to that of a glass containing water, the three loads would make up the composition of the water, while the glass would represent the metaphorical maximum amount of cognitive space available at any given

[120] 3 Minute Ed Theory.
[121] 3 Minute Ed Theory.
[122] Sweller, "Instructional Design."
[123] Sweller, "Instructional Design."

time. Swellers' theory of cognitive load uses the idea that the water fills in order from the intrinsic first, followed by the extraneous and then finally the remainder to the germane on top. The "waters" composition varies for each load, with the volume of each load changing based on the surrounding atmosphere, and the individual's cognitive ability. In some instances, there may be too much intrinsic and extraneous stimuli, therefore filling the glass with no ability for the germane load to fit. In such a case, the learning goal, or ability of the individual to learn the new information would fail. The brain would be overloaded either by the intrinsic level, i.e. an idea that may be too complex to understand at that time, or the extraneous distractions. In order for the theory of cognitive load to be successfully used as a tool, it must take into consideration the atmosphere and surrounding environment in which the user is learning, as well as the content itself, to provide benefit to the individuals.

2.2.3 Cognitive load and Periodization

Traditional sports have come up throughout the ages, with varying degrees of focus put on them from society. For many, sports are the entertainment they consume rather than partake in. Others partake in the sport, but not to the same intensity of drive as those at the professional levels. In the modern arena of today's professional leagues, athletes have access to coaching systems and information that has been developed over the years to suit their specific sport and help them achieve the best they can in said activity. Cognitive load and Periodization both play their parts within these worlds. Periodization allows the athletes to get the most out of their training by targeting specific areas to work around as well as providing the rest periods to help alleviate stress

buildup. Cognitive load provides the best ability for that athlete to understand the requirements put on them during any second of play. Both of these theories have their place and utilization within the traditional sports world. In these two theories, one can be in peak physical shape as well as have the best understanding of how to perform based on their knowledge of the game. It is due to how similar in nature the two theories methods are that they are discussed hand in hand. On one hand, we have the physical elements of the individual. Their stamina, ability to perform and reaction times fit into this category. On the other hand, we have the mental fortitude and ability to understand the flow of the game. Both aspects are needed when performing, as one could have plenty of physical prowess, but not mentally able to keep up, or the opposite of an individual having a high understanding of the game, but unable to stay relevant physically in the match. By considering both theories as one methodology of training, it can allow for the athlete to perform at their best at a given time.

2.2.4 Periodization and Cognitive Load in esports

esports professional matches thrive when there is a gallery of spectators there to root for their favorite teams and players. The atmosphere is electric with eruptions of cheers during pivotal moments of each game. Similar to traditional sports, esports matches can take some time to play out. An average best of three series can take anywhere from two and a half to three hours to play out. Comparatively, a traditional sports game often takes about a similar amount of time, excluding any additional time in the case of a tie. Unlike traditional sports, in which only one game is played in the three hour time period, esports athletes may have played multiple rounds in a match or

multiple games, with the possibility of trading wins back and forth between each team. This creates a unique dynamic that esports has over traditional sports. It is a much quicker turnaround between moments of high pressure and stress to lulls in between rounds, or waiting for the next game to start. Therefore, endurance becomes paramount for the athletes to have the stamina to play at their top level for the duration of the match. During tournaments or championships, esports often takes to a best of five series, instead of three, requiring the top teams to best each and be able to endure for up to five hours on a given professional match day. In order for the athletes to be best prepared for such occasions, both theories can be utilized to have the utmost benefit on the athletes.

2.2.5 Utilizing Periodization in esports

Periodization is often associated with physical training for traditional sports. Activities like weightlifting or the relatively new phenomenon of Crossfit are big examples of where periodization is actively being used to the benefit of the athletes. These sports rely heavily on the training of the physical body, both in its stamina and its strength to participate. In both of these cases, periodization is used to prepare training regimes that allow the athletes to target specific muscle groups in order to achieve the most benefit from the training. By providing focus based training regiments, the athletes both lessen the wear and tear on their body while also reducing the stress they undergo. As was noted, esports is a different beast than that in which periodization is traditionally used. The esports virtual world requires no physical strength for the individual in order to participate. Arguably, there is no physical strength required

whatsoever within esports. Instead the physical stamina of the individual and the precise physical control is what makes the most important. It would be remiss to not explain what is meant by physical control in regards to esports. In this regard, physical control would be in relation to the mouse movements and key presses performed during any moment of a match. Professionals at the highest level operate within pixels of success and failure. As each wrist or arm movement can affect the movement of the mouse in the virtual space, the smallest of millimeters can determine a play in an online game. Add to this the fact that the opposing members of the other team are under the same conditions at the same time and it can make for dynamic swings of momentum based on one or two millimeters of movement. Periodization's strength here lies in the ability to target these movements and put them into training regimes, allowing for the individual athletes to lessen the burden on their physical capabilities and have that precision control through to the end of the match. Those same regimes would also provide a secondary benefit. As the idea of periodization is training within a period of time, the structured training would provide ample time to prevent the buildup of stressors on the individual. Kiely discusses the ample evidence showing that stress can reflect into sports related injury.[124] In the example analysis, there concludes that a strong predictor of injury occurrence was related to elevated psycho-emotional stress.[125] Kiely also notes that traits such as “self-blame” or “perfectionism” heavily contributed to the likelihood of sport related injury. In a poll of collegiate esports players conducted by Joanne DiFransisco-donoghue, Jerry Balentine, Gordon Schmidt and Hallie Zwibel,

[124] Kiely.
[125] Kiely.

55% had eye fatigue, 42% reported some form of neck and back pain, with 36% stating they had wrist pain and 32% indicating hand pain.[126] On average these athletes were practicing between three and ten hours a day which equates to the current practice regimes of some professional esports teams.[127] Kiely also discusses that periods of high academic stress during the season for elite football players also resulted in increasing injury chances.[128] Though it cannot be stated the level of stress of each individual who answered the survey, it can be assumed that as collegiate esports players, some general life stress would be present. Regardless of stress levels, the poll showcased a high likelihood of injury when practicing to play at the highest levels, likely from overuse. In this case, periodization would be used to prepare better training regimes, so as not to cause any physical injuries resulting from overuse, and secondly to provide rest periods to provide relief from stressors, which would further alleviate the possibility of stress related sport injuries. As the painting of periodization in esports further shows the benefits of applying it within the profession, describes how performance is affected by the stress on an athlete. Kiely discussed how heightened stress impeded training gains and muscular recovery.[129] In addition, Kiely described how high levels of stress impacted the ability of the athlete's path to return to action. Since periodization has the ability to control or lessen stress on an individual, using it within esports can have many benefits as the athletes are often put into stressful environments or situations. With the

[126] DiFrancisco-Donoghue, Balentine, Schmidt, and Zwibel.
[127] DiFrancisco-Donoghue, Balentine, Schmidt, and Zwibel.
[128] Kiely.
[129] Kiely.

reduction in stressors and physical ailments, the athletes performance will be heightened when it comes to crucial matches.

To summarize, periodization would provide better training regimes for the players allowing them to focus on training the physical stamina for long periods of play, or focusing on training the wrist or arms to reduce the chance of physical injury. Periodization would also provide the athletes with a programme to prevent overuse injuries and provide periods of rest, incorporated into the training structure, that would help to prevent the buildup of stressors on the individual. By utilizing it in such a way, professional esports athletes would have better training conditions, more periods of rest, and better control over their conditions resulting in better performance, less stress on the individual and a reduction in the opportunity of injury relating to either stress or overuse.

2.2.6 Utilizing Cognitive Load in esports

From infancy we learn to adapt and understand how to survive in the modern world. This primary biological knowledge is imparted onto us from birth. Following our first few years, we enter into the academic system in order to start to learn secondary biological information such as math, science and the like. It is in this context that cognitive load begins to shape how we see the world. Cognitive load is a tool used throughout the educational systems to continuously advance our ability to gain information without distractions from the lessons imposed on the class. How to portray that information, the complexity of its ideas, and how the individual responds to it are all influenced by cognitive load. Sweller argues that our ability to process information is

only considered when attempting to process new or novel material.[130] As we age, all information is new to us and everyone takes varying amounts of time to grasp new material. Within esports, there is the initial learning curve to understand the game, followed by a plateau where the game knowledge or game information does not change drastically or as frequently. It is at this point that cognitive load can be best applied for use in esports. Consider two athletes training with the same information being taught. In this example, there would be three variables to consider. One is the champions in the game and the skills, the second would be how different champions interact and the third being the proposed game plan or method of attack a team or individual wants to employ in a match. Player A in this case has full knowledge of all the champion skills and how champions can interact with each other. Player B has the same knowledge of champion skills, but lacks the knowledge of interactions. If both players are taught the same plan of action, Player A has to spend less cognitive power to understand the connections between the champions, their interactions and the proposed play than player B, who would require more cognitive resources to get to the same outcome. This is the crux of cognitive load theory. Player A would have the intrinsic load to learn the proposed play, while any extraneous loads may be easier managed prior to the germane load making the connections to previous stores of information. On the contrary, player B would have two portions of intrinsic, the proposed play as well as champion interaction, in addition to the same extraneous loads as player A. In this case, cognitive load theory dictates that the “glass” of Player B would leave less room for the germane load than Player A.

[130] Sweller, “Cognitive Load Theory.”

This example showcases the importance of cognitive load theory when it comes to practicing maneuvers or team calls in esports. By incorporating cognitive load theory into the training practices, it can allow for there to be as few distractions as possible for the players, reducing the extraneous load therefore allowing for more complex intrinsic loads to be tackled leaving room for the connections provided by the germane load.

In current esports facilities, there is often a corporate side of the business that shares the space with the athletes. This not only can serve as a distraction, but the different interior programs require different spaces in order to function. Cognitive load theory teaches us that in order to best tackle a new subject, any extraneous load on the individual is going to diminish the returns on any learning objective. Utilizing this theory can help prevent any distractions from reaching the athletes allowing the best chance of them being able to intake new information.

In summary, cognitive load theory is a tool that can help to further progress training schedules and theory crafting for professional matches. It can lead to removing as many extraneous distractions from the athletes cognitive atmosphere allowing for further complex intrinsic ideas to be discussed during team training. In addition it will allow for further moments of clarity when new ideas are being proposed since there is more room in the mental “cup” for the germane load to have resources utilized for it.

2.2.7 Applying the Theories of Cognitive load and Periodization to the Design

Both the theory of cognitive load and the theory of periodization exist much more in the methodology in which the players realize their time, rather than in the physical form of an interior space. That said, both theories provide the contextual foundation for

various interior spaces that will be applied in this practicum. In order to comprehend how both cognitive load and periodization will be applied to the interior space, a breakdown of the various use cases will give the most benefit.

2.2.8 Areas of Pause

Periodization dictates that some form of time management is undertaken when training various physical and mental attributes. This relates to both the specific method of training that is being undertaken and the targeted physical or mental area being trained. Regardless of the target or method, periodization follows a principle to include periods of rest and recuperation into the training schedule. In order to facilitate these periods of rest and recuperation, the creation of spaces that target the ability to relax and “shut off” one's brain will be included throughout the building. These “areas of pause” will be placed strategically around various zones of high stress, such as the training areas for the professional players or nearby corporate zones, to allow for an area of mental and physical relaxation to take place and rejuvenate the individual. These spaces will focus on engaging in natural light and having elements of biophilia in order to connect the individual to nature. These spaces can be larger or smaller in nature, but provide enough space to enable individuals to spread out and experience a feeling of recluse while recuperating. As an additional benefit to these moments of pause, the athletes will be encouraged to engage with these spaces after long training sessions. Via the use of furniture selection or with considerations to layout, we can create areas of refuge for the athlete to minimize any distractions in order to better retain the information garnered during the training session. The additional benefit

provided by these spaces is not only a space the individual can go in order to decompress, but it also provides the bonus of relieving stress that the players may have taken on during any training sessions or during any other moments of their professional or personal lives.

2.2.9 Reduction of Extraneous Load Elements

esports, in relation to the cognitive load theory, only truly engages with the iconic and echoic memories storages when actively training. The visual input gives players information of where their opponents may be, or allows for certain decisions to be made based on what they can see. The auditory stimuli signals players to incoming threats, points of interest or highlights gameplay moments that may have been triggered. Both of these two sensory storages' work in tandem to deliver the information so that the brain can relate and proceed with a response to it. If the goal is to achieve the most benefit from training periods as possible, a care to reduce any outside distractions on the players is critical. In order to reduce the outside extraneous loads on the players while training, different aspects of design can be incorporated. Moving training spaces away from the exterior windows helps to reduce any possible glare as well as a distraction of visual stimuli. Training spaces will be placed in relation to other programmed rooms so that there is no pollution of noise spilling into the areas of training. In addition, the spaces for training and the teams will be placed on a different level from that of the corporate spaces and placed furthest away from the public gathering space in order to prevent any undesired distractions. Other aspects of design can be taken in order to prevent distractions, such as furniture choices not being

extravagant in training spaces and utilizing color theory when painting walls to create spaces of calmness rather than elements that provide high visual stimuli.

Whereas periodization helps to control the physical and mental stamina of the athletes, cognitive load would act as the secondary punch, preparing the athlete for any in-game situation that could arise. Inhabiting a space that focuses on providing the best training optics for esports via the methods above, will create a facility that will be the envy of other teams, hopefully leading to the ultimate success for the organization and team.

3.0 PRECEDENTS ANALYSIS

3.1 PRECEDENTS
3.2 ANALYSIS

3.1 Precedents

3.1.1 Team Liquid Alienware Training Facility

Overview

Designer: Unknown

Client: Team Liquid

Location: Playa Vista, Santa Monica, Los Angeles, USA

Footage: 9,000 sq.ft

Purpose / Program

The goal of the Alienware Training Facility is to create a space for the contracted players, coaching staff and organizational staff to co-inhabit. The space is designed to function as a training place for the professional players as well as allowing for social media content to be created for the teams identities. This is done by the content team and the entirety of the space is looked after by administration staff of the organizations.

Figure 1: Alienware Training Facility Floor Plan

Overall Design Concept

The space could double as a nightclub with high tech LED screens and lighting engulfing the space. It's sleek with open work space for the administrative and content creation teams, and private contained booths for the teams to practice within. There is a personal chef and kitchen on the premises to allow for healthy eating alongside a nutritionist and sports psychologist to allow for players to concentrate to their fullest on the next upcoming tournament / game.

Figure 2: Alienware Lunar Light Scrim Room

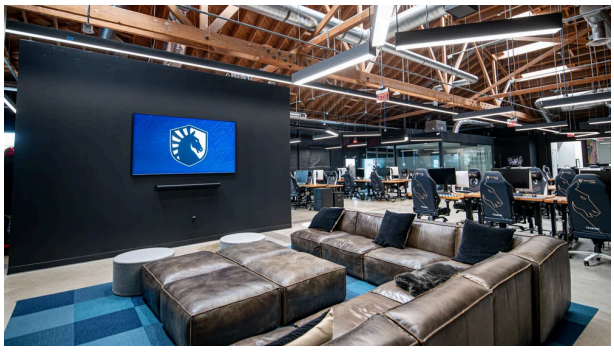


Figure 3: Alienware Training Facility Office Interior

Spatial Organization

An open concept look is the take on what is ideal by Team Liquid at the Alienware facility. Open views to most areas, facilitated via interior glazing, allows for views throughout the entirety of the space. Practice spaces are more closed off and private booths are prepped for louder volume levels. The Kitchen is located near the practice rooms for easy access to healthy eating for the players and both practice spaces inhabit the same area to separate the practice space from the corporate space. General lounge space is located within the middle main office area at an installed bar allowing for both players and corporate to mingle throughout the day. War rooms or meeting rooms are provided and insulated for private conferences with glazing looking into the main space.

3.1.2 100 Thieves CashApp Compound

Overview

Designer: Unknown

Client: 100 Thieves

Location: Playa Vista, Santa Monica, Los Angeles, USA

Footage: 15,000 sq.ft

Figure 4: CashApp Compound Floor Plan

Purpose / Program

A first of a kind compound created to house the training facilities, apparel design and retail, entertainment and content production as well as the business headquarters for 100 Thieves.

Overall Design Concept

Sleek, white and open concepts were the key fundamentals in the creation of the CashApp Compound. This space is intended to fulfill the functions of three separate typologies merged; corporate, retail and training. Allowing for the mingling of the corporate teams, with the retail apparel teams and the players themselves, creating a closer knit group that shares the same facility which includes a lounge, kitchen, practice spaces, retail space, corporate office space and content creation sweets for further brand recognition.

Spatial Organization

Upon entering the compound, the public is allowed access to the retail space that houses the apparel sold by the brand. The first floor consists mostly of corporate teams with the lounge being housed at the back next to the outdoor patio for all to enjoy. The kitchen is available for all to use and two practice spaces are also located within the first floor. Finally the first floor also locates the production studio, where regular content is produced via the brand and distributed to the public online. The mezzanine houses the other two practice spaces alongside the content creation booths, which allow for content producers, such as streamers and lifestyle video influences to produce and distribute their content under the 100 Thieves brand. The second floor mezzanine also houses a lounge space for players to rest or relax outside of the training rooms which can be more stressful.

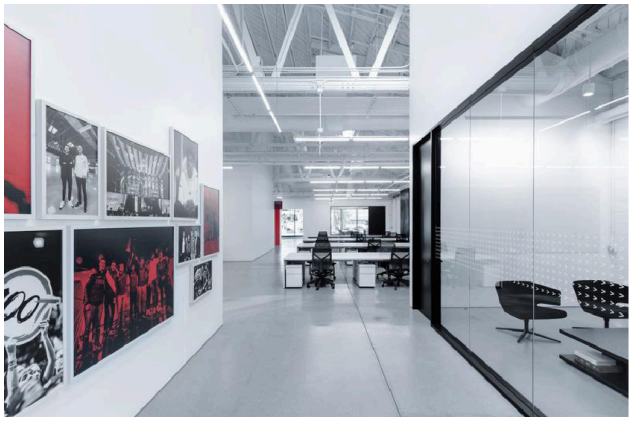


Figure 5: CashApp Compound Office Interior

Figure 6: CashApp Compound Practice / Training Room

3.1.3 UCLA Health Training Center

Overview

Designer: Rossetti

Client: LA Lakers

Location: El Segundo, California, USA

Footage: 120,000 sq.ft

Purpose / Program

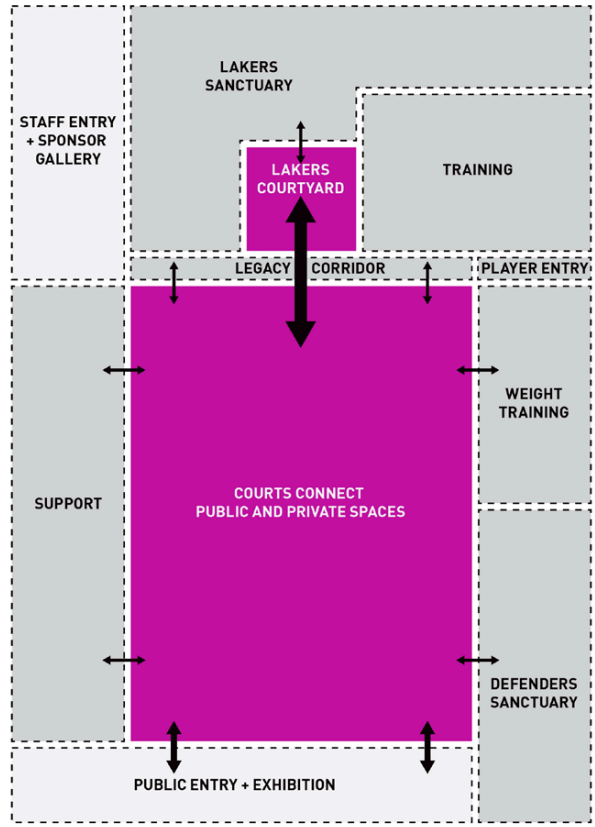
Built by Rossetti, a firm well known for sports and entertainment designs, this project was built to consolidate the basketball team and business team all under one roof. Merging the corporate team with the athletes reflects the values and goals of the organization, aiming at creating greater

synergy between all the various parts. UCLA is a breakaway from conventional programming of training facilities offering a new adaptation of training facilities looking towards the future.

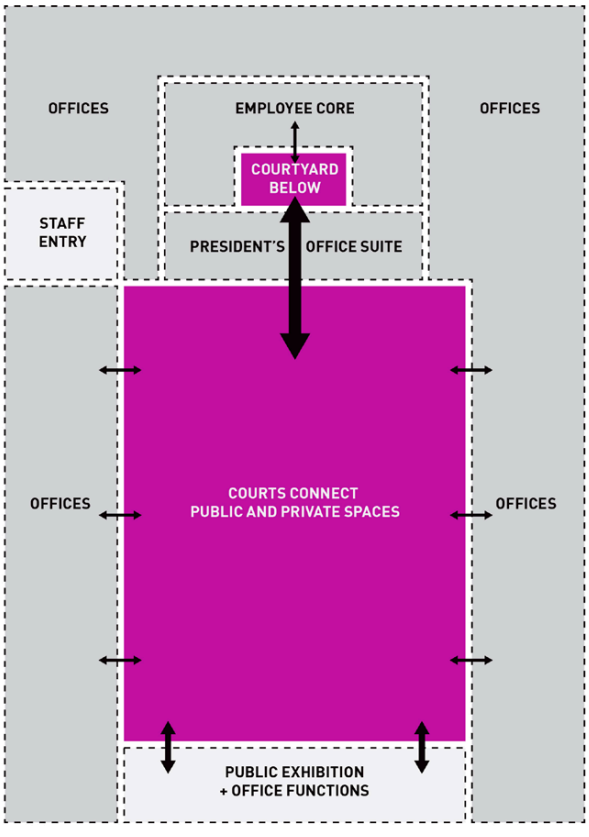
Overall Design Concept

The creation of this space focuses on a domestic approach as an alternative to the typical corporate environment. The design uses a “home away from home” approach incorporating basketball courts, offices, weight and conditioning gym, training areas, theatre/screen room, a barbershop, a kitchen directed by a nutritionist and a player quiet room.1 Optimal Visibility has also been at the forefront with the design process, creating views for both within and outside the facility.

Figure 7: UCLA Health Training Center Office Interior



GROUND FLOOR PROGRAM



SECOND FLOOR PROGRAM

Figure 8: UCLA Health Training Center Floor Plans

Spatial Organization

The first floor allows for public exploration into the facility while still containing privacy for the athletes in their respective sanctuaries. The first floor also locates all the training and needs for the athletes inhabiting the space. Upon the second floor is where the corporate offices and programming occurs. Here you can find the offices of the presidents, with views onto the training courts as well as the offices of the business team staff, allowing for views out of the facility overlooking the Hollywood hills in the distance. The Lakers sanctuary also contains the private courtyard, allowing access to green spaces, and kitchen with onsite nutritionist for healthy eating capabilities.

Figure 9: UCLA Health Training Center Interior Basketball Courts

3.2 Analysis

3.2.1 Team Liquid Alienware Training Facility

The Team Liquid Alienware Facility is perhaps one of the strongest precedents for the future of esports training facilities. This is partly due to the recency of the project, which was finished in 2018, and also due to it becoming a model for other organizations to follow. Many aspects of the facility point towards thoughtfulness towards players wellbeing and lifestyles while also including the merging of the corporation teams to create a space that enhances the relationships between players and corporate teams. Alongside this is the added bonus of other genre teams sharing experiences and helping to support each other in the competitive scene.

Pros:

- Kitchen and Nutritionist on site
- Practice space for players separate and private from that of the corporate workspace
- Analysis space separate from practice space allowing for healthy balance of practice and learning
- Programming keeps the players and coaching staff together and nearby amenities close
- Content production and studio teams are gathered into one area to allow for cooperation on various projects and sound isolation for the production teams.

Cons:

- Open office workspace could be considered difficult to work in with louder lifestyle of players walking into kitchen and or distraction from those entering the building
- Natural light at a minimum within the main office space, creating a need for natural elements for the mental health of employees
- Lack of privacy for important meetings and or administrative actions
- Acoustical properties within the office and hard surfaces could cause a problem as there is little to no sound mitigation within the space.

How does this relate?

There are many positive aspects that can be taken from the Team Liquid facility, such as the amenities that are provided for the players to facilitate a healthier lifestyle but there are however a few negative aspects that should be looked at in relation to the project. The lack of natural light is a big component of a healthy lifestyle and it can be a difficult balance in regards to the screens that the players play on and glare being a major issue. In this space however there is minimal natural light and no outdoor patio or space provided for players to get fresh air. Secondary to this is the corralling of the players into one corner of the facility. This has both negative and positive issues. Positively it provides a space for the players specifically that they can feel comfortable in. Contrary to this however, one could feel confined within the space, as there is a lack of lounge space within the facility for players to get away from the practice rooms. These two aspects would be major

considerations within the design proposal for my project. Providing both natural light and the ability to relax and get away from the practice room, whether that be in a lounge format or natural patio format, is paramount in order to maintain a healthy balance and lifestyle for the professional players.

3.2.2 100 Thieves CashApp Compound

100 Thieves CashApp Compound provides an interesting amalgamation of different typologies and how they can function within the space. Corporate open office, retail space and practice space, alongside studio and content creation all inhabit the space. Some of these aspects in relation to my project could become redundant or not needed depending on the branding of the team. For 100 Thieves this space works as they are attempting to be a lifestyle brand, whereas if compared to Team Liquid, the goal there is an esports organization.

Pros:

- Kitchen on site
- Practice space for players separate and private from that of the corporate workspace
- Programming shows good organization of various spaces and public access limitations
- Patio and outdoor space for those looking for rest space from practice of office work
- Natural light infiltrates the spaces for office settings and conference spaces whereas the training rooms are more closed off from natural lighting preventing glare.

Cons:

- Content creation and individual studios seem thrown out in various areas, creating difficulty in communication between them
- Not all aspects of the spatial planning will be needed for my proposal
- No on site physical training or nutritionist available
- Practice and analysis space share the same area, though rooms are big, can add mental stress on players causing mental fatigue.

How does this relate?

The spatial organization of the compound is what I want to focus on most as it seems to have a very cohesive layout save for one or two elements. Public access into the retail space and front of the building are gated by the reception desk, allowing for easy access for public and separation of the private spaces. The mezzanine or balcony overlooking the open office floor plan on the first floor does well in separating the practice spaces from the monotony of the workspaces as well as provides an additional lounge space for players to step out and away from practice spaces without having to travel all the way to the bottom floor and the back of the building. Within the building the use of natural light traverses into the open office workspaces. This is assisted by the material selection of the space, with reflective surfaces and bright colours helping to bounce the light further into the space. Multiple lounges are located throughout the space allowing for work to carry into those spaces or a break from the corporate typology open office. The production studio and streaming studios provide privacy and due to their nature of coming and going, allow for easy access and less distraction to the office spaces due to their placement. Overall many aspects of this layout can provide for good examples of spatial layout going forward for my proposal to create a space that excels in all areas.

3.1.3 UCLA Health Training Center

The LA Lakers basketball team uses this facility for training and day to day activities for the business. Within this space we are catering to the amalgamation of the corporate teams and the athletes for a realization of the goals of the company. This example allows for references and examples to be taken from a well established sports organization and league. This typology and space can create highly influential decisions for esports teams to copy and has been done by Team Solo Mid (another esports organization) and others looking to create their own facilities in the future.

Pros:

- Kitchen and Nutritionist on site
- More established sports organization utilizing the same principles as esports facilities
- Private space for the athletes to inhabit
- Open courtyard for nature exposure
- Natural light infiltrates through the facade
- Physical training rooms on site for players
- Public access controlled but allows transparency
- Domestic “home” approach to the materiality selection and aesthetics of the space.

Cons:

- Not esports programmed
- Considerations for the differences within the types of sports would need to be considered in regards to the programming of the space.
- Multi-Storied facility and much larger than most esports facilities currently
- Lack of mingling between players and corporate.

How does this relate?

UCLA provides one of the most complete experiences in my opinion for the programming and organizational layout of the space. All of the players' amenities and programmed spaces are within the bottom floor private sphere whilst the office spaces inhabit the second space. The views provided into the training courts from the second floor allow for connections between the athletes and corporate teams to emerge though the actual cohabitation between players and corporate is limited. Each space integrates the natural light from the outside, including the court areas which use clerestory windows to bring in natural light to the courts. This programming can relate to the spatial organization of my proposal by showcases the advantages of keeping the programmed spaces for the athletes close by to one another and providing a separation from the corporate typology while still allowing for both typologies to inhabit the space together. Lastly, the domestic

interior or home approach to the materials and furniture selections can provide a different feel to the corporate space and inherit “homier” attitudes for a more comfortable working environment.

4.0
SITE ANALYSIS

4.1 OVERVIEW
4.2 SITE SELECTION CRITERIA
4.3 SITE HISTORY
4.4 LOCATION

4.1 Overview

- Address: 310 Ross Avenue, Winnipeg MB
- Neighbourhood: East Exchange District
- Current Tenant: Unoccupied, for Lease by Avison Young
- 5 Storey Warehouse
- 27,520 square feet (5,504 per floor)
- Basement of 5,940 square feet (not included in square foot calculations)
- Built in 1905
- 15 ft. wall Heights

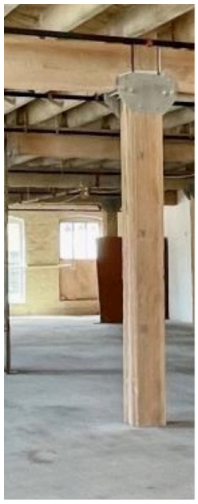
The next portion of this practicum will undertake an exploration of the contextual information related to the site. It will navigate through the site's location, its history, climate information and other existing conditions situated nearby the hypothetical Northern Lights esports Center. As the building in which a corporate entity resides can play a vital role in how the public and employees perceive them, care was taken to locate the building in an area that adheres to the companies goals and fundamentals. This allows for the site to become an extension of the proposed programming to further encapsulate the culture and identity of the organization.

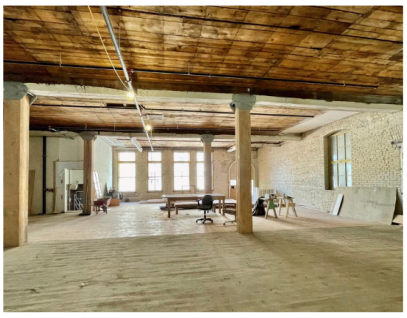
4.2 Site Selection Criteria

Utilizing the following criteria, the location at 310 Ross Avenue was decided upon as the ideal location for Northern Lights esports Center.

1. Easily accessible by both public and active transportation.
2. The building should be located in the heart of the city in order to foster connections and create a community space for fans to interact with the team, players and others who share the same passion.
3. The site should be close to elements that promote healthy living, such as green spaces or active bike lanes. In addition, located nearby residential housing in order to allow for a better work life balance for both the players and organizational staff.
4. The site should be large enough for the three elements of Northern Lights esports. Those would include a public space for gathering, a semi-private space for the organization's corporate staff to work and the team's private spaces for dedicated training and practice.
5. The site should have consideration for the dichotomy at play between the “darkness” of esports and the promotion of natural elements for health and well being, such as natural light and nature. The location chosen has windows on 3 sides of the building, allowing for the natural light to bleed in, while still providing an area for the programmed functions that require little to no natural light.

4.3 Site History






310 Ross Avenue, also known as the Leadlay Building, is rooted in the industrial upcomings of Canadian Railway and the growth of Winnipeg's Warehouse District. Initially the building was commissioned in 1905 by Harry Leadlay, a local hide and fur dealer, who operated his business next door.[131] The four storey building was designed by a local architect by the name of James H. Cadham and subsequently constructed by John A. Girvin and W.J. Hodgins.[132] Upon completion, Leadlay, who originally intended to occupy one of the floors for themself, rented out the building to other companies due to the high demand.[133] By 1913 Leadlay's Manufacturing Company, a new business started by Leadlay that specialized in sweaters, overalls and other clothing, had occupied a floor in the Leadlay building.[134] In the early 1920's Leadlays' company filed for bankruptcy and since then various occupants have inhabited the

[131] "Historic Sites of Manitoba: Leadlay Building (306-310 Ross Avenue, Winnipeg)" Manitoba Historical Society Archives, last modified April 13, 2020, https://www.mhs.mb.ca/docs/sites/leadlaybuilding.shtml#.
[132] Manitoba Historical Society Archives, "310 Ross Avenue."
[133] M. Peterson, *306 Ross Avenue: Leadlay Building,* (Winnipeg: City of Winnipeg, May 2019), 1-31
[134] M. Peterson, *306 Ross Avenue.*

building, such as Winnipeg Leather Goods Manufacturing Limited.[135] In 2019, the building became a municipally-designated historical building.

The Leadlay building incorporates arches above the doorways and windows that was heavily utilized in the warehouse district of Winnipeg. This style was highly sought after as businesses believed it to portray stability for their firms via the buildings they chose to inhabit.[136]

Since being bought by the 310 Ross Ownership group, the building has undergone a restoration to enhance and highlight the early 1900's characteristics such as the timber beams and hardwood floors. It currently remains open to lease with some plans having been discussed previously, such as the opening of a restaurant on the main floor and office spaces on the floors above.

[135] M. Peterson.
[136] M. Peterson.

Figure 12 shows the location of 310 Ross Avenue, within the exchange district. This map highlights the major landmarks or routes, such as the Red River and Portage Avenue to help provide context for the building. The location being in the heart of the exchange district is a huge attraction for multiple reasons. Firstly, as shown in Figure 19, the building is easily accessible via bike with designated bike paths and bike friendly streets connecting to it. Similarly public transport via bus has a stop located at the end of Ross Avenue, as seen in Figure 20. Public parking is also available nearby. Figure 16 showcases the census data which indicates most that live in the area utilize a personal vehicle for transportation. As the building would be a gathering point, ease of access to the site was a crucial element to the decision to locate Northern Lights esports as there would be both public and private access to the building.

Similar typologies were located nearby to the building as shown in Figure 21. These typologies share similarities with the proposed typology of this practicum. Locations of arts, entertainment, public gathering spaces, recreation spaces and restaurants were all located showing the diverseness of the exchange district.

The proposed practicum would cater to all demographics, but likely have a more focused user-base of those from the age of 10-40. Figures 17 showcases the most recent census data which matches the expected user age of the day to day clientele. Other elements from the census were selected for their relation to the site and the proposed typology. Figure 13 shows the religious representation within the area, while figure 14 provides the education demographics.

4.4 Location

4.4.1 Street Map of 310 Ross Avenue

Figure 12: Street Map of 310 Ross Avenue

4.4.2 Area Demographics

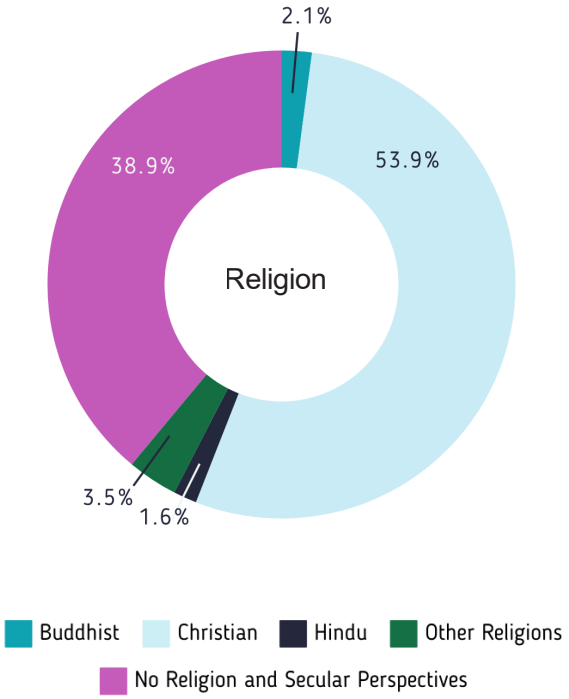


Figure 13: Religion Demographics by Area from Statistics Canada, 2021

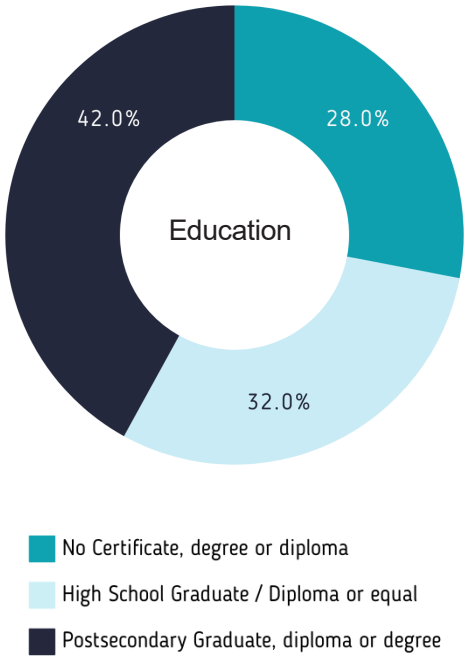


Figure 14: Education Demographics by Area from Statistics Canada, 2021

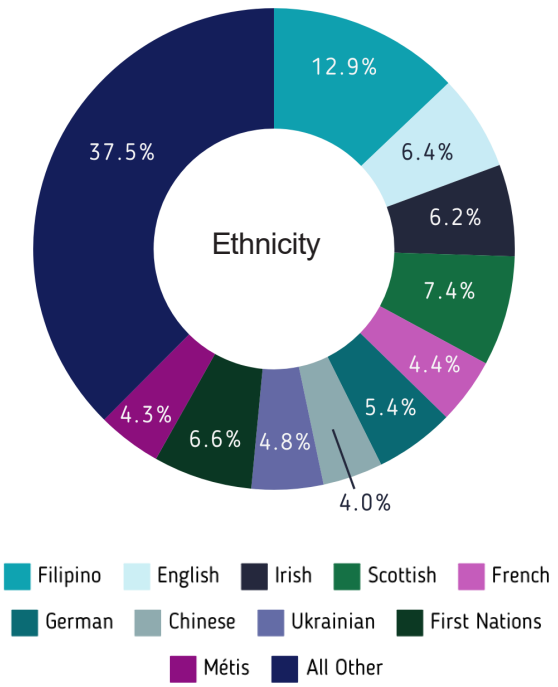


Figure 15: Ethnicity Demographics by Area from Statistics Canada, 2021

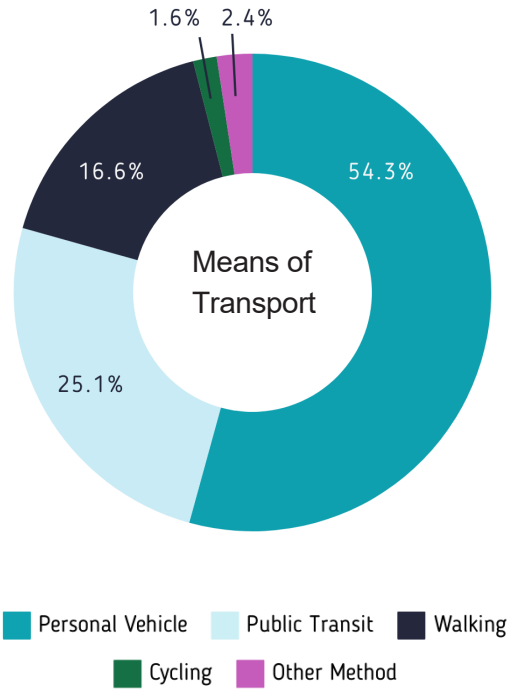


Figure 16: Means of Transport Demographics by Area from Statistics Canada, 2021

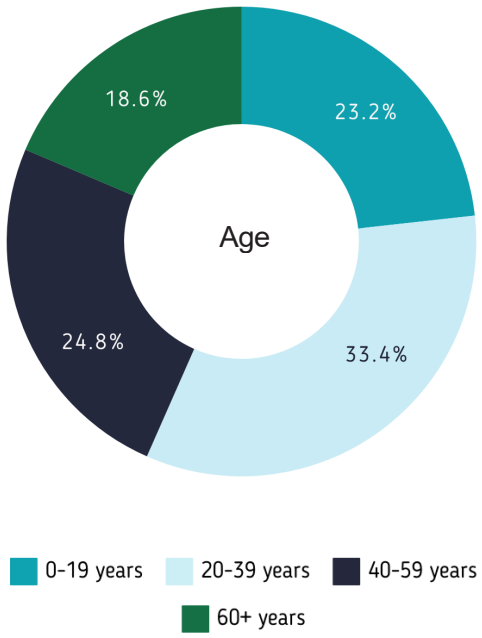


Figure 17: Age Demographics by Area from Statistics Canada, 2021

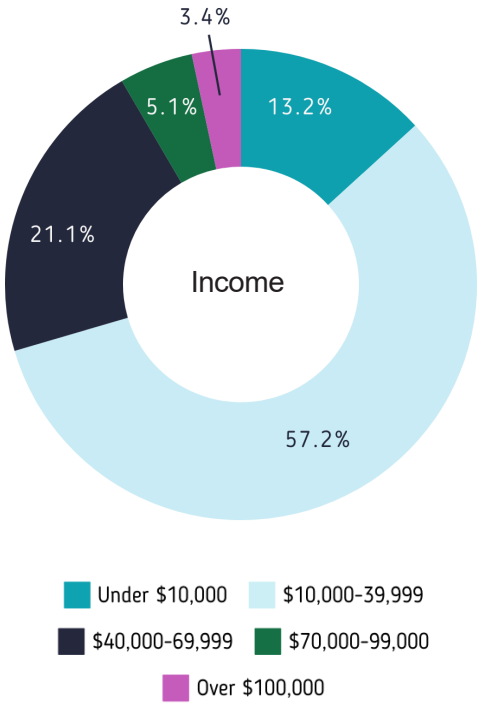


Figure 18: Income Demographics by Area from Statistics Canada, 2021

4.4.3 Transportation Map

Figure 19: Transportation Routes for 310 Ross Avenue

4.4.4 Public Transportation Map

Figure 20: Public Transportation and Parking Available for 310 Ross Avenue

4.4.5 Places of Gathering

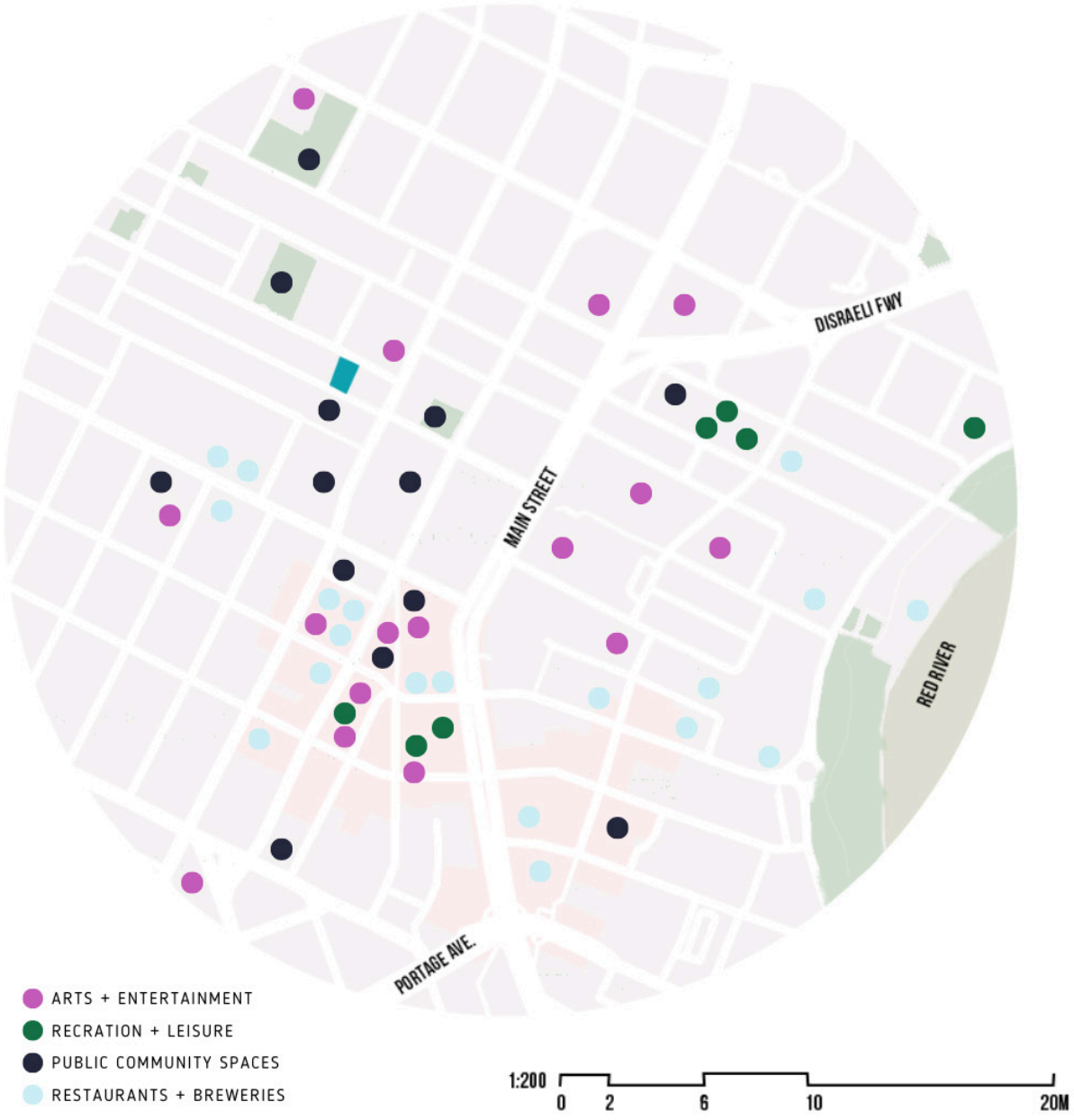
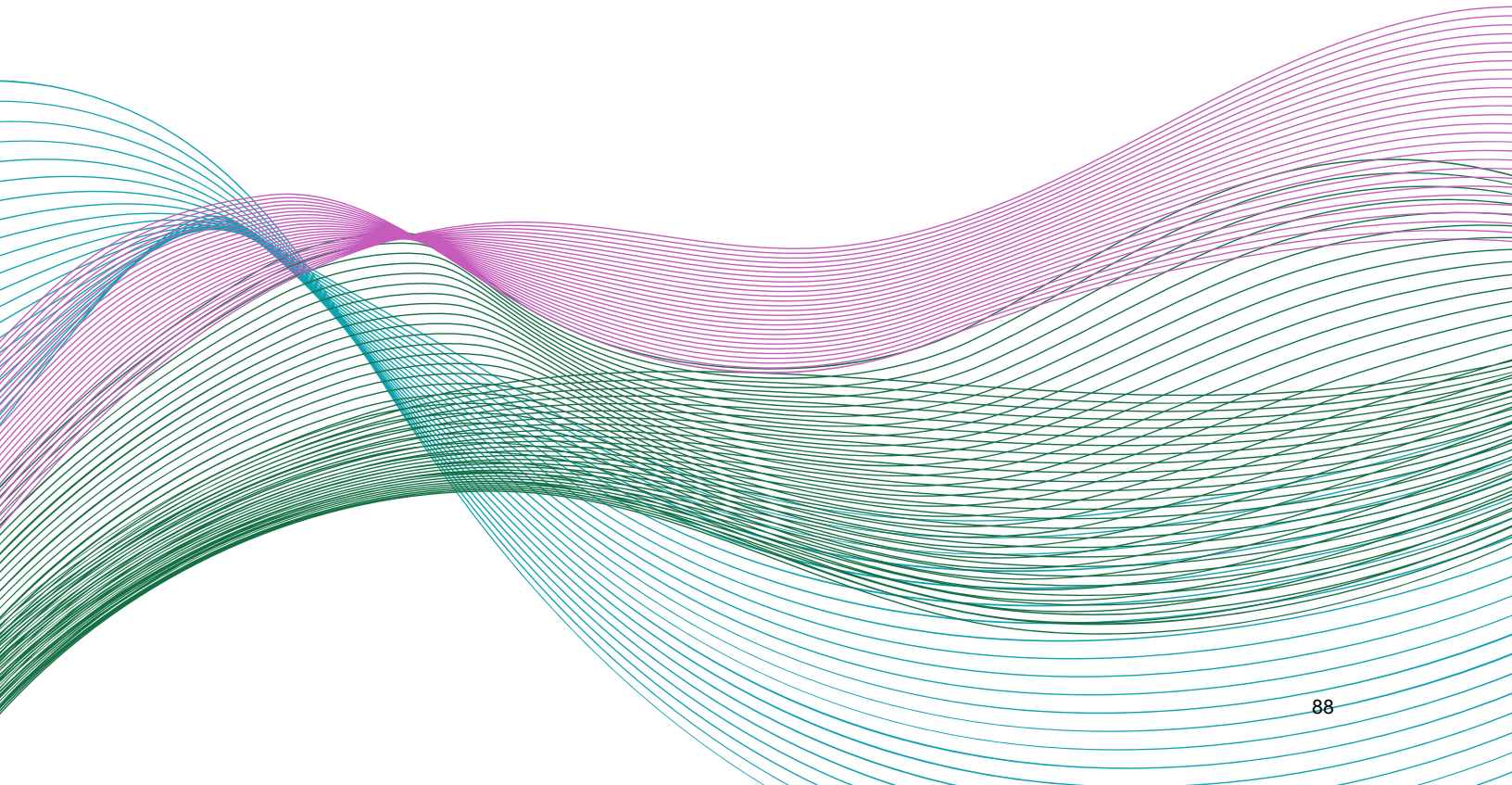


Figure 21: Types of Gathering Spaces near 310 Ross Avenue

5.0 PROGRAMMING

5.1 CLIENT OVERVIEW
5.2 DESCRIPTION OF CLIENTS AND USERS
5.3 ADJACENCY MATRIX
5.4 STACKING DIAGRAM
5.5 BUBBLE DIAGRAMS



5.1 Client Profile

Northern Lights esports

Northern Lights esports is a hypothetical esports organization located in Winnipeg, Manitoba and serves as the primary users of 310 Ross Avenue. The organization competes with other professional teams in various esports genres. Most notably having teams competing in League of Legends and Counter Strike Go. Thus far, the teams have competed well, earning podium finishes in the last few international events. The organization consists of three distinct users groups. The players / coaching staff, the content and moderation team and finally the organizational administrative staff. All three groups work in conjunction together to make up Northern Lights esports.

Northern Lights esports pays homage to the True North Sports Entertainment (TNSE), who operate the Winnipeg Jets & Manitoba Moose NHL hockey teams, alongside other entertainment venues. Additionally, as Winnipeg and Manitoba are well known for their Aurora Borealis display, the namesake pays tribute to that as well.

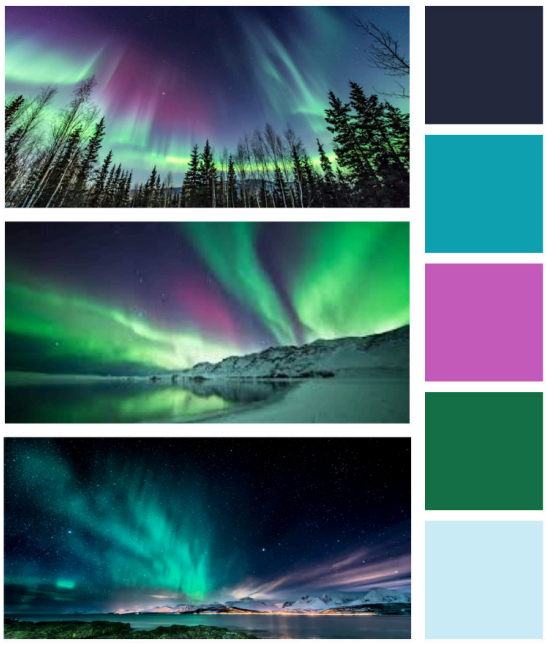


Figure 22: Northern Lights esports Brand Inspiration and Colours

Client Identity

Northern Lights esports aims to be a big name recognizable in the esports industry. As such the logo and imagery needs to have resonance with the image of the Northern Lights. As the Northern lights can inspire passion and amazement in those that witness them, Northern Lights esports aims to bring that passion and awe-inspiring moments to the city of Winnipeg through their esports teams. The company's logo (Figure 23 and 24) is inspired by the movement of the Northern lights (Figure 22) in its ebb and flow, while taking the typical colours often seen within the northern lights (and surrounding atmosphere) to deliver an iconic logo that is recognizable throughout the industry.

Figure 23: Northern Lights esports Logo Concept

Figure 24: Northern Lights esports Alternative Logo Concept

Client Objectives

Player Wellness

- Ability for players to relax or take moments of rest after periods of high stress
- Physical exercise / recreational activities available onsite or nearby
- Focus on mental resiliency of both players and staff
- Nutritional needs being met daily.

Create a competitive esports team with cutting edge training facilities

- Most beneficial practice technologies including ability to simulate stage games
- Create spaces that provide the best ability to train for any situations
- Create safe and comfortable training areas for all genders to practice within

All aspects of the organization under one roof.

- Team Operations staff, Business staff, professional athletes, coaching staff, content / social media team all housed under one roof with the ability to access one another easily
- Different spaces for different functions; maximizing the use of private, semi-private and public hierarchies to create defined spaces for all to excel

Development of passionate community

- Form a connection between those who shares the same passion for esports
- Create a gathering space that brings together like-minded people
- Form connections with fans via content and other events

Natural Elements / Healthy Atmosphere

- Connections to nature or outdoor spaces
- Meld the virtual reality world with the real world via biophilia Use natural light where appropriate and not affecting team practices
- Various forms of work spaces to provide for individuals who like to work on the move.

5.2 Description of Clients and Users

5.2.1 Primary Users

Primary Users

User	Age	Responsibilities	Physiological Needs	Adjacencies	Requirements	Quantity
Professional Athletes	17-30	• Train for upcoming events and matches • Attend team meetings and V.O.D. reviews	• Areas of Respite from Stress • Collaboration Spaces / Meeting • Spaces / Practice spaces Access to Nutrition	• V.O.D. Review rooms • Enviro Control Practice Rooms • Head Coaches • Training Areas	• Height adjustable workspace • On-site shower facilities • Storage for personal items • Exposure to Biophilia • Access to natural light	5-10
Coaching Staff	25+	• Prepare training regimens for athletes • Care for players physical and mental health Develop game plans for stage games Keep up to date tabs on players on-goings	• Stress Reducing spaces • Collaboration Spaces / Meeting • Spaces / Practice spaces Access to Nutrition	• V.O.D. Review rooms • Enviro Control Practice Rooms • Head Coaches • Analysts • Assist. Coaches • Training Areas	• Height adjustable workspace • Storage for personal items • Exposure to Biophilia • Access to natural light	1-2
Team Operations Staff	21+	• Day to Day team functions • Planning of trips for tournaments • Assist in player well-being and providing support when needed	• Collaboration Spaces / Meeting • Spaces / Practice spaces Access to • Nutrition Ability to book space for heads down work or private work	• Coaching Staff • Business Staff	• Height adjustable workspace • Storage for personal items • Exposure to Biophilia • Access to natural light	6-8
Business Operations Staff	21+	• Day to Day business operations • Ensure smooth running of public engagement and public gathering space on main floor Assist in player well-being and providing support when needed Collaborate with • Content team for Event planning	• Collaboration Spaces / Meeting • Spaces / Practice spaces • Access to Nutrition • Ability to book space for heads down work or private work	• Coaching Staff • Team Operations Staff	• Height adjustable workspacev • Storage for personal items • Exposure to Biophilia • Access to natural light	4-6
Content Team	21+	• Day to Day social media operations • Creation of content for public • consumption. • Assist in player well-being and providing support when needed Collaborate with Business operations staff for Event planning	• Collaboration Spaces / Meeting • Spaces / Practice spaces • Access to Nutrition • Ability to book space for heads down • work or private work Sounds proof working booths	• Athletes • Coaches • Team Operations Staff • Business Operation Staff	• Height adjustable workspacev • Storage for personal items • Exposure to Biophilia • Access to natural light	6-8
Public Space Team	16+	• Provide assistance for guests coming • to the main floor gathering spaces • Sale of retail items • Guest Experience • Tech support for PC Cafe	• Break area away from public • Nutrition access • Access to seating area while on break	• PC Cafe • Event Space • Retail area	• Storage for personal items • Access to natural light	5-10 with only 2-5 working at any given time

Table 1: Primary Users of Northern Lights esports Facility

5.2.2 Secondary Users

Secondary Users

User	Age	Responsibilities	Physiological Needs	Adjacencies	Requirements	Quantity
Public	All Ages	• Use the PC Cafe to play local tournaments Shop branded • Merchandise Attend events or • Live showings Gather with those sharing the same passion	• Ease of wayfinding • Feelings of Safety	• PC Cafe • Events Space • Retail spaces	• N/A	N/A
Visiting Teams	21+	• Bootcamp for local tournaments or practice for international tournaments • Discussion of current state of the game	• Collaboration space • Ability to book meeting space • Ability to book practice space	• V.O.D. Review rooms • Enviro Control Practice • space Meeting Rooms	• Ease of access • Personal Storage	3-6
Guests & Media	All Ages	• Visitors of Northern Lights • esports Attend meetings • Touring of the space	• N/A	• N/A	• N/A	N/A

Table 2: Secondary Users of Northern Lights esports Facility

5.2.3 Tertiary Users

Tertiary Users

User	Age	Responsibilities	Physiological Needs	Adjacencies	Requirements	Quantity
Shipping / Delivery	16+	• Delivering & receiving of items / goods to be shipped	• Access to Service Elevator • Access to storage Areas	• Accessibility to Reception	• Allocated Delivery / Receiving space	1
Cleaning Staff	16+	• Cleaning of the facility • Primarily cleans after hours	• Access to all floors and elevators	• Accessibility to Reception	• Maintenance / Janitorail spaces	2-4

Table 3: Tertiary Users of Northern Lights esports Facility

5.3 Adjacency Matrix

Figure 25 shows an adjacency matrix for the client profile. The Adjacency matrix is a representational diagram that provides information on how to layout the floor plans based on client needs and wants. In the case of Northern Lights esports, the most important adjacencies are indicated are primary, whereas items labelled as secondary are not a neccesity for the spatial layout. Northern Lights esports needs focused on getting the training areas for the professional athletes to be located close to each other, in order to gain the most benefit for the team.

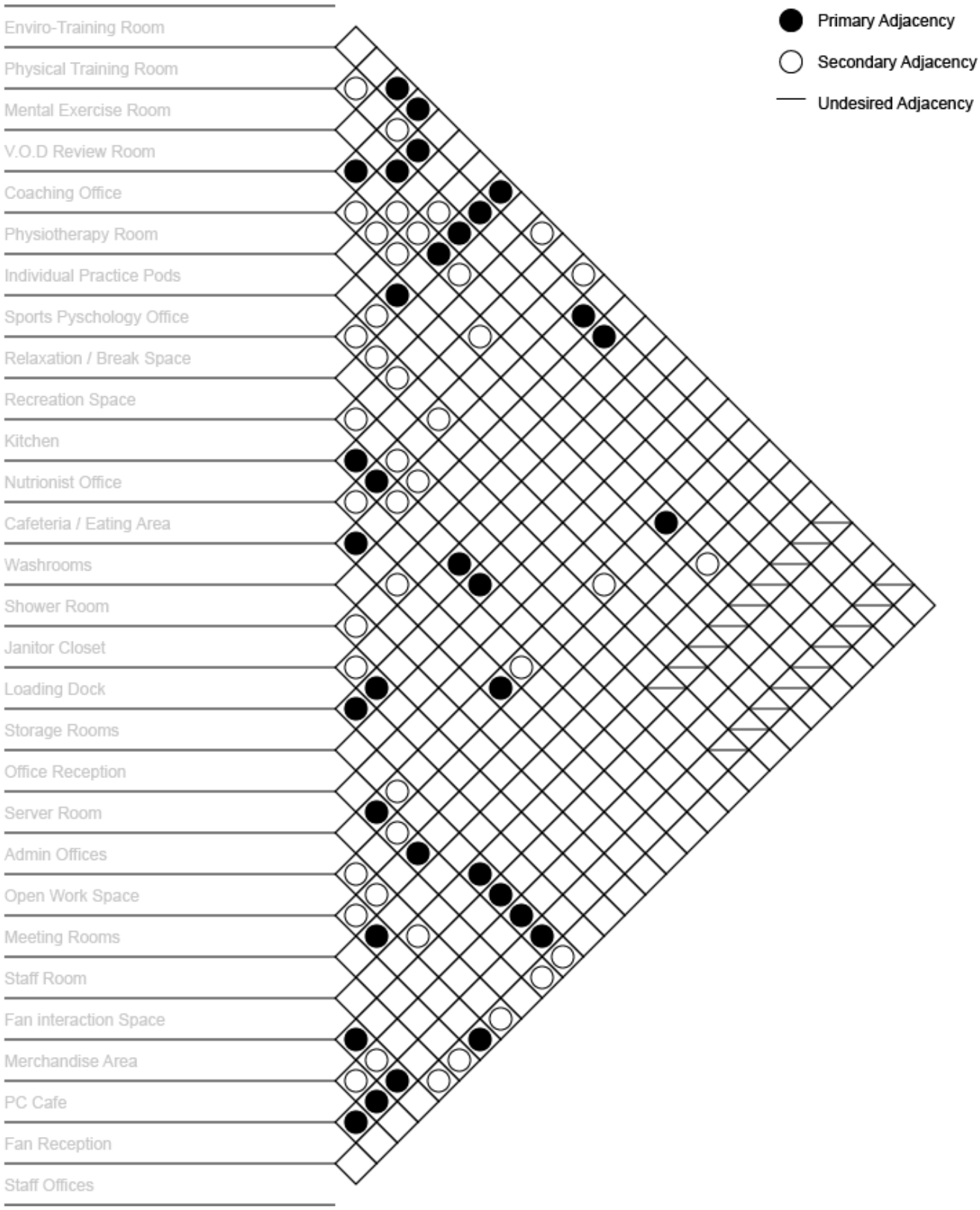


Figure 25: Adjacency Matrix for Northern Lights esports Facility

5.3 Stacking Diagram

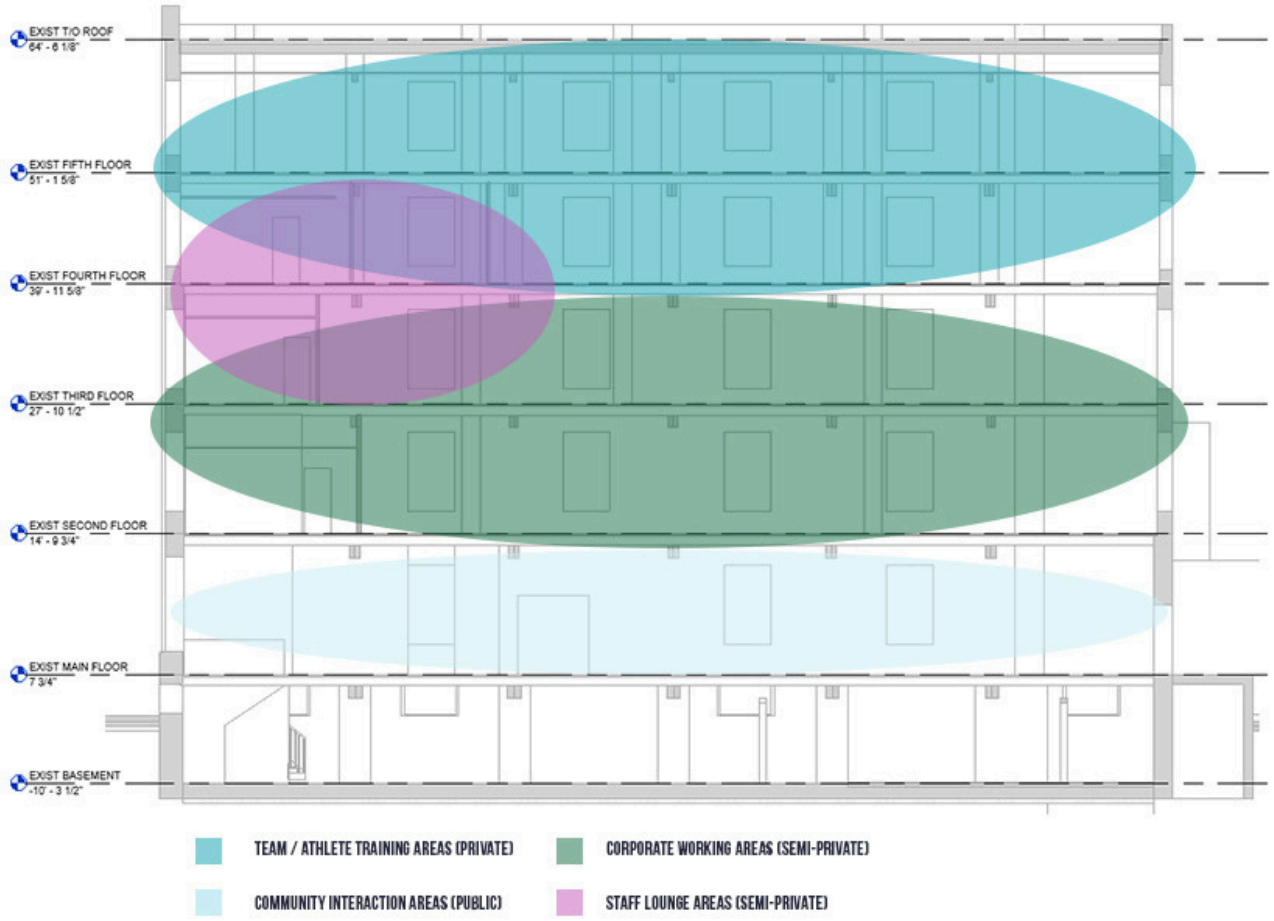


Figure 26: Stacking Diagram for Northern Lights esports Facility

As the building at 310 Ross Avenue is five stories, there was a need to differentiate the differences between public, semi-private and private floors. With the first floor being open to the public, the second and third floors would contain the semi-private organizational staff. The fourth and fifth floors would act as the training spaces for the teams, and as such would be much more secluded and private in contrast to the floors below. The purple space shown in Figure 26 represents the place of connection between the team players and coaching staff, and the organizational staff. This area would be used to bring those two groups together when normally they would be seperate.

5.3 Bubble Diagrams

Entire Building

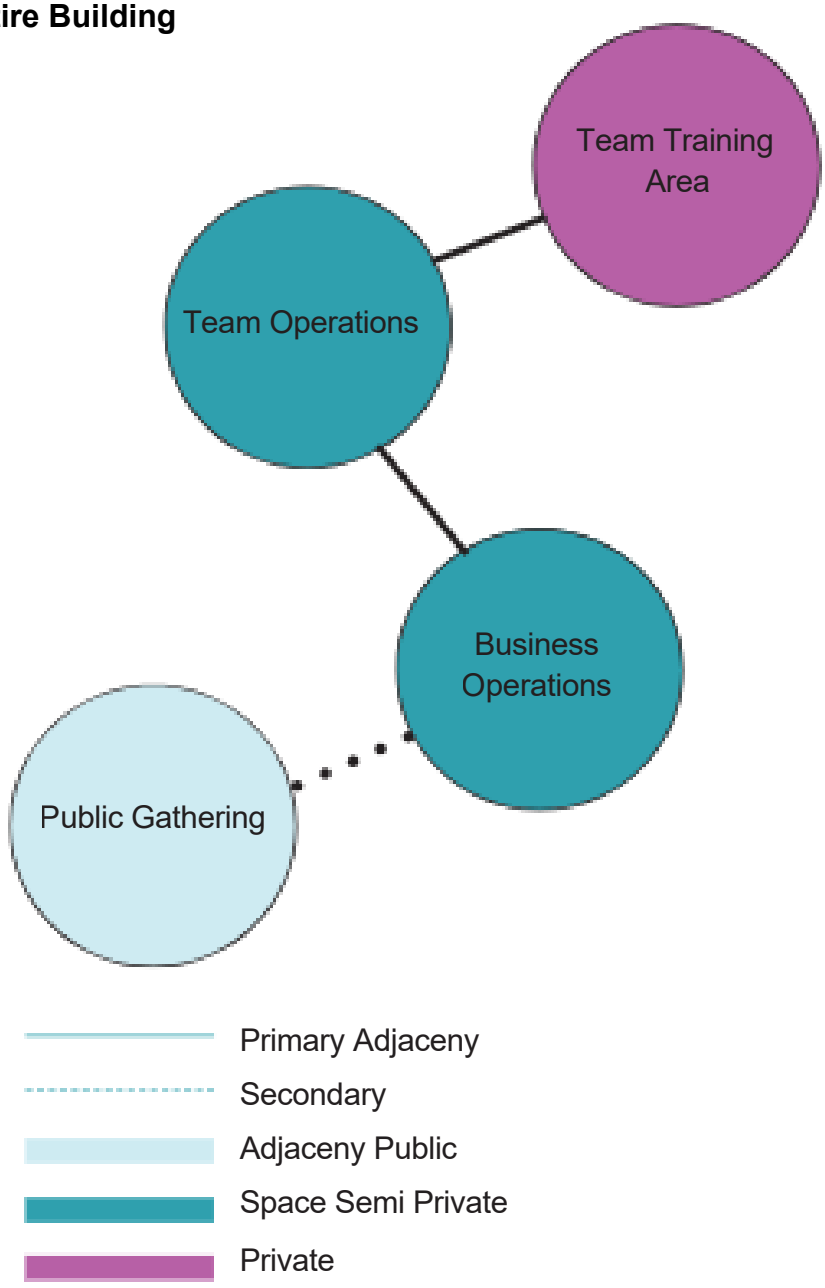


Figure 27: User Group Adjacencies

Figure 27 shows an adjacency bubble diagram for the four distinct user groups that will inhabit the building during operation. The public gathering space has a secondary adjacency to the other user groups, not requiring direct correspondence with the other user groups. In contrast, the other three groups all have primary adjacency, showing the need for those spaces to form some kind of connection.

Public Gathering Floor

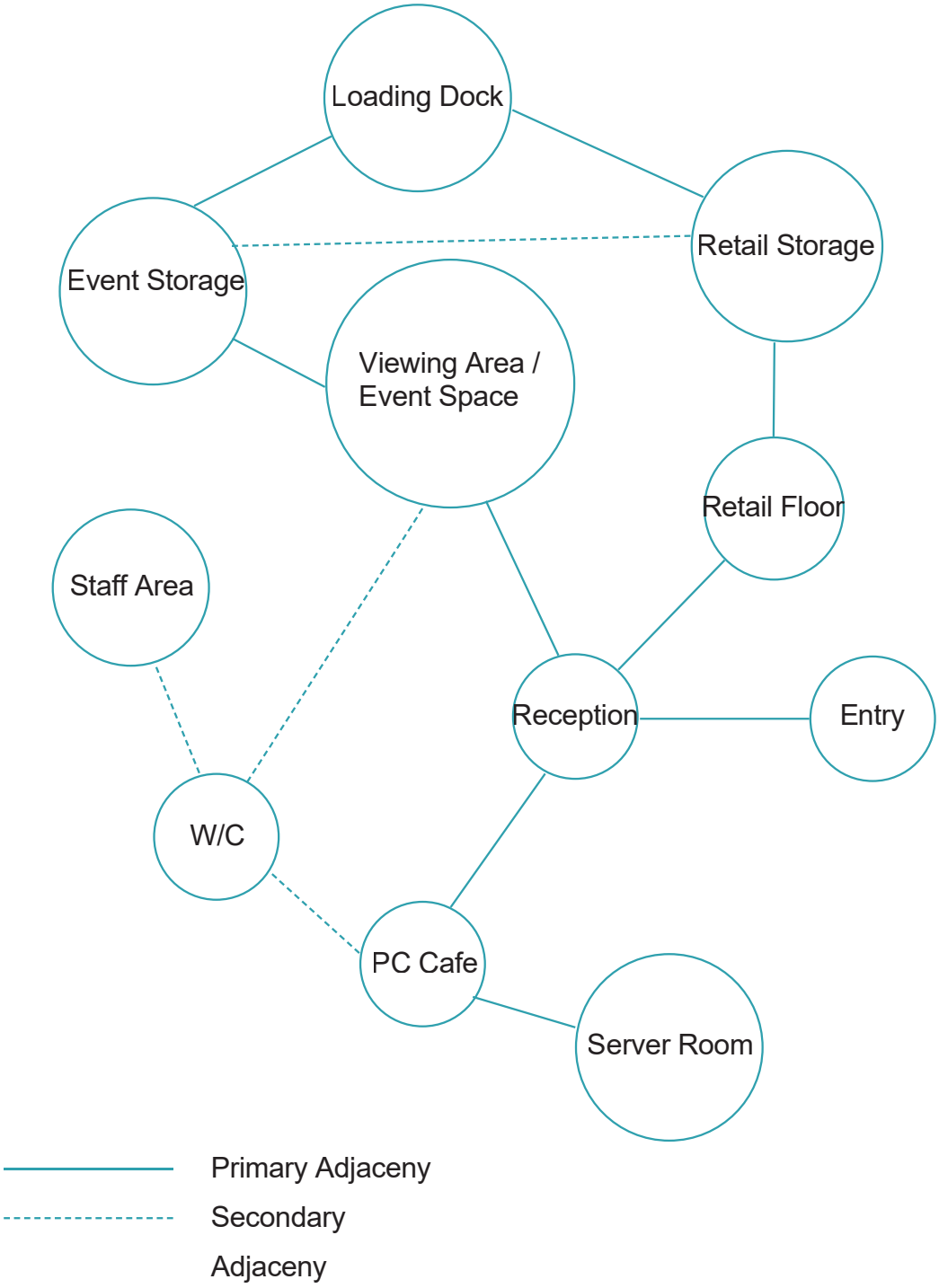


Figure 28: Public Gathering Floor Adjacencies

The various spaces located in the public gathering area are shown in figure 28 with various adjacencies. This visual representation assists in the spatial planning of the floor plans

Semi Private Floors - Team / Business Operations

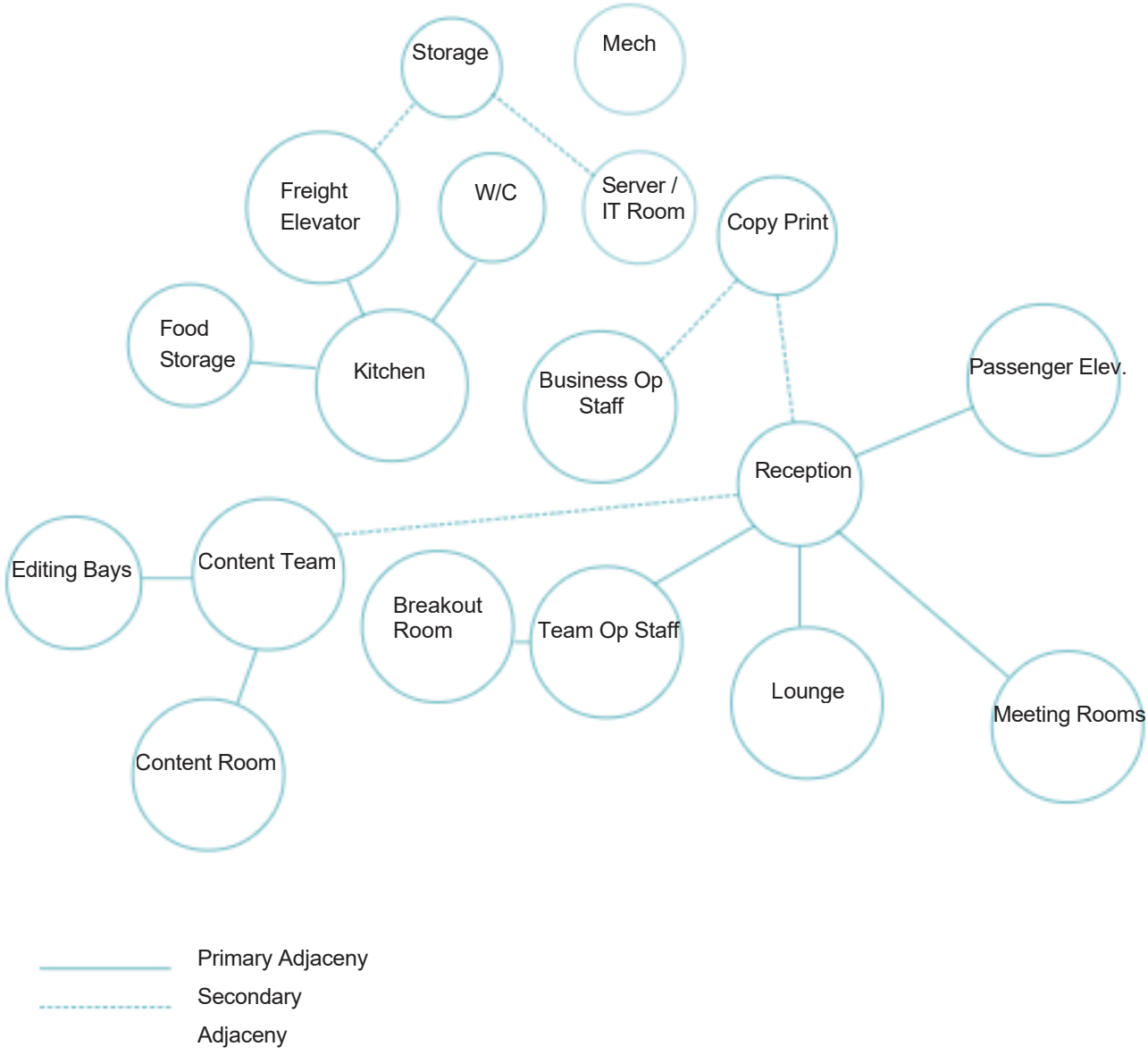


Figure 29: Organizational Adjacencies

Similar to Figure 28, Figure 29 showcases the various spatial requirements for the semi-private organizational staff floors. The accessory spaces that provide auxiliary functions are shown as having secondary adjacencies as compared to the specific user group functions, which have primary adjacency.

Private Floors - Team Floors

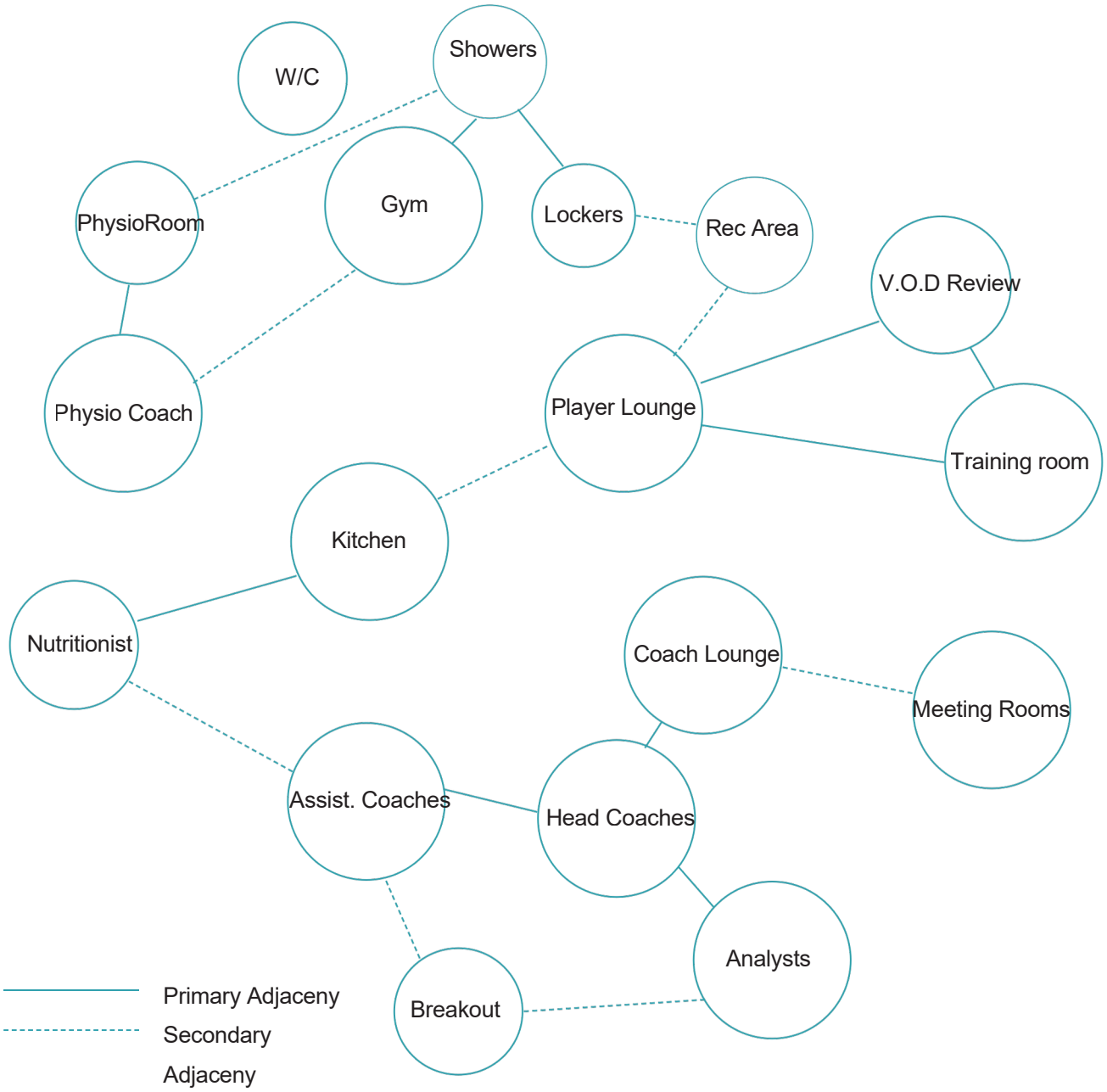


Figure 30: esports Teams Adjacencies

figure 30 is the final visual representation to help with programming for the spatial requirements for the team athletes and staff. Most of the training spaces have primary adjacency requirements to each other in order to gain the most advantage from the cognitive load and periodization theories. Auxiliary rooms such as meetings rooms and breakouts tend to have a secondary adjacency and are more easily moved around in the spatial layout.

6.0 DESIGN PROPOSAL

6.1 DESIGN CONCEPT
6.2 DESIGN DEVELOPMENT

6.1 Design Concept

In similarity to the logo design, inspiration was drawn from the magnetic fields of the planet that creates the Northern Lights. Firstly a connection was made to find the northernmost point of the building. This first compass represents the geographical north for the planet, otherwise known as the North Pole (See Figure 31). A vast majority would consider this as “North” however it is also referred to as True North. This is however, not the only north of the planet. There is a second set of north and south, known as the magnetic north and south. As the planet spins in space, the North and South poles can veer or sway over the course of years or decades. This sway is known as the declination. The declination, or magnetic declination, defines the difference between “true north” and magnetic north. After determining the current declination at the proposed location of 310 Ross, (+2 degrees), this new compass rose was added to the floor plan as seen in Figure 32. As this represented the magnetic north, this would be a better defined North when referring to Northern lights, which depends on the magnetic poles in order to be seen. Once again the polar stereographic maps were consulted (figure 33 & 34). The meridian line, or zero line was lined up with Magnetic North and used as a defining line for the design proposal. (Figures 35 & 36)

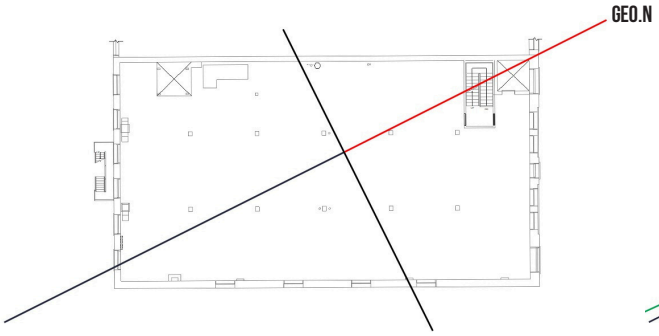


Figure 31: Geomagnetic North

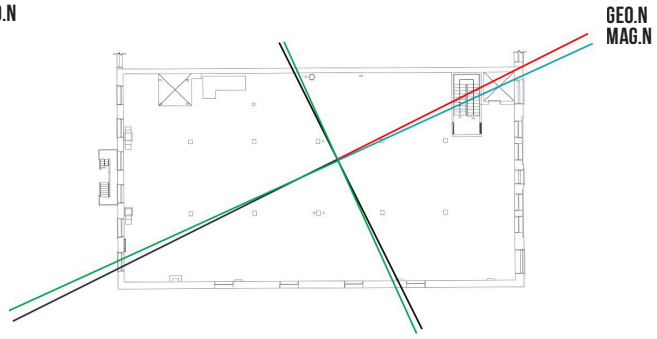


Figure 32: Magnetic North

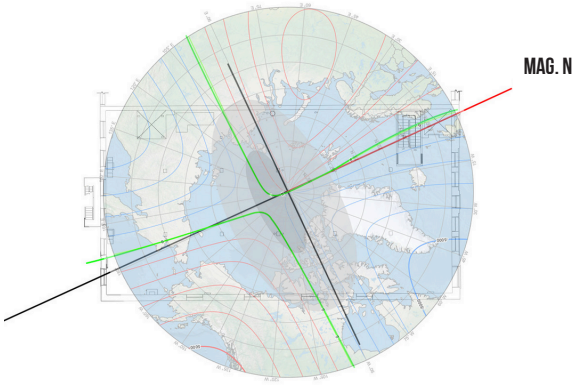


Figure 33: Mag. North Polar Stereographic

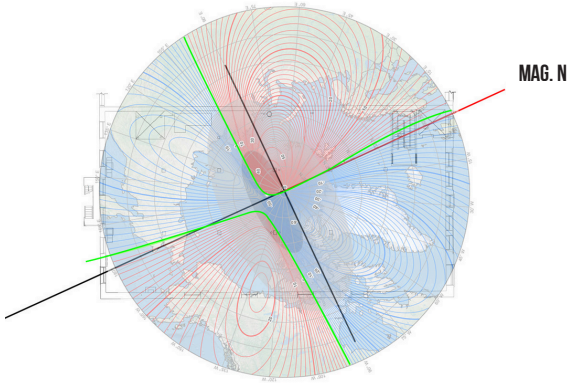


Figure 34: Mag. North Polar Stereographic II

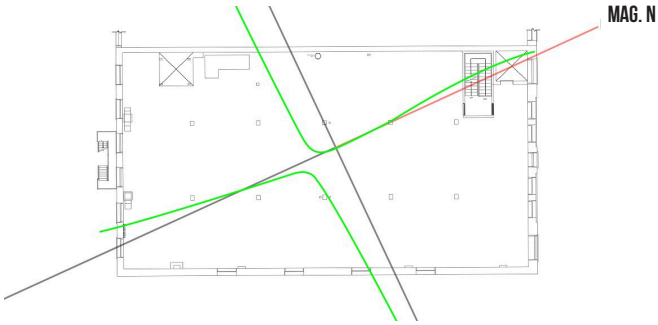


Figure 35: Mag. North Meridian Line

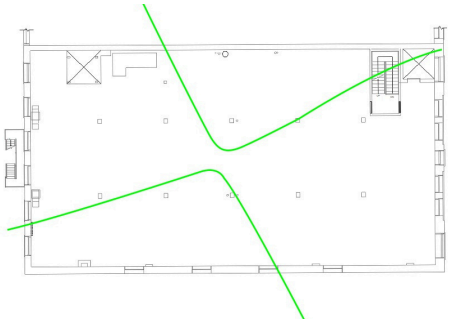


Figure 36: Proposed Project Meridian Line

Moments of Pause

Throughout the practicum, there has been mention of moments of pause. Though these act as a pause, the inspiration for these zones was taken from the various magnetic field lines. The goal for these zones was to create spaces that were distant from the core of the building in order to facilitate a moment of respite from continuous stimulation. As shown in figure 37, the moments occur on the extremities of the floor plan both to have the ability to connect with nature via the natural light and outdoor views, but also due to their proposed proximity to heavier stress programming such as physical or mental training.

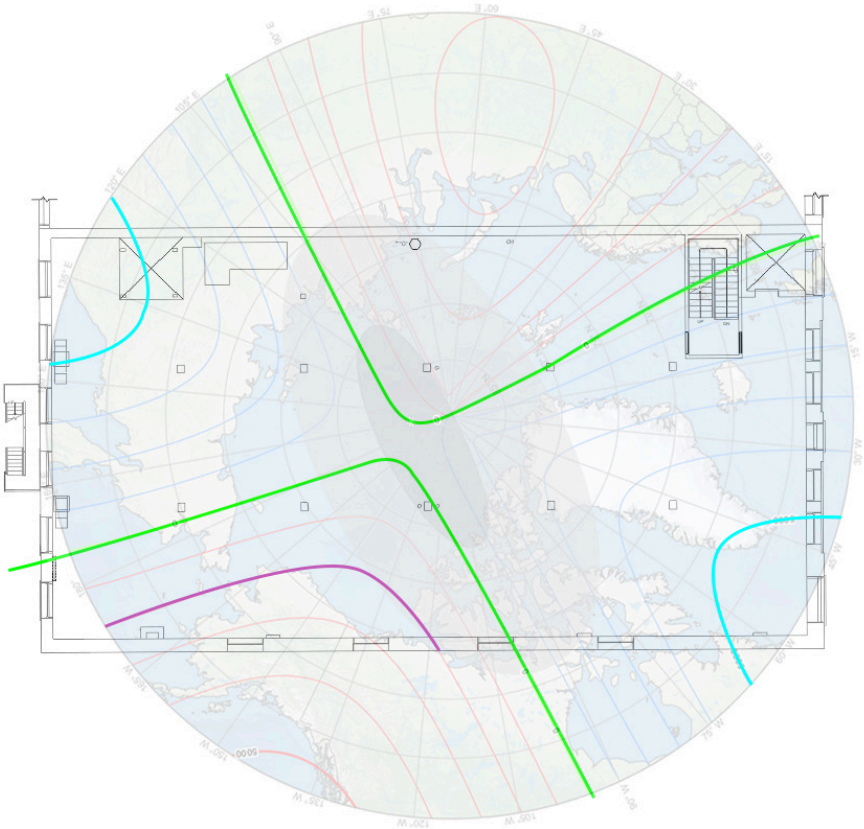


Figure 37: Meridian Line Moments of Pause Zones

6.2 Design Development

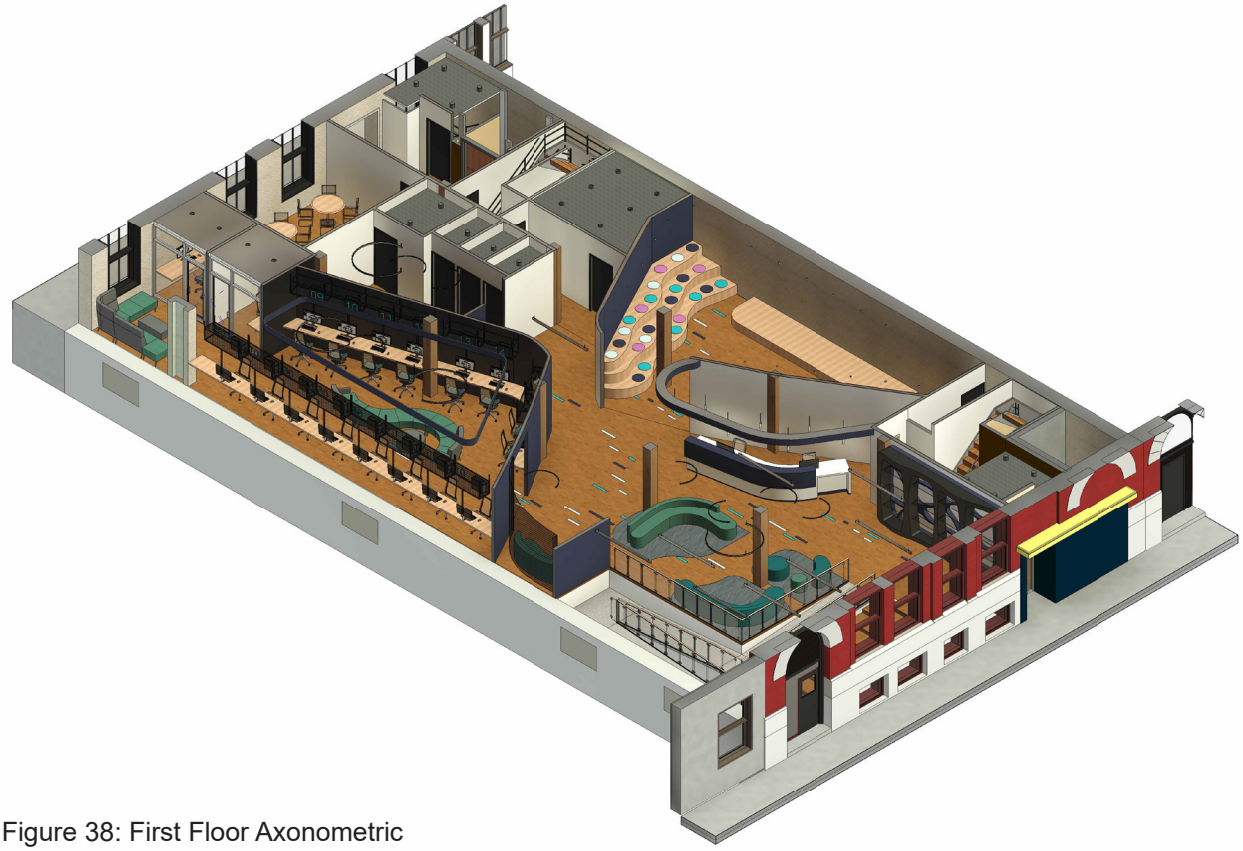


Figure 38: First Floor Axonometric

Northern Lights esports was designed to be a collaborative gathering space for those who share in the passion of esports. As such, several considerations influenced the programming for the building. The natural flow of the floor plans, mimicking the procession of the Aurora Borealis, the connection to the community and nature, and finally the relationship between collaborative spaces, individual work spaces and moments of pause defined the programming. Northern Lights esports inhabits all five of the floors at 310 Ross Avenue. Each floor caters to a different portion of the organization and its members. The buildings has 3 exterior walls with large windows to let in natural light on the east, west and south facades. These windows look into the heart of the exchange, a major gathering space in Winnipeg, opening the view towards the community.

As a community hub, the first floor provides a space for the public to gather and watch

esports, talk with like-minded inviduals who engage in the passion, and to provide a place for players of all skill levels to participate in the world of esports. The professional players from the team, as well as team staff, are welcomed into this space to interact with the public. As a community gathering space, the goal was to create an open safe environment welcoming for all.

As we move up from the ground level, the space starts becomes semi-private for the organizational staff and team members. The public loses access to any of the floors above the first floor, providing more privacy for the team players and organizational staff. Continuing on this procession, the floors transistion from office into training for the professional team. The main team spaces are situated on the 4th and 5th floor, providing privacy from the public below. The second and third floors house the organizational staff as well as gathering space for the players and staff to mingle.

To maximize the ebb and flow of the programming, inspiration was taken from the Northern Lights and it’s magnetic lines. The meridian line, sometimes referrred to as the zero line, provided the main pathways on the floor. This distinct corridor provided

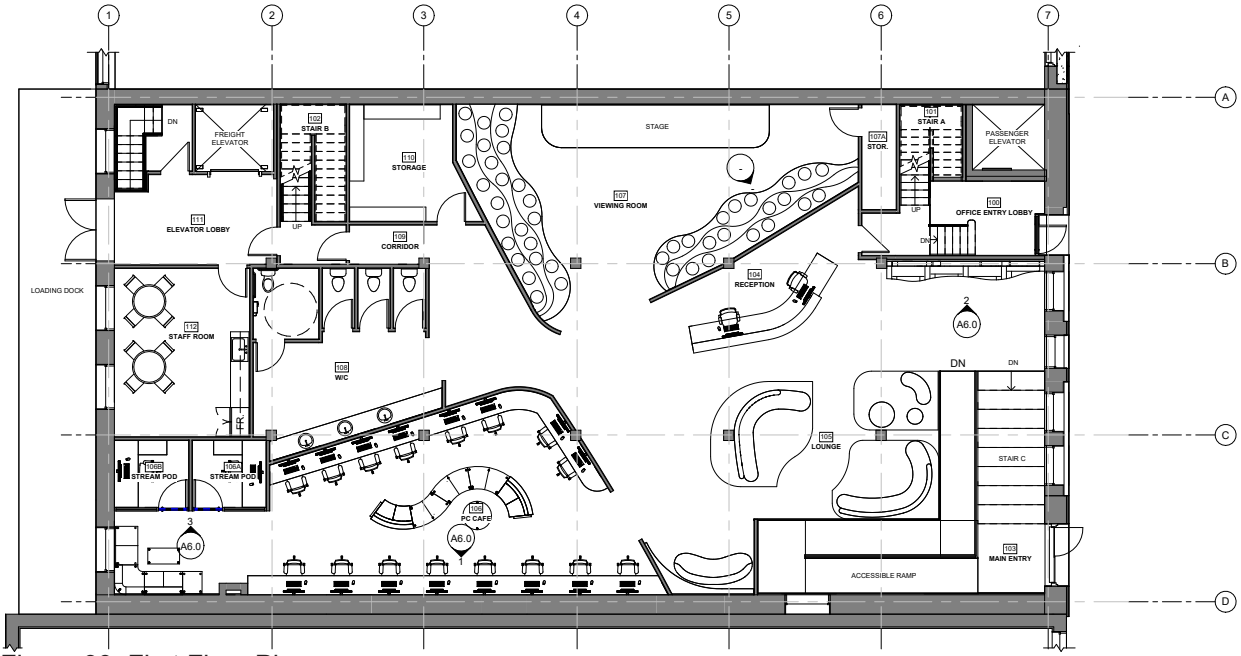


Figure 39: First Floor Plan

a seperation for the open collaborative workspaces and more secluded moments of pause. This seperation also intends to provide circulation that flows from one portion of the building to the other when you exit the working zones.

Finally, moments of pause were spaced periodically on each floor (excluding the first level) to provide pockets of space to reset and allow for the absorbing of any gained knowledge during training.

First Floor Gathering

Upon arrival to the building, the public is greeted by a large open space with soft lounge seating seen in Figure 40 and Figure 41. The large open expanse highlights the large timber columns and beams supporting the building structure. The reception desk mimicks the flow of the aurora borealis, providing a stepping stone for the first guest experience. Large curvalinear furniture sits in the lounge, inviting guests to sit and engage in conversation as they await either the next viewing or are just taking a break from the PC Cafe. The trophy case stands proud at the entrance, showcasing the achievements of the organization thus far.

Figure 40: First Floor Entry


Figure 41: First Floor Reception & Lounge

Figure 42: First Floor Viewing Area

Viewing Room

The viewing room features wooden amphitheatre seating, directed towards a raised stage. (Figure 42) Simple in its design, it allows for multiple programs to take place within the large space. During esports tournaments or events, a projection screen is utilized on the brick wall for the public to gather and cheer on their team. Additionally, the stage is used for fan meetups, organization run events, and longer Q&A sessions with the players. The viewing room acts as one of the two gathering spaces for the community to engage with the organization.

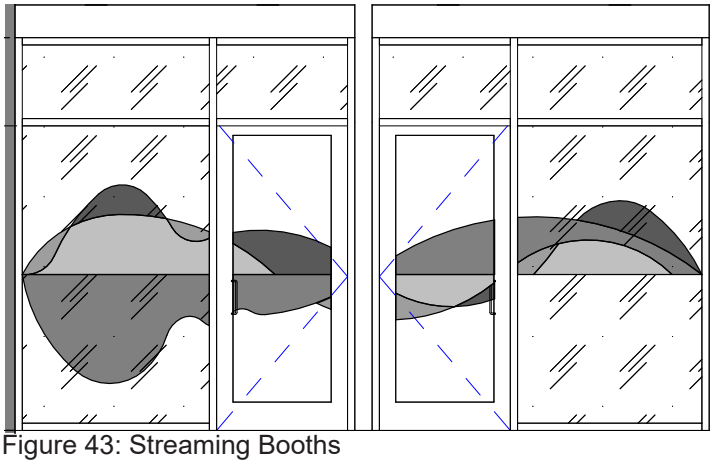


Figure 43: Streaming Booths

PC Cafe

The PC Cafe shown in Figure 43, is designed to fit up to 18 individuals playing, with ample space for those waiting or there to learn and engage. The design follows the curvature of the walls, keeping the players on the extremities, allowing individuals to observe from behind. To the rear of the PC cafe there are two streaming booths with glazing and window film, available to be used for those who want to try their hand at streaming but do not have the means to do so (Figure 43). Curved finature spines the middle of the PC cafe, allowing casual seating for observers. Each station has signage to allow for the player to find their assigned location. Suspended lighting highlights the pathways and seating area's while acoustic panels are incorporated to help reduce noise. Once again the vaulted ceilings of this warehouse are put on display, making the space feel large and open while the suspended elements work in conjuction to make the space feel more personable. In order to reduce glare, the PC cafe was placed in a location with as few windows as possible. The lone window at the end beckons the individual to come explore through the space.

Figure 43: PC Cafe

Second Floor Lounge

The second floor starts the semi-private nature of the building. Here the organization staff work. The second floor lounge is a gathering space for all members of the organization staff to come together. Lowered ceiling provide areas of intimacy amongst the high ceiling. The second floor lounge opens up from the main corridor, with a wooden slat privacy wall seperating the corridor from the main seating spaces (Figure 46). The lounge flows around this privacy wall, with the glazed meetings room as seen in the rear of figure 45, allowing the light from the exterior windows to filter into the space. A large viewing lounge to watch the organizations performances during tournaments contains circular seating and surrounded by carpet to highlight the different seating area. The carpet also provides a visual difference noting a change in programming from location to location, compared to the typical hardwood floors. Connecting all the spaces on the second floor is the main corridor, which provides sightlines from one side of the building to the other.

Figure 45: Second Floor Lounge

Figure 46: Second Floor Opening to Lounge

Following the flow of the corridor, the open workstations on the second floor navigate around the magnetic lines formed by the north and south poles. As seen in figure 47, this space functions as a collaborative work space. A breakout table hides behind the wood slat wall, allowing for some visual and acoustical privacy. The materiality stays neutral throughout this space, allowing for the overhead beams and joists to do most of the talking. Black suspended light fixtures provide wayfinding in the corridor, while others provide light for the day to day tasks.

Figure 47: Second Floor Open Workstation

Third floor Eatery

Figure 48: Third Floor Eatery

One of the main gathering spaces in the building for the semi-private nature, the third floor eatery provides ample space for both the organizational staff alongside the esports team staff to congregrate together. This space allows for individuals of the two distinct working groups to intermingle. A large bulkhead showcased in Figure 48 rests over the main seating area and provides an intimate feeling over the kitchen island and booth seating. The step up seen in Figure 50 provides additional casual seating.

Figure 49: Third Floor Eatery East

Figure 50: Third Floor Eatery West

Figure 51: Third Floor Moment of Pause

Adjacent to the third floor eatery is one of the secluded moments of pause. This moment of pause brings itself outside the building, surronding the individual with a view of the city and the nature nearby(Figure 51). The moment of pause has minimal seating to allow for the individual to sit peacefully, and engage if wanting with one or two individuals at most. As this sits external to the building proper, it breaks the connection with the rest of the interior building, once again allowing for the mental reset or decompression to occur.

Fourth Floor coaching Area

The fourth floor coaching area is the coaching zone within the building. It provides office spaces for the head coaches and a collaborative workstation for the analysts and assistant coaches. A small coaches lounge provides opportunity to work from a different space while a breakout table and meeting table are available to allow the individual to work from anywhere in the space. As the coaches collaborate often, ample space for discussions is provided. The coach area opens up off of the main corridor, with a visual break provided by the wooden slats as seen in Figure 52 and Figure 53. Similar to the second floor lounge, the space rotates around the wooden slate wall, using it as a pivot to create distinct working locations in the coaching such as a breakout table, a more formal meeting table and the workstations.

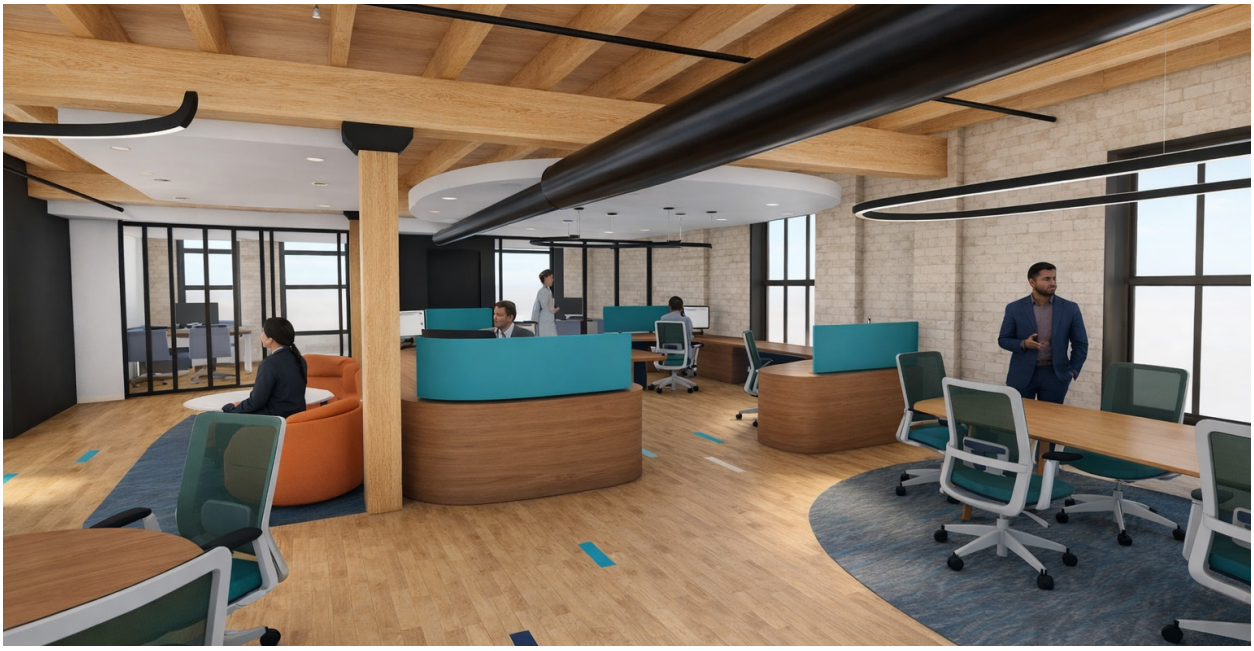


Figure 52: Fourth Floor Coaching Area

Figure 53: Fourth Floor Coaching Workstations

Fourth Floor Players Lounge

Designed to be open and accesible, the fourth floor players lounge seperates the training spaces on the fifth floor with the recreational space needed to prevent buildup of stress. It functions as a gathering space for the team, located nearby the coaches area, for easy access. The lounge features a seated area for group watching of esports alongside a pool table and ping pong table. A metal mesh dictates the main corridor and seperates the lounge from the coaches area as seen in Figure 54.

Figure 54: Fourth Floor Players Lounge

Figure 55: Fifth Floor Lounge

Fifth Floor Lounge & Environmental Context booths

The Fifth floor is designed as the main training hub for the professional athletes. figure 55 and 56 showcase a lounge which is situated nearby the environmental context booths to provide a visual of people outside, similar to what a real life tournament or stage game would provide. The Booths themsevles conform to the standard desk sizes and booth sizes that would be present if used at a tournament or event. The lounge looks towards the slate wall where a projector and screen are utlized to allow for others to watch the players in the booth play. Behind the wall is a kitchennete and seating for an additional moment of rest from the traditional training.

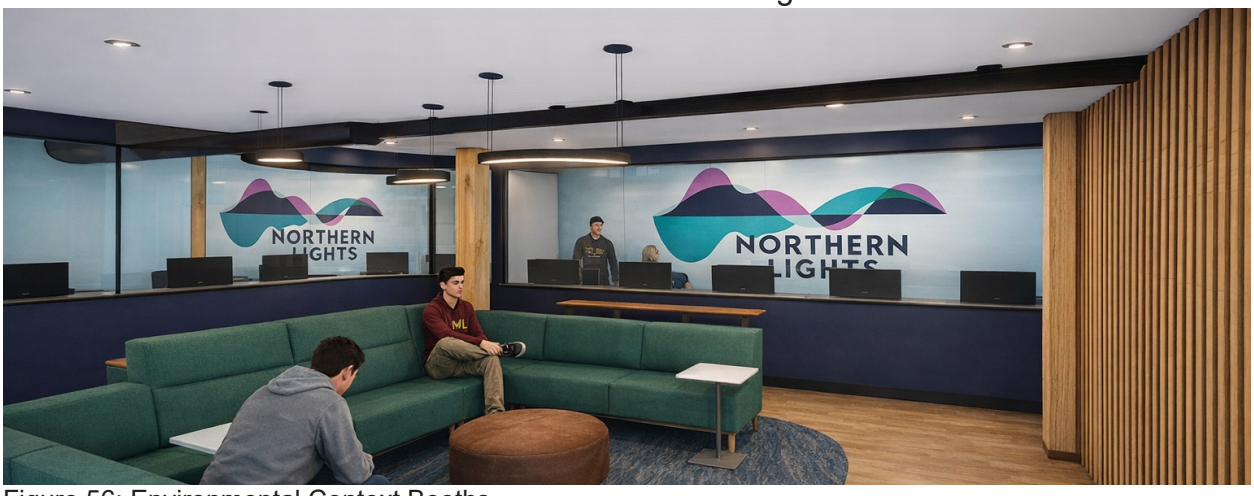


Figure 56: Environmental Context Booths

Figure 57: Players Training Room

Fifth Floor Players Training Room

The players training room has a dual purpose. Opposite the environmental context booth, the computer stations in here are used to go over quick and small things on repeat in a more casual manner. As such the computers sit near the back of the room, allowing for the coaches to watch over the shoulders of the players while practicing. The V.O.D. review space (video on review) features lounge seating to provide comfort to the players when reviewing the tapes of their play. Figure 57 shows the two spaces working in conjection, allowing the team to flow from practice computers to conversation or review. By combining these two functions into the one space, it allows for the players to become more comfortable disecting their mistakes and going over film.

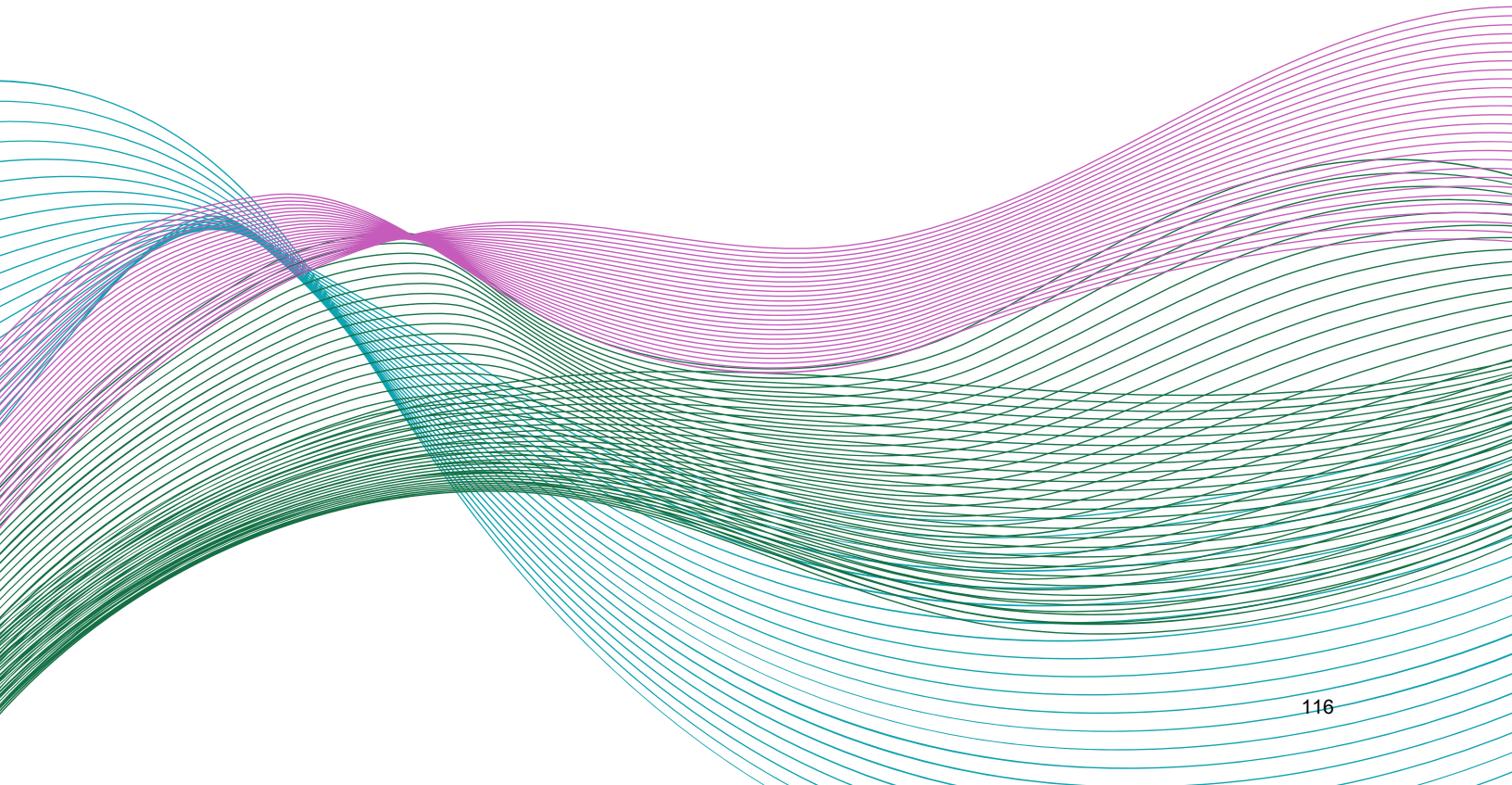
Figure 58: Inclusive Moment of Pause

Moments of pause are used to break up the cognitive load on the athletes. By providing spaces that are zones of rest and recuperation, the athletes can digest the information they recieved in training easier. It also allows for the individual to take respite if needed. The inclusive moment of pause, shown in Figure 58, is a communal space, with large lounge furniture set to engage with one another whilst resting. Opposite that is the secluded moment of pause (figure 59), which offers isolated seating looking out into the exchange district, allowing one to contemplate their own thoughts while recovering.

Figure 59: Secluded Moment of Pause

7.0 CONCLUSION

7.1 CONCLUSION
7.2 RESPONDING TO QUESTIONS OF INQUIRY
7.3 FUTURE CONSIDERATIONS
7.4 FINAL REMARKS



7.1 Conclusion

As I've grown up, I've been situated in the unique timeline of watching video games explode with the onset of new technology. It's gone from simple hand-held devices and 8 bit videographics in black and white, to realistic looking visuals and massive realms of explorable realities right at one's fingertips. Alongside this growth, human competitive nature has driven players to strive to be the best. It is in that regard that I am no different. Video games have provided many opportunities for growth in my life, from cognitive abilities such as critical thinking, problem solving and decision making to social skills such as communication, leadership, and teamwork and even physical skills such as hand-eye coordination. This practicum started with a deeply ingrained personal investment in video games and a drive to elevate the status of video games as it grows into its professional status of esports. This led down the path of investigating how the current climate of competitive video games operates, and how interior design can provide benefits for all competitive players. What are the major concerns of professional players? How does their day to day operate? What would their ideal esports space function and look like? These curiosities drove me to delve into how to better design a space for the players and staff within an esports typology.

From my research I found that stress is experienced heavily within the profession. The stress to perform at a high level, achieve good results in professional games and deal with the public's criticism all play a part in the day to day of the professional esports athlete. Many esports athletes begin their careers in their late teenage years and as such, it was not surprising to find that very little is done to prepare

the players for the stressful situations they will encounter. A player is picked based on their skill level and thrust into the spotlight, having no prior training or experience in dealing with the negative impacts that can occur. This coalesces into a group of players navigating highly stressful environments and having to work it out together. This shows a lack of understanding and programming to help diminish the effects of stress on the players. Positively, as esports grows, more awareness is being given to these effects, but it is still infantile in its explorations. It is my own opinion that even taking steps to design esports spaces to combat stress, has great potential and will be a positive force moving forward for the profession.

As I continued to research into how stress affects the individual, the ways to combat that within design started to leak through. The idea of designing to combat stress, via the use of colours, biophilia, spaces of pause, collaborative zones and inclusive areas created a new way to design for esports. It was through these interventions that my design started to come to life. These findings combined with my questions of inquiry culminated in the final design that informed my practicum.

7.2 Responding to Questions of Inquiry

1) What aspects of Interior Design can improve the overall health and well being of the professional athletes / coaches / staff in an esports setting?

Interior design can affect the physical, social and psychological well-being of its inhabitants in many ways. Whether that be through poor design, sick building syndrome, etc, it can negatively impact how an inhabitant reacts to outside pressures. In the case

of esports, stress levels often run high due to the high ceiling of performance required for teams to do well, mixed with the organization's pressures to perform and public fan criticism. A commercial space for an esports organization can be designed to combat those challenges. I designed spaces to allow for maximum flexibility and control, via the use of various furnishing types to provide different levels of working comfort, or the ability to choose where one works, either in a collaborative or more inclusive space. My aim was to create a space that felt open and free to explore for the employees, while providing distinct working zones for the various users working in the building. Programmed space for the various user groups were contained to smaller areas to provide an ample collaborative space for those working. Additionally, moments of pause or breakout spaces were created in various places to provide ample opportunities for individuals to break away from their current work space and either work in a quieter environment or take a break in a softer and more inclusive location. Many of the working spaces have a visual connection to the outside, while retaining the materiality of the natural environment in the building's materials through the use of wood. Overall, these designs aimed to achieve a healthier environment for the inhabitants in the long term.

2) What techniques or theories work in conjunction with interior design to promote an atmosphere that is conducive to better training and therefore, better professional results for the team in competitions?

The Theory of Cognitive load and the Theory of Periodization work in tandem to deliver the atmosphere that is most conducive to better training. Though not strictly design theories, this provided a base of understanding for how much training can be

done before it leads to negative impacts. Various training areas were created, with designed breaks in between. These breaks range from simple navigational, i.e. moving from a softer casual space to a more focused desk work space, to transitional, moving from one room to another to give a signal to the players brain that there is a change in atmosphere, scenery, and mind can temporarily reset. This was done via the use of furnishing, creating soft seating in areas of practice that acts as the opposite and more casual to the typical desk station for the players to play at and through corridors providing blank slate to move through while transitioning from one training space to the other. Additionally, lounge space was provided as a place for the players to rest and recover in an inclusive setting, whereas the moments of pause were provided for the player to recover in a secluded setting. Finally, the main circulation on each floor mimicked one another, providing a typical understanding of how to navigate around each of the distinct working zones throughout the design.

3) How can using the theory of environmental recall and the study of human behavior in the built environment change how individuals respond to the interiors to positively benefit them?

The Theory of Environmental Recall dictates that if a person does an activity, or task within the same surrounding atmosphere, that their results will be better if that task is performed again in the same surrounding atmosphere. This acts doubly so for the built environment. If an esports athlete has struggled to produce good results at professional games on stage, that atmosphere will begin to have a negative impact on them as they continue to struggle in that space. To combat that, environmental context

booths provide similar setups to tournament stage games, while allowing the ability to pump into the booth both audience noise, and other visuals while a team practices. This positively benefits the team as their training can provide examples of what to expect, but also, in the case of our struggling player, counteracts the mental stigma of the stage by making it become a more neutral place for the player, who can then rely on their practice and skills to perform, without the outside distraction.

7.3 Future Considerations

Throughout my journey in this practicum, there have been many moments of struggle and personal growth. As always, time ticks on and often leaves nothing left to finish all the ideas, inquiries and solutions one may have in a project such as this. While working through the pandemic, myself and others had to deal with the feeling of isolation. I dealt with my own personal health and stress, ironically, while learning about how stress affects a person and the human body. The ability to have peer to peer conversations about design and bounce ideas off of one another is something that was greatly missed during this process. Though that cannot be changed now, future considerations would lead me to engage more with peers to have those conversations to benefit the final design.

An additional element that I would have liked to explore with more time, would be to conduct interviews with existing professional players or esports organizations to better understand their views and opinions on the current atmosphere within esports. I found that though there is plenty of documented evidence and personal opinions from athletes online regarding the high levels of stress, a formal conversation in person, from

both the players perspective and the organizations, would have created a tangible comparison to further develop the design.

Regarding design, there are plenty of decisions that may have changed throughout the process. I would have liked to explore further how sensory limitations can affect the players environment and how that would have played out in materiality. Further exploration into biophilia to make the space feel more organic could have also benefitted the design. Throughout the design, I tried to incorporate universal design strategies for accessibility. However, I feel as though this only pertains to the “typical” accessible concerns for the “typical” unabled individual. Video games can be played by almost anyone to some degree, why that individual shouldn’t be able to achieve a high level of play rivaling other professional esports athletes shouldn’t matter based on their physical or mental capabilities. With that in mind, I would further like to explore how esports settings could be designed so those individuals wouldn’t have any less of an experience as any other player within the space.

Lastly, I would have further liked to explore the technological aspects that could be entertained within the environmental context booths. There are many factors and various strategies employed by tournament organizers during professional events and each has its own pros and cons. Having the ability to prepare for vast amounts of different atmospheres or conditions that the athlete would compete in would result in a further advantage. With more time, these would have been the items focused on in the design process.

7.4 Final Remarks

Throughout the practicum, I have been able to expand my knowledge on how interior design can be utilized to combat stress and provide options for individuals to decompress. Through my research and finding, I was led to a design that would ideally provide a space for professional esports athletes to excel in their training regimens, provide less stressful working environments and achieve better well-being for the professional players. My hope is that this practicum provides actionable insights for interior designers, enabling them to effectively implement stress-reducing strategies into their projects and promote user well-being.

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Appendix A: Building Code Review

BASED ON 2020 NATIONAL BUILDING CODE OF CANADA & MANITOBA AMENDMENTS

3.1.2 OCCUPANCY

PROJECT LOCATION: 310 ROSS AVENUE, WINNIPEG, MANITOBA, R3A 0L4
PROJECT DESCRIPTION: NO CHANGE OF USE FROM OFFICE SPACE
ZONING DESCRIPTION: ZONE C (COMMERCIAL)
MAJOR OCCUPANCY: GROUP D
BUILDING AREA: 2415 m^2
GROSS AREA: 2557 m^2

3.1.17 OCCUPANCY LOAD

MAIN FLOOR: GROUP A2 (500 PERSONS)
2ND FLOOR: GROUP D (52 PERSONS)
3RD FLOOR: GROUP D (52 PERSONS)
4TH FLOOR: GROUP D (52 PERSONS)
5TH FLOOR: GROUP D (52 PERSONS)

3.2.2 BUILDING CLASSIFICATION

NUMBER OF STOREYS: ABOVE GRADE - 5
NUMBER OF STREETS: ONE (ROSS AVENUE)
SPRINKLERED: YES
BARRIER-FREE DESIGN: YES
CONSTRUCTION: NON-COMBUSTIBLE CONSTRUCTION
FIRE RESISTANCE RATING REQUIREMENTS

FLOORS:	2+ HOURS
WALLS & COLUMNS:	2+ HOURS
ROOFS:	2+ HOURS

STANDPIPE & FIRE ALARM REQUIRED
HIGH BUILDING: YES

3.4 EXITS

MINIMUM NUMBER OF EXITS: 2
DISTANCE BETWEEN EXITS: DISTANCE BETWEEN 2 EXITS IS AT LEAST ONE HALF THE MAXIMUM DIAGONAL DIMENSION OF THE FLOOR AREA (NOT LESS THAN 9M)
PRINCIPAL ENTRANCES: AT LEAST ONE DOOR AT EVERY PRIMARY ENTRANCE
EXIT WIDTH: DETERMINED IN CONFORMANCE WITH SUBSECTION 3.4.3.2.

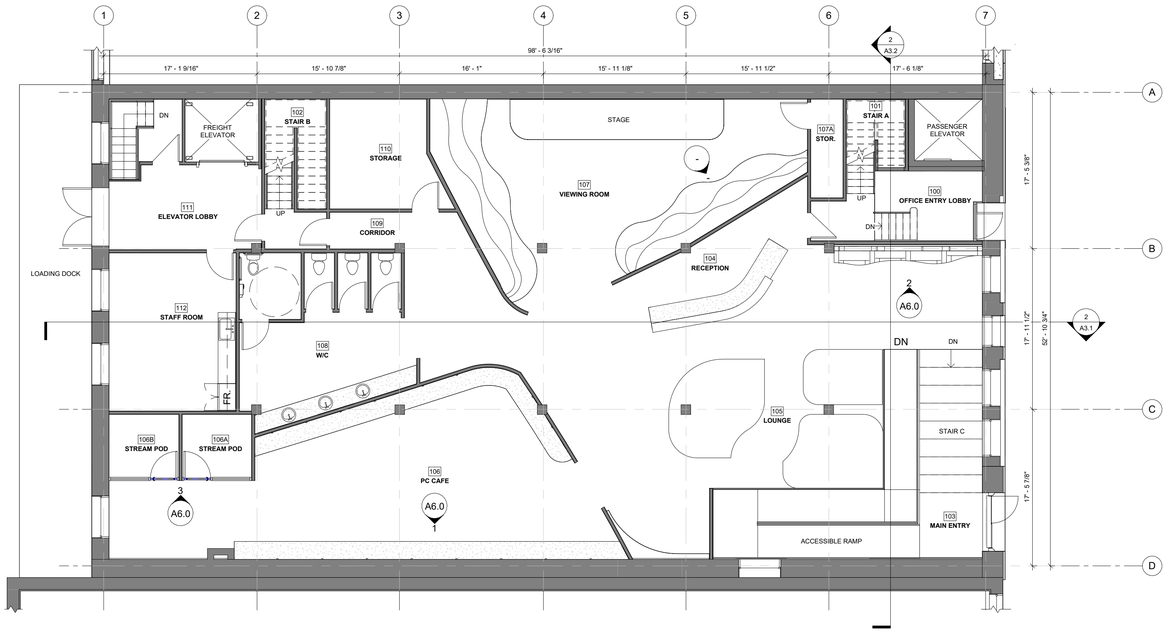
EXIT CORRIDORS & PATHWAYS:	1100MM
RAMPS:	1100MM
STAIRS:	1100MM
DOORWAYS:	850MM

3.7.2.2. PLUMBING FIXTURE REQUIREMENTS

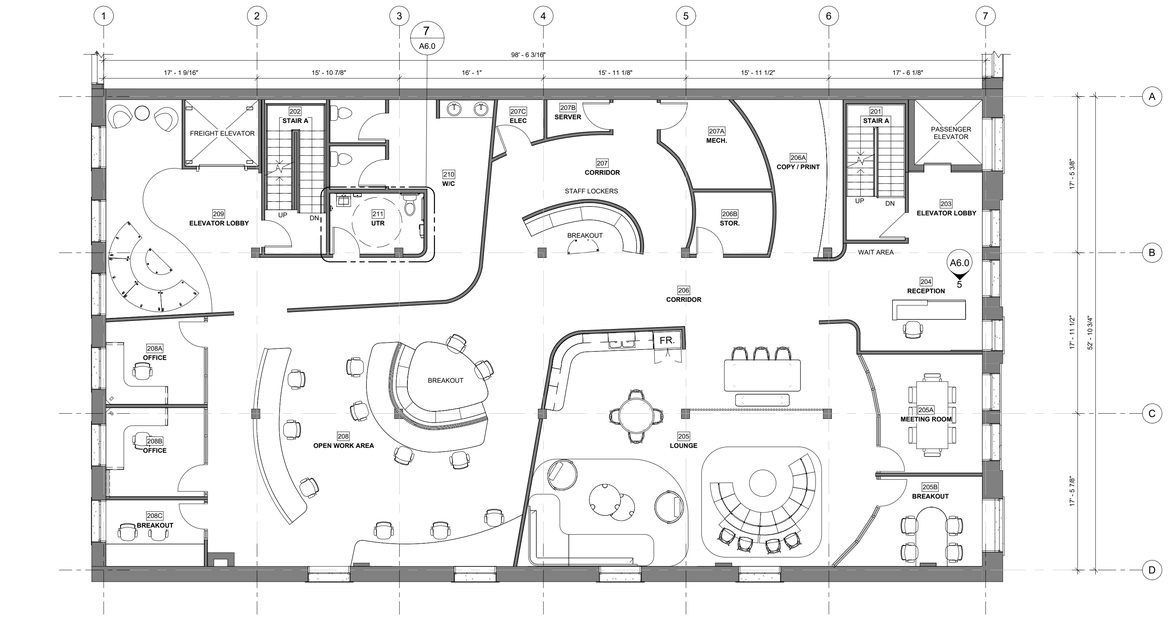
MAIN FLOOR: MALE (1) | FEMALE (2)
2ND FLOOR: MALE (1) | FEMALE (2)
3RD FLOOR: MALE (1) | FEMALE (2)
4TH FLOOR: MALE (1) | FEMALE (2)
5TH FLOOR: MALE (1) | FEMALE (2)

3.8 ACCESSIBILITY

DOORS: DOORS LOCATED IN BARRIER FREE PATH OF TRAVEL, MUST HAVE A CLEAR WIDTH NOT LESS THAN 850MM
BARRIER FREE PATH OF TRAVEL: MIN. 920MM
RAMPS: MIN. 870MM WIDTH, 1:12 SLOPE



1 MAIN FLOOR CONSTRUCTION PLAN
1/8" = 1'-0"



2 SECOND FLOOR PLAN CONSTRUCTION PLAN
1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

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25-12-05
DATE (YYYY/MM/DD)

NORTH

CONSULTANTS

COREY HARRISON DESIGN

PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

FIRST & SECOND FLOOR CONSTRUCTION PLANS

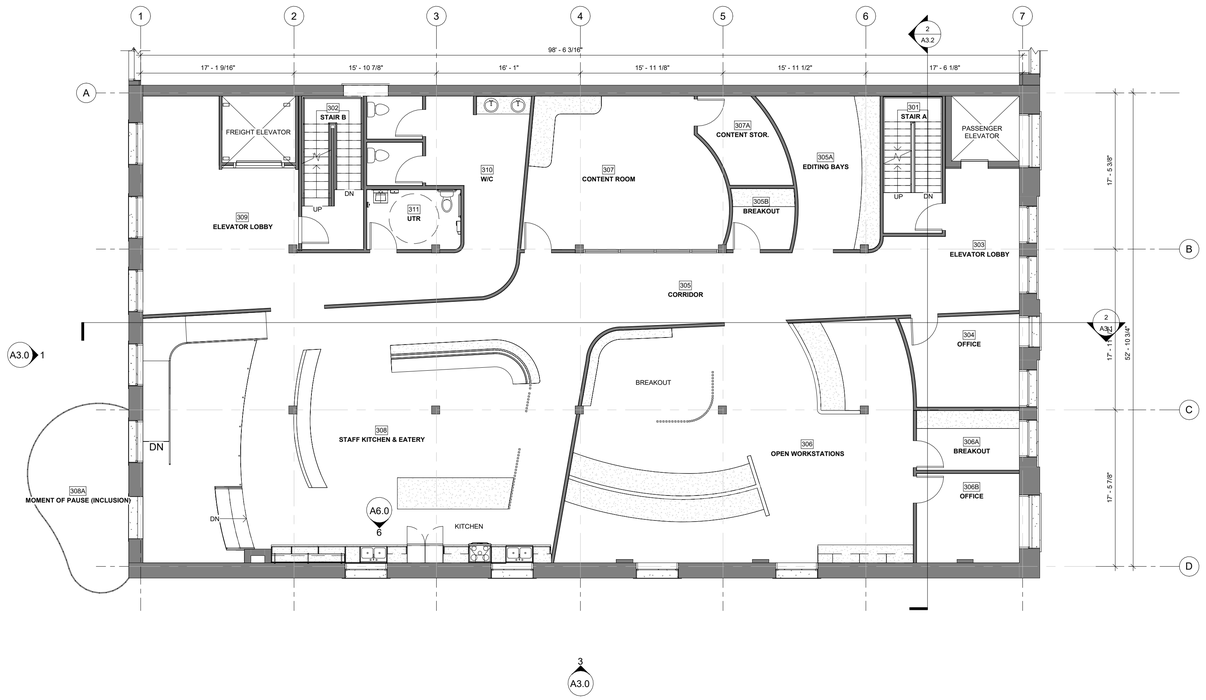
SCALE 1/8" = 1'-0"

CONSULTANT PROJECT NUMBER 1715

OWNER PROJECT NUMBER

SHEET NUMBER A1.0

REV



1 THIRD FLOOR PLAN
1/8" = 1'-0"

2 FOURTH FLOOR PLAN
1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

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COREY HARRISON DESIGN

PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

THIRD & FOURTH FLOOR CONSTRUCTION PLANS

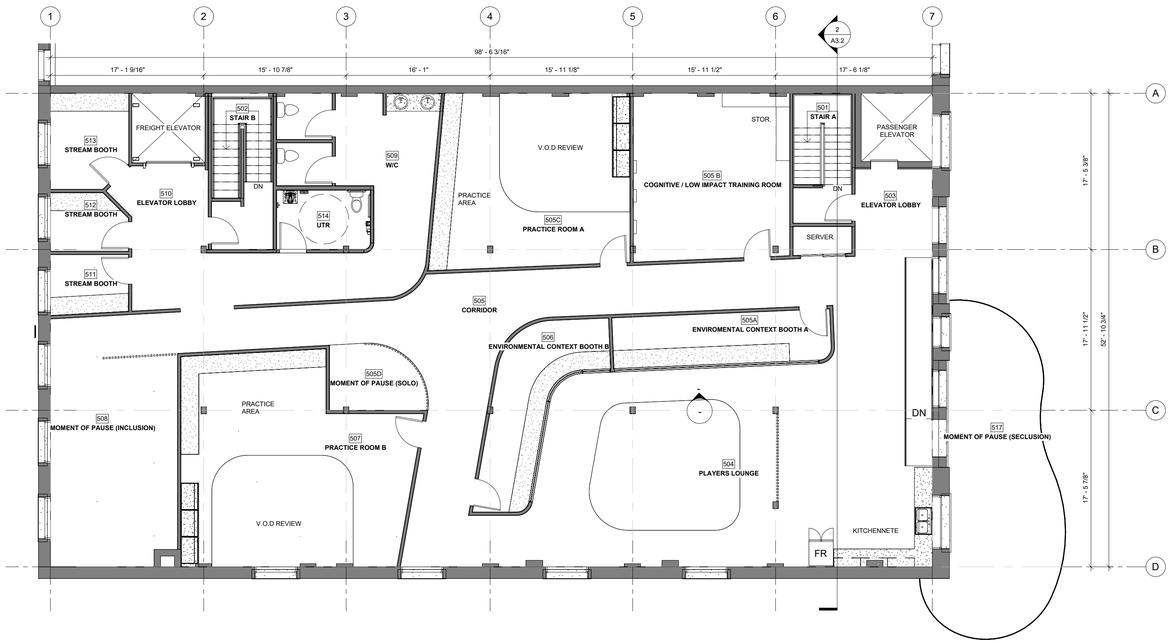
SCALE: 1/8" = 1'-0"

CONSULTANT PROJECT NUMBER: 1715

OWNER PROJECT NUMBER

SHEET NUMBER: A1.1

REV



1 FIFTH FLOOR PLAN
1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

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COREY HARRISON DESIGN

PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

FIFTH FLOOR CONSTRUCTION PLAN

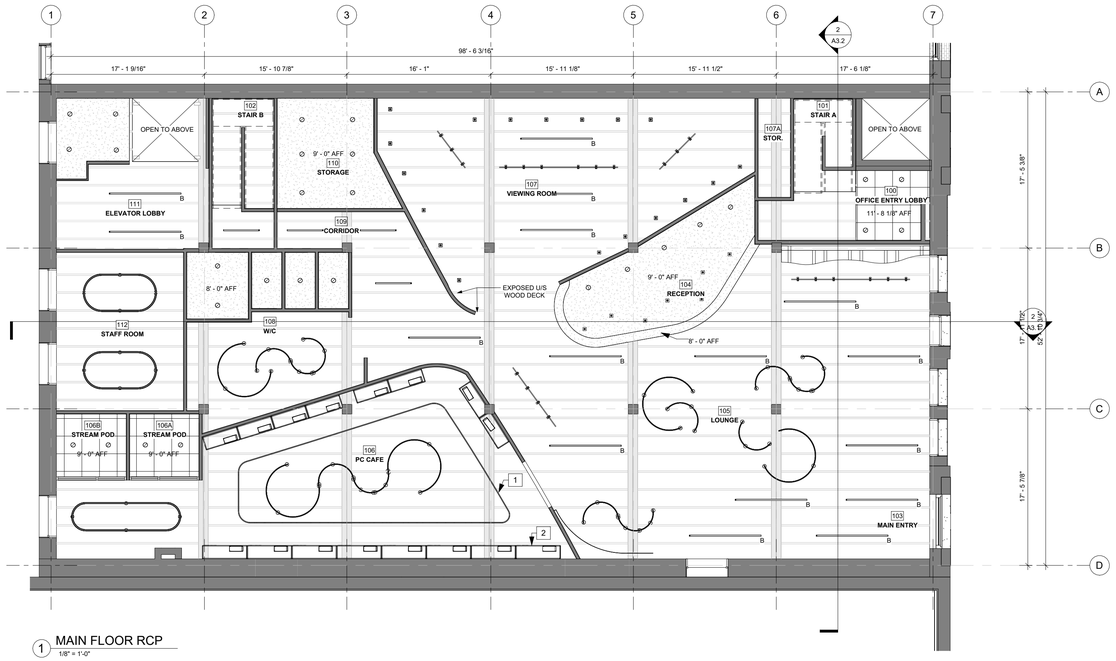
SCALE 1/8" = 1'-0"

CONSULTANT PROJECT NUMBER 1715

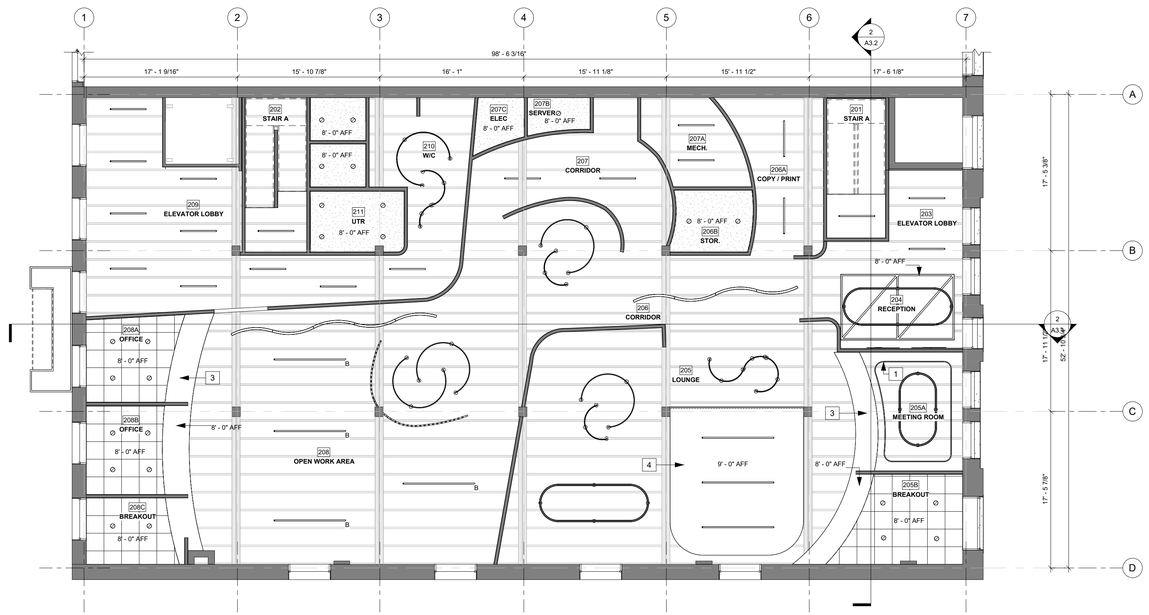
OWNER PROJECT NUMBER

SHEET NUMBER A1.2

REV



1 MAIN FLOOR RCP
1/8" = 1'-0"



2 SECOND FLOOR RCP
1/8" = 1'-0"

REFLECTED CEILING PLAN KEYNOTES

1 SUSPENDED ACOUSTIC FELT PANEL
2 PERFORATED BLACK METAL COMPUTER HOUSING TYP.
3 8" GYPSUM SUSPENDED CEILING. HEIGHT TO U/S AS NOTED
4 6" GYPSUM SUSPENDED CEILING. HEIGHT AS NOTED
5 18" GYPSUM SUSPENDED CEILING. HEIGHT TO U/S AS NOTED

CEILING FINISH LEGEND

- EXPOSED TO U/S STRUCTURE NO FINISH REQ'D
- 2'X2' ACOUSTIC CEILING TILE HEIGHT AS NOTED
- GYPSUM WALL-BOARD UNLESS OTHERWISE SPECIFIED HEIGHT AS NOTED
- EXPOSED WOOD BEAMS

REFLECTED CEILING PLAN LEGEND

- 6" RECESSED LED POTLIGHT
- TRACK LED LIGHT
- LED PENDANT
- 4' SUSPENDED LINEAR PENDANT
- 8' SUSPENDED LINEAR PENDANT
- 90° SUSPENDED LED PENDANT
- 180° SUSPENDED LED PENDANT
- 270° SUSPENDED LED PENDANT
- WOOD JOISTS

- LUMENWERX ELIA 26 SUSPENDED OVAL PENDANT
- LUMENWERX ELIA 312 SUSPENDED OVAL PENDANT
- LUMENWERX ELIA 48 SUSPENDED OVAL PENDANT
- LUMENWERX ELIA 412 SUSPENDED OVAL PENDANT
- LUMENWERX CURVIA CURVED SUSPENDED PENDANT
- LUMENWERX CURVIA LINEAR SUSPENED PENDANT
- SUSPENDED METAL PANEL HEIGHT AS NOTED

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

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310 ROSS AVE

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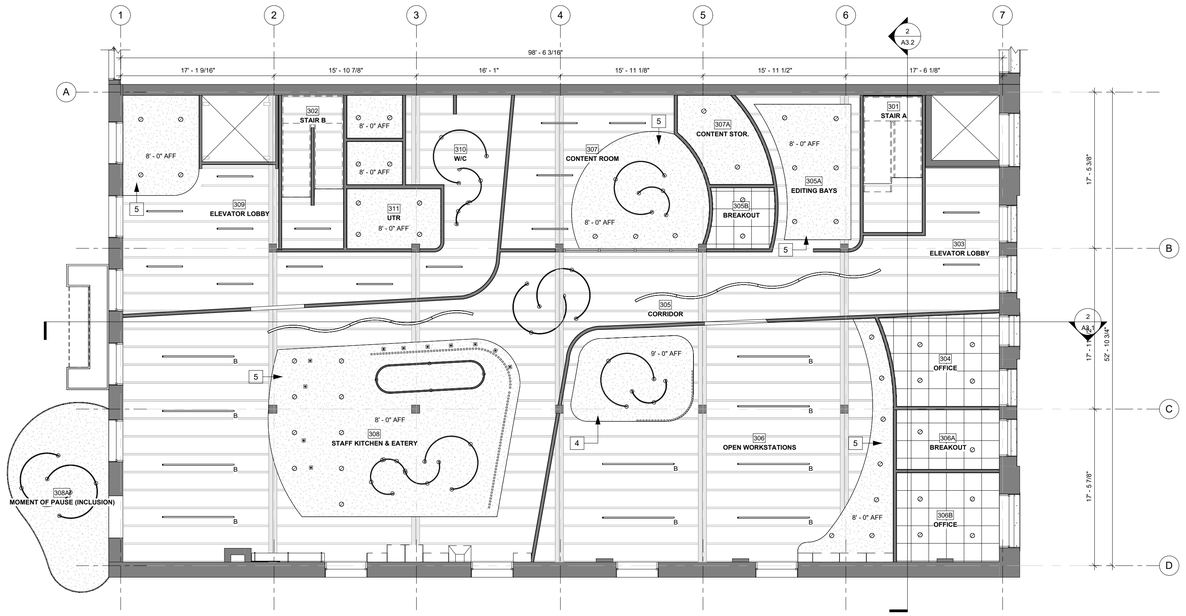
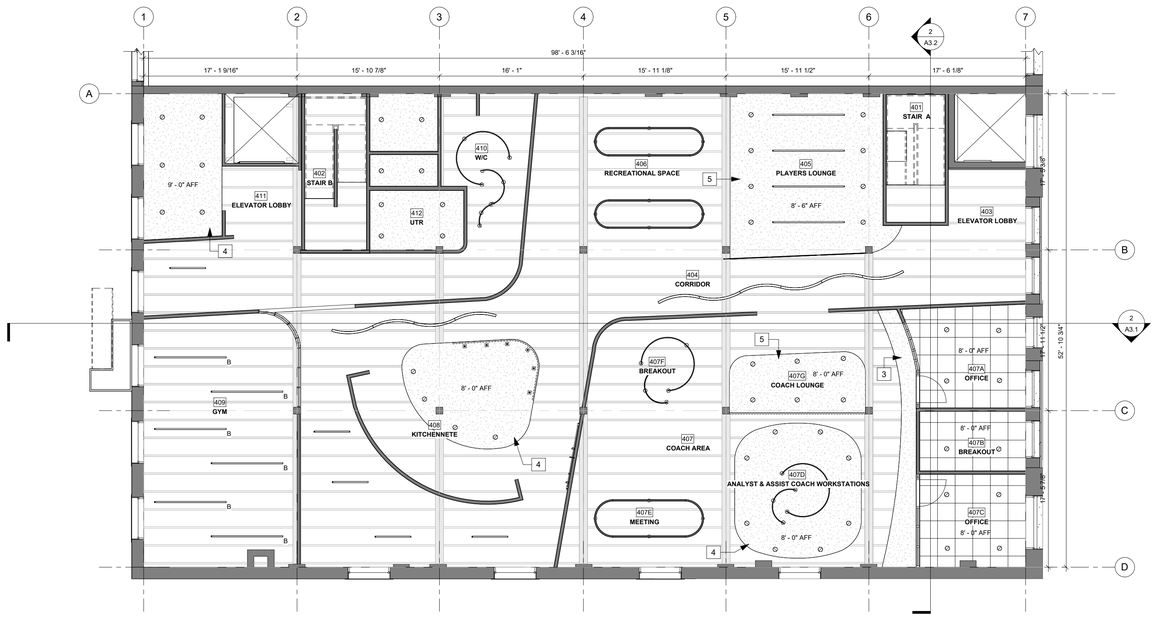
FIRST & SECOND FLOOR REFLECTED CEILING PLANS

SCALE	1/8" = 1'-0"
CONSULTANT PROJECT NUMBER	1715
OWNER PROJECT NUMBER	
SHEET NUMBER	A2.0
REV	



1 THIRD FLOOR RCP
1/8" = 1'-0"



2 FOURTH FLOOR RCP
1/8" = 1'-0"

REFLECTED CEILING PLAN KEYNOTES

1 SUSPENDED ACOUSTIC FELT PANEL
2 PERFORATED BLACK METAL COMPUTER HOUSING TYP.
3 8" GYPSUM SUSPENDED CEILING. HEIGHT TO U/S AS NOTED
4 6" GYPSUM SUSPENDED CEILING. HEIGHT AS NOTED
5 18" GYPSUM SUSPENDED CEILING. HEIGHT TO U/S AS NOTED

CEILING FINISH LEGEND

- EXPOSED TO U/S STRUCTURE NO FINISH REQ'D
- 2'X2' ACOUSTIC CEILING TILE HEIGHT AS NOTED
- GYPSUM WALL-BOARD UNLESS OTHERWISE SPECIFIED HEIGHT AS NOTED
- EXPOSED WOOD BEAMS

REFLECTED CEILING PLAN LEGEND

- 6" RECESSED LED POTLIGHT
- TRACK LED LIGHT
- LED PENDANT
- 4' SUSPENDED LINEAR PENDANT
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- 90° SUSPENDED LED PENDANT
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- LUMENWERX ELIA 412 SUSPENDED OVAL PENDANT
- LUMENWERX CURVIA CURVED SUSPENDED PENDANT
- LUMENWERX CURVIA LINEAR SUSPENED PENDANT
- SUSPENDED METAL PANEL HEIGHT AS NOTED

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

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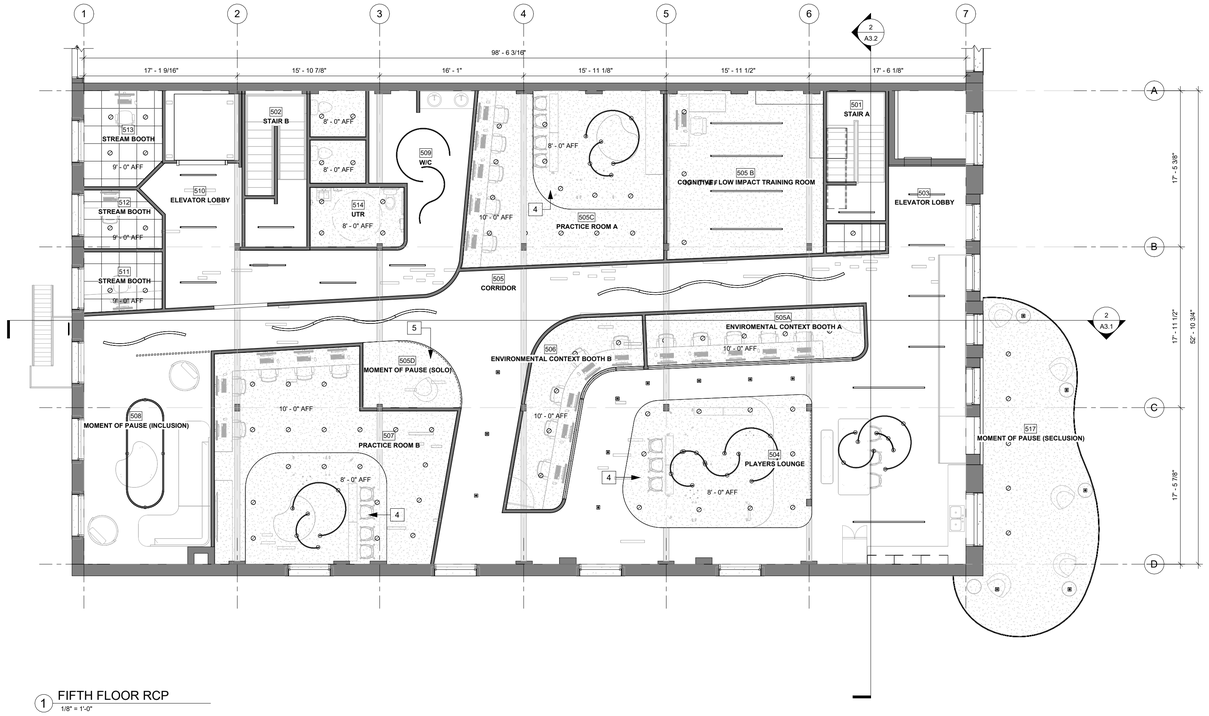
THIRD & FOURTH FLOOR REFLECTED CEILING PLANS

SCALE	1/8" = 1'-0"
CONSULTANT PROJECT NUMBER	1715
OWNER PROJECT NUMBER	
SHEET NUMBER	A2.1
REV	



1 FIFTH FLOOR RCP
1/8" = 1'-0"

REFLECTED CEILING PLAN KEYNOTES

1 SUSPENDED ACOUSTIC FELT PANEL
2 PERFORATED BLACK METAL COMPUTER HOUSING TYP.
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5 18" GYPSUM SUSPENDED CEILING. HEIGHT TO U/S AS NOTED

CEILING FINISH LEGEND

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- 2'X2' ACOUSTIC CEILING TILE HEIGHT AS NOTED
- GYPSUM WALL-BOARD UNLESS OTHERWISE SPECIFIED HEIGHT AS NOTED
- EXPOSED WOOD BEAMS

REFLECTED CEILING PLAN LEGEND

- 6" RECESSED LED POTLIGHT
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- LUMENWERX CURVIA CURVED SUSPENDED PENDANT
- LUMENWERX CURVIA LINEAR SUSPENED PENDANT
- SUSPENDED METAL PANEL HEIGHT AS NOTED

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NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

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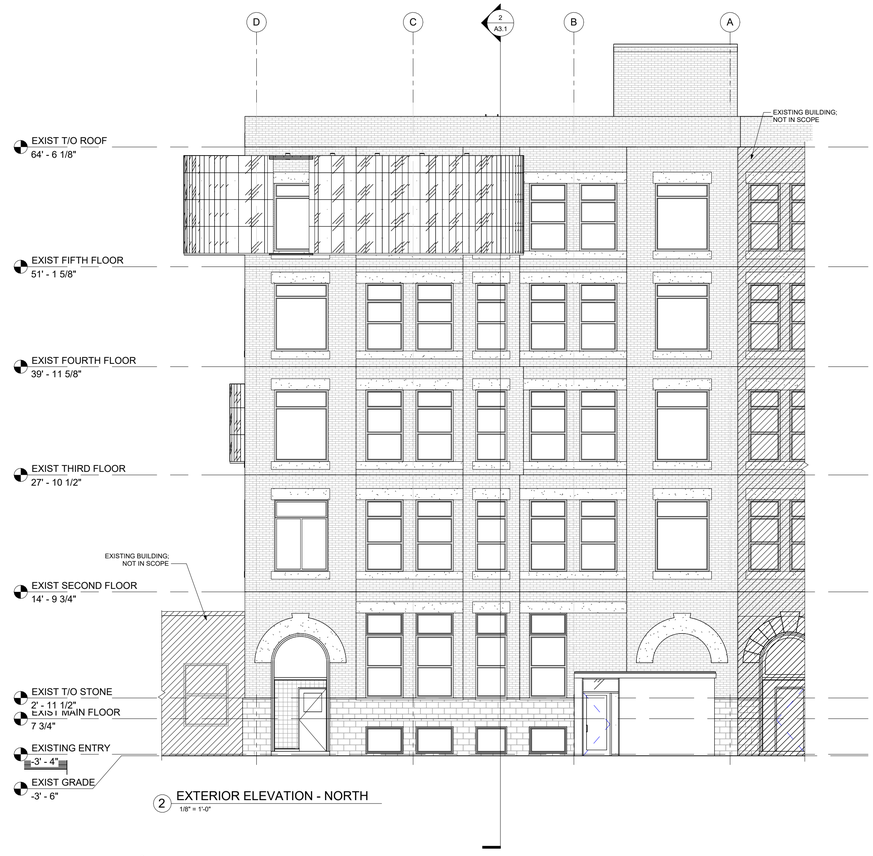
SHEET TITLE

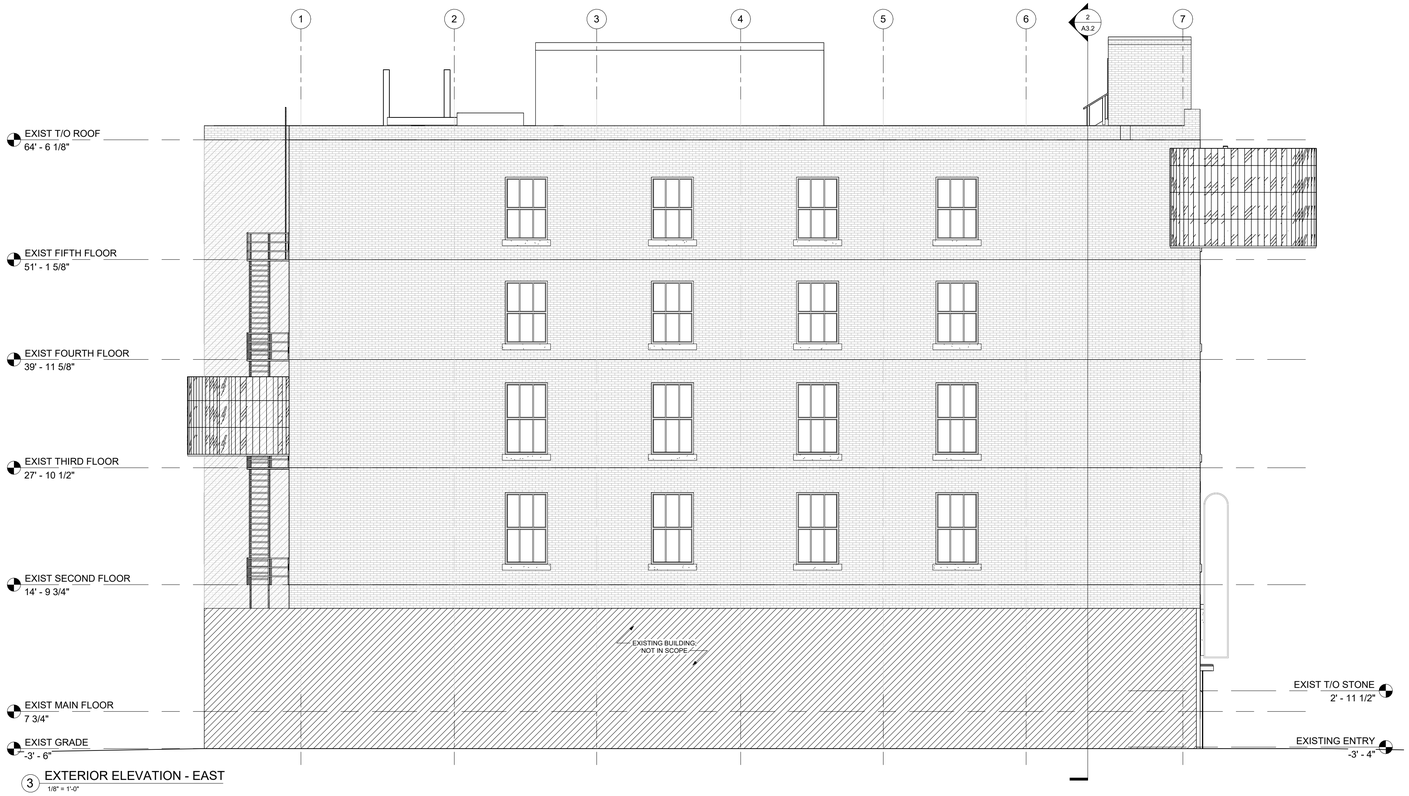
FIFTH FLOOR REFLECTED CEILING PLAN

SCALE: 1/8" = 1'-0"
CONSULTANT PROJECT NUMBER: 1715
OWNER PROJECT NUMBER:
SHEET NUMBER: A2.2
REV:

1 EXTERIOR ELEVATION - SOUTH
1/8" = 1'-0"



2 EXTERIOR ELEVATION - NORTH
1/8" = 1'-0"



3 EXTERIOR ELEVATION - EAST
1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

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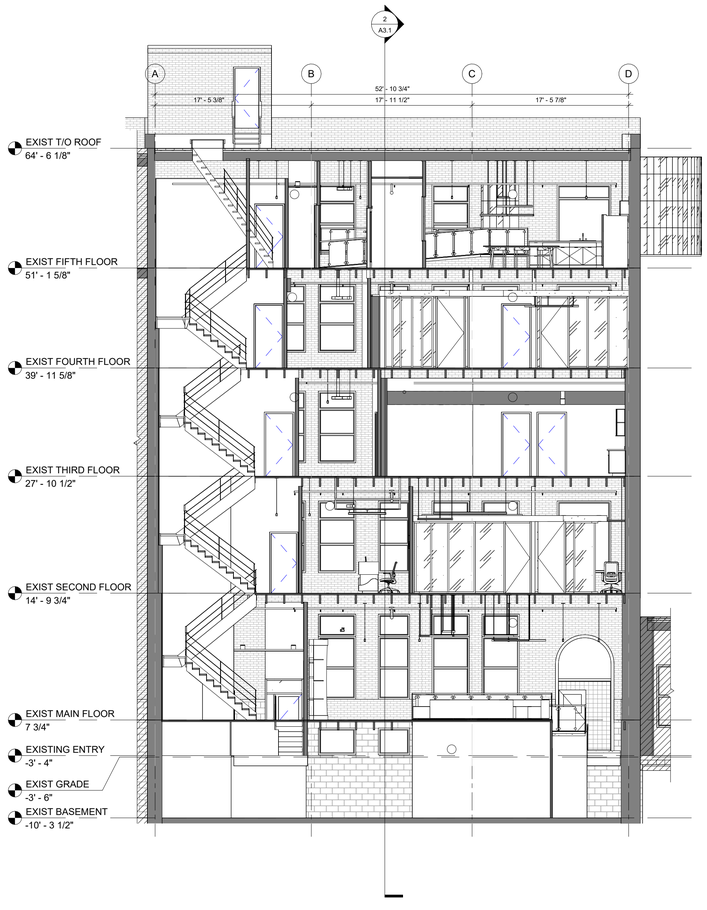
SHEET TITLE

EXTERIOR BUILDING ELEVATIONS

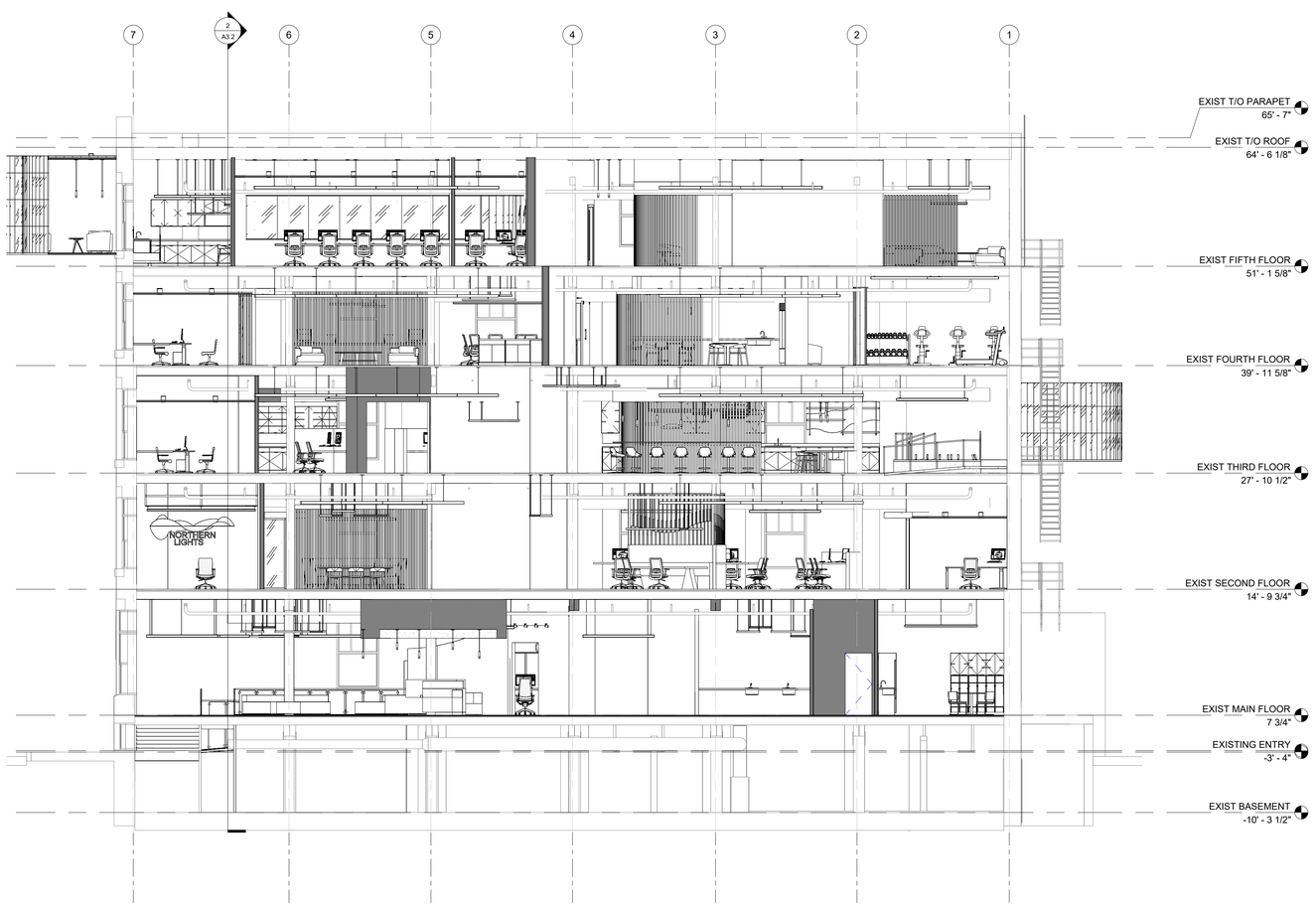
SCALE	1/8" = 1'-0"
CONSULTANT PROJECT NUMBER	1715

OWNER PROJECT NUMBER	SHEET NUMBER	REV
	A3.0	



1 Building Section # 1

1/8" = 1'-0"



2 Building Section # 2

1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

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PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

BUILDING SECTIONS

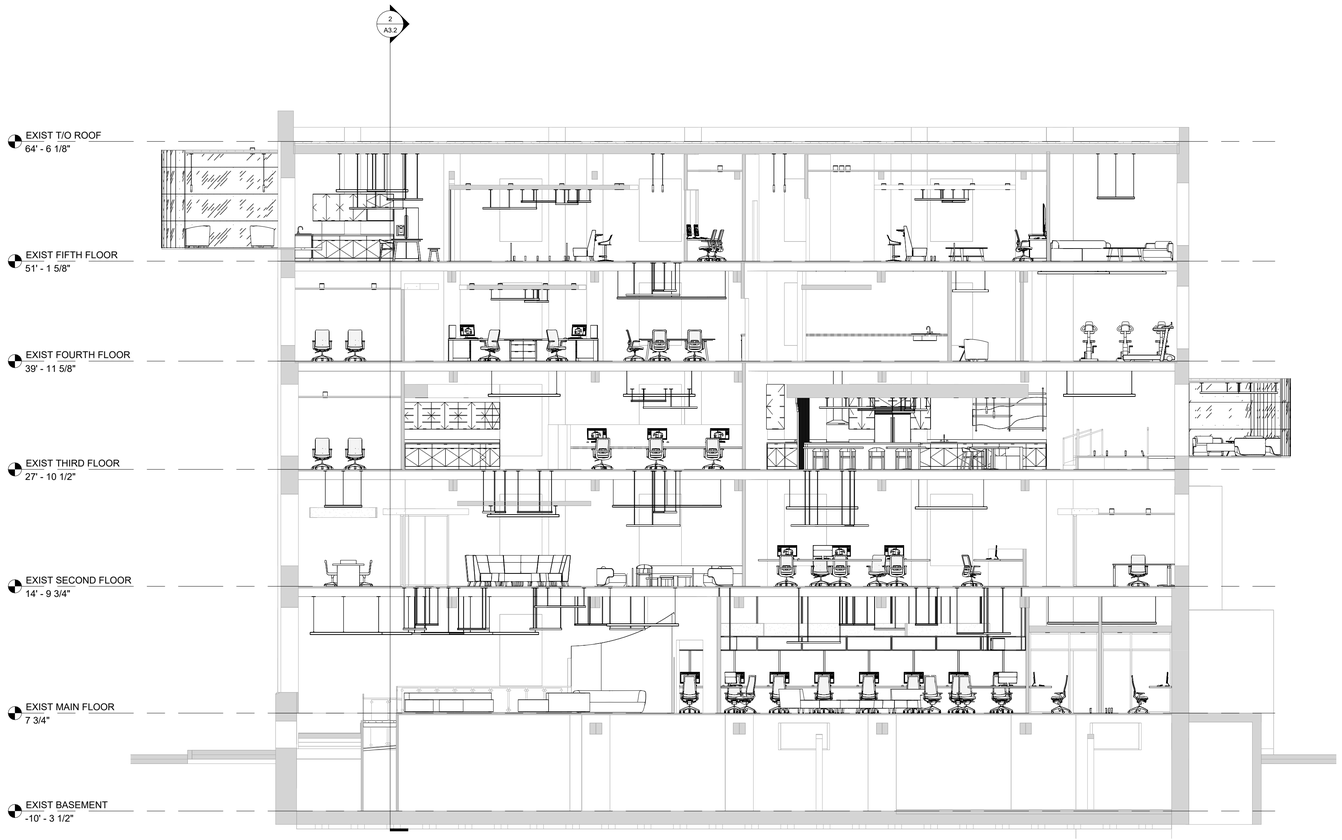
SCALE 1/8" = 1'-0"

CONSULTANT PROJECT NUMBER 1715

OWNER PROJECT NUMBER

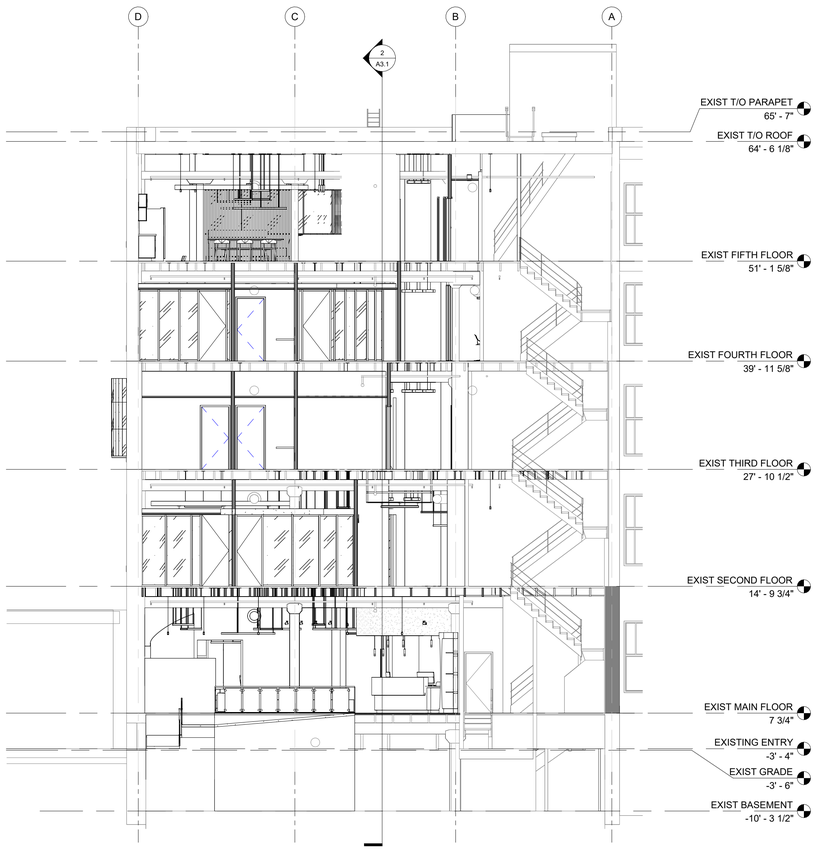
SHEET NUMBER A3.1

REV



1 Building Section # 3

1/8" = 1'-0"



2 Building Section # 4

1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

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PROJECT MANAGER	REVEWED BY
CH	25-12-05
DRAWN BY	DATE (YYYY/MM/DD)

NORTH

CONSULTANTS

COREY HARRISON DESIGN

PROJECT TITLE / ADDRESS

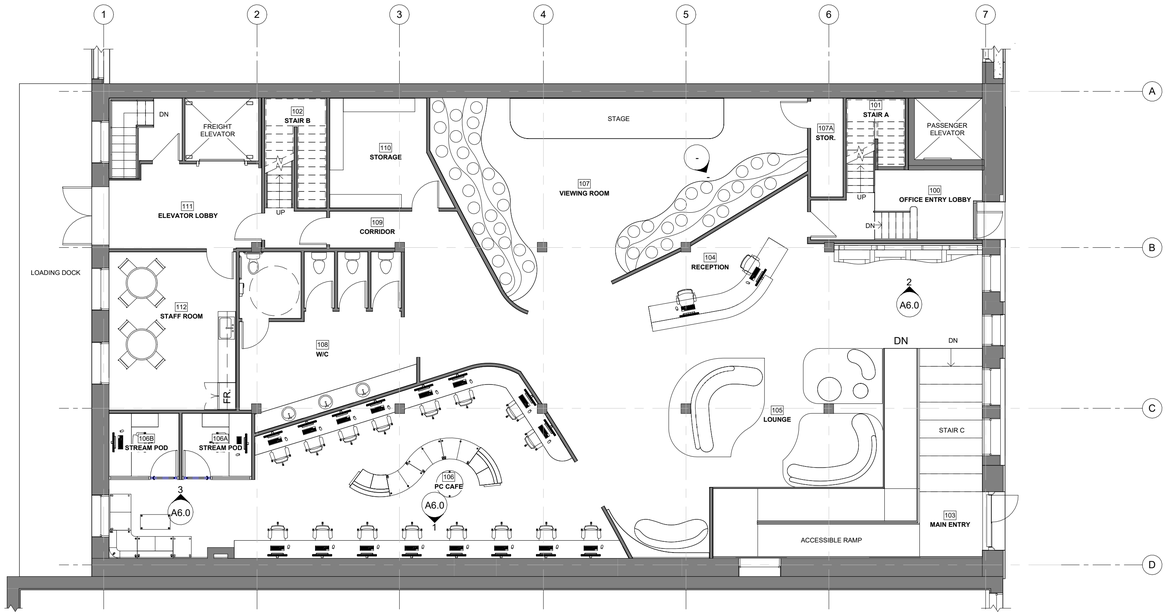
310 ROSS AVE

SHEET TITLE

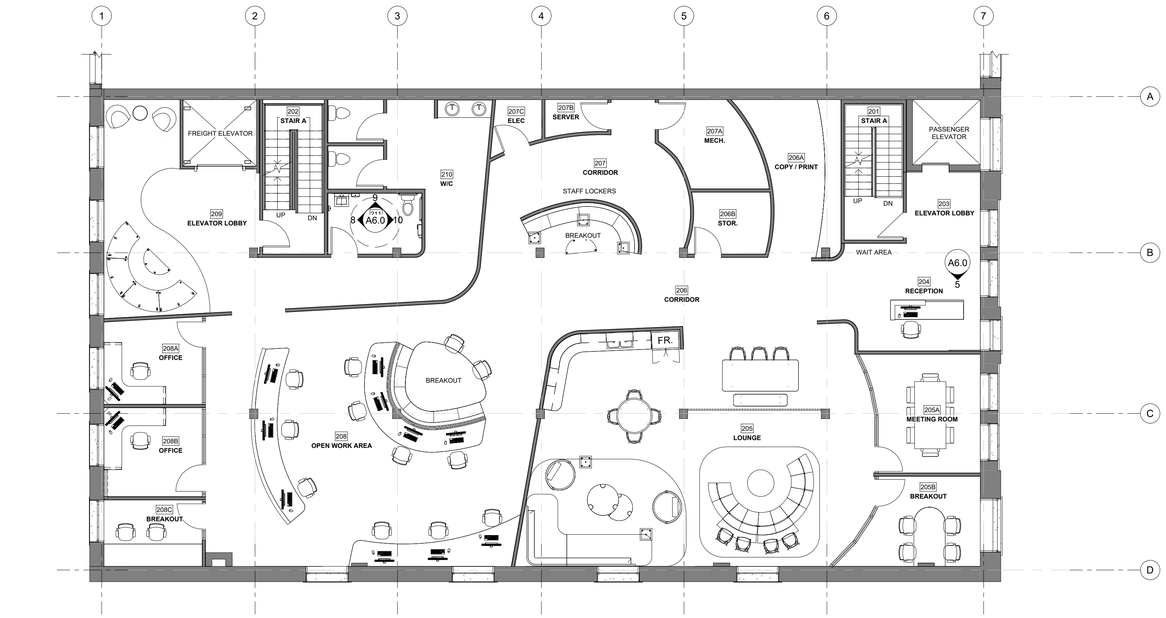
BUILDING SECTIONS

SCALE	1/8" = 1'-0"
CONSULTANT PROJECT NUMBER	1715

OWNER PROJECT NUMBER	SHEET NUMBER	REV
	A3.2	



1 MAIN FLOOR FURNITURE PLAN
1/8" = 1'-0"



2 SECOND FLOOR FURNITURE PLAN
1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

NOT FOR CONSTRUCTION

CH — PROJECT MANAGER

CH — REVEWED BY

CH — DRAWN BY

25-12-05 — DATE (YYYY/MM/DD)

NORTH

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PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

FIRST & SECOND FLOOR FURNITURE PLANS

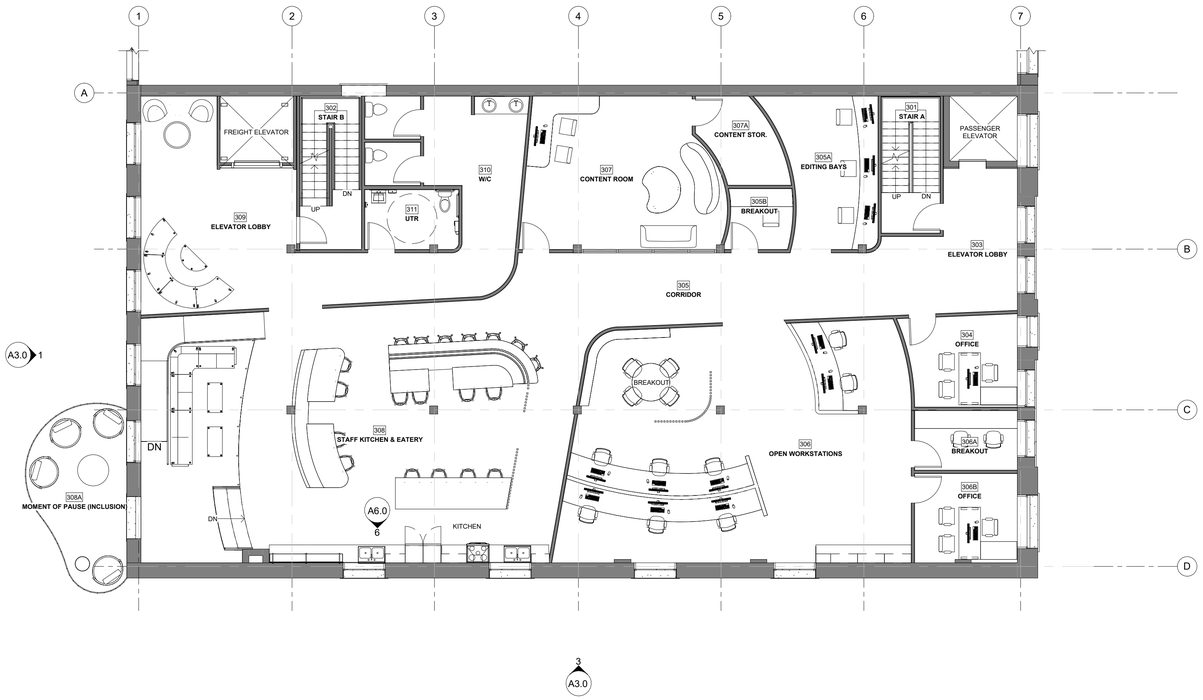
SCALE: 1/8" = 1'-0"

CONSULTANT PROJECT NUMBER: 1715

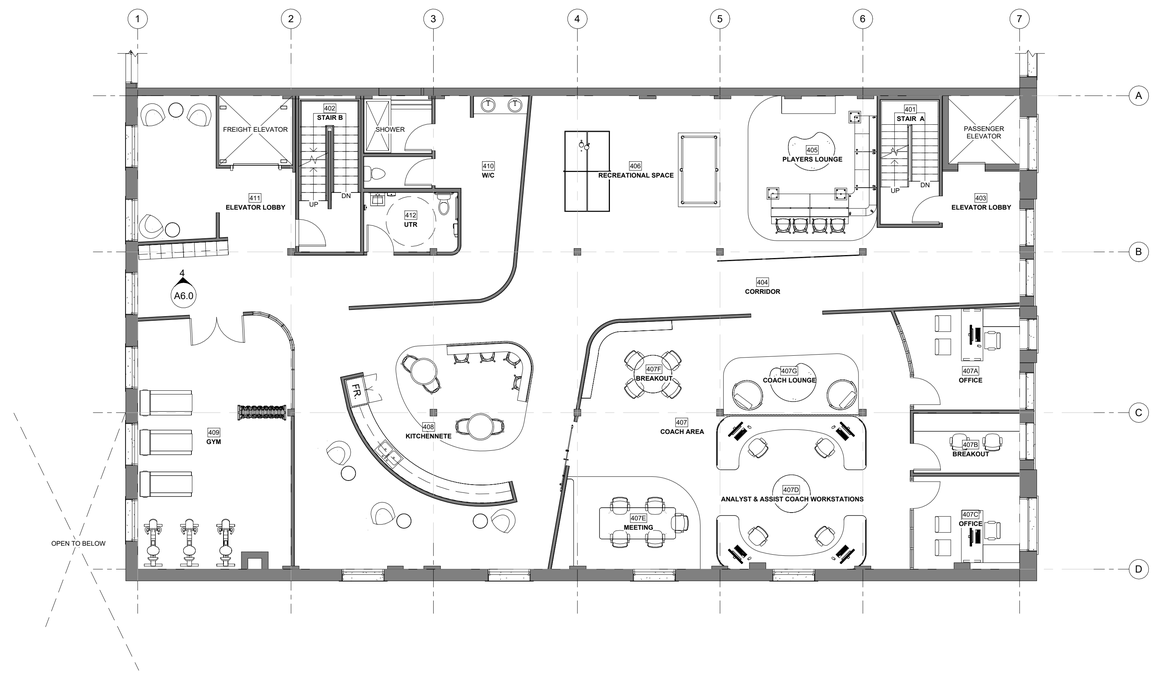
OWNER PROJECT NUMBER:

SHEET NUMBER: A4.0

REV:



1 THIRD FLOOR FURNITURE PLAN
1/8" = 1'-0"



2 FOURTH FLOOR FURNITURE PLAN
1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

NOT FOR CONSTRUCTION

CH	CH
PROJECT MANAGER	REVEWED BY
CH	25-12-05
DRAWN BY	DATE (YYYY/MM/DD)

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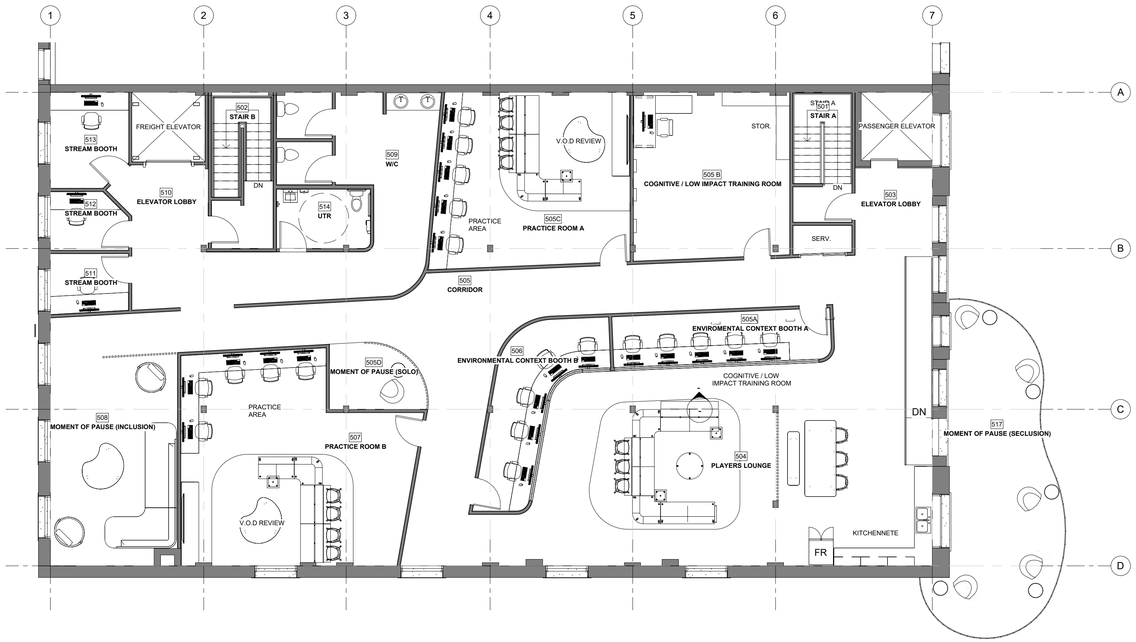
PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

THIRD & FOURTH FLOOR FURNITURE PLANS

SCALE	1/8" = 1'-0"
CONSULTANT PROJECT NUMBER	1715
OWNER PROJECT NUMBER	
SHEET NUMBER	A4.1
REV	



1 FIFTH FLOOR FURNITURE PLAN
1/8" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

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PROJECT MANAGER

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25-12-05
DATE (YYYY/MM/DD)

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CONSULTANTS

COREY HARRISON DESIGN

PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

FIFTH FLOOR FURNITURE PLAN

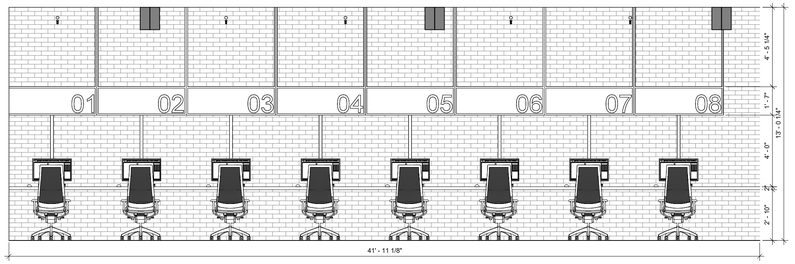
SCALE 1/8" = 1'-0"

CONSULTANT PROJECT NUMBER 1715

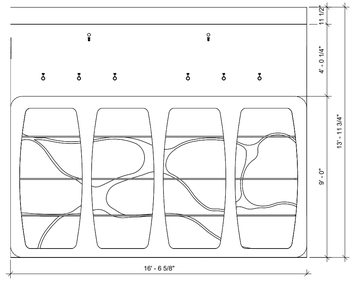
OWNER PROJECT NUMBER

SHEET NUMBER A4.2

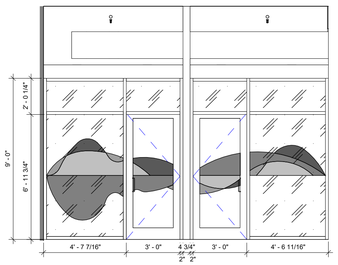
REV



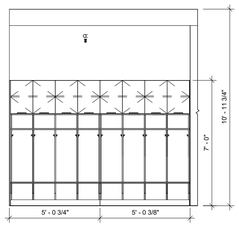
1 Main Floor - Pc Cafe
1/4" = 1'-0"



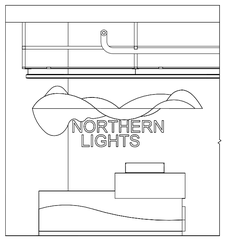
2 Main Floor - Trophy Case
1/4" = 1'-0"



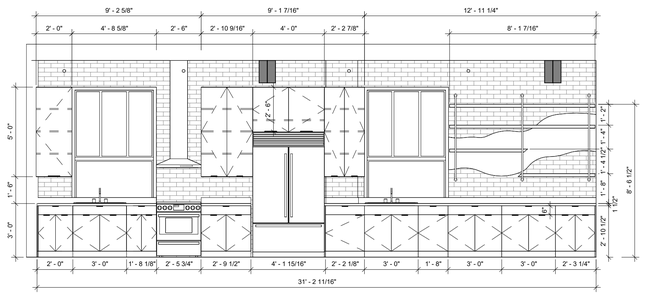
3 Main Floor Streamer Pods
1/4" = 1'-0"



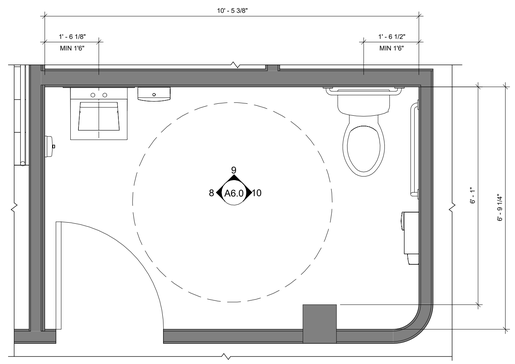
4 4th Floor Lockers Elev.
1/4" = 1'-0"



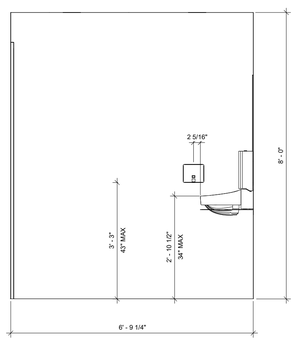
5 Office Reception Elev.
1/4" = 1'-0"



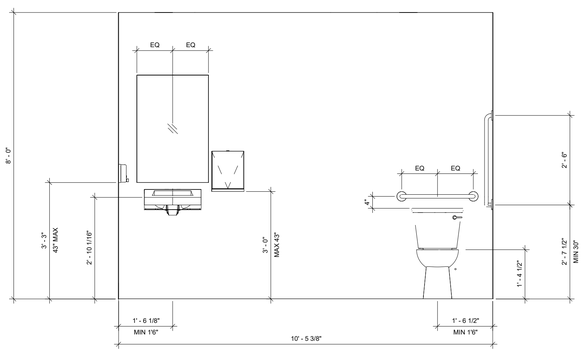
6 Staff Lunch Kitchen Elev.
1/4" = 1'-0"



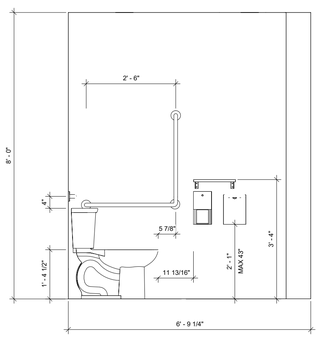
7 ENLARGED UTR PLAN TYPICAL
1/2" = 1'-0"



8 UTR ELEVATION A
1/2" = 1'-0"



9 UTR ELEVATION B
1/2" = 1'-0"



10 UTR ELEVATION C
1/2" = 1'-0"

PROJECT OWNER

NORTHERN LIGHTS ESPORTS

NO	REVISION	DATE	BY

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COREY HARRISON DESIGN

PROJECT TITLE / ADDRESS

310 ROSS AVE

SHEET TITLE

INTERIOR ELEVATIONS & DETAILS

SCALE
As indicated

CONSULTANT PROJECT NUMBER
1715

OWNER PROJECT NUMBER

SHEET NUMBER
A6.0

REV