

# Build Community By Fighting

Andrea Puameliaonaonaonalani Simpliciano  
August 2010

*Submitted towards the fulfillment of the requirements for the Doctor of Architecture Degree.*

School of Architecture  
University of Hawai'i

**Doctorate Project Committee**  
Spencer Leineweber FAIA, Chairperson  
Mark Hakoda  
Ramsay Taum

# Build Community by Fighting

Andrea Puameliaonaonaonalani Simpliciano  
August 2010

---

*We certify that we have read this Doctorate Project and that, in our opinion, it is satisfactory in scope and quality in fulfillment as a Doctorate Project for the degree of Doctor of Architecture in the School of Architecture, University of Hawai'i at Mānoa.*

## **Doctorate Project Committee**

---

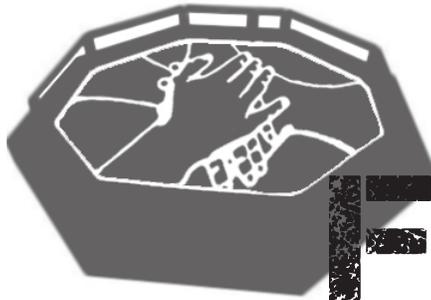
Spencer Leineweber, FAIA

---

Mark Hakoda

---

Ramsay Taum



Build Community by

**FIGHTING**

This project is dedicated to

My mom Priscilla Simpliciano and my grandma Abbie K. Dela Cruz who are my heros and main supports in my life. To my uncle Peter for taking time to visit me while i was doing practicum. To my family for being a strong foundation throughout my years in school. I love you all very much and you all made my seven years in architecture school worth it.

To my architecture friends that i have made throughout the years. Thank you for all the crazy memories, the laughs and for helping me last through the stressful parts of school. To my sister Joni who i was honored to have studied with in school, thank you for being my best friend and for helping me physically and mentally get through school.

To my committee Spencer Leineweber, Mark Hakoda and Ramsay Taum for taking the time out of their busy schedules to help me throughout my thesis project. Mahalo for all the feedback during the process.

To all who made this project possible such as Vincent D. DeBina Jr., Ms. Lorraine Shin, Chris Leben, and 808 fight factory. Thank you for taking the time to aid me in information i needed to complete my project. Mahalo for everything

# Table of Contents

1	Abstract
1	Introduction
	Part I - Fighting Styles which influence Mixed Martial Arts
4	From Fighting to Mixed Martial Arts
5	Striking Arts - Standup fighting
16	Wrestling Arts - Standup Grappling
25	Grappling Arts - Groundwork
	Part II - Evolution of fighting through Mixed Martial Arts
33	Definition of Mixed Martial Arts
33	Historical Background
50	Present Day Culture of Mixed Martial Arts for Hawaii
	Part III - Spatial Qualities of Mixed Martial Art Spaces
54	Defining spaces for mixed martial arts
65	Practice Space
69	Competition space
73	Existing examples of MMA spaces with multiple spaces
	Part IV - Case Studies: Mixed Martial Art Spaces
80	Ultimate Fighting School
86	Penn Training & Fitness Center
91	808 Fight Factory
95	Reflection - Similarities & Differences

# Table of Contents

## Part V - Design of a Mixed Martial Arts Community Center

96	Community + Fighting = Mixed Martial Arts Community Center
99	Site and/or Context Documentation/Analysis
101	Historical Background
110	Program
133	Design Concept
134	Drawings (Site & Floor Plans)
139	Sunlight Conditions on Proposed Design
140	Function
142	Outer Shell
143	Research on Existing Building
147	Wall Sections (Existing & Proposed)
149	Materiality
152	Interior Wall Assembly
156	landscape Plan
158	Renderings
161	Elevations & Sections
164	Sustainable Architecture
166	Conclusion
167	Bibliography

## List of Figures

- 7 Figure 1: Competition Mat for Karate
- 10 Figure 2: Competition Mat Space for Taekwondo
- 13 Figure 3: Distance for Kick
- 13 Figure 4: Reach Distance
- 14 Figure 5: Sliding Movement
- 14 Figure 6: Lunge Movement
- 15 Figure 7: Ring Position
- 16 Figure 8: Boxing Ring
- 19 Figure 9: The Sumo Ring
- 21 Figure 10: The Scene at a Sumo Stadium
- 24 Figure 11: Basic layout of a wrestling
- 25 Figure 12: Wrestling Room
- 29 Figure 13: Spatial layout of a competition space for Judo with one main mat
- 30 Figure 14: Positioning of participants within a competition space for Judo
- 35 Figure 15: Ariel view of Palaestra
- 37 Figure 16: Magazine photo of Lua practitioners
- 39 Figure 17: Pa Lua: Space for Lua Training
- 48 Figure 18: Layout of fighter equipment
- 49 Figure 19: Layout of Training equipment
- 57 Figure 20: illustration of a dojo space
- 61 Figure 21: Diagram on how natural elements connect to directions and the four distinct spaces within a dojo
- 63 Figure 22: Beginner layout of a gym
- 64 Figure 23: Intermediate layout of a gym
- 64 Figure 24: Professional layout of a gym

## List of Figures

- 65 Figure 25: Hitsquad Facility in St. Louis, Missouri
- 66 Figure 26: RVCA Headquarters and Gym in Costa Mesa, California
- 67 Figure 27: Team Quest Gym in Murrieta California
- 68 Figure 28: XMA World Headquarters Gym in North Hollywood, California
- 69 Figure 29: Xtreme Couture Mixed Martial Art Gym in Las Vegas, Nevada
- 70 Figure 30: The shape of an octagon used for competition
- 71 Figure 31:View of the octagon with surround seating and lighting setup
- 71 Figure 32: Example of a plan for a UFC layout with octagon in the center.
- 73 Figure 33: International Judo Center. The Kodokan Judo Institute
- 74 Figure 34: Kodokan Judo Institute (5th Floor)
- 74 Figure 35: Kodokan Judo Institute (6th Floor)
- 75 Figure 36: Kodokan Judo Institute (7th Floor)
- 75 Figure 37: Kodokan 360degree Panorama Movie. The Kodokan Judo Institute
- 76 Figure 38: Kodokan Judo Institute (8th Floor)
- 77 Figure 39: Ariel view of the Nippon Budokan in Japan
- 78 Figure 40: Exterior of the Nippon Budokan
- 79 Figure 41: view of martial arts competition space setup
- 80 Figure 42: Ariel View of location for the Ultimate Fight School
- 80 Figure 43: (Left) Front view of gym (Right) Logo page
- 84 Figure 44: Floor Plan of Ultimate Fighting School
- 85 Figure 45: Interior drawing of the Ultimate Fight School gym
- 86 Figure 46: Ariel View of the Penn & Training Fitness Center in Hilo, Hawaii. Goole  
Maps. Accessed 10-5-09
- 86 Figure 47: Streetview & entrance of the gym. Photo taken by Andrea P. Simpliciano
- 88 Figure 48: Street level floor plan of Penn & Training Fitness Center with photos of  
various spaces

## List of Figures

- 88 Figure 49: Street floor plan with photos
- 89 Figure 50: Below grade floor plan with photos of various spaces
- 90 Figure 51: Perspective sketch of materials used within the gym
- 91 Figure 52: Ariel view of 808 Fight Factory
- 93 Figure 53: Floor plan of 808 Fight Factory
- 94 Figure 54: Perspective Drawing of interior spaces
- 99 Figure 55: (Top Left) Drawing shows climate conditions on site
- 100 Figure 56: Map of various buildings on the site
- 104 Figure 57: Original Pālama Settlement Structure
- 105 Figure 58: Temporary Pālama tenements built for those without homes after  
Chinatown fire in 1912
- 107 Figure 59: Site plan with proposed parking area
- 122 Figure 60: Spatial diagrams of spaces and how each varies in size and purpose
- 123 Figure 61: Octagon configurations
- 124 Figure 62: Cage Panel Walls
- 125 Figure 63: Polyurethane surface
- 126 Figure 64: Example of acrylic mirrors in a training space
- 127 Figure 65: Floor mounted boxing ring with various versions of a bag rack system
- 127 Figure 66: Heavy bag system that allows easy storage and flebility
- 127 Figure 67: Different Type of Punching Bags used for Striking Exercises
- 128 Figure 68: Various types of grappling mats
- 121 Figure 69: Example of a treadmill prototype
- 129 Figure 70: Example of a ellliptical prototype
- 130 Figure 71: Example of a exercise bike prototype
- 138 Figure 72: Massing diagrams and how they relate to the existing structure

## List of Figures

- 139      Figure 73: Sketch diagram of the various conditions the natural conditions (sun, wind, rain) have on the proposed design
- 140      Figure 74: Floor Plan showing dimensions of mma integrated into multi-purpose space
- 141      Figure 75: Integration of mma functions within the existing gym
- 142      Figure 76: Diagram shows various type of building materials and systems used on the outer shell
- 145      Figure 77: Photos of existing gymnasium conditions
- 146      Figure 78: Photos of existing gymnasium conditions
- 149      Figure 79: Sketch of different type of materials for the facade
- 156      Figure 80: Renderings of the entry passage into the gym and mixed martial art community center
- 158      Figure 81: Sketch of the interior space of the gym and multi-purpose spaces of the center
- 159      Figure 82: Birds eye perspective rendering
- 159      Figure 83: Interior rendering of multi-purpose space with grappling activities
- 160      Figure 84: Front perspective from the freeway
- 160      Figure 85: Interior rendering of multi-purpose space with striking activities

## **ABSTRACT**

The goal of my thesis project is to design a multifunctional space which enhances the teaching and sharing of mixed martial arts in Hawaii as an art and a sport by responding around an existing program that emphasizes community. The thesis project will introduce the reader on the evolution of mixed martial arts from the past, present and future. The spaces for mixed martial arts is investigated through case studies which aid in guidelines for design. The research and design will introduce a new way to create mixed martial art spaces that can work alongside the community.

## **INTRODUCTION**

It seems just yesterday when I felt the adrenaline rush that occurs when competing on a mat during a live wrestling match. In a split second all the long hours of practice combined with sweat flashed into my mind trying to figure out the perfect move to do at the perfect time and how I can counter an opponent's tactics all in one quick moment. It was an ongoing chess game physically and mentally between my opponent and I. The greatest feeling I recall is having a chance to experience victory of knowing in my heart I had earned the win and tried my best. From that point on my life was changed completely and I was in love with the idea of sports that allowed me to learn different styles that not only taught me how to grapple or punch, but the dedication and hard work that influenced how I lived my life.

As time past I was introduced to the world of ultimate fighting where a Hilo boy named Bj Penn allowed me to witness a new style of fighting called mixed martial arts. Even though many people thought this type of fighting as being bloody and brutal, I saw it as an art that was so

interesting to watch. I had the opportunity to study and train for different styles such as wrestling, jiu-jitsu and muay thai which let me gain a greater appreciation for what makes a practitioner of mixed martial arts so unique. It was hard enough to master one style, but combining more than one to me seemed unbelievable and at times impossible in my eyes. While training in wrestling, jiu-jitsu and muay thai I have been exposed to spaces that were usually existing structures such as warehouses and auditoriums. These places were transformed into practice areas by just rolling out mats, placing a full size boxing ring in a corner, placing a time clock on a table and a few mirrors here and there. As I reminisce on the spaces I have trained I realize there wasn't any thought of how the spaces could possibly affect the way I train. This is one memory that led me in wanting to design a way to change and open eyes to a new idea of what could be improved in spaces towards training.

Another memory that stands in my mind is my experience of sitting in a gym in San Diego while watching grapplers quest. This competition is to showcase the nation's best grapplers and is a way to find upcoming stars who have potential to become professional athletes. I remember watching the matches from bleachers filled with loud people talking and walking in front of me and constantly distracting me from watching the matches. The matches were held on six separate mats which were partially blocked by coaches, referees and teammates who surrounded the mats and often blinded me in seeing what was occurring on the mat. My best friend and I soon began to discuss how disappointed and how distracting the experience was and could there be a way to provide clearer views between spectators and competitors as well as provide space for coaches and teammates which would minimize interference. This yet again sparked an interest on what type of design could change the existing competition settings for combat sports conditions and could it be used in mixed martial art competitions.

By reflecting on my past experiences, it impacted my desire to design for the blending of an upcoming style of mixed martial arts. I am a fan of the sport, the fighters that practice it, and the numerous techniques that make it an exciting heart pumping, mind boggling sport. Mixed martial arts always keep me on my toes because I never know who could win or what technique will happen next that could possibly turn a match around. The passion of mixed martial arts is something I hope people can come to appreciate, love and learn within the research and design ideas within this thesis project.

# **PART 1**

## **FIGHTING STYLES WHICH IMPACT MIXED MARTIAL ARTS**

### **FROM FIGHTING TO MIXED MARTIAL ART**

Fighting derived from humble beginnings as a way humans needed in order to survive. Fighting was a way to fight against all types of threats that impact a cultures well being such as nature, disease and predators. Cultures from all over the world translated fighting as an action that occurred between two people as a way to gain ownership, freedom, power and defense for themselves and others. The requirements of fighting took physical, mental, and intellectual efforts which produced a win or loss at the end. Man throughout time invented ways to perfect skills and techniques of fighting. This evolution lead to the fighting sport we know today called mixed martial arts.

In order to become a master of mixed martial arts, one must learn the basic fundamentals which create mixed martial arts. These fundamentals are characterized in three components that strengthen technique towards mixed martial arts. In an interview Bj Penn states that “instead of just training mixed martial arts, what I like to do is train boxing, train wrestling, and then train jiu-jitsu with different coaches for each one, and then blend them together later”. This ability to “blend” is essential in mastering the style known as mixed martial arts.

This blending effect is what makes mixed martial arts so unique because it is a fighting art that combines three fighting components which are striking, wrestling and grappling. In the following chapter the introduction of these arts will emerge to create a base of understanding on what mixed martial arts i truly built upon.

## **STRIKING ARTS - STANDUP FIGHTING**

Striking is commonly associated with punches and kicks that are found in boxing matches. Striking can also consist of a combination of blocking, knees and elbows in other striking fighting styles.<sup>1</sup> Distance and timing is crucial in executing an accurate and efficient strike that comes in contact with a immobile and mobile target. The use of the arms and legs are ways to attack and defend an opponent. The important point in the striking game is to be aware of the positioning of your opponent's body in relation your own. This space will be important to be conscious about when in a fighting situation. The understanding of space will be investigated in relation to research of the three components of mixed martial arts.

## **KARATE**

The history of striking arts can be seen in many combat arts throughout history. Karate in particular embodies various attributes of striking techniques while having the ability to integrate physical and psychological principles. The principles are part of the techniques which karate is built upon and are similar to other martial arts. The physical principles found in karate are the ability to control maximum strength through force and striking power of force. The ability to concentrate strength will enable the utilizing of reaction force from an opposite reaction and control use of breathing.<sup>2</sup>

---

<sup>1</sup> "Striking Arts in Mixed Martial Arts." World of Combat. < [www.worldofcombat.net/striking-arts-in-mixed-martial-arts.html](http://www.worldofcombat.net/striking-arts-in-mixed-martial-arts.html)> 22. September 2009

<sup>2</sup> Nishiyama, Hidetaka. Richard C. Brown. Karate – The Art of "Empty-Hand" Fighting. Singapore: Turtle Publishing, 1960. pg. 19-20

## **SPATIAL REQUIREMENTS FOR KARATE**

The space for training the principles that structure techniques for karate is found in a training gym. The floor of the gym would consist of flooring that will not injure foot contact as well as not create a sliding effect or overpowering of friction. The ideal floor for a karate gym would be of polished wood. The room should have ventilation with no excess furniture with space allowed for movement.<sup>3</sup> Training within a training gym for karate would consist of basic practices of punching, kicking, striking, and blocking. This would be followed by formal exercises which is combination of four techniques in combination and is essential in training in various techniques at once. The last segment would consist of sparring where students can practice with an opponent and where distance and response can be executed.<sup>4</sup>

Competition of Karate takes place in a more formal space and is called free-style sparring which evolved into a sport for competitions. This style of competition karate is targeted on more advanced competitors who have trained on technique as well as self-control. The Japan Karate Association has laid guidelines on competitions specifically for Karate contest. The rules consist of an area eight meters (approx. 26 feet) square, marked off with a white or visible marker. (Figure 1) The surface should consist of a smooth, flat material like canvas covered mats or polished wood. A single match should last two to three minutes decided by a judge. Within the allotted space, points are given to one that completes effective “killing” blows which is the ability to strike the face, neck or midsection while maintaining correct form, correct distance and attitude.<sup>5</sup>

---

<sup>3</sup> Nishiyama, Hidetaka. Richard C. Brown. Karate – The Art of “Empty-Hand” Fighting. Singapore: Turtle Publishing, 1960. pg. 36

<sup>4</sup> Nishiyama, Hidetaka. Richard C. Brown. Karate – The Art of “Empty-Hand” Fighting. Singapore: Turtle Publishing, 1960. pg. 29

<sup>5</sup> Nishiyama, Hidetaka. Richard C. Brown. Karate – The Art of “Empty-Hand” Fighting. Singapore: Turtle Publishing, 1960. pg. 187-189

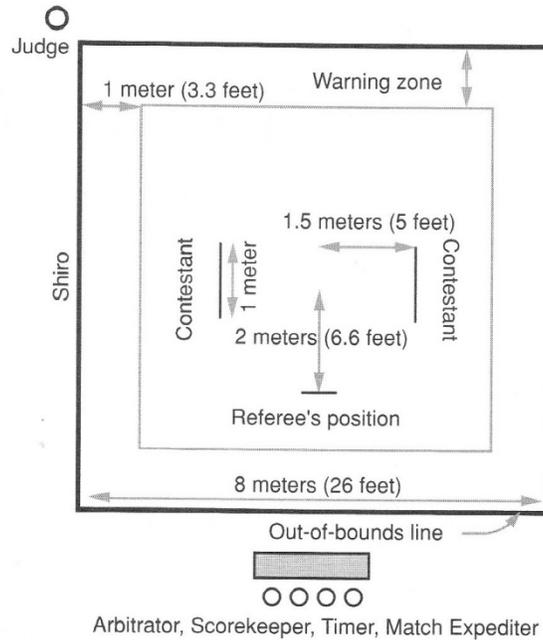


Figure 1: Competition Mat for Karate. Hickey, Patrick M. Karate: Techniques & Tactics. Illinois: Human Kinetics Publishers. 1997. Pg. 164

## **TAE KWON DO**

The style called Tae Kwon Do is another striking fighting art which was rooted in Korea as an unarmed fighting system and has evolved into a well known sport. Translated as the art (do) of kicking (tae) and punching (kwon) where a practitioner would use their body parts as weapons of self-defense.<sup>6</sup> Tae-kwon does primarily focuses on 70 percent on kicking techniques. The leg attacks are done in quick and snapping of the leg which differentiates it from other styles. Unlike styles that involved formal stances like karate, tae kwon do consist of quick actions with a very movable base that creates quick reactions.

## **SPATIAL REQUIREMENTS FOR KARATE**

The space in which tae kwon do practitioners practice is within a school called kwans. The schools however were based on various masters who had different approaches of the art. The training hall called dojang is where practitioners of tae kwon do come to practice. There is a demonstration of respect that is shown when entering and exiting the area of training. Within the space of the training hall the practitioners try to improve themselves spiritually, mentally and physically. The hall enables spiritual growth however it is not a form of religious worship.<sup>7</sup> Training for tae kwon do involves students to line up according to rang and bow between instructor and fellow students.

The most important component that a dojang needs to have is the adequate space that will be large enough to accommodate free movement. For an average class of fifty students the recommended area should be no less then 25 feet wide and 70 feet long (1,750 square feet).

---

<sup>6</sup> Parkm Yeon Hwan, Gerrard, Jon. Black Belt Tae Kwon Do. New York: Checkmark Books, 2000. pg. xii

<sup>7</sup> Parkm Yeon Hwan, Gerrard, Jon. Black Belt Tae Kwon Do. New York: Checkmark Books, 2000. pg. 10

The rectangular shape is a traditional form used in tae kwon do and is used when students line up formally and arrange themselves side by side in rows facing one of the long walls. The walls usually are painted in neutral colors that give a bright atmosphere. The highest ranking students are in the front rows and descend from left to right. This lineup enables a student the capability to kick and punch while in clear view of the instructor. If necessary the dojang length can be split to allow different types of training to occur at once.<sup>8</sup>

The lighting of a dojang is important because it impacts sparring sessions and how a practitioner executes a move. Lighting can have a large effect in action and reaction and could lead to mistakes and injuries. Fluorescent lighting in particular provide light without creating heat. The placement of windows creates openness within the space as well. The flooring of tae kwon do dojang usually consist of flat, leveled padded floors that can withstand impact of falls, spins and jumps. The padding however should not be similar to a wrestling mat or any other type of mat that has a spongy feel with soft plastic. This type of padding of mat can cause the feet to be stuck and toes can get caught and ankles may twist and injure other body parts. Other instructors prefer wooden floors or even carpets. Mirrors are needed in order to watch themselves perform a technique they are trying to perfect. The mirror provides a view for practitioners to understand the forms of their own body and how to understand proper execution of techniques. Mirrors should be as large as possible so a practitioner may have a full view and allow the space to seem brighter and larger. Mirrors are sometimes covered along walls and enable practitioners to view themselves their progress. The placement of mirrors should not be directly opposite of each other because the reflection may cause distraction.<sup>9</sup>

The equipment of Tae Kwon do focuses on striking targets both by punching and kicking. Fixed striking pads are used and are sometimes mounted on walls. These fixed pads are used to

---

<sup>8</sup> Parkm Yeon Hwan, Gerrard, Jon. Black Belt Tae Kwon Do. New York: Checkmark Books, 2000. pg. 231

<sup>9</sup> Parkm Yeon Hwan, Gerrard, Jon. Black Belt Tae Kwon Do. New York: Checkmark Books, 2000. pg. 230

build power as well as distinguish distance. Since these pads are just a foot high and 4-6 inches wide precision is needed for accurate contact of the target. Heavy bags are also used and allow strikes from 360 degrees from any angle. The heavy bag focuses on development of power and how to see how much power is placed on a bag when it moves. Along with fixed pads are immobile pads that can be held by a partner as a moving target. Focus mitts are wormlike gloves that are on the hands of a partner while the opposing student practices punches and kicks.<sup>10</sup>

The space for competition also has its own set guidelines and dimensions. The area measures 8 square meters (approx. 26 square feet) with the outer boundary measuring 12 square meters (39 square feet). (Figure 2) The surface is approved foam padding or wood. Local competitions and tournaments differ in measurement however and measure 6 square meters (19.5 square feet) while the outer boundary measures 8 square meters (26 square feet).<sup>11</sup>

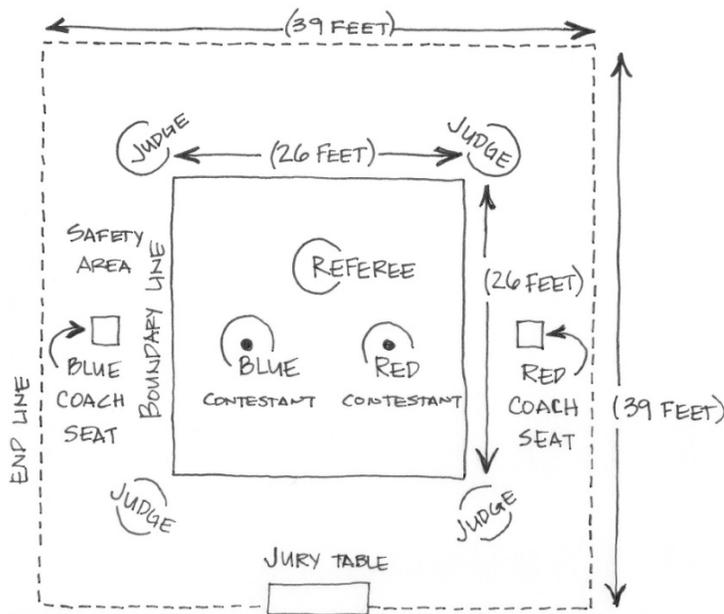


Figure 2: Competition Mat Space for Taekwondo. Park, Yeon Hwan. Seabourne, Tom. Taekwondo: Techniques & Tactics: Skills for Sparring and Self-Defense. Illinois: Human Kinetics Publishing. 1997. Pg. 138

<sup>10</sup> Parkm Yeon Hwan, Gerrard, Jon. Black Belt Tae Kwon Do. New York: Checkmark Books, 2000. pg. 230-232

<sup>11</sup> Parkm Yeon Hwan, Gerrard, Jon. Black Belt Tae Kwon Do. New York: Checkmark Books, 2000. pg. 241

## **BOXING**

Boxing was always seen as a spectator sport and can be dated back to the 688 Olympics where competitors would primarily focus on punches in order to dominate another. Boxing also reveals a very cultural protocol set by native Hawaiians as a tool for makahiki games and war. Hawai'i had its own form of boxing called mokomoko or dirty fighting as well as closed fist boxing called ku'i ku'i. This type of boxing would occur during makahiki season and became a favorite national sport throughout the islands. The fights were usually held in competitions within a circular area where observers would surround the boundary of the so called ring.<sup>12</sup>

The modern refinement of boxing is set around the perception of strengthening the body, character, speed, aerobic fitness, agility, muscular and cardiovascular endurance.<sup>13</sup> Boxing was incorporated to many countries such as Rome, Europe and China as a way for entertainment and a well known sport. The sport of boxing influenced lifestyles particularly during the Industrial Revolution where boxing became a famous working mans sport that contributed to monetary prizes if they were victorious. During this revolution boxing was done similar to street fighting called bare knuckle contest until 1870's when padded gloves were introduced as well as a new set of rules made by Marquess of Queensbury which implemented 3-minute rounds.<sup>14</sup> The rules also specified weight classes which limited unfair pairing of opponents which could cause serious injuries.

The sport of boxing evolved into amateur as well as professional levels. During the 1900's boxing became very popular in the United States however was also viewed as having violent intentions. Boxing usually occurs between two people where the main objective would be to land blows to score points. When a boxer is knocked to the ground the referee would count till ten

---

12 Malo, David. Hawaiian Antiquities (Mooolelo Hawaii). (Honolulu, Hawaii: Hawaiian Gazette Co., 1903.) pg. 304

13 Oliver, Ian. Boxing Fitness: A system of training for complete boxing fitness. London: Snowbooks Ltd. 2004. pgs. 14

14 Human Kinetics, Hanlon, Tom. The Sports Rules Book. 3rd edition. Illinois: Human Kinetics, 2009. pg. 51

allowing the fallen opponent to recover and continue. If the opponent can't recover the match is automatically given to the boxer that landed a knockout hit.

The space in which boxers train within is usually called a gym where fellow boxers are training and sparring. Various spaces are distinguished for specific focuses such as technique, bag work, boxing drills, weight training, core training, circuit training, flexibility and stretching. Along with these focuses is also a space that designates for full contact sparring with a partner in a ring. The ring within the gym allows boxers to practice and become comfortable within the space they will be competing in. The basic shape of a ring is a square ranging from 16 to 20 feet long on each side and is measured from the inside ropes. It is then bordered by four ropes made of a synthetic plastic called manila which is not less than one inch in diameter. The rings have spacer ties on each side of the ring to secure the ropes. The outer flooring of the ring extends two feet beyond the ropes while the flooring is not more than four feet from the ground.<sup>15</sup> The basics of a ring are a ring surface made of canvas that is placed on an inch of padding. The dimensions range from 16 feet and 24 feet. The base is raised around three to four feet from the ground and usually has a steel frame with wooden supports. Corner posts are attached at the four corners and are the attachment for the ropes. There are usually four ropes in a ring and are an inch in diameter covered with fabric or PVC to lessen the possibility of rope burns. In MMA rings a fifth rope is added to prevent fighters from falling due to grappling. The tension of the ropes differs for MMA rings must be tighter than boxing rings and is controlled from turnbuckles on the corner post.<sup>16</sup>

While the designated ring space provides adequate space for sparring, space is also important in calculating timing, distance and mobility against an opponent. Timing is a method used to pick precise moments of attacks in order to move or defend.<sup>17</sup> Fighters rely on timing as a way to calculate anticipation and reaction between opponents in hopes of finding a moment to

---

15 Human Kinetics, Hanlon, Tom. The Sports Rules Book. 3rd edition. Illinois: Human Kinetics, 2009. pg. 51

16 Boxing Ring. Fighters Only Magazine. Rosi Sexton. April 2009. Pg. 86-87

17 O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 85

attack. Timing can be disrupted with the fear of hesitation. Hesitation allows lack of confidence that is caused by lack of experience, under trained or not conditioned. Distance is determined by the distance of which an opponent's reach is. This reach is the space between the furthest punch and your opponent.<sup>18</sup> The common distance between two fighters is fifteen inches. Distance can be measured within a circle where the center is a neutral zone and the circumference being the boundary of danger or attack.<sup>19</sup>

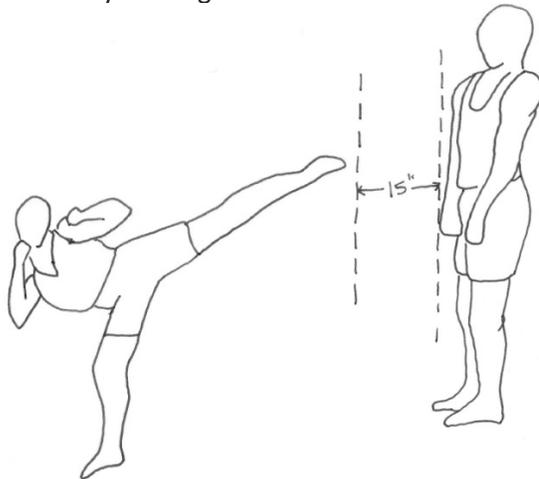


Figure 3: Distance for Kick. O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 87

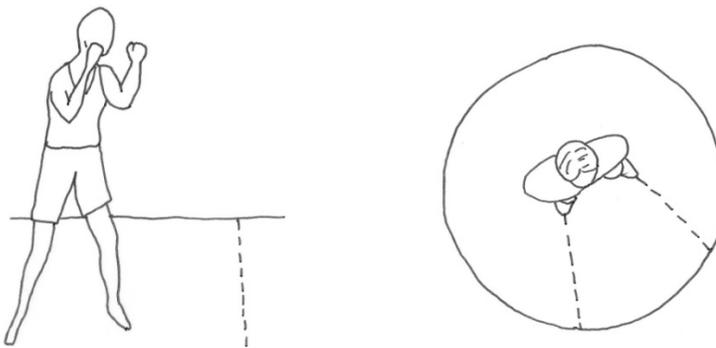


Figure 4: Reach Distance. O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 87

---

<sup>18</sup> O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 87

<sup>19</sup> O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 87

The transition of movement is key when striking because it incorporates distance and timing. Common transitions are sliding and lunging which deals with the least amount of raising the foot so more ground can be covered for positioning.<sup>20</sup> Lunging is a fast forward movement set with the lead leg towards the opponent. A lunge is performed correctly with the lead foot and placing less weight on the back leg in order to produce power for the punch. The power of twisting the hip while switching weight and producing a punch is a powerful motion used in striking. If done correctly this movement can be effective and is seen in many striking fighting arts.

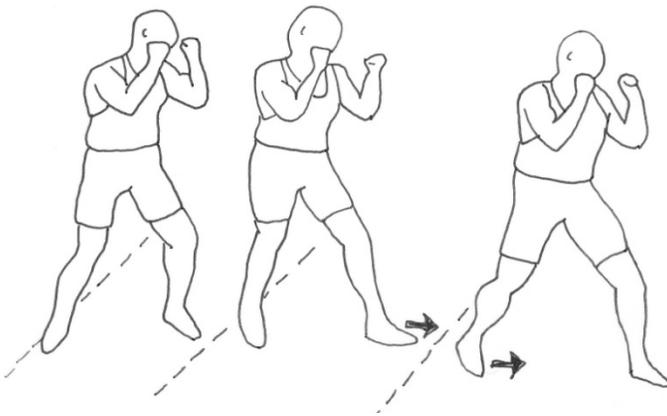


Figure 5: Sliding Movement. O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 91

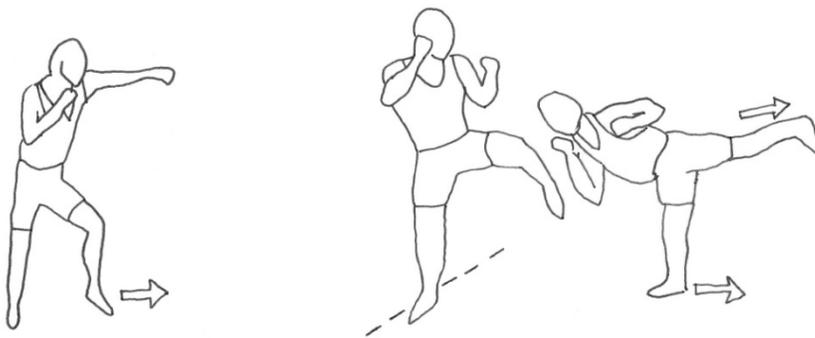


Figure 6: Lunge Movement. O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 91

---

<sup>20</sup> O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 91

Mobility is the constant planning of movement that places your opponent at a disadvantage and places you in a position of dominance.<sup>21</sup> It is the ability to combine footwork and body movement in one constant motion in order to do different strikes. Upper body strikes usually involve ducking, layback, bobbing, weaving, and slipping to avoid being hit. Lower body movements involve small and large movements that delay attacks, alter opponents, and also enhance speed. The body reacts and attacks to an opponent by having efficient mobility within the ring as well as between two fighters.<sup>22</sup>

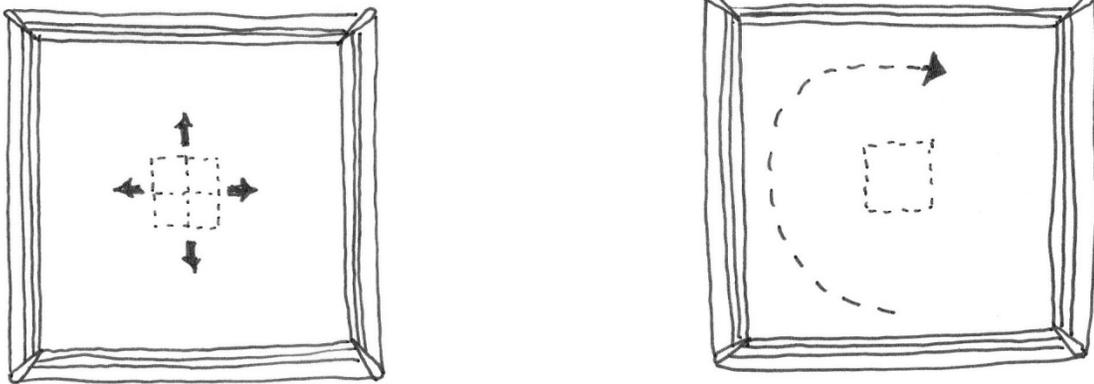


Figure 7: Ring Position. O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 93

---

<sup>21</sup> O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 91

<sup>22</sup> O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 87



Figure 8: Boxing Ring. <http://upload.wikimedia.org/wikipedia/en/9/92/500pxring.jpg>. Accessed: August 14, 2009

## **STANDUP GRAPPLING - WRESTLING ART**

Throughout history wrestling has been viewed as civilizations oldest sport and also embodies strong attributes of a clinching art. Wrestling was introduced during prehistoric times as hand-to-hand combat and can be seen in as far back as 20,000 years ago and found in various places such as ancient Mesopotamia, ruins of Khafaji which is near present day Iraq, as well as Greece. Wrestling in Greece was held in competitions and gave rise to wrestling in England and Europe during the middle Ages (AD 400's-1500).<sup>23</sup>

The art of wrestling differs depending on the culture and people who practice it. Wrestling involves the use of clinching which is the bread and butter of wrestling arts. Clinch fighting is part of the stand-up game where combatants are grappling in a clinch hold. The clinch is the phase found between free-movement striking and ground fighting grappling.<sup>24</sup> The clinch is also a way to keep the fight in standing position as well as a method to set up takedowns that lead to ground grappling found in the following segment.

The training and competition of wrestling in ancient Greece would occur in a Palaestra or

---

<sup>23</sup> Chiu, David. *Wrestling: Rules, Tips, Strategy, and Safety*. New York: Rosen Central, 2005. pg. 4-6

<sup>24</sup> Clinch Fighting. Full Contact Martial Arts. <<http://www.fullcontactmartialarts.org/clinch-fighting.html>> 15 October 2009

Greek Wrestling School. Its function is similar to a gymnasium today and was a place for athletic, cultural and social factors. The Palaestra was simply a rectangular court that connected to various rooms for training, observation, and socializing.<sup>25</sup> The space which upright wrestling would occur would be in a *skamma* which is a carefully leveled and sanded section of the ground. The competitors would enter from the *altis* or space of sacred alters. Wrestlers also applied olive oil to resist grip and also wrestled nude with short hair while others wore tight-fitted leather caps.<sup>26</sup>

The form of wrestling was also developed in other cultures such as Japan and is an example of how wrestling has evolved from becoming a ritual practice to a spectator sport. The wrestling art of Sumo was popular during imperial times circa 710-1185. Before sumo became a spectator sport, the origins of sumo came from *Chiao-ti* which was a form of wrestling found in the Chou dynasty of China. It was originally referred to as a rough ritual contest done at rural festivities where men wore horned caps and butted each other in a type of dance called *ch'ih yu-his*.<sup>27</sup> Following the butting techniques were holds and throws which evolved into wrestling used in training exercises. Along with military training this form of wrestling became a type of amusement for the emperor as well as commoners which led the way to tournaments.

By the Sui dynasty (590-618) and T'ang dynasty (618-906) *chiao-ti* became a yearly festivity for the 15th day of the first month where wrestling tournaments were held at banquets along with dancing and music.<sup>28</sup> The Chinese influence led to the creation of wrestling in Japan called *chikara kurabe* which was written in the Chinese word *chiao-li*. Wrestling and sumo were tied to the Shinto or the way of the Gods. The ritual performances held on the 7th day of the 7th month are early documentation of the introduction of sumo tournaments. The training for sumo wrestlers or *sumotori* occurred when they lived and train together in stables where hierarchy was stressed upon highly. New members would take responsibility of chores of *chanko*, fish, meat, vegetables

---

25 "Palaestra". Miahanas. <<http://www.mlahanas.de/Greeks/LX/Palaestra.html>> 20 February 2009

26 Swadding, Judith. *The ancient Olympic games*. London: Trustees of British Museum Publications, 1980. pg. 73

27 Cuyler, P.L. *Sumo: From Rite to Sport*. New York: Weatherhill, 1979. pg. 18

28 Cuyler, P.L. *Sumo: From Rite to Sport*. New York: Weatherhill, 1979. pg. 20

and tofu stew.<sup>29</sup>

Sumo ceremonies were also practiced at native agricultural festivals and were known as *sechie* which meant a festive meal in honor of the deities.<sup>30</sup> Sumo was practiced as a Shinto fertility and divination ritual and performed at *shinji-zumo* or god-service sumo. One type of sumo focuses of ritual practice by practicing *toya-zumo* which is a ritual dance for a shrine or specific festivities. Various shrines throughout Japan have a unique protocol on how sumo is incorporated into its unique ceremony and are usually set on precise dates throughout the year. Rice planting ceremonies is an example of how sumo symbolized a match with the spirit of the rice plant and how the human will lose to the spirit.<sup>31</sup> Sumotori would stamp his feet on the ground and rinse his mouth with water and scatter salt in the ring which is a purification ritual found in sumo till this day. They then would crouch then stand upright and move around being prepared for grapples and attacks of being thrown.

Modern day sumo tournaments still follow the purification protocol but emphasize sumo as a spectator event or sport. Sumo tournaments are usually held in a *Kokugikan* which is the national sumo stadium in the Kuramae District. In the center of the stadium sits the wrestling platform led by four narrow aisles through the rows of seating. The two aisles used from the western and eastern wrestlers were known as *Hanamichi* or the flower paths.<sup>32</sup> These paths were called flower paths due to the left wrestlers entering with hollyhock flowers and from the right wrestlers wore calabash blossoms. The process of decorating when entering was in honor of the emperor within the Imperial Palace.

The wrestling ring is located in the center of the *Kokugikan* and is called a *dohyo* which translates as “the place of the straw bales of earth. It is an 17’-10” to 18’ square foot mound of clay tightly packed which is two feet high. The packing of the mound requires seven full truckloads

---

29 Sosnoski, Daniel. *Introduction to Japanese Culture*. Japan: Tuttle Publishing, 1996. pg. 36

30 Cuyler, P.L. *Sumo: From Rite to Sport*. New York: Weatherhill, 1979. pg. 25

31 Cuyler, P.L. *Sumo: From Rite to Sport*. New York: Weatherhill, 1979. pg. 31

32 Cuyler, P.L. *Sumo: From Rite to Sport*. New York: Weatherhill, 1979. pg. 163

of earth.<sup>33</sup> Within the mound is a 15'-2" diameter circle which allows the wrestlers to maneuver in a wrestling match. The ring itself represents infinity and primordial circle of chaos.<sup>34</sup> The basis of sumo is depicted in the philosophy Ch'i primeval forces as the yin and yang. The north of the mound is looked upon as the front and is where Cut into the mounds is shallow steps for wrestlers to climb and enter the ring. On top of the mound is a surface covered with a thin layer of sand that originated from Shinto rituals as a sign of purity. The salt is washed into the clay when in contact with water and creates a hard solution that creates a solid but soft ring. Then center of the ring consist of two white parallel lines which are two feet apart and mark the location where sumotori (sumo wrestlers) crouch during preliminary rituals.

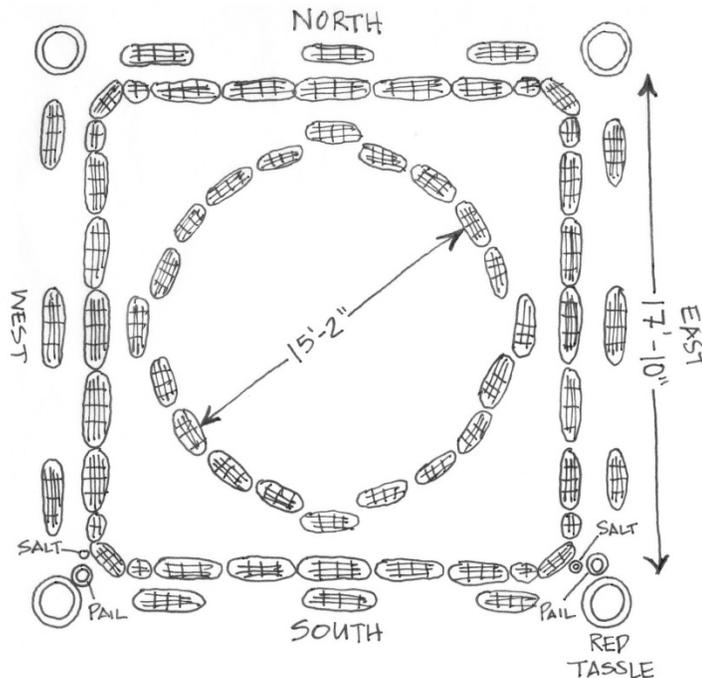


Figure 9: The Sumo Ring. Kenrick, Doug. *The Book of Sumo: Sport, Spectacle, and Ritual*. New York: Weatherhill, 1969. pg. 95

<sup>33</sup> Kenrick, Doug. *The Book of Sumo: Sport, Spectacle, and Ritual*. New York: Weatherhill, 1969. pg. 93

<sup>34</sup> Kenrick, Doug. *The Book of Sumo: Sport, Spectacle, and Ritual*. New York: Weatherhill, 1969. pg. 94

The use of sand prevents slipping while wrestling as well as aids judges to determine if a wrestler stepped out of the ring. Small, oblong rice-straw bales stuffed with earth and tied with straw rope are sunk into the perimeter of the circle. There are twenty-eight bales of clay packed around the square with twenty more that mark the ring. A bale is removed from each of the four cardinal point directions to allow drainage of water to occur when the wrestling mound took place outdoors. They are also buried firmly into the earth. Above the wrestling ring is a wooden roof which depicts the architectural style of Shinto shrines. The roof was originally held up by four columns but because it blocked visibility they were replaced by silk tassels in 1952. Each huge tassel roughly six feet long would represent a certain season where blue would be spring, red is summer, white is autumn and black is winter.<sup>35</sup> From the tassels hang white zig-zag pattern papers which also are sacred symbols of Shinto rites. Originally hung between the four columns below the roof are purple (former black with wave pattern) drapes that depict the drifting of clouds. The physical function of the sumo ring and area is designed to protect wrestlers from the sun and rain and is an religious expression of people whose lives are rooted in agriculture and used sumo as a way to worship their gods.<sup>36</sup>

---

35 Cuyler, P.L. Sumo: From Rite to Sport. New York: Weatherhill, 1979. pg. 166

36 Kenrick, Doug. The Book of Sumo: Sport, Spectacle, and Ritual. New York: Weatherhill, 1969. pg. 97

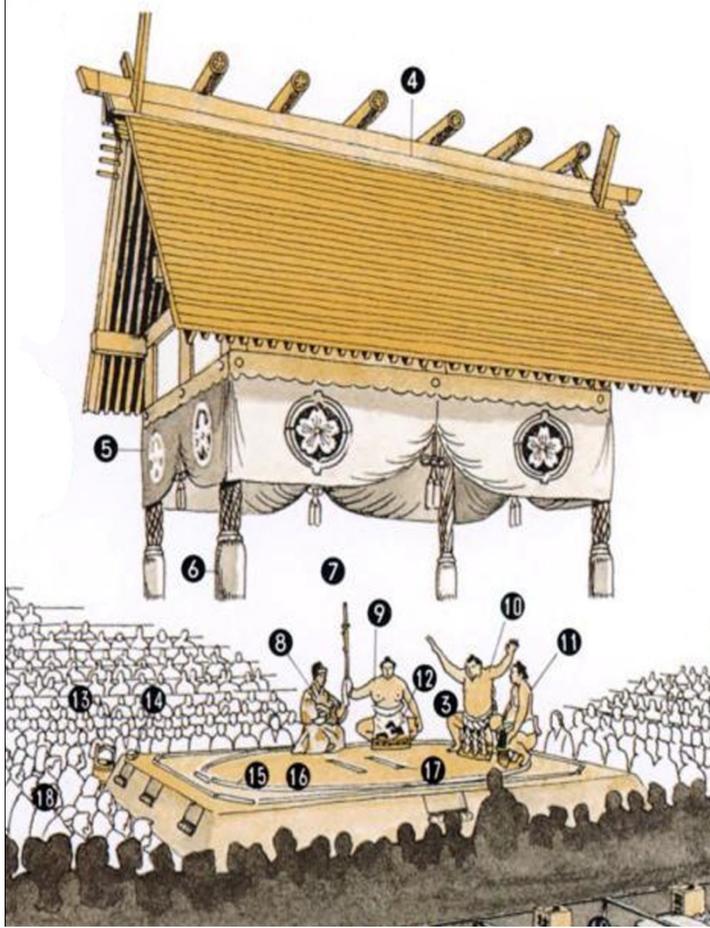


Figure 10: The Scene at a Sumo Stadium. Sosnoski, Daniel. Introduction to Japanese Culture. Japan: Tuttle Publishing, 1996 pg. 37

While sumo focuses on many cultural protocols as its basis of fighting, another type of wrestling revolves around the idea of sports that occur in levels ranging from high school, to college to Olympic status. The two forms called 1. Greco-Roman Wrestling and 2. Freestyle wrestling both provide different styles of fighting in the art of wrestling.

The Roman representation of wrestling called Greco-Roman wrestling was established in France in the early 19th century. It became very popular towards Scandinavian countries from 1912 to 1948 following the movement of the Soviet Union. Greco-Roman wrestling permits the use of more variations in technique than the traditional style. Greco-Roman wrestling consists primarily of throwing the opponent and using upper body locks. The main focus is towards upper body contact consisting of attacks towards the head, trunk, and arms. This style however does not permit any type of leg holds or any application done below the waist. Since the style mainly focuses on the upper body, practice and refinement of a technique is vital in doing a specific move effectively.<sup>37</sup>

Another style of wrestling is known as freestyle wrestling which involves a top opponent having the ability to take control with the other opponent on the mat. There are possible ways for the bottom man to counter and escape any holds and become in the advantage position. Wrestling tactics for this style involve having the ability to escape, counter, and ride and do various moves in a constant motion. A significant amount of time is spent on the mat, both trying to find a control position. There is also constant direct contact with the opponent and points are added when control positions are achieved. The conditioning towards endurance for a match is key in order for a wrestler to do various moves and be effective. Freestyle wrestling involves constant attacks towards the legs such as take-downs which is also a way to score points. In doing leg attacks, freestyle wrestlers learn to scramble from all positions in sequence to escape, counter,

---

<sup>37</sup> Martell, A. William. Greco-roman wrestling. Human Kinetics Publishing. Illinois. 1993

stand up and sit out.

In today's modern wrestling room there are still similar components that were used during the time of the Greeks. The preferred flooring would be of wood mainly because the material itself has give while other materials like concrete do not. Concrete has the tendency to stain mats so coating of polyurethane should be applied to the concrete prior to any mat being laid upon it. There are also ways to increase shock absorbency which is to 1. Interlock rubber tiles and 2. Build a raised floor by covering the wood two by fours with plywood.

For safety precautions, wrestling room walls should be padded to a height of six feet to prevent injury of wrestlers. The three common ways to pad walls is to 1. Bolt on wall panels of plywood to backed foam mats 2. Glue foam mats to the walls and 3. Attach mats via Velcro strips so they can be removable if necessary. Windows should be shatterproof and at least six feet from the ground to provide ventilation. The ceiling and wall colors should be a light color in order to reflect lighting in the room. The lighting and acoustical features play an important role. Acoustical features can control the noise level in the space, and lighting should be recessed.

The mat is very important in finishing off the space of a wrestling room or any type of room that involves grappling. The mat is a way to protect grapplers from injury and give padding when doing ground work. Many various types of mats were used over the past fifty years. The first used mats were thick hair filler mats which were tied together and covered with vinyl or canvas. Shock absorbent mats are vital in the safety of a wrestler. The foam is made of foam plastic core that range from one inch to one inch three eights that is coated with vinyl. The core of the mat is of polyvinyl chloride.

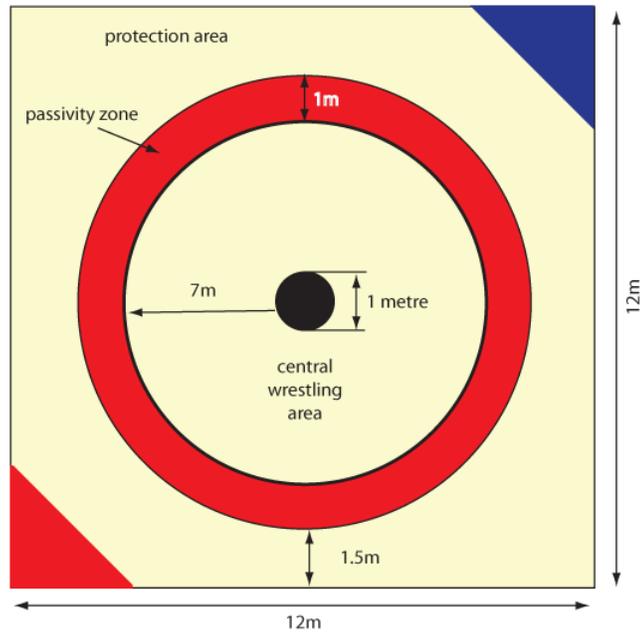


Figure 11: Basic layout of a wrestling mat <http://www.dsr.wa.gov.au/index.php?id=985>. Accessed: August 23, 2009

The mat is where wrestling, judo and jiu-jitsu matches take place. A wrestling match would occur in a circle which is 12m by 12m in dimension. In the center of the circle is a 1m (3.2 feet) where two opponents would be in the standing position at the beginning of a match. The center wrestling area is 7m in diameter and is also surrounded by a 1m zone. The edge of the mat extends another 1.5m which is called the protection zone and out-of-bounds area if a wrestler is thrown out.<sup>38</sup> A typical wrestling room provides a space for wrestlers to practice various techniques, do live wrestling and also condition.

---

<sup>38</sup> Wrestling Room Construction. Wrestling Assistant. Milt Sherman. 9.11.05 <http://homepage.mac.com/gdemarco1/WA/WRMilt.html> 20 February 2009



Figure 12: Wrestling Room <http://graphics.fansonly.com/schools/nw/graphics/nw-wrestling-room-01.jpg> Accessed September 3, 2009

## **GROUNDWORK - GRAPPLING ARTS**

Grappling is defined as “the act of engaging in close hand-to-hand combat”.<sup>39</sup> Grappling can also coexist with wrestling art because of the nature of the art being in close proximity to your opponents. How do these two arts differ? This difference lies in the word submission which is evident in the style of grappling. Submission is a term highly used in grappling arts as a main objective to submit an opponent using a variety of joint locks and chokes to win a match.<sup>40</sup> Both wrestling and grappling arts showcase highly efficient takedown techniques but what sets them apart is how grappling focuses strictly on achieving a dominant position on the ground as a way to plan a submission.

Two similar arts that practices grappling arts as its repertoire is judo and Ju-jitsu. Both similar through basic techniques but both have evolved into completely two different sports. Ju-jitsu was a martial art used by Japanese warriors to use in combat and has transitioned into a hybrid style founded in Brazil and now is used in mixed martial arts. Judo follows similar traits of Ju-jitsu and has transitioned into a world renowned sport that reached the Olympics.

---

39 “Grappling” The free dictionary by Farlex. 2009. The free dictionary online. 26 September 2009 <<http://www.thefreedictionary.com/grappling> > 24 September 2009

40 Submission Grappling Vs. Classical Ju-jitsu: When Cultures and Concepts Collide. Grapplearts: Building a Better Grappler. [www.grapplearts.com/submission-grappling-vs-ju-jitsu.html](http://www.grapplearts.com/submission-grappling-vs-ju-jitsu.html) 26 September 2009

Ju-jitsu was an art used during the feudal age of Japan and was also referred to as *yawara* and *taijutsu*. Jui-jitsu was a system of attack that involved throwing, hitting, kicking, stabbing, choking, bending and twisting of limbs, pinning an opponent, slashing, and also defending from other attacks.<sup>41</sup> It wasn't an art that was shown or practiced however until the Edo Period (1603-1868) when the emersion of teaching began.

A man named Jigoro Kano learned from various teachers who taught ju-jitsu and compared the various techniques and found a glitch in his training. He realized that Ju-jitsu at times did not look at the underlying principles. Thus he substituted techniques in which the principle was applied and developed his own system and distinguished it as judo. The contribution that judo had to the practice of ju-jitsu is the concept of Randori. Randori is a type of sparring and a set of sportive rules that made practice safe and realistic. The rules of safe practice enabled Ju-jitsu students to practice and minimize injury. However, Kano did not see groundwork as important as achieving a takedown or throw which led to a not so emphasized grappling system in Judo. The rise of rules and restrictions were placed in Judo in order to accommodate the rules for it to become an Olympic sport. The rules minimized the reality of self-defense but enabled Judo to flourish and become the national martial art in Japan. This led to it becoming the official art used in the 1800's for law enforcement as well as training for U.S. soldiers.<sup>42</sup>

People may depict Ju-jitsu and Judo as separate arts but they coexist with each other. The words Ju-jitsu and Judo contain the word Ju which means "gentleness" or "giving way". The meaning of Jitsu is "art, practice" and do means "principle" or "way".<sup>43</sup> The difference in the two styles is distinguished in its meaning where ju-jitsu focuses on the technical aspects of gentleness while Judo stresses the use of principle as a way of life. This example of giving way is by conserving your energy and using the momentum of your opponent and creating least amount of energy in

---

41 ' Kanō, Jigorō. Kodokan Judo. New York: Kodansha International Ltd. 1986. pg. 15

42 "Ju-jitsu History" Ju-jitsu.net MMA & Ju-jitsu Online: The Ultimate Brazilian Ju-jitsu & Mixed Martial Arts Resource. 2009. 17 October 2009 <http://www.Ju-jitsu.net/history.shtml>.

43 Kanō, Jigorō. Kodokan Judo. New York: Kodansha International Ltd. 1986. pg. 16

order to create a powerful outcome.

The principles that distinguish Judo from Jiu-jitsu is the two main aspects of training the body in forms of attacks and defense through 1. Kata and 2. Randori. Kata is a form of prearranged movements that teach the fundamentals of attack and defense.<sup>44</sup> The form of kata can also be seen in karate as a way to practice the correct forms in throwing, hitting, kicking and how they interconnect with other techniques. Randori also called “free practice” where participants pair off with each other and practice pins, chokes, throws, locks, hits as if in an actual combat situation. However participants are aware to follow judo etiquette which is to not put full maximum force to minimize injury.<sup>45</sup> It can used as training in methods of attack and also physical education where all movements are to conform to the principle of maximum efficiency.

## **SPATIAL ENGAGEMENTS - RULES AND REGULATIONS**

The rules of Judo have changed in the past 120 years from following traditional ju-jitsu matches to Olympic matches. Matches in the traditional style were rough and at times were life threatening. The duels or shiai meaning match or tournament at once meant death. At that time there were no such thing as a point system or scoring on a throwing, choking, hold, arm lock points but usually ended in someone dropping to exhaustion. The first annual Judo competition began in 1884 is called the Red and White Contest which is the longest running competitive sport event in the world.<sup>46</sup>

The founder Jigoro Kano studied rules and regulations for jujutsu and wrestling matches and came up with a set of rules for Judo. The reason of safety created the banning of finger, ankle, toe, and wrist locks for jujitsu and judo in 1899. In 1916 the use of dojime (body scissors) and

---

44 Kanō, Jigorō. Kodokan Judo. New York: Kodansha International Ltd. 1986. pg. 21

45 Kanō, Jigorō. Kodokan Judo. New York: Kodansha International Ltd. 1986. pg. 22

46 Ohlenkamp, Neil. The Evolution of Judo Contest Rules. JudoInfo Online Dojo. Modified December 10, 2006. <http://judoinfo.com/rules2.htm>> October 24, 2009

garami (knee twisting and lock) were also banned due to previous serious injury. The rules were always changed or adopted due to safety and also to keep a fairness between competitors in a match. This allowed judo to be seen as a safer spectator friendly event. The time duration of a match also changed from 20 minutes in the 1950-60's to 15 minutes in the 1970s to 5 minute match limits today.<sup>47</sup> Along with time duration changes was also the introduction of weight classes specifically for the Olympic Games in 1964. Before this date all weights were all placed in one category but soon it got placed into 3 distinct weight groups starting from -68k, -80 kg and +80 kg. These categories soon grew to 6 weight classes in the 1968 Olympics and 8 weight class categories in the 1980 Olympics. The category for open weight was eliminated in the 1992 Olympics and went down to 7 weight class categories for men and women.

---

<sup>47</sup> Ohlenkamp, Neil. The Evolution of Judo Contest Rules. JudoInfo Online Dojo. Modified December 10, 2006. <http://judoinfo.com/rules2.htm>> October 24, 2009

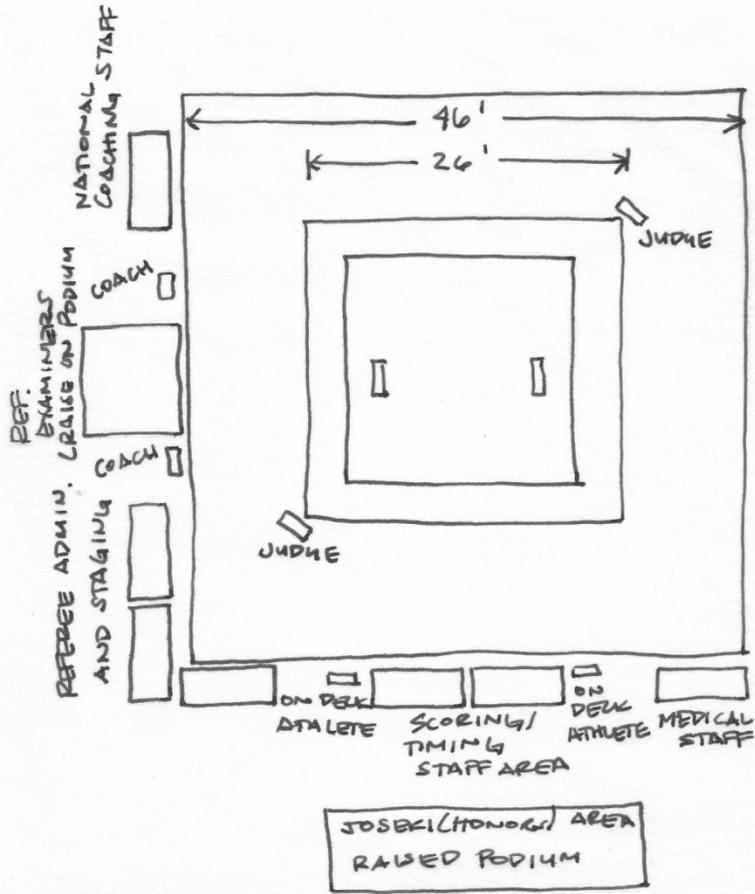


Figure 13: Spatial layout of a competition space for Judo with one main mat.

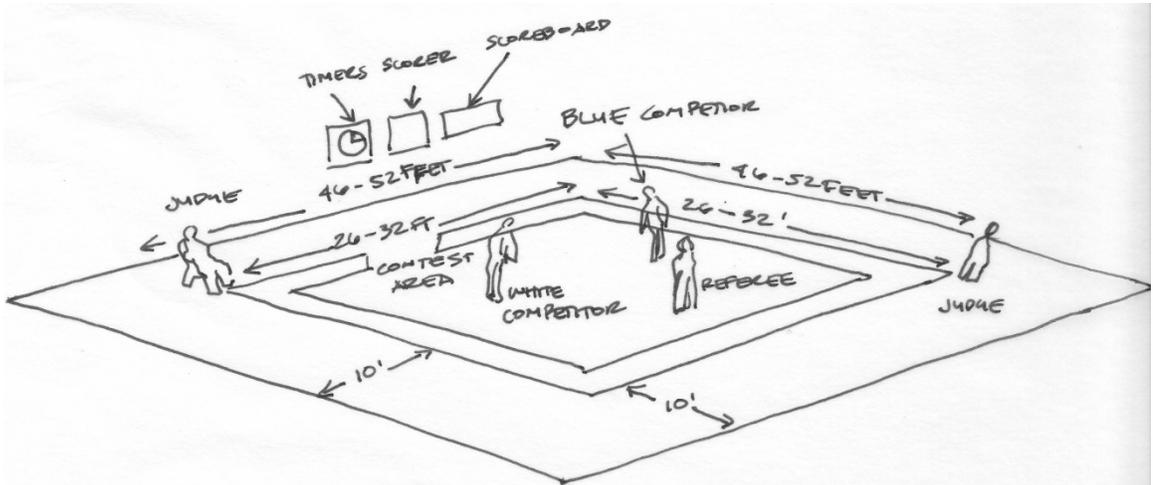


Figure 14: Positioning of participants within a competition space for Judo.

## **TRADITION/CULTURE TO SPORT/ ENTERTAINMENT**

### **TRANSITION OF JUDO TO A MARTIAL SPORT**

When Judo was showcased in the Olympics many people referred to it as a martial sport sometimes oversee the martial art implication it has. The term sport creates a thought of judo as being a spectators sport and not a way of life, a method of self defense or fighting and combat. One main difference between martial sports and martial arts is in the value of the training method.<sup>48</sup> Martial Arts train in artificial and counter training such as pulling, modifying points of contact and precaution movement that control natural action and the way a technique was done. A martial sport on the other hand stresses on fast, reflexive movement of full power where the result are two opponents struggling and using power as strategy to win and resistance. A participant is limited to his/her physical and phychological skills and usually the one with more will maintain control of the situation. Usually technique is abandoned if its not successful and there is always unpredictability in offense and defense situations. The purpose of martial sports is to develop technique and knowledge and character.<sup>49</sup> Competition of martial sports provide safety and a glimpse of defeat where one does not need to actually experience the agony of a real defeat which commonly would be death. However, when a fighter is trained to think of winning and losing as a goal the martial art soon becomes a game. While training in martial sports, a participant may not provide the full scope of self defense that judo stress in preserving self defense skills that are not used in competition. However Judo still remains a self defense and even though Judo is technically practiced as a sport, the founder Jigoro Kano applied a training methodology to traditional jujitsu that is a better combat art.<sup>50</sup>

---

48 Ohlenkamp, Neil. Fighting or Playing? The Martial Art vs. Sport Debate. Judoinfo Online Dojo. Modified July 13, 2002. <http://judoinfo.com/sport.htm>> October 25, 2009

49 Ohlenkamp, Neil. Fighting or Playing? The Martial Art vs. Sport Debate. Judoinfo Online Dojo. Modified July 13, 2002. <http://judoinfo.com/sport.htm>> October 25, 2009

50 Ohlenkamp, Neil. Fighting or Playing? The Martial Art vs. Sport Debate. Judoinfo Online Dojo. Modified July 13, 2002. <http://judoinfo.com/sport.htm>> October 25, 2009

## **FROM SPORT GRAPPLING TO COMBAT GRAPPLING**

In sport grappling, there is a strong emphasis towards winning a competition and applying the style of technique towards self defense. They also follow strict guidelines or rules that control the amount of brutality that can be done. Combat style grappling however uses another type of training methodology where the objective is not to win a competition, but find a way to win a ground battle as efficient and as quickly as possible.<sup>51</sup> The training for combat grappling responds to principle rather than technique. It can be efficient in certain situations regarding persons within the military or law enforcement. Both styles of grappling have their strengths as well as flaws however the a style should be able to fit the needs of the practitioner and be enjoyable to train and practice.

---

51 Lewis, Clyde. Grappling Concepts. Judoinfo Online Dojo. Modified March 1, 2003.  
<http://judoinfo.com/grappling.htm>> October 26, 2009

# **PART 2**

## **EVOLUTION OF MIXED MARTIAL ARTS**

### **DEFINING MIXED MARTIAL ARTS**

If someone were to ask “what is mixed martial arts” many people would define it as being a gruesome form of sport fighting that is televised and showcased in live tournaments. However, within my research i will try and introduce a way for mixed martial arts to be seen as a sport that translates various fighting styles from around the world. Mixed martial arts is defined as an evolution of styles-adapting to one another to produce a new hybrid style of fighting. This style of fighting enables a specialist in either striking and/or grappling to fuse their knowledge and technique into one repertoire. As a whole Mixed Martial Arts can be defined as a collection of arts. Dave Camarillo states that “you need to be a fan for all the arts to truly learn them. If a fighter is not a fan of other arts they overlook the importance of that art.”<sup>52</sup> By coming to understand how each art is essential in their own unique way and how they can be “mixed” strengthens the way mixed martial arts is seen. By integrating and being a fan for all the arts, the world of mixed martial arts will continue to grow and might even introduce new prototypes styles that have not been introduced before

### **HISTORY**

#### **ANCIENT FIGHTING ART OF PANKRATION**

The history of how mixed martial arts came to be through many cultural influences throughout history. One culture that impacted the evolution of mixed martial arts are the Greeks who practiced barbaric sport called pankration. The first occurrences of mixed martial arts were

---

52 The State of the Art-Putting the Art in Mixed Martial Arts. Fighters Only Magazine. April 2009. Issue 2. pg. 52-57

believed to have begun during the thirty third Olympic Games in 648 B.C.E. through the sport of Pankration also called pammachon or pammachion. The art of pankration meaning “all power or all strength” consisted of competitions before the seventh century BCE. It is one of three types of empty-hand combat sports that was practiced in ancient Greece and was seen as blood, brutal, and barbaric in form. It was a more dangerous form of wrestling due to the striking of the face, grappling techniques after falling, various types of chokes, foot arm locks, strikes and kicks.

A typical pankration dual would begin by pairing two contestants with no rules other than to not gouge out the opponents eyes. It was a no holds barred type of fighting where anything goes such as kicking, biting, strangling, jumping, twisting arts, choking and punching. It would start with both competitors outstretching their arms as a method to gain an advantage grip of position. A commonly used stance that is still used in today’s boxers and muay thai. Punching and kicking aided in clinching and setting up for elbows and knees. The variations of stance expressed the fluid movement and footwork, strong defense, kicks, clinches throws and powerful counter-punches. A submission would include arm and leg twisting, strikes towards the ground, chokes, hook punches, and hammer fists which is common to pound for pound today. Usually boxing (kato Pale) or wrestling (anaklinopale) fighting would take place. Ground fighting in Greece is known as halindesis (a form of exercise by rolling on the ground) or kulisis (more skilled type of ground wrestling).<sup>53</sup> The wrestlers would train on the ground to refine techniques and practice various holds in the mud/dirt. A dual would consist of no time or rounds and would continue until one competitor gave up or could not continue on. Rules and drills were compiled but disappeared and can now only be studied through stone carvings, paintings and sculptures. Some positions are still seen in Brazilian Jiu-Jitsu, wrestling and mixed martial arts such as mounting, half guard, knee kicks and side control.

---

53 Georgiou, Andreas. V. Pankration: An Olympic Combat Sport: An Illustrated Reconstruction Volume 1. Xlibris Corporation. 2005.

## **PRACTICE SPACE FOR PANKRATION: THE PALAESTRA**

This structure was known as the Greek Wrestling School. It was also the location for pankration, boxing training as well as wrestling exercises. The palaestra acts and functions as a gymnasium and was an important landmark in Greek society. It was a place that integrated athletic, cultural and social factors which aided in its effect towards training for various arts. The palaestra was a simple rectangular court that connected to various rooms which had specific functions such as changing quarters, observation, instruction, training, showers, activities, socializing, seating and also storage. The palaestra was the hub for all fighting competitions and is similar to a gymnasium today which holds modern day competitions and training.<sup>54</sup>



Figure 15: Ariel view of Palaestra. Pankration Group. "photo 350: circus agonalis". Flickr.com 4 March 2006. 20 Feb. 2009

---

54 "Palaestra". Mlahanas. <<http://www.mlahanas.de/Greeks/LX/Palaestra.html>>

## **ANCIENT HAWAIIAN FORM OF MIXED MARTIAL ARTS: LUA**

Hawai'i also embodies its own unique style of mixed martial art fighting that is unique to culture and heritage through protocol and practice. It was a fighting system that was used by Kamehameha I during war and battles and was also seen as a sport exhibition during makahiki season. This style of fighting is known as Lua which is an integration of rough brutal movements which philosophical and spiritual balance that creates harmony and balance.

What is Lua? In Pukui and Elbert's Hawaiian Dictionary, the word Lua is defined as, "A type of dangerous hand-to-hand fighting in which fighters broke bones, dislocated bones at the joints, and inflicted severe pain by pressing on nerve centers. There was much leaping, and (rarely) quick turns of spears".<sup>55</sup> According to 'Olohe Lua Mr. Charles W. Kenn, the definition of Lua is defined as pit; the number two; duality; force, counter-force, hard-soft; action-reaction; polarity; life-force of life and death.<sup>56</sup> Abraham Fornander calls Lua "a profession of hostility; it was taught in preparation for the day of battle or other encounters; it was practiced to guard against the strength of an opponent intending to inflict an injury".<sup>57</sup> These definitions provide a powerful insight on which Lua is built upon. It consist of the ability to perform lethal combat movements while following a set of spiritual and philosophical protocol that evolves around the balance of opposites.

The philosophy of Lua is connected strongly in harmony with nature and with life. There is a value of perseverance or persistence that lua tries to embody called "Ho'omau" which expresses how a student would learn how to make the mind, body, hear and spirit become one and function as a whole. There is also the action of lōkahi which is defined as harmony and unity. A lua fighter combines and balances the mental, physical, spiritual and religious aspects in order to master the art of Lua.<sup>58</sup> Lua is therefore a "supernatural/magical sense" and is a "method of immobilizing an

---

55 Mary Kawena Pukui and Samuel H. Elbert, Hawaiian Dictionary, (Honolulu: University of Hawai'i Press, 1960). Pg. 213

56 Paglinawan, Richard K. Lua, The Hawaiian Art of Self-Defense. Hawaiian Culture Lecture Series. May 9, 1991. Pg. 8

57 Fornander, Abraham, "Collection of Hawaiian Antiquities and Folklore" in Memoir of the Bishop Museum of Polynesian Ethnology & Natural History, vol. VI, trans. And ed and Thomas G. Thrum, (Honolulu: Bishop Museum Press, 1919-1920). Pg. 148

58 Kikuchi, Kristina P. Lua: The Sacred Fighting System of Hawaii. Honolulu: University of Hawaii at Manoa. May 1995 pg. 9

opponent by the use of words and or touch without the use of undue physical force”.<sup>59</sup>

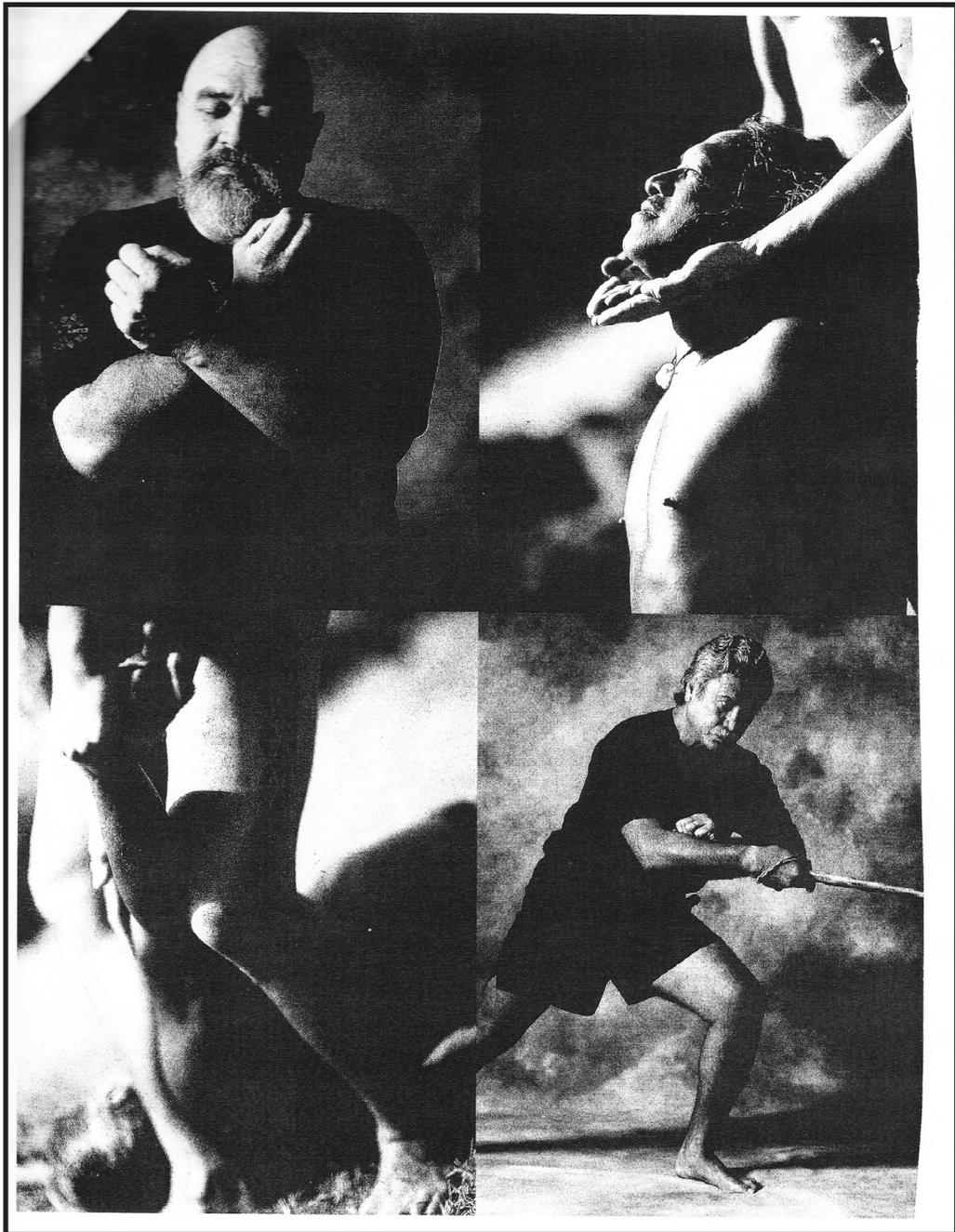


Figure 16: Magazine photo of Lua practitioners. Way of the Warrior. Hana Hou! The Magazine of Hawaiian Airlines. <http://www.hanahou.com/pages/Magazine.asp?Action=DrawArticle&Arti...> Accessed: September 18, 2009

---

59 Pā Ku'ialua, Lua, NHCAP Collection, Vol. 1, page. 16

## **PRACTICE SPACE: PA LUA**

Lua fighters would use 'ai'ahamaha as a way to test strength and talent against various fighters in other halāu and in their own hālau as well. A hālau is the space where these shams battles would take place and were seen as open houses that had floors covered with mats. The school or place of learning was called Pā Lua. A Pā Lua would generally consist of a rectangular building with a single entrance. The entrance to the pā was restricted to those who were worthy to train. There was always a lua official known as kia'i puka or the "guard of the door" at the entrance who looked over who entered. Above the entrance hung a kōkō pōhaku which was a rock that was held up in a net. A correct password was needed to enter the pā and if they were not worthy or didn't know the password the pōhaku would drop on their head.<sup>60</sup>

The interior of the hālau would be divided into three distinct areas dependent of their function. The first area would be located at the front and back sections of the pā where the students or haumāna learned lua 'ai or skills and techniques. The second space is the central space towards the left which was sacred or kapu because it was an area designate for the 'ōlohe who would watch and guide practices as well as the deity or god which was present in order to bring forth mana or divine power to those who practice. The third space is the central space towards the right which was also a sacred for the placement of the kuahi or alter where the 'ōlohe lua or lua instructor would sit and where god Ku'i-a-lua would be as a place of inspiration for the haumāna.<sup>61</sup>

---

<sup>60</sup> Paglinawan, Richard. Eli, Mitchell, Kalauokalani, Moses, Walker, Jerry. Lua: Art of the Hawaiian Warrior. Honolulu: Bishop Museum Press. 2006 pg. 26

<sup>61</sup> Paglinawan, Richard. Eli, Mitchell, Kalauokalani, Moses, Walker, Jerry. Lua: Art of the Hawaiian Warrior. Honolulu: Bishop Museum Press. 2006 pg. 24

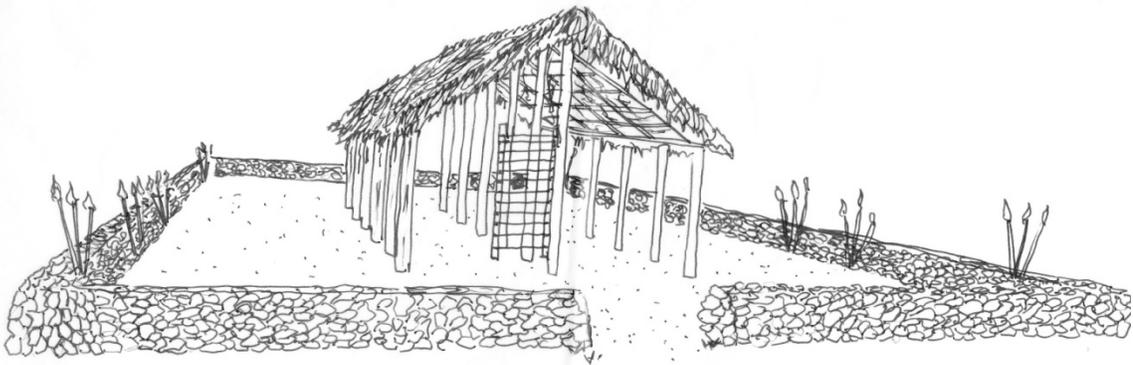


Figure 17: Pa Lua: Space for Lua Training. Sketch done by Andrea Simpliciano.

### **COMPETITION SPACE FOR LUA**

Lua was performed as an exhibition sport and was practiced in sham-battles also known as 'ai'ahamaka, or holds-of-the-house-made-with-cords.<sup>62</sup> These sham battles were held to train men in the art of war and was a way for people to witness the practice of Lua fighting. Training occurred in secrecy at night with oil lamps as light. During makahiki season for example, exhibitions of Lua can still be seen at Pu'ukohola heiau where various schools from across the islands or Hale Mua or Na Koa o Maui came to show the traditional style of this art. The battlefield would be a empty flat piece of dirt with enough space for various battles to occur at once either with or without hand weapons. Some styles which were showcased was "mokomoko" (dirty fighting) or (closed fist boxing), "ku'i ku'i" (finger and knuckle-point stress type of boxing), "kaala" (grappling), "peku" (kicking), "hākōkō" (wrestling) and "ka'ane" (strangulation by the cord).<sup>63</sup>

---

62 "Ka Oihana Lua Hawai'i Lahui," 2 August, 1923. pg. 1

63 Kaihewalu, 'Ōlohe Solomon. Ancient Hawaiian Martial Art of Kaihewalu 'Ohana Lua. Orange, California: Kaihewalu 'Ohana Publishing. 2006 pg. 3

## **BRAZILIAN MIXED MARTIAL ART 3 VALE TUDO TO BRAZILIAN JIU-JITSU**

Vale Tudo is believed to be the founding fighting style for the type of mixed martial arts practiced today because of its open ended type of combat. It is a type of mixed martial art in Brazil that is translated in Portuguese as “anything goes”. Vale Tudo is an unarmed combat system with very few implications of rules. It first started as a type of fighting within booths that were showcased in circuses during the 1920’s. Within these circuses were exhibition fights of various styles such as wrestling, capoeira etc. It was showcased on various televised shows that included the Gracie family. In 1960 the till today vale tudo has become a very underground sub-culture where most fights are based in Rio de Janeiro.<sup>64</sup> This area also has a very intense rivalry with Luta Livre and Brazilian Jiu-Jitsu. Brazilian Jiu-jitsu began with the immigration of a skilled judo and jiu-jitsu practitioner named Mitsuo Maeda who was known as Count Komo in Brazil. During the 1900s Japan was attempting to make a colony in the country of Brazil so Mitsuo Maeda was chosen to organize such an endeavor. Maeda was also a very skilled fighter who trained under Jigaro Kano who founded the fighting style of Judo. The Japanese colony in Brazil was aided by a Scottish politician named Gaston Gracie who helped in developing the colony. For his generosity, Maeda began to teach the sons of Gaston his knowledge of jiu-jitsu even though this act was seen as forbidden in the Japanese culture.<sup>65</sup>

The world of Brazilian Jiu-jitsu was began when a man named Hēlio Gracie proved that his family’s style of grappling had the ability to outthink a striker by introducing a style of grappling called Gracie Jiu-Jitsu. Hēlio Gracie was the innovator of perfecting a jiu-jitsu style that was based on real fighting situations as well as any type of challenge that was given within a ring. Gracie jiu-jitsu as it was called was a strategic style of jiu-jitsu that used submission locks and chokes that existed for years in jiu-jitsu and judo. It also focused on the development of a theory

---

64 Snowden, Jonathan. Total MMA: Inside Ultimate Fighting. Canada: ECW Press. 2008. Pg. 9

65 Bledsoe, Gregory H. Combat Sports Medicine. London: Springer Publishing, 2009. Pgs. 323

towards positional dominance.<sup>66</sup>

The Gracies took on this new martial art and learned how to modify and perfect it for use in the streets of Brazil. Helio Gracie was very small compared to his other brothers, but managed to use his size to his advantage and create jiu-jitsu as a way for smaller opponents to have the ability to defeat large opponents. All throughout Brazil he challenged other styles within Vale Tudo competitions and soon Gracie jiu-jitsu also called Brazilian Jiu-jitsu became respected and known.<sup>67</sup> This style of fighting was passed down to Helios sons who also became practitioners of the style. In the 1990s the Ultimate Fighting Championships began in the United States which was no-hold barrel sport with no weight classes and very few rules similar to Vale Tudo. In 1993 the Gracie family chose younger brother Royce Gracie to represent the family and the style they have for years perfected in their home country of Brazil. He was a legendary figure in the development of Ultimate Fighting which later became mixed martial arts because he introduced Brazilian Jiu-jitsu to America to see and demonstrated how striking wasn't the only way to win.

This new phenomena took the martial art community by storm and the curiosity of what style of martial arts was the best soon aroused. Practitioners such as wrestlers, judo practitioners known as judoka, boxers, etc. began to cross train in other disciplines and broadened their knowledge of various techniques. This began the movement of interlocking various styles into a fighter's range of fighting. Even though the sport has experience hardships and negative publicity it has managed to survive and become a legit sport compared to what people assumed it to be before as a human cock fight. Today the sport of mixed martial art is the fastest growing combat sport in the world.<sup>68</sup>

---

<sup>66</sup> Snowden, Jonathan. Total MMA: Inside Ultimate Fighting. (Toronto, Ontario, Canada: ECW Press, 2009), pg. 17

<sup>67</sup> Bledsoe, Gregory H. Combat Sports Medicine. London: Springer Publishing, 2009. Pgs. 324

<sup>68</sup> Bledsoe, Gregory H. Combat Sports Medicine. London: Springer Publishing, 2009. Pgs. 325

## **THE SPORT OF MIXED MARTIAL ARTS - ULTIMATE FIGHTING**

In today's modern mixed martial arts the culture is being marketed through a rising business empire all beginning with the development of the Ultimate Fighting Championships in 1993. The main concept of the UFC was to create tournaments of skilled athletes from various disciplines to test their knowledge against one another. The beginning of the UFC was seen as brutal and a way of "human cockfighting" which led to the almost destruction of the UFC. The name no holds barred was changed into the current named mixed martial arts which encompasses a set of rules and created a legitimate sport for all to see.

### **RULES & REGULATIONS**

The rules set for Mixed Martial Arts is different than any other type of martial art competition mainly because the rules at first were very simple. Basically two fighters of any type of weight class without any regard to size or weight would enter the octagon and fight a way to defeat each other. The only prohibitions were eye gouging, biting and fish hooking. This range of rules was a very opposite to traditional martial arts which focus on a very strict and controlled range of techniques that can be used which controlled safety.<sup>69</sup>

The rules soon stirred many obstacles dealing with controversies on how people view the UFC as showcasing "savage" type of combat and at one time they were not allowed to televise it on television because of bloodiness and reality of brutality being showed. From this the UFC evolved as a sport and altered its rules to control techniques and ensure safety.

One rule which was changed was the amount of time allowed for a match. The UFC at one time had no set time limit and the match would continue until one fighter gave up or was defeated via knock out etc. The time was then changed to 30 minute matches then were lessened to 10-18 minutes which would depend on the hype and importance of a match.<sup>70</sup> Finally a formal

---

69 Bolelli, Daniele, M.A. Mixed Martial Arts: A Technical Analysis of the Ultimate Fighting Championship in its Formative Years. Journal of Asian Martial Arts. Volume 12 Number 3. 2003. Pg. 41

70 Bolelli, Daniele, M.A. Mixed Martial Arts: A Technical Analysis of the Ultimate Fighting Championship in its Formative Years. Journal of Asian Martial Arts. Volume 12 Number 3. 2003. Pg. 43

system was established which allowed the main event to have five five-minute rounds while the rest of the matchups would have three five-minute rounds in order to control time and enable all matches to be shown on television such as payperview.

Along with time was the control of age, weight and height for competitors. In the beginning of the sport it was believed for fighters to believe that anything goes and size doesn't matter. However it was clear that usually the bigger competitor had a slight strength. This enabled the creation of weight divisions to provide equal opportunities of both competitors to train in similar settings and weight and progress smoothly. Mixed martial art competitions follow these divided weight classes:

1. Flyweight under 125.9 pounds;
2. Bantamweight 126 lbs. - 134.9 pounds;
3. Featherweight 135 lbs. - 144.9 pounds;
4. Lightweight 145 lbs. - 154.9 pounds;
5. Welterweight 155 lbs. - 169.9 pounds;
6. Middleweight 170 lbs. - 184.9 pounds;
7. Light Heavyweight 185 lbs. - 204.9 pounds;
8. Heavyweight 204 lbs. - 264.9 pounds; and
9. Super Heavyweight over 265 pounds.

The Unified Rules of Mixed Martial Arts established by the New Jersey Athletic Control Board are the rules set for states that sanction mixed martial art tournaments and fights. In regards to the fighting area the rules state that:

13:46-24A.2 Fighting area

(a) The fighting area canvas shall be no smaller than 18 feet by 18 feet and no larger than 32 feet by 32 feet. The fighting area canvas shall be padded in a manner as approved by the Commissioner, with at least one inch layer of foam padding. Padding shall extend beyond the fighting area and over the edge of the platform. No vinyl or other plastic rubberized covering shall be permitted.

(b) The fighting area canvas shall not be more than four feet above the floor of the building and shall have suitable steps or ramp for use by the participants. Posts shall be made of metal not more than six inches in diameter, extending from the floor of the building to a minimum height of 58 inches above the fighting area canvas and shall be properly padded in a manner approved by the Commissioner.

(c) The fighting area canvas area shall be enclosed by a fence made of such material as will not allow a fighter to fall out or break through it onto the floor or spectators, including, but not limited to, vinyl coated chain link fencing. All metal parts shall be covered and padded in a manner approved by the Commissioner and shall not be abrasive to the contestants.

(d) The fence shall provide two separate entries onto the fighting area canvas."<sup>71</sup>

## **EQUIPMENT**

In participating in any type of full contact sport, there are precautions of safety that one must be aware of. Mixed martial arts is no exception and it's vital in providing a safe outcome while enabling full pace fighting to occur. Within a gym space there are equipment that is important in training and performance as well as personal equipment a fighter will use while training with the equipment.

---

71 "Mixed Martial Arts Unified Rules of Conduct" < <http://www.state.nj.us/lps/sacb/docs/martial.html> >. (Accessed 3-12-2009)

## **FIGHTER EQUIPMENT**

1. **Glove** (Mixed Martial Art Gloves, boxing gloves, Bag Gloves, Training Gloves /handwraps: During any type of sparring or contact drills gloves are required. For boxing gloves their should be a ½: inch latex and Polyfoam or other products that meet the severity (force of blow index).<sup>72</sup> For mixed martial the glove is a hybrid glove that has an open thumb design with cut fingers for the best possibility of clinching, takedowns and ground fighting which is difficult for traditional boxing gloves which are bulky. The mixed martial art glove should provide comfort and protection to the knuckle area where is the area of most impact. Handwraps are mandatory for competition and are used to protect the metacarpal bones of the hand. Wraps are designed to utilize the impact of punches and can be common cotton gauze or velpeau material which is recommended.<sup>73</sup>

2. **Shorts**

Grappling shorts are designed to have a flex panel inseam, stretch fabric, sweat and blood repellent and fungus resistance. The waistband should also feature a non-slip waistband and allow for range of adjustability. The flexibility is essential in situations where a fighter is on the ground and must be free to maneuver and not be restricted by the flexibility of his/her shorts. Mixed Martial Art shorts as they are called resemble surf shorts however have fabric that can resist sweat and wear and tear while at the same time provide comfort.

3. **Headgear:** protects the head from excess punching, hitting or even wrestling or slamming on the mat. It also is a way to reduce facial cuts and also protect ears from being injured or forming cauliflower ears which are common to grapplers who rub the mat consistently.

4. **Protective gear:** protective gear towards areas which are sensitive (groin) avoids any injury.

---

72 Sawyer, Thomas H. Facilities Planning for health, Fitness, Physical Activity, Recreation and Sports: Concepts and Applications. Tenth Edition. United States: Sagamore Publishing, 2002. Pg. 421

73 Sawyer, Thomas H. Facilities Planning for health, Fitness, Physical Activity, Recreation and Sports: Concepts and Applications. Tenth Edition. United States: Sagamore Publishing, 2002. Pg. 421

5. mouthguard: protects jaw and teeth in the case of a punch from the opponent that can cause damage to the mouth area.

## **TRAINING EQUIPMENT**

### **1. Punching Bags**

Heavy bag, grappling dummy, hook & upper cut wall bags used for drilling and training. It is a way to simulate an opponents body and to practice targeting points of the body. Various types of bags range from canvas, to nylon, leather and vinyl and are filled with water, foam, rags and sawdust at time. Lighter bags are used to develop timing, speed and coordination.

### **2. Strength & Conditioning**

Jump ropes, medicine ball, kettle bells, weighted gear, weightlifting, resistance bands, strength, speed and agility (weight vest, ab wheel) abs & core (crunches, sit-up)

3. Shin guards: padded protectors that cover the shins to avoid injury or bruising.
4. Focus Mitts: enables the practice of accuracy when punching a target
5. Knee guards/knee pads: protects knees when a fighter shoots or are on his/her knees for long periods of time.

### **3. MATS**

1. Mixed Martial Art Mats: (Grappling, Tatami, folding, landing, puzzle, home mats)
  - a. Zebra 2" Pro Series MMA Mat made for quality, safety, durability, or performance and is designed to withstand falls, slams and throws as well as stand up striking.
  - b. Dollamur Flexi-Roll Tatami-Style Martial Art Mats consist of 24 oz. non-slip no skid vinyl with tatami textured surface, heat-laminated vinyl/foam board, a bio-pruf anti-microbial to guard against odor causing microorganisms and microbial deterioration. The colors they come in are

Black, Green, Red and Blue. The foam used is made of cross linked polyethylene which does not shrink or harden over a certain period of time. The mat thicknesses are 5/8", 1.25", 2", and 2.25".

Mat Specifications are

-42' x 42' (7 sections)

-42' x 40' (7 sections)

-42' x 38' (7 sections)

-36' x 36' (6 sections)

-30'-30' (5 sections)

-24' x 24' (4 sections)

-18' x 18' (3 sections)

Custom sizes

4. **FLOORING**

1. Weight Room Flooring

2. Aerobic Flooring

3. Carpet Tiles

4. Wood Flooring

5. **CAGES**

1. Mixed Martial Art Cage Areas

a. Cage Panel Walls

b. Floor Mount Cages

# LAYOUT OF FIGHTER EQUIPMENT

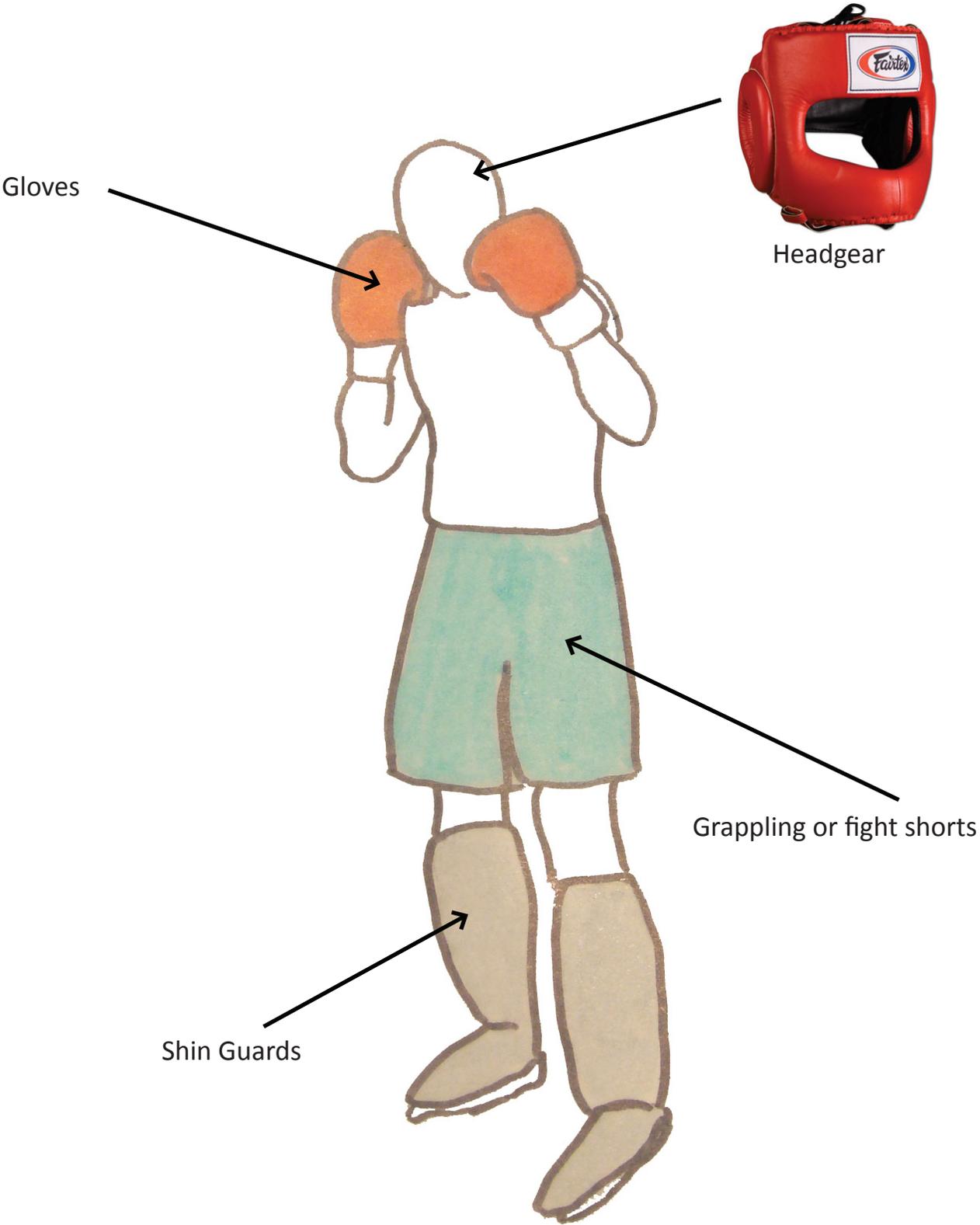


Figure 18: Diagram of different components needed for a fighter

# TRAINING EQUIPMENT



Punching Bags



Boxing Ring



Grappling mats & Conditioning Equipment

Figure 19: Equipment needed for training in mixed martial arts. Location: Fairtex gym, San Francisco, CA

## **PRESENT DAY CULTURE OF MIXED MARTIAL ARTS FOR HAWAII**

By looking at the spaces designated for training and competition, do these spaces express the culture of mixed martial arts? What is this culture? I asked this question to a man named Tom Callos who is a co-founder for an organization called the New Way Network and who is a teacher and consultant to the martial arts industry. By asking him the question of how he regarded the culture of mixed martial arts towards Hawaii he replied and stated some very interesting comments. He stated that “Mixed martial arts culture” has something South American in it” He said it has something to do with the surf culture, big time wrestling, boxing culture and all around the testosterone of men with tattoos and bling with breasty adoring women”.<sup>74</sup> Along with it this focus on health and the push of people wanting to be crazy fit to follow this template of how a fighter should look like.

The South American statement refers to the idea that mixed martial arts originated from a place called Rio de Janeiro where a family called the Gracies proved their way of grappling was the next step into fighting and would revolutionize marital arts. This style called Brazilian jiu-jitsu was a fighting style that was developed with a set of skills that enabled a fighter to move from position to position to escape and maintain positions. They also figured out ways to dominate an opponent and not knocked them out but find ways to perform submission holds which in the beginning was a new style of fighting. This style began the challenge to see what style was the best.

As we look at big time wrestling and boxing culture I am reminded of my mother recalling her younger years attending wrestling matches at the civic center and speaking of famous wrestlers like Curtis Iaukea and Billy White Wolf just to name a few. It was so called the golden age of wrestling which began in 1961 through a promoter named Al Karasick. It became a hit with

---

74 Callos, Tom. “Re: Mixed Martial Arts Culture.” Email to Andrea Simpliciano. 27 October. 2009

weekly matches at the civic auditorium which became the home to professional wrestling. The amount of fans grew and the sport grew in popularity so a larger area was needed which was the Honolulu International Center which could house 8,700 fans for this specific event. Along side wrestling the sport of boxing was also a favorite sport to many locals particularly Filipinos. One famous boxer from Hawaii is Brian Vitoria also referred to as the Hawaiian Punch became a local favorite and also represented to cultural roots very strongly while boxing. Boxing was sport a sport which brought communities together especially during fights because it gave neighbors a chance to share time in enjoying a sport they love.

Within both training and competition spaces there is an emphasis on hyper masculinity of identity through these spaces. The image of fighting has always been assumed as a masculine sport due to the rough and ungentle profile it has. With the image of masculinity is the trend of testosterone men who want to bulk up their muscles to have the perception of being strong. The thought of being strong may predict the possibility of a fighter to have the advantage to punch harder or more effective. But does muscle always make a winner? By researching various types of martial arts it is proven that muscle and strength is a commodity but isn't an assurance of victory. The victory of any type of fighting style is the use of the mind as a way to outthink an opponent through technique.

Along with the testosterone muscles is the design of tattoos on the bodies of fighters. Fighters tattoo their skins as a sign of strength and also a way to exhibit their background of who they are and represent. Some fighters like Brandon Vera tattoo symbols of his Filipino heritage printed in the ancient Filipino script called Baybayin. The tattoo represents mundo (earth) Hangin (wind) Tubig (Water) and Apoy (Fire).<sup>75</sup> Other fighter's tattoos depict tribal designs that run on their arms, back, chest etc. I see tattoos as a unique armor that a fighter is proud to have on them

---

<sup>75</sup> Brandon Vera's Baybayin Tattoos. Pinoy Tattoos.com. Updated October 13, 2007. <<http://www.pinoytattoos.com/brandon-veras-baybayan-tattoos/>>. November 17, 2009

and for them to show to the world. It tells their triumphs, struggles, happiness and pain which is permanently marked on their bodies.

The culture of mixed martial arts is not only confined in the cage like setting that many people assume it to be but it has hit the marketing demands. Television, apparel, fashion, small fight competitions, online, books, movies and branding are all components that build up this mixed martial arts business empire. Television allowed the sport to become available for the public by starting a television reality show that follows the lives of selected fighters who will train and fight under Ultimate fighting champions. The reality show proved to be a starting point for the growth of mixed martial arts mainly because it allowed people with no knowledge watch how fighters live and train to become the Ultimate Fighter. Pay-per View also show live fights from various parts of the world and is also a very huge event particularly for Hawaii. Many fans pack bars to watch while others stay home and have barbecues while watching the fight. It's beginning to become a ritual for people as if they are watching any other sporting event. The promotions are very distinct on television as well as online. The internet is a never ending resource of knowledge for mixed martial arts. Pages are dedicated to techniques of various styles, others are blogs to create feedback on point of views, while others try and promote their business via clothing and equipment. The site of BJ Penn is a prime example of where thousands of fans can log into his website and become updated with the latest news within the mixed martial arts world, have chat rooms with various fans and practitioners, live video of actually training and nutrition techniques, and blogs for people to post in regards of discussions they are interested in. The internet has catapulted the culture of mixed martial arts to everyone with just a click of a button.

The fan base is strongly influenced by the fashion perspective that defines a cultural lifestyle. This lifestyle is found in the accessories, clothing, collectables, footwear, headwear and

equipment that promotes branding. Tapout, Warrior, Silverstar, RVCA, Badboy, etc. are common brand names that mixed martial art fans and fighters wear to promote the sport. It is a way for fans to gain an identity through showing their love and support for the sport it has become through the emergence of a fashion lifestyle. The rise in fashion is at the very moment defining the physical culture of the sport and building upon the major money making empire that comes with it.

# PART 3

## SPATIAL QUALITIES OF MIXED MARTIAL ART SPACES

““No other sport has exploded as quickly on the international sports scene as Mixed Martial Arts (MMA). The sports emergence has also triggered the emergence of MMA training techniques and regiments as a viable form of mainstream fitness, not only for aspiring competitors, but also for anyone looking for an exciting and dynamic way to get their body into peak condition. MMA training centers are beginning to emerge”.”<sup>76</sup>

### DEFINING A SPACE OF TRAINING FOR MIX MARTIAL ARTS

In today’s growing society, mixed martial arts schools/gyms/dojos are becoming a very popular interest due to the workout and techniques of fighting. Each place of training ranges in appearance and spatial layout but the overall goal is to provide a space for teaching, practice and growth. “The unique training facilities serve the growing legions of mixed martial arts professionals, aspiring amateurs, as well as those individuals turning to MMA training as a unique alternative to conventional exercise and training methods”.”<sup>75</sup>

Apart from providing spaces for training, the overall program should provide a basis for the community to use and become involved in watching and supporting the knowledge that is being passed and practiced for mixed martial arts. By opening up a dojo/gym, it creates interaction between persons within and outside of the martial art community. This interaction can provide guidance as well as motivation and support for anyone training. It also enables the community to become a foundation for the movement of knowledge towards mixed martial arts. “The center serves as a source for education and training for anyone interested in developing MMA knowledge

---

<sup>76</sup> Advance fitness Products-Total Fitness Resource. Services-Design. <http://www.afproducts.com/resources/case-sudy/xyience-training-center>. Access Date: November 23, 2009

and skills across a variety of martial art disciplines”.<sup>77</sup>

Mixed martial arts has a strong connection to nature and the elements. It is important to implement the importance of this connection within the space because it will enhance the overall experience. Nature in itself can provoke a sense of freedom and privacy at the same time. It enables someone to connect in a way that provokes humility both while training and in life. This connection is vital because it enables an intimate connection with all that compiles nature and encourages an appreciation for all the elements beyond martial arts. With this in mind, the awareness of nature can encourage the development of natural materials by creating organic forms which will enhance the space for mixed martial arts. Nature also has a strong link to dojo etiquette and direction placement and distinct characteristics they follow.

Martial art is also a form of self-defense and a way to conserve and utilize resources. “The core of various styles of martial arts are all methods of self-protection with the aim of injuring another person to unwarranted acts of aggression. All arts, to be complete, should have a comprehensive repertoire of defensive methods to protect oneself from another attacker, applying pressure to the different muscle groups in order to help maneuver the attacker, twisting, striking and squeezing muscles to create pain and control the attacker, restricting or cutting off air entering or leaving the lungs, restraining the blood flow from an artery or vein to render the attacker unconscious; striking or pressing vulnerable points of the body to stun, create pain and control the attacker, and throwing a person to the ground”.<sup>78</sup>

This form of conservation is seen beyond the physical level of mixed martial arts. “The comprehensive repertoire of defensive methods all adhere to universal principles and laws applicable to the human body, human biomechanics, levers and energy transfer”.<sup>79</sup> This sense of conservation towards resources can also influence the style and spatial features of a space. In this

---

<sup>77</sup> Advance fitness Products-Total Fitness Resource. Services-Design. <http://www.afproducts.com/resources/case-sudy/xyience-training-center>. Access Date: November 23, 2009

<sup>78</sup> Barkley, J. Terry. Surfacing. Sandford Group. 1997. [Http://www.sandfordgroup.com/editoriallibrary1/fitness\\_library/fitness\\_facility\\_surfacing.html](http://www.sandfordgroup.com/editoriallibrary1/fitness_library/fitness_facility_surfacing.html). November 23, 2009

<sup>79</sup> Barkley, J. Terry. Surfacing. Sandford Group. 1997. [Http://www.sandfordgroup.com/editoriallibrary1/fitness\\_library/fitness\\_facility\\_surfacing.html](http://www.sandfordgroup.com/editoriallibrary1/fitness_library/fitness_facility_surfacing.html). November 23, 2009

chapter we will compare the spatial features of dojo and gym space and how they can enhance cultural values for mixed martial arts.

### **SENSE OF PLACE**

In trying to define what a mixed martial arts space can provide, the place in which it will be taught and practiced is located in a built environment where there is an importance in culture and sense of place. This sense of place is sometimes assumed to be a structured space within a defined set of boundaries. In regards to a space for mixed martial arts it can be seen as a kind of theatre which the behavior of those who participate or watch alter both the nature of the activity and the place where it is practiced.<sup>80</sup> In a way the space where mixed martial arts is practiced can be similar to a theatre where it has the ability to provide a context of different experiences and social interactions. The spatial organization of sport places 'is integral to the production of social relations'.<sup>81</sup> A place is made through power relations, which construct rules, and define boundaries where these boundaries are social and spatial. In the social spectrum there are models of consumption, masculinity and performance that are set in spatial contexts. Implicated into these boundaries is the engagement of people and how the body itself inhabits a space. We as humans live our lives in and through places, and in and through the body where the body is the site of an individual. Bodies and places are woven together through intimate webs of social and spatial rules that are made by and make embodied (sporting) subjects.<sup>82</sup>

In looking at places of training for mixed martial arts, there are assumptions that they are either held in a dojo or gym setting. Currently there is a cookie-cutter type of entity about them where there is little or no possibility of change. Could this change be positive or detrimental to the teaching of mixed martial arts? By researching the following spaces I state what each type has that can aid in the development of a new space where a sense of local attachment can be

---

80 Karl Raitz, *The Theatre of Sport*. Baltimore, MD: John Hopkins University Press, 1995. Pg. vi

81 Massey, Doreen. *Space, Place and Gender*. Cambridge: Polity Press. 1994. Pg. 4

82 Heidi, Nast and Pile, Steve (eds). *Places Through the Body*. New York: Routledge. 1998. Pg. 4

started and a landscape which characterizes tradition and sense of place. This sense of place is important towards context and social relation that define mixed martial arts and the physical culture it provides.<sup>83</sup>

## **DOJO VS. GYM**

### **DOJO**

A Dojo is translated as being a training hall and a place where the force of (Ki) or harmony is practiced. It is also described as the “place of the way” where the way emphasizes the power of wisdom, learning and enlightenment. There is a traditional set of mind when approaching and entering a dojo of a Ryū. The definition of a Ryū is flow or mainstream where ryūha means mainstream school of thought. It is commonly used to refer to schools of Japanese martial arts and may vary due to location within Japan. It consists of organizing a codified system and a way for practitioners to establish their own interpretation of specific martial arts.

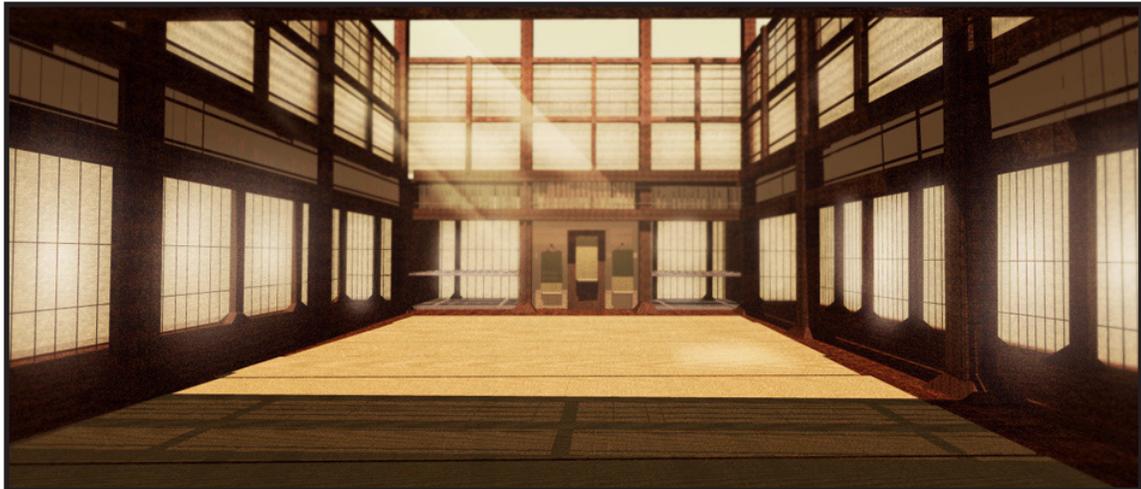


Figure 20: illustration of a dojo space. [http://www.injectiondesign.com/work/dojo/dojo\\_port.jpg](http://www.injectiondesign.com/work/dojo/dojo_port.jpg). Accessed 2.12.09

---

<sup>83</sup> Vertinsky, Patricia. Locating a ‘Sense of Place’: Space, Place and Gender in the Gymnasium. New York: Routledge. 2004. Pg 9

The dojo focuses on the spirit and not just the physical training therefore a dojo may at times resemble a gym but aesthetically is to depict a temple or shrine. Dojo is defined as a place where the practice of Buddhism is done and where zen meditation would occur. The space where training and demonstrations are done is called an embu-jo. There are also training spaces that are outside which is not within a closed space or hall but a practice place called keiko-jo. The space where training is held however is called a shiai-jo.<sup>84</sup>

In ancient times, a dojo would consist of a minimum amount of people joining because there was a certain protocol on entering. Generally an applicant who was interested in joining a dojo would first have to present a letter of introduction and also a recommendation from another former instructor. Following this would be a background check so the applicant would be checked in having good character, and also being aware of not letting a member join an enemy school and expose the secrets of a certain Ryū. Once a check was complete an applicant would take a blood oath or a keppan which signified a loyalty oath and sealed the applicant's commitment in blood. Usually this oath would remain with a scar on the arm or finger and would remind an applicant the honor of being part of a Ryū.

By becoming a member of a certain Ryū, he still must be looked upon in a trial period known as a hodoki or unleashing of hands. This so called probation period would consist of doing chores such as preparing meals, washing uniforms, and chopping wood. This tested a member's ability of tolerance and discipline and would prove to the instructor the commitment the member is willing to put forth in learning. Once he proved his worth he soon became a monjin or a person at the gate and is able to enter the ranks of the Ryū. Members of a Ryū experience feelings of nakama or within the interior space where they share similar training with others within their school and form a close-knit bond like family.

---

<sup>84</sup> Lowry, Dave. In the Dojo: A Guide to the Rituals and Etiquette of the Japanese Martial Arts. Boston: Weatherhill Publishing. 2006. pg. 12

The place of which defines a dojo was not always referred to as a structure or building in Japan's history of martial arts. The samurai class during the 19th century used the outdoors as the location of training. Even though the leaders of the class or daimyo could construct such halls for martial arts with the common wooden floors, training in nature allowed conditioning in a different set of conditions. The teaching and practice took place in courtyards, open fields and open verandas in some homes, or natural terrain and in unpredictable weather. The ability to train outside gives another encounter in practice and allows the students to find rhythms, observations and impulses. The type of training that occurs outside is called *yagai-geiko* or *no-geiko* which means "training out in the field".<sup>85</sup> The open space soon becomes a training space and are not referred to as dojos for example sumo facilities where the sumotori live in stables where they train.

The structural organization of a dojo is according to the outer simplicity, arranged along the lines of a building and used for religious and spiritual exercises. A traditional dojo is divided geometrically into a completed type of matrix.<sup>86</sup> The traditional *KoRyū* or old school floorplan focuses on etiquette and layout space. The dojo would consist of four main walls beginning with the entrance wall called the *shimoza* or lower seat. On the opposite side the shrine or *kamidana* would be placed on the *kamiza* or *shomen* side also called upper side. To the left of the *Kamiza* or *Shomen* wall is the *Joseki* or upper lateral wall while to the right of the *Kamiza* or *Shomen* is the *Shimoseki* or lower side wall. At times of practice an invisible line would be drawn separating the *joseki* and *shimoseki* sides. The area towards the *joseki* side was where the senior practitioners practiced while on the *shimoseki* side is where the junior students practiced. It there was a time where the length of the room was needed the senior practitioners always had their back towards the *Kamiza* while the junior students faced the *kamiza*. In smaller dojo space is always the premium concern where an elevated area is not common as compared to the larger dojo.

---

<sup>85</sup> Lowry, Dave. In *The Dojo: A Guide to the Rituals and Etiquette of the Japanese Martial Arts*. Boston: Weatherhill Publishing, 2006. pg. 13

<sup>86</sup> Lowry, Dave. In *The Dojo: A Guide to the Rituals and Etiquette of the Japanese Martial Arts*. Boston: Weatherhill Publishing, 2006. pg. 14

The Shimoza side would face the south side which in the Taoist cosmology is associated with the element of fire. The fire is associated with etiquette and intellect where those who desire to learn of the art being shown will attract one to train in a dojo through the entrance. The opposite of the south would be the north which is the compliment of fire which is water. The element of water expresses the feeling of the dojo as being a morale place to train. The term sagacity expresses the definition of upper seat or divine where the highest of ranking would sit such as deities or important figures. Transitioning to the left side of the dojo is the shimoseki which follows the characteristics of metal that expresses rectitude which is a upright righteousness that is a consequence of honor. Those who train must build a sense of rightness. The opposite side is the joseki which is compared to the wood which expresses virtue and charity. This is done through the instructors who have a responsibility to teach the younger practitioners the knowledge they have.<sup>87</sup>

The traditional dojo architecture is associated closely with reishiki or etiquette of three main functions. These functions are 1. Placement of the sensei at the front, seniors on the right and juniors on the left afforded the teacher maximum protection an intruder.<sup>88</sup> In modern day dojos, applicants approach a dojo with a different state of mind then in ancient times. Many dojos try and market their style by luring people and make them believe that their dojo provides state of the art training of a certain style and equipments. Usually this leads to business and money transactions which stray away from the sole purpose of what the dojo is all about. I feel that people today who enter a dojo to lose weight, get into shape, or just take lessons because it sparks an interest. I feel the entrance to a dojo should have the same experience of simplicity and commitment in the past. Hopefully this will enable students to appreciate the process of passage and have the dedication to continue within a dojo.<sup>89</sup>

---

<sup>87</sup> Lowry, Dave. What Puts the "Tao" in the Dojo? Part 2. Fightingarts.com. <http://www.fightingarts.com/reading/article.php?id=387>. November 16, 2009

<sup>88</sup> Lowry, Dave. In the Dojo: A Guide to the Rituals and Ettiquette of the Japanese Martial Arts. Boston: Weatherhill Publishing. 2006. pg. 19

<sup>89</sup> Japanese Traditions – Entering the Dojo: What Prices are you willing to pay? Fightingarts.com. Dave Lowery. < <http://www.fightingarts.com/reading/article.php?id=402> > 13 April 2009

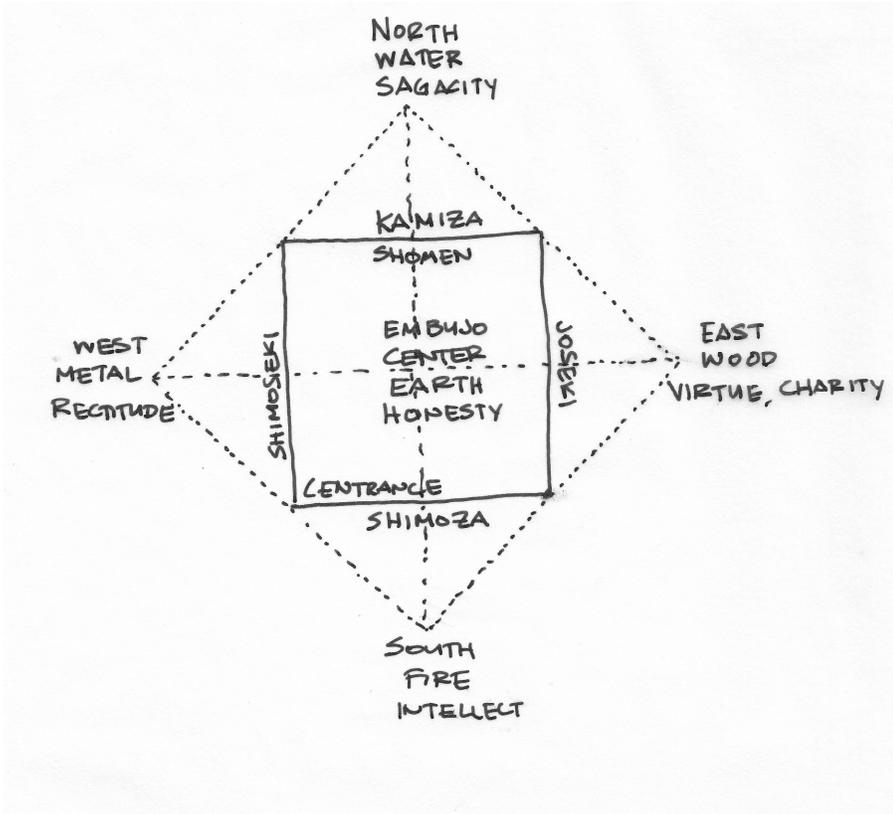


Figure 21: Diagram on how natural elements connect to directions and the four distinct spaces within a dojo.

## **GYM**

The cultural model found in western style dojos resemble a type of gym where the spaces are built in a fashion where there is an ignorance of sensitivity and a strong focus on necessity. A gym provides different attributes than a dojo but still has the focus of spreading knowledge of martial arts. Gyms in general instill a very physical training regime that builds up skills towards cardio, strength and endurance. Within a mixed martial arts gym, this physical conditioning is key in preparing a fighter for battle. Many gyms provide their students a variety of options on different types of martial art styles they would want to train in. Some of these classes emphasize grappling such as jiu-jitsu or striking such as kickboxing. The more a gym offers in classes, the more opportunities the students have in gaining an all around comprehension of all the arts. This combination of knowing various styles comes in handy when training mixed martial arts. It is important to learn the basics of a separate style first, then try to come up with your own versions or techniques that integrate various moves into your own. The possibilities or switching up or inventing your own moves are endless which makes mixed martial arts full of surprises.

Along with the physical training are other options such as self-defense classes, weight and cardio activities and running. However for some gyms another form of training is used which implements fast powerful movements that improve the nervous system and reflexes. This powerful tool is called plyometrics which enables a fighter to have his/her muscles capable of various types of stress and teaching the body to produce speed and quickness through strength and elasticity of muscles. It is proven to be a very effective way to cross train and enable the body to withstand the physical intensity of training. Another factor that is just as important as physical strength is building a strong mental and emotional foundation. Just as this following quote reads "Champions are made from something they have deep inside them - a desire, a dream, and a vision. They have

to have the skill, and the will. But the will must be stronger than the skill.” - Muhammad Ali” a fighter is a champion by having the commitment to never give up and put all your heart mind and body into learning martial arts. It is then when a true warrior is made.

MMA gyms can range from large high tech warehouse gyms to privately custom home gyms. No matter where a gym may be, its priority should be to provide the highest quality teaching and training for mixed martial arts. In the following section I will review examples of what can be found in different levels of gyms.

#### BEGINNER

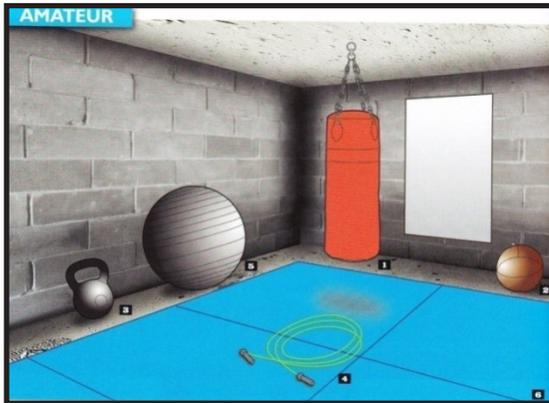


Figure 22: Beginner layout of a gym. “Open ALL HOURS: A Guide to Building the Ultimate Gym.” Fighters Only. April 2009: pg. 64

This is a basic layout for a beginning amateur fighters training space. The bare essentials would be a room which has a mat for grappling. A punching bag can come in useful when practicing various striking techniques. A Mirror will aid a beginner in trying to find the right positioning for certain moves. Kettle balls, medicine balls and jump ropes aid in conditioning.

## INTERMEDIATE

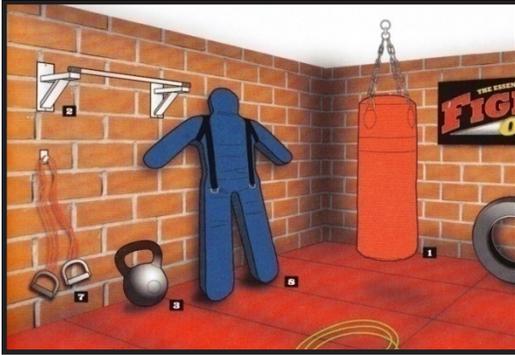


Figure 23: Intermediate layout of a gym “Open ALL HOURS: A Guide to Building the Ultimate Gym.” Fighters Only. April 2009: pg. 65

A semi-pro area will consist of all the basic essentials of an amateur space however the work would be more similar to a gym. This is done by adding more equipment that will aid in strength and endurance. Some of these would be a sledgehammer and tyre, pull-up bar and even a dummy to practice on when a partner isn’t available.

## ADVANCE

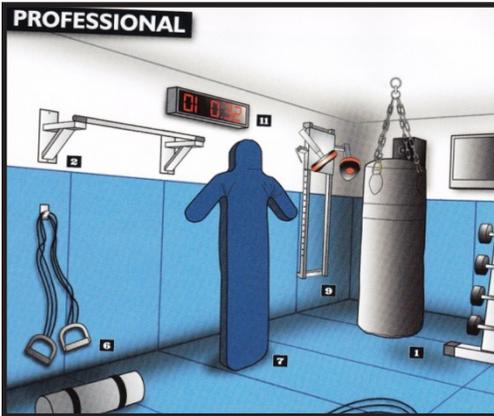


Figure 24: Professional layout of a gym “Open ALL HOURS: A Guide to Building the Ultimate Gym.” Fighters Only.

A professional area would consist of all the elements in both an amateur and a semi-pro space but will provide top quality mats on the ground and wall. Some other equipment may be added such as weight machines and free weights. A television can be included as a way to promote motivation and also leisure.

### **PRACTICE SPACE: MIXED MARTIAL ART TRAINING FACILITIES/GYMS**



Figure 25: Hitsquad Facility in St. Louis, Missouri. [http://www.dollamur.com/ma\\_schools\\_events.html](http://www.dollamur.com/ma_schools_events.html)

This gym is where fighter Matt Hughes from the Ultimate Fighting Championship trains which is called the Hitsquad Facility. This facility located in St. Louis, MO. Consist of different types of camo grappling matting that gives the space a very jungle/army appeal. The camo lets the space have a basic training vibe in which one would have within the military. The patterns distract the eye at times and express the busy/hectic training that can occur here. The space is separated by gates that are boundaries for training and safety for different types of training being performed simultaneously. The overall feel is of a warehouse with high ceiling heights. No thought was done

to decorate the walls but only a draped material with the words ultimate fighter. This sheet gives people inspiration to train harder as they work for that ultimate goal on the wall. Ropes hang from the ceiling as a training exercise of upper body strength and can occur during grappling or mixed martial art training within the fenced area.



Figure 26: RVCA Headquarters and Gym in Costa Mesa, California. [http://www.dollamur.com/ma\\_schools\\_events.html](http://www.dollamur.com/ma_schools_events.html)

This is the new RVCA gym located in Costa Mesa, CA. The gym is actually a warehouse for this clothing line. The gym consist of the basic cage like atmosphere with a built in octagon and punching bags. The company makes sure to promote itself with the logos specified all over the gym. This is an example of how mixed martial arts is marketing outward to clothing lines. The walls are bare concrete slab with common fluorescent lighting. Row machines are located at the edge of the mat as a conditioning component.

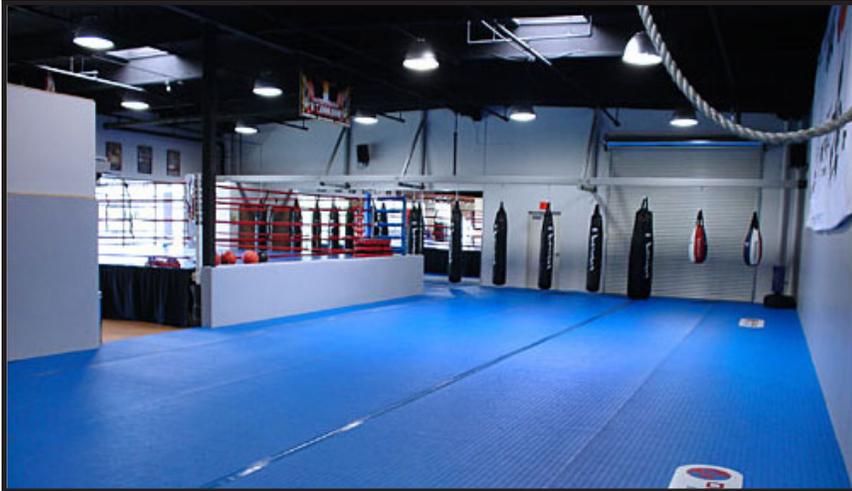


Figure 27: Team Quest Gym in Murrieta California. [http://www.dollamur.com/ma\\_schools\\_events.html](http://www.dollamur.com/ma_schools_events.html)

This is the gym where PRIDE and UFC Veteran Dan Henderson trains along with his team called Team Quest in Murrieta California. This gym uses the basic color of blue which gives it a very calmer feeling compared to the camouflauge. The ring and numerous punching bags indicate they focus a lot on striking abilities however they also have a consistant amount of matted area for grappling. The space contains skylights above which give the space a different type of glow compared to fluorescent lighting.



Figure 28: XMA World Headquarters Gym in North Hollywood, California. [http://www.dollamur.com/ma\\_schools\\_events.html](http://www.dollamur.com/ma_schools_events.html)

This is the XMA World Headquarters gym in North Hollywood California. This gym however is different than many other mixed martial arts gyms because its main focus is not only on mixed martial arts. The facility caters to other type of disciplines such as gymnastics, dance, performing arts, acrobatics as well as mixed martial arts. The facility also uses state of the art training equipment with the combination of theatrical sound and lighting. The flooring consist of special olympic stratum fiberglass spring flooring for gymnastics as well as grappling matting surfaces for mixed martial arts. There is also trampoline bed with foam pits, tumbling rigs and stunt crash pads with ropes.

The colors bring a very lively atmosphere with accent orange detailing and brown walls. The lighting however plays a very dramatic effect and creates shadows that makes the space more enlightening.

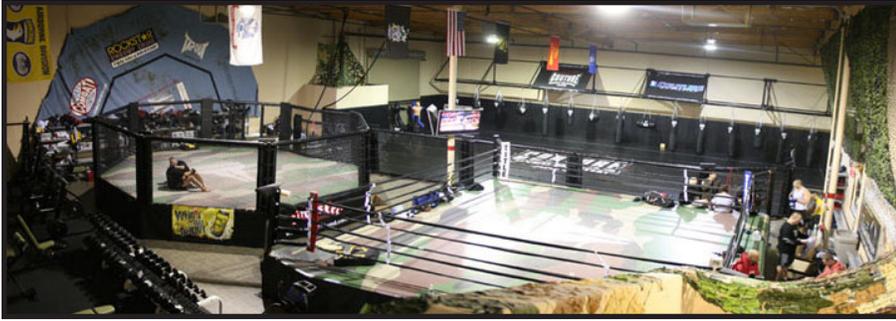


Figure 29: Xtreme Couture Mixed Martial Art Gym in Las Vegas, Nevada. [http://www.dollamur.com/ma\\_schools\\_events.html](http://www.dollamur.com/ma_schools_events.html)

This is the gym where Randy “the natural” Couture trains located in Las Vegas, Nevada. The gym consist of 12,000 square feet gym with a real size octagon, boxing ring, mat and bag area, and weights and conditionig area. The space is similar to the training space of mat hughes where the space gives characteristics of being in a space of war or someone preparing for war. The walls are covered with green looking camaflouge material to give it a feeling of attack. The spaces are all held in one open space which provides access to any area at any time.

### **COMPETITION SPACE: THE OCTAGON-THE NEW ARENA FOR MIXED MARTIAL ARTS**

With the rise of this upcoming sport, a new shape would have to be designed to offer a hybrid of both circular and square spaces found in striking and grappling spaces. It is similar to its counterparts because it offers the infinite number of sides of a circle and doubles the sides of the square which enables more chances of movement and less possibilities of being trapped into a corner. This shape would be known as the octagon. The octagon provides a 135 degree

angle which enhances the mobility and movement for fighters and opens corners compared to 90 degree corners found in conventional rings. The octagon is an eight-sided cage that is fenced with a black vinyl around six feet high cage with edges of the poles padded for added safety. The octagon is four feet above the surface of the floor and contains a padded canvas for impact and with surface area across of thirty feet. There are only two main entry points where the fighters enter and exit and are also closed during the fight. It is in this eight sided shape where the best of mix martial arts is shown. The octagon was influenced by past spaces within martial arts that enabled the octagon to have the fullest potentials for success in this fast pace sport.



Figure 30: The shape of an octagon used for competition. tournamentguidemag.com. Accessed: 3-6-09

The octagon is also enclosed in a cage design which is trademarked by Zuffa. Today the octagon is a strong symbol for the Ultimate Fighting Championships which launched the popularity of mixed martial arts since 1993.



Figure 31:View of the octagon with surround seating and lighting setup <http://tkoxtreme.com/wp-content/uploads/2008/04/octagon-1.jpg>. Accessed: 3-3-09



Figure 32: Example of a plan for a UFC layout with octagon in the center. [http://www.indux.com/map/MBEC\\_UFC\\_New\\_tn.gif](http://www.indux.com/map/MBEC_UFC_New_tn.gif). Accessed: 3-3-09

The figure above show examples of a typical layout for a mixed martial arts event such as Ultimate Fighting Championships, WEC, Strikeforce etc. The location of these events occur in

existing stadiums, arenas, halls, or concert halls where the set up of seating arrangement makes it easier for the setup of the octagon which would be located directly in the center. The seating is priced according to distance for example the farthest seats from the octagon would be the cheapest due to the restricted views while seats on the floor closest to the octagon would be the most expensive due to close quarters to the actual event.

The opening located at the four corners of the ground level would be the area where fighters would enter into the arena. A bout would start with each fighter entering with a particular song of their choice. The crowds of people roar with screams and cheers when their favorite fighter enters the arena. The lights are usually dimmed while the set up track lighting above the octagon provides various lighting of different colors as if in a night club scene. Large screens are placed around the arena to provide close up footage for those seated far from the octagon. When a fighter walks into the arena he/she is escorted by security and are so close to fans they can reach out and touch them.

The excitement and adrenaline is high during this process. Before the fighters enter the octagon they are equipment checked and vaseline is placed on their face by a certified trainer. When the two fighters are within the octagon there is an introduction process where each one is introduced by name and usually a team and sign behind him. All along the sides of the octagon are camera personnel, staff persons, security and a table designate for judging the bout. Throughout this whole process there is a feeling of excitement along with anxiety and nervousness. The excitement is caused by sound of thousands of fans cheering, waving their signs, and wearing gear of their favorite fighter or brand. The anxiety of nervousness is that feeling of anticipation of what might happen and wanting to know who will win the match and how. Its this high pace roller coaster ride of adrenaline that makes the sport of mixed martial arts the next rising sport in

the world today.

## **EXISTING EXAMPLES OF MIXED MARTIAL ARTS SPACES WITH MULTIPLE FUNCTIONS**

### **KODOKAN JUDO INSTITUTE**

The Kodokan is the word that refers to the home of judo. The Kodokan Judo Institute in Bunkyo, Japan is made up of the International Judo Center and office building. It was the original location of the Eishōji temple where it held only 12 mats compared to the current 1,000 mats it can hold today. The present Judo center is comprised of nine floors that include 6 dojos (main dojo with spectator seating, school dojo, international dojo, womans dojo, boys dojo and special dojo, a store, cafeteria, conference room, library, lodging rooms, 5 rooms for training camps, single rooms, deluxe single rooms, and deluxe twin rooms, parking, research center and shops.

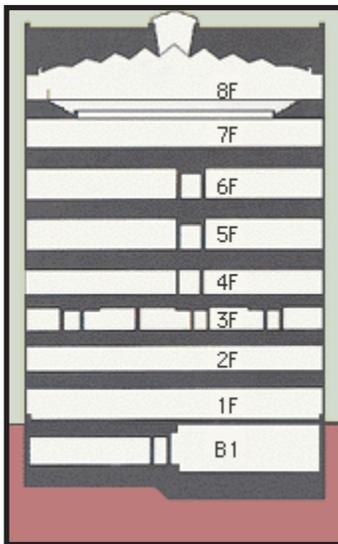


Figure 33: International Judo Center. The Kodokan Judo Institute. [http://www.kodokan.org/e\\_basic/facindex.html](http://www.kodokan.org/e_basic/facindex.html).

Accessed: 10-25-09

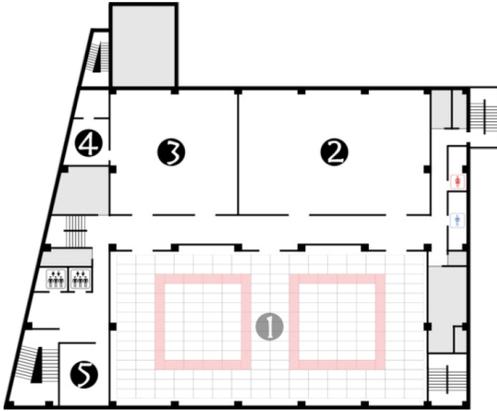


Figure 34: Kodokan Judo Institute (5th Floor). Judopedia.com

[http://judopedia.com/index.php?title=Kodokan\\_Judo\\_Institute\\_\(5th\\_floor\)](http://judopedia.com/index.php?title=Kodokan_Judo_Institute_(5th_floor)). Accessed: 10-29-09

The 5th floor is the location of the womans dojo, boys dojo, and special dojo. The womans dojo is capable of holding two competitions at one time by having a large room be divided into two separate ones while having 240 mats. The boys room is a little smaller with 114 mats and can also be divided into two rooms if needed. The special dojo is designated for retired-judo players who are studying the techniques of judo. All of these rooms can be rented out for particular practices or events.

#### 6th Floor

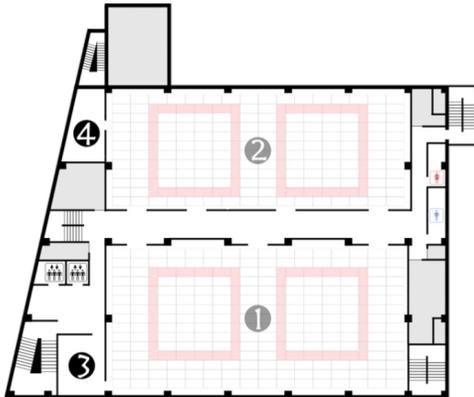


Figure 35: Kodokan Judo Institute (6th Floor). Judopedia.com

[http://judopedia.com/index.php?title=Kodokan\\_Judo\\_Institute\\_\(6th\\_floor\)](http://judopedia.com/index.php?title=Kodokan_Judo_Institute_(6th_floor)). Accessed: 10-29-09

This floor consist of a school dojo and an international dojo. The school dojo has 240 mats and can be divided into two rooms.

7th Floor

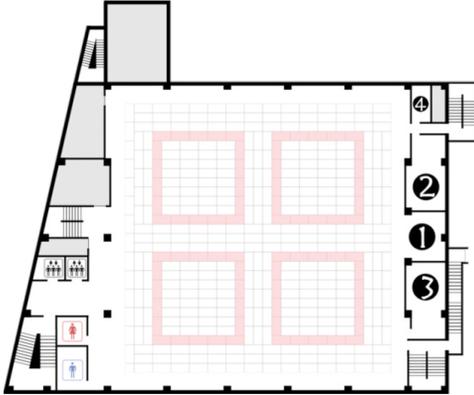


Figure 36: Kodokan Judo Institute (7th Floor). Judopedia.com

[http://judopedia.com/index.php?title=Kodokan\\_Judo\\_Institute\\_\(7th\\_floor\)](http://judopedia.com/index.php?title=Kodokan_Judo_Institute_(7th_floor)). Accessed: 10-29-09



Figure 37: Kodokan 360degree Panorama Movie. The Kodokan Judo Institute. [www.kodokan.org](http://www.kodokan.org).

[http://www.kodokan.org/e\\_basic/panorama\\_dojo.html](http://www.kodokan.org/e_basic/panorama_dojo.html). Accessed: 10-21-09

This floor is designated for the main dojo where there is floor springness, ventilation and natural brightness from the skylight above. Four official contest can be held in the main dojo allowing for 420 mats.

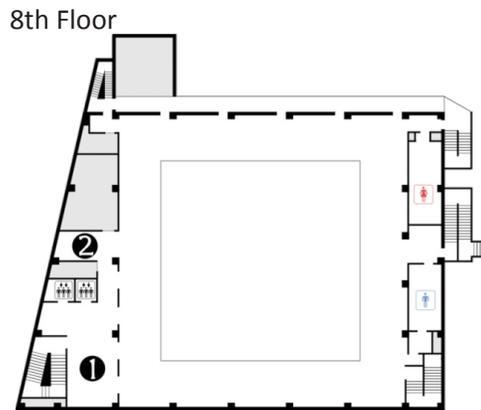


Figure 38: Kodokan Judo Institute (8th Floor). Judopedia.com

[http://judopedia.com/index.php?title=Kodokan\\_Judo\\_Institute\\_\(8th\\_floor\)](http://judopedia.com/index.php?title=Kodokan_Judo_Institute_(8th_floor)). Accessed: 10-21-09

This floor is designated for spectators who are watching the main dojo events on the below 7th floor. 900 spectators can watch from above. This floor differentiates itself from other floors mainly because its purpose is for competitions where there is a focus on certain matches. The space a large open space so spectators can have clear views from the upper floors.

## NIPPON BUDOKAN & BUDOKAN GAKUEN



Figure 39: Ariel view of the Nippon Budokan in Japan. googlemap. Accessed: 10-25-09

This arena located in central Tokyo is also known as the Budokan or also known in English as the “martial arts hall”. The purpose of this center was to encourage traditional martial arts in Japan to be practiced especially for young people’s as a way to nurture a healthy mind and body through martial arts as well as contribute o the development of the nation, the world at large may contribute to peace and warfare.<sup>90</sup> The building was meant to hold the judo competition and martial art exhibitions during the Olympics. Built in 1964 specifically for the 1964 Olympic games, it houses free martial art exhibitions and demonstrations every year. The building itself consist of three floors above ground and two floors underground. The building area is 8,132,240 meters square, the total floor area is 21,133,00 meters square and the land use area is 12,625,000 meters square. The seating can hold 7,864 seats with standing room of 480 seats and temporary max seating of 2,946 which totals up to approximately 14,471 seats at max.<sup>91</sup>

---

90 Nippon Budokan: Official website: Purpose Built. <http://www.nipponbudokan.or.jp/>. Accessed: 12-1-09

91 Nippon Budokan: Official website: Purpose Built. <http://www.nipponbudokan.or.jp/>. Accessed: 12-1--09

The design is to resemble the Yumedono, the wooden Hall of Dreams that is part of the temple Hōryūji, one of the oldest centers of worship and situated in the ancient imperial capital of Nara.<sup>92</sup> The martial arts hall consisted of an octagonal floor plan with capped distinct roofing that is to image mount Fuji. The arena is an important center for eight Japanese martial arts which are Judo, Karate, Kendo, Naginata, Aikido, Shorinji Kenpo, Jukendo and Kyudo. The location of Budokan was near moats in Kitanomaru Park which is the site of the once Tokugawa shogun Edo Castle.<sup>93</sup>

While the Budokan is the area of exhibitions and demonstrations, the area of practice towards these martial arts can be seen in the Budokan Gakuen which is located in the same area as the Nippon Budokan. The Budokan Gakuen is a school that consist of three dojos on the same floor which allows the viewing of more then one martial art being practiced at the same time. The idea of both the Nippon Budokan and Budokan Gakuen is to find ways to connect the past with the present as well as tradition with modernity.

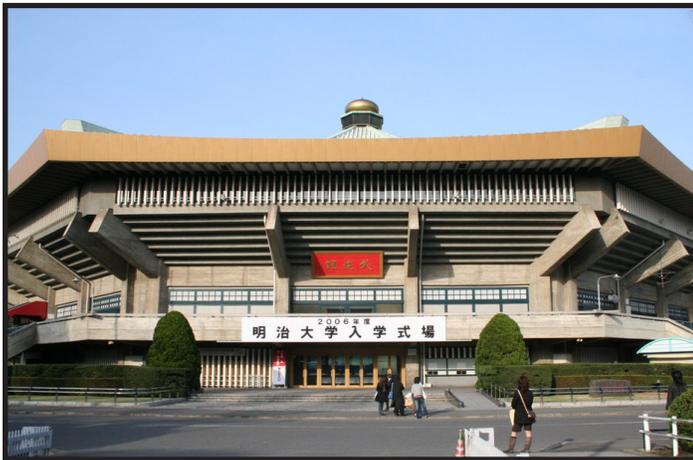


Figure 40: Exterior of the Nippon Budokan. <http://www.rockbandbeatlesblog.com/wp-content/uploads/2009/08/The->

---

92 McClain, James L. Japan, a modern history. New York: W.W. Norton & Company. 2002. pg. 564

93 Pompian, Susan. Tokyo for Free. New York: Kodansha International, 1998. pg. 108

Beatles-In-Nippon-Budokan.jpg



Figure 41: view of martial arts competition space setup. <http://www.joninjapan.com/images/tourney.jpg>

# PART 4

## CASE STUDIES: MIXED MARTIAL ART SPACES

### CASE STUDY #1: THE ULTIMATE FIGHT SCHOOL

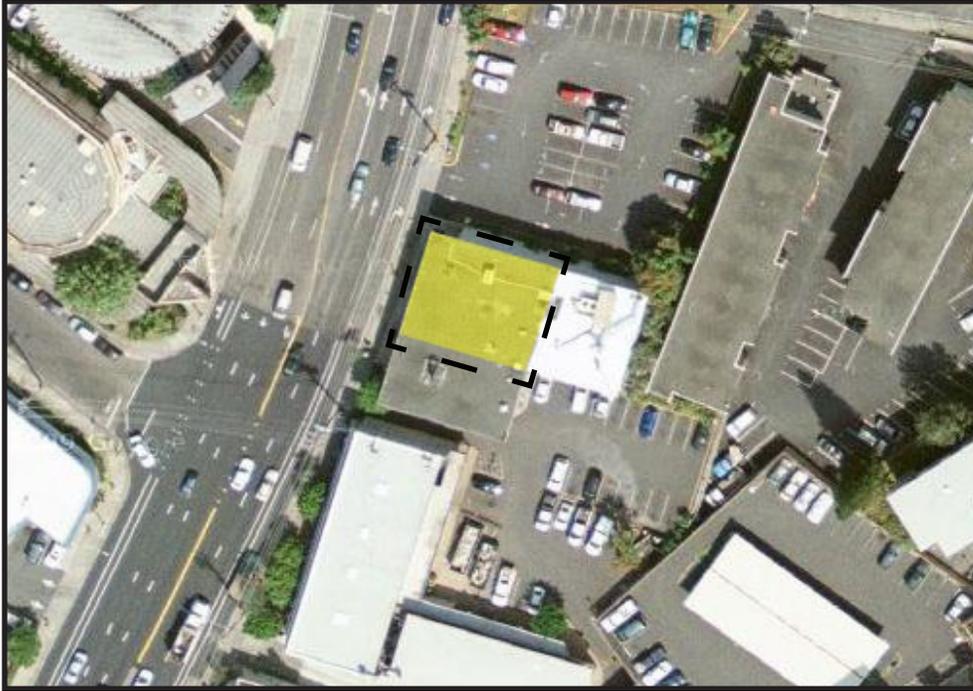


Figure 42: Ariel View of location for the Ultimate Fight School. google maps. Accessed 10.5.09

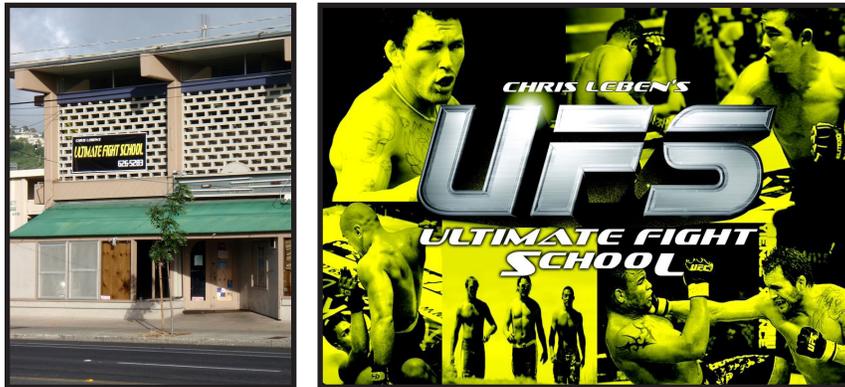


Figure 43: (Left) Front view of gym (Right) Logo page

The school was opened since January 2009 and was founded by Ultimate Fighter Chris Leben. It is a school that focuses on training and instruction of mixed martial arts. The instructors are skilled and knowledgeable and have experience and backgrounds in various styles of mixed martial arts. The school is located on University Avenue near the University of Hawai'i at Mānoa. The school provides courses on

1. Kickboxing: This class focuses on “striking skills” and various techniques such as punching, kicking, footwork, blocking, and the use of the UFS numbering system. Requirements for class are boxing gloves of choice, handwraps and mouthpiece
2. Submission Wrestling: Also referred to as “grappling” submission wrestling that focus on training on ground fighting techniques. Various skills are shown such as takedowns, holds, escapes, positioning, and submissions. Requirements for class is a mouthpiece.
3. Mixed Martial Arts is the combining of the skills learned in striking (kickboxing) and grappling (ground fighting). However the kickboxing and submission wrestling techniques are modified specifically for Mixed Martial Arts. Some of the skills taught are ground-and-pound and clinch. Requirements for class are mixed martial art gloves, mouthpiece, boxing gloves, handwraps.
4. Thai Pads/conditioning: Class focus on cardio workout by holding pads and striking as well as drills. Its mainly a class to build conditioning and endurance
5. Boxing: This class focus on the fundamentals of punching and footwork in boxing.
6. Ultimate Conditioning: This conditioning is step above Thai Pads/conditioning because it is aimed on enhancing speed, power, agility and endurance by using weights along with drills and workouts.
7. Fighter Training: This class if for advanced students who have developed a firm foundation

of courses in kickboxing, submission wrestling and mixed martial art courses. This course uses sparring as a method of training. Students will develop multiple aspects of mixed martial arts by combining striking, grappling and conditioning. This course focuses on training potential fighters who have the desire to compete.

8. Open Mat: This is opened to members specifically of Ultimate Fight School where they may practice on their own workouts. Some activities done are hitting and kicking heavy bags or thai pads, lifting weights, cardio and endurance exercises and sparring with another member. No instruction is done during open mat sessions.

**Ventilation:**

Natural Air is only accessible on the façade facing the road and where there is access to jalousie windows that can be opened. The windows are in front of a CMU wall that restricts wind to enter. However the jalousie windows are kept shut to allow the air conditioning system to work properly and keep the work out area cool at all times. The only natural air that comes into the gym are from the windows towards the road. The air condition is felt strong throughout the gym and makes students cool down fast. It also can get to cold and become a way for students to become sick.

**Lighting:**

Lighting is designed in rows with (2) linear fluorescent lights in a 2'x 4' lighting fixture. There were 41 lighting fixtures all together separated by a type of cork board as spacers. Natural light can only be seen on the wall facing the road where the jalousie windows are located. Natural sunlight lights up the heavy bag area as well as that half of the matted floor. The lighting of the gym is comfortable and strong enough to grapple or strike. The daylight only occurs on the façade that faces the street where the windows allow sun to come into the space.

**Texture:**

The texture of the walls is commonly gypsum board painted post it yellow. Some gypsum walls occur when there is an addition to a room. There is one CMU wall that is also painted over in post it yellow. Two walls occupy full size mirrors that are used during training when fighters are shadowing and learning moves. The mats are soft and slippery when sweat comes in contact with them. The carpet is soft for easier movement on and off the mat to other areas.

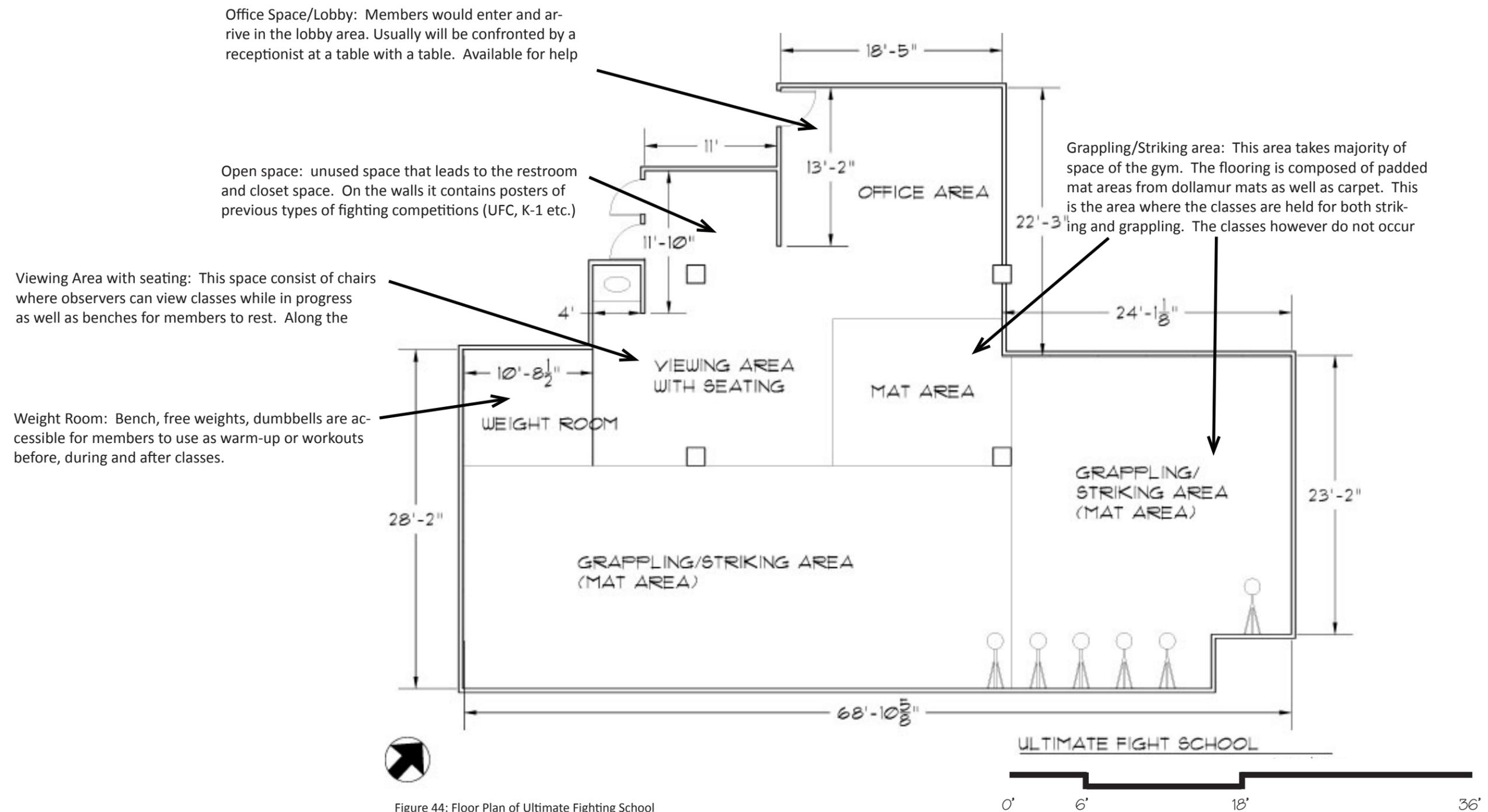


Figure 44: Floor Plan of Ultimate Fighting School

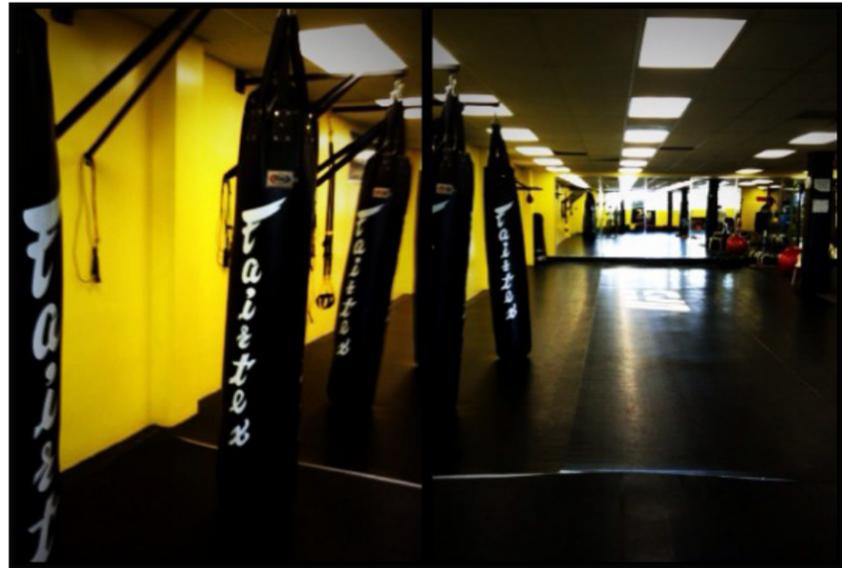


Figure 45: Interior shots of the Ultimate Fight School gym. Photo taken by Joni Ablay



Figure 46: Interior shot of grappling/striking area. Photo taken by Andrea P. Simpliciano

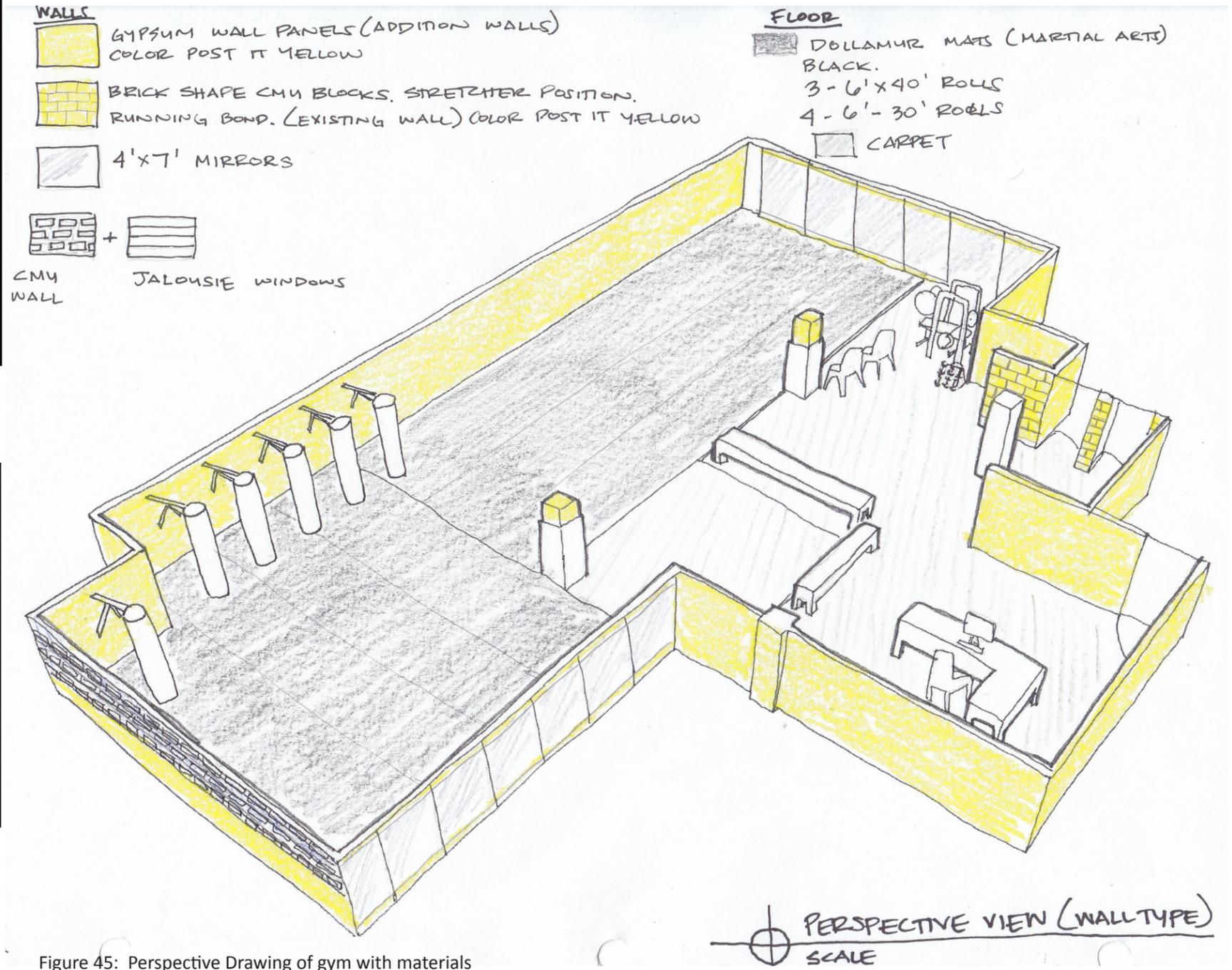


Figure 45: Perspective Drawing of gym with materials

## CASE STUDY #2: PENN TRAINING & FITNESS CENTER



Figure 46: Ariel View of the Penn & Training Fitness Center in Hilo, Hawaii. Goole Maps. Accessed 10-5-09



Figure 47: Streetview & entrance of the gym. Photo taken by Andrea P. Simpliciano

The Penn Training & Fitness Center is the main training location for Ultimate Fighting Championship lightweight fighter BJ Penn. In 2003 the Penn family took over the location of the Hilo Macaroni Factory and transformed it into a full functional Mixed Martial Arts and Fitness Center. It provides a place for youth to learn skills in jiu-jitsu and also a way for them to stay off the streets.

The Penn Training & Fitness Center provides various classes such as

- Yoga (Beginning, Intermediate & Advance)
- Muay Thai
- Boxing
- Children Jiu-Jitsu
- Turbo Kickboxing
- Adult Jiu-Jitsu (Gi & No Gi)
- Spinning (in-place cycling)
- African Dance
- Pilates

The classes offered range to mixed martial arts as well as other fitness programs that cater to a larger group of people and not minimized to just fighters.

Fitness Area: People arrive at the Fitness area which is located on Kino'ole street. The Fitness area consists of a variety of cardio and weight machines similarly found in common 24 hour fitness. The machines are all in new condition and are situated in areas for specific workouts for the body. For example, the treadmills and stair master are towards the front to cater to cardio and leg conditioning. Weights are found in the center and side towards mirrors. The mirror enables people to look at themselves when doing reps. The mirror gives people motivation to workout and allow them to see themselves lift. The atmosphere is clean and cool from the air condition. The view is the busy Kino'ole street in front of the gym. It is usually quiet but can get loud when a lot of people are using the gym. The smell is of sweat that comes from the machines that people use to workout.

Front Desk/Merchandise Counter: It is the first space you encounter when entering the fitness center. The front desk is also the location to purchase official Bj Penn merchandise. Many tourist and fans enter the gym to buy merchandise and also to look at the facility.

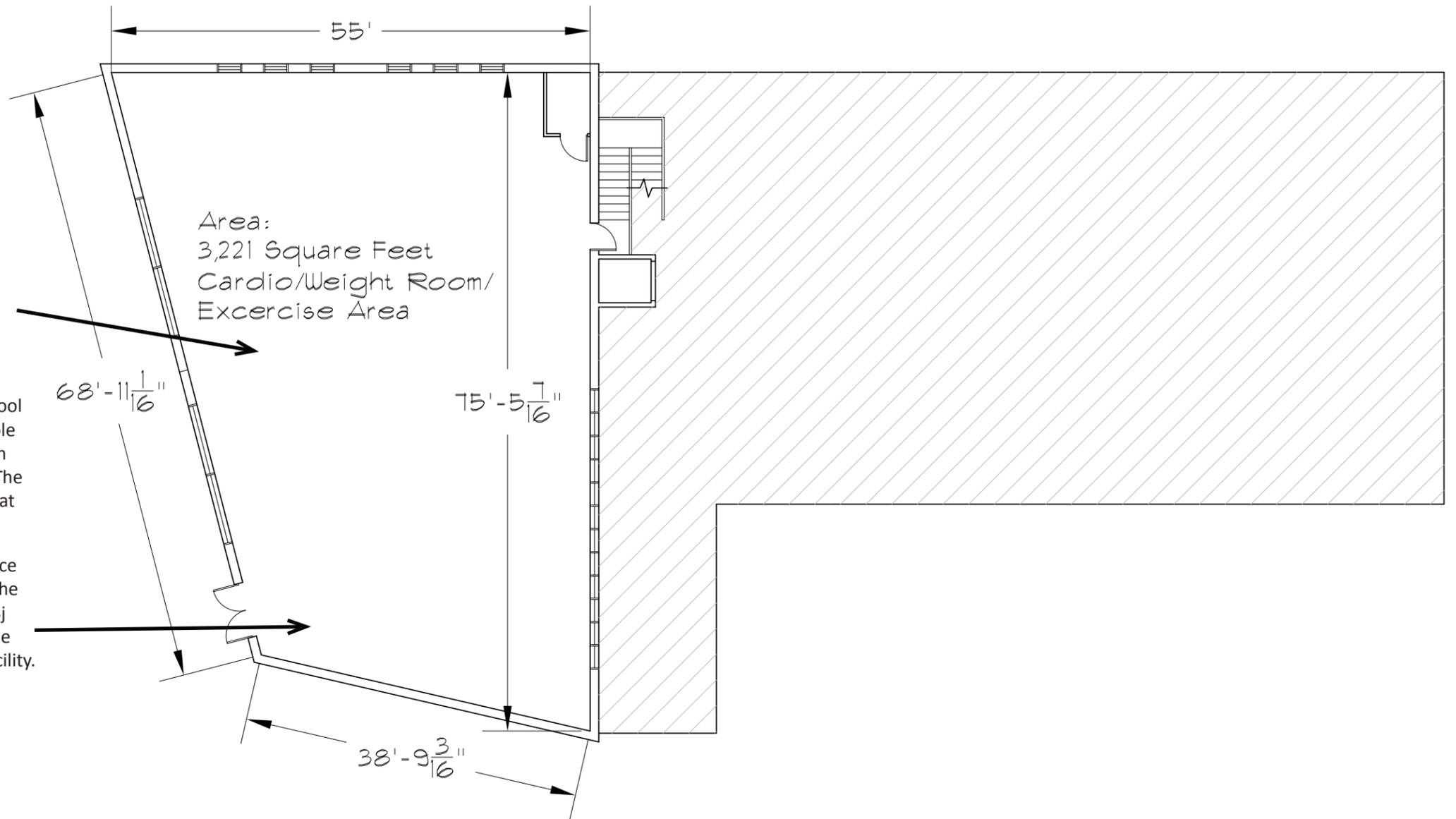
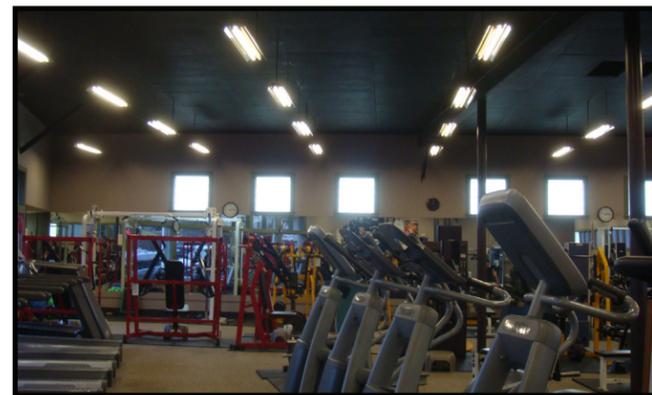


Figure 48: Street level floor plan of Penn & Training Fitness Center with photos of various spaces

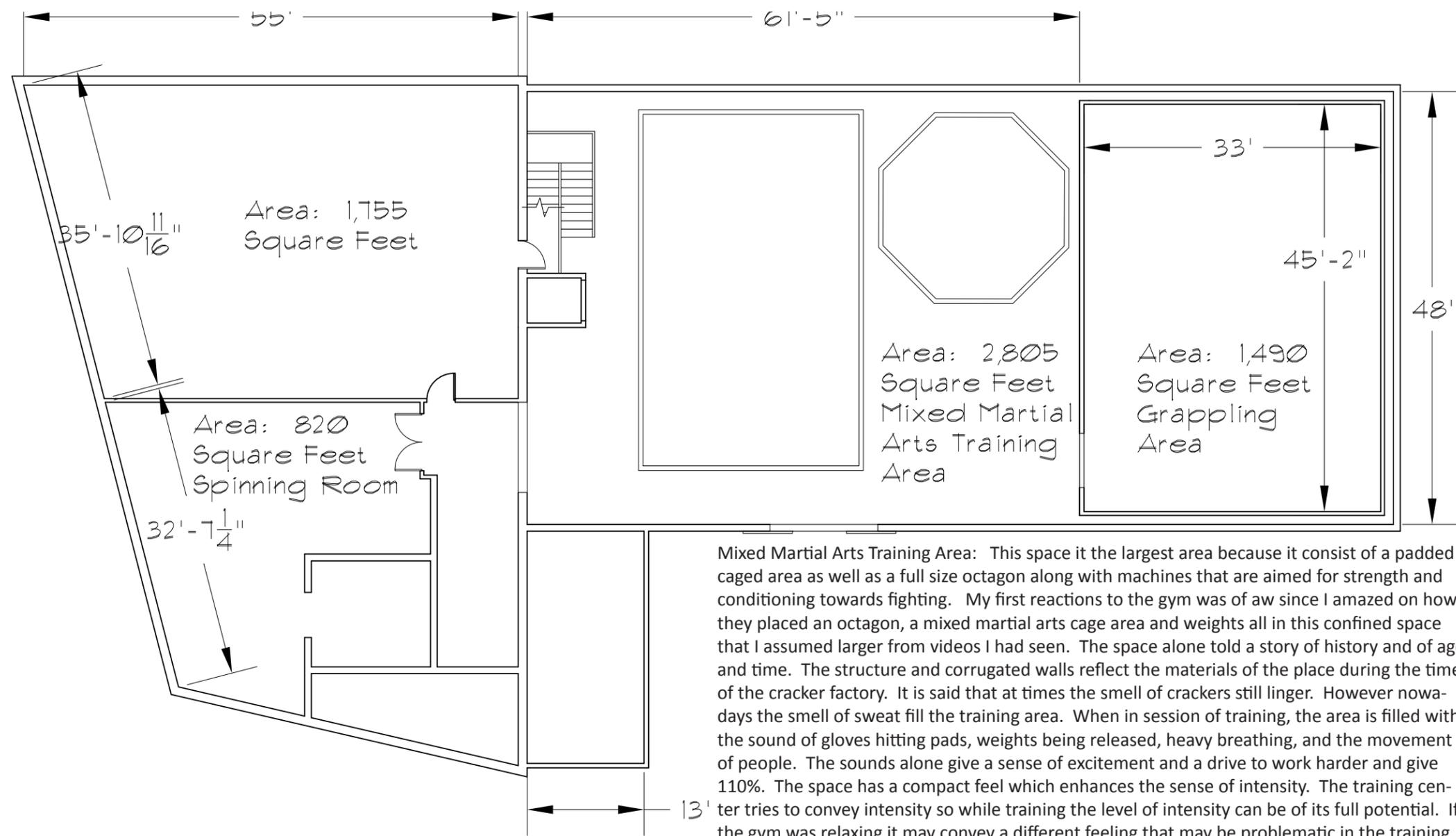


Figure 49: Street floor plan with photos



PENN TRAINING & FITNESS CENTER





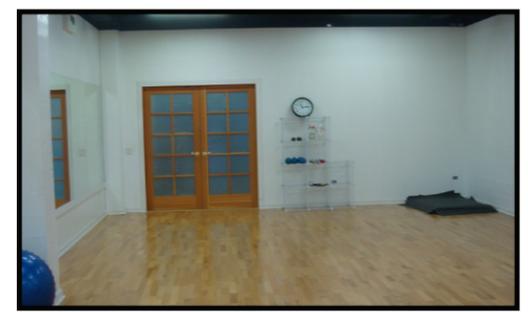
Grappling Room: A separate grappling room is attached to the Mixed Martial Art training area and consists of mirrors and matted flooring and walls. The mirror allow students to see how well they do a technique and how they can improve on movement and position. The mirror is also a tool to create excitement and intensity during grappling drills. When a student sees others practice it gives a drive to do your best and give your all no matter what. The padded walls allow for safety which is key in a grappling room. If an area isn't padded sufficiently someone could fall on a hard surface and injure a body part or cause spinal problems if one landed in the wrong way. This room is very humid and sticky particularly when students are practicing. With a gi causes students to sweat even more and allows it to go on the matted flooring. The sweat causes odor and can be slippery. For hygiene purposes, the mat is mopped after every practice to clean all the sweat that is left behind so no one will have health problems. The feeling of warm spaces can also aid to the intensity of training and training the body to endure sweat and heat and build endurance to outthink the surrounding conditions and focus on the task at hand.

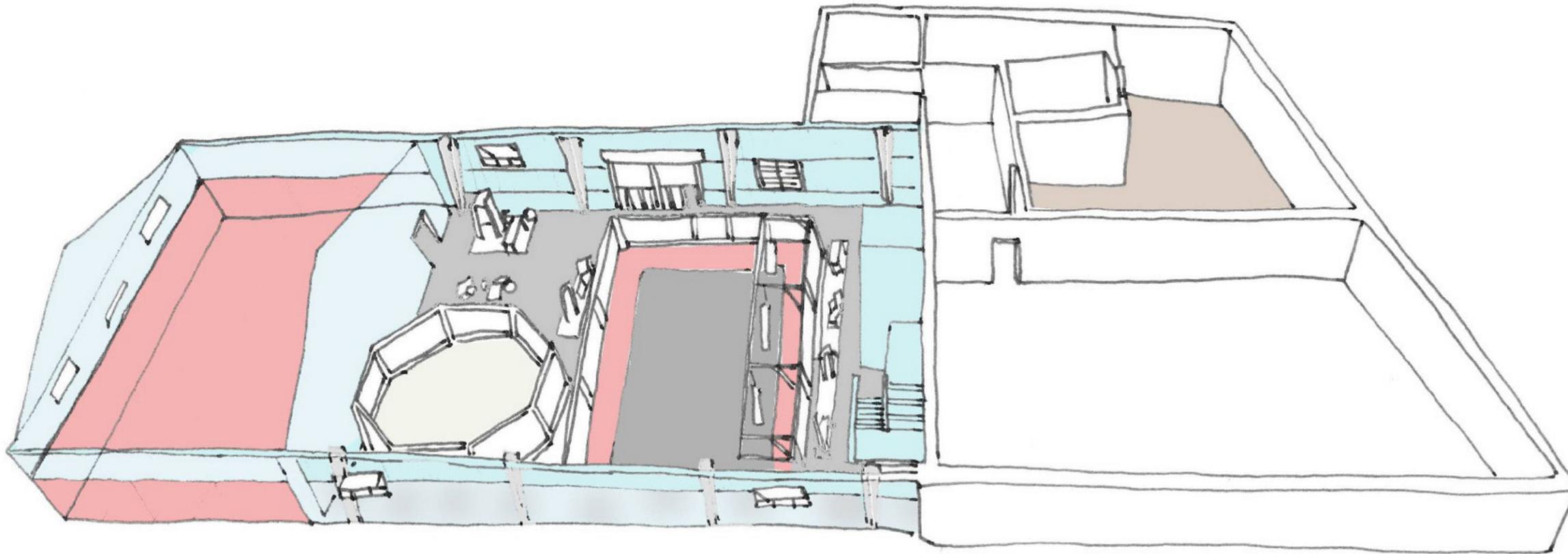
Mixed Martial Arts Training Area: This space it the largest area because it consist of a padded caged area as well as a full size octagon along with machines that are aimed for strength and conditioning towards fighting. My first reactions to the gym was of aw since I amazed on how they placed an octagon, a mixed martial arts cage area and weights all in this confined space that I assumed larger from videos I had seen. The space alone told a story of history and of age and time. The structure and corrugated walls reflect the materials of the place during the time of the cracker factory. It is said that at times the smell of crackers still linger. However nowadays the smell of sweat fill the training area. When in session of training, the area is filled with the sound of gloves hitting pads, weights being released, heavy breathing, and the movement of people. The sounds alone give a sense of excitement and a drive to work harder and give 110%. The space has a compact feel which enhances the sense of intensity. The training center tries to convey intensity so while training the level of intensity can be of its full potential. If the gym was relaxing it may convey a different feeling that may be problematic in the training process of fighters.

PENN TRAINING & FITNESS CENTER

Spinning Room: Wooded flooring room that is made for spinning and other exercises.

Figure 50: Below grade floor plan with photos of various spaces





WALL SYSTEM

- Soffit Metal Wall Panels (Painted light blue/aqua/green)
- Concrete Wall (Painted light blue/aqua/green)
- Dry Wall (Painted light blue/aqua/green & White)

FLOORING SYSTEM

- Mat Flooring for Grappling
- Wooden flooring
- Concrete Flooring
- Steel Rigid Frame

Figure 51: Perspective sketch of materials used within the gym

## CASE STUDY #3: 808 FIGHT FACTORY



Figure 52: Ariel view of 808 Fight Factory

The 808 Fight Factory is located in the heart Waipahu just off of Farrington Highway and in an industrial/warehouse looking area. The school is located right above an existing mechanic garage and the gym has adapted to the space of two garages as their grappling and boxing areas to train. The gym offers classes in wrestling and submission grappling on Tuesdays and Thursdays and mixed martial art training such as kickboxing on Mondays, Wednesday and Fridays. The two classes are never done at once due to space and time as well as size of classes that want to train. The gym focuses on training men and women who are in the frame of mind to compete in mixed martial art fights and competitions.

### **Ventilation**

The only type of ventilation is the large garage doors in the front of the gym that allows access to wind and air. There are also windows towards the back of the gym which are closed

and gated which reduces the chance of air. The limited amount of air impacts the smell that accumulates within the training areas. The less air allows students to sweat and burn more during class which makes the equipment at times wet and not sanitary to use. The humidity within the space is uncomfortable for those not training however since students are focused on training they don't notice the air circulation.

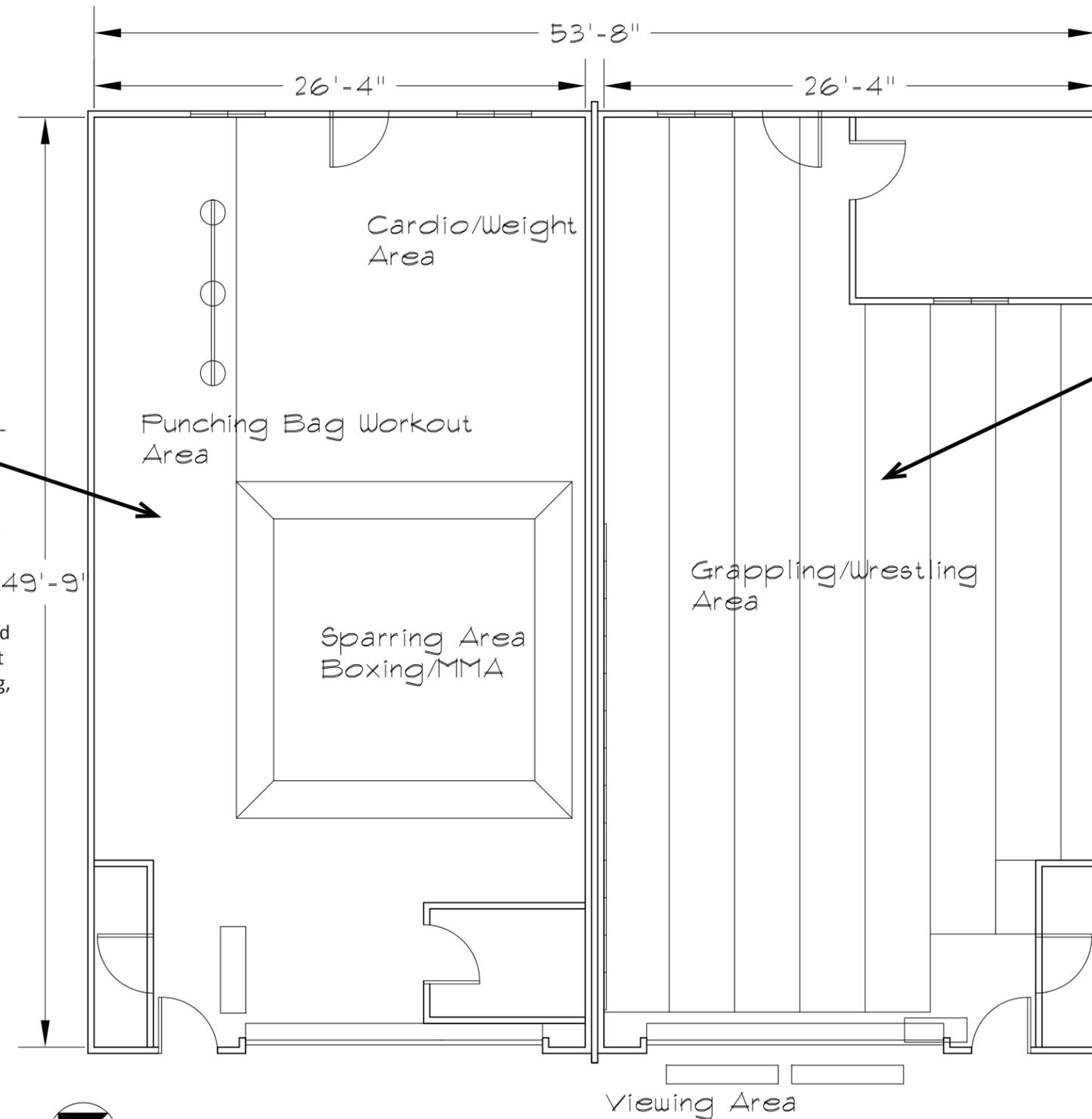
### **Lighting**

Since classes are held at night, lighting is important in order for practice to occur. Practical fluorescent tube lighting is used to light up large amounts of the gym. The lighting creates adequate vision for students to practice and isn't too dim either. The lighting from outside also draws cars and people from outside because it catches attention due to the sounds and bright lights. Watching from outside of the gym creates a different perspective as if one was to watch within the gym. By watching within the gym, I was able to feel like I was closely engaged with those training and could see first hand techniques that were being taught and could hear reactions from students as well. From afar I wasn't able to have this understanding of training compared to when I sat on the same mats as the grapplers.

### **Texture**

The walls of the gym were mainly Concrete masonry units painted black and white. I can't get to a conclusion on why those colors were chosen since these colors don't have relevance to the gym. The mats are the only colors within the gym as well as the boxing ring. The addition areas are made of wooden stud walls while the flooring was left existing poured concrete. All these elements are covered to hide the existing conditions.

The Mixed Martial Art training area also takes the space of a garage space that's 9'-11" tall and consists of a boxing ring, punching bags, mirrors, and a weight/conditioning area fit for a fighter. The size of the garage with the equipment makes movable space very tight and restricts the amount of people to practice in order to follow safety precautions. The room doesn't smell as odorous as the wrestling/grappling training area but there is hype that is much stronger due to the loud music that is played to pump up a student to do various exercises like shadow boxing, running or punching the bags.



The grappling/wrestling room is located in one of the garages above the mechanics garage. The room has a strong odor of sweat and toe jam due to the type of training that happens within the space. The flooring is mostly covered in grappling mats with a few mirrors and wall pads placed randomly. In the corner is a room that was added to the space as an office space. There is one television that can be entertaining for those who are training or just leisure when there is a break. Equipment is scattered throughout the space and are at hand in the case they are needed for an exercise. The majority of people that train are dominantly male with a few females here and there. The grapplers/wrestlers practice in shorts and t-shirts and not in the formal gi that many



Figure 53: Floor plan of 808 Fight Factory

808 Fight Factory Floor Plan

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



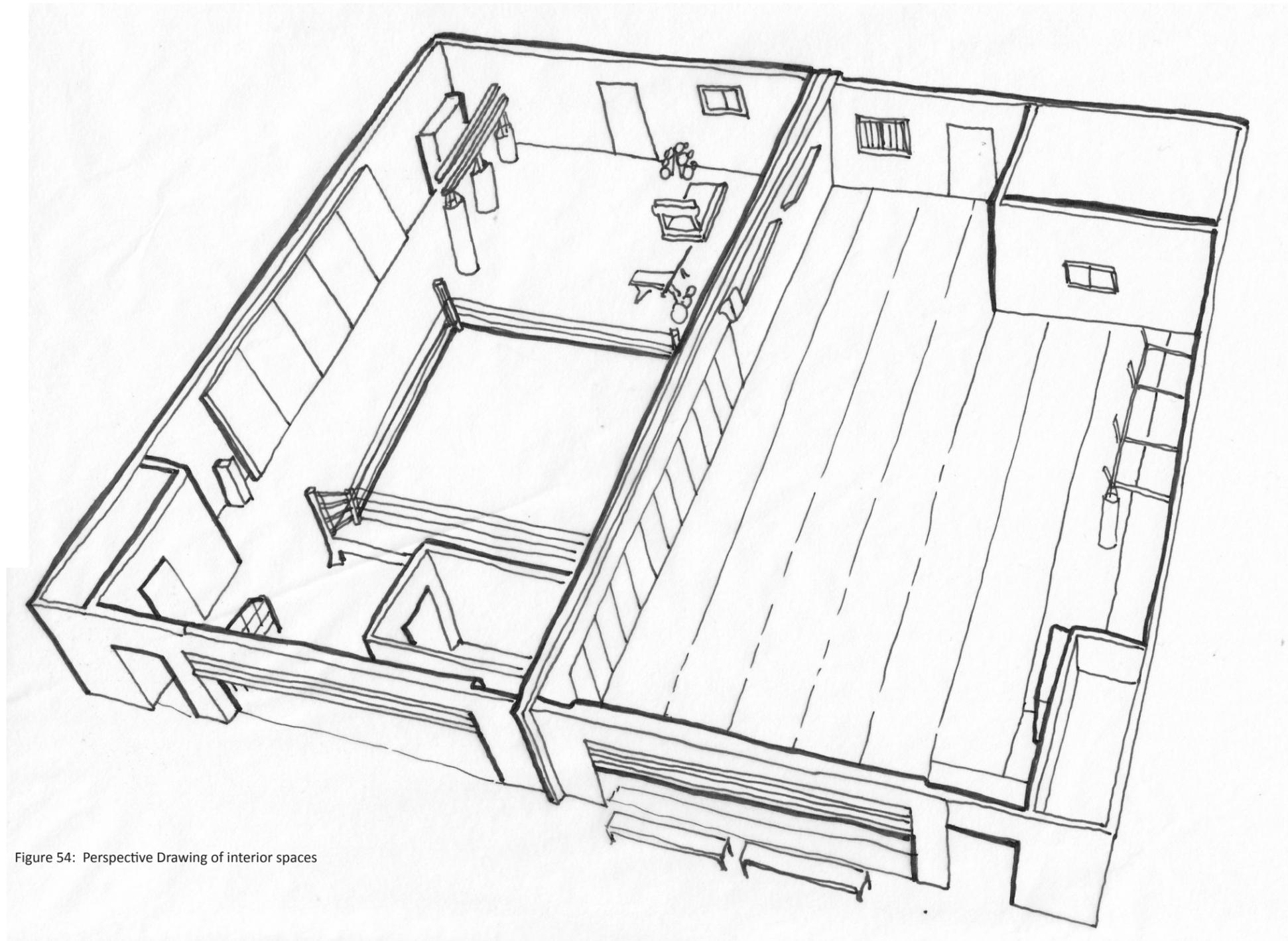
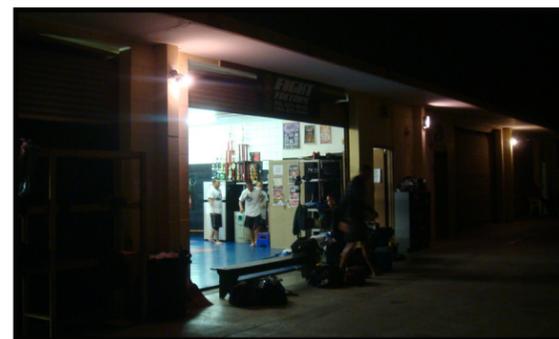


Figure 54: Perspective Drawing of interior spaces



## **REFLECTIONS**

**SIMILARITIES:** By visiting the various types of mixed martial art gyms in Hawaii I was able to see similar traits about all three gyms. The gyms all had this feeling of intimidation and pressure, not a type of negative pressure but a feeling of being always being aware of your surroundings. The spaces allowed me to use various sense of my body which let me understand the level of engagement needed for training. The space also portrays intensity and discomfort where one is always trying to push one's harder and work harder to become a champion. These various feelings were expressed through seeing grappling mats laid on the floor and actually boxing/octagon spaces. Even if I didn't see these components, listening to the sounds that people make while grappling and striking tells a story all in its own. The sounds along with the smell of body perspiration add to the overall experience that this place isn't a place to just sit and relax, but a place that is dependent on hours of hard work to achieve success.

Another similarity is how each gym adapted to the amount of space it was given. Ranging from a empty floor to a old cracker factory to a garage, these gyms all were given an "x" amount of space and with that had to accommodate and fit all the equipment needed in order to become a sufficient gym. I thought of this as very interesting because I have noticed gyms to be places that are hidden within other buildings or warehouses and sometimes one could miss if not looking for them. It is interesting how gyms adapt to their surroundings and are able to turn a unusable space into a full energize physical work station for mixed martial arts.

**DIFFERENCES:** There were only a few differences here and there regarding the gyms such as how one would separate striking and grappling while others preferred to stick them together. Another difference is the amount of equipment provided and space which allows for training. Penn training and fitness center contained a large amount of space for mixed martial arts and grappling area

# PART 5

## DESIGN OF A MIXED MARTIAL ARTS COMMUNITY CENTER

### COMMUNITY + FIGHTING = MIXED MARTIAL ARTS COMMUNITY CENTER

When approached by the phrase “Build Community by Fighting” what thoughts come into your mind? At first it might be puzzling to understand how these two extreme conditions can at one point benefit each other for the better. The two key words “community” and “fighting” are the two approaches I will try and define within my paper by regarding community as Pālama Settlement and fighting as mixed martial arts. My overall goal is to try and design a facility that suits the needs and wants of the Pālama Settlement mission statement which is “to provide a facility, services and programs that will support, improve, and enhance the cultural, social, educational, physical, and emotional well being of individuals, families and communities that surround the Pālama Settlement and beyond”<sup>94</sup> and still have the ability to provide programs that instill values, service and teach people of the community the impact mixed martial arts has.

Pālama Settlement and mixed martial arts have a strong tie to one another. This tie is found in a style known as Kajukenbo. What is Kajukenbo? It was a style that was developed by five men in the Pālama Settlement when various cultures used martial arts as a way for practice, entertainment, self-defense and survival. The area of Pālama Settlement was rugged and dangerous which made fighting the only option of survival and defense. These five boys named Adriano Emperado, Peter Choo, Joe Holck, Frank Ordonex, and George “Clarence” Chang developed a system that could be used as self defense on the streets. They were all experienced in western boxing although each of them had a specific specialty in martial arts. Adriano Emperado

---

<sup>94</sup> Palama Settlement. Mission Statement. <http://www.palamasettlement.org/>. February 4, 2010.

had a background in jiu-jitsu, judo, escrima and kenpo jiu-jitsu. Peter Choo was strong in boxing and knew of Korean karate, kenpo jiu-jitsu and Danzan ryu-jiu-jitsu. Joe Holck had a background in Danzan Ryu jiu-jitsu and Kodokan Judo training. Frank Ordonez knew Danzan Ryu Jiu-jitsu and Kodokan Judo while George “Clarence” Chang practiced Chinese boxing called Sil-lum kung fu in china and Hawaii.<sup>95</sup>

By having a background in some type of martial art the men came together to form a group called “The Black Belt Society”. The sessions of which the training took place occurred in locations around Halawa Housing and at Kaheka Gym where the current Pālama Settlement is located today. Halawa housing was filled with civilians, veterans and military however before WWII ended the military houses were vacant. The five men of the black belt society moved from building to building practicing the evolving art so no one could witness the techniques shown. They studied and blended combinations from each type of style and distinguished strengths and weaknesses as well as found gaps within fighting the styles.<sup>96</sup>

The men began to merge different techniques together such as karate, boxing, kenpo, kung fu and escrima. They soon began putting together fighters such as boxers vs. judoka, karate practitioners vs. boxer, jiu-jitsu vs. kenpo and so forth. The main focus was to put their various arts into practice in their own backyard. They had the set of mind that the opponent would not be of one that practiced movements of martial arts but street thugs that would carry a knife as a way to fight. With this type of fighter in mind the five men of the black belt society developed kajukenbo as a self defense tactic that can counter attackers on the streets. If it would be a grapple or choke situation jiu-jitsu would play its part while striking would consist of boxing. Kajukenbo also isn’t like most other styles because it relies on combination techniques unlike traditional styles that rely on one type of style. The ability to combine techniques is arranged so that each technique will set

---

95 Bishop, John Evan. Kajukenbo-the original mixed martial art. www.kajukenboinfo.com. Chino Hills. 2008 pg. 15

96 Bishop, John Evan. Kajukenbo-the original mixed martial art. www.kajukenboinfo.com. Chino Hills. 2008 pg. 16

97 Rathbone, Jim. James Mitose and the Path of Kenpo. United States: White Tiger Productions. 2006. Pg. 55

up the next by following the reaction and action of an attacker's body.<sup>97</sup> It also was a technique that's main focus was for self defense purposes. The self defense soon became the formation of the beginnings of mixed martial arts in Hawaii.<sup>98</sup> For this cause the name Kajukenbo is named after the main martial arts that comprise it which are

**KA** (Karate) - long life that is from karate which is an art that places emphasis on powerful and hard techniques.

**JU** (Judo & Jui-jitsu) – happiness that is a form of judo and jiu-jitsu which is an art form that emphasizes locks, throws and sweeps.

**Ken** (Kenpo) – Fist which is a form called Kenpo which is fluid hand techniques that were formulated in Okinawa and China.

**Bo** (Chinese and Western boxing) – a style that originates from Chinese and American boxing. Chinese boxing also referred to as kung fu has an emphasis on agility and flexibility as well as evasive movements that flow together.<sup>99</sup> The area of Pālama Settlement also influenced a form of kata movements by Adriano Emperado which was similar to karate forms called Pālama sets. Formerly known as pinan, the Pālama sets were 14 different types of kata that many techniques of kajukenbo was taken from and incorporated into its martial arts.<sup>100</sup>

The focus of Pālama Settlement is to help youth who are less fortunate and who are struggling to have to opportunity to take part in various activities. In the Kalihi Pālama Action Plan it states that they “treasure the youth and are dedicated to helping them create a bright future”.

<sup>101</sup> The future lies in the young and in order to pass knowledge it is important to provide a place to encourage this interaction of teaching and sharing for youth. The proposed facility is just a small part of this larger picture of Pālama settlement. It can have the opportunity to provide programs, services and a facility that can change and enhance the already existing recreational conditions that Pālama Settlement has been known for.

---

98 Bishop, John Evan. Kajukenbo-the original mixed martial art. www.kajukenboinfo.com. Chino Hills. 2008 pg. 17-18

99 History of Kajukenbo. Mateo Kajukenbo. [http://mateokajukenbo.com/history\\_of\\_kajukenbo.htm](http://mateokajukenbo.com/history_of_kajukenbo.htm). November 23, 2009

100 Rathbone, Jim. James Mitose and the Path of Kenpo. United States: White Tiger Productions. 2006. Pg. 55

101 City and County of Honolulu Department of Planning and Permitting. Kalihi-Palama Action Plan. Townscape, Inc. Honolulu, HI. 2004. Pg. 1-2

## SITE & CONTEXT DOCUMENTATION/ANALYSIS

Pālama Settlement is located on in the Kalihi Palama area bordered by the H-1 freeway , Palama Street and North Vineyard Boulevard. The site consist of various structures that house different activities for the surrounding community. The following maps show the various areas that make up Pālama Settlement.

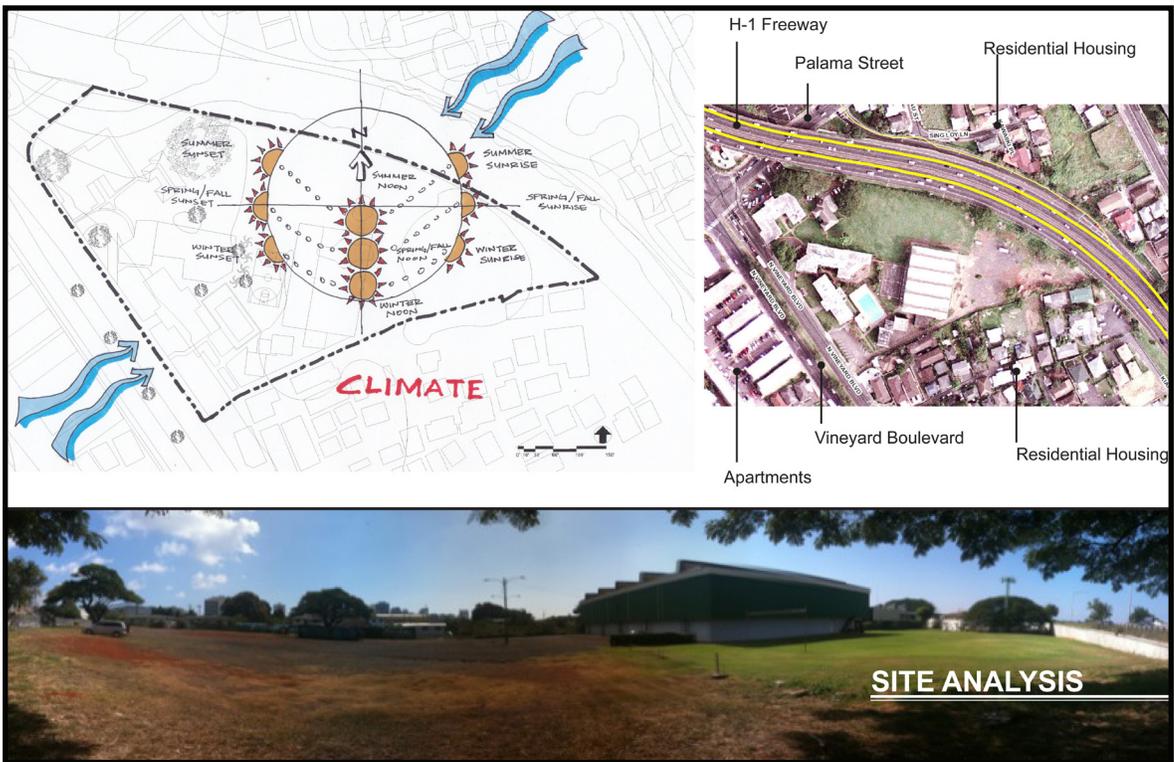


Figure 55: (Top Left) Drawing shows climate conditions on site. (Top Right) Surrounding conditions.

(Bottom) View of site from the freeway



Figure 56: Map of various buildings on the site

## **HISTORICAL BACKGROUND**

Pālama Settlement began with the construction of a chapel on the corner of Liliha and King Street on June 2, 1896. During this time the area was a hub to many working class Hawaiian families. The chapel was an important landmark to the Pālama area because it was a location that families could go for prayer meetings, Sunday school, choir, kindergarten and spiritual activities. Another area located east of the Pālama area across from the Nu'uaniu Stream is an area where many immigrant families dwelled in very harsh overpopulated conditions that caused health issues. In 1900 a house fire overtook four blocks and demolishing the housing within them. The residents who lost their homes evacuated to live in the newly built tenements in Pālama. These living areas were packed with groups of people who shared living and cooking facilities. The Pālama Chapel was sponsored by the Central Union Church who quickly realized something needed to be done to accommodate the movement of the people into Pālama. They decided to use a settlement movement method that is similar to New York City's University Settlement and the Chicago Hull-House.

These settlement houses or so they were called were regarded as "independent instruments of social reform. Charities did 'for'; settlements did 'with'. Users were not 'needy clients' but 'neighbors' building a better community for themselves.<sup>102</sup> The settlement houses as they were referred to be a place those settlers could raise their families and find ways to learn and design programs to fit the needs of the people.

There was a need for a director to head this so called settlement house and the person who was chosen is James Arthur Rath Sr. He was born in Hyderabad, India and was a social worker in Springfield, Massachusetts. Both James Rath and wife Ragna Helsing Rath began to transform

---

<sup>102</sup> Center for Oral History. Social Science Research Institute. Reflections of Pālama Settlement. Volume 1. August 1998. January 8, 2010. Pg. xxx

Pālāma chapel into a settlement home. The area soon became known as Pālāma Settlement because it was a chartered, independent, non-sectarian organization that received contribution from the islands elite.<sup>103</sup> However the settlements main purpose was to meet the needs of its community. The idea of a settlement began with a similar movement in England during the 1880s where university students were able to so call settle with the people of a deprived area.<sup>104</sup>

The first nursing department, day camp for children with tuberculosis, pure milk depot, day nursery, night school and low rent housing were made at King and Liliha Street site. Following these structures in 1908, an indoor pool was open as well as a gymnasium and bowling alley. The playground, tennis courts, and basketball court were added and led to the formation of the Pālāma Settlement Athletic Association in 1916.<sup>105</sup> The settlement which has been around for over 100 years is a place to provide social workers, health providers, and leaders of the community a chance to have an understanding of the conditions of the neighborhood and find ways to improve it. The unique side by side interaction of the social workers with the people made it more efficient in finding the help that was needed.

In 1925 the Pālāma Settlement moved to its present location on Vineyard and Pālāma Streets where it occupies eight acres of land. Presently, the structures on the site embody four major principles that make Pālāma Settlement unique from anywhere in Hawaii. The four main focus points area:

- 1. Medical Opportunities**

Pālāma Settlement provided medical and dental services in the early fifty years of its existence. Some of these services included free dental care through the Strong-Carter Clinic, day camps to teach health, hygiene and stress management, branch dispensaries, outpatient, birth control, well-baby and venereal disease clinics and public health nursing. However during the 1940's the

---

103 Center for Oral History. Social Science Research Institute. Reflections of Pālāma Settlement. Volume 1. August 1998. January 8, 2010. Pg. xxxi

104 Hillman. Settlements and Community Centers. November 17, 1966. January 10, 2010

105 Center for Oral History. Social Science Research Institute. Reflections of Pālāma Settlement. Volume 1. August 1998. January 8, 2010. Pg. xxxi

medical services were taken over by City and County and state programs that changed the services towards what was needed for the surrounding neighborhood.

## **2. Exploration of creativity towards activities**

Pālama Settlement is known for being a place for people old and young to learn, gather, and expand their creativity. It was a place for people to escape the run down conditions of the outside neighborhoods and become involved in various activities that offer innovation and creativity.

## **3. Athletic education**

Pālama Settlement was referred to as “the sports center of Honolulu” mainly because it held the best gym and swimming pool.<sup>106</sup> It was a place that aloha was shared where people could grow and be proud of who they are. These athletic facilities housed youth and taught them not only about sports but about the necessity of developing strong family ties and gaining a good education. Athletics was the motivator on how they would achieve these goals even until this day. Sports are a major part of Pālama settlement for the past 100 years because it provided a way for people to cope and escape temptations from the streets. Basketball, baseball, barefoot football, swimming, volleyball and gymnastics are all programs that are found in Pālama Settlement. They use sports to make a difference as in Pakolea which is a program that provides motivation for personal growth, athletic achievement and recognition by a combination of sports, academics and rewards for the young people of today.

## **4. Serving and Uniting the Community**

Ever since the Chinatown fire Pālama Settlement is an important place for building community spirit and organizing leadership. It has the ability to bring together people from various ethnic backgrounds by providing social and organizational center and leading the community in identifying and solving problems.

---

<sup>106</sup> Gee, Pat. Barefoot Days: Once the sports center of Honolulu, Palama Settlement celebrates its 100th anniversary with a proud tradition of helping children to a better life. Honolulu Star-Bulletin <http://archives.starbulletin.com/96/05/29/sports/story1.html>.2/2/2010.

By following the historical significance it has towards the community and the kajukenbo history towards mixed martial arts creates an opportunity to improve the existing spaces to accommodate these two factors. The new proposed facility will coincide with the existing gymnasium and provide space for more programs, space for rental, and adaptation of area for various types of activities throughout the day while still providing a way to train and teach mixed martial arts. This connection will allow interaction between uses throughout the facility and instead of being two separate buildings, have the ability to create a sense of unity and community through open spaces.

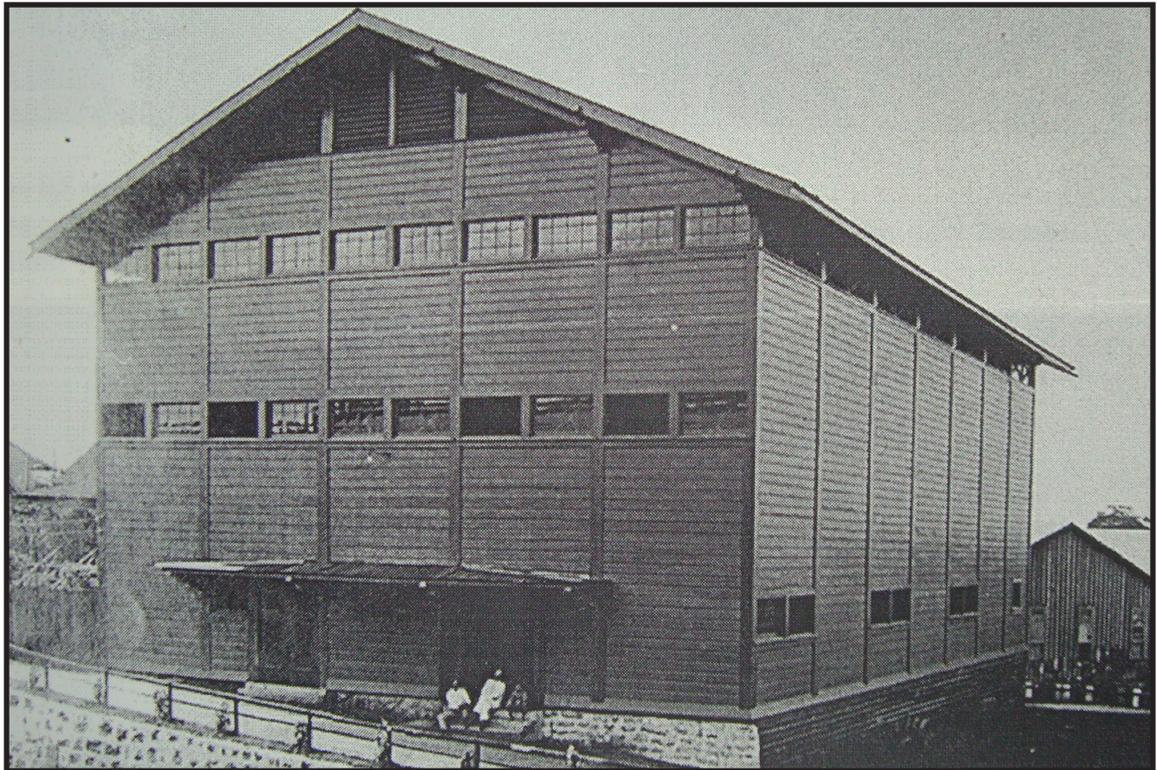


Figure 57: Original Pālama Settlement Structure with swimming pool and club rooms on the first floor and gym on the second floor. Center for Oral History. Social Science Research Institute. Reflections of Pālama Settlement. Volume 1. August 1998. January 8, 2010. Pg. xv



Figure 58: Temporary Pālama tenements built for those without homes after the Chinatown fire in 1912. Center for Oral History. Social Science Research Institute. Reflections of Pālama Settlement. Volume 1. August 1998. January 8, 2010. Pg. xvii

## **ACCESSIBILITY**

1. Pedestrian: The site is highly used by youth from neighboring areas particularly after school. The site provides various sidewalk passage ways on all sides of the site which lead to the gymnasium as the point where youth participate in activities.
2. Vehicular : car access currently is very difficult and does not follow code requirements. The proposed parking area will still remain in the same area however the entrance and exit points will change. Primary traffic to and from the site for parking will come from Kiapu Place which is a street that runs along the H-1 freeway and into a Korean elderly housing which Pālama Settlement may buy out in the future for further development. Surrounding traffic generators can be found on the main streets surrounding the site which area Vineyard and Pālama. Public transportation via bus is accessible on Vineyard Boulevard to accommodate youth and elderly who use the site and do not drive.
3. Parking: Currently the site provides 39 parking stalls total to accommodate the various programs on site. As for the gymnasium, there is no paved road or marked stalls for parking but just an empty gravel lot where cars randomly park. I propose to place 160 which should accommodate the gymnasium and proposed mixed martial arts facility. Code regulation from the Land Use Ordinance states that facilities for recreation require 200 square feet (LUO pg. 110).  
 $12,200$  (first floor square footage) +  $10,800$  (second floor square footage) =  $23,000$  total square footage /  $200$  sq. ft. (LUO per square foot for recreation space) =  $115$  required parking stalls for proposed structure. Following the Land Use ordinance of 100-150 required number of accessible parking are 5. Table 1106.1 in IBC). One way traffic 12 feet minimum. Two way traffic is 24 feet minimum. Stall dimensions: Typical:  $18'-6''$  in length by  $8'-3''$  in width. Handicap:  $19'-0''$  in length by  $8'-0''$  in width with a  $5'-0''$  by  $19'-0''$  loading area.

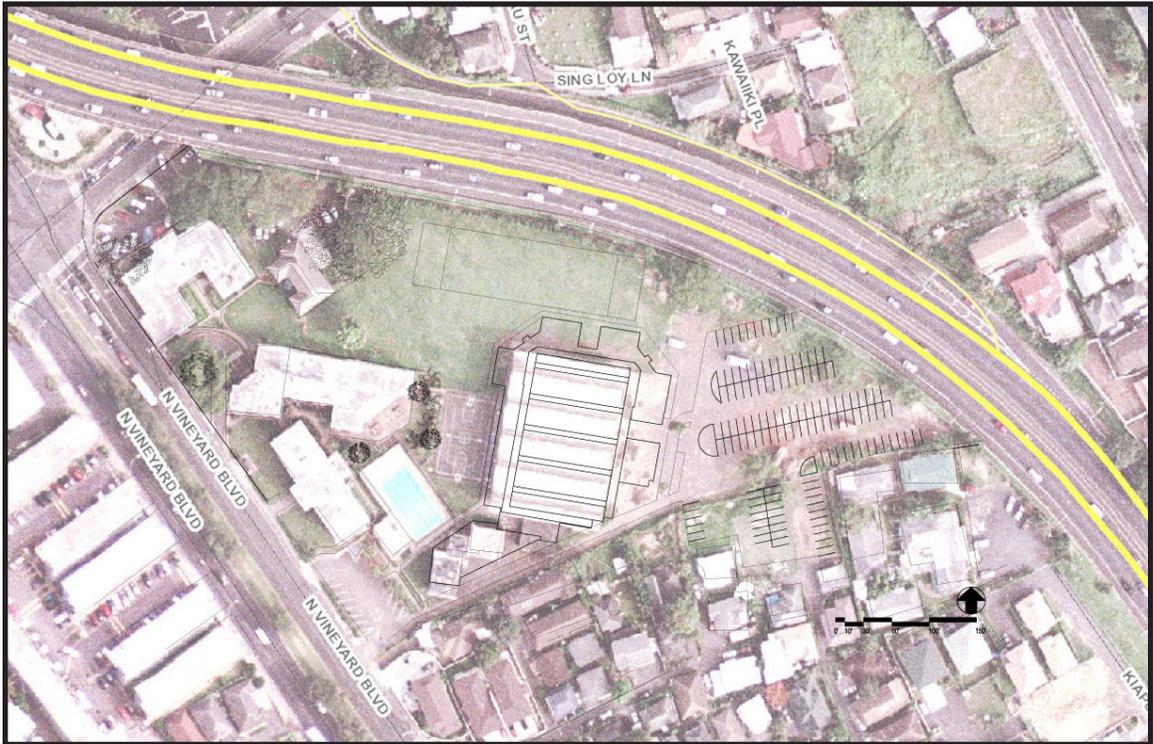


Figure 59: Site plan with proposed parking area

## **BUILDING CODE AND ZONING INFORMATION**

### Address

810 North Vineyard Boulevard

Honolulu, HI 96817

Tax Map Key: 1-7-045:001

Historical TMK Sequence: 99

Area (square footage): 274,183.000

Area (acres) 6.556

Ohana: None

### Land Control Codes

Code Type	Code Description
-----------	------------------

Flood Zone	Firm Zone X
------------	-------------

Height Limit	30 Feet
--------------	---------

Historic Site Register	No
------------------------	----

Lot Restrictions None

SMA/Shoreline Not in SMA

Special District Not in Special District

State Land Use Urban District

Street Setback	None
----------------	------

Property Line Setback: 30 Feet

Zoning	R-5 Residential District
--------	--------------------------

Maximum Building Area: 50 percent of zoning lot

FAR: 2.5

Code: 2006 IBC Building Code

Occupancy Classification

Section 303 Assembly Group A

303.1 Assembly Group A: Assembly Group A occupancy includes among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food and drink consumption; or awaiting transportation.

Type: A-3: Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to gymnasiums (without spectator seating, libraries, community halls, etc.

Section 507: Unlimited Area Buildings

507.6 Group A-3 buildings. The area of a one-story, Group A-3 building used as a place of religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor swimming pool or tennis court of Type II construction shall not be limited when all of the following criteria are met:

1. The building shall not have a stage other than a platform.
2. The building shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The assembly floor shall be located at or within 21 inches (533 mm) or 5 feet of street or grade level and all exits are provide with ramps complying with Section 1010.1 to the street or grade level.
4. The building shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

## **PROGRAM: INSTILL VALUES**

In developing a program that teaches fighting there is also a negative approach which many people view fighting to be. Mixed martial arts are a form of fighting because it places two opponents against each other in a manner that could be dangerous. Common word “violence” is often associated with mixed martial arts because it’s a system that incorporates punches and kicks. To a person who isn’t educated on what mixed martial arts will automatically see this brutal and aggressive style of fighting unfit and unsuitable to even be taught and shown to youth. However, mixed martial arts is more than just a punch and a kick, it’s an art that teaches various values in life. Penn Hawai’i Youth Foundation is an existing program that focuses on teaching youth fundamentals of mixed martial arts through jiu-jitsu. The live like a champion project is also a project that focuses on targeting martial arts as a way to have an engaged living and teaching that is more than teaching people how to fight. The live project focuses on life, education, social consciousness, and creating martial art schools that teach people to be better whether they be youth or adults. It’s a way for teachers to be examples and go beyond the art and change lives, families and communities and instilling value in the community. It is a project that will let youth and adults take their mixed martial arts “out of the ring and into the world.”<sup>107</sup>

Pālama Settlement can also propose a similar program as a way to encourage positive values such as akahi (kindness), ha’aha’a (humility), ho’okipa (giving/respect), ohana ( family), alulike (teamwork) and ahonui ( patience and perseverance)which can be incorporated into the teaching of mixed martial arts.<sup>108</sup> These values are significant to Hawai’i and are a strong foundation for youth to instill into their lives. The goal can create guidance for risk youth to create paths, give tools that can be taught through martial arts while rooting youth with Hawaiian values. Mixed martial arts can show youth that strength comes from the mind and not from the fist that

---

<sup>107</sup> Live Like a Champion website. <http://livelikeachampion.squarespace.com/> Accessed: March 1, 2010

<sup>108</sup> Penn Hawaii Youth Foundation. [www.pennyouth.org/index.php](http://www.pennyouth.org/index.php). Accessed: February 16, 2010.

many people assume it to be. The mental and physical discipline it takes to succeed is not about being tougher or the best but about overcoming adversity.<sup>109</sup>

### **SERVICE TOWARDS YOUTH**

The program can service youth as well as adults on how to train the body and mind in physical fitness, mixed martial arts training in various forms of fighting arts, self-defense, health education, substance prevention and awareness, community service and involvement, life skill training, problem solving and decision making, peer mentoring, social skills, and cultural and educational activities. The program as a whole will be more than just fighting but provide a way to instill discipline and respect to youth encouraging them to understand the importance of family, culture and community and identify it through training in martial arts. Bj Penn who is a role model particularly in Hawai'i stresses the importance of reaching out to youth and states that several of his students at the Penn Hawai'i Youth Foundation were previously considered "at risk" but today stand proud and represent a testament that young people can be when engaged, inspired and mentored through martial arts and serve as a strong force for positive and social change".<sup>110</sup>

---

<sup>109</sup> Penn Hawaii Youth Foundation. The Foundation. [www.pennyouth.org/index.php](http://www.pennyouth.org/index.php). Accessed: February 16, 2010.

<sup>110</sup> Penn Hawaii Youth Foundation. About Us. [www.pennyouth.org/index.php](http://www.pennyouth.org/index.php). Accessed: February 16, 2010.

## **PROGRAM-EXISTING SPACES**

The Pālama Settlement provides activities for youth and senior citizens. During the week, Pālama Settlement provides a haven for senior citizens during the morning and youth during the afternoon after school. During the week the youth use three main areas on the site which are 1. Gymnasium 2. Pool 3. Game Room located in the Administration building (Higashino Building). According to the Director of the Recreation Division Vincent DeBina Jr. he states that there are approximately around 250 youth can use the site at one time particularly during the weekends. During the weekdays the number of youth changes. The youth come to Pālama Settlement as a haven and as a place to participate in the open pool and gymnasium where they can shoot around.

During the morning however senior citizens from the area use the multipurpose room on the second floor of the gymnasium to do arts and crafts. This multipurpose room consists of mirrors, chairs and padding for the floor. Various activities occur within these rooms such as hula, karate, tai-chi etc. On the opposite side is a small room which is the weight room that houses a few machines and free weights. This area is closed locked and not open to the public.

### **PARTS OF PROGRAM**

A. Morning Session: geared towards senior citizens between the ages of 50 through 85 years. Registered senior citizens currently are 400. Activities run between 8 am to 12 noon Monday through Friday. The activities consist of:

1. Country Line Dancing: Average 80 to 150 senior citizens a day (classes range from beginner's class to advance beginners class to intermediate class to advance class.
2. Tai-chi class
3. Luk-tong (Chinese exercise)

4. Hula
5. Arts & Crafts
6. Sewing
7. Mah-jong

B. Youth Program: geared towards youth from elementary through intermediate. Activities run from 2:30 to 6 pm Monday through Friday. The activities consist of Intramural programs which are all year round. Teams from different elementary and intermediate schools participate in activities such as:

1. Basketball
2. Flag football
3. Tackle football
4. Volleyball
5. Swimming

Summer Enrichment Program: occurs Monday through Friday from June through July. Made for youth ages 5-11 and occurs 9 am to 5 pm providing similar activities as the youth program. Alongside this program are field trips for youth and cultural activities.

C. Rental Program: Clubs from outside of Pālama Settlement can rent out spaces to provide classes. Private clubs consist of Karate, Aikido, volleyball etc. Rent can also be used towards the gym where organizations rent in order to hold tournaments for various sports. This brings financial income to Pālama Settlement and helps pay for the programs and facilities.

Activities within the enclosed gymnasium

The enclosed gym consists of one regulated size basketball court and a smaller court. However the overall space can accommodate three basketball games if needed. The types of activities that



people)

Swimming (Lanes): 10 lanes with 1 swimmer each lane

10 people minimum

TOTAL: 300-400 people use per

day

Addition:

Karate club:

20 people (class certain days)

Aikido people:

40 people (class certain days)

Volleyball club

100 people

Total: 460-560 people

The amount of people varies during different times of the day to accommodate different type of activities. The morning hours are designated for senior citizen activities during the week while during the afternoon the youth use the same spaces for other activities. The amounts of people who use the site differ dramatically because there is constant movement of people coming in and out for certain activities at certain times.

## **PROGRAM: PROPOSED SPACES**

1. Competition Space: Since there is no distinguished structure designed for mixed martial arts and the various arts that compile the sport, the competition space will take place in the existing gymnasium which can hold large amount of spectators for tournaments as well as other sport events. The gym will allow the ability of mats or rings to be placed and removed in order to allow various activities to occur when needed. It is a large space that can enhance interaction and emphasize a sense of community.

### 2. Wrestling/ Grappling Space

The wrestling space has different needs compared to striking spaces. One reason is the fact that majority of the training is done on the ground which means efficient space is needed for maneuvering instead of punching and kicking. Grappling layouts tend to not have a strong order of reference and etiquette as traditional martial arts due. There is mainly an open space with matted flooring which is all that is needed within a wrestling/grappling space.

Circle shapes are commonly used during wrestling bouts such as sumo or competition wrestling. The circle can be seen as the perfect form with the possibility of an endless edge. All the edges of the perimeter are spaced equally away from the center of the circle. This shape provides wrestlers the space to maneuver and have freedom to grapple in a space that provides equality from the center. Grappling however don't use circular perimeters but use traditional square edges as competition and practice spaces.

### 3. Striking Space

By looking at various types of striking styles such as karate, tae kwon do and boxing it is evident that these spaces need enough efficient space to allow training activities for the development physical fitness and skills used for self defense as well as competition. Within traditional martial arts there

is an emphasis on order and etiquette. This order enables the practice to have certain spatial requirements for training such as karate. Tae kwon do begins to shift this order and translates it into a sport like atmosphere where there is an order of rules.

The Square is a common shape used within striking spaces but does not give equal amount of space from the center to the perimeter. Also seen in the shape of a boxing ring, the square or ring provides a stronger linear area that provides constraints on the horizontal and vertical sides. The most obvious difference is that the ring consists of restrained areas particularly in the corners which open possibilities of opponents to be trapped. The corners provide a fighter a more complicated approach of defense compared to a circle which provides more opportunities of escape.

Overall the space for striking should be organized for learning and practicing striking fundamentals and techniques for boxing and kickboxing that are ideal for the development of physical fitness and self-confidence. Boxing is a common striking training style that is universally known as having best conditioned athletes with fitness activities such as bag punching, punching drills, shadow boxing, distance running and interval training. With the combination of kickboxing leg conditioning and leg kicking would be integrated into the fitness activity.

The needed space for striking exercises such as boxing would need proper floor covering, heavy and light striking bags, calisthenic stations and small storage area. The size of boxing areas vary from large gymnasiums to small classrooms depending on the capacity of students that are training. Usually the organization is a space divided into a ring area, a striking mat area, and an exercise section.<sup>111</sup> For the installation of a ring, 20 feet by 20 feet would be needed. A typical size would be 30' by 50' which would be adequate to accommodate the needs of striking activities. In a mat area students have the chance to do exercises with their own weight by having pull-up

---

<sup>111</sup> Sawyer, Thomas H. Facilities Planning for health, Fitness, Physical Activity, Recreation and Sports: Concepts and Applications. Tenth Edition. United States: Sagamore Publishing, 2002. Pg. 420

bar stations (6-8), sit-up and push-up stations, and an area for jump roping for cardio, and shadow boxing with mirrors. The walls for striking should be padded with one-inch ensolite. Ensolite is a closed cell foam material made from a blend of poly vinyl chloride (PVC) and Nitrile Butadiene Rubber (NBR). It is used for shock absorption athletic equipment.<sup>112</sup>

#### 4. Mixed Martial Art Space:

The mixed martial art space would be an area strictly for the training for mixed martial art fighting and usual fighters who are training for an upcoming bout. The intensity of the training would be of a higher caliber compared to other spaces for training. The mixed martial art space would consist of a caged area for stand up and grappling situations as well as a full size octagon for fighters to train. The space should be filled with proper equipment such as designated punching bags and weights.

A thought dawned to me as I realized mixed martial arts spaces were always closed up spaces found in unoccupied spaces. Could the spaces for striking, grappling as well as mixed martial arts be outdoors where fighters could train in natural elements. The elements outside such as sun and wind can possibly create a totally different experience compared to the confinements of a closed space. Open spaces allow the interaction of the outside world and creates a feeling of freedom that walls can sometimes restrict.

#### 5. Formal Entry Point:

The lobby space is located near the entrance of a structure and its purpose is to welcome visitors and well as occupants of people who use the building. The entry point is a secured area that is the main point in connecting to various spaces within a building. The space should have aesthetics and security where safety is important for patrons.

#### 6. Strength & Conditioning Space:

---

<sup>112</sup> Monmouth Products. A Family of Materials/A World of Solutions. Monmouth Rubber & Plastics, Corp. [http://www.rubberplastics.com/equivalency\\_chart\\_01.htm](http://www.rubberplastics.com/equivalency_chart_01.htm). Accessed: November 29, 2009

The strength and conditioning space also referred to as the exercise or physical fitness space is a type of area that is designated for fitness training, physical wellness activities and exercise. Along are also toilets and locker rooms as well as general storage.<sup>113</sup> This space provides a comprehensive program of physical activities to meet the individual training regimens of its occupants. The Indoor fitness programs can typically be divided into four categories of exercises which are 1. Warm-up/cool down, free weight, circuit training, and cardiovascular. Each area that accommodates an exercise should have enough space for equipment, utility, proper HVAC, circulation and control. Another important component is the durability of finishes, flexibility of space, and acoustical control.<sup>114</sup>

Within a strength and conditioning space it is important to make safety the first priority so everyone can workout safely. Some guidelines that should be followed by the National Strength and Conditioning Association (NSCA) and the American College Sports Medicine (ACSM) are to have all weight machines and apparatus spaced at least two feet away from each other however three feet is much preferred. The platform areas should have sufficient overhead space of at least 12 feet and should be free from any type of low-hanging items as piping, lighting, beams and signs. There should be clear 3 feet pathways within the facility at all times and no equipment should be blocking. Free weights should be away from any entrances and exits which provides safety for pedestrians and people who are working out.<sup>115</sup> The spatial requirements of equipment and exercise spaces are a minimum of 12 feet ceiling height in order to have clearance of equipment usage. Surface types that are recommended are cushioned training surface, mirror walls, and impact resistant walls. An increase in structural steel is recommended in order to reduce vibration transmission. Exercise rooms should be designed for 150 LB/SF live load where finishes should be durable and ease to maintain caused by constant usage. In order to reduce

---

113 Whole Building Design Guide Staff. Physical Fitness (Exercise Room). Updated: June 2, 2009. [http://www.wbdg.org/design/physical\\_fit.php](http://www.wbdg.org/design/physical_fit.php). Accessed: November 29, 2009

114 Whole Building Design Guide Staff. Physical Fitness (Exercise Room). Updated: June 2, 2009. [http://www.wbdg.org/design/physical\\_fit.php](http://www.wbdg.org/design/physical_fit.php). Accessed: November 29, 2009

115 Stürzebecher, Peter. Ulrich, Sigrid. Architecture for Sport: New Concepts and International Projects for Sport and Leisure. England: Wiley-Academy. 2002 pg. 294

noise that is made from exercise space, ways to control is to use sound baffles in acoustical rated partitions. In regards to HVAC systems, it is important to reduce moisture and odor migration to other spaces which would consist of a 20% cooling capacity compared to other spaces within the building. They should also have an Air Handling Unit (AHU) that can circulate and condition the air for air conditioning and ventilation.<sup>116</sup>

The mixed martial arts community centers goal is to try and enhance the existing conditions towards the needs and wants of its users. The existing conditions of the gymnasium space consist of a multipurpose room, an open lanai area, a weight room and a space that holds three basketball courts. The new center will provide more square footage for more activities to take place alongside the already existing multipurpose room. The proposed area can be used for various activities alongside the designated martial arts and other activities by using the existing gym and open lanai. Karate can be practiced in the karate room instead of the multipurpose room. The gymnasium can also be used for tournaments because it provides enough space for multiple mats and rings to be placed alongside seating and bleachers. The fitness/cardio room can coincide with the already existing weight room and both can become health and fitness areas to improve athletics.

#### PARTS OF PROGRAM

A. Youth mixed martial art training: during certain times of the week instructors from the night classes can teach and aid in training mixed martial arts in the youth program by instilling values and teaching techniques that build confidence and discipline for the youth of Pālama. Training can occur in multipurpose spaces to accommodate different services occurring at once. Spaces separate levels of training and also different areas of teaching.

---

<sup>116</sup> Whole Building Design Guide Staff. Physical Fitness (Exercise Room). Updated: June 2, 2009. [http://www.wbdg.org/design/physical\\_fit.php](http://www.wbdg.org/design/physical_fit.php). Accessed: November 29, 2009

B. Evening Mixed Martial Art classes: 6-9 PM would be designated for mixed martial arts training with a combination of grappling, striking, or both which can happen simultaneously. Areas can be rented out by clubs if needed for specific existing programs such as karate and aikido.

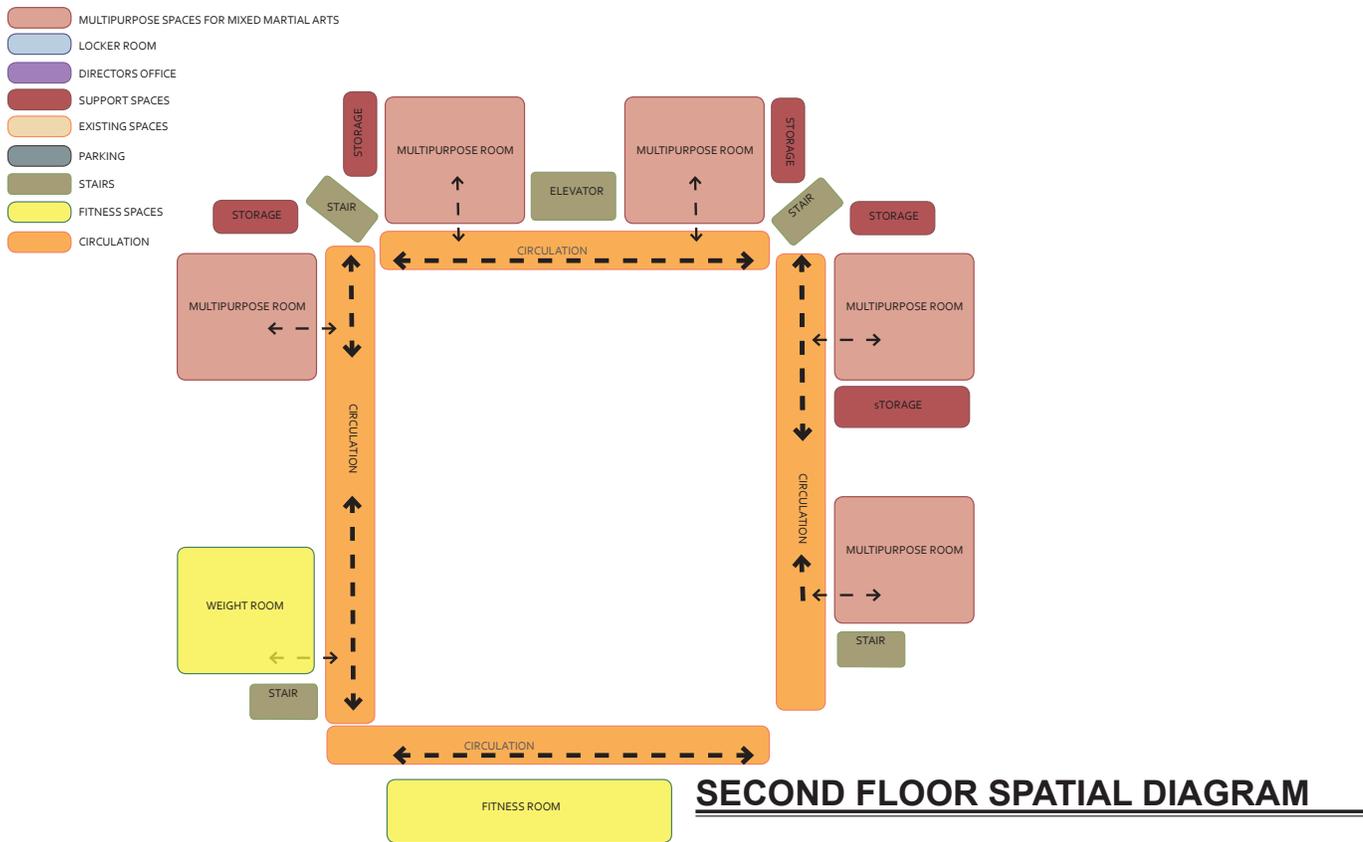
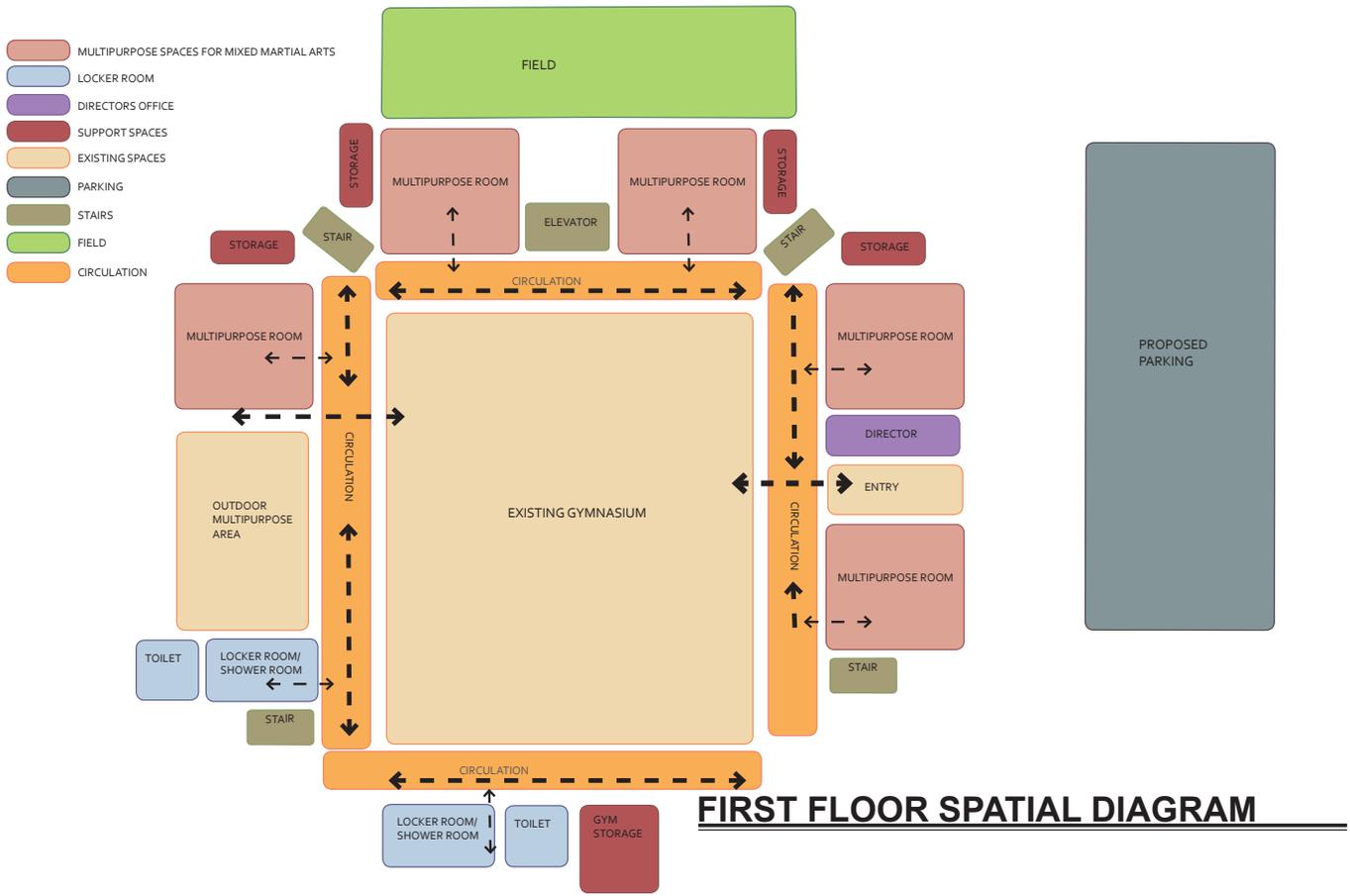


Figure 60: Spatial diagrams of spaces and how each varies in size and purpose

## **FACILITIES PROGRAM**

### A. Mixed Martial Art Spaces

Function: Teaching/Training space

Description of Use/Activities: The spaces that are designated as mixed martial art spaces are designed to teach the main principles of Kajukenbo which are karate, judo/jiu-jitsu, kenpo and Chinese and western boxing. Similar to the four components that define Pālama Settlement, these four styles of fighting are areas that youth and adults and learn, teach and train. Within these areas there is a need for different types of equipment to fit the art. The spaces will be designated as striking areas for boxing and grappling areas for judo and jiu-jitsu. Their shall be spaces that can be used for multiple activities such as karate, kempo, and other arts. The areas are as follows.

### **MULTIPURPOSE / MIXED MARTIAL ART AREA**

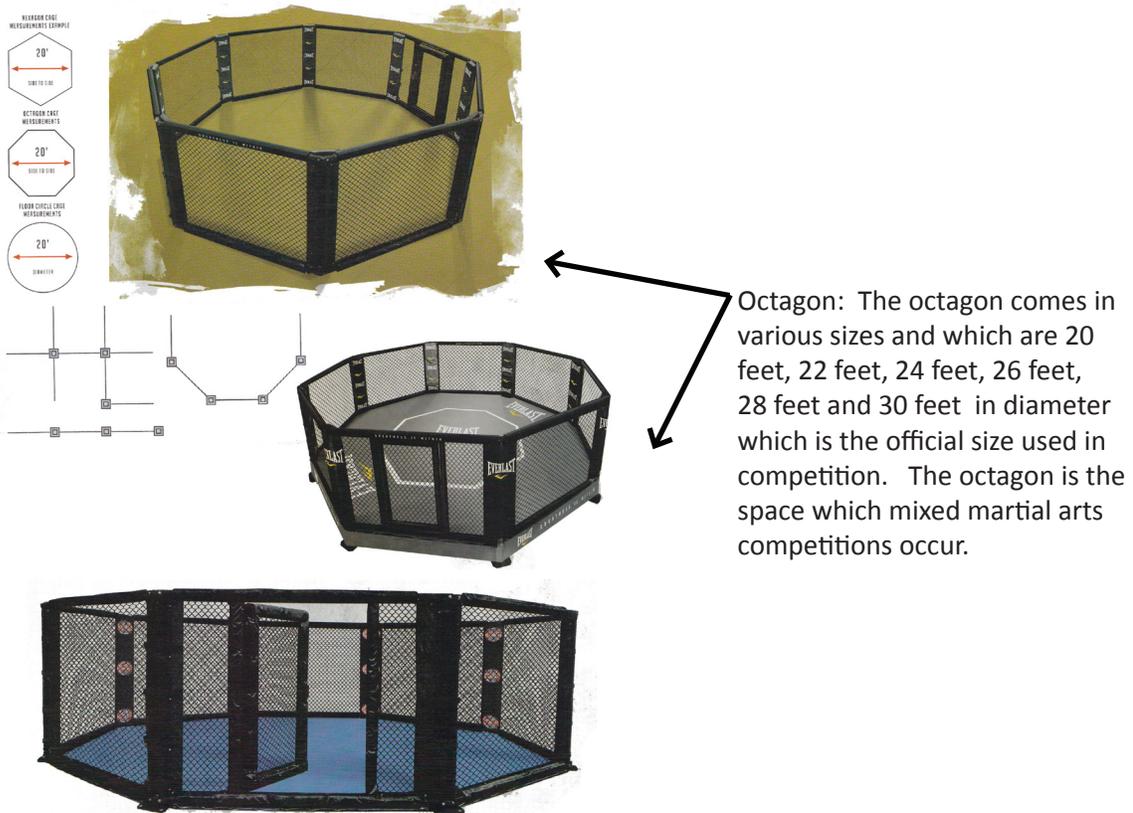
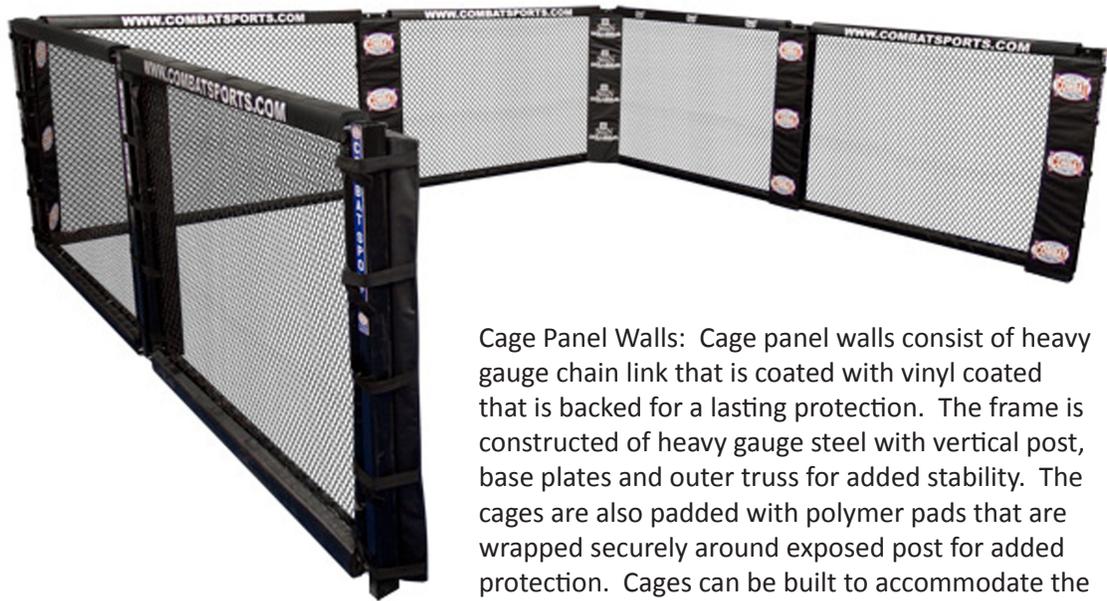


Figure 61: Octagon configurations. Combat Sports International. Winter 2010 catalog. Pgs. 103, 104 & 111



Cage Panel Walls: Cage panel walls consist of heavy gauge chain link that is coated with vinyl coated that is backed for a lasting protection. The frame is constructed of heavy gauge steel with vertical post, base plates and outer truss for added stability. The cages are also padded with polymer pads that are wrapped securely around exposed post for added protection. Cages can be built to accommodate the size of a space. The various measurements of a cage come in 10 feet, 20 feet, 24 feet and 30 feet pieces in length. Cages can also be configured into circle and hexagon shapes with measurements of 20 feet, 24 feet and 30 feet in diameter. All cage panel walls are 6 feet tall.

Figure 62: Cage Panel Walls. <http://www.combatsports.com/prodinfo.asp?number=CPWALL>

### Combo mats

This type of mat is used for a combination of striking and grappling due to its density in material and its design to withstand falls, is a shock absorber and is durable for various types of activities. Combo mats come in half and full sizes. The half size piece is 1 inch by 3 feet by 3 feet while the full size is 1 inch by 3 feet by 6 feet and 6 inches.

## **MULTI-PURPOSE SPACE**

Function: Multi-use space for practicing, teaching, and seminars

Description of Uses/Activities: Areas that provide training in two arts that make up Kajukembo which are Karate and Kempo. The space has the ability to accommodate other type of fighting arts and become open to the outside or inner gymnasium in the event of a seminar where special guest come to share different activities that influence the sharing of mixed martial arts.

Studio A: Karate & Kempo Space

Flooring

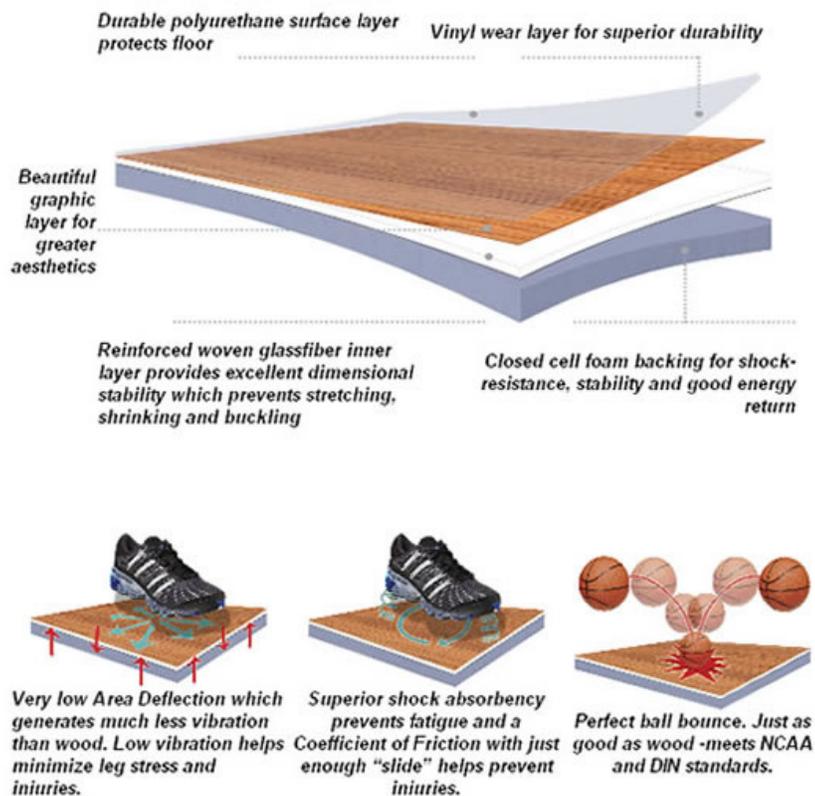


Figure 63: Polyurethane surface. <http://www.signaturesportsflooring.com/signaflex.php>

The flooring allows for multipurpose activities and can withstand constant usage. The Polyurethane coating flooring provides resistance against dirt and has a bacteriostat agent for buildup of bacteria which provides a healthier environment for users. Reinforced glass fiber layer provides extra dimensional stability. It also provides shock-resistance for various activities. The flooring comes in rolls which range from 5 feet 11 inches by 65 feet 6 inches, 5 feet 11 inches by 49 feet, and 5 feet 11 inches by 36 feet.

Acrylic Mirrors: Lightweight, durable and shatterproof then traditional glass. It is less expensive then glass mirrors. The dimensions are 33 mm by 4 feet by 8 feet.



Figure 64: Example of acrylic mirrors in a training space.

**BOXING AREA (STRIKING)**



Figure 65: Floor mounted boxing ring with various versions of a bag rack system. Right hand side shows equipment such as a speed bag, striking bag and upper cut bag. Combat Sports International. Winter 2010 catalog.

Boxing Ring: Boxing rings come in vary depending on the situation of the space. Some boxing rings are propped up 3 feet high and are used in competition bouts so spectators have an clear view of the fight. There are also rings that are attached to the floor and could be beneficial for the proposed community center. The common measurements of a ring range from 20 feet, to 22 feet to 24 feet in diameter. The rings are a square in shape and are enclosed with padded rope and cushion.



Figure 66: Heavy bag system that allows easy storage and flebility <http://www.balazsboxing.com/cgi-bin/catalog2.cgi?action=page&page=gear|track%20system>



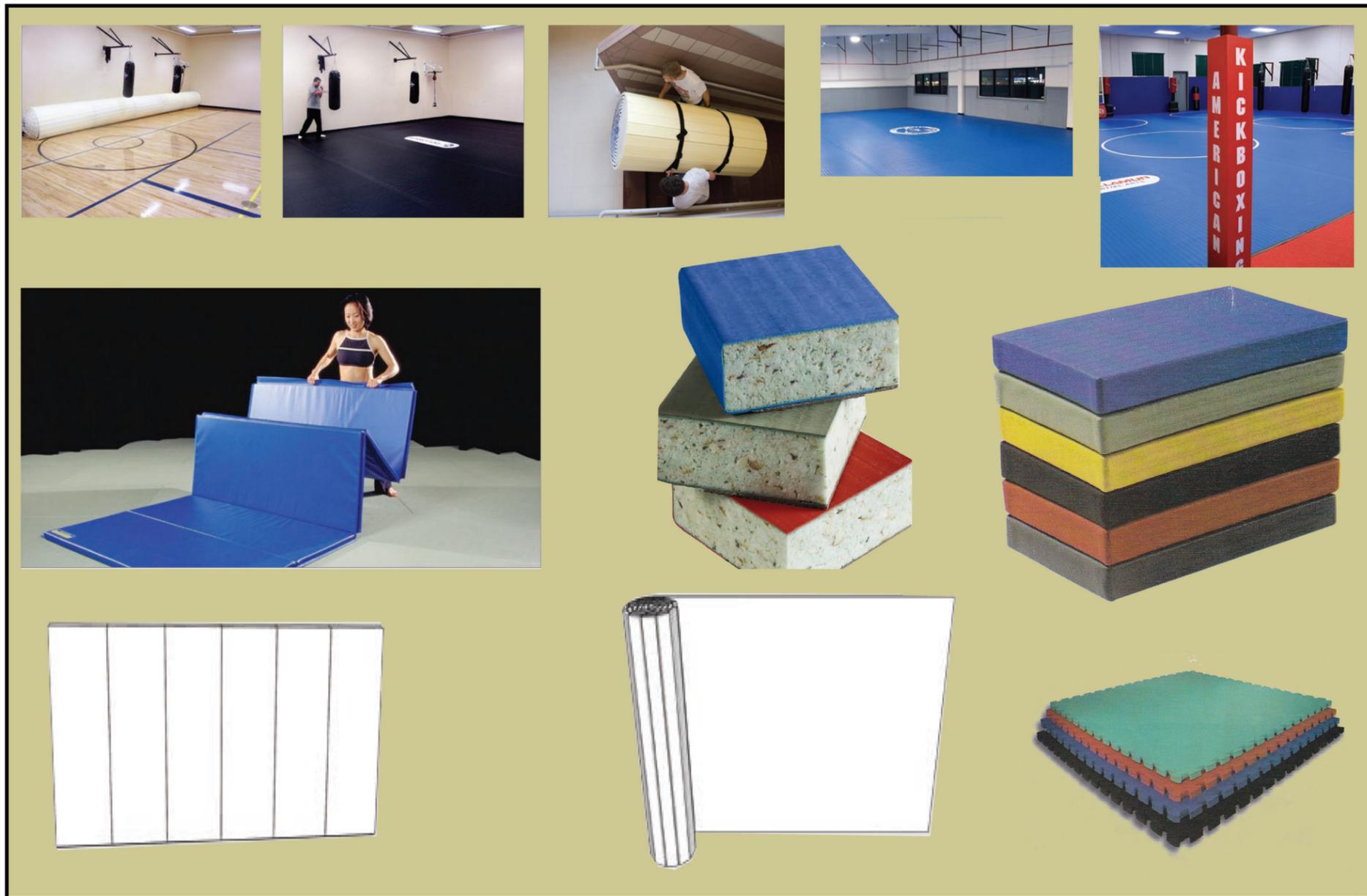
Bags: The bags are added onto the rack system. Bags come in various shapes and sizes depending on the type of striking done. Muay Thai striking involves longer heavy bags and upper cut bags that are attached to the wall to practice knees and elbows. Boxing is another type of striking art that consist of heavy bags for punching and speed bags for accuracy.

Figure 67: Different Type of Punching Bags used for Striking Exercises. Combat Sports International. Winter 2010 catalog. Pgs. 11 & 76



Bag Rack system: This system is useful in holding up multiple type of punching bags. The system comes in various sizes however the common sizes are 1. 6 feet by 10 feet 2. 6 feet by 20 feet 3. 6 feet by 30 feet and 6 feet by 40 feet. The racks also come in L-shapes that can be found 6 feet by 20 feet by 20 feet.

**JUDO/JIU-JITSU AREA (GRAPPLING)**



Grappling mats  
 Mats are used for wrestling and grappling exercise as a way for protection from impact due to the intense throwing and movement on the ground. Grappling mats as they are formally called are usually bought in rolls and laid out on the surface of a training area. The measurements are found in the chart.

Mat Thickness: 2"      1.5"  
 5/8"

42'x42' (7 individual 6'x42' rolls)

42'x40' (7 individual 6'x40' rolls)

42'x38' (7 individual 6'x38' rolls)

36'x36' (6 individual 6'x36' rolls)

30'x30' (5 individual 6'x30' rolls)

24'x24' (4 individual 6'x24' rolls)

18'x18' (3 individual 6'x18' rolls)

Figure 68: Various types of grappling mats

## CARDIO AREA

Function: Space for cardio exercise and geared for warm up towards mixed martial arts

Description of Uses/Activities: Area that can be used alongside other athletic activities as a common cardio area. Within this space are common weights, treadmills, and cardio equipment with space for fitness exercises.

### CARDIO DEVELOPMENT

1. Treadmill: 20 inch by 55 inch



Figure 69: Example of a treadmill prototype. [http://www.nordictrack.com/webapp/wcs/stores/servlet/Product2\\_12401\\_10301\\_118909\\_-1\\_19051](http://www.nordictrack.com/webapp/wcs/stores/servlet/Product2_12401_10301_118909_-1_19051)

2. Elliptical:



Figure 70: Example of a elliptical prototype. [http://www.nordictrack.com/webapp/wcs/stores/servlet/Product2\\_12401\\_10301\\_124253\\_-1\\_19053](http://www.nordictrack.com/webapp/wcs/stores/servlet/Product2_12401_10301_124253_-1_19053)

3. Bikes:



Figure 71: Example of a exercise bike prototype. [http://www.nordictrack.com/webapp/wcs/stores/servlet/Product2\\_12401\\_10301\\_134403\\_-1\\_19051](http://www.nordictrack.com/webapp/wcs/stores/servlet/Product2_12401_10301_134403_-1_19051)

The use of green technology exercise bikes allow power produced from the pedaling of the bike in order to generate a type of electricity that is renewable energy. The energy produces watts that can eventually provide for the lighting and electrical equipment for the center.

## **EQUIPMENT/ STORAGE AREA**

Function: Store equipment

Description of Use/Activities: Private space to hold and store various equipment needed for training

Design Considerations:

General : 400-500 SF

Services:

Able to store rolled up mats (6 feet by 30 feet long)

Parts of Octagon and boxing ring

Boxing bags

Mitts, gloves, etc. for sparring

## **MAINTENANCE ROOM**

Function: Room for janitorial stall to keep training areas clean

Description of Use/Activities: Place for mat cleaners, floor cleaners and disinfectants to be used when training is done. Constant cleaning reduces the spread of germs and creates a healthy environment for all who participate.

Design Considerations:

General: 156 ASF

Services

Sink

Soaps and cleaners

Mop, broom and dustpan

## **MALE & FEMALE LOCKER ROOM**

Function: Store personal belongings while persons are training or taking part in other activities within the site.

Description of Use/Activities: Space for patrons only to hold equipment and personal entities in lockers. Lockers are not assigned and are public.

Design Considerations:

General : 1,200 ASF

Services:

Tile floor with drains

Grooming area – sinks, mirrors, soap and towel dispenser, trash can, non-slip flooring, water resistant electrical receptacles

Stools or benches

Dressing areas

HVAC system

### **Male & Female Toilets**

Function: Space for restroom use

Non-slip floor

Description of Use/Activities: Private area

Health code requirements

Design Considerations:

Floor drains

General : 544 ASF (6 stalls)

Sanitary options – seat covers, napkins, pads

Services:

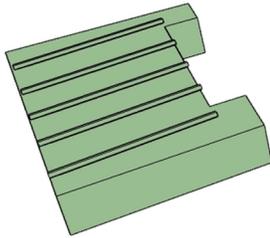
Adequate toilet stalls for peak capacity

Handicap accessible

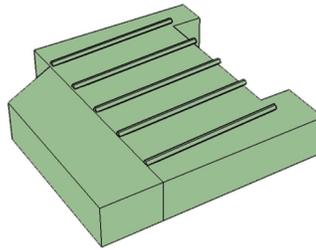
## DESIGN CONCEPT

The overall design concept is to emphasize a sense of community while integrating mixed martial art concepts through design. The design should express the two ideas of “community” and “mixed martial arts” and how they can accommodate each other through form and function.

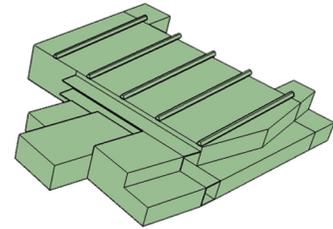
## FORM



EXISTING FORM:  
SOLID RECTILINEAR MASS THAT AT TIMES  
OVERPOWERS THE SITE. NOW TRANSITION  
OR VOIDS FOR DESIGN.

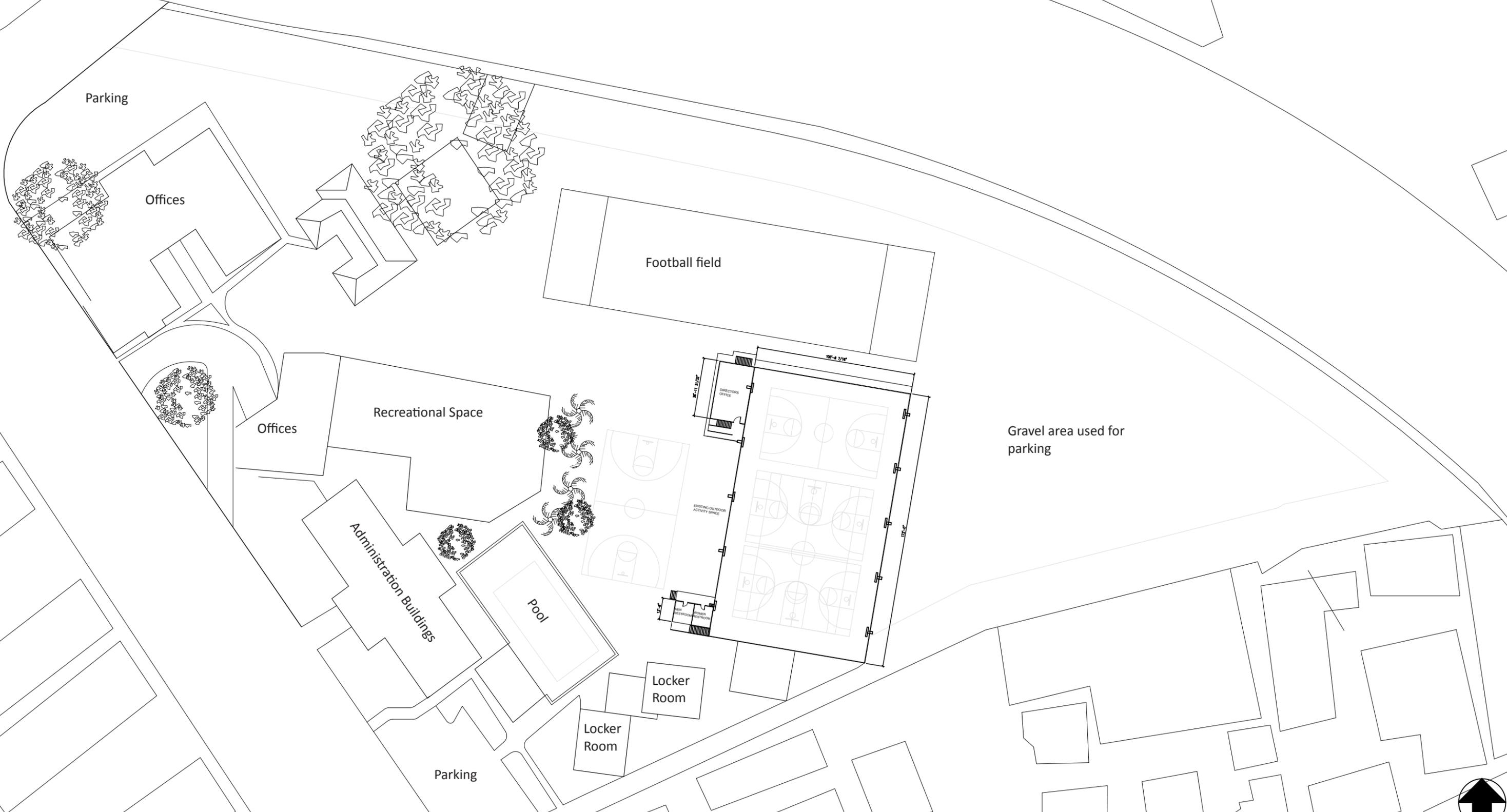


DESIGN SCHEME #1  
PROPOSED CENTER ADDS TO OVERPOWER  
MASS AND VISUALLY MAKES EXISTING FORM  
LARGER. MASS STILL SEEMS VERY BULKY  
AND DOESNT PROVIDE CONNECTION TO  
SURROUNDING LANDSCAPE.

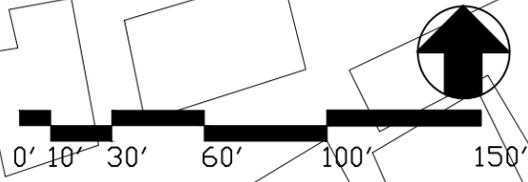


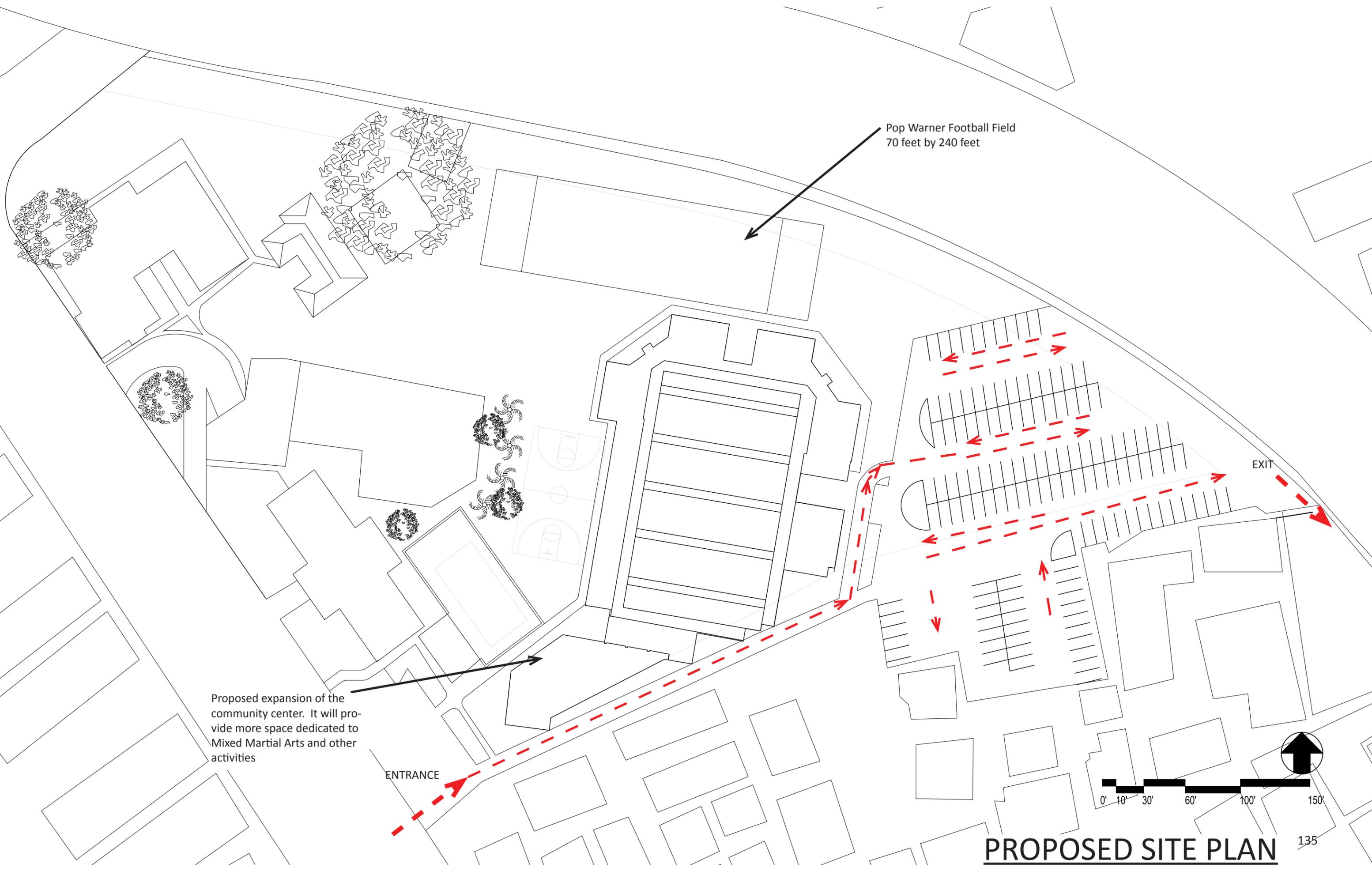
DESIGN SCHEME #2  
SOLID MASS CARVED IN TO CREATE OPEN  
AND CLOSED SPACES WHICH VISUALLY  
BREAK THE SOLID RECTILINEAR MASS  
IN THE EXISTING FORM. SLOPING TERRACE  
CONCEPT FOLLOWS THE FREEWAY AND  
CREATES A SMOOTHER TRANSITION OF  
HIERACHY SPACES.

In past massing analysis I tried to create a new structure dedicated for mixed martial arts. In the process of designing these spaces I realized that there was something missing in the idea of community. The ability of connecting spaces from existing to new seemed difficult. By focusing on the mission statement of providing spaces for the old and new programs I decided to use the gymnasium as the starting point. The gym is a hub for various type of activities and instead of creating a new form, I wanted to incorporate my proposed spaces into the existing gymnasium space. The form will be rectangular spaces that border around the gymnasium creating an extension of the existing conditions. The form will enhance the rectilinear shape of the gymnasium as well as provide new ways to ventilate the spaces within.



**EXISTING SITE PLAN**



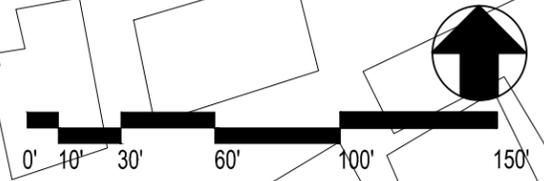


Pop Warner Football Field  
70 feet by 240 feet

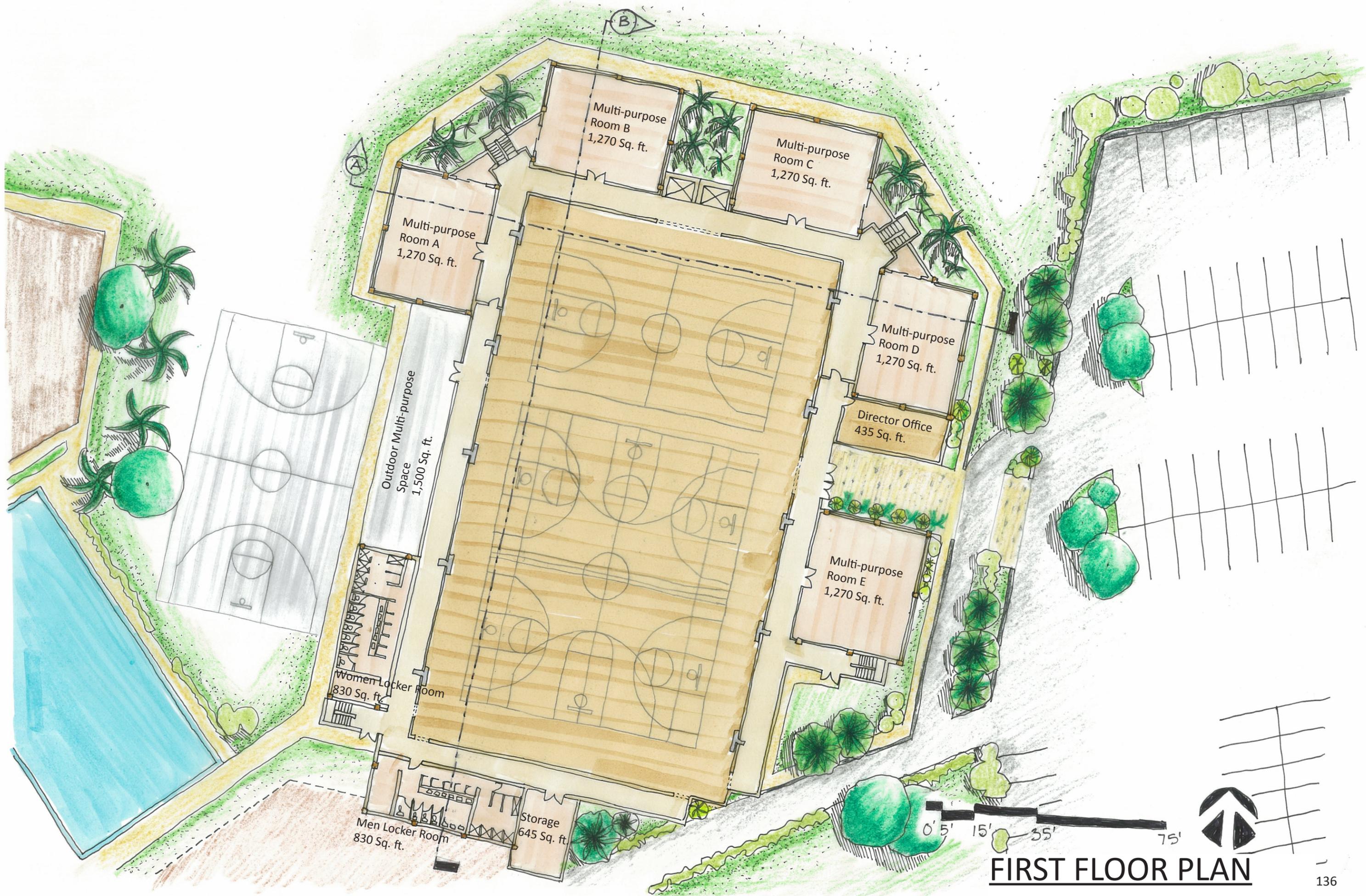
Proposed expansion of the  
community center. It will pro-  
vide more space dedicated to  
Mixed Martial Arts and other  
activities

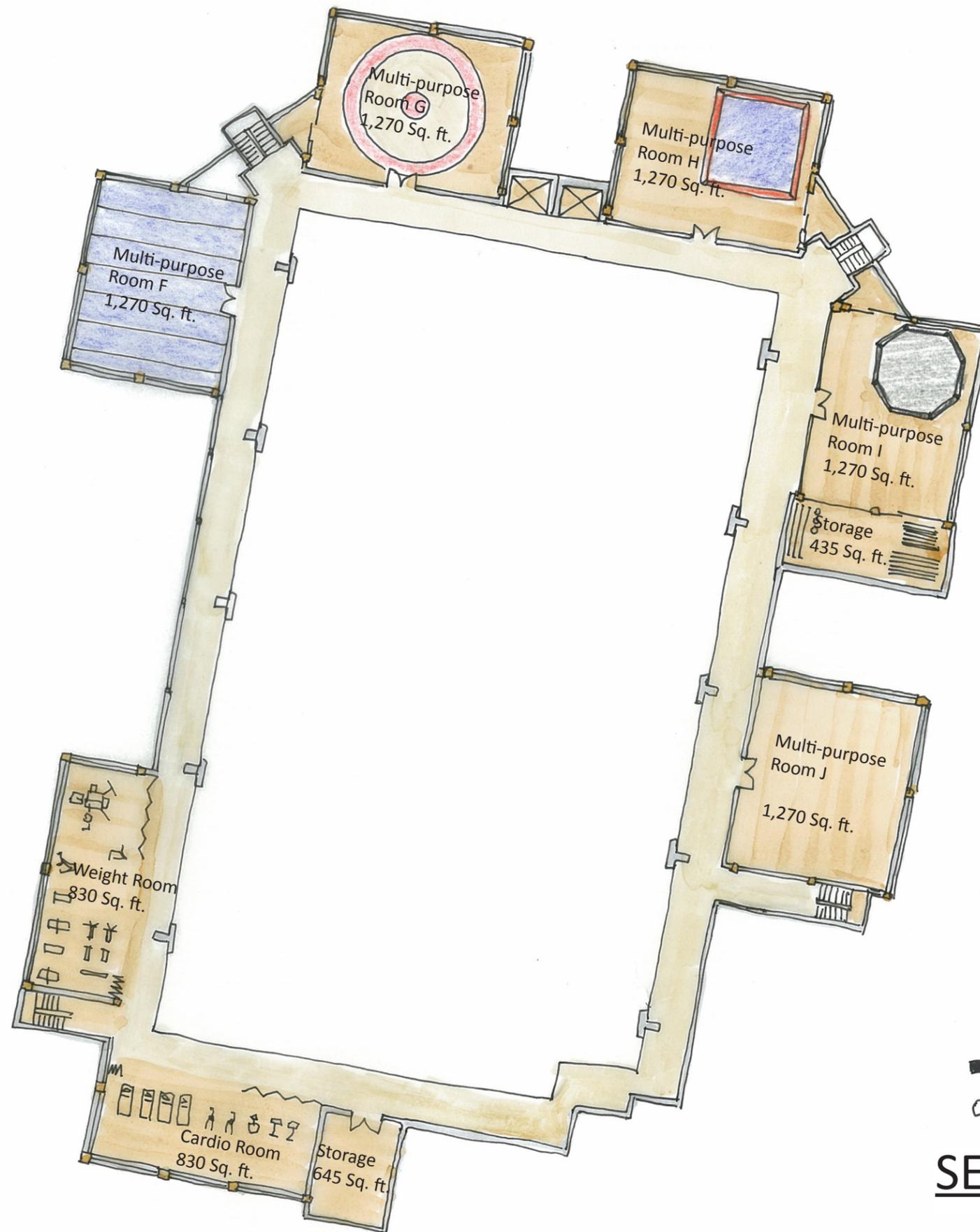
ENTRANCE

EXIT

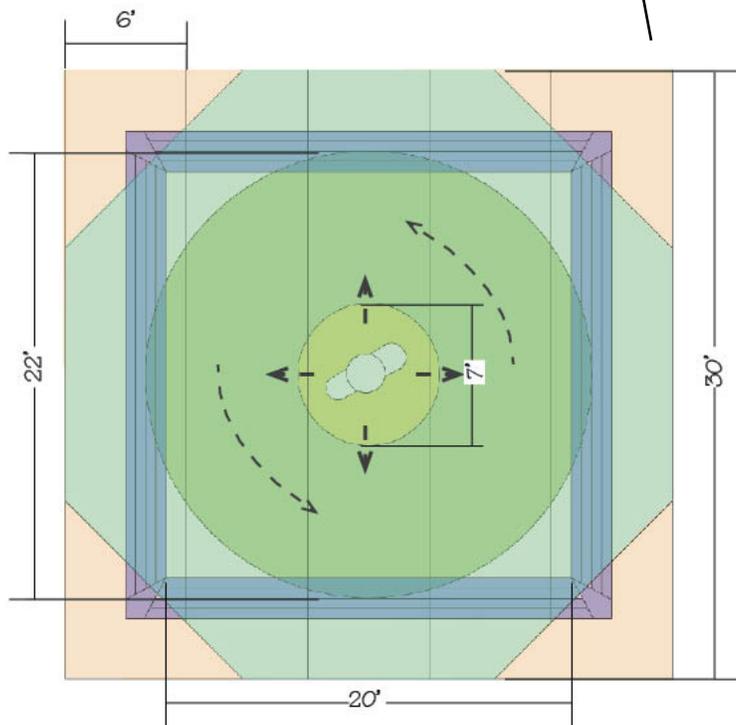
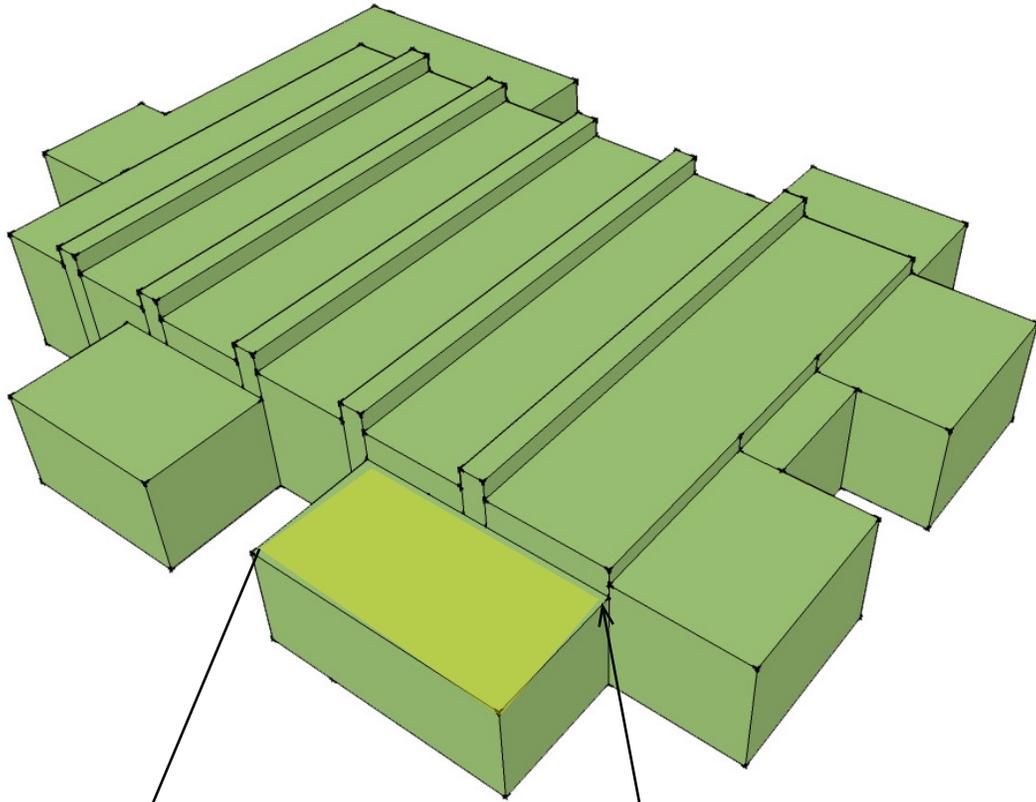


# PROPOSED SITE PLAN





**SECOND FLOOR PLAN**



The square footage of each multi-purpose space was designated to fix various type of mixed martial arts. The drawing shows the amount of space needed for each style such as mats and rings. The drawing also showcases how each space designated for each styles varies.

Figure 72: Massing diagrams and how they relate to the existing structure. (Above) diagram showcases different spatial qualities for various mixed martial art styles

**SUNLIGHT CONDITIONS ON PROPOSED DESIGN**

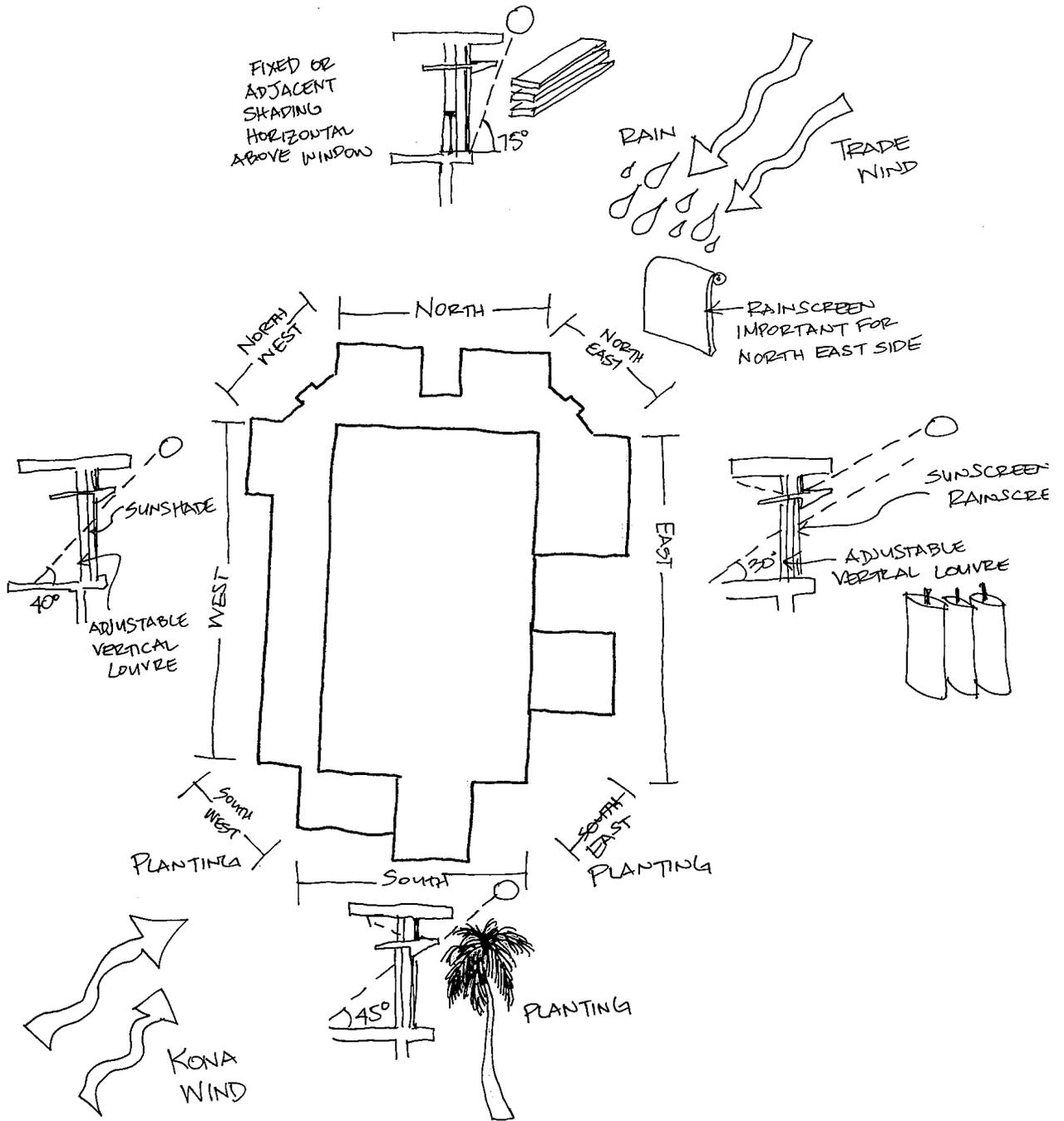


Figure 73: Sketch diagram of the various conditions the natural conditions (sun, wind, rain) have on the proposed design

## FUNCTION

The functions of the mixed martial art center is to provide a way for the community to revolve around the existing and proposed programs. This is done by incorporating the new spaces with the existing allowing constant interaction between anyone who uses the center. The multipurpose spaces are designed to accomodate various activities for mixed martial arts whether it be grappling, or striking or both. It also can be transformed into spaces for other activities for youth and senior citizens if needed.

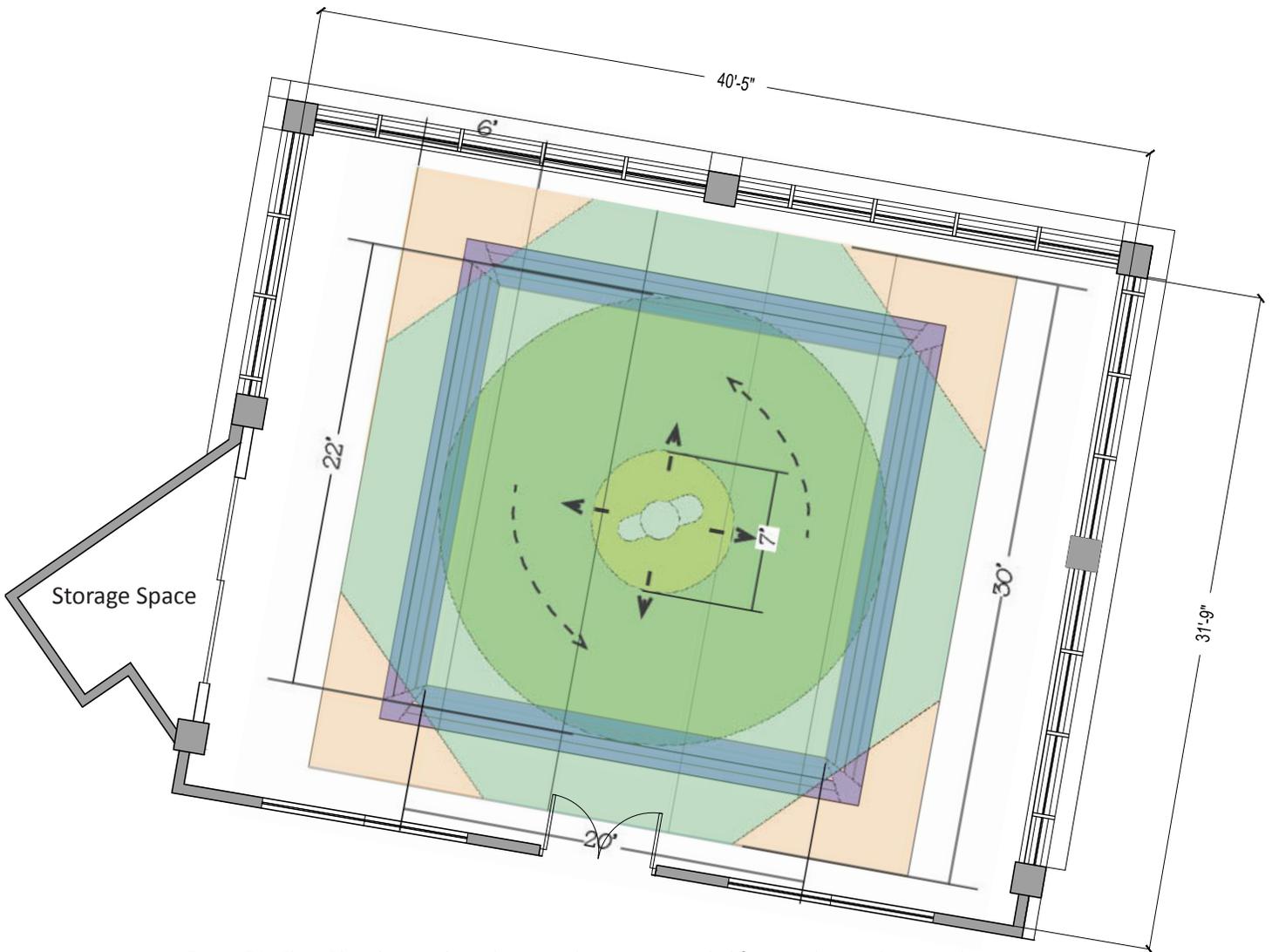


Figure 74: Floor Plan showing how the given dimensions needed for mixed martial arts can be integrated into the multi-purpose space

## FUNCTION

The incorporation of the existing gymnasium to the proposed program will enhance the activities that the center can hold such as tournaments. Along with the gym being a place for basketball and volleyball tournaments, the gym can also house various tournaments specifically for mixed martial arts such as boxing, wrestling, grappling and mixed martial arts. Fights can occur to aid in income for the running of the center and gymnasium. The gym can also be a place to have large classes that the multi-purpose rooms can't hold. It is vital for the gym to coincide with the proposed program in order to enhance the success of mixed martial arts as well as other activities that Palama Settlement provides.

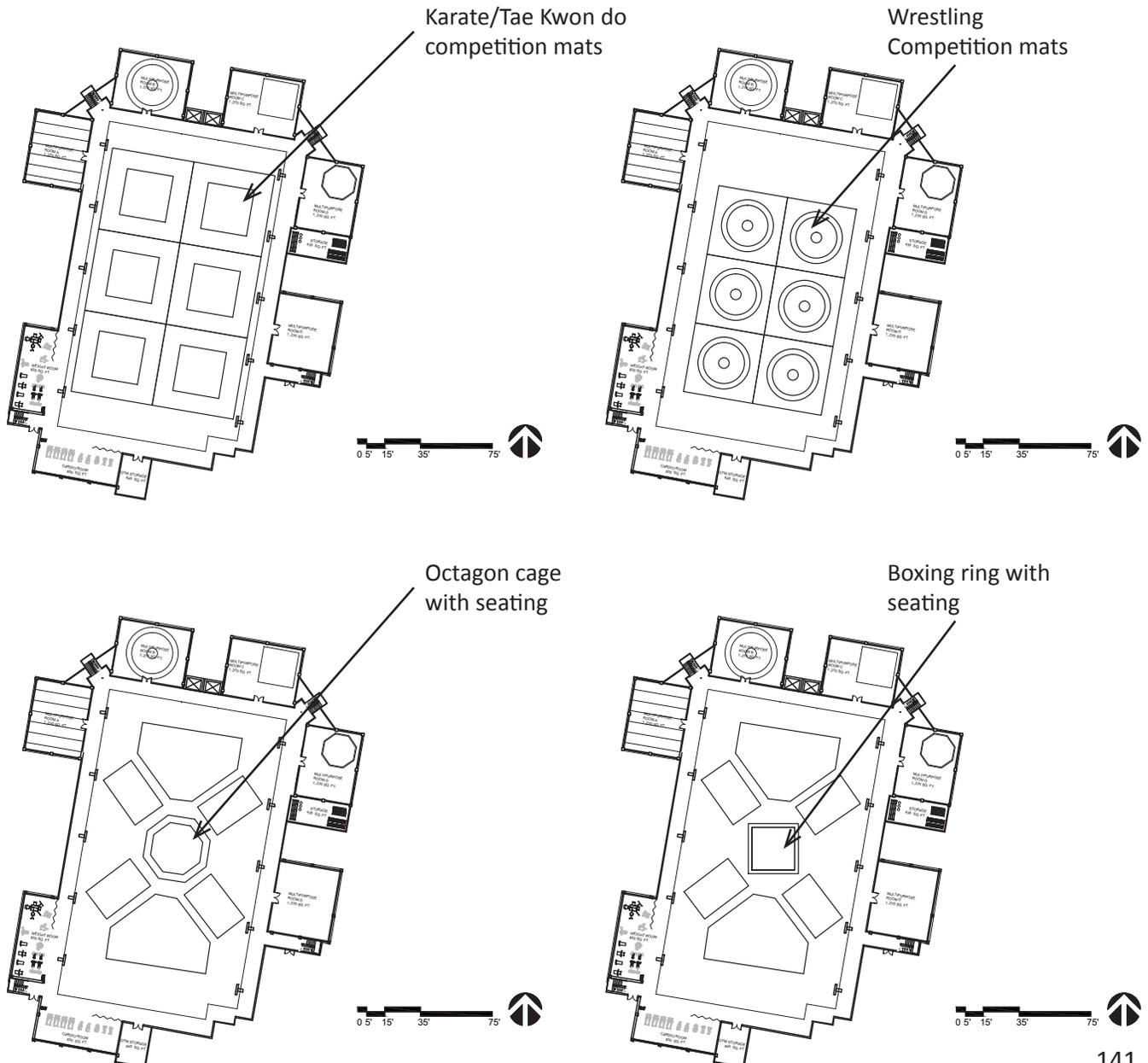
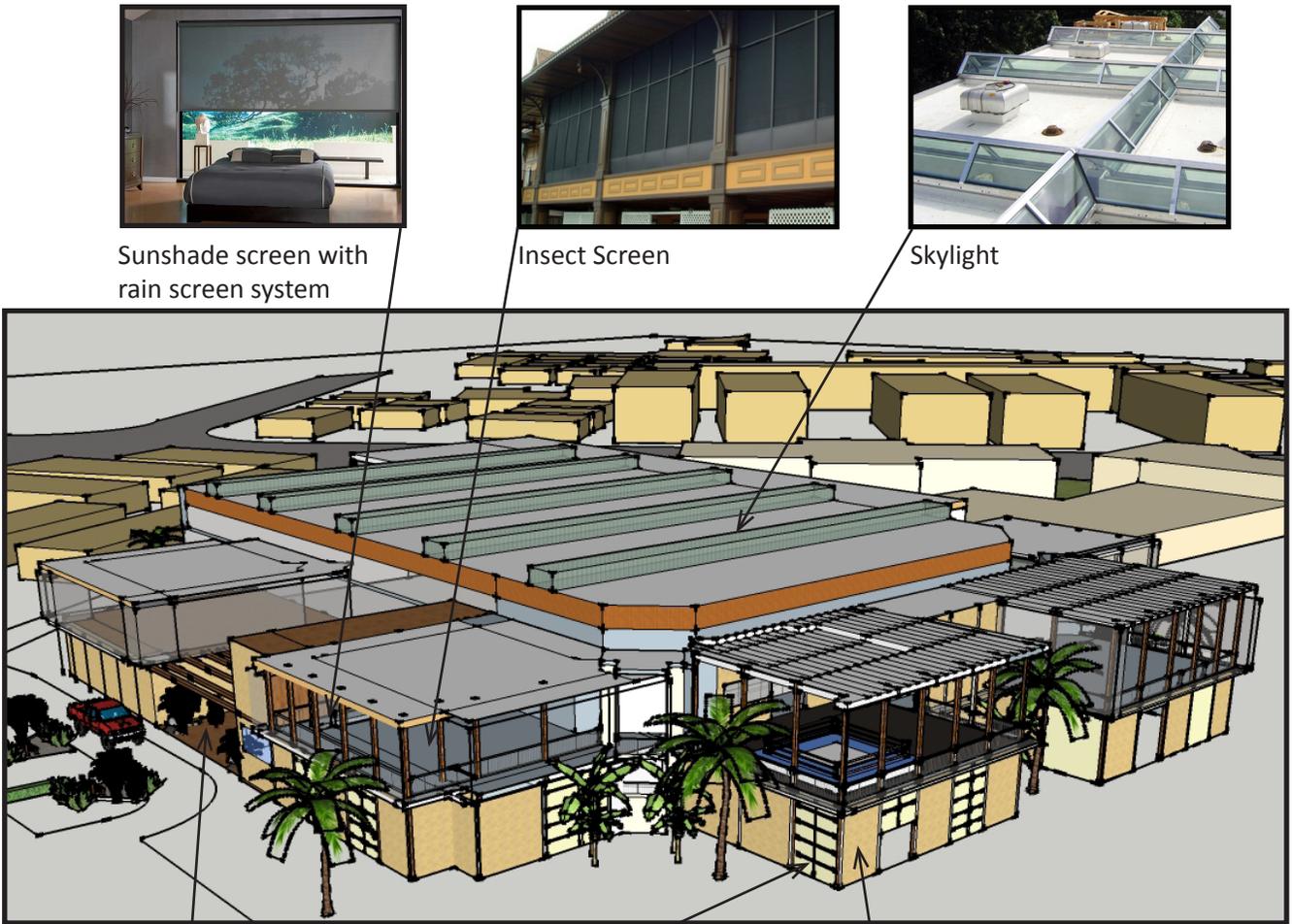


Figure 75: Integration of mma functions within the existing gym

**OUTER SHELL**



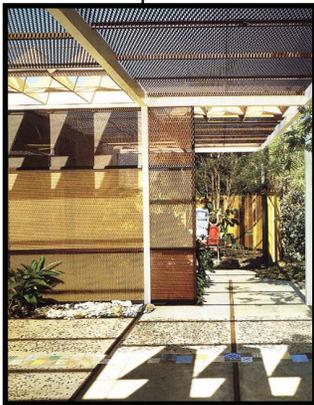
Sunshade screen with rain screen system



Insect Screen



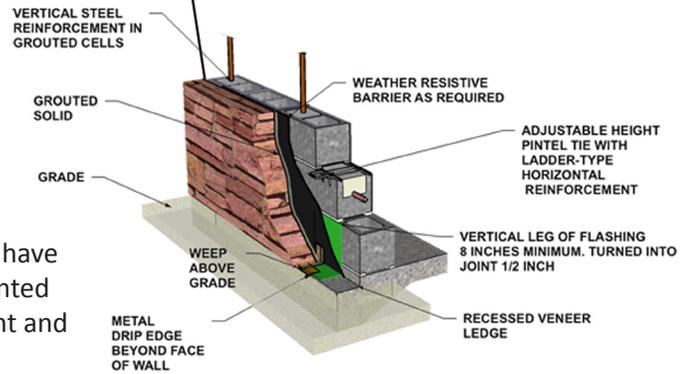
Skylight



Entrance Area: Use of wooden trellis system and plants along with the use of shadow and light



Ground floor doors with have retractable doors with tinted windows to block sunlight and add privacy



Section of building wall

Figure 76: Diagram shows various type of building materials and systems used on the outer shell

## **RESEARCH ON EXISTING GYMNASIUM**

### **Structural:**

Roof: open web steel joists

Floor: Slab on grade

Walls: Concrete masonry Unit (CMU) bearing walls and concrete footing

The concrete masonry unit acts as a bearing wall for the joist and roof system. The steel joists are anchored to the concrete columns which brace the structure as a whole. The system of footing with concrete masonry unit walls and steel joist are needed for seismic activity.

### **Envelope:**

Roof: Corrugated metal & Trussing

Skylights

Walls: Concrete walls, insect screening

### **Interior:**

Ceilings: Steel decking with fluorescent lighting

Floors: wooden court surface

Walls: Glazed interior face Concrete masonry unit

Furnishings: movable wooden bleachers, screen divider for courts

Ventilation: Natural air occurs through the insect screens and when gym doors are left open.

Senses:

Noise: The noise is buffered by the walls from outside the gym. Sounds of the basketballs bouncing and whistles can be heard majority of the time.

Smell: The smell within the gymnasium is musty mixed with sweat when people occupy it. It's a smell that tells of time and age that is difficult to describe and compare.

Sight: The lighting within the gym is slightly dim and is a combination of artificial and natural light.

**RESEARCH ON EXISTING GYMNASIUM**



Exterior view of the west facade showing the shell protecting the insect screening and shading the interior open spaces.



Outer shell is constructed of a painted corrugated metal material to block sunlight and rain from entering. Protects the interior space



Gymnasium wall consist of insect screening for ventilation

Figure 77: Photos of existing gymnasium conditions

## RESEARCH ON EXISTING GYMNASIUM



Interior view of East Facade facing the parking lot. This facade does not have insect screening so it restricts cross ventilation.

Interior view of East Facade facing the parking lot. This facade does not have insect screening so it restricts cross ventilation.



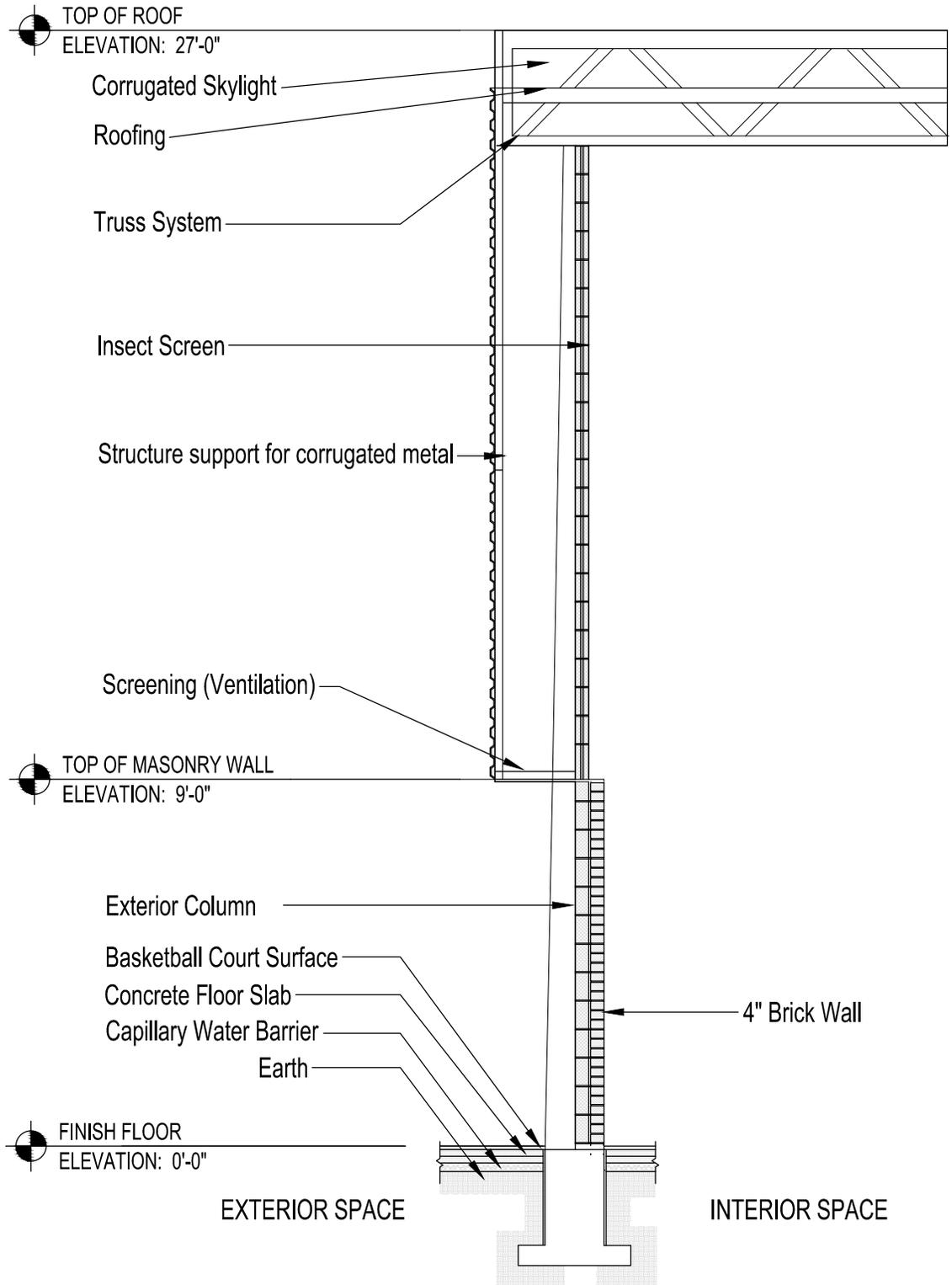
Interior view of the West Facade facing the outdoor court. This facade has insect screening as well as the directors office on the bottom and room on the second floor. Used as a multi-purpose area it is commonly used throughout the day.

View of the truss systems that form the room as well as the skylight that is formed around the trussing.



Figure 78: Photos of existing gymnasium conditions

**EXTERIOR WALL ASSEMBLY**

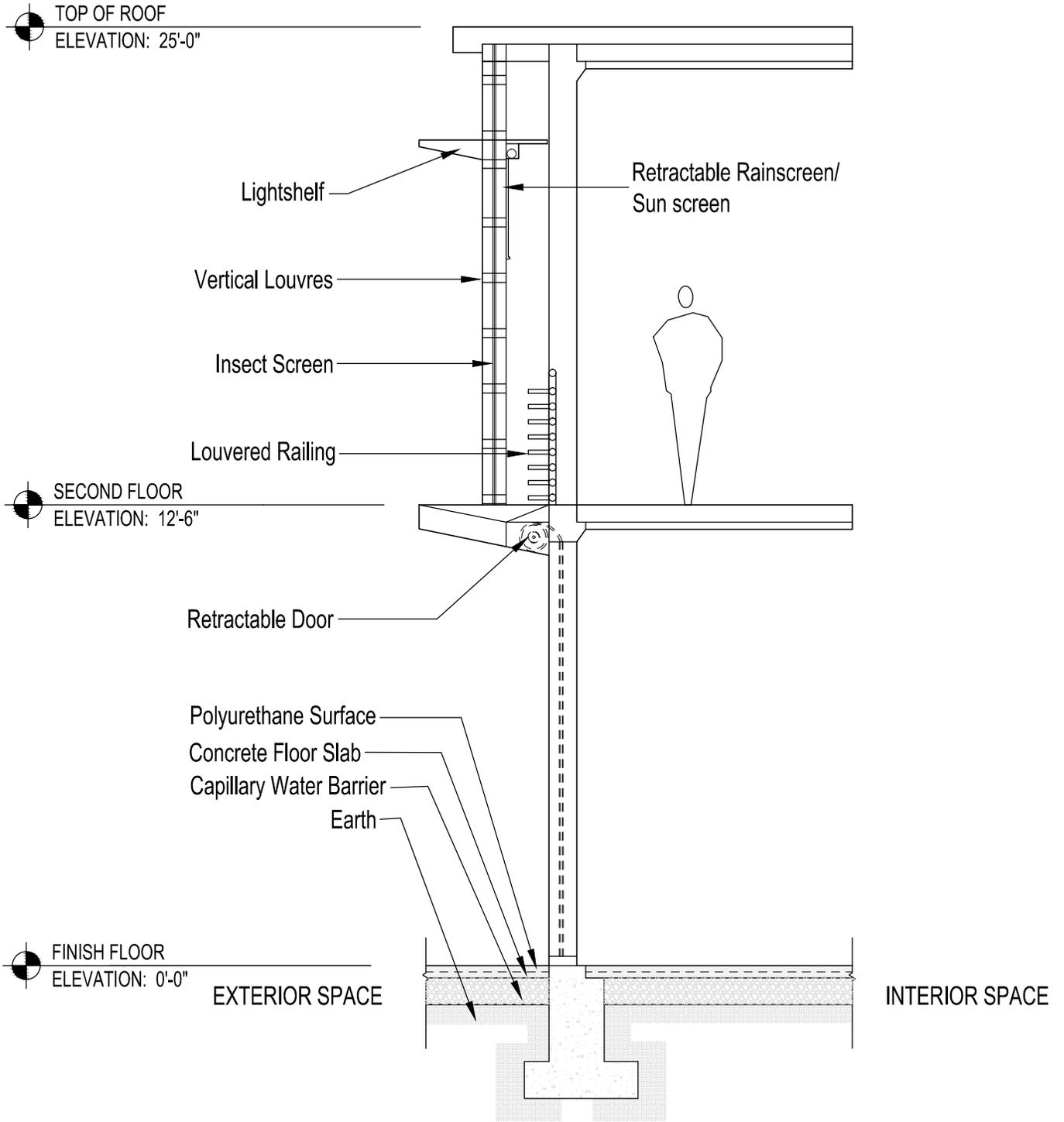


A  
A1.2

**EXISTING WALL DETAIL**

DESCRIPTION

1/4" = 1'-0"



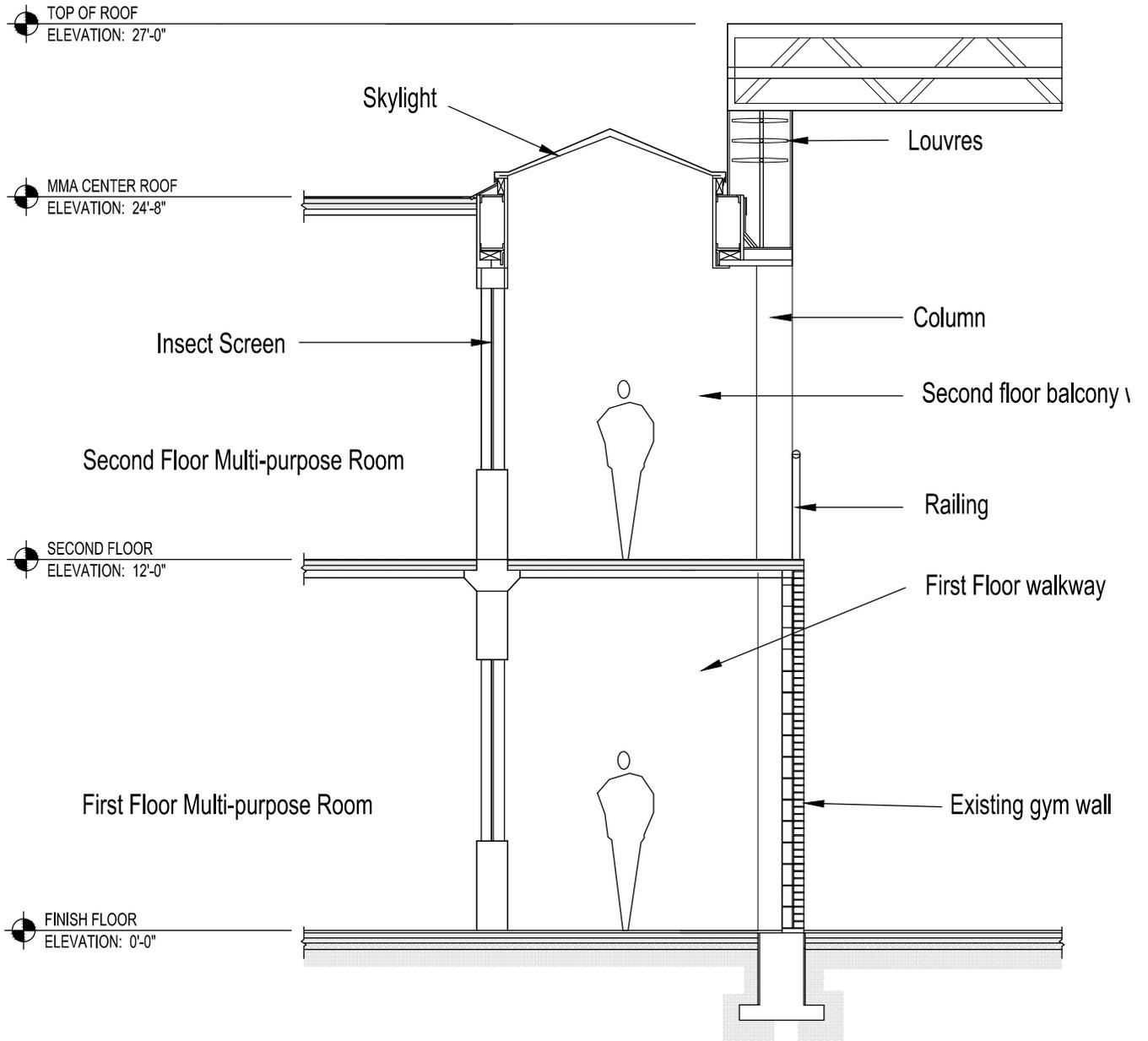
A  
 A10  
**WALL DETAIL**  
 DESCRIPTION

1/4" = 1'-0"

## MATERIALITY

Figure 79: Sketch of different type of materials for the facade

## **MATERIALITY**



A  
A1.1

**WALL SECTION**

**CONNECTION DETAIL WITH NEW CENTER AND GYM**

**3/16" = 1'-0"**

## **INTERIOR WALL ASSEMBLY**

### **Lighting**

Lighting is a way to illuminate or further brighten a space or area. Two primary lighting options that could be used are energy produced lighting and natural lighting. The product of this light in combination with other variables for example the level of darkness, the amount of reflective light (from surfaces), and the color of light results in a form of illumination. The amount of illumination is measured by foot candle and the brightness is the luminous intensity of any surface which is measured in foot-lambert. Glare is also an important consideration in sport facilities which can create high brightness.<sup>117</sup>

Artificial: Types and levels

Area	Footcandles on Tasks
Gymnasium	50
General Exercise and recreation	35
Wrestling and Defense Room	70
Lobby	100-150
Parking	1

### Natural Lighting

“It is impossible to overestimate the important influence of natural light on the interior and exterior forms of buildings and on those who dwell in them. So daylight is the natural beginning”.<sup>118</sup>

Daylighting Systems: Daylighting has a strong influence on a buildings functionality from many perspectives and effects energy costs associated with illumination and space conditioning which can enhance the buildings comfort, ambience and productivity of its occupants. Daylight also incorporates sidelighting.<sup>119</sup> Daylight along with sunlight provide power for lighting while entering

---

<sup>117</sup> Sawyer, Thomas H. Facilities Planning for health, Fitness, Physical Activity, Recreation and Sports: Concepts and Applications. Tenth Edition. United States: Sagamore Publishing, 2002. Pg. 75

<sup>118</sup> Lighting Historic Buildings, Architectural Press. 1997

<sup>119</sup> Savings By Design. California. Southern California Edison. 2007

a building through openings as “light” to interior spaces and also impact exterior building surfaces that can be converted into solar energy.<sup>120</sup>

### **Acoustics**

Areas that contain physical activities usually create noise and sound which is important to consider in the design. In regards to dealing with absorption and reflection qualities of all surfaces within the space an acoustical engineer would distinguish the type of treatment which is needed. Any noise that is caused outside of an area must be controlled. When dealing with sound travel the design of walls, ceilings, floors and surfaces must be used to create barriers. The use of soft materials on surfaces can control sound as well as walls that go beyond dropped ceilings can create acoustical control.<sup>121</sup>

### **Indoor surfaces - ceilings, walls & floors**

The choice of specific indoor surfaces will affect the utility, appearance and success of the facility. The cost, type and installation of the material will aid or damage the amount of time and safety the facility can have. The primary focus of the choice of surfaces depends on the need, the use, the funding, cost of maintaining and aesthetics.

Flooring surface: Flooring surface by be able to resist resilience and deflection. It must withstand resilience which is a shock-absorption flooring that is based on force applied. In this situation a concrete base would best suite the needs since it has no resilience. The harder and thicker a surface ism it will influence the amount of resilience it can create. In regards to deflection which is the amount of impact that is felt around points of contact, the use of area elastic floors would be beneficial in order to control movement on the surface. Overall, it is important to keep in mind the type of condition the sub-flooring surface would be and if they are placed directly or floating because the overlay surface will react differently depending on the sub-flooring. Three common

---

120 Phillips, Derek. Daylighting: Natural light in Architecture. Massachusetts: Architectural Press. 2004. Pg. 7

121 Sawyer, Thomas H. Facilities Planning for health, Fitness, Physical Activity, Recreation and Sports: Concepts and Applications. Tenth Edition. United States: Sagamore Publishing, 2002. Pg. 82

type of sub-flooring would be a suspension floor of plywood, foam rubber and synthetic material with finished floor on top 2. Spring floor with metal springs covered by plywood subfloor and finished layer on plywood and 3. Padded floor of foam or synthetic or porous materials laid on concrete or plywood and covered with finished floor.<sup>122</sup>

Walls: The function of walls is to define perimeters, boundaries or dividers for specific activities. It also can control volume of sound, light, heat and moisture and can be used for acoustical purposes if needed. The walls have the chance to be free with aesthetics such as pictures, graphs and color schemes. The walls have the ability to control how large or how small a space can become and if it is private or open to other spaces. The use of nana walls can be a system integrated to provide experiences of being able to bridge between indoors and outdoors and strengthen a sense of place.

Ceiling: Current gyms don't give much thought of the exiting ceiling conditions and usually leave it looking like a typical warehouse or even a ceiling with visible ducts for the air vent. The design of a ceiling can be intriguing and can be impacted by the roof design, the planned activities and ceiling construction.<sup>123</sup>

#### Suggested Indoor Surface Materials

##### Classrooms

Flooring: 1. Hard maple or 2. Tile, asphalt, rubber, linoleum

Lower Walls: 1. Plaster 2. Cinder Block 3. Wood Panel

Upper Walls: 1. Plaster 2. Cinder Block

Ceilings: 1. Tile, acoustic 2. Plaster 3. Concrete or structure tile

##### Locker Rooms

Flooring: 1. Tile, ceramic 2. Terrazzo, abrasive 3. Cement, abrasive, non-abrasive 4. Synthetics

---

<sup>122</sup> Stoll, S. Beller, J. The professionals Guide to Teaching Arobics. Englewood Cliffs, NJ: Prentice-Hall. 1989

<sup>123</sup> Sawyer, Thomas H. Facilities Planning for health, Fitness, Physical Activity, Recreation and Sports: Concepts and Applications. Tenth Edition. United States: Sagamore Publishing, 2002. Pg. 121

Lower Walls: 1. Glazed brick 2. Tile, ceramic 3. Cinder block 4. Concrete 5. Plaster

Upper Walls: 1. Cinder block 2. Plaster

Ceiling: 1. acoustic tile

Lobby

Flooring: 1. Carpeting 2. Hard maple 3. Tile, asphalt, rubber, linoleum

Lower Wall: 1. Wood Panel 2. Plaster 3. Cinder Block

Upper Wall: 1. Cinder Block

Training Rooms for mixed martial arts

Flooring: 1. Hard maple 2. Tile, asphalt, rubber, linoleum

Lower Wall: 1. Plaster 2. Wood Panel 3. Glazed Brick

Upper Wall: 1. Brick 2. Cinder Block 3. Plaster

Ceiling: 1. Acoustic Tile

### **Environmental Climate Control-relation to heating, ventilation, air conditioning**

The design of high performance heating, ventilation, and air conditioning system includes specification of high-efficiency equipment and controls that regulate the system to allow operation only when it is needed. The thoughtful consideration of all the interactions of the system of elements can increase comfort for building occupants while cutting cost for the building owner.<sup>124</sup>

---

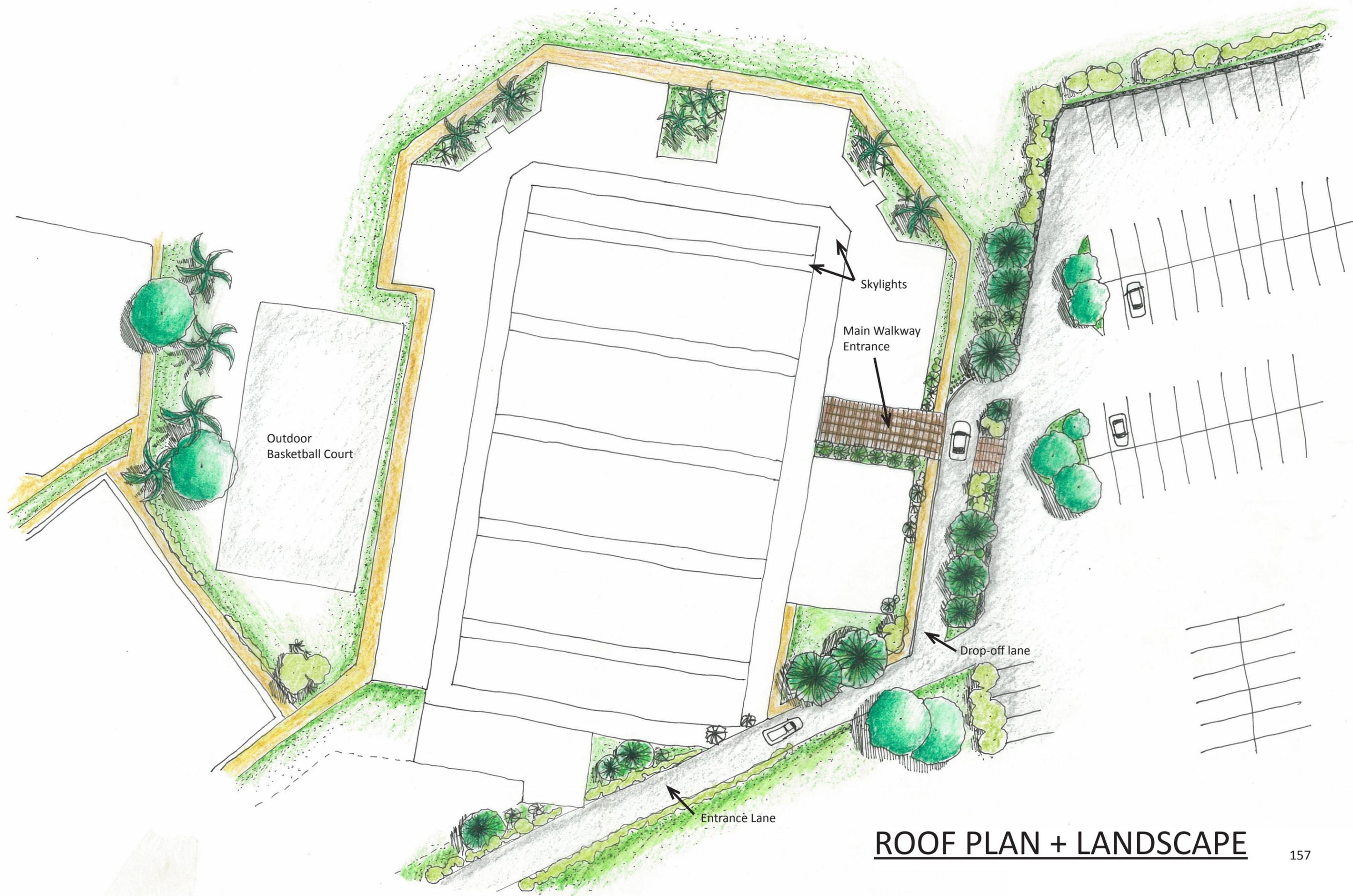
124 Savings By Design California. Southern California Edison. 2007

## **LANDSCAPE PLAN**

The purpose of the landscape is to create a buffer between the proposed mixed martial arts community center and the parking. The trees and flora will create a natural border that divides the existing field with the parking lot. The local stone walls and walkways add to the overall feeling of walking through a garden and entering the mixed martial arts community center. The Hala tree will be used throughout the site and will represent firmness which comes from its strong roots. These roots symbolize the foundation of everything in which Palama Settlement is built upon and how the mixed martial art spaces will enhance the structure to become a community center for all.



Figure 80: Renderings of the entry passage into the gym and mixed martial art community center



Outdoor Basketball Court

Skylights

Main Walkway Entrance

Drop-off lane

Entrance Lane

# ROOF PLAN + LANDSCAPE

## RENDERINGS

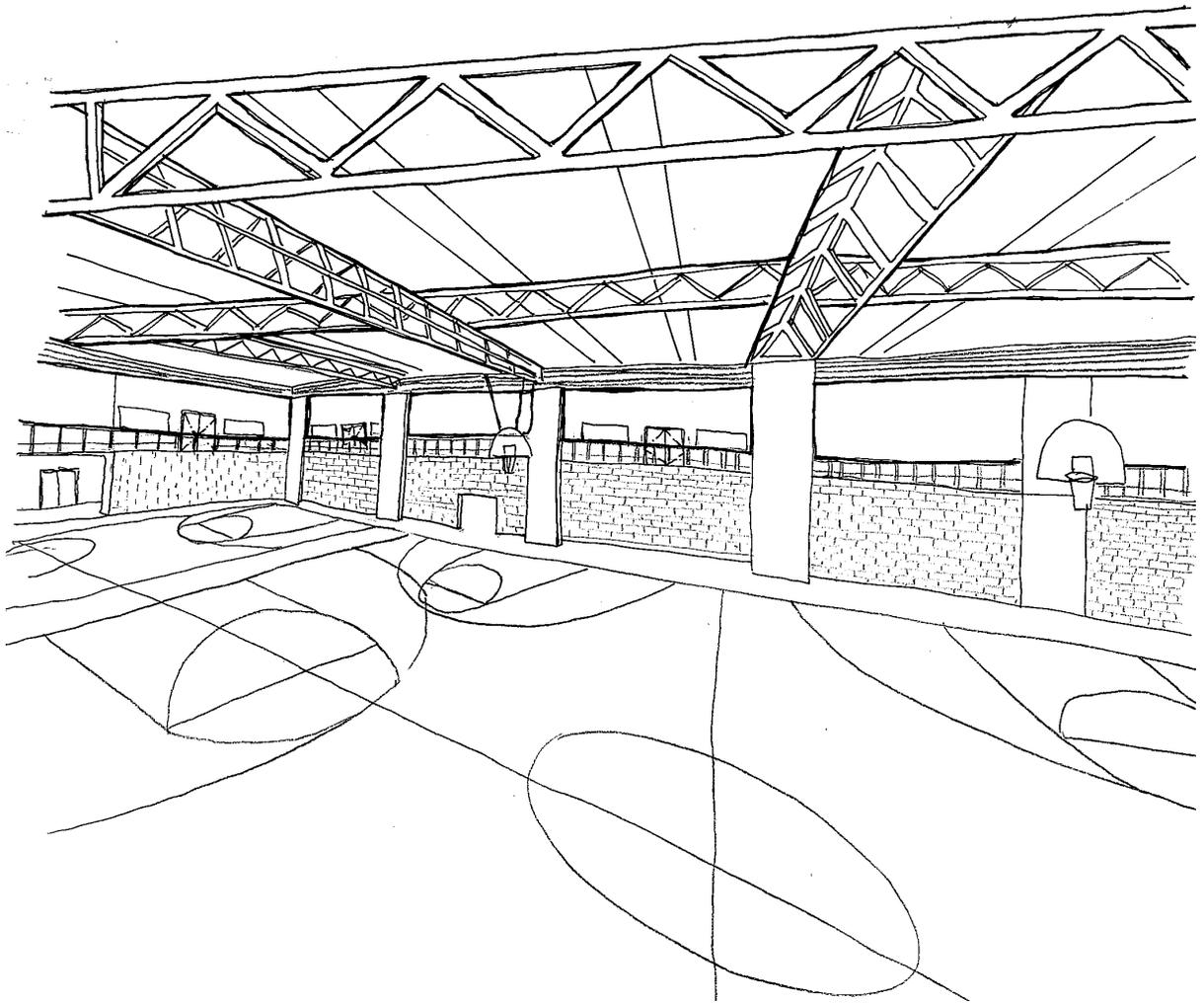


Figure 81: Sketch of the interior space of the gym and multi-purpose spaces of the center



Figure 82: Birds eye perspective rendering



Figure 83: Interior rendering of multi-purpose space with grappling activities

## RENDERINGS



Figure 84: Front perspective from the freeway



Figure 52: Interior rendering of multi-purpose space with striking activities



NORTH ELEVATION



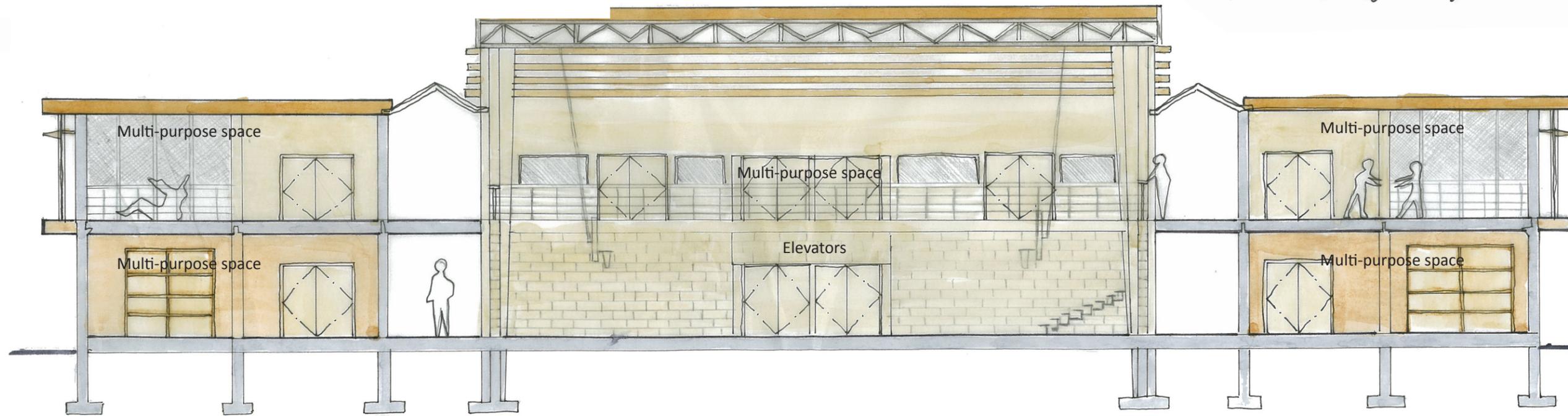
EAST ELEVATION



ELEVATIONS



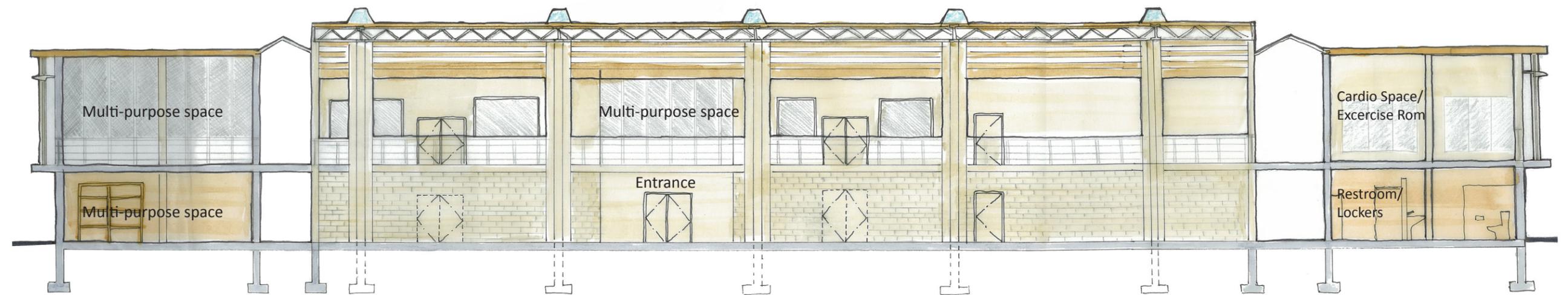
WEST ELEVATION



SECTION A



ELEVATION & CROSS-SECTION



SECTION B



LONGITUDINAL SECTION

## **SUSTAINABLE ARCHITECTURE FOR MIXED MARTIAL ART SPACES**

With the powerful movement of “green” architecture taking affect, it is never too early to prepare ways to integrate key decisions which would allow spaces of training and entertainment for Mixed Martial Arts to be sustainable and environmental friendly. Some simple ideas could be the use of natural materials, sunlight and ventilation which can save energy cost and be sufficient. The use of green roofs or photovoltaic panels can also be ways to save. Also, allowing spaces to open up instead of closing spaces up like boxes would be something to venture into. I haven’t seen any gym which allows openness or connection with other elements outside of the gym. By creating openness I know it will enhance the physical, mental and spiritual set of mind as well as set it apart from any other type of institution which trains mixed martial arts.

“The architecture isn’t going to do this all by itself. The staff, management, programs and equipment etc., all play a big part. However the facility can give you a great competitive edge, that first and lasting impression, the essence of a special place like no other.

At one time a gym was seen as a place with workout equipment and cardio area where people wanted to become stronger, lose weight and live longer. As the science of health and fitness centers became more sophisticated, the science and art facility design soon arose.”<sup>125</sup>

By researching past and present mixed martial art spaces and community spaces, it is also important to think of what can be changed or altered for future. Presently the idea of green or sustainable architecture is becoming common in various types of architecture projects. However, can this type of sustainable architecture be implemented into centers that cater to mixed martial art training spaces? There are currently various components that can be used within the proposed

---

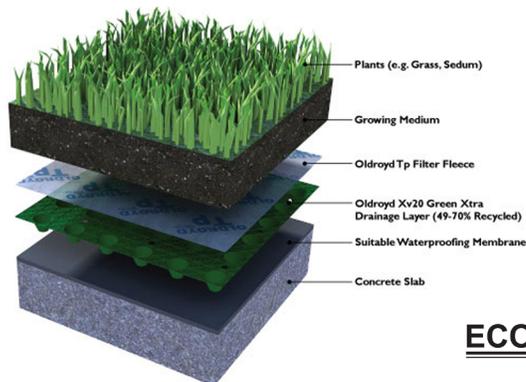
<sup>125</sup> Fabiano, Rudy. Club Design: By Working with rather than against a natural resource, unique spaces of distinction can be created. Sandford Group. 1997. [http://www.sandfordgroup.com/editoriallibrary1/fitness\\_library/fitness\\_club\\_architect.html](http://www.sandfordgroup.com/editoriallibrary1/fitness_library/fitness_club_architect.html). November 23, 2009

center to increase the efficiency by being selective of materials and energy sources that will help the earth. Some of these type of materials are eco friendly paints, reusable flooring, green roofing, the use of local materials and photovoltaic panels. Particularly for fitness centers, there is a movement of pedal electricity or human power which allows humans who use exercise machines to produce electricity or power which the building can use. By implementing these sustainable design components into the proposed mixed martial arts center will encourage future centers to follow the template set forth by the mixed martial arts community center.

## SUSTAINABLE ARCHITECTURE FOR THE FUTURE

increasing the efficiency in the selection and use of materials and energy sources that will change the design movement of training spaces for mixed martial arts

- Paint
- Flooring - Recycled rubber tiles, reusable materials
- Roofing - Green Roof
- local materials such as wood. Eucalyptus Laminated Veneer Lumber (LVL) & Local stone for veneer and walls
- Energy-efficient materials - photovoltaic panels, solar electricity and pedal electricity or human power (bike, treadmill etc.)
- Integration of nature into building



Local wood with integrated PV panels

## ECO TECHNOLOGY MIXED MARTIAL ART CENTER

## **CONCLUSION**

As I come to the conclusion of my research and design project, I look back and realize how much knowledge I gained and how my perception to mixed martial arts has altered. In the beginning of the project all I wanted to do was to design a mixed martial arts gym for the sole purpose of training fighters to fight. However by researching the various styles of martial arts throughout history and the world, I have come to understand and respect the customs and protocols which make various martial arts unique.

The research and design exercise have enabled me to broaden my ideas of looking outside of the box and introducing mixed martial arts to be more than fighting, but a way to bring people of all ages, races, and cultures together and build a stronger community. The space of which this sharing takes place is what my design proposal exemplifies. The name “mixed martial arts community center” introduces a new prototype of how gyms can be in the future. It can be a multipurpose place that can serve all types of fighting arts.

Through this project I also wanted to see if mixed martial arts and architecture could in fact relate in some form or fashion. Architecture creates the space of which mixed martial art is taught, shared and competed in. This project enabled me to find ways to create new ideas of how sustainable design aids in energy efficiency by using Hawai`is natural resources. This will in turn form a prototype for other mixed martial art spaces to follow and begin a new trend towards energy efficiency for the future.

Importantly I realized that a space for mixed martial arts could not be complete without the people who spend time in teaching and mentoring this art. The users who are the community bring a space for mixed martial arts to life with the various activities. The place for mixed martial arts should embody a place where teaching and training can be done and where the spiritual, emotionally and physically building of mixed martial arts can be obtained.

## **BIBLIOGRAPHY**

1. Advance fitness Products-Total Fitness Resource. Services-Design. <http://www.afproducts.com/resources/case-sudy/xyience-training-center>. Access Date: November 23, 2009
2. Barkley, J. Terry. Surfacing. Sandford Group. 1997. [Http://www.sandfordgroup.com/editoriallibrary1/fitness\\_library/fitness\\_facility\\_surfacing.html](Http://www.sandfordgroup.com/editoriallibrary1/fitness_library/fitness_facility_surfacing.html). November 23, 2009
3. Bledsoe, Gregory H. Combat Sports Medicine. London: Springer Publishing, 2009. Pgs. 323-325
4. Bolelli, Daniele, M.A. Mixed Martial Arts: A Technical Analysis of the Ultimate Fighting Championship in its Formative Years. Journal of Asian Martial Artrs. Volume 12 Number 3. 2003. Pg. 41,43
5. Bolelli, Daniele. On the Warriors Path: Philosophy, Fighting, and Martial Arts Mythology. 2nd edition. Berkeley: Blue Snake Books. 2008
6. Boxing Ring. Fighters Only Magazine. Rosi Sexton. April 2009. Pg. 86-87
7. Brandon Vera's Baybayin Tattoos. Pinoy Tattoos.com. Updated October 13, 2007. <<http://www.pinoytattoos.com/brandon-veras-baybayan-tattoos/>>. November 17, 2009
8. Callos, Tom. "Re: Mixed Martial Arts Culture." Email to Andrea Simpliciano. 27 October. 2009
9. Camarillo, Dave. Kraaus, Erich. Cordoza, Glen. The Book of Knowledge Series. Brazilian Jiu-Jitsu: The Closed Guard. Las Vegas: Victory Belt Publishing. 2009
10. Carsten, J. and Hugh Jones, J. (eds). About the House: Levi Strauss and Beyond. Cambridge: Cambridge University Press. 1995. Pg. 2
11. Chiu, David. Wrestling: Rules, Tips, Strategy, and Safety. New York: Rosen Central, 2005. pg. 4-6
12. Cordoza, Glen. Krauss, Erich. Mixed Martial Arts: The Book of Knowledge. China: Victory Belt Publishing. 2007
13. Clinch Fighting. Full Contact Martial Arts. <<http://www.fullcontactmartialarts.org/clinch-fighting.html>> 15 October 2009

14. Cuyler, P.L. Sumo: From Rite to Sport. New York: Weatherhill, 1979. pg. 18,20, 25,31,163,166
15. Definition of Culture. <http://www2.eou.edu/~kdahl/cultdef.html> October 22, 2009
16. Donohue, John. Taylor, Kimberley. The Classification of the Fighting Arts. Journal of Asian Martial Arts. Volume 3. Number 4. Pg. 13
17. Fabiano, Rudy. Club Design: By Working with rather than against a natural resource, unique spaces of distinction can be created. Sandford Group. 1997. [http://www.sandfordgroup.com/editoriallibrary1/fitness\\_library/fitness\\_club\\_architect.html](http://www.sandfordgroup.com/editoriallibrary1/fitness_library/fitness_club_architect.html). November 23, 2009
18. Fornander, Abraham, "Collection of Hawaiian Antiquities and Folklore" in Memoir of the Bishop Museum of Polynesian Ethnology & Natural History, vol. VI, trans. And ed and Thomas G. Thrum, (Honolulu: Bishop Museum Press, 1919-1920). Pg. 148
19. Gems, Gerald R. The Athletic Crusade: Sport and American Cultural Imperialism. United States: Blackwell Publishing. 2006 pg. 77
20. Georgiou, Andreas. V. Pankration: An Olympic Combat Sport: An Illustrated Reconstruction Volume 1. Xlibris Corporation. 2005.
21. Gracie, Renzo. Gracie, Royler. Brazilian Jiu-Jitsu: Theory and Technique. Vermont: Invisible Cities Press. 2001.
22. "Grappling" The free dictionary by Farlex. 2009. The free dictionary online. 26 September 2009 <<http://www.thefreedictionary.com/grappling> > 24 September 2009
23. Heidi, Nast and Pile, Steve (eds). Places Through the Body. New York: Routledge. 1998. Pg. 4
24. Human Kinetics, Hanlon, Tom. The Sports Rules Book. 3rd edition. Illinois: Human Kinetics, 2009. pg. 51
25. Japanese Traditions – Entering the Dojo: What Prices are you willing to pay? Fightingarts.com. Dave Lowery. < <http://www.fightingarts.com/reading/article.php?id=402>> 13 April 2009
26. "Ju-jitsu History" Ju-jitsu.net MMA & Ju-jitsu Online: The Ultimate Brazilian Ju-jitsu &

Mixed Martial Arts Resource. 2009. 17 October 2009 <http://www.Ju-jitsu.net/history.shtml>

27. "Ka Oihana Lua Hawai'i Lahui," 2 August, 1923. pg. 1
28. Kaihewalu, 'Ōlohe Solomon. Ancient Hawaiian Martial Art of Kaihewalu 'Ohana Lua. Orange, California: Kaihewalu 'Ohana Publishing. 2006 pg. 3
29. Kanō, Jigorō. Kodokan Judo. New York: Kodansha International Ltd. 1986. pg. 15,16,21,22
30. Karl Raitz, The Theatre of Sport. Baltimore, MD: John Hopkins University Press, 1995. Pg. vi
31. Kenrick, Doug. The Book of Sumo: Sport, Spectacle, and Ritual. New York: Weatherhill, 1969. pg. 93,94,97
32. Kikuchi, Kristina P. Lua: The Sacred Fighting System of Hawaii. Honolulu: University of Hawaii at Manoa. May 1995 pg. 9
33. Kordi, Ramin. Maffulli, Nicola. Wroble, Randall. Wallace, W. Combat Sports Medicine. London: Springer-Verlag. 2009
34. Lewis, Clyde. Grappling Concepts. Judoinfo Online Dojo. Modified March 1, 2003. <http://judoinfo.com/grappling.htm>> October 26, 2009
35. Lighting Historic Buildings, Architectural Press. 1997
36. Lowry, Dave. In the Dojo: A Guide to the Rituals and Etiquette of the Japanese Martial Arts. Boston: Weatherhill Publishing. 2006. pg. 12-14
37. Lowry, Dave. What Puts the "Tao" in the Dojo? Part 2. Fightingarts.com. <http://www.fightingarts.com/reading/article.php?id=387>. November 16, 2009
38. Lowry, Dave. In the Dojo: A Guide to the Rituals and Etiquette of the Japanese Martial Arts. Boston: Weatherhill Publishing. 2006. pg. 19
39. Malo, David. Hawaiian Antiquities (Moolelo Hawaii). (Honolulu, Hawaii: Hawaiian Gazette Co., 1903.) pg. 304
40. Martell, A. William. Greco-roman wrestling. Human Kinetics Publishing. Illinois. 1993

41. Mary Kawena Pukui and Samuel H. Elbert, Hawaiian Dictionary, (Honolulu: University of Hawai'i Press, 1986). Pg. 213
42. Massey, Doreen. Space, Place and Gender. Cambridge: Polity Press. 1994. Pg. 4
43. McClain, James L. Japan, a modern history. New York: W.W. Norton & Company. 2002. pg. 564
44. Monmouth Products. A Family of Materials/A World of Solutions. Monmouth Rubber & Plastics. Corp. [http://www.rubberplastics.com/equivalency\\_chart\\_01.htm](http://www.rubberplastics.com/equivalency_chart_01.htm). November 29, 2009
45. Muay Thai History (Complete Version). Muaythaistuff.com. <[http://www.muaythaistuff.com/learn-muay-thai/muay-thai-history/muay\\_thai\\_history\\_complete\\_ver/](http://www.muaythaistuff.com/learn-muay-thai/muay-thai-history/muay_thai_history_complete_ver/)> 21 April 2009
46. Nippon Budokan: Official website: Purpose Built. <http://www.nipponbudokan.or.jp/>. December 1, 2009
47. Nishiyama, Hidetaka. Richard C. Brown. Karate – The Art of “Empty-Hand” Fighting. Singapore: Turtle Publishing, 1960. pg.19-20, 29,36, 187-189
48. O'keefe, Pat. Kickboxing: The Ultimate Guide to Conditioning, Sparring, Fighting & More. New York: Skyhorse Publications. 2007 pg. 85,87,91,92,93
49. Ohlenkamp, Neil. The Evolution of Judo Contest Rules. JudoInfo Online Dojo. Modified December 10, 2006. <http://judoinfo.com/rules2.htm>> October 24, 2009
50. Ohlenkamp, Neil. Fighting or Playing? The Martial Art vs. Sport Debate. JudoInfo Online Dojo. Modified July 13, 2002. <http://judoinfo.com/sport.htm>> October 25, 2009
51. Oliver, Ian. Boxing Fitness: A system of training for complete boxing fitness. London: Snowbooks Ltd. 2004. pgs. 14
52. Pā Ku'ialua, Lua, NHCAP Collection, Vol. 1, page. 16
53. Paglinawan, Richard. Eli, Mitchell, Kalauokalani, Moses, Walker, Jerry. Lua: Art of the Hawaiian Warrior. Honolulu: Bishop Museum Press. 2006 pg. 24, 26
54. Paglinawan, Richard K. Lua, The Hawaiian Art of Self-Defense. Hawaiian Culture Lecture Series. May 9, 1991. Pg. 8

55. "Palaestra". Miahanas. <<http://www.mlahanas.de/Greeks/LX/Palaestra.html>> 20 February 2009
56. Parkm Yeon Hwan, Gerrard, Jon. Black Belt Tae Kwon Do. New York: Checkmark Books, 2000. pg. xii,10, 230-232, 241
57. Phillips, Derek. Daylighting: Natural light in Architecture. Massachusetts: Architectural Press. 2004. Pg. 7
58. Pompian, Susan. Tokyo for Free. New York: Kodansha International, 1998. pg. 108
59. Sattler, Jon. The Ultimate Guide to Grappling. United States: Black Belt Books. 2007
60. Sawyer, Thomas H. Facilities Planning for health, Fitness, Physical Activity, Recreation and Sports: Concepts and Applications. Tenth Edition. United States: Sagamore Publishing, 2002. Pg. 75, 82, 121, 420, 421
61. Savings By Design. California. Southern California Edison. 2007
62. Snowden, Jonathan. Total MMA: Inside Ultimate Fighting. (Toronto, Ontario, Canada: ECW Press, 2009), pg. 9,17
63. Sosnoski, Daniel. Introduction to Japanese Culture. Japan: Tuttle Publishing, 1996 pg. 36
64. Stoll, S. Beller, J. The professionals Guide to Teaching Arobics. Englewood Cliffs, NJ: Prentice-Hall. 1989
65. "Striking Arts in Mixed Martial Arts." World of Combat. < [www.worldofcombat.net/striking-arts-in-mixed-martial-arts.html](http://www.worldofcombat.net/striking-arts-in-mixed-martial-arts.html)> 22. September 2009
66. Stürzebecher, Peter. Ulrich, Sigrid. Architecture for Sport: New Concepts and International Projects for Sport and Leisure. England: Wiley-Academy. 2002 pg. 10, 22, 294
67. Submission Grappling Vs. Classical Ju-jitsu: When Cultures and Concepts Collide. Grapplearts: Building a Better Grappler. [www.grapplearts.com/submission-grappling-vs-ju-jitsu.html](http://www.grapplearts.com/submission-grappling-vs-ju-jitsu.html) 26 September 2009
68. Swadding, Judith. The ancient Olympic games. London: Trustees of British Museum Publications, 1980. pg. 73

69. The State of the Art-Putting the Art in Mixed Martial Arts. Fighters Only Magazine. April 2009. Issue 2. pg. 52-57
70. Thernstrom, Stephan. Harvard encyclopedia of American ethnic groups. Cambridge, Massachusetts: Belknap Press of Harvard University. 1980 pg. 358
71. Valentino, Steve. Conference Center Design. Ezine Articles. Submitted November 9, 2006.
72. Vertinsky, Patricia. Locating a 'Sense of Place': Space, Place and Gender in the Gymnasium. New York: Routledge. 2004. Pg 9
73. Whole Building Design Guide Staff. Physical Fitness (Exercise Room). Updated: June 2, 2009. [http://www.wbdg.org/design/physical\\_fit.php](http://www.wbdg.org/design/physical_fit.php). November 29, 2009
74. Wrestling Room Construction. Wrestling Assistant. Milt Sherman. 9.11.05 <http://homepage.mac.com/gdemarco1/WA/WRMilt.html> 20 February 2009