

To my committee and professor, who have helped me, encouraged me and guided me at every step of my project.

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Thank you!

Overture

Being an Architect was always something I was proud of, and I see it as a means to give back to the society. Architecture can change and influence ones life tremendously to create betterment and excellence.

Likewise, choosing this project is a means of giving back to the country's most vulnerable with the skills as a designer.
Housing for homeless Veterans, to help the people in need is the primary moto behind my final study.

Keeping in intact the essence of ones identity, culture and need this project goes forward to design housing and medical facilities for the Homeless Veterans.

Order

I nvestigation	1-6
I nference & I nspiration	7-12
I deas & E volution	13-14
D esign	15-28
R eferences	29

Demographics



Texas is the 2nd largest holder of veterans with 1,583,272 veterans of the total vet population. The homeless veterans in Texas are constantly rising, among which 50% are disabled, above age 50 & majorly men. Most of them face Mental Issues like Depression, Suicidal thoughts, PTSD, Low self Esteem & Self-Worth Issues.



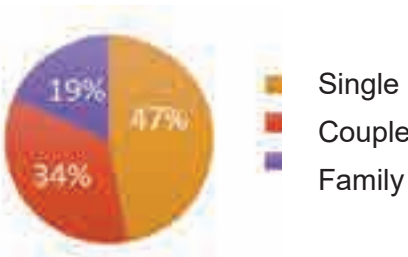
10% of the homeless population are veterans.



8/10 homeless veterans experience Alcohol, Drug or Mental Issues.



Veteran Household



Disability & Economic Status



Investigation

- Demographics
- Financial Profile
- Desktop Studies

Financial Profile

- **HUD-VASH-EUL:** U.S Department of Housing and Urban Development - VA Supportive Housing - Enhanced Use Lease Program.
- HUD Housing Voucher + VA Support Services help homeless veterans & their families to find & sustain permanent housing.
- Case Management involves case managers who play a major role. Case Managers respond to every individual veteran's needs uniquely to improve their mental, physical, social and economic conditions to cope with the shift to civilian living.
- Report – End of FY 2018, 85,000 veterans were with active vouchers & 78,000 veterans were in housing with a HUD-VASH Vouchers.



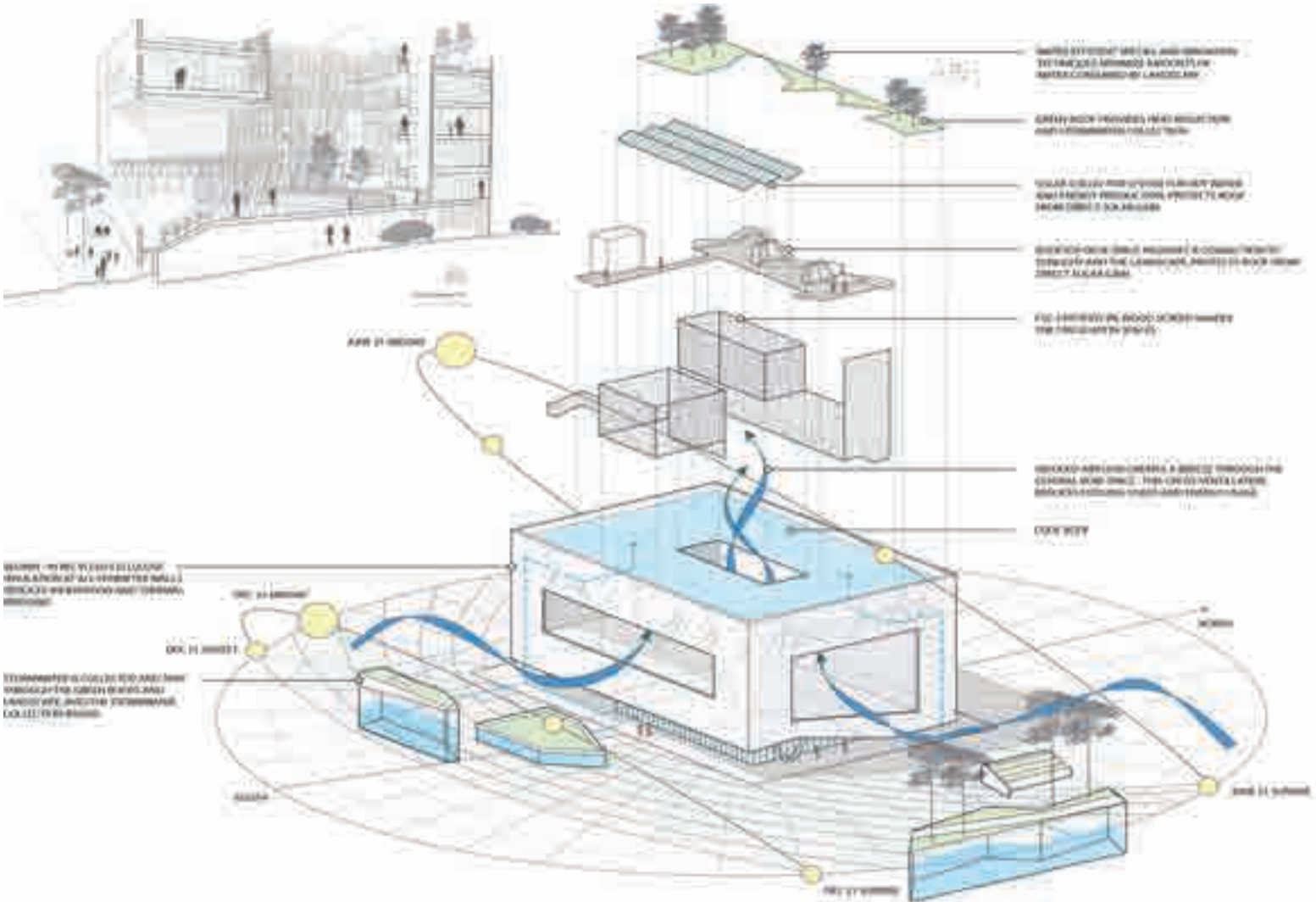
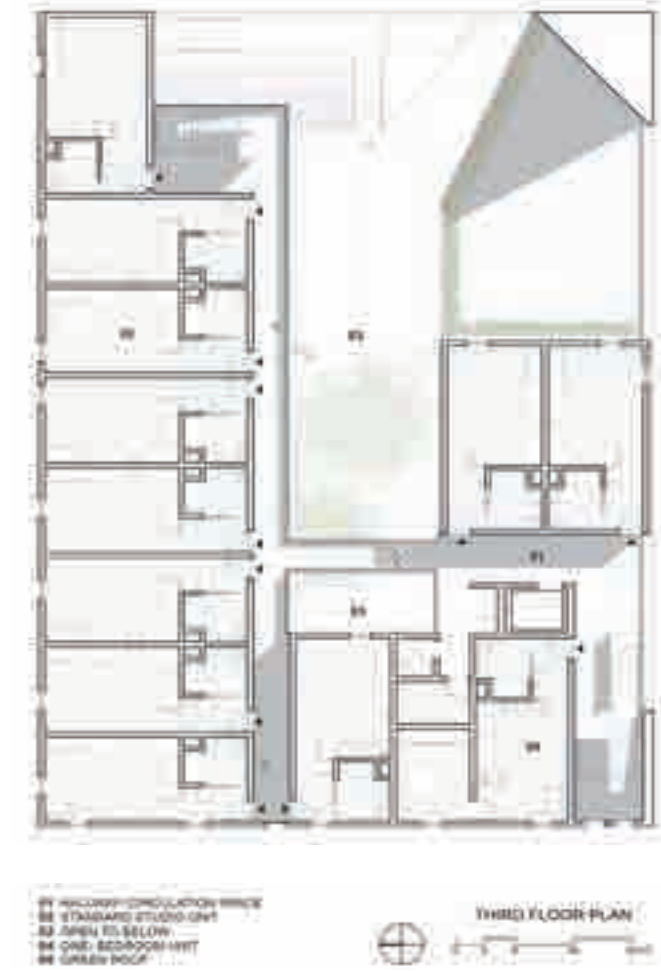
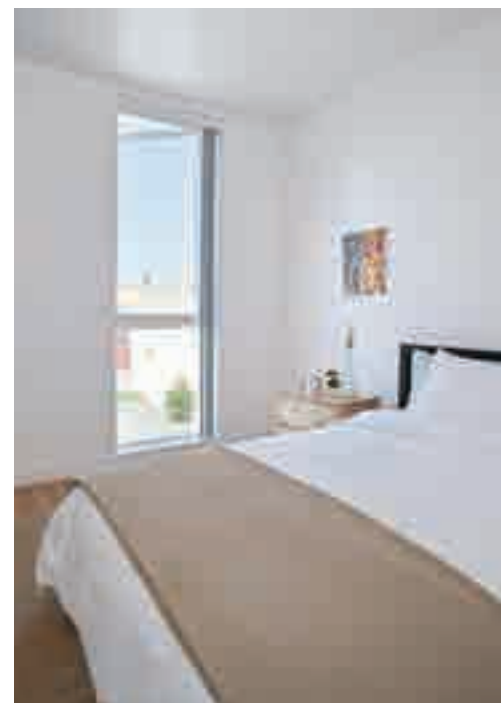
**THE SIX-PERMANENT
DISABLES/HOMELESS
VETERAN HOUSING**

Architecture Firm: Brooks + Scarpa

Location: MacArthur Park, Los Angeles

Site Area: 0.37 acres

The housing comprises of 45 studios,
7 one bedroom apartments.





CREST APARTMENTS

Architecture Firm: Michael Maltzan Architecture.

Location: Van Nuys, Los Angeles

Site Area: 1 acre

It comprises of 64 efficiency apartments and on-site social services.



MECHANICAL EFFICIENCY

- High-efficiency Fluorescent Fixtures
- Energy Star Appliances
- High-efficiency Double-paneled Windows
- PE Panels / Pre-insulated & PE of Energy Efficient
- Noise Proofed Entry

INDOOR ENVIRONMENTAL QUALITY

- Enhanced Outdoor Air Ventilation
- Low VOC
- Low VOC Construction Materials
- 90 VOC Materials and Products
- Low VOC Solvent Cleaning Products

MATERIALS & RESOURCES

- 62% Construction Waste Diverted
- Recycled Concrete Blocks
- FSC Certified Plywood
- Recycled Steel

SUSTAINABLE SITE

- Highly Efficient and Energy Efficient
- Lowest Carbon Footprint
- Lowest Energy Consumption
- High Quality Materials
- High Quality Construction
- High Quality Workmanship
- High Quality Workmanship
- High Quality Workmanship

LOCATIONS & LINKAGES

- Walkable
- Near Public Community Resources
- Excellent Public Transit Access

STUDIO UNIT 1

STUDIO UNIT 2

1-BEDROOM MANAGER'S UNIT

FIRST FLOOR

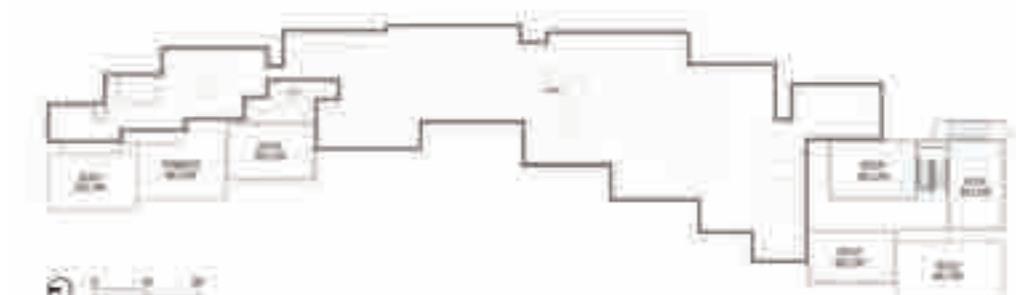
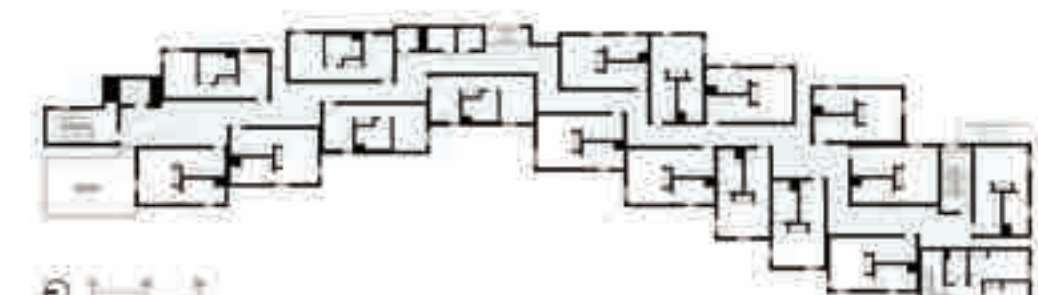
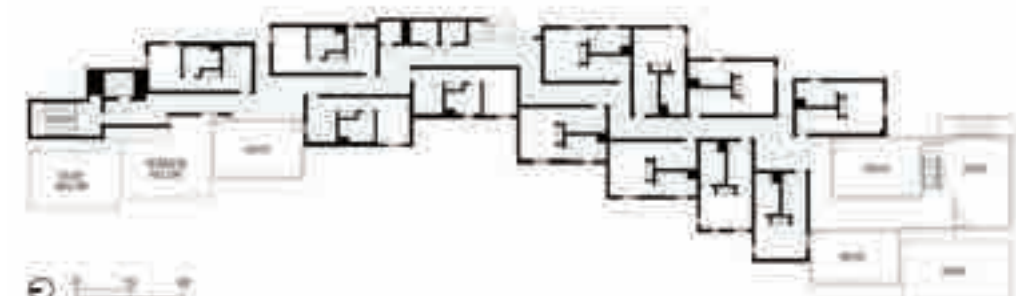
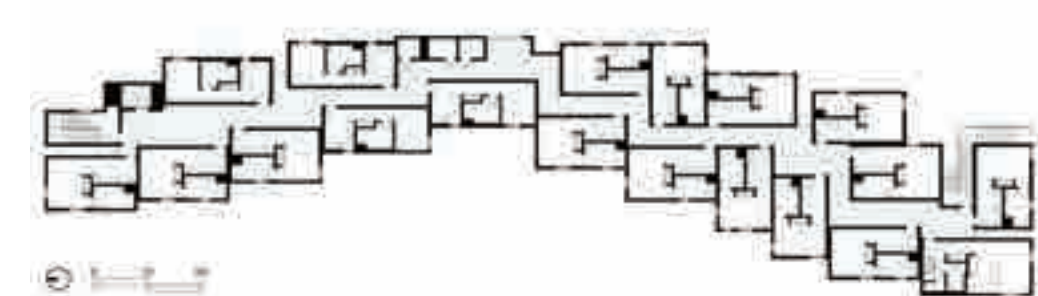
SECOND FLOOR



ARCHITECTURE



WEST ELEVATION



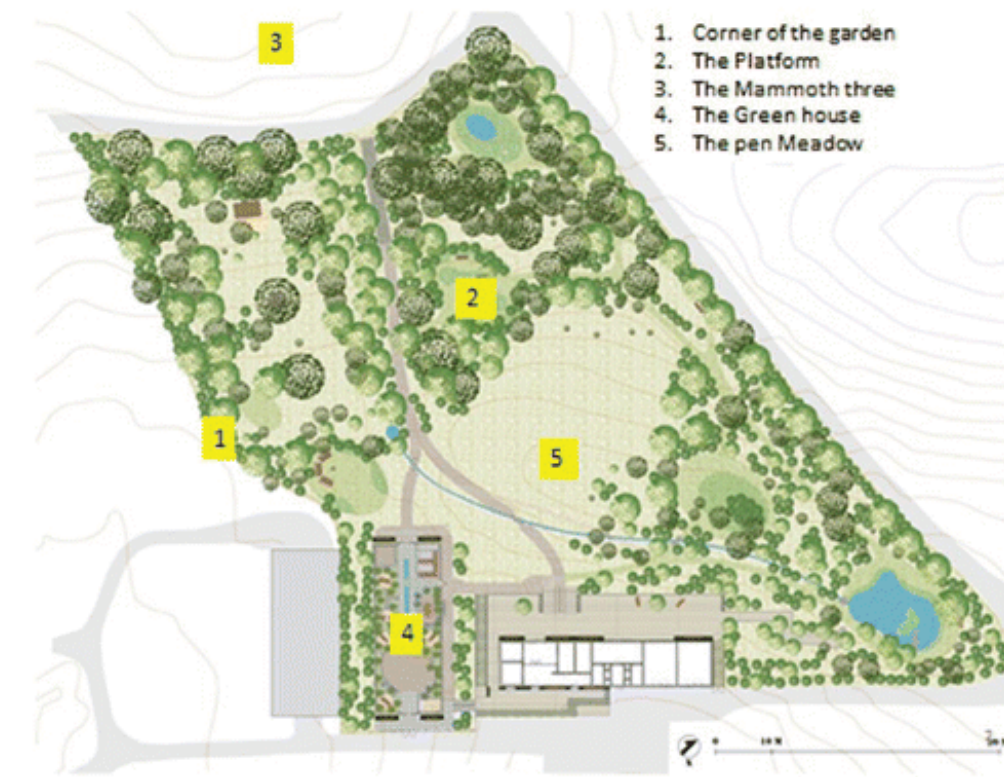
- | | | | |
|--------------------------|-----------------------|----------------------|----------------------|
| 1. Manager's Office | 7. Conference Room | 13. Staff Break Room | 19. BBQ Area |
| 2. Reception Lobby | 8. Laundry Room | 14. Trash Room | 20. Transformer Yard |
| 3. Restroom | 9. Electrical Room | 15. Recycling Room | 21. Parking Area |
| 4. Elevator Machine Room | 10. Restroom | 16. Mechanical Room | |
| 5. Community Kitchen | 11. Counseling Office | 17. Bicycle Storage | |
| 6. Community Lounge | 12. Open Office | 18. Community Garden | |

Inference

- Evidence Based Design Research towards user needs & experience
- Programm
- Site Selection & Analysis

Inspiration

- Vizag Steel Plant, India
- The Mughal Gardens



As a part of Evidence Based Design a research question was selected to understand how nature can help veterans heal. The research question was as follows and an experiment was conducted to understand the results.

The question:

Can nature participation help in physical & mental healing of veterans in a residential setting?

The Experiments:

8 Danish veterans suffering from PTSD participated in a 10-week Nature Based Therapy at the university of Copenhagen forest therapy garden Nacadia in Horsholm arboretum.

Qualitative Interviews were conducted before and after the study.

Elements that were a part of Nature Based Therapy were:

1. Mindfulness activities
2. Applied Mindfulness
3. NBA- Nature Based Activities
4. Therapeutic Individual sessions.

Results:

The Arboretum was a place where they felt included and a place with no or low demand. There was a shift of preferred space by veterans from one that offered refuge & considered safe to, open areas & public locations where they could welcome other veterans.

Conclusion:

After the interviews at the end of the experiment, veterans who participated in the Nature Based Activity therapy found it motivating and meaningful. They also vocalised that it improved their self-efficacy to make them feel more responsible and courageous. Therefore including nature and nature participation at a residential setting was found beneficial for the improvement of mental and physical health of veterans.

The 3 levels of Nature participation or Nature Based Activities are as follows:

- Viewing Nature
- The presence of nature nearby
- Active participation & involvement with nature



Gardening as an activity in residential Balconies.



Presence of seating and walking pathways in a garden setting.

HOUSING FOR 100 HOMELESS VETERANS

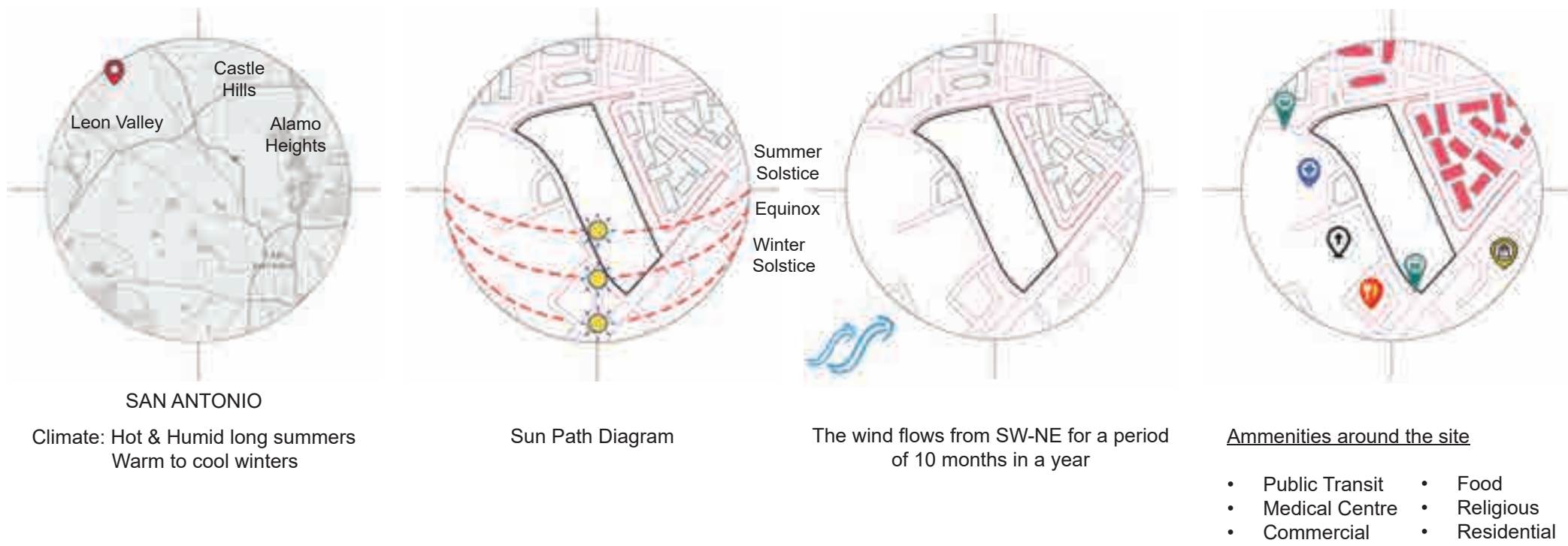
SPACES	NSF/SPACE	QTY	NSF
1.0 HOUSING			
Shared Spaces			
Reception	40	2	80
waiting area	15	4	60
Powder rooms / toilets	50	1	50
Computer Room	120	2	240
Recreational/multipurpose room	325	1	325
Laundry Rooms	60	1	60
Mechanical Rooms	100	1	100
File/copy/work	60	1	60
Wheelchair storage	10	4	40
Occupied Spaces			
Efficiency Units	360	25	9750
Studio Apartments	510	25	12750
2bed 2bath Apartments	840	25	21000
Built Up Area			44515
Circulation	30% of B.U. A		13354.5
Total Built Up Area			58000

SPACES	NSF/SPACE	QTY	NSF
2.0 PUBLIC AMMENTIES			
Leasing office			
Reception	40	4	160
Waiting Area	60	4	240
Office/Manager room/ meeting room	120	3	360
Staff Toilets	50	1	50
Powder room / toilet	50	1	50
Mail room	60	1	60
File/Copy/Work	60	1	60
Storage	45	1	45
Mechanical Room	100	1	100
Clubhouse			
Library	45	1	45
Waiting area	15	4	60
Computer / Technology Center	100	2	200
Gym	1000	1	1000
Meditation & Yoga Room	300	2	600
Game & TV Room	325	1	325
Kitchenette	15	2	30
Event room	600	2	1200
Salon	120	2	240
Toilets	50	1	50
Built Up Area			4875
Circulation	30% of B.U.A		1462.5
Total Built Up Area			6500

SPACES	NSF/SPACE	QTY	NSF
3.0 SUPPORT SYSTEMS/ WELLNESS CENTER			
ADMIN			
reception	40	6	240
Waiting area	60	10	600
Patients toilet	50	1	50
Group therapy room	325	2	650
ANCILLARY			
Staff Lounge and Lockers	120	1	120
Conference room	325	1	325
Staff toilets	50	1	50
DIAGNOSIS & TREATMENT			
Counselling & Assistance rooms	120	10	1200
Craft Activity Area/occupational therapy	325	2	650
Storage for occupational therapy	45	2	90
Teaching Kitchens	120	2	240
Aroma therapy & Acupuncture	120	2	240
Massage & Hydro therapy	120	2	240
Physiotherapy	120	2	240
Examination rooms	120	2	240
COMMERCIAL			
Drug Store	120	2	240
Cafe	360	1	360
Storage	200	1	200
SPORTS			
Walking & Running Track	7000	1	7000
Swimming Pool/changing rooms/bathrooms/ toilets	1200	1	1200
Basket Ball court	3500	1	3500
SERVICES			
Janitors closet	15	3	45
Supply & linen storage	15	5	75
Storage	200	1	200
Mechanical room	100	1	100
Built Up Area			18085
Circulation	30% of B.U.A		5425.5
Total Built Up Area			24000
PARKING			
			40000
Total Area			128500

Site Selection & Analysis

Bexar County in Texas with major homeless veterans, was chosen to maximise the design scope. A site at walkable distance to the amenities like schools, hospital, commercial zones and public transit was chosen to help the financially frail homeless veterans. Choosing a site near a residential zone also was an essential condition considered, to serve the vulnerable as it would instill a feeling of safety and a scope to socialize.



Inspiration

The Mughal Gardens



The Mughal gardens, which are also called as the persian gardens have a unique landscape design which are an epitome to the major design guidelines like symmetry, balance and repetition.

These gardens are an inspiration to the evolution of the landscape in the design, which plays a primary role to support the research of nature and its effects on veterans mental and physical health. The landscape forms a walking maze creating pockets of green spaces for various activities.

Vizag Steel Plant Township, India



The Vizag Steel Plant is a township, in India which comprises of 12 sectors. Each sector is in the shape of a tear drop, with central zone being occupied by the commercial and parks, surrounded by residential. All the sectors are connected with internal roads and a major arterial roads.

This has been a major inspiration for the evolution of the design to create a community that comes together made up of clusters.

Ideas

- Creating Communities
Cluster Layout
Prefab + Modular

Evolution

- Zoning
Contrast + Balance :
Building Typology +
Landscape
- Seamless Connecting
Landscape

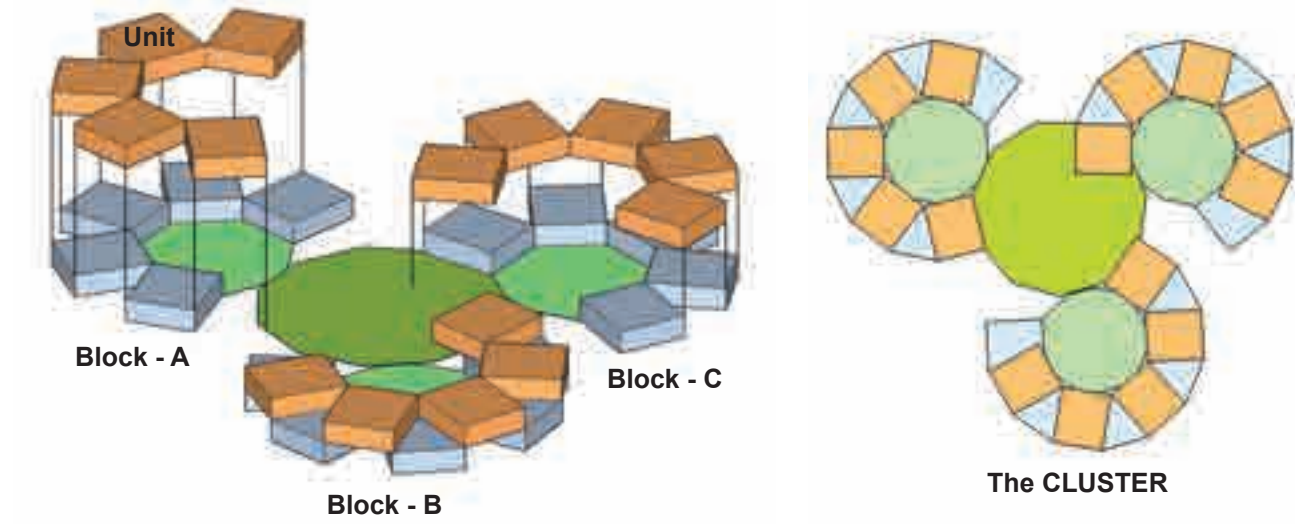
Creating Communities

Prefabricated Modular Cluster Layout :

The Residences of Veterans have been designed as clusters of communities to create niches of green pockets that evolve from unit level to site level to create meeting hubs.

Each **Block** comprises of 10 units and
Every 3 blocks from a **Cluster**.

2 clusters on either side of the Health clinic depict how the contrasting building typologies are held together in a tight knit, through the seamless landscape creating a harmonious and safe environment.



Zoning & Evolution



The octagons spread along the longitudinal site connecting the two bus-stop at the two extreme corners of the site.

The clusters are arranged in a radial manner to create pockets of green spaces with the wellness centre in the middle.

The frontage of the wellness center provides the parking for the wellness centre and also acts as a drop of zone to the residential clusters.

The contrasting form of the building depicts the contrasting functions of the building, while the seamless landscape connects them together.

Design

- Site Plan
- Floor Plans
- Elevations & Sections
- Structure & Details





The Buddy Housing:

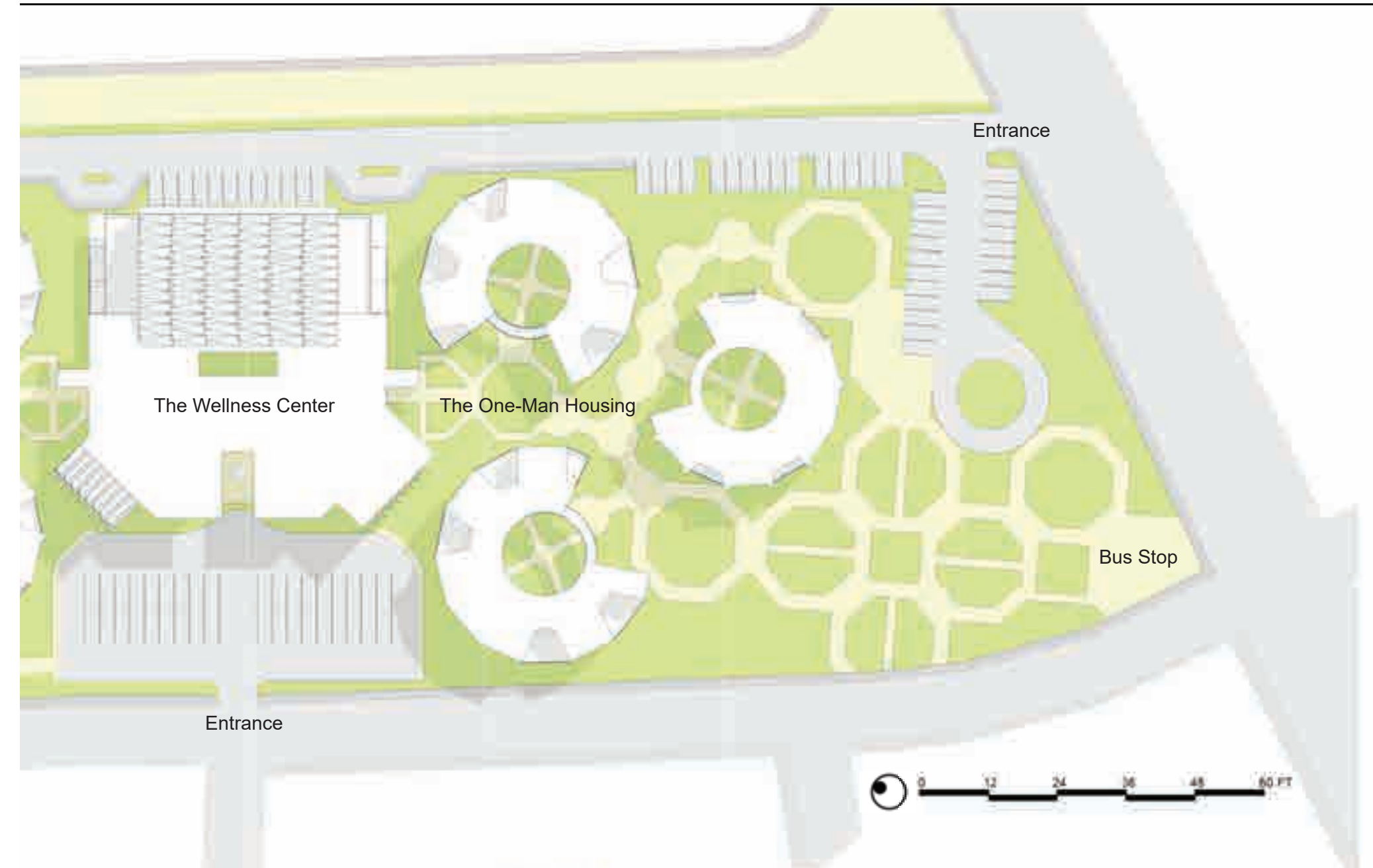
The buddy housing is a 2bhk housing for veterans who want to share the house with their buddy or who want to live with their family. Every house has views towards the nature, due to its radial arrangement. A private balcony facilitates activities like gardening and also encourages socialisation.

The One-Man Housing:

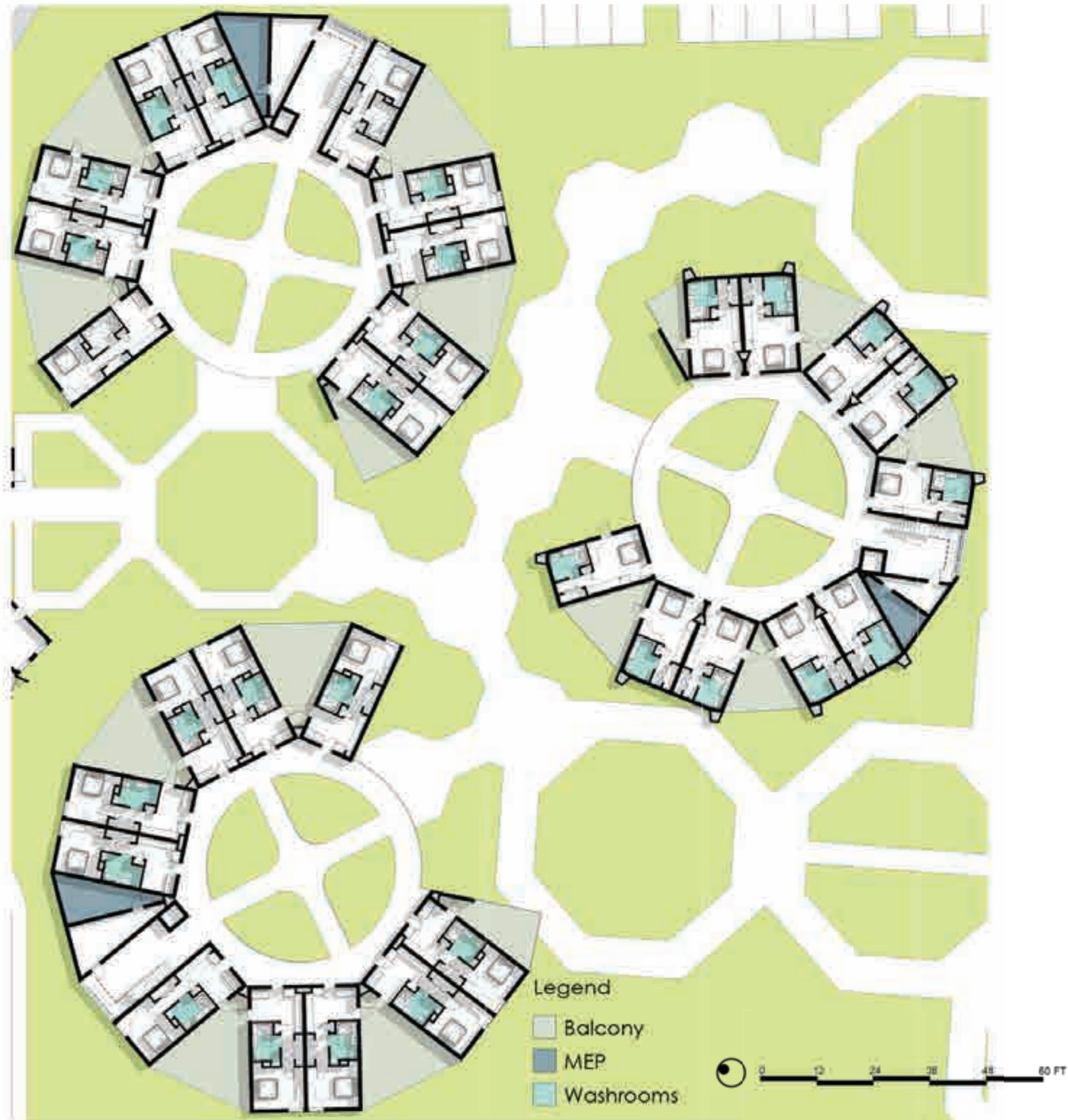
The one-man housing is a 1bhk unit. Every 2 units share a common balcony which encourages socialisation. The housing units are arranged in a way that they are at walkable distance to the bus stops and the wellness center.

The Wellness Centre:

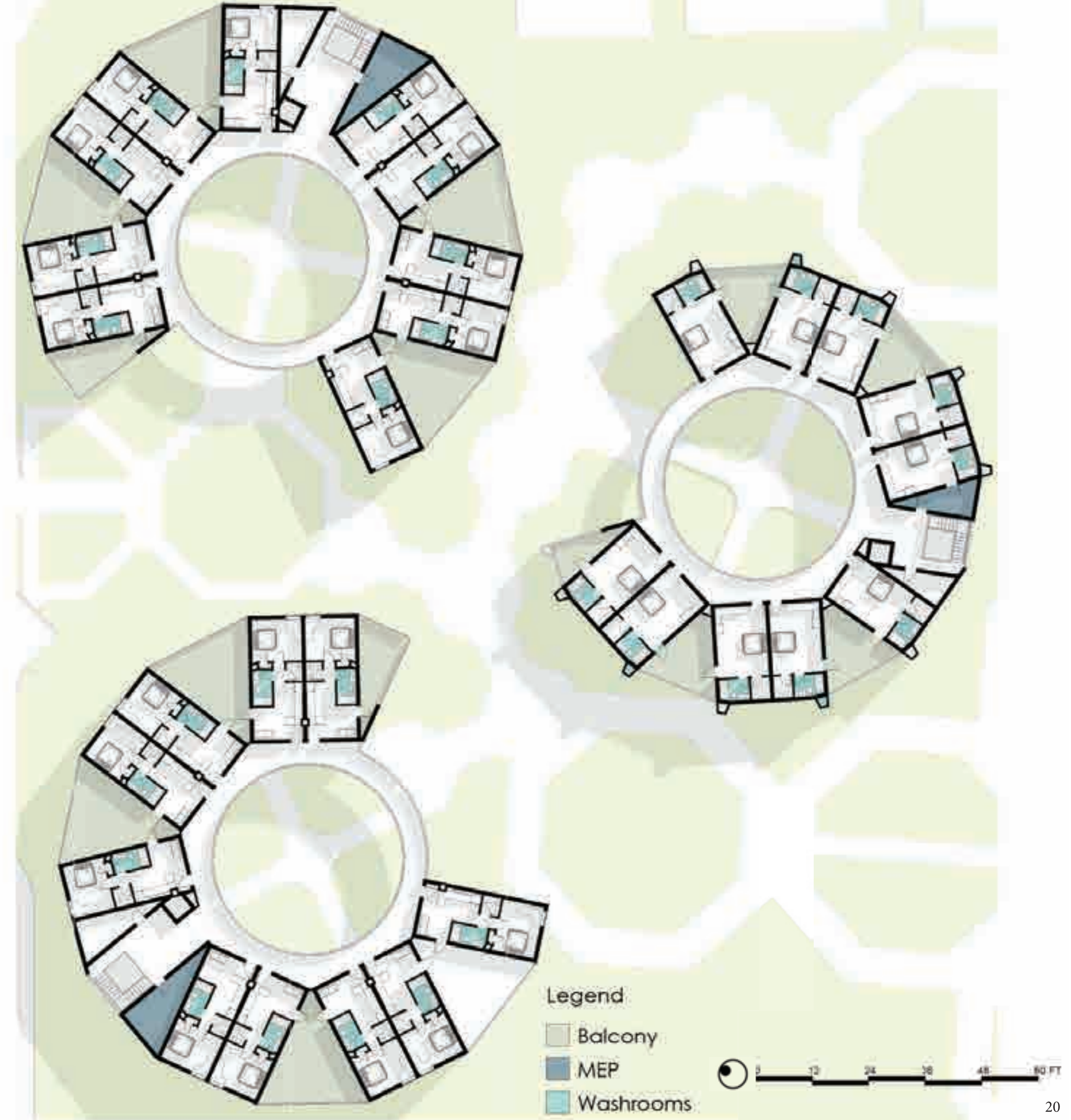
The wellness centre provides health care facilities to the veterans living on the site, while it is open to the veterans not living on-site as well, as a result generating revenue. The 1st floor of the wellness centre is open to the public while the 2nd floor-The club House, is accesible only to the veterans living on-site.



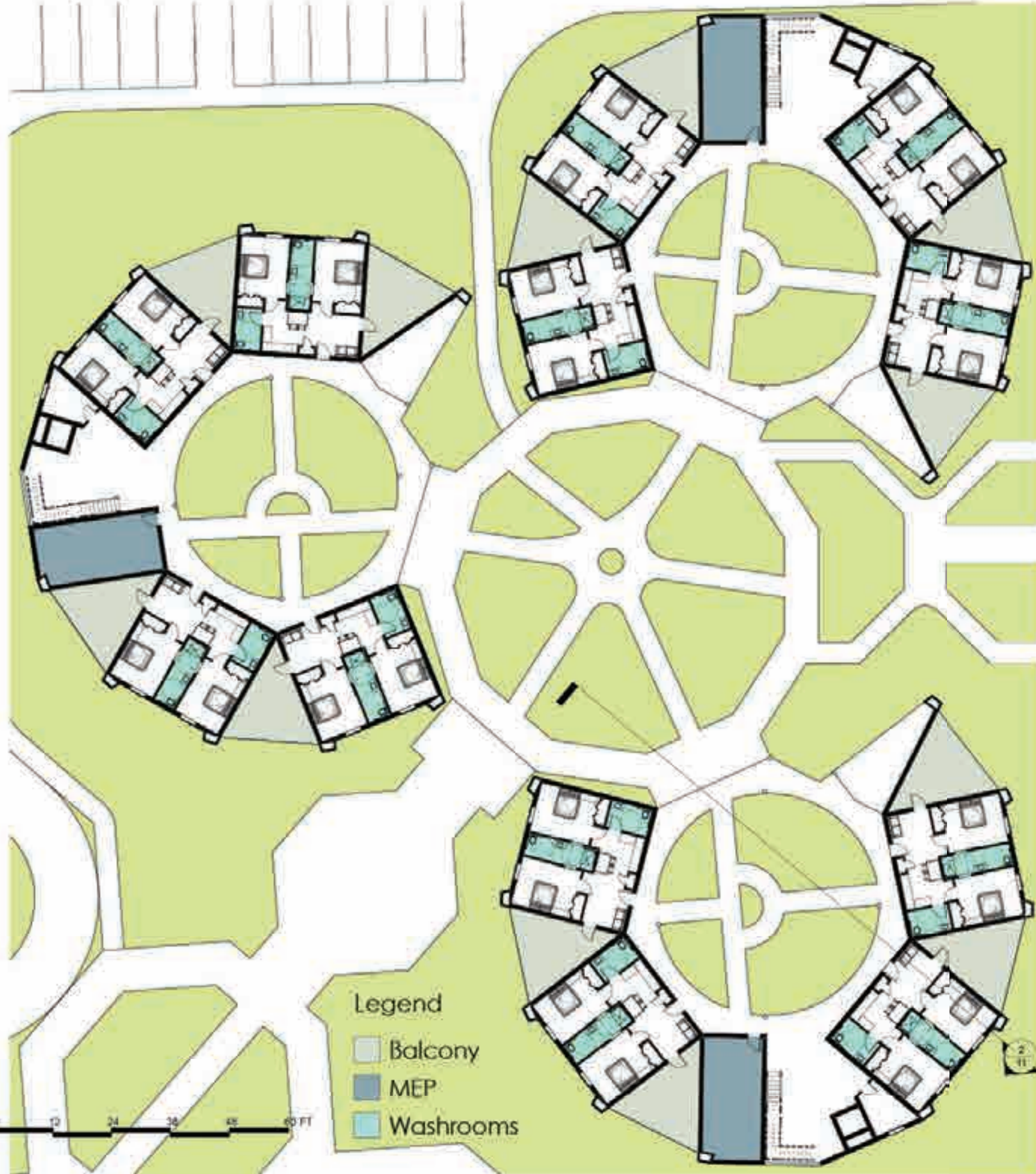
One Man Housing - 1st Floor plan



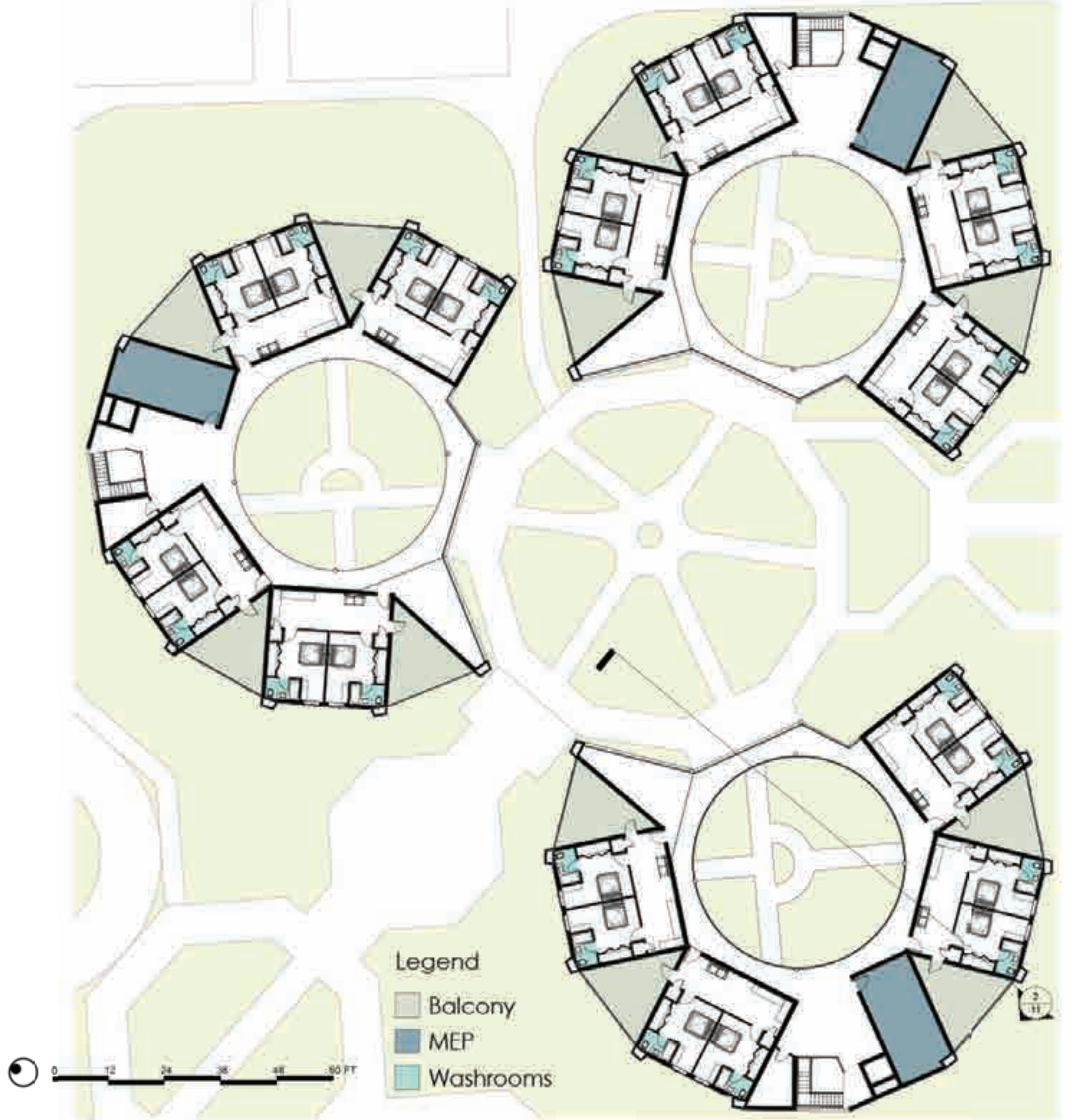
One Man Housing - 2nd Floor Plan



Buddy Housing - 1st Floor plan



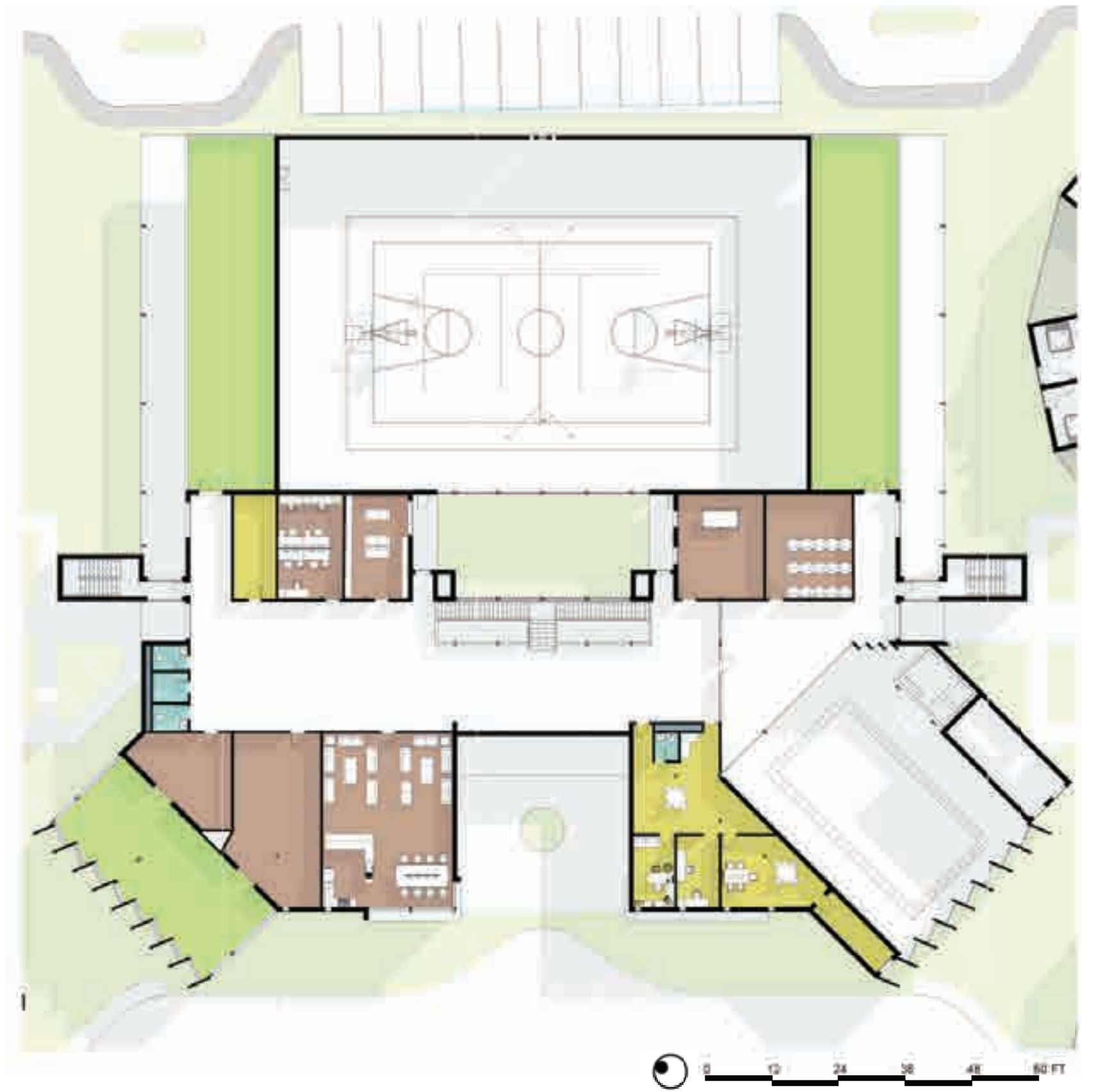
Buddy Housing - 2nd Floor plan

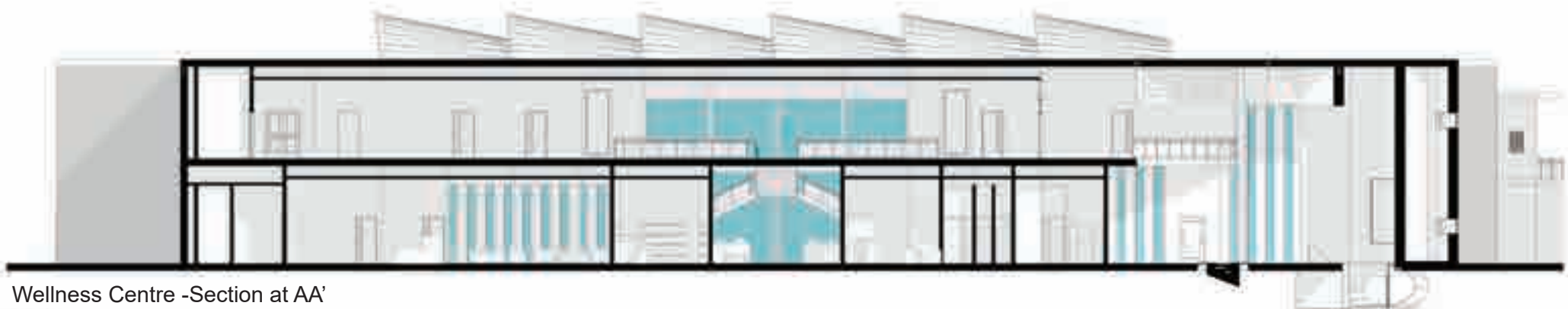


Wellness Center - 1st Floor plan



Wellness Center - 2nd Floor plan





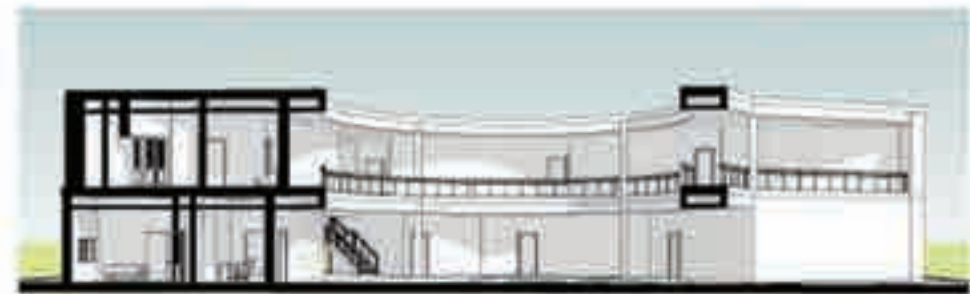
Wellness Centre -Section at AA'



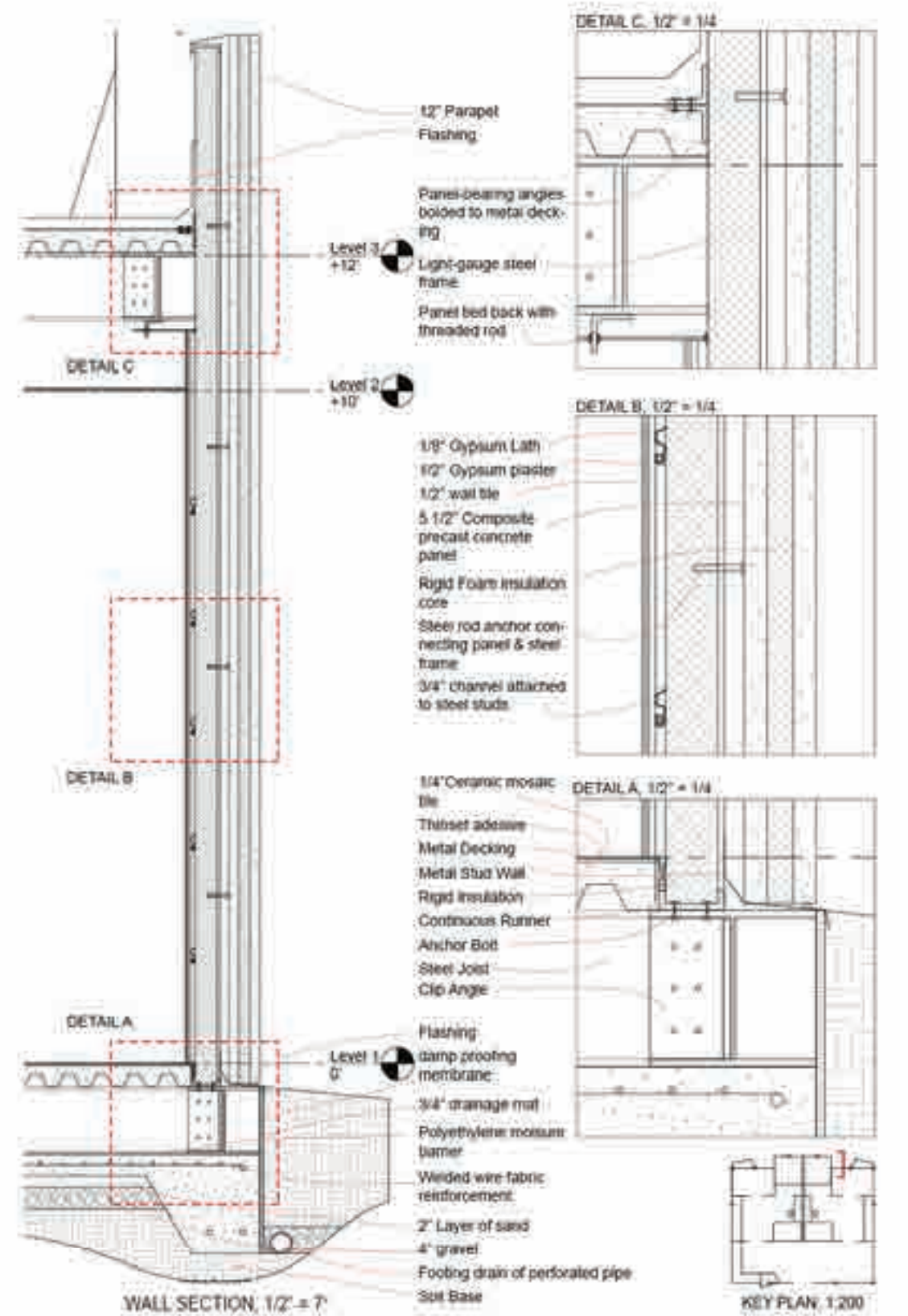
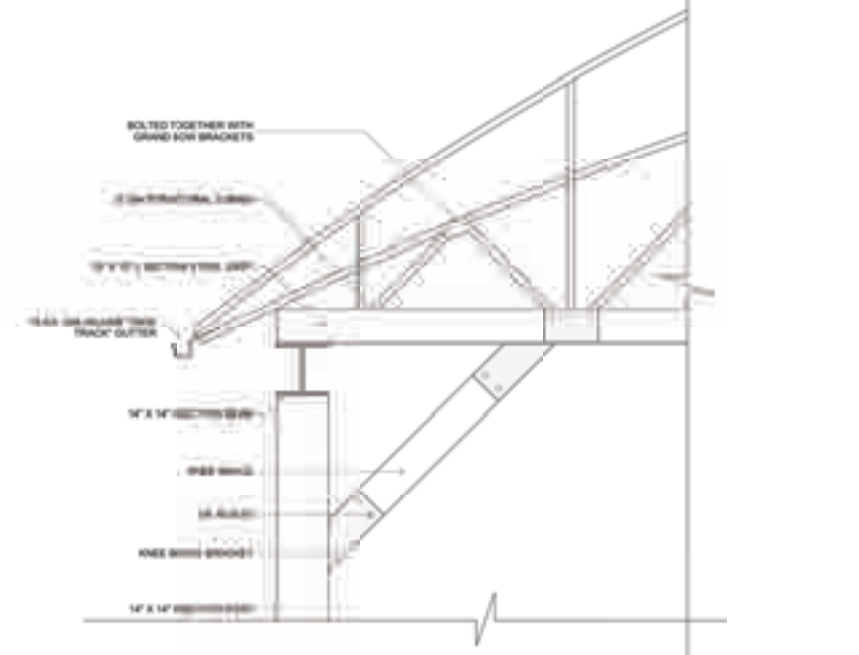
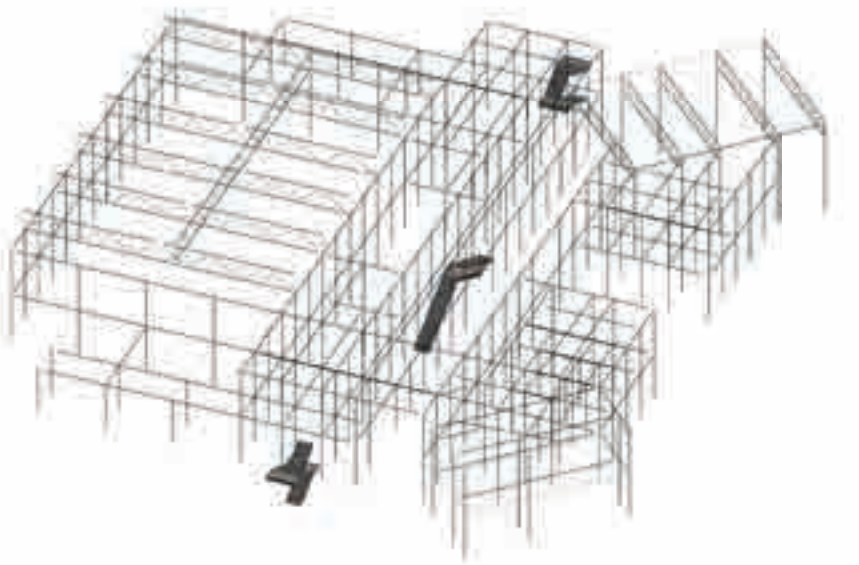
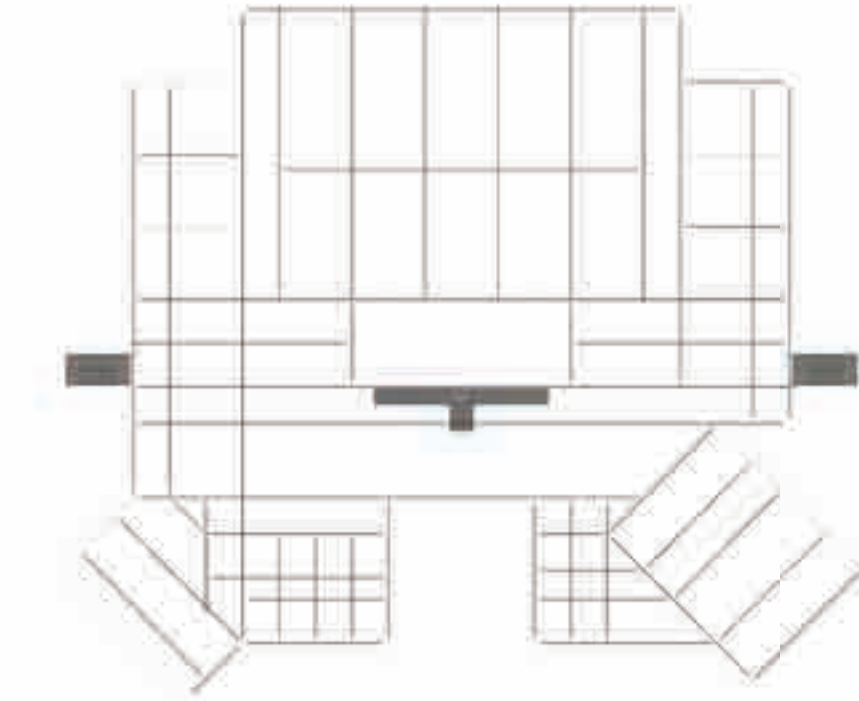
Wellness Centre -Front Elevational View



Residential -Sectional cut



Residential -Sectional cut





References

- <https://brookscarpa.com/the-six>
- https://www.va.gov/homeless/for_homeless_veterans.asp
- <https://www.mmaltzan.com/projects/crest-apartments/>
- <https://journals.sagepub.com/doi/full/10.1177/2055102916637090>

