



Designing a Specialized Dementia Villages Using a Dementia-Friendly Design in Yogyakarta

Perancangan Kampung Spesial Demensia menggunakan pendekatan Dementia-Friendly di Yogyakarta

FINAL ARCHITECTURAL DESIGN STUDIO by Jenny Chairani Saban (21512153)

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Final Architecture Design Studio Book Quality :

Adequate*)

Effective*)

Excellent*)

Therefore,

It is Recommended / Not Recommended (*)

To serve as a reference for the final design studio project (*)

Circle one

Yogyakarta, 8 December 2025

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Statement of Authenticity

I hereby declare that all parts of this work are my own, except where references are cited. No external assistance, either wholly or partially, has been involved in its creation. I also affirm that there is no conflict of intellectual ownership regarding this work; all ideas and writings contained herein are attributed to the main author and supervisor. The final results are submitted to the Department of Architecture, Universitas Islam Indonesia, for educational and publication purposes.



Yogyakarta, 06 February 2025

A handwritten signature in black ink, appearing to read "Jenny", written over a horizontal line.

Jenny Chairani Saban

PREFACE

With sincere praise to Allah SWT, and salutations upon the Prophet Muhammad SAW, his family, and companions, I acknowledge that it is only through Their guidance and blessings that I was able to complete the **Final Architectural Design Studio** project entitled “**Designing a Specialized Dementia Villages Using a Dementia-Friendly Design in Yogyakarta**”

This report is coming from a personal reflection on the experience of frequent forgetfulness even my friend no longer surprised and began to question how someone could be so forgetful. This make me reflect and ask whether there might be something wrong within myself. It's where i found out about dementia, a condition that goes fat beyond ordinary forgetfulness and profoundly affects the live of those experience it. I developed empathy for those living with dementia and began see the importance of designing environments that respond to the unique needs of individuals living with this condition. Medicine indeed a main cure but architecture can contribute to their progressive by creating space that safe for them.

This project could not have completed without the assistance, advice, and motivation generously provided by numerous individuals. I wish to convey my appreciation and gratitude to:

1. To Allah SWT, for His guidance, mercy, and enabled me to complete this final project with sincerity
2. To my beloved family, mama, ayah, and my brothers for their constant encouragement and support
3. To my supervisor, Arif Budi Sholihah, S.T., M.Sc., Ph.D for invaluable guidance and continuous encouragement and examiner, Dr.-Ing. Putu Ayu Pramanasari A., S.T., M.A. and Prof. Dr.-Ing. Ir. Ar. Ilya Fadjar Maharika, MA., IAI. for constructive feedback and advice
4. To Ir. Hanif Budiman, M.T., Ph.D. IALI Head of the Architecture Study Program at FTSP UII, who made my day before supervision session along with all lecturers and staff for their guidance, valuable knowledge, and provide 24 hours lab.
5. To my bimbingan partner and dearest roommate, Aisyah Baswedan a.k.a bocil for coompanionship, motivation, and support which sustained me during FADS
6. To my precious friend, Adudu, Karisa, Jo, Nadip, Andin, Diva, Zidan for their presence, laughter, and moral support
7. To Apek, Zura, and Fira, my longtime friends for their patience listening me, accompany me, and introduce me to pisang kemul as my top tier snack during FADS
8. To Miss Merlin, for her patience and kindness in accomodating me, and for generously providing snacks
9. To member of Panggung Goyang 5, Harris, Nasrul, Fitriyanto, Jo, along with 24 hours assistance mas Nasrul & mas Zaki for their patience in their last week before defense, even as they kindly tolerated our angelic voice.
10. To my sweetiepies, Xdinary Heroes, BOYNEXTDOOR, and cortis for supporting me through song. Especially Kwak Jiseok and Park Sungho, who mostly update when i feel down.

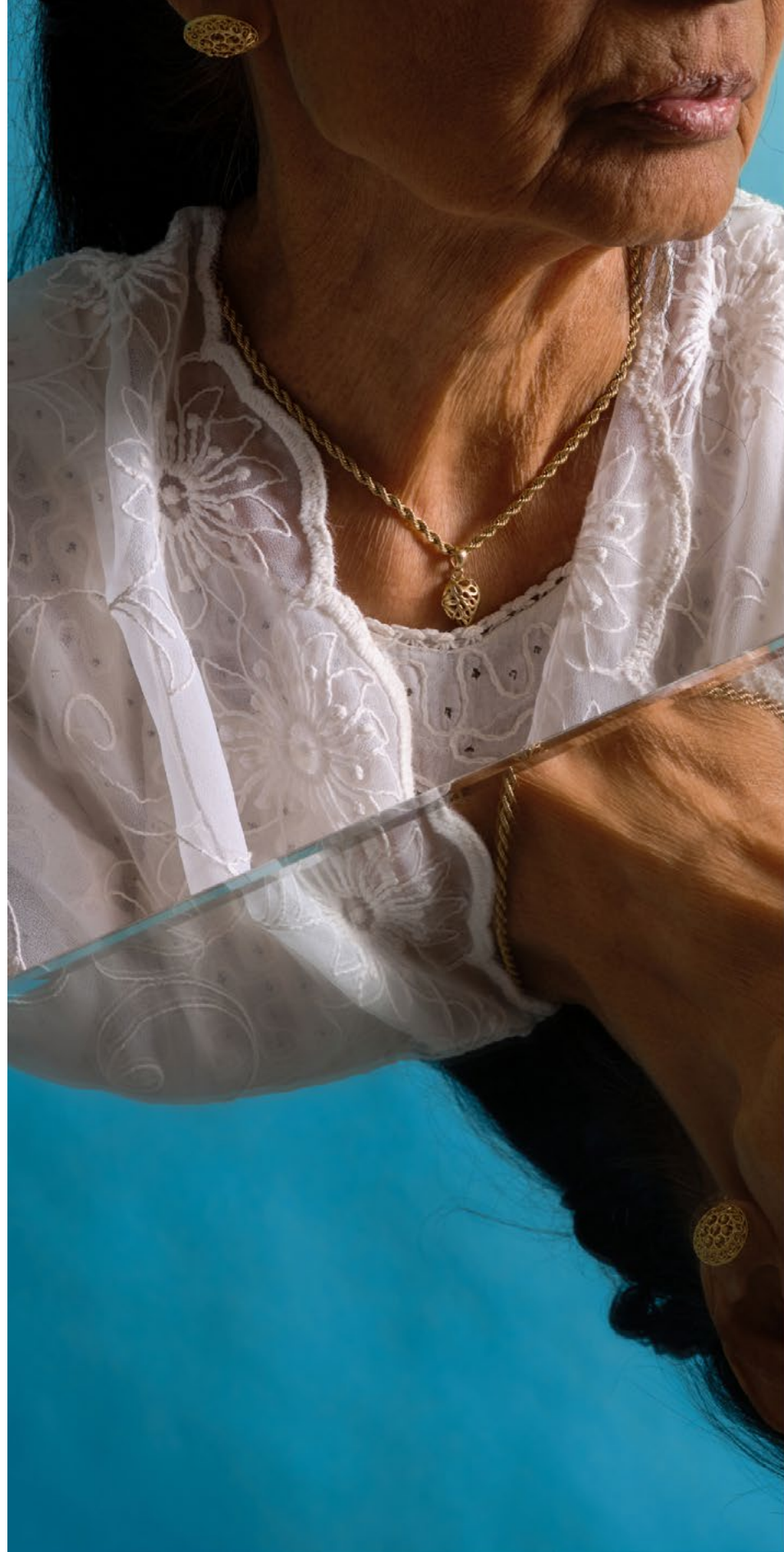
Beyond those mentioned, I am also deeply thankful to everyone who has accompanied me, offered encouragement, and provided assistance during this journey. May their kindness be rewarded and remembered.

I am fully aware that this project is not without its limitation, Therefore, I sincerely welcome constructive criticism and suggestions for improvement. May this work provide insight, serve as useful reference, and inspire further exploration in the field of inclusive architecture.

ABSTRACT

The increasing elderly population alongside with the high prevalence of dementia in Yogyakarta so having a specialized environment for them is needed to reduce its dementia's progression. Dementia is often misunderstood as natural part of aging rather than serious neurocognitive disorder. This leads to inadequate care and make the progression faster for the survivor. This project titled "Designing a Specialized Dementia Village Using a Dementia-Friendly Design in Yogyakarta" is to improve the quality of life of people with dementia.

This project using dementia-friendly design principle specifically by Fleming and Bennett's as design guidelines to create a supportive environment for people with dementia. It grouped into 5 different zones such as welcoming zone, residential zone, community zone, healthcare zone, and support zone. These zones are designed to support individuals with dementia in identifying and navigating their surroundings comfortably, without being overstimulated or feeling overwhelmed by the scale of the space.





ABSTRAK

Meningkatnya jumlah lansia diiringi dengan tingginya prevalensi demensia di Yogyakarta, maka diperlukan lingkungan khusus bagi mereka untuk mengurangi perkembangan demensia. Demensia sering disalahpahami sebagai bagian alami dari penuaan, dibanding gangguan neurokognitif yang serius. Hal ini menyebabkan perawatan yang tidak memadai dan mempercepat perkembangan demensia. Proyek dengan judul “Merancang Desa Khusus Demensia Menggunakan Desain Ramah Demensia di Yogyakarta” ini bertujuan untuk meningkatkan kualitas hidup penyandang demensia.

Proyek ini menggunakan prinsip desain ramah demensia khususnya oleh Fleming dan Bennett sebagai pedoman desain untuk menciptakan lingkungan yang mendukung bagi penyandang demensia. Proyek ini dikelompokkan menjadi 5 zona berbeda seperti zona penyambutan, zona pemukiman, zona komunitas, zona perawatan kesehatan, dan zona dukungan. Zona-zona ini dirancang untuk mendukung individu dengan demensia dalam mengidentifikasi dan menavigasi lingkungan mereka dengan nyaman, tanpa terlalu terstimulasi atau merasa kewalahan oleh skala ruang.

Fig.0.1 A husband accompanying his wife, an Alzheimer's dementia patient who lacks initiative.

Source: Alzheimer Indonesia. (2016, April 1). Journey Of Caring - Alzheimer Indonesia [Video]. YouTube. <https://www.youtube.com/watch?v=sgsf-Ucs-pw>

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DESIGN PREMISE

A Future for Dementia Survivor

The growth of the elderly population in Yogyakarta along with the prevalence of dementia, is becoming concerning. 'Designing a Memory Care Center Using a Dementia-Friendly Approach in Yogyakarta' is expected to help dementia patients achieve a better quality of life and slow the effects of dementia. This idea emerged due to the perception among Indonesians, including healthcare professionals, who tend to underestimate dementia patients by attributing it to 'old age' and considering it a normal part of aging. If this perception persists, it will have detrimental effects and accelerate the decline in their cognitive abilities.



Fig.1.1 A husband accompanying his wife, an Alzheimer's dementia patient who lacks initiative.
Source: Alzheimer Indonesia. (2016, April 1). Journey Of Caring - Alzheimer Indonesia [Video]. YouTube.
<https://www.youtube.com/watch?v=sgsf-Ucs-pw>

PROJECT TITLE

Designing a Specialized Dementia Villages Using a Dementia-Friendly Design in Yogyakarta

Specialized Dementia Villages

A new typology, residential care community, designed to support people with dementia, aiming to improve their quality of life and provide a safe, stimulating environment that resembles a normal, home-like setting.

Dementia-Friendly

A dementia-friendly approach in architecture involves designing environments that support the autonomy, well-being, and safety of individuals with dementia. This approach emphasizes the use of visual cues, familiar landmarks, and simplified layouts to aid navigation, along with contrasting colors, textures, and lighting to demarcate functional areas. Incorporating familiar objects and personalized spaces enhances memory retention and treatment outcomes. Safety features such as slip-resistant flooring, handrails, and accessible bathrooms are crucial to prevent falls. Additionally, therapeutic elements like gardens and outdoor spaces provide sensory stimulation, encourage physical activity, and foster social engagement.

DESIGN PROBLEM STUDY

THE HIGH ELDERLY POPULATION IN YOGYAKARTA

The proportion of elderly people in D.I. Yogyakarta has increased over time. In 1971, the percentage of elderly was 6.82 percent, which rose to 15.75 percent in 2020. As reported by Badan Pusat Statistik (2023), the province of DI Yogyakarta ranked highest with an elderly population percentage of 16.02%

Regency / City	Dependency Ratio		Population Growth 2010 - 2020		Proportion of Productive Age	
	2010	2020	Productive Age	Non-Productive Age	2010	2020
Kulon Progo	54,39	49,04	4,81	64,77	64,77	67,10
Bantul	46,57	44,39	4,64	9,78	68,23	69,26
Gunung Kidul	54,51	50,37	5,05	13,67	64,72	66,50
Sleman	51,64	43,50	6,18	1,66	70,60	69,69
Kota Yogyakarta	35,53	40,30	5,33	-7,14	73,78	71,27
D.I. Yogyakarta	45,93	45,40	5,27	6,50	68,53	68,79

Table 1.1. Population by Regency/City in D.I. Yogyakarta, 2010-2020
Source: BPS, Population Census 2010 and Population Census 2020

The productive age population in Kulon Progo, Bantul, and Gunungkidul is growing slower than the non-productive age population. Demographic indicators like the dependency ratio and population growth show that these areas have higher quality population growth, with more people in the productive age group and a lower dependency ratio. In Sleman, although the population is increasing and there are more people in the productive age group, the proportion of this group is decreasing, leading to a higher dependency ratio.



Fig.1.2 Elderly individuals who live alone at home and have limited mobility.
Source: Universitas Katolik Indonesia Atma Jaya. (2023, June 26). Kehidupan dan Perawatan Lansia di Yogyakarta [Video]. YouTube. https://youtu.be/mWJiwM_KeBA?si=7USSMrG2SgCd9qD3

DEMENTIA PREVALANCE IN YOGYAKARTA

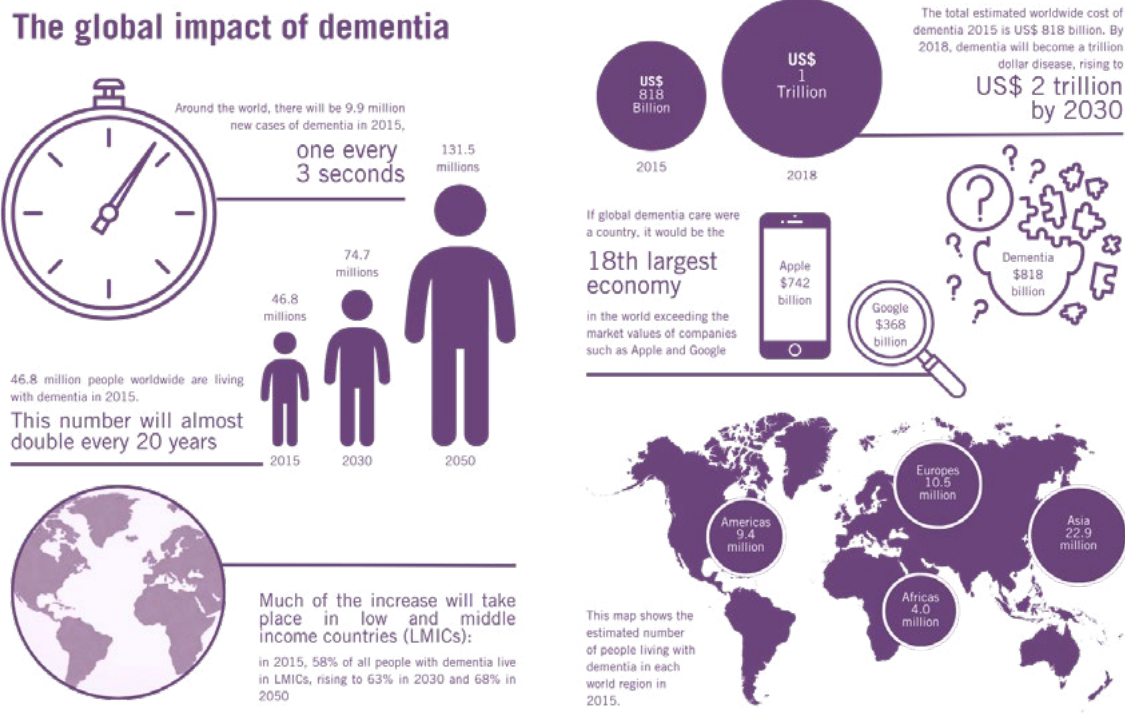


Fig.1.3 Dementia Statistics.
Source: Alzheimer Indonesia. Retrieved February 11, 2025, from <https://alzi.or.id/statistik-tentang-demensia/>

The highest prevalence of dementia in Indonesia is found in the Special Region of Yogyakarta (DIY), with approximately 20.1% among people aged 60 years and older. Women have a higher prevalence of dementia compared to men due to the influence of estrogen hormones and the fact that women generally have a longer lifespan than men. The issue becomes more complex because the knowledge of the elderly and their caregivers about the 10 common symptoms of Alzheimer’s dementia is very low. (Suriastini et al, 2016).

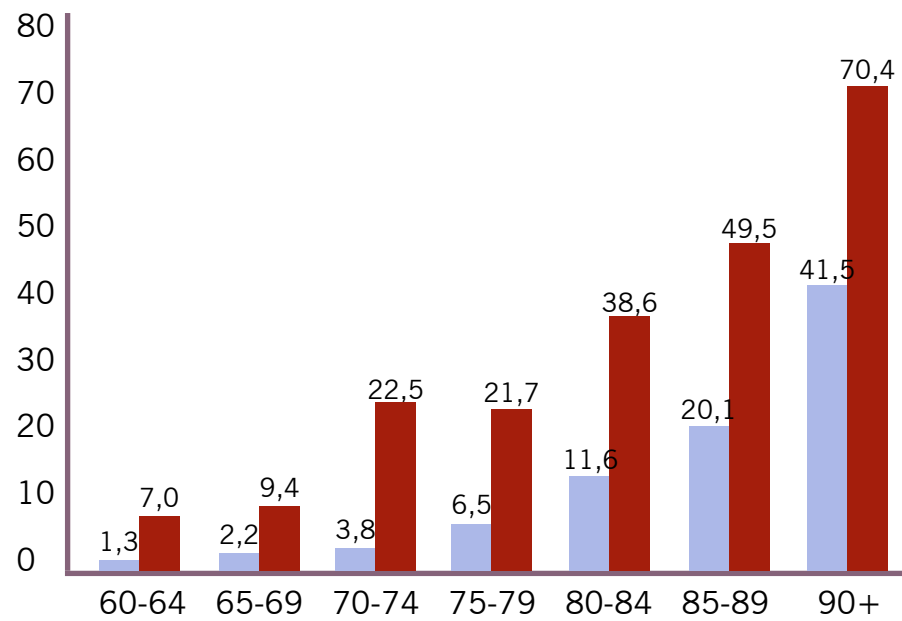


Table.1.2 Comparison of Dementia Prevalence in D.I. Yogyakarta in 2016 and Globally
Source: Suriastini et al., SurveyMETER (2016)

Prevalence of Alzheimer’s dementia is rapidly increasing worldwide, and it is currently estimated that nearly 46.8 to 50 million people are diagnosed with dementia globally, with 20.9 million in the Asia-Pacific region (Alzheimer’s Disease International, World Health Organization, 2017). In 2010, 57.7% of Alzheimer’s patients lived in Indonesia, which is classified as a middle- and low-income country. This proportion is expected to increase to 63.4% by 2030 and 70.5% by 2050 (Nisa & Sinuraya, 2017). A study found that the prevalence of dementia in Indonesia is 27.9% (Farina et al., 2023)

UNDERSTANDING DEMENTIA

According to the World Alzheimer Report, Dementia is a chronic brain disorder seen by a gradual and widespread decline in cognitive functions such as memory, learning, orientation, language, comprehension, and judgment. While it mainly affects older adults, approximately 2% to 10% of cases begin before age 65. Dementia is a leading cause of disability in later life (Alzheimer’s Disease International, 2009, p. 14). Aside cognitive, their sensory and perceptual are change. They loss their vision, auditory, smell, taste, and tactile. Moreover, their behavior became agitation increasing because of the stress, may wander aimlessly, having depression and anxiety become common, and change in sleep pattern.

Halsall & MacDonald (2015)Dementia is a chronic condition that significantly impairs an individual’s functioning compare normal aging. It is classified as a major neuro-cognitive disorder (NCD) and represents a syndrome rather than a single diagnosis. The term covering various types of dementia, each with distinct causes and manifestations. All forms of dementia are organic disorders stemming from identifiable biological causes.

The different types of dementia include:

- Alzheimer’s disease
- Vascular dementia
- Diabetes
- Blood pressure/strokes/mini-strokes
- Parkinson’s disease
- Dementia in Pick’s disease
- Dementia in Creutzfeldt-Jakob disease
- Dementia in Huntington’s disease
- Dementia in human immunodeficiency virus
- Post-encephalitic dementia
- Head trauma related dementia
- Alcohol related dementia.

The common case is Alzheimer’s disease which has 55% cases while vascular dementia have 25% of cases. Dementia often causes a gradual decline in cognitive abilities and social skills, but it can also begin suddenly. Key clinical features include: Apathy, Aggression, Restlessness, Disinhibition, Impulsivity, Low mood, Anxiety, Delusion, Hallucinations, and Sleep disturbances.

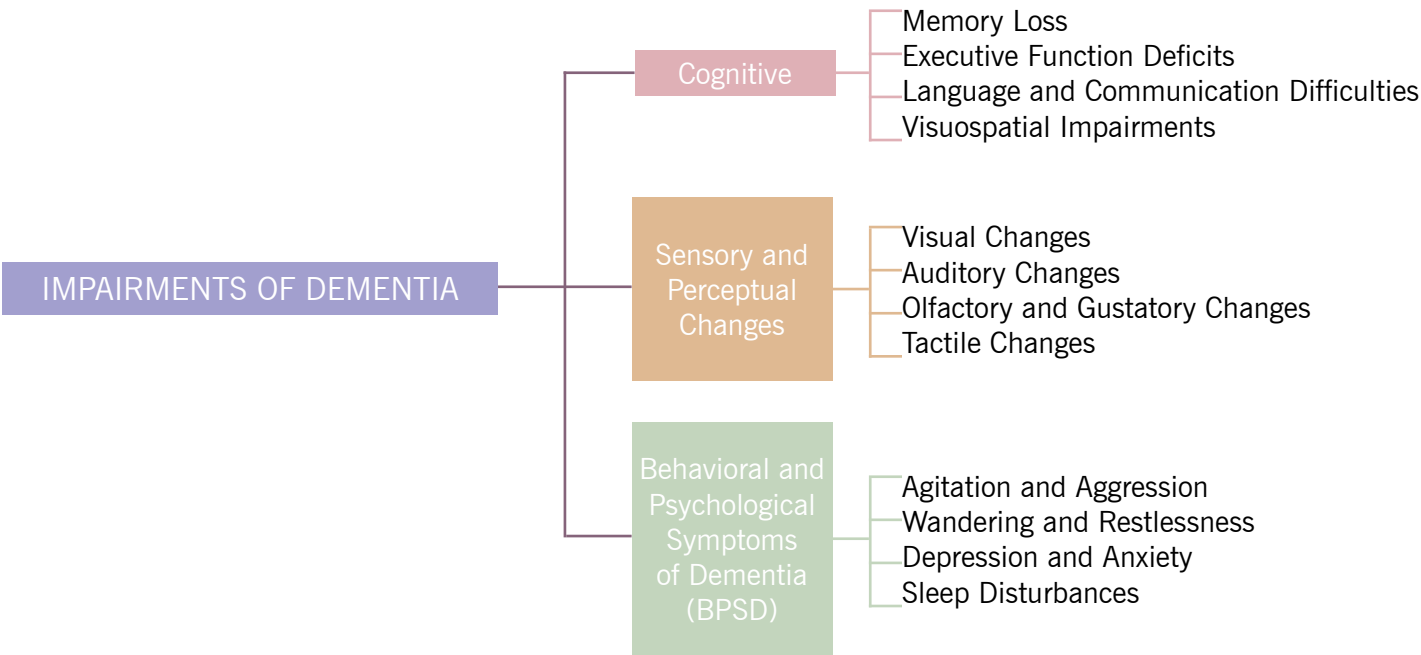


Table 1.3. Impairments of Dementia
Source: Author (2025)

IMPORTANCE DEMENTIA FACILITY

The differences support for People with Dementia (PWD) between developed and developing countries is the. In developed countries, they use holistic approach that includes bio-psycho-social and spiritual aspects, utilizing formal services, technology, and community-based programs to support the elderly with dementia. In contrast, in developing countries, the family often serves as the primary caregiver due to. limited formal healthcare services (Lumbantoruan et al., 2025). How unit size, spatial layout, home-like characteristics, sensory stimulation, and social spaces affect resident behavior and well-being. In addition, smaller unit sizes give positive impact on resident well-being, behavior, function, and activity engagement (Chaudhury et al., 2018) It is dangerous when People with Dementia (PWD) living with their own as they lost their judgement and decision-making. Having high quality care is important to improving quality of life as well as a trained staff to ensure People with Dementia (PWD) receive appropriate care and support. Moreover, they have opportunities to engage in social activities, reducing feelings of isolation and loneliness.



Fig.1.4 Mary thinking she is on her vacation though she already in there for 7 years.
Source: Social Care Institute for Excellence (SCIE). (2019, September 19). Living in a care home: A positive outcome for a person with dementia [Video]. YouTube. <https://youtu.be/w2iKEjq12h4?si=H3SxYySmtg4p1WOW>

GENERAL PROBLEM STATEMENT

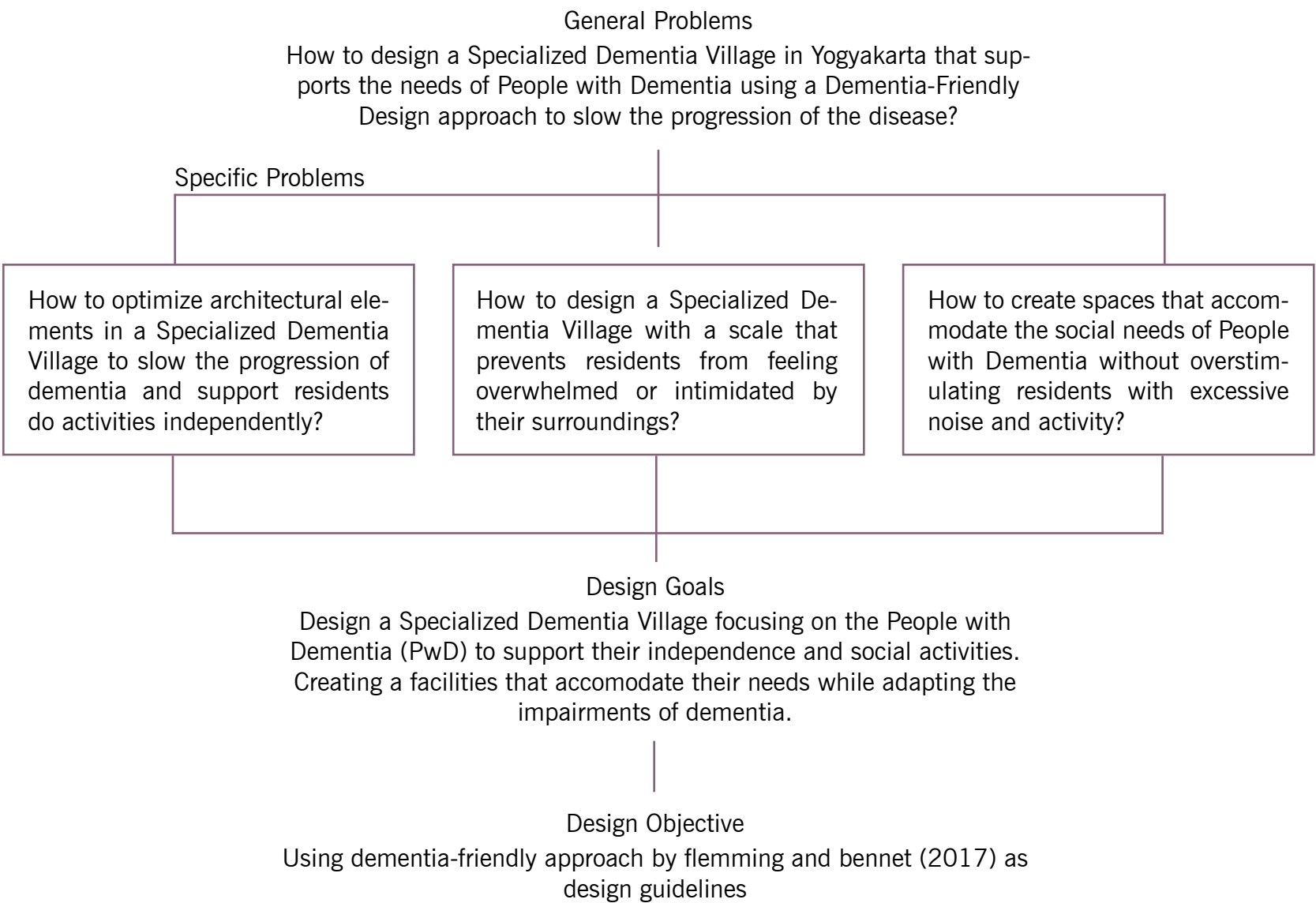


Table 1.5. Problem statement
Source: Author (2025)

DESIGN PROBLEM STATEMENT

Lawson (2005) emphasizes that design problems involve a combination of constraints and requirements that designers must balance.

	Formal	Practical	Radical	Symbolic
DESIGNER Architect	Create a specialized care facility for people living with dementia that provide their ability	ensures the layout supports daily routines, with clear wayfinding, accessible facilities, and multipurpose rooms that can adapt to various activities.	explores cutting-edge technologies and design strategies, such as smart home systems for monitoring patients' health and safety, and sensory gardens to stimulate cognitive functions.	Incorporates cultural aspect (traditional Javanese element) and element that familiar for the survivor
CLIENT D.I. Yogyakarta Government	high-quality, visually appealing design that reflects their vision and goals for the memory care center.	efficient facility that meets the needs of patients and staff, ensuring smooth daily operations.	integration of advanced technologies and innovative design strategies that enhance patient care and safety.	incorporation of local cultural elements and memory-triggering features that resonate with the community and patients.
USER People with Dementia (PWD) PWD's families Caregiver Medical staff	a calming, visually pleasing environment with natural light, soothing colors, and harmonious forms that promote well-being.	clear wayfinding, accessible facilities, and multipurpose rooms that support their daily activities and routines.	Can use the system and space that enhance cognitive functions.	traditional Javanese design elements and memory-triggering features that create a sense of familiarity and belonging.
LEGISLATOR D.I.Y Regulation	designs that enhance the overall quality and appeal of the built environment.	Regional Regulation of Yogyakarta City Number 2 of 2008: Licensing for the Operation of Healthcare Facilities and Licensing for Healthcare Personnel.	adoption of advanced technologies and innovative design strategies that improve patient care and safety.	inclusion of cultural elements and community-focused design features that align with local values and traditions.

Table 1.6. Problem Statement by Lawson
Source: Author (2025)

EXCELLENCY, ORIGINALITY & NOVELTY

In D.I. Yogyakarta, specialized dementia village never built before.

TITLE	PROJECT	DIFFERENCES
Perancangan Dementia Residential Care Dengan Pendekatan Healing Architecture di Yogyakarta Design of Dementia Residential Care with Healing Architecture Approach in Yogyakarta Author: Adrienne Arsyah Haryadi Year: 2024	This project design a Dementia Residential Care using healing architecture as approach and implement 'Cognitive Therapeutic Stimulation'	- Different design approach
Panti Wredha Bagi Lanjut Usia Penderita Demensia Author: Kevin Natanael Susanto Year: 2023	This project focuses on the design and planning of nursing homes specifically for elderly individuals with dementia. This need to focus	- Different design approach - Different location
Dementia for Elderly Care Center di Kota Batu Tema: Therapeutic Architecture Author: Asa Hening Arista Putri, Debby Budi Susanti, dan Komang Ayu Laksmi Harshinta Sari Year: 2024	This project design a Elderly Care Center using therapeutic architecture as approach. It also integrate with various facilities, including residential areas, therapy rooms, communal spaces, and healing gardens. Author also consider the behavior and needs of the dementia and the impact for their quality of life	- Different design approach - Different location

Table 1.7. Excellency, Originality & Novelty
Source: Author (2025)

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UNDERSTANDING DEMENTIA

WHAT IS DEMENTIA

According to World Health Organization (WHO), Dementia is a umbrella term for several diseases affecting memory, other cognitive abilities and behaviour that making it difficult for individuals to do daily or normal task. Age is the most common risk factor for dementia yet it's not a normal part of ageing.

TYPES OF DEMENTIA

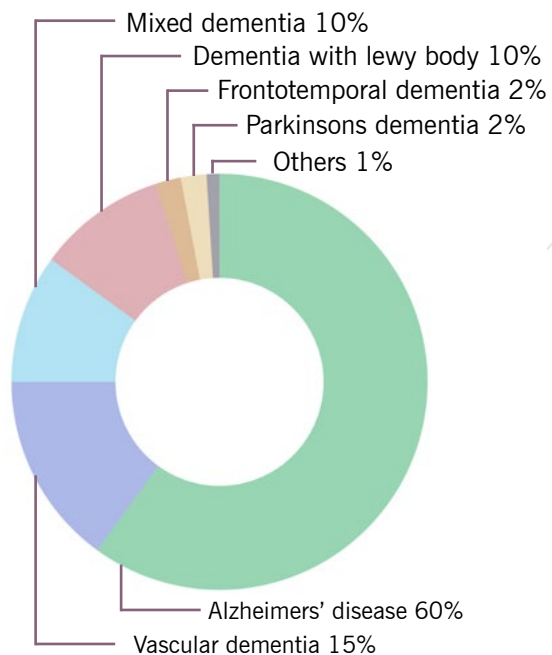


Table 2.1. Dementia by disease type
Source: Alzheimer Research UK (unknown)



Dementia syndrome is linked to a large number of underlying brain pathologies. Based on that, dementia classified into:

- Alzheimer's Disease, a condition that gradually affects memory and thinking skills. It happens when certain proteins build up in the brain, forming plaques and tangles that disrupt how brain cells work.
- Vascular dementia, It occurs when blood supply to the brain is compromised by arterial disease, which results in reduced neuronal function and eventually the death of brain cells.
- Mixed dementia, a condition where more than one type of dementia exists. A study found that mixed dementia has a high prevalence, with the most common form being a combination of AD and VaD (Korczyn, 2002).
- Dementia with Lewy bodies, a small group of abnormal protein, alpha-synuclein, in different part of brain including the cerebral cortex (Attems and Jellinger 2013). Which can damage the brain and lead to cognitive decline, movement difficulties, and other symptoms.
- Frontotemporal dementia, a condition that affect regions in the front of the brain responsible for planning, emotion, motivation and language.
- Parkinson's dementia, a condition that affect movements, causing tremors, slowed movements (bradykinesia) and other issues.

TYPES OF DEMENTIA	CHARACTERISTICS	BRAIN CHANGES
Alzheimers' disease	<ul style="list-style-type: none"> • Memory loss • Word-finding difficulties • Language difficulties. • Anxiety and lack of motivation <p>Impaired memory, apathy and depression</p> <ul style="list-style-type: none"> • Gradual onset (disease develops slowly over time) 	Amyloid plaques and neurofibrillary tangles lead to the memory loss and cognitive decline
Vascular dementia	<ul style="list-style-type: none"> • Slow down thinking lead to depression, anxiety, and apathy • Mood fluctuations more prominent • Physical frailty (body becomes weak and less resilient) • Temporal relation between acute vascular event (stroke) and onset of cognitive impairment, within minutes or days; stepwise course 	<ul style="list-style-type: none"> • Cerebrovascular disease (lead to strokes) • Single infarcts in critical regions, or more diffuse multi-infarct disease (damage from strokes)
Mixed dementia	<ul style="list-style-type: none"> • Gradual decline like Alzheimer's disease but with additional strokes 	Based on each disease
Dementia with lewy body	<ul style="list-style-type: none"> • Memory loss • Marked fluctuation in cognitive ability • Visual hallucinations • Parkinsonism (tremor and rigidity) • Recurrent falls • Disturbed sleep • Disorientation • Gradual onset (disease develops slowly over time) 	Cortical Lewy bodies (alpha-synuclein), abnormal protein deposits, primarily composed of a-synuclein, found in the cerebral cortex of neurons.
Frontotemporal dementia	<ul style="list-style-type: none"> • Personality changes • Mood changes • Disinhibition • Language difficulties • Gradual onset (disease develops slowly over time) 	Damage limited to frontal and temporal lobes of the brain, which control behavior, speech, and decision-making.
Parkinsons dementia	<ul style="list-style-type: none"> • Memory loss • Parkinsonism (tremor and rigidity) • Visual hallucinations • Disturbed sleep • Disorientation 	Cortical Lewy bodies (alpha-synuclein), abnormal protein deposits, primarily composed of a-synuclein, found in the cerebral cortex of neurons.

Table 2.2. Medical Characteristics of Dementia Types
Source: World Alzheimer Report (2009); McKeith et al (2005);
Arvanitakis et al; (2019)

UNDERSTANDING DEMENTIA

STAGES OF DEMENTIA

Dementia is a progressive condition, whilst remaining in their own home has advantages for a person during the mild and moderate stages of dementia, as a person moves into the late stages of dementia, these advantages may be lost as the physical environment is no longer able to accommodate increasing disability. Even with home modifications the increased care needs of the person living with dementia may necessitate a move into residential care (Gabriel, 2014). Dementia divided into three stages to help understand and manage the progression of the disease more effectively. According to the World Alzheimer Report (2009), dementia stages are:

Early Stage

The early stage of dementia is often overlooked. Relatives and friends see it as 'old age'; just a normal part of the ageing process. Because the onset of dementia is gradual, it is often difficult to be sure exactly when it begins. The person may:

- Have problems talking properly (language problems)
- Have significant memory loss – particularly for things that have just happened
- Not know the time of day or the day of the week
- Become lost in familiar places
- Have difficulty in making decisions
- Become inactive and unmotivated
- Show mood changes, depression or anxiety
- React unusually angrily or aggressively on occasion
- Show a loss of interest in hobbies and activities

Late Stage

This stage is one of near total dependence and inactivity. Memory disturbances are very serious and the physical side of the disease becomes more obvious.

The person may:

- Have difficulty eating
- Be incapable of communicating
- Not recognise relatives, friends and familiar objects
- Have difficulty understanding what is going on around them
- Be unable to find their way around in the home
- Have difficulty walking
- Have bladder and bowel incontinence
- Display inappropriate behaviour in public
- Be confined to a wheel chair or bed

Middle Stage

As the disease progresses, limitations become clearer and more restricting. The person with dementia has difficulty with day-to-day living and:

- May become very forgetful – especially of recent events and people's names
- Can no longer manage to live alone without problems
- Is unable to cook, clean or shop
- May become extremely dependent on their family and caregivers
- Needs help with personal hygiene, i.e. toilet, washing and dressing
- Has increased difficulty with speech
- Shows problems with wandering and other behaviour problems such as repeated questioning and calling out, clinging and disturbed sleeping
- Becomes lost at home as well as outside
- May have hallucinations (seeing or hearing things which aren't really there)

	Early Stage	Middle Stage	Late Stage
Cognitive	<ul style="list-style-type: none"> • Significant memory loss, particularly for recent events • Problems with language (difficulty talking properly) • Difficulty making decisions • Not knowing the time of day or the day of the week • Becoming lost in familiar places 	<ul style="list-style-type: none"> • Very forgetful, especially of recent events and people's names • Increased difficulty with speech • Unable to manage daily living activities (cooking, cleaning, shopping) • Becoming lost at home and outside 	<ul style="list-style-type: none"> • Severe memory disturbances • Incapable of communicating • Not recognizing relatives, friends, and familiar objects • Difficulty understanding surroundings
Sensory and Perceptual Changes	-	Hallucinations (seeing or hearing things that aren't there)	<ul style="list-style-type: none"> • Difficulty eating • Difficulty walking • Bladder and bowel incontinence
Behavioral and Psychological Symptoms of Dementia (BPSD)	<ul style="list-style-type: none"> • Mood changes, depression, or anxiety • Unusual anger or aggression • Loss of interest in hobbies and activities • Becoming inactive and unmotivated 	<ul style="list-style-type: none"> • Extremely dependent on family and caregivers • Problems with wandering • Repeated questioning and calling out • Clinging behavior • Disturbed sleeping patterns 	<ul style="list-style-type: none"> • Inappropriate behavior in public • Confined to a wheelchair or bed

Table 2.3. Stages of dementia differentiate with the impairment
Source: Author (2025)

UNDERSTANDING DEMENTIA

RISK FACTOR OF DEMENTIA

There are several risk factor of dementia (McCullagh et al., 2001):

Age

Age is one of the biggest risk factors for Alzheimer's disease. After the age of 65, the chances of developing Alzheimer's roughly double every five years. This might be because older people have been exposed to more environmental and genetic influences over time.

Gender and hormonal effects

Even when controlling for differences in longevity, several studies have found that women are at increased risk for Alzheimer's disease.

Oxidative and inflammatory stress

Alzheimer's disease is linked to a type of damage in the brain called oxidative stress, which happens when harmful molecules build up.

Vascular risk factor

A more detailed analysis showed that current and former smokers actually have a higher risk of developing Alzheimer's (Launer et al., 1999). Other health conditions also seem to be linked to Alzheimer's. Diseases affecting blood vessels, like diabetes, high blood pressure, and heart-related problems, have been associated with an increased risk (Stewart et al., 1999). On the other hand, eating fish, which contains healthy omega-3 fatty acids, has been linked to a lower risk of Alzheimer's (Kalmijn et al., 1997). Blood pressure's connection to Alzheimer's is still unclear, with studies showing mixed results. However, recent research suggests that medications used to lower blood pressure may help prevent dementia, including Alzheimer's (Forette et al., 1998).

Head trauma

Boxers can develop a condition called dementia pugilistica, which has brain changes similar to those seen in Alzheimer's disease. Because of this, scientists have wondered whether past head injuries could increase the risk of developing Alzheimer's later in life. However, studying this has been difficult since families of Alzheimer's patients might recall past injuries more often than families of healthy individuals, leading to biased results.

Chemical exposure

Aluminium has been a controversial topic when it comes to Alzheimer's disease. Some researchers have found aluminium in the brain structures of Alzheimer's patients, and experiments show that aluminium could affect a key protein involved in the disease. However, since aluminium is found everywhere—including in drinking water, antacids, and antiperspirants—scientists have had difficulty proving whether it truly plays a direct role in causing Alzheimer's. A major incident in England showed that aluminium can be toxic in high amounts, but it is still unclear if everyday exposure leads to long-term brain damage.

Depression

Some research suggests that people who experience depression may have a higher risk of developing cognitive decline later on. However, other studies argue that depression might not actually cause Alzheimer's but could instead be one of its early symptoms. One possible biological link is cortisol, a hormone related to stress and depression. High levels of cortisol may damage brain cells, which could contribute to cognitive problems over time.

Education

Study found that lower education levels may increase the risk of Alzheimer's disease, especially in men (Ott et al., 1999). One theory is that having more education builds stronger cognitive skills and brain resilience, which could help delay the onset of the disease. Some scientists believe that larger brain size might offer more protection against dementia.

Parental age

Age of a mother at childbirth—whether very young or much older—might increase the risk of Alzheimer’s disease in her children later in life.

Demographic risk factors

Elder is a well-known risk factor for stroke, which can lead to vascular dementia, as male gender and racial or ethnic background.

Lipids

High levels of low-density lipoproteins (LDL), also known as “bad” cholesterol, have been found to increase the risk of dementia in people who have had a stroke.

Smoking

Smoking has been shown to be a risk factor by Meyer et al (1988), whereas the Canadian Study of Health and Aging (Lindsay et al, 1997) did not show any association.

Cerebral white-matter lesions

Cerebral white-matter lesions occur when nerve fibers in a part of the brain lose their protective covering (myelin) and small blood vessels become damaged. These lesions are more common in vascular dementia than in other types of dementia or in healthy elderly individuals. For those who have had their first small stroke (lacunar infarction), having white-matter lesions increases the risk of death, another stroke, dementia, and loss of independence. Other conditions that may raise these risks include a history of heart attack and irregular heartbeats like atrial fibrillation

Occupational exposure

A study found that people who worked with pesticides, fertilizers, liquid plastics, or rubbers had a higher chance of developing vascular dementia compared to those without those exposure.

Alcohol

People with a history of alcohol misuse may have a higher risk of developing vascular dementia, though not all studies have found the same results.



Fig 2.2. College illustration of dementia risk factor by author
Source: anontae (u.k), monticello (Getty Image), nailoti (u.k), Laura Mogollon (u.k), PICNIC-photo (u.k), ajfilgud (Getty Image)

UNDERSTANDING DEMENTIA

REDUCING RISK FACTOR OF DEMENTIA

Given the variety of risk factors for dementia, living a healthy lifestyle may lower your chances of having dementia as you age. According to the National Institute on Aging, the following are recommendations to improve your brain health and lower your risk of dementia:

Control high blood pressure

High blood pressure can damage the cardiovascular and nervous systems, raising the risk of stroke and vascular dementia.

Eat healthy diet

What we eat significantly impacts how well an aging brain can think and remember. So having a healthy dietary pattern including fruits, vegetables, whole grains, and lean protein can lead to cognitive benefits.

Keep mentally active

Doing activities like reading, playing board games, crafting, taking up a new hobby, learning a new skill, working or volunteering, or socializing can help to mental agility and cognitive engagement.

Connect with people

Maintaining relationship with family, friends, and neighbors helps prevent loneliness and supports brain health as you age.



Manage blood sugar

High blood sugar levels are associated with diabetes and may also heighten the chance of cognitive impairment and other vascular conditions.

Be physically active

Exercising contributes to overall health by reducing the risk of stroke, depression, diabetes, and high blood pressure, a health condition that is linked to cognitive functional decline. Some of exercise can also help prevent muscle loss and reduce your risk of falling. Aim for 150 to 300 minutes of moderate-intensity physical activity plus two days of muscle-strengthening exercise each week.

Take care of your mental and physical health

Take charge of both mental and physical well-being. This includes regular medical checkups, managing depression and cholesterol, quit smoking, and stay in touch with a healthcare provider.

Limit or avoid alcohol

Drinking too much can worsen various health issues like diabetes or memory problems and heighten the risk of falls. Experts suggest no more than two drinks per day for men, and one for women.



Treat hearing problems

Untreated hearing loss can make communication harder and may raise the risk of cognitive decline. Cover your ears from loud noises, get regular hearing checks, and use hearing aids if advised by your doctor.

Sleep well

Aim for 7–9 hours of good sleep each night to recharge your body and mind. If you're struggling with sleep, or suspect a sleep disorder, consult your healthcare provider.

Prevent falls

As we age, the risk of falling increases and can lead to serious injuries. You can help prevent falls by making your home safer and wearing well-fitted, slip-resistant shoes.

Fig 2.3. College illustration of reducing risk factor by author
Source: Johnrob (u.k), Barbhuiya (u.k), welcomia (u.k), Kzenon (u.k), Studip Phillippines (u.k), Pamai (u.k), Studioroman (u.k), Bolovtsova (u.k), Wanderluster (u.k), Anna Tis (u.k)

UNDERSTANDING DEMENTIA

NEEDS OF DEMENTIA

Based on the previous literature, we can understand that the needs of individuals with dementia differ significantly from those of older adults who do not experience cognitive decline. People with severe dementia often exhibit behavioral symptoms (e.g., agitation, screaming, restlessness) if their needs are not fulfilled (Cohen-Mansfield et al., 2015).

Safety & Security

Study shows that physical needs like pain control, infection prevention, and mobility support are often not met in severe dementia at the end of life (Perrar et al., 2015). Moreover, the physical environment must be able to maintain comfortable temperature and lighting, because sensory comfort is directly related to quality of life (Dröes et al., 2006, in Schölzel-Dorenbos et al., 2010). Motor function decline has also been shown to be a predictor of dementia incidence, so space design should minimize the risk of falls and support physical activity (Kueper, Speechley, Lingum, & Montero-Odasso, 2017).

Orientation & Navigation

Orientation needs related to familiarity with the environment and human spatial scale. Unfamiliar environment can increase anxiety, agitation, and problematic behavior in severe dementia. Familiarity in environment including using design elements that are consistent and easy to recognize help people with dementia maintain a sense of security and reduce the burden on caregivers (Schölzel-Dorenbos et al., 2010). Study about need in the end of life emphasized importance of environment that feels like home and personal comfort (Perrar et al., 2015). Hence why spatial orientation and clear navigation is part of integral of dementia-friendly design.





Fig 2.4. The Village Langley
Source: Dementia Solutions. (2021, October 20). The Village Langley- Levelling Up the Care for Those with Dementia [Photograph]. Dementia Solutions. dementiasolutions.ca/the-village-langley-levelling-up-the-care-for-those-with-dementia/

Sensoric and Cognitive

Sensoric needs include accessibility toward adequate lighting, distraction control, and support for their visual and hearing impairments. Many patients report unmet needs related to sensory issues such as visual and hearing impairments (Orrell et al., 2008, cited in Schölzel-Dorenbos et al., 2010). Cognitive needs include support for memory and time orientation, which can be facilitated by assistive technology such as reminders, security sensors, and communication systems (Green, van Reenen & Griffiths, 2019). These technologies proven to increase safety and reducing caregiver burden.

Social and Emotional

Social interaction, feelings of belonging, and emotional support are important needs for people with dementia. A study shows that social needs like togetherness, meaningful activity, and interpersonal contact often not fulfilled, lead to behavioral symptoms (Cohen-Mansfield et al., 2015). Emotional needs include autonomy and independence, related to pride and quality of life (Schölzel-Dorenbos et al., 2010). In their end of life, spirituality and individuality appear, emphasizing the importance of respecting personal history and preferences (Parrer et al., 2015). Thus, design needs facilitate social interaction, create space to make meaningful activity, and support people with dementia autonomy.

UNDERSTANDING DESIGN APPROACH

WHAT IS DEMENTIA-FRIENDLY DESIGN?

Dementia-friendly design prioritizes creating environments specifically for people with dementia, reducing the impact of its progression and improving their well-being. It should incorporate their needs into the design, helping to minimize confusion and disorientation.

ROLE OF ENVIRONMENT TO DEMENTIA

A well-designed environment can help reduce confusion and agitation, improve wayfinding and encourage social interaction. While poorly designed environment increase disorientation and lead to distressing behavior. As you can see on the Table 2.1, a well-designed environment lead to better wayfinding and mobility to wandering around. It also increase people with dementia's well-being by improvement in eating behavior, activities of daily living, self-help skills, use of toilet, and dressing. Additionally, their connection between other people increase from interaction between staff or other residents. Apart from that, a well-designed environment can significantly reduce in disruptive behavior. Lower rates of depression, dyspraxia, restlessness, and stress associated with bathing improve mental and emotional well-being. It also minimize agitation, anxiety, confusion, and emotional disturbances. Overall, these reduction help create a safe and comfort environment.

IMPORTANCE OF SPECIALIZED CARE

Reimer et al. (2004) examines the quality of life (QoL) of individuals with middle- to late-stage dementia in a specialized care facility (SCF) compared to traditional institutional settings over a one-year period. Participant experienced a slower decline in daily activities, maintained greater engagement with their surroundings, and exhibited fewer negative emotions.

IMPROVEMENTS IN -	REDUCTION IN -
Wayfinding	Agitation
Eating behaviour	Anxiety
Motor functions	Conflict
Activities of daily living	Confusion
Self-help skills	Depression
Mobility	Dyspraxia
Pleasure	Emotional disturbance
Use of toilet	Number of falls
Vitality	Restlessness
Interaction between staff and residents/patients	Stress associated with bathing
Independence in dressing	Amount of physical help required
Ease of supervision	Time spent by staff locating and monitoring patients/residents
Likelihood of residents/patients making friends with one another	Number of attempts to leave
Quality of life	Doses of antibiotics and psychotropic drugs
	Wandering into other people's spaces

Table 2.4. Effects of a well-designed environment on people with dementia
Source: Environmental Design Resources (2017)

EVOLUTION OF DEMENTIA-FRIENDLY DESIGN

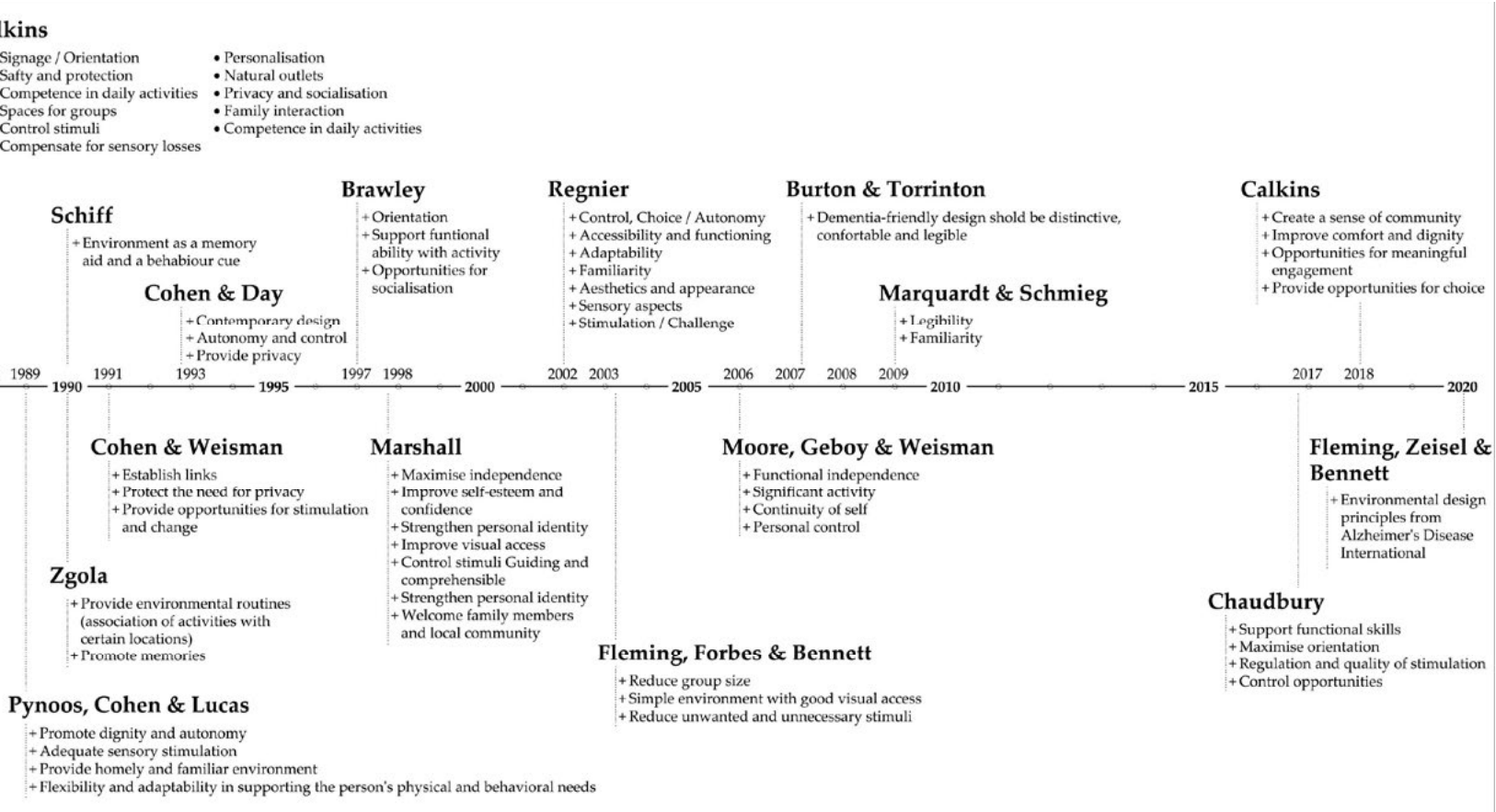
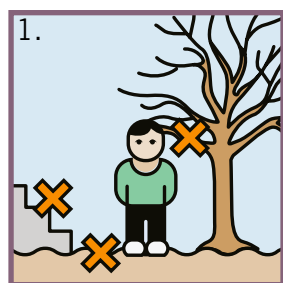
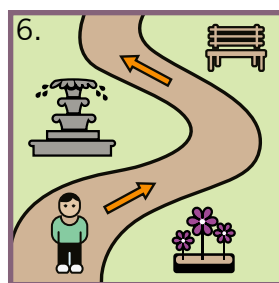


Table 2.5. Main contributions of various authors over the last forty years to design principles for environments for people with dementia.
Source: Quesada-García, Valero-Flores, & Lozano-Gómez (2024)

Research about dementia has been carried out extensively since 1987. However, the most persistent developing and testing of dementia design principles over the past 35 years has been carried out by Flemming, Bennet, and others. Fleming and Bowles (1987) presented eight design principles. Fleming, Forbes, and Bennett (2003) provided new design ideas. These concepts were further developed and polished over the next decade to become the Fleming and Bennett principles stated in page 27 (Quirke et al., 2023).

UNDERSTANDING DESIGN APPROACH

DESIGN PRINCIPLES

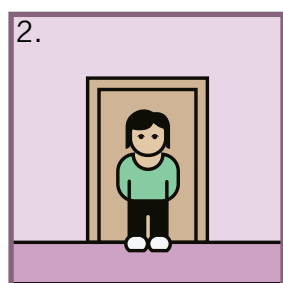


UNOBTRUSIVELY REDUCE RISKS

Ensure that both internal and external environments are safe and easy to navigate for people with dementia (PWD), allowing them to continue their daily activities.

PROVIDE A HUMAN SCALE

The space should not be intimidating or overwhelming but should promote a sense of well-being and enhance the individual's competence.

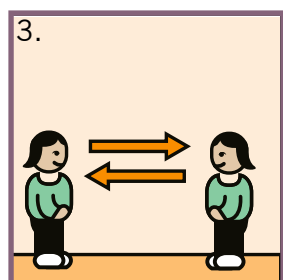
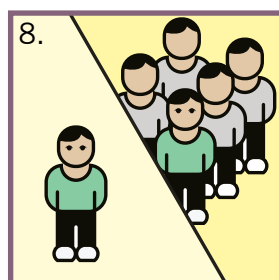


ALLOW PEOPLE TO SEE AND BE SEEN

Design a space that cover these key areas: lounge room, dining room, bedroom, kitchen, and outdoor area to helps PWD recognize their surroundings and make choices about where they want to go, thereby reducing confusion. Additionally, it allows staff to monitor

REDUCE UNHELPFUL STIMULATION

Minimize unnecessary stimuli to prevent stress in PWD. The space should be designed to limit exposure to irrelevant or competing noises, visual clutter, and other distractions that do not benefit the resident.

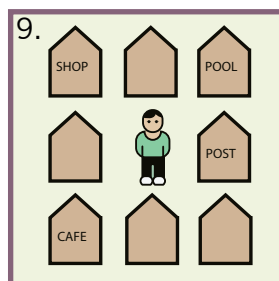


OPTIMISE HELPFUL STIMULATION

Provide sign that help PWD recognize their location and understand what they can do.

SUPPORT MOVEMENT AND ENGAGEMENT

Design pathways that encourage purposeful movement and engagement in activities and social interactions. It should be well-defined, free of obstacles, and guide individuals past points of interest.

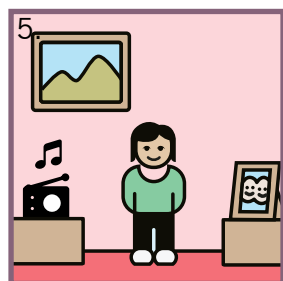
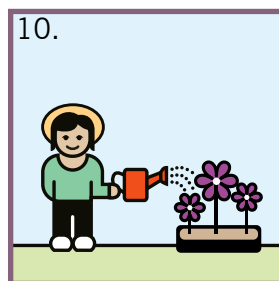


CREATE A FAMILIAR PLACE

Create a sense of familiarity between the space and user. It can be furniture, fittings, colour, or traditional elements.

PROVIDE OPPORTUNITIES TO BE ALONE / WITH OTHERS

Provide a variety of spaces to meet the diverse needs of individuals with dementia.



LINK TO THE COMMUNITY

Facilitate connections with the community to help individuals with dementia maintain their sense of identity.

DESIGN IN RESPONSE TO VISION FOR WAY OF LIFE

Align the design of the environment with the building's philosophy of care. Whether the focus is on daily living activities, full-service recreation, healthy lifestyles, or spiritual reflection, the design should support and clearly convey this philosophy.

Fig. 2.2 Design Principle by Fleming and Bennett
Source: Dementia Training Australia (2017)

DESIGN SOLUTION BASED ON DESIGN PRINCIPLE

	DESIGN PRINCIPLE	DESIGN STRATEGY
P1	Unobtrusively reduce risks	<ul style="list-style-type: none">• Prevent physical injuries (especially falls and getting lost) through environmental design through non-slip flooring
P2	Provide a human scale	<ul style="list-style-type: none">• Divide big building mass into housing unit scale• Avoid long corridor without orientation• Furniture with user friendly size (not too high or big)
P3	Allow people to see and be seen	<ul style="list-style-type: none">• Circulation and key areas can be seen by staff & resident passively• Make sure People with Dementia can oriented themself and choose the activity because all area are clearly seen• Open plan layout with visual connections
P4	Reduce unhelpful stimulation	<ul style="list-style-type: none">• Minimize voice & visual distractions using acoustic material• Avoid excessive decoration or confusing visual• Adjust lightning to prevent glare or flickering
P5	Optimise helpful stimulation	<ul style="list-style-type: none">• Create signage with simple icons and contrasting colors for wayfinding• Textured and familiar materials to assist sensory recognition.
P6	Support movement and engagement	<ul style="list-style-type: none">• Create clear, obstacle free, and looping circulation path• Ensure pathways bring residents back to its destination, preventing getting lost.
P7	Create a familiar place	<ul style="list-style-type: none">• Integrating culture and local lifestyle that can trigger People with Dementia memory• Resident can costumized their space (bedroom)
P8	Provide opportunities to be alone/with others	<ul style="list-style-type: none">• Create a private to communal room for them to interacting without overstimulation• Facilitate family visit and community activity
P9	Link to the community	<ul style="list-style-type: none">• Create a zone that facilitate safe interaction with family and community
P10	Design in response to vision way of life	<ul style="list-style-type: none">• Ensure each design decisions support the building’s philosophy

Table 2.6. Design Strategy
Source: Author (2025)

UNDERSTANDING DESIGN APPROACH

LANDSCAPE FOR HEALTH

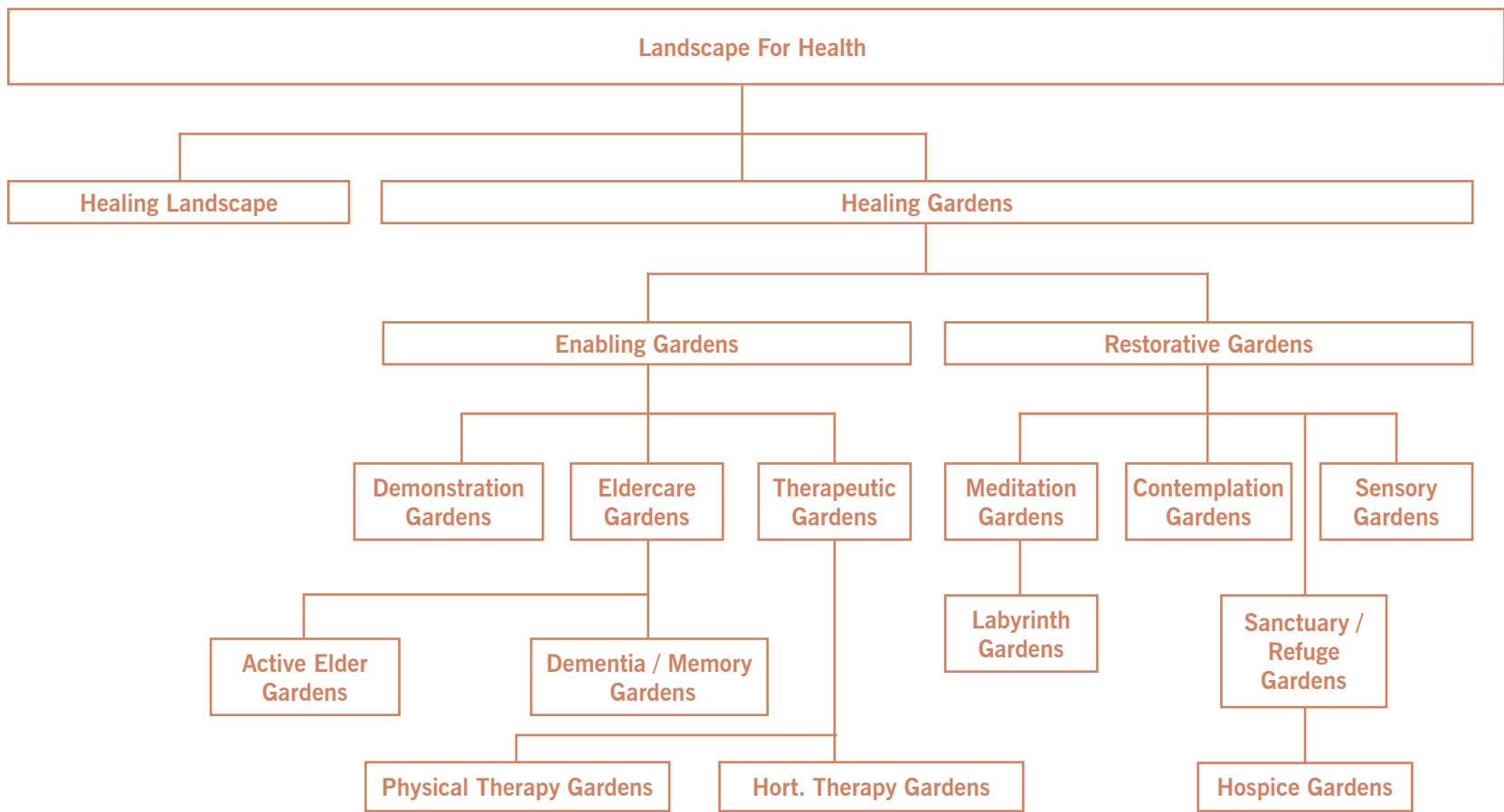


Table 2.7. Landscape for Health
Source: National Parks Board (2013)

According to the Singapore National Parks (2013), healing gardens are place that provides stress-reducing and heal in a number of ways and at different levels. Healing word mean a lot of things, like physical therapy, cognitive therapy, or emotional therapy. There are two types of healing gardens: the restorative garden, which is based on research and theories produced by pioneers in the field of environ-

mental psychology, and the enabling garden, which is a garden that use universal design with gardening as its goal, rather than on the restoration of mental strength. But just like the restorative experience, one comes with the other. Removing physical barriers opens up a variety of therapeutic experiences.

GARDEN TYPES	DEFINITION	DIFFERENCES	FOCUS
Demonstration Garden	Educational gardens showcasing techniques, plants, or therapeutic concepts	Designed for teaching and outreach, not necessarily for direct healing	Awareness, training, and community engagement
Active Elder Garden	Eldercare garden promoting physical activity and independence	Encourages movement and autonomy for older adults	Mobility, empowerment, and social interaction
Dementia / Memory Garden	Eldercare garden tailored for cognitive support and memory recall	Includes orientation cues, familiar plants, and sensory triggers	Comfort, reminiscence, and emotional grounding
Physical Therapy Garden	Therapeutic garden supporting motor skill recovery	Includes rehab tools, walking paths, and therapist-led activities	Physical rehabilitation and movement therapy
Horticultural Therapy Garden	Therapeutic garden used in structured therapy programs	Led by certified therapists with measurable outcomes	Emotional healing, skill-building, and clinical support
Labyrinth Garden	A meditation garden with a winding path for reflection	Focuses on slow, mindful walking and internal focus	Meditation, spiritual clarity, and stress reduction
Meditation Garden	Garden designed for quiet reflection and spiritual connection	Minimal activity; may include symbolic or cultural elements	Mental clarity, spiritual healing, and emotional peace
Contemplation Garden	Designed for quiet reflection and spiritual connection	Minimal activity; emphasizes solitude and introspection	Mental clarity, spiritual healing, and emotional peace
Sanctuary Garden	Offers a refuge from stress or trauma	Often enclosed or secluded; may include symbolic or cultural elements	Safety, emotional comfort, and psychological refuge
Sensory Garden	Stimulates sight, sound, touch, smell, and taste	Prioritizes multi-sensory engagement; often used in dementia or autism care	Grounding, memory recall, and sensory exploration

Table 2.8. Definitions, differences, and focus for each type of healing gardens
Source: National Parks Board (2013)

SENSORY GARDEN FOR STIMULATION

A sensory garden is a plant-dominated environment designed to promote physical, psychological, cognitive, and social well-being through interaction with nature. Murroni et al. (2021) examined that a sensory garden has a positive psychological effect on people with dementia (PWD). Nature exposure lowers cortisol levels (stress hormone) leading to a reduction in anxiety and agitation. At the same time, it a decrease in medication use because of the gardening therapy. Moreover, gardening activities can stimulate cognitive function, increase social interaction, and improves mobility. These align with dementia-friendly design principles, which optimise helpful stimulation, support movement and engagement, and link to the community.

Hernandez (2007) provides several design recommendations for sensory gardens in dementia care unit:

- Provide support for the resident
- Provide shading
- Provide solarium/conservatory as the indoor alternative to outdoor space
- Colored walkpath to reduce glare
- Vegetation as shade to reduce glare
- Vegetation as visual stimulus, using bright-colored flowers
- Provide garden area for resident's gardening activities as enhances physical therapy
- Provide pet therapy but located in certain area so other resident who have fear with animal don't get anxiety
- Vegetation as season awareness
- Planting non-toxic plant

Focusing on Garuth Chalfont's work, *Design for Nature in Dementia Care* (2007), talking about how natural environments can serve as restorative spaces that support cognitive function and reduce stress among people with dementia. Therapeutic gardens create a multisensory experience that encourage relaxation, social interaction, and improved behavioral responses by integrating elements such as textured landscapes, aromatic plants, and interactive garden features.



Fig 2.3. Garden in dementia care space at Garden View
Source: Hernandez (2002)



Fig 2.6. Garden in dementia care space at Sunshine Center
Source: Hernandez (2002)



Fig 2.7. Garden in dementia care space at Sunshine Center
Source: Hernandez (2002)

CHARACTERISTICS OF SENSORY GARDEN

These are the element that usually in therapeutic garden:

Vegetation

The hardscape walkways and courtyards are part of a good hospital landscaping plan, vegetation is sovereign. It should be luxurious, with covered landscapes with shade trees, flowers, and shrubs at several heights. Plant life that offers shade, privacy, and beauty all significant to a therapeutic atmosphere.

Wildlife Presence

Domestic plants — plants unique to the context country should be vastly popular now. They are resistant and less vulnerable to pests and diseases. They grow fine and need little care. They also attract flora and fauna, another enhancement to healing. Birds, butterflies, and hummingbirds will start fluttering around, take pleasure for the patients and hospital workers who stood outside for some relief.

Engaging the Senses

The best therapeutic landscaping should not be just an appealing for the eyes. It must Suggest gardens that can be touched, smelled, and heard, too. Decorative grasses swoosh mildly in the breeze. Vague lamb's ear plants are nice alternatives for pets. Lavender's odor is well-known for relaxation and calm. One note that should be Avoided sturdily fragrant flowers or other odors. Chemotherapy patients are subtle to many smells.

Walkways Accessibility and Safety

Pathways should be inclusive enough to house wheelchairs and pedestrians walking in pairs. They should be even, so they do not obstruct wheelchair wheels or hitch wheeled IV poles.

Healing Plants

Some plants have been related with healing for centuries and are great add-ons to therapeutic landscaping. They include lavender, rosemary, roses, catnip, sage, and sweet marjoram.

Water Features

The sound of stirring water relaxes us, pacifies our nerves, and makes a hospital visit a bit less stressful. Waterfalls and fountains are both great choices to include in the courtyard or communal areas or as a feature in a healing garden.

UNDERSTANDING BUILDING TYPOLOGY

BUILDING TYPOLOGY FOR DEMENTIA

Residential Age Care

accommodation and 24-hour care provided to older people who can no longer live independently in their own homes.

Acute Hospital

Acute general hospitals provide time-sensitive acute curative services, typically in a short time frame. This distinguishes them from acute curative services, typically in a short time frame. This distinguishes them from other healthcare settings such as primary health care centres (i.e. primarily for short daytime appointments) or community hospitals (i.e. typically for long term residential care or rehabilitation). Acute hospital environment can be challenging and distressing for patients with dementia due to its busy, unfamiliar, and stressful nature so universal design approach is needed to accommodate the diverse needs of hospital users, including patients with dementia, their families, and staff (Grey et al., 2020).

Memory Care Units

A specialized environment within a larger facility (like an assisted living community or a nursing home) designed to provide care and support for individuals with memory loss conditions like Alzheimer's or dementia

Day Care Center

A specialized care and companionship for individuals with cognitive or memory-related conditions, like Alzheimer's disease, during the day, offering a safe and structured environment. The models of day care can be generally split into two main types; community centre large group models and smaller scale house models. Community centre models often have larger groups of attendees and have a social and entertainment focus to their programs. House model day centres are smaller scale and are often delivered in a more domestic home designed environment.

Specialized Dementia Villages

A residential care community designed to support people with dementia, aiming to improve their quality of life and provide a safe, stimulating environment that resembles a normal, home-like setting.

KEY DESIGN ACCROSS TYPOLOGY

Wayfinding: Clear and intuitive layouts, visual cues, and landmarks.

Safety: Secure environments, non-slip flooring, handrails, and adequate lighting.

Sensory Stimulation: Appropriate lightWing, acoustics, and tactile experiences.

Social Interaction: Communal spaces for activities and socializing.

Person-Centered Care: Environments that support individual needs and preferences.

SIMILARITY AND DIFFERENCES BETWEEN BUILDING TYPOLOGY

	Residential Age Care	Acute Hospital	Memory Care Units	Day Care Center	Specialized Dementia Villages
Purpose	Provides long-term care for elderly individuals, including those with dementia.	Offers short-term, intensive medical care for patients with acute health issues, including dementia-related complications.	Specialized care for individuals with Alzheimer’s and other dementias.	Provides day-time supervision and activities for individuals with dementia	Creates a community-like environment specifically for individuals with dementia.
Patient population	<ul style="list-style-type: none">• elder who can no longer live independently at home.• 10-15 people/unit	Individuals requiring immediate and intensive medical care for a wide range of conditions, including severe illnesses, injuries, and acute exacerbations of chronic conditions.	The majority of residents are older adults, often in their 80s or 90s with dementia or Alzheimer’s disease	<ul style="list-style-type: none">• 30-100 attendess (community centre);• 10 -20 attendess/day (House-model day care)	Each unit less than 10 people
Intended level of care	24-hour care and support in a facility	short-term care	24-hour care and support in a facility	short-term care	24-hour care and support in a facility
Services offered	24/7 care, assistance with daily activities, medical care, social activities, and meals.	Advanced medical treatments, emergency care, diagnostic services, and rehabilitation.	Structured activities, cognitive therapies, personalized care plans, and trained staff focused on dementia care.	Social activities, meals, personal care, health services, and transportation	Comprehensive care, social integration, therapeutic activities, and a focus on maintaining independence and quality of life.
Layout	Homelike setting with private or shared rooms, communal areas, and gardens.	Clinical setting with individual patient rooms, specialized medical equipment, and emergency facilities.	Secure units within larger residential care facilities	Safe and structured setting with activity rooms, dining areas, and outdoor spaces.	Village-style layout with homes, shops, and communal areas designed to mimic a normal village.

Table 2.9. Similarity and Differences between Building Typology
Source: Author (2025)

UNDERSTANDING BUILDING TYPOLOGY

WHAT IS SPECIALIZED DEMENTIA VILLAGES?

Among the many building initiatives for dementia, small-scale homelike facilities show promising results in improving physical functioning, social participation, and quality of life compared to conventional nursing homes (Krier et al., 2023). Dementia villages are the latest innovation in creating a safe area for dementia sufferers without making them feel cramped. The aim is to create a communal space for residents while adhering to societal care standards (Haeusermann, 2018). Dementia villages provide a self-contained neighborhood where residents can move freely in a safe environment including facilities like shops, restaurants, and public spaces, giving residents to maintain a sense of familiarity (van der Eerden & Jones, 2011). Compare to traditional nursing homes, dementia villages replicate real-world settings to maintain independence while receiving necessary care.



Fig.2.8 People with dementia in Hogeweyk dementia village

Source: Note. From MedicalExpo e-magazine, by Erin Tallman, (2024). Retrieved from <https://emag.medicalexpo.com/worlds-first-dementia-village-hogeweyk-inspires-many/>

IMPACT OF SPECIALIZED DEMENTIA VILLAGES

Since dementia villages prioritize living in normal life, the culture of organization should be changed from the clinical, hospital-like atmosphere to the person-centered care. It might be create a significant financial investment yet it will be efficient in the long run by reducing hospitalizations and improve residents' well being (Røhnebæk et al., 2023). Dementia villages might encourage the local business to participate (like cafe or shops) and benefit with each other (Henry et al., 2019)



Fig.2.9 People with dementia in Hogeweyk dementia village

Source: Note. From MedicalExpo e-magazine, by Erin Tallman, (2024). Retrieved from <https://emag.medicalexpo.com/worlds-first-dementia-village-hogeweyk-inspires-many/>

UNDERSTANDING DESIGN PRECEDENT

Murray House, Wentworth (2016)

Building typology: Residential aged care

Architect: GSD Srchitect

Murray House is a residential aged care facility that is home to 42 people. Operated by the Wentworth District Hostel Society, it located in a small town on the NSW/Victorian border where strong local involvement.

A new cluster of 12 places are designed for people with dementia. The purpose of this plan is to create no distinction between spaces for individuals with dementia and other part of Murray House.

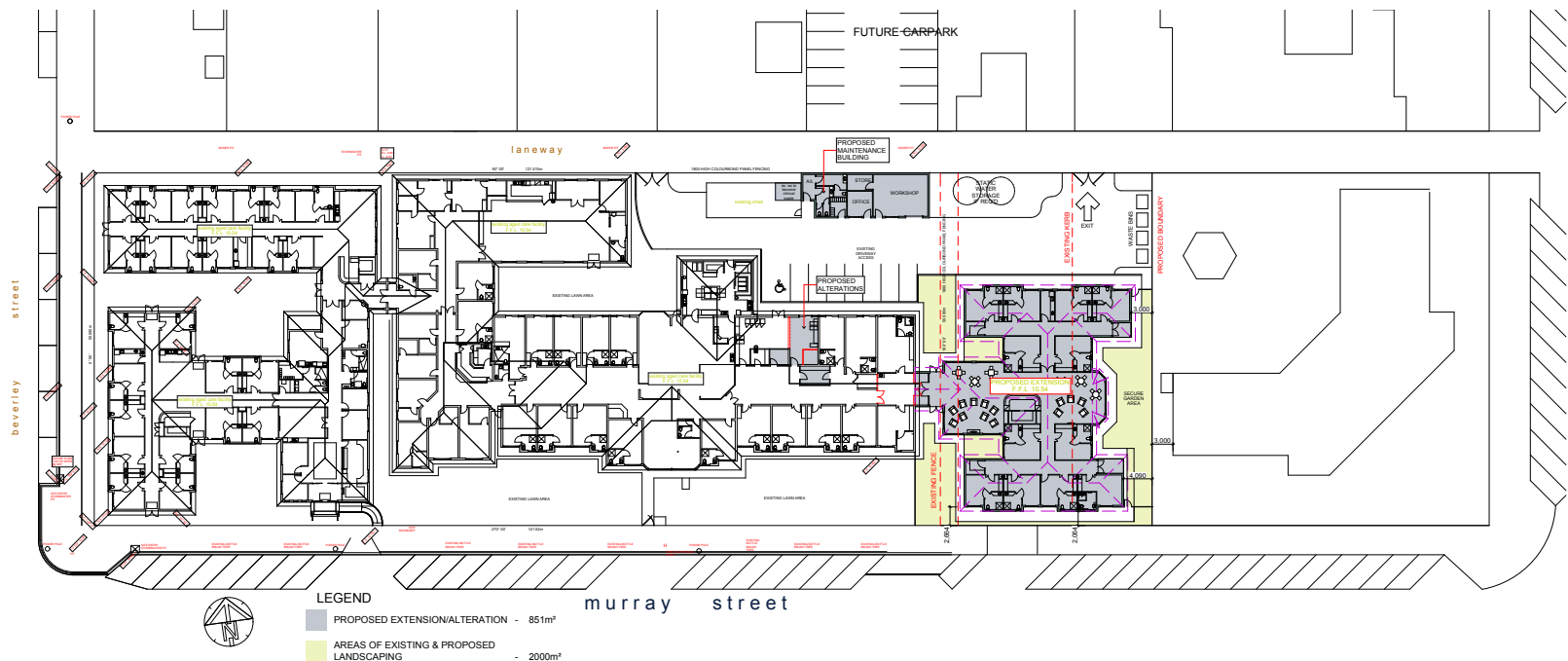


Fig.2.10 Murray House extension proposal

Source: bickertonmasters.com.

The extent of the site which is available for the new building is constrained by the existing building to the west, Murray St. The goal is to create close and safe environment but not separate with the rest of Murray House. That's why social space are placed between old and new building to break-down any perceived barriers. The new unit will contain 12 single rooms with ensuites, a small lounge/dining room, a garden and a staff base. The architect start to design using EAT (Environmental Assessment Tool) assessment as starting point. From that, the floor plan are created (fig.)



Fig. 2.11. Murray House dining lounge

Source: murrayhouse.com

BEDROOM

To provide human scale, size of the room, furniture arrangements, finishes, and acoustic measures are become consideration. The entry door will be highlighted from the approach corridor but hidden from inside the social space so that when it is closed attention is not drawn to it.

ALCOVE/LOBBY

To reduce unhelpful stimulation, the alcove are upgraded into lobby to avoid 'busy' throughfare because of people coming and go. Service door also removed.

ENTRY

Located in the end of murray house, create a feeling this unit is 'out of sight' to resident. The entrance is not to give an impression of a locked unit and so there is to be a feeling of openness upon arrival. This highlight important stimulation, create a familiar environment, support movement & engagement

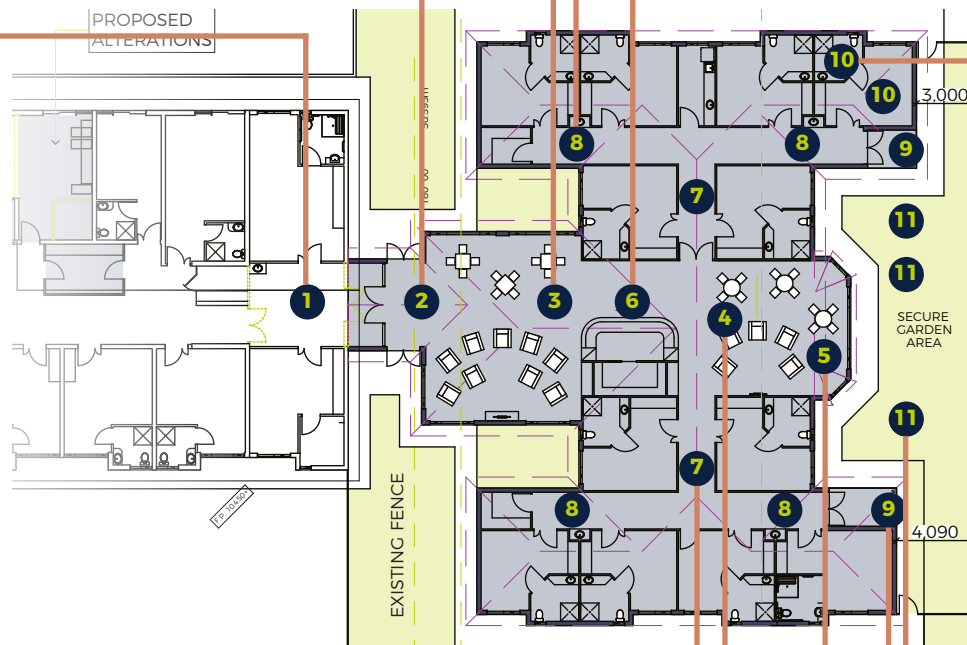


Fig.2.12 Murray House extension proposal
Source: bickertonmasters.com.

BEDROOM CORRIDOR II

Each corridor have different identity for resident know where they belong. This highlight support movement, seeing and be seen, and support movement and engagement.

STAFF BASE

Using seeing and be seen principle, staff base placed in a central location to create visual and physical connection between staff and residents. Considering the decor of staff base to prevent conflict between the ambience of lounge-dining room.

BEDROOMS & ENSUITES

Each resident have a single bedroom which as its own ensuite which located on the external wall of the building to gain natural light and ventilation. Moreover, distinguish bedroom and ensuites door using different door frame. This highlight the important stimulation and create familiar space.

BEDROOM CORRIDOR I

Distinguish space using colour, finishes, artwork and other finishes so residents know where they belong.

LOUNGE DINING TO GARDEN

Create wall and doors to the lounge-dining to create a room which can be closed to create privacy between lounge and dining. This highlight providing opportunities for privacy and community, and reduce unhelpful stimulation.

LOUNGE DINING TO GARDEN

The lounge dining view is garden area to encourage resident do activity in outdoor & it can be seen from the staff base. This highlight providing opportunities for privacy and community, support movement & engagement

GARDEN

It also provide continuous part for residents. This highlight the important stimulation & support movement and engagement.

DOOR TO GARDEN

Door need to be clearly recognisable from the garden so resident know their unit & the entrance. This highlight the important stimulation & support movement and engagement.

UNDERSTANDING DESIGN PRECEDENT

The Hogeweyk Dementia Village, Netherlands (2008)

Building typology: Specialized Dementia Villages

Architect: BuroKade



Fig.2.13 The Hogeweyk.
Source: telegraphindia.com (2023)

The hogeweyk is the first dementia village in the world. Jannette Spiering, the founder of dementia village said that they started with simple questions like what makes people tick and what would a “normal life with dementia” look like. There are 27 individual houses with 6-7 residents per house. From, 188 residents it divided into 4 lifestyles: traditional, urban, formal, and cosmopolitan. There are professional care working day and night such as home supporters, individual healthcare professionals, nurses, practice nurses, doctors, psychologists, physiotherapists and social coaches work as part of this care. They are supported additionally by 5-6 staff throughout the complex. Facilities that include are: restaurant, café, supermarket, theatre, office, various club rooms, a physiotherapist and a hair and beauty salon. Each houses include a living room (70-100 m²), kitchen, private bedrooms (17-20 m²), bathrooms, a storage and laundry room and a private outdoor space. Overnight supervision is carried out only through acoustic sensors in resident rooms, which are monitored by night staff at the entry. In addition, Only the front door of each house is locked overnight. Layers of private, semi-public, and public spaces allow for this type of control seen in the transitions from living room, dedicated outdoor space adjacent to house, and outdoor public spaces and gardens. Each of the individual houses are configured around 6 courtyard spaces which form key landmarks for wayfinding. Within the village, there is a central street, courtyards, alleys and squares replicating a scale that is typical of suburban living in the Netherlands.

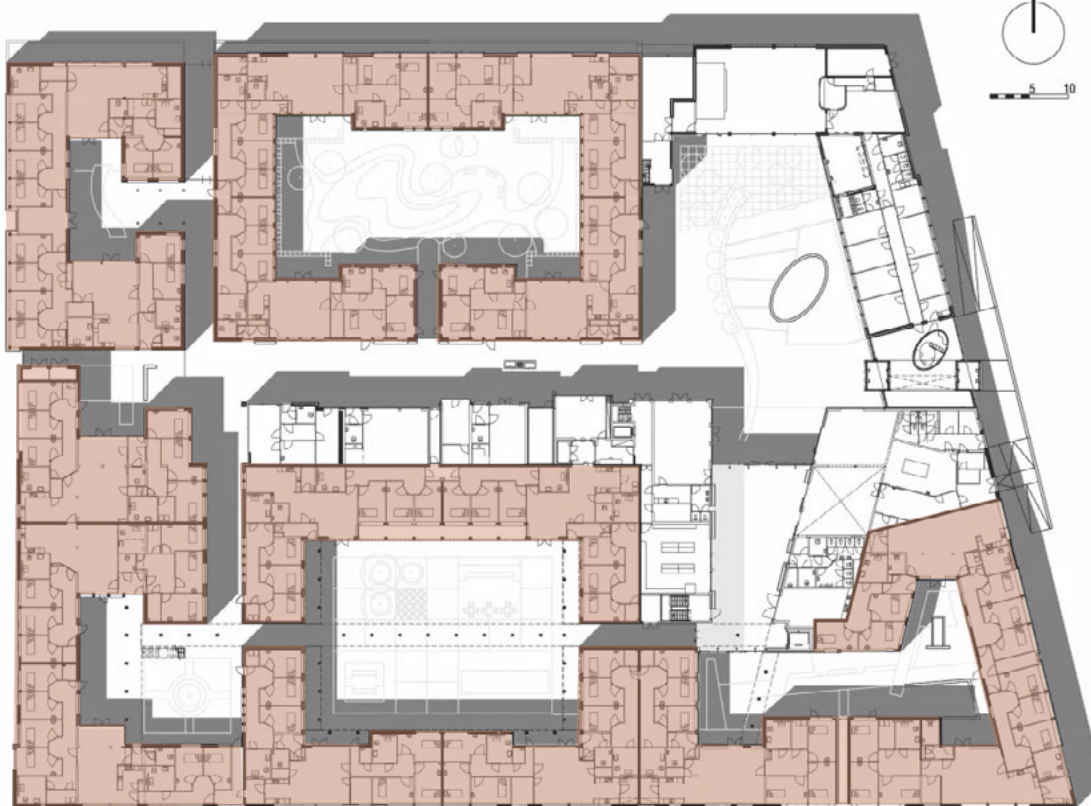


Fig.2.14 The Hogeweyk floor plan.
Source: telegraphindia.com (2023)

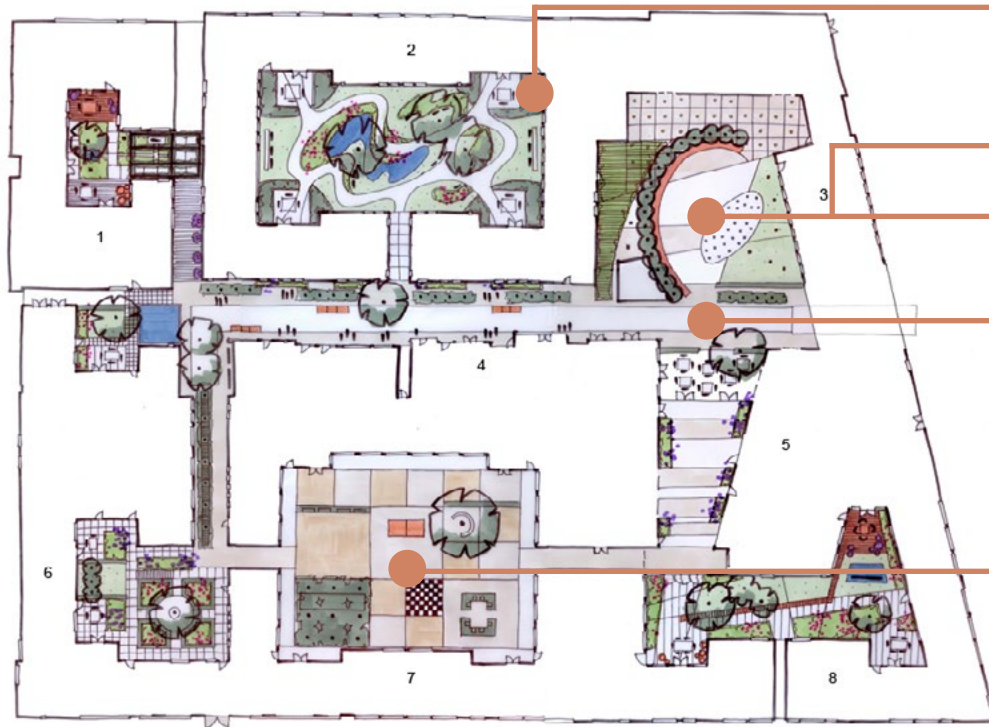


Fig.2.15 The Hogeweyk's six main courtyard.
Source: telegraphindia.com (2023)

LESSON LEARNED:

FAMILIAR FURNITURE

Helps residents adjust and reduces symptoms of dissociation.

SOCIAL INTERACTION

Layers of private, semi-public, and public spaces foster social interactions and independence.

OUTDOOR ACCESS

Prioritized for movement, while indoor spaces are mainly for housing purposes.

WAYFINDING

Courtyards serve as key landmarks for navigation.

LIFESTYLE-BASED GROUPING

Residents are grouped by interests, with interiors reflecting their lifestyles.

COMMUNITY FACILITIES

Makes the resident remember and do regular activity like watching movie, or socialize with other.



Fig.2.16 The Hogeweyk's six main courtyard.
Source: telegraphindia.com (2023)

UNDERSTANDING DESIGN PRECEDENT

RUKUN Senior Living, Bogor (2011)

Building typology: Residential Age Care

Architect: unknown

RUKUN senior living is the first senior living and the only one in Indonesia until now. Residents can choose to stay in their own homes or with family while participating in activities at the Senior Club. Following the Continuing Care Retirement Community (CCRC) concept, RUKUN Senior Living provides an integrated range of services tailored to different senior lifestyles, featuring a variety of housing options such as villas, resort apartments, and senior care accommodations.

In dementia area, they have RUKUN Home Care and they has has two branches: Bogor and Bintaro. Both locations provide 24-hour facilities with caregivers and focusing on communal activities that take place from morning until evening. However, in RUKUN Senior care, they provide health monitoring with the doctor. They also do daily health and activity updates for family. They also have Dementia Day Program, one day activity for dementia to optimize their daily.



Fig.2.17 Activities for dementia in RUKUN Senior Living
Source: rukunseniorliving.com.



Fig.2.18 RUKUN Senior Living Bogor
Source: Facebook.



Fig.2.19 Villa type (Camelia) in RUKUN SL
Source: rukunseniorliving.com.

LESSON LEARNED:

OPEN PLAN

They use open plan combining living room and kitchen. If resident if the resident leaves the room/enters the house, they can see what he wants to do next in one space. This highlight the important stimulation and create familiar space.

BATHROOM

Provide sliding door opening for resident who are for residents who have difficulty in motoric like opening doors. This highlight the important stimulation and create familiar space.

SECOND ENTRANCE

A second entrance can be used for caregiver or technician so they don't create noise coming from main opening. This highlight the reduce unhelpful stimulation.

BEDROOMS

Resident have single room for themself with garden view. It can stimulate resident to go out which good for their health. This highlight the important stimulation, create familiar space, and support movement & engagement.

GARDEN

A green area for resident so they can gardening or looking at existing plants. This highlight the important stimulation and create familiar space.

UNDERSTANDING DESIGN PRECEDENT

Daw Park Dementia Neighbourhood, Australia (2023)

Building typology: Specialized dementia village
Architect: Bickerton Masters, Swanbury Penglase and Mossop Constructions

The design of the cottage-style dementia neighbourhood invokes elements of the bungalow style, featuring prominently within garden suburbs such as the adjacent Colonel Light Gardens. The project features six bungalow-style cottages designed to accommodate 9-15 residents each, arranged around a Central Park and Plaza. These cottages provide access to both private and public outdoor areas, to bring sense of community and connection with nature. Two of the cottages, each offering 9 places, are dedicated to specialist dementia care and are linked to an 11-place step-down cottage to ensure a continuum of care for residents. Three cottages are dementia-specific (acute care to non-ambulant) while two cottages serve to strengthen the state's specialist dementia care programme. Community facilities, including a general store, café, hairdresser, and studio, enhance the quality of life for residents by offering essential services and social spaces. Ancillary administration and back-of-house staff facilities support the smooth operation of the community.

LESSON LEARNED:

- Circular floor plan: to make residents wandering in certain area
- Small population: to ensure the resident's quality of life
- Space based on urgency: to maximize the treatment for each stage
- Community facilities: support resident's independence and hobby by these facilities like store, cafe, etc
- Outdoor access: easy access to shaded gardens and outdoor spaces from the cottages.
- Relationship-based care: focus on individualized care tailored to residents' needs, supported by a nurse-led care team and specialist clinical support.
- Based on other care: building are based on research and experience (hammond care)



Fig.2.20 Daw Park Dementia Neighbourhood's Floor Plan.

Source: bickertonmasters.com.



Corinne Dolan Center at Heather Hill (1985)

Building typology: Small-scale household

Architect: Taliesin Associated Architect

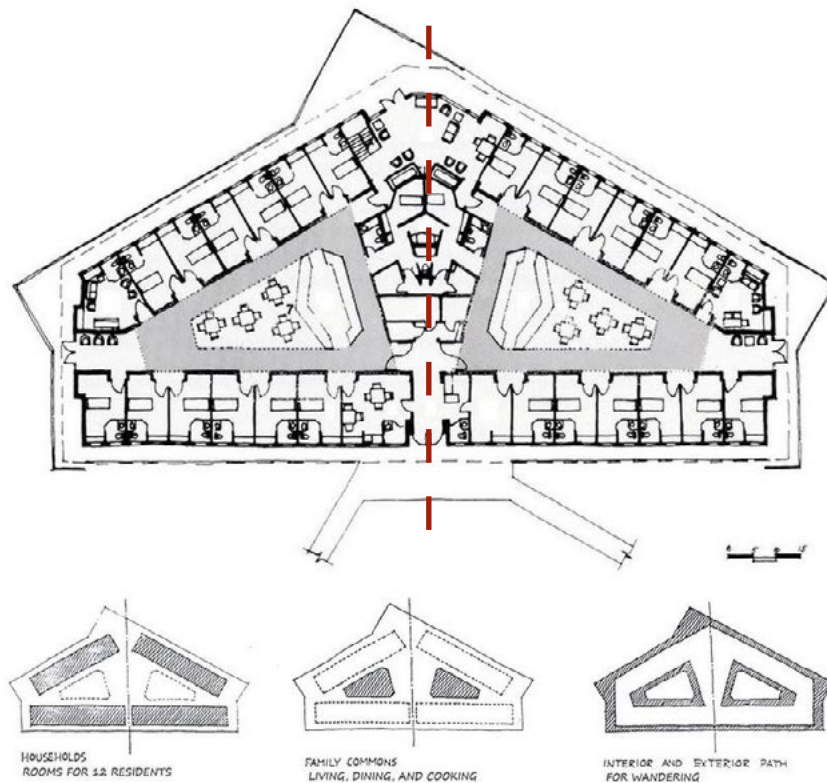


Fig.2.21 Floor plan and spaces and routes schemes.

Source: Saavedra, F., et al (2017).

Corinne Dolan Center organized three residential modules with 12 residents in each module. Each module included private bedrooms, a kitchen, dining, and living room. The design emphasized personalization, allowing residents to bring their own furniture and decor. The bedrooms arranged around an open central space that included the dining room and a kitchen. The architect believed that this configuration would support residents' efforts to find the dining room for meals and to find their bedrooms, which were directly visible from the dining room. They also design space at the bedroom entry for displaying momentos that were specifically intended as orientation cues.

LESSON LEARNED:

- Create a module with 12 resident for each area to minimize their confusion
- Using a circular corridor and combined with open central space that has dining room and kitchen
- Create space for resident's costumized area

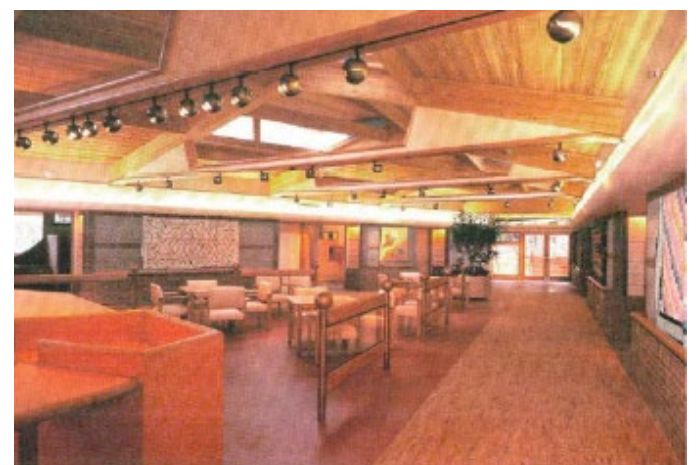


Fig.2.22 Interior

Source: Quesada-Garcia, S., et al (2024).

UNDERSTANDING SPATIAL ELEMENT IN DEMENTIA-FRIENDLY ARCHITECTURE

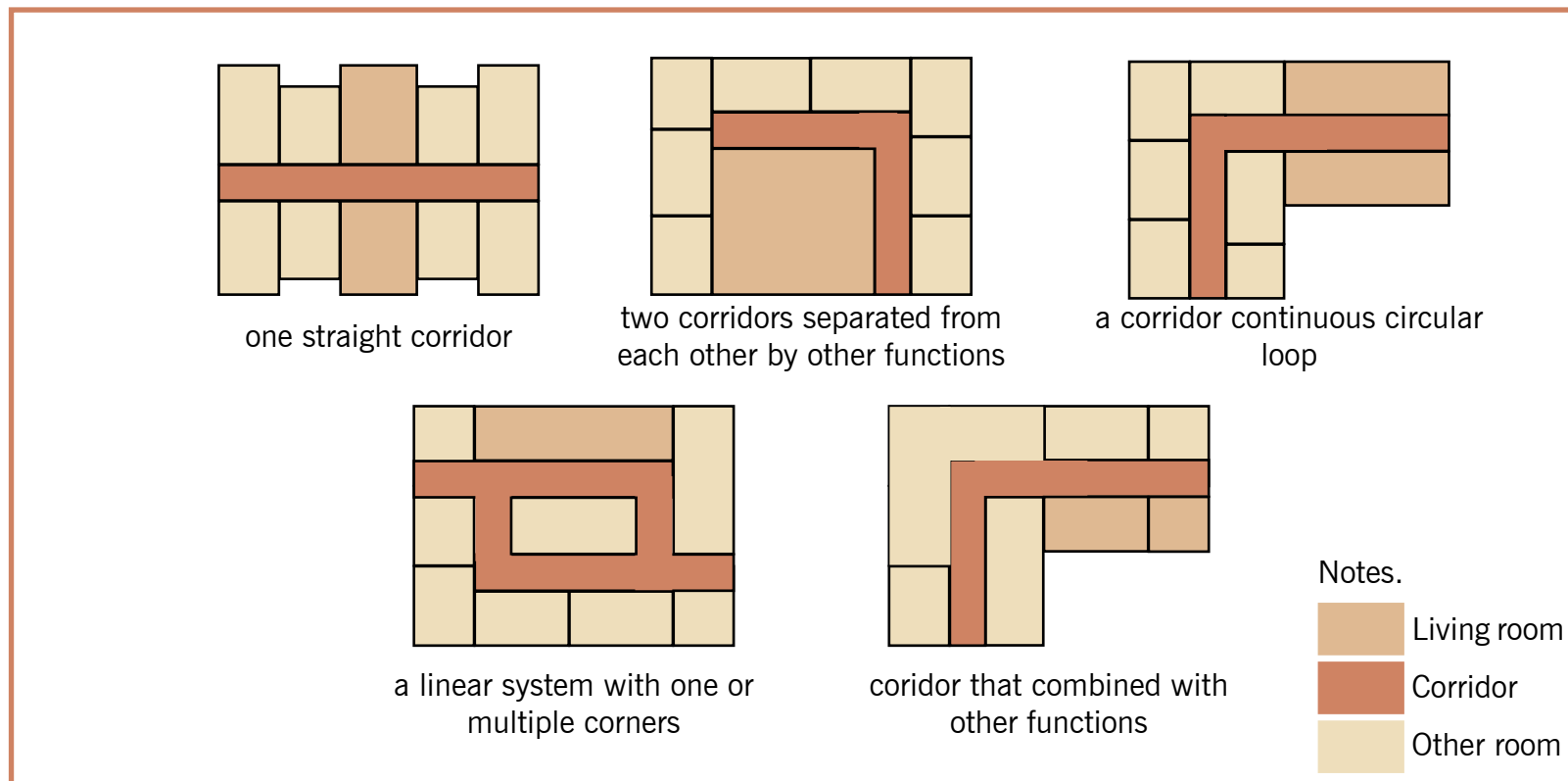


Fig.2.23 Types of Corridor
Source: Author (2025).

CORRIDOR

Van Buuren and Mohammadi (2022) explored the application of dementia-friendly design principles in support of wayfinding within inpatient care environments. The study evaluated 14 dementia care home floor plans in the Netherlands using 14 design criteria. It also identified five floor plan typologies based on corridor configurations, but three of the five typological layouts loop corridors, dual corridors with a central living room, and corridors framed by interior elements were found to be the most effective in supporting wayfinding.

Corridor continuous circular loop

- Supports natural wandering behavior without dead ends or confusing turns
- Reduces anxiety by allowing residents to keep moving without needing to make complex decisions.

Linear system with one or multiple corners

- The central living space acts as a visual and social area, helping residents reorient themselves.
- Not like long corridors, it makes the space feel more home-like and less institutional

Corridor that combined with other functions

- Creates a visually environment that helps residents recognize where they are.
- Reduce the feeling in the “hallway”



- Ensure even lighting with a minimum light level of 300 lux
- Remove/cover mirror to avoid confusion when they see their reflection
- Blind for good night rest
- Contrast bedsheets colour between floor, bedhead, and bed-cover

Fig.2.24 Bedroom of Dementia
Source: enablingenvironments.com.au (uk.)

BEDROOM

Morgan & Stewart (1998) compared multiple occupancy and private rooms, finding that private rooms offer more benefits in terms of resident dignity, autonomy, and reduced conflict. In addition, family can create a personalization of space for a private room, which creates a familiar room for people with dementia. Multiple-occupancy rooms may facilitate social interaction, but also increase stress and behavioral issues. There is also a challenge in the staff perspective on maintaining safety, supervision and resident autonomy in shared rooms.

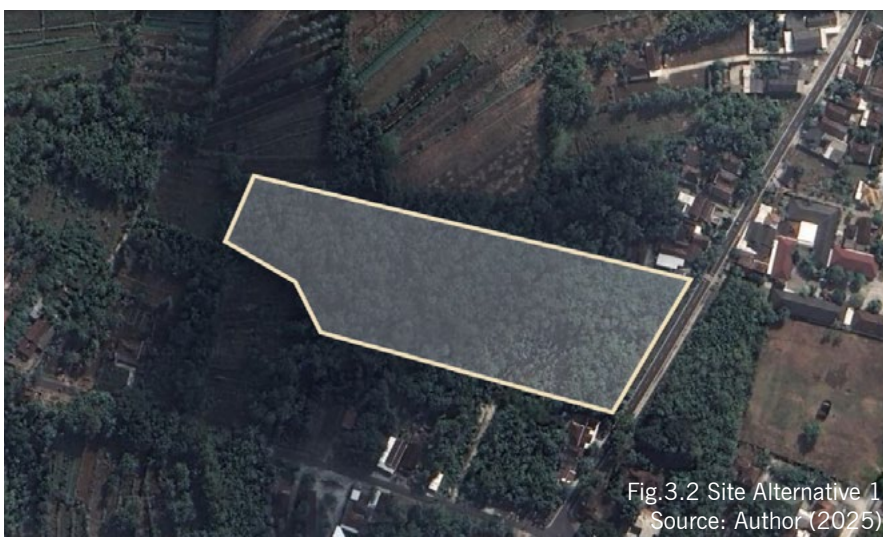
Day, Calkins, and Bechtel (2002) also mentioned that bedroom should be a retreat space for privacy, reflections, and visits with family. The acoustics should be buffered from noisy communal areas.



SITE OPTION

ALTERNATIVE 1

Alternative 1 is located in Bendungan Village, Karangmojo District, Gunungkidul Regency, Special Region of Yogyakarta. Specifically on the local road of Bendungan village with an area of 20,800 m².



ALTERNATIVE 2

Alternative 2 is located in Kapanewon Karangmojo, Gunungkidul Regency, Special Region of Yogyakarta. Specifically on the collector road of Karangmojo-Semanu with an area of 18,000 m².



ALTERNATIVE 3

Alternative 3 is located in Tawarsari Hamlet, Kapanewon Wonosari, Gunungkidul Regency, Special Region of Yogyakarta. Specifically on the local road of Tawarsari with an area of 20,000 m². Additionally, the site is less than 1 km from Wonosari Regional Public Hospital (RSUD Wonosari).

SITE EVALUATION MATRIX

CONSIDERATION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
Accessibility (to main road)	-1	1	1
Accessibility (to hospital)	-1	-1	1
Noise & Disturbance	1	-1	-1
Land cost	1	-1	-1
Utilities Availability	-1	1	1
Total Score	-1	-1	1

Table 3.1. Site evaluation matrix
Source: Author (2025)

SELECTED SITE CONTEXT

The site is a empty land located in Tawarsari, Kapanewon Wonosari, the capital of Gunung Kidul Regency. The site location is also approximately 600 meters from Wonosari Regional General Hospital (RSUD Wonosari), which was a one of the consideration for site selection. In north boundary of the site, the boundary is by a housing. The south boundary is agricultural area. Next in the east side, the site is next to Tawarsari Street, a main access to the main road, Dagalan street. . Meanwhile, the west boundary is combination of residential area and green area.

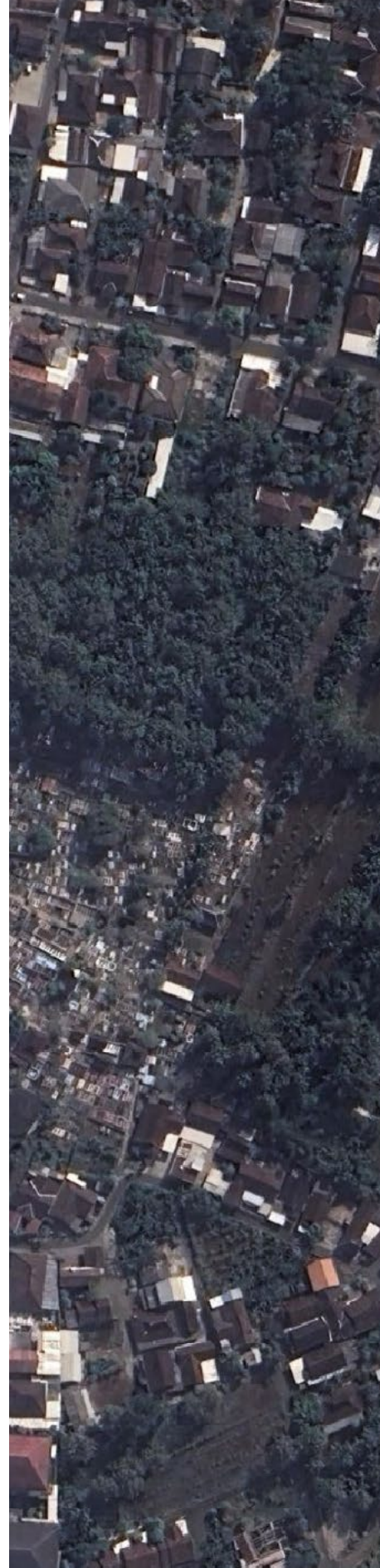
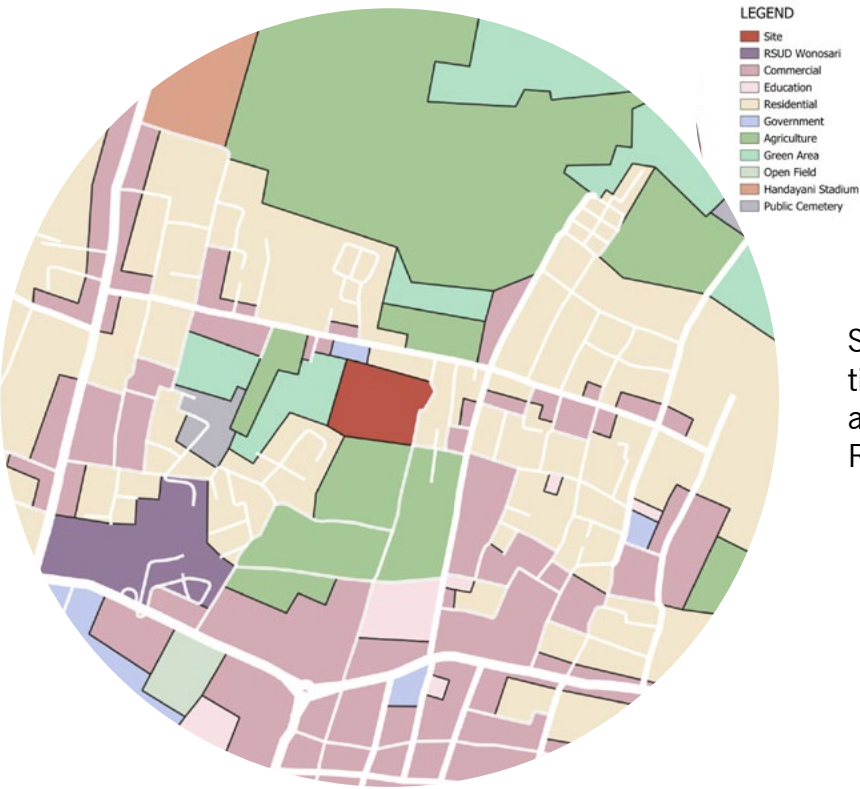




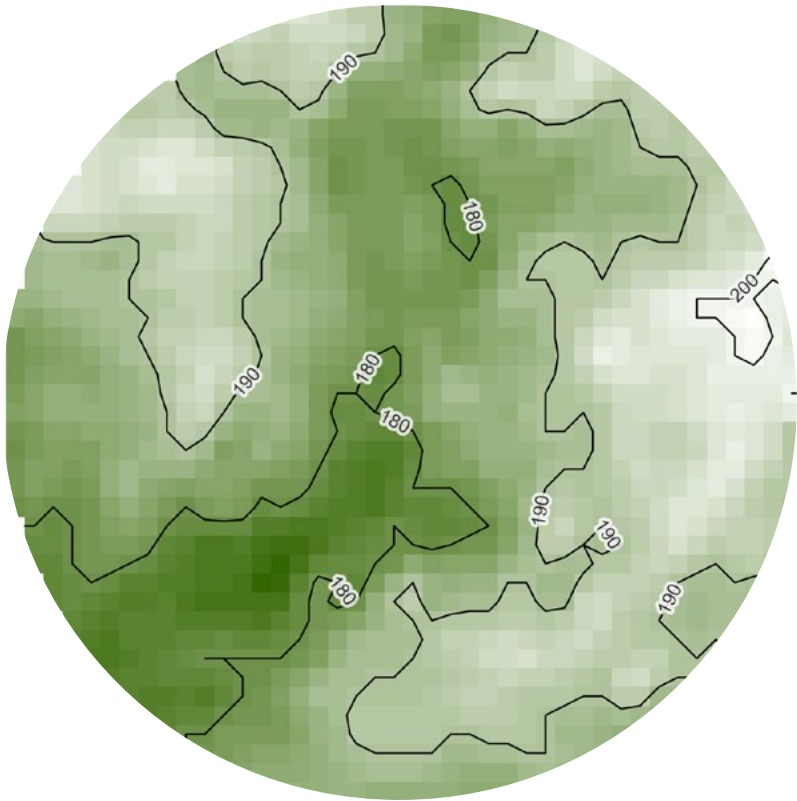
Fig. 3.4 Selected Site Surrounding
Source: Google Earth (2025).

PHYSICAL ATTRIBUTES



Site surrounded by local agriculture and residential. In addition, the location between site and health care is near which an advantage to the project. It's around 600 meters from RSUD Wonosari.

The topographic conditions at the site are relatively flat.



REGULATION

Regional Regulation of Gunungkidul Regency Number 6 of 2011 Concerning the Spatial Planning of Gunungkidul Regency for 2010–2030
Peraturan Daerah Kabupaten Gunungkidul No. 6 Tahun 2011 tentang RTRW 2010-2030

Chapter VII Article 62 (General Provisions of Urban Zoning Regulations)
“Zoning regulations for PKWp Wonosari City whose activities are permitted include organizations with medium to high levels of spatial utilization intensity; **new organizations in the form of housing**; primary, secondary and higher education; financial services in the form of bank branches, rural credit banks (BPR) and baitul mal wa tanwil (BMT); wholesale markets and small and large scale trade and service businesses” means Specialized Dementia Village in Gunung Kidul are relevant since its can be as new organizations in the form of housing.

Regional Regulation of Gunungkidul Regency Number 4 of 2021 Concerning the Medium-Term Regional Development Plan of Gunungkidul Regency for 2021-2026
Peraturan Daerah Kabupaten Gunungkidul Nomor 4 Tahun 2021 tentang Rencana Pembangunan Jangka Menengah Kabupaten Gunungkidul Tahun 2021-2026

Chapter IV (Regional Problems and Strategic Issues) BAB IV

- 4.1.1.2: Urban System Development

Urban system development is needed in the regional service system through improving government service, social service, economic service and infrastructure service according to the scale of urban service. In the PKW area, the development of facilities developed can be in the form of trade and services, government, secondary and higher education, health and social, industry up to the district scale. (p. IV-2)

- Section 4.1.2.2: Spatial Pattern Plan for Cultivation Areas

The designated cultivation areas are divided into several types, which one of them is designated residential area. Urban settlement development must consider ecological balance by limit the Building Base Coefficient (KDB) to no more than 70% (p. IV-7).

BCR	15,600 m²
70%	
FAR	1.5
GAR	4,680 m²
30%	
Building Setback	3 m

EXPLORATION OF ROOM PROGRAMMING

BASED ON USER

PRIMARY USER - Resident		
	Activities	Room Requirement
People with Dementia	Arriving with family	Parking area
	Waiting family for check in	Lobby
	Sleeping	Bedroom
	Self-care: Brush teeth, Wash- ing face/hand, Changing hygiene products, etc	Bedroom
	Toileting, bathing, changing	Restroom/Bathroom
	Praying	Praying room
	Eating	Dining room
	Socializing	Common room
	Gathering	All-purpose room
Caregiver	Parking	Parking area
	Sleeping	Bedroom
	Self-care	Bedroom
	Toileting, bathing, changing	Restroom/Bathroom
	Praying	Praying room
	Assisting the resident eating & eating	Dining room
	Socializing with resident	Common room
	Gathering with resident	All-purpose room
	Crosscheck resident	Nurse station
Nurse	Parking	Parking area
	Sleeping	Bedroom
	Self-care	Bedroom
	Toileting, bathing, changing	Restroom/Bathroom
	Give & track medicine	Health station
	Recording resident's health	Health station

Table 3.2 Room programming based on user
Source: Author, 2025

SECONDARY USER		
	Activities	Room Requirement
Family	Parking	Parking area
	Check in	Lobby
	Waiting resident to come	Lobby
	Consultation with doctor	Consultation room
	Dinner with family	Dining room
Doctor	Parking	Parking area
	Tracking resident's health update	Consultation room
	Outpatient examination	Consultation room
	Providing Medical Treatment to Patients	Consultation room
	Intensive care	Consultation room
	Rehabilitation	Rehabilitation room
	Taking emergency measures	Emergency room
Staff: Admininstration	Parking	Parking area
	Welcoming resident & family	Lobby
	Initial examination of the patient	Health station
	Recording and storing patient medical data and archives	Lobby
	directing the patient	Lobby
Staff: Maintenance & service	Cooking for resident	Kitchen
	Washing linen, bed sheets, pillow cases etc.	Laundry room
	Storing tools	Storage room
	Facility maintenance	-
	Maintaining hygiene in all area	-
	Organizing event/sessions	-

Table 3.3 Room programming based on user
Source: Author, 2025

EXPLORATION OF ROOM PROGRAMMING

BASED ON AREA OF REQUIREMENT

RESIDENTIAL			
	Room	Room Requirement (in sqm)	Reference
RESIDENTIAL: FOR INDIVIDUAL	Bedroom	10,80 m² per rea	Architects' Data
	Personal bathroom	3,8 m² per area	Architects' Data
	Communal toilet	1,84 m² per area	Architects' Data
	Communal Dining room	12,96 per 8 people	Architects' Data
	Communal Kitchen	4 m² per area	Architects' Data
	Communal Room	10,80 m² per area	Architects' Data
	Communal Laundry & Hanging area	5 m² per area	5
	Nursing Station Corner	2 m² per area	Asumption
	Storage room	3 m² m² per area	Architects' Data
RESIDENTIAL: FOR COUPLE	Bedroom	16,20 m² per area	Asumption
	Personal bathroom	3,8 m²m² per area	Architects' Data
	Communal toilet	1,84 m² per area	Architects' Data
	Communal Dining room	12,96 per 8 people	Architects' Data
	Communal Kitchen	4 m² per area	Architects' Data
	Communal room	10,80 m² m² per area	Architects' Data
	Communal Laundry & Hanging area	5 m² per area	Architects' Data
	Nursing station	2 m² per area	Asumption
	Storage room	3 m² per area	Architects' Data
SUPPORT			
	Room	Room Requirement (in sqm)	Reference
PARKING AREA	Car	12,5 m² per car	Architects' Data II
	Car: Disability	18,5 m² per car	Architects' Data II
	Motorcycle	3 m²	Architects' Data II

Table 3.4 Room programming based on Area Requirement
Source: Author, 2025

LOBBY & HEALTHCARE			
	Room	Room Requirement (in sqm)	Reference
LOBBY	Lobby	12 m ² per area	Architects' Data
	Receptionist & Nurse Station	15 m ² per area	FGI
	Pharmacy	15 m ² per area	FGI
	Waiting Area	10 15 m ² per area	Architects' Data
	Consultation Room	9 m ² per area	FGI
HEALTHCARE	Cognitive & Activity Therapy	20 m ² per area	FGI
	Physical & Occupational Therapy	25 m ² per area	FGI
	Isolation Room	12 m ² per area	Architects' Data
	Nurse Station	10 m ² per area	FGI
COMMUNITY			
	Room	Room Requirement (in sqm)	Reference
COMMUNITY	Activity Room	2,5 m ² per person	Asumption
	Demonstration Kitchen Area	25 m ² per area	Time-Saver Standards
	Shared Dining Area	2 m ² per person	Time-Saver Standards
	Garden: Sensoric	2.5 m ² per person	Asumption
	Garden: Quiet area	2.5 m ² per person	Asumption
	Garden: Common	2.5 m ² per person	Asumption
	Storage room	3 m ² per room	Time-Saver Standards
	Community toilet	1,84 m ² per area	Architects' Data

Table 3.4 Room programming based on Area Requirement (cont.)
Source: Author, 2025

USER FLOW



Fig.3.7 Group of Elder
Source: AnnaStills (uk).



Fig.3.8 Group of Medical Staff
Source: Fatcamera (uk).



Fig.3.9 Gardener
Source: Virrage (uk).

People with Dementia

Newcomer

Referred — Pre-registration — Initial consultation — Assessment
Independent —

Resident Daily Live

Wake up — Personal hygiene — Breakfast — Morning exercise — Lunch

Medical Staff

Caregiver

Morning shift — Briefing — Standby to assigned unit — Update with residents
Night shift — Briefing — Check resident update — Standby to assist

Doctor

Arrival — Data Check — Consultation Session (if any) — Document

Nurse

Arrival — Data Check — Accompany doctor/Resident Care — Data

Service

Housekeeper

Morning shift — Briefing — Cleaning each unit — Cleaning common areas
Night shift — Briefing — Cleaning each unit — Cleaning lobby & corridors

Gardener

Arrival — Turn off outdoor lighting — Water plants — Prune plants

Assessment — Registration — Orientation — Daily Living

Lunch — Rest — All unit activity — Dinner — Assessment — Sleep
└─ Cognitive session ─┘

What resident do in morning to afternoon — Assessment — Rotation
Assigned unit — Help with morning routine — Rotation

Documentation & follow up — Shift End

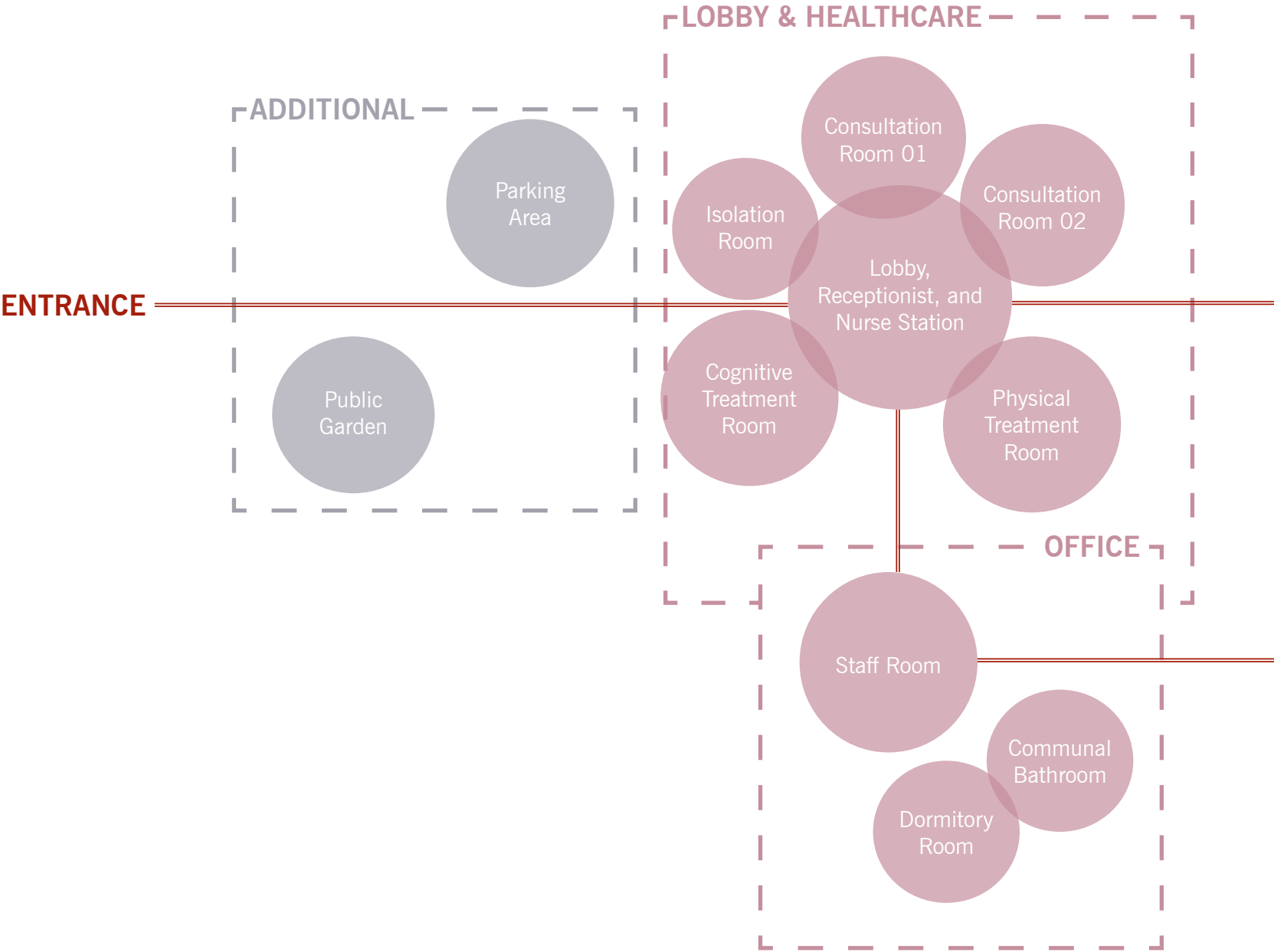
Break during cognitive/physical session — Shift End

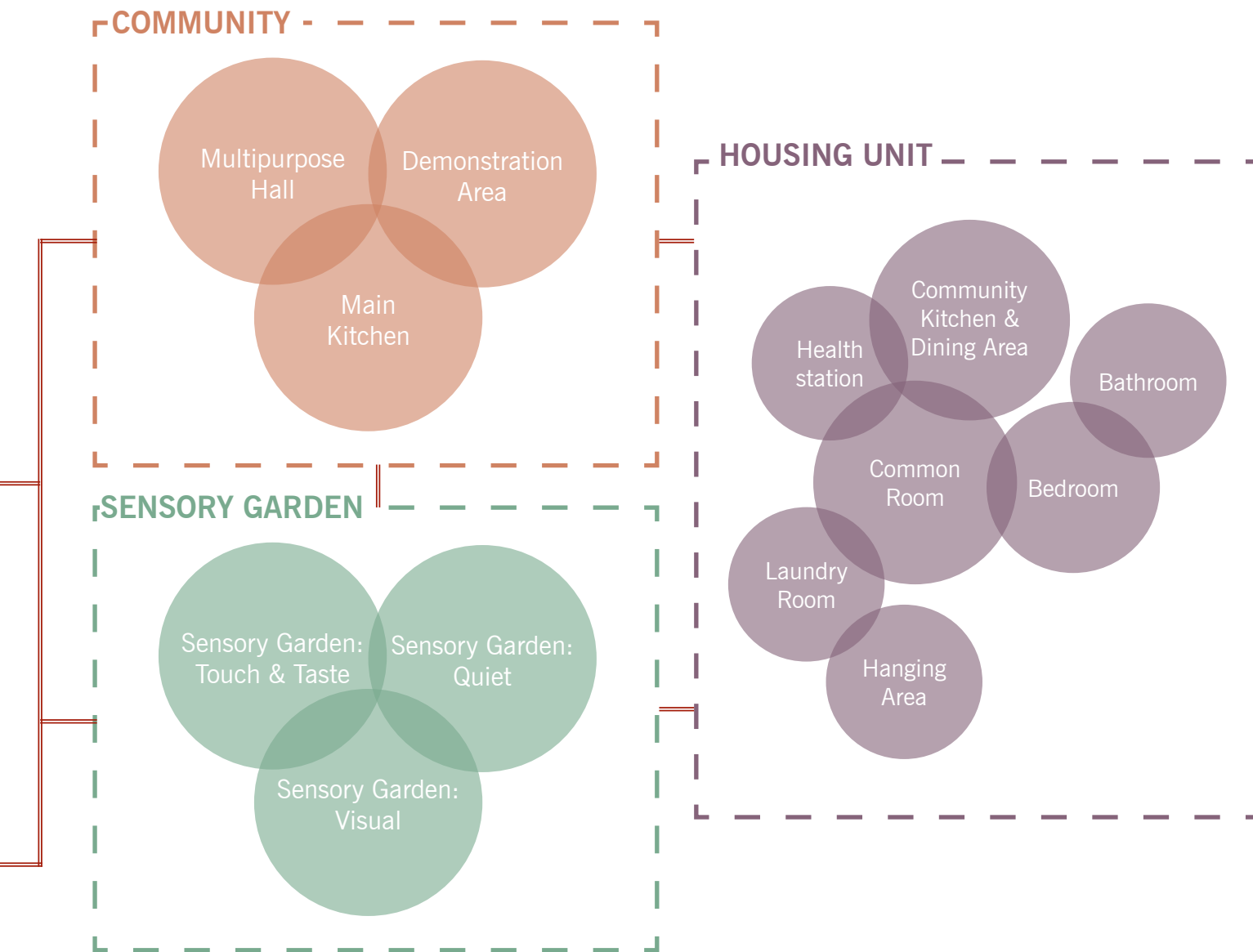
Community hall — Shift End

Reception & healthcare area — Shift End

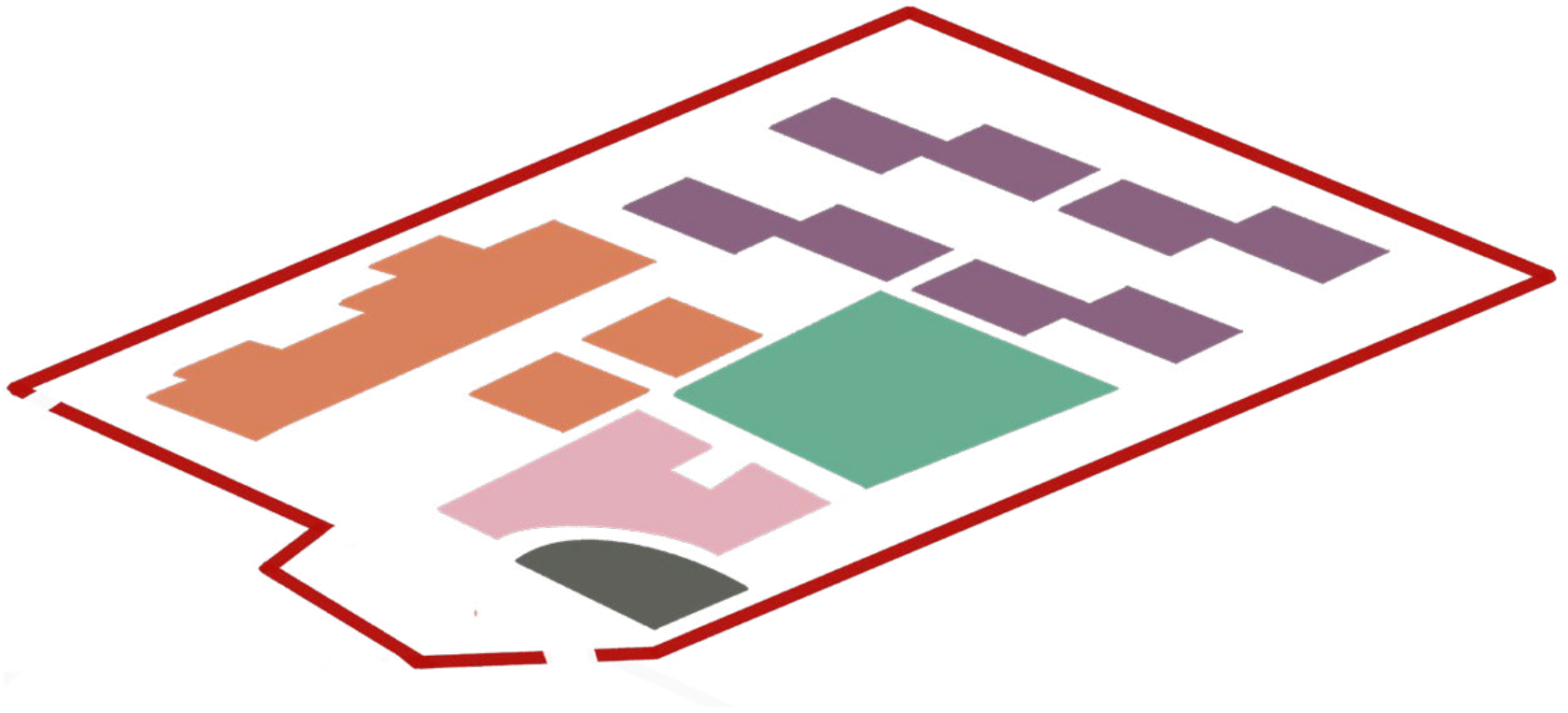
Planting — Turn on outdoor lighting — Shift End

BUBBLE DIAGRAM



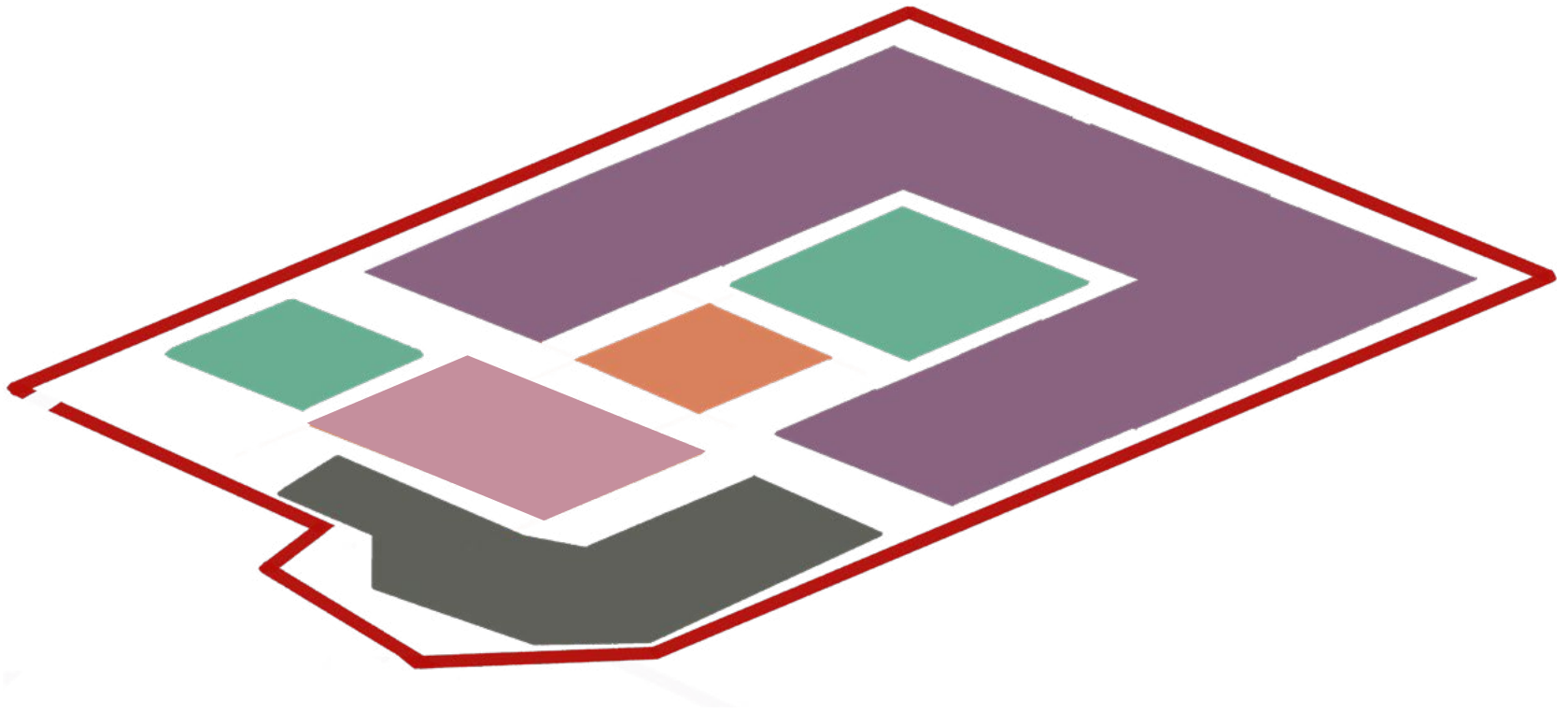


DESIGN ALTERNATIVE: MASSING



ALTERNATIVE 1

There are eight dementia housing units, each housing six residents. Prioritizing privacy, the housing is located at the rear of the site. Upon exiting the housing area, residents can view the entire site, including the garden and community area. The lobby and healthcare facilities are located at the front, providing a transition between the public space (for family visits) and the private space (for residents).

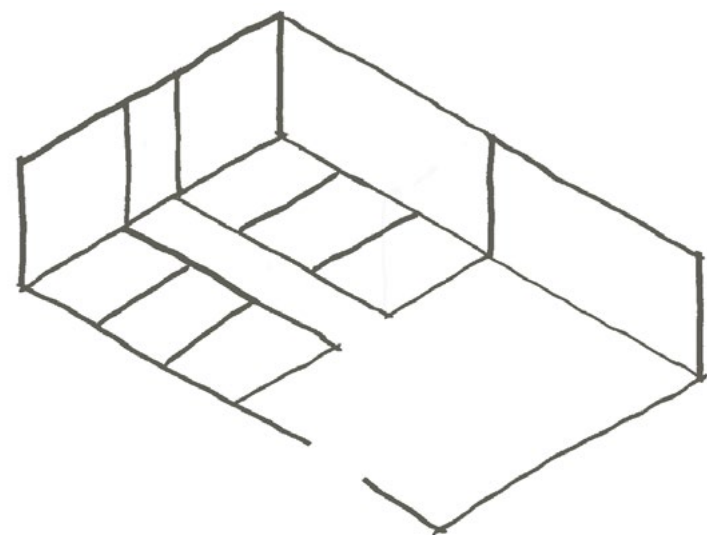


ALTERNATIVE 2 | SELECTED

There are seven dementia housing units, each housing eight residents. The housing units are U-shaped to create clear, looping circulation and avoid dead ends that can create confusion. The inner court features a sensory garden and community hall. Residents can easily access them, regardless of their unit. The lobby and health care are located at the front, providing just-in-case-of-urgency services, as well as an isolation area (if the patient experiences behavioral problems), and a therapy area.

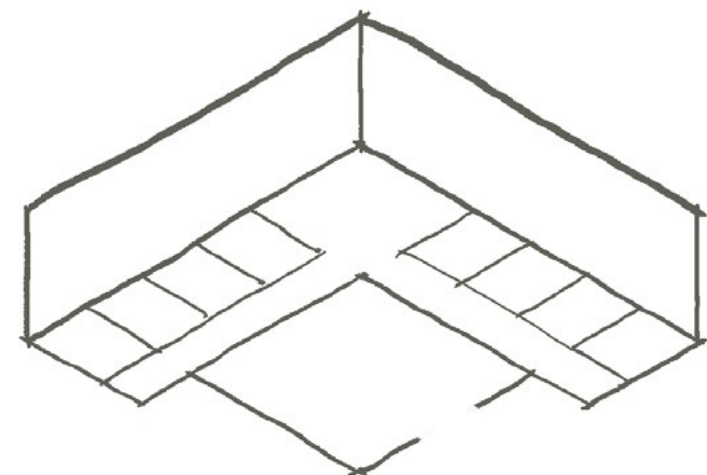
DESIGN RESPONSE

HOUSING UNIT



Alternative 1

Private areas, such as bedrooms, are located at the rear of the building, creating a corridor. When residents exit their rooms, they can see the overall floor plan, including the kitchen, laundry, common room, and more.



Alternative 2 | Selected

The bedroom is L-shaped with a separate communal area. The large communal area is used for cooking, gathering, etc., while the back area is designated for laundry, as privacy is important for those with dementia who want to do their own laundry.

UNIT TYPE	TOTAL UNIT	RESIDENT/UNIT	TOTAL RESIDENT
INDIVIDUAL (MILD-MODER-ATE)	3 Unit	8 Resident	24 Resident
INDIVIDUAL (SEVERE)	2 Unit	8 Resident	16 Resident
COUPLES (MILD)	2 Unit	8 Resident	8 Resident
COUPLES (SE-VERE)	1 Unit	8 Resident	8 Resident
TOTAL	7	-	56 Resident

2 UNIT

Type A: Couples

- 1 unit for People with Dementia mild-moderate stage
- Capacity 4 couples - 8 people

Type A: Couples

- 1 unit for People with Dementia severe stage
- Capacity 4 couples - 8 people

3 UNIT

Type B: Individual for women

- 2 unit for People with Dementia mild-moderate stage
- Capacity 4 couples - 8 people

Type B: Individual for women

- 1 unit for People with Dementia severe stage
- Capacity 4 couples - 8 people

2 UNIT

Type B: Individual for men

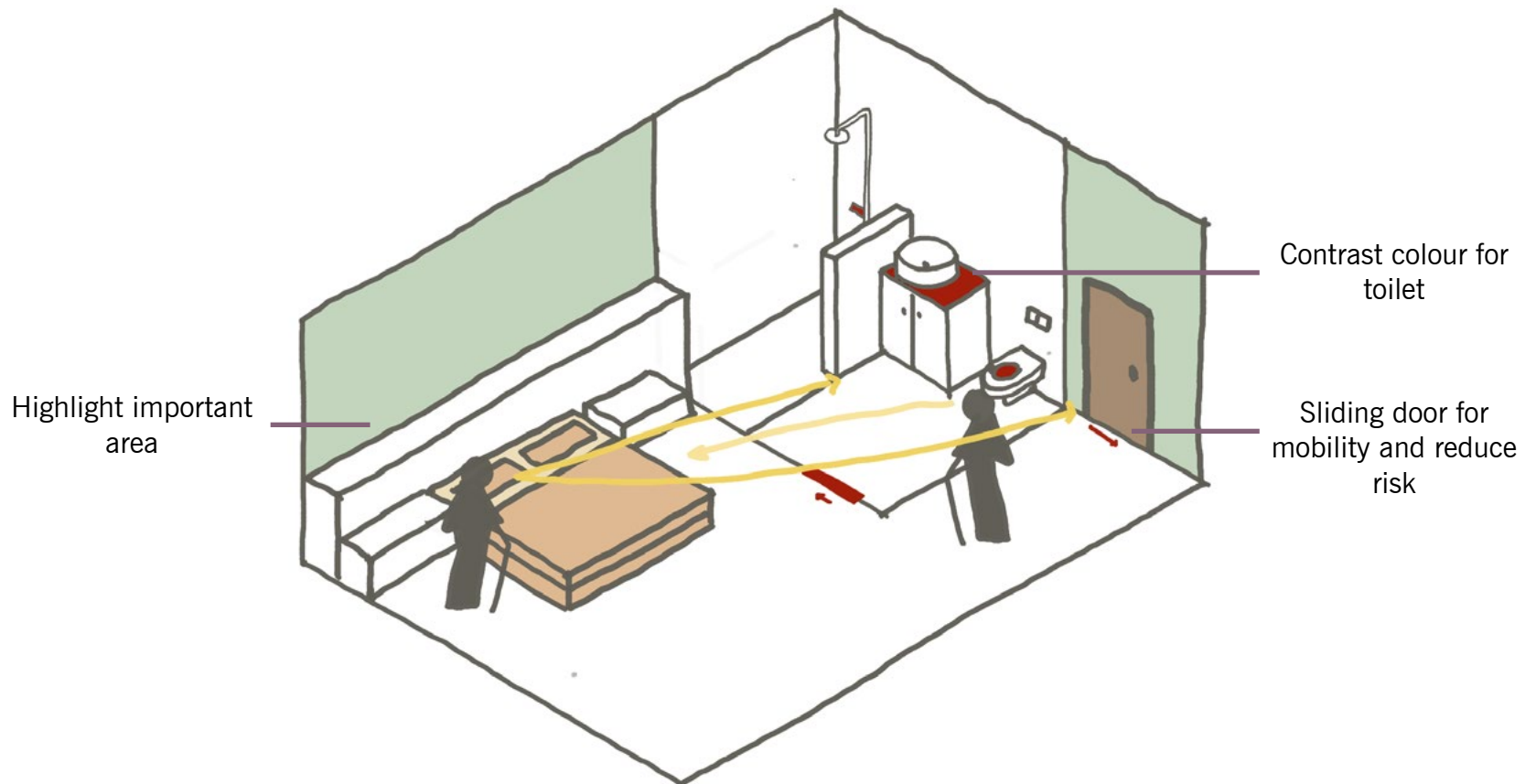
- 2 unit for People with Dementia mild-moderate stage
- Capacity 4 couples - 8 people

Type B: Individual for men

- 1 unit for People with Dementia severe stage
- Capacity 4 couples - 8 people

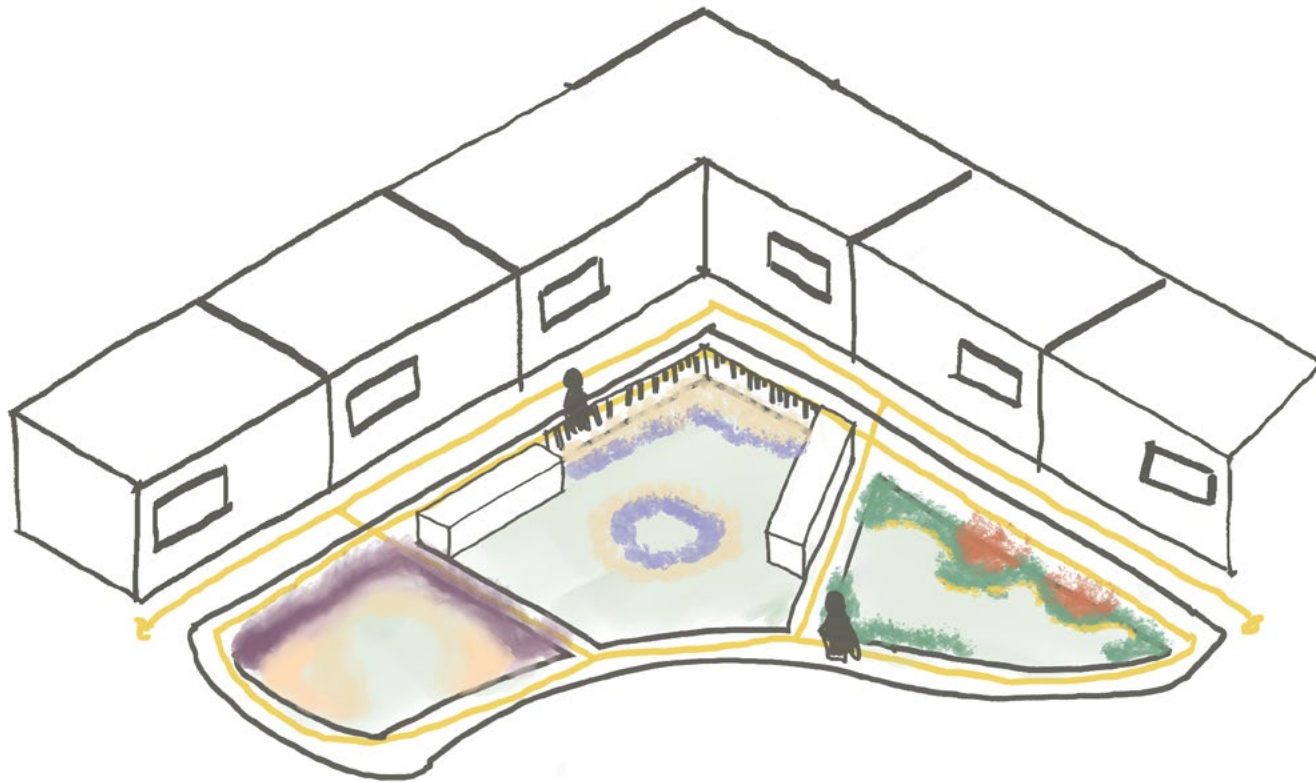
DESIGN RESPONSE

BEDROOM



DESIGN RESPONSE

SENSORY GARDEN



The sensory garden features three main areas where residents can choose what they want based on their needs. The path loops to avoid dead ends, ensuring residents don't get lost. In the center, there's also vegetation for them to touch and eat.

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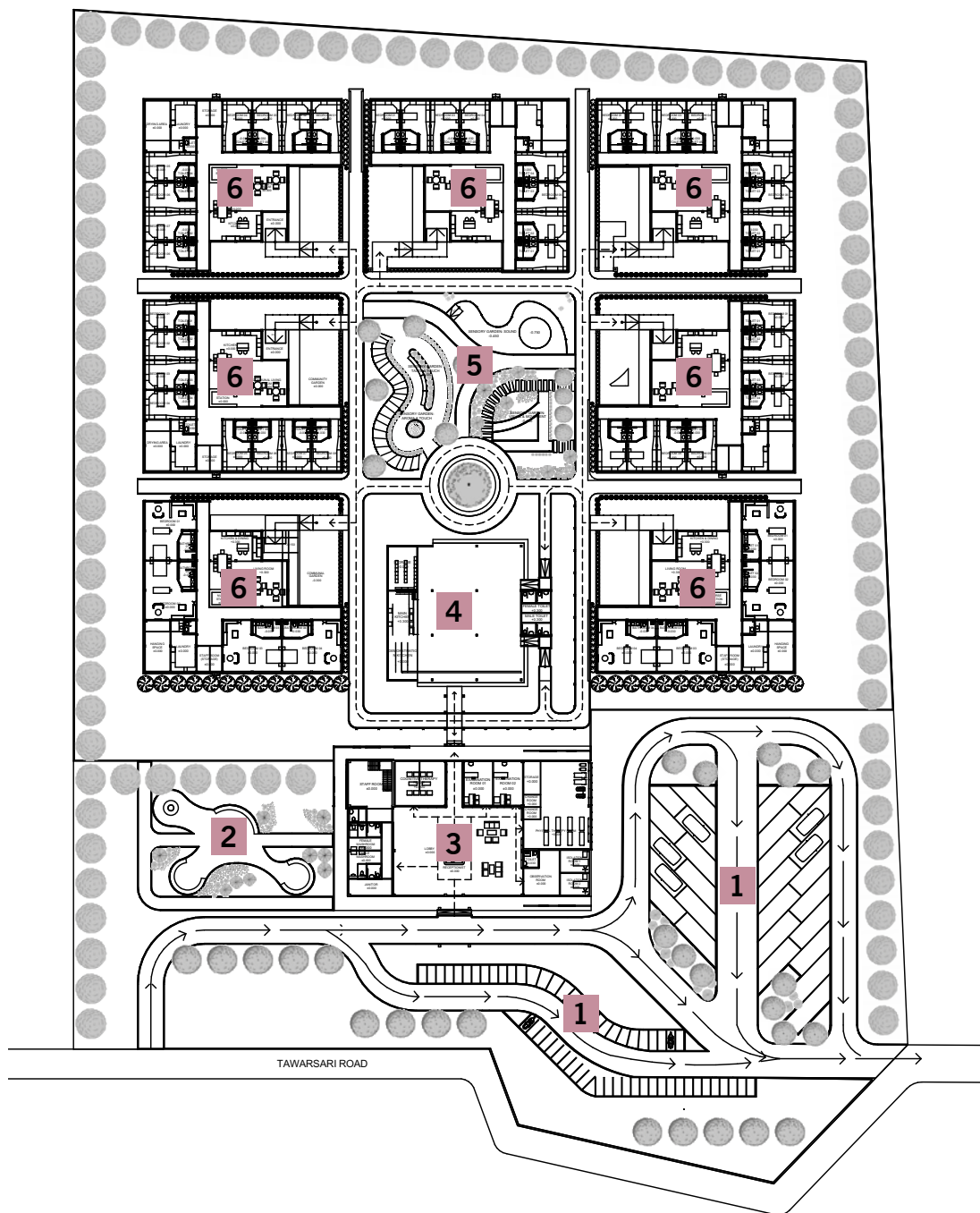
04

DESIGN RESULT

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Fig.4.1 Block Plan
Source: Author (2025)



SITE PLAN

LEGEND

1. Parking Area
2. Public Garden
3. Lobby & Healthcare
4. Community Hall
5. Sensory Garden
6. Housing Unit

Fig.4.2 Site Plan
Source: Author (2025)

LOBBY & HEALTHCARE

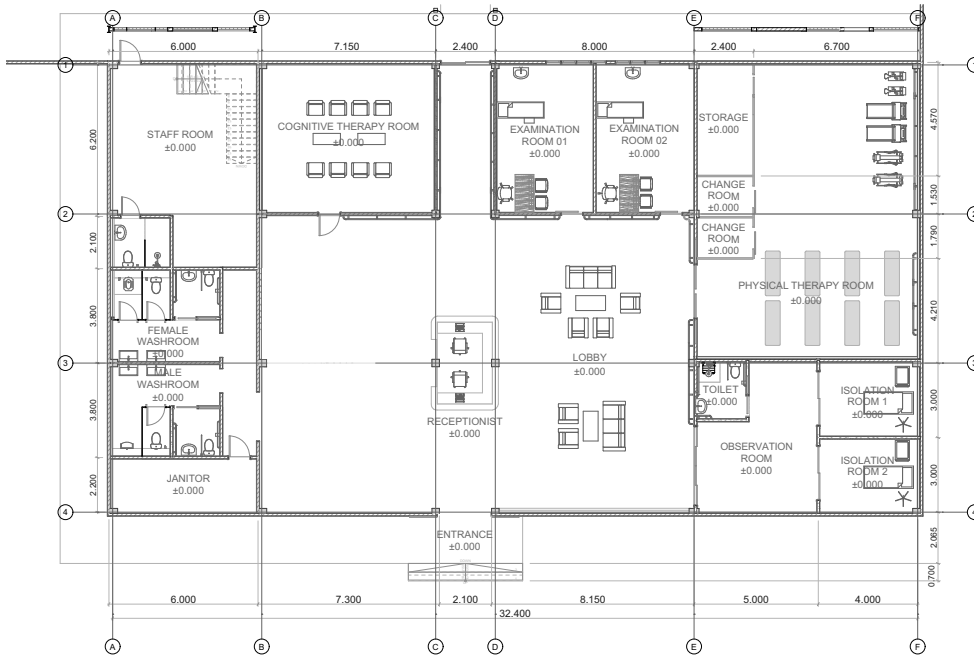


Fig.4.3 Lobby & Healthcare Ground Floor Floor Plan

Source: Author (2025)

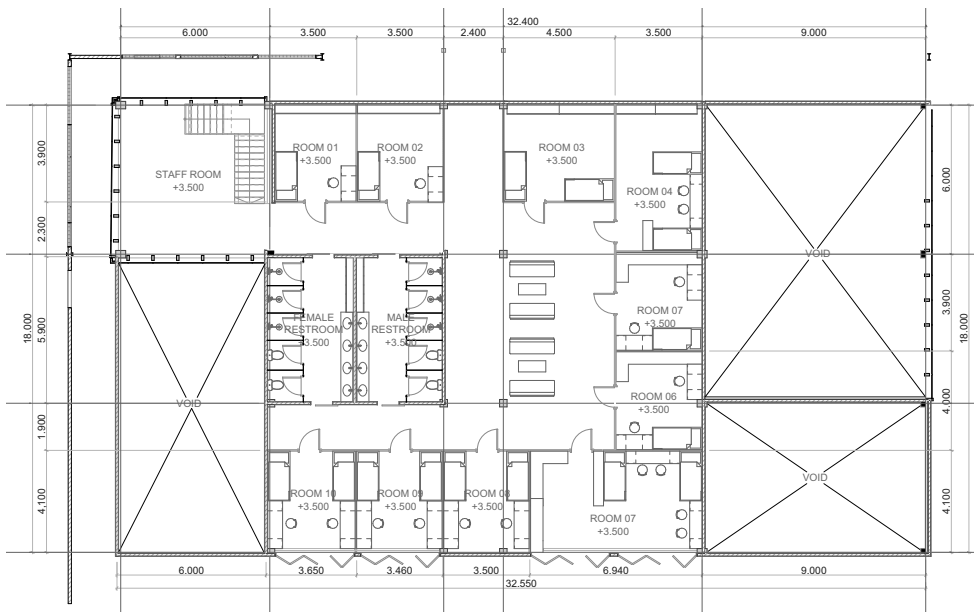


Fig.4.3 Lobby & Healthcare First Floor Plan

Source: Author (2025)

FLOOR PLAN

Lobby combined with healthcare A centrally placed nurse station ensures staff can supervise residents while remaining approachable. A circular path designed for resident so they dont feel confusion with long or difficult circulation. Kampung Srawung has only one two story building. It was designed as a point for residents with dementia to see their emergency room. On the ground floor, there are two therapy areas: cognitive and physical, two examination rooms, one isolation area, and a staff room with direct access to the private (residential) area. Meanwhile, on the first floor, access is only through the staff room, which houses dormitories for caregivers and staff on duty.

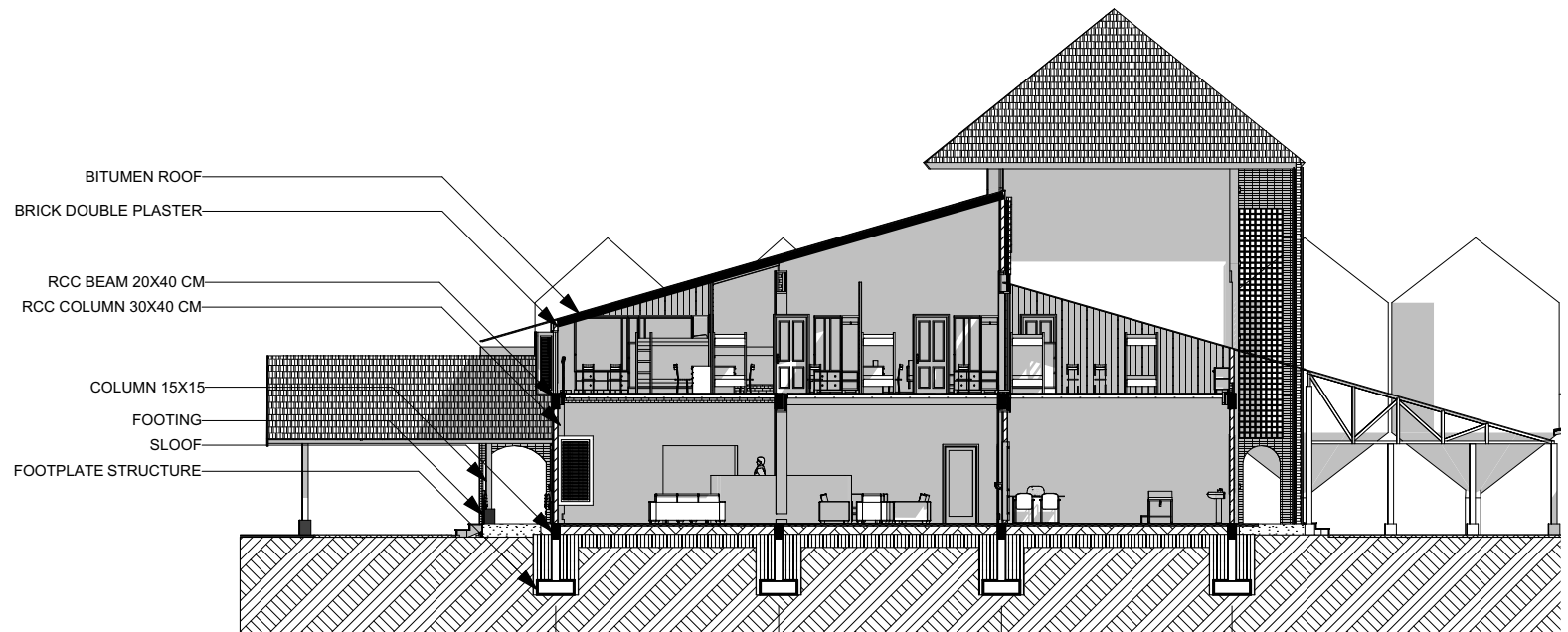


Fig.4.4 Lobby & Healthcare Section
Source: Author (2025)

SECTION

The ground floor features a lobby with a receptionist and waiting room. There's also a consultation room where residents undergo assessments with doctors. On the first floor, there are three bedrooms for caregivers. Each room has a different bed. The largest room has four beds, while the smaller room only has one bunk bed.



Fig.4.5 Lobby & Healthcare Interior
Source: Author (2025)



In the Lobby & Healthcare area, the space is dominated by green tones to create a calming atmosphere. This also helps reduce initial anxiety when entering the facility.

Fig.4.6 Lobby & Healthcare Render
Source: Author (2025)

COMMUNITY HALL

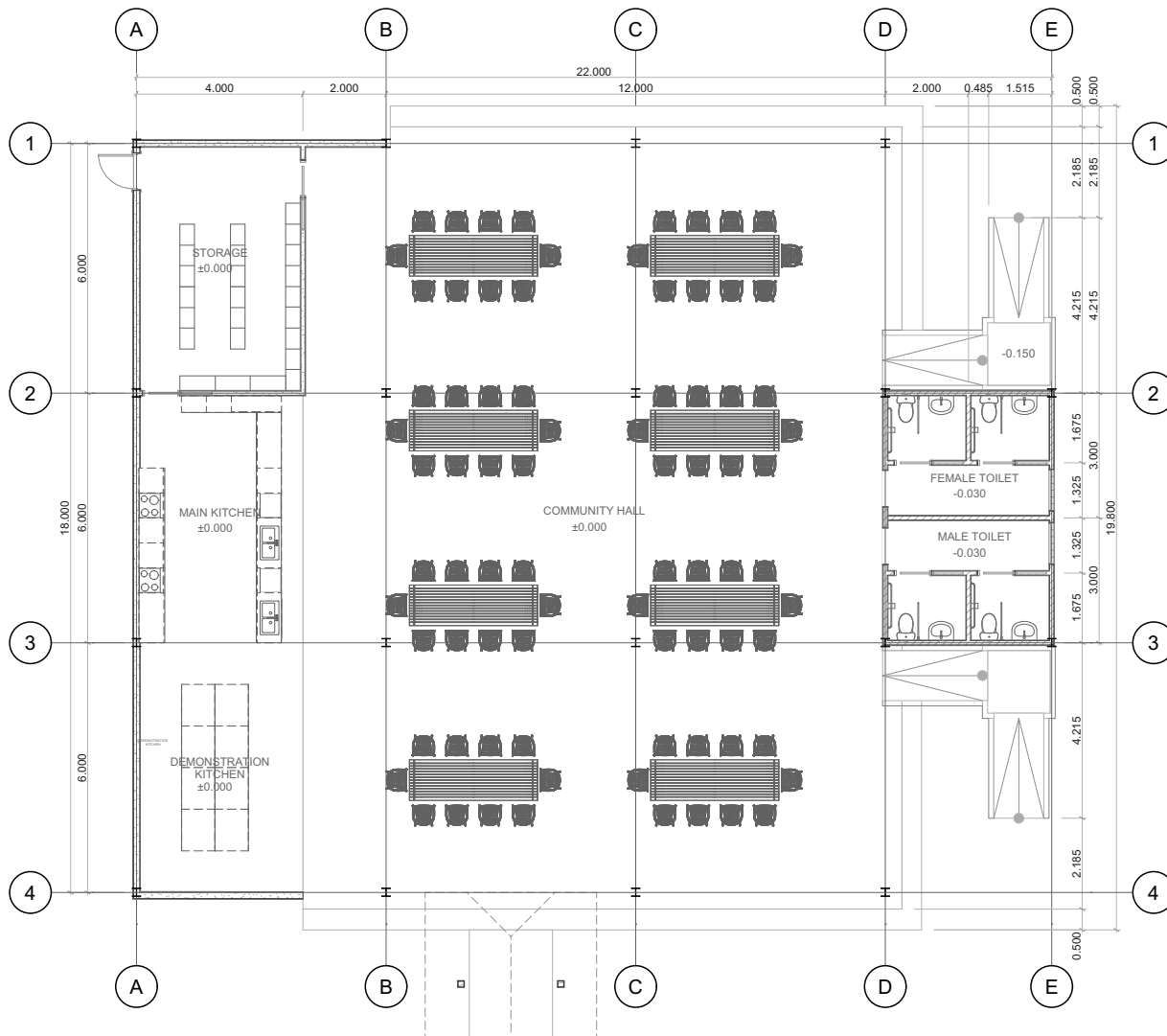


Fig.4.7 Community Hall Floor Plan
Source: Author (2025)

FLOOR PLAN

Community hall in the middle of the site to ensure that people from all unit can easily see and sense what is happening inside, reducing feelings of isolation and encourage them to join the activity. two ramps are positioned on opposite sides of building, connecting between residential area to community and lobby & healthcare to community. This building act as communal kitchen aside their housing to prepare three meals a day for residents. This can make resident join the cooking routines. Using aroma of meal preparation as stimulation.

SECTION

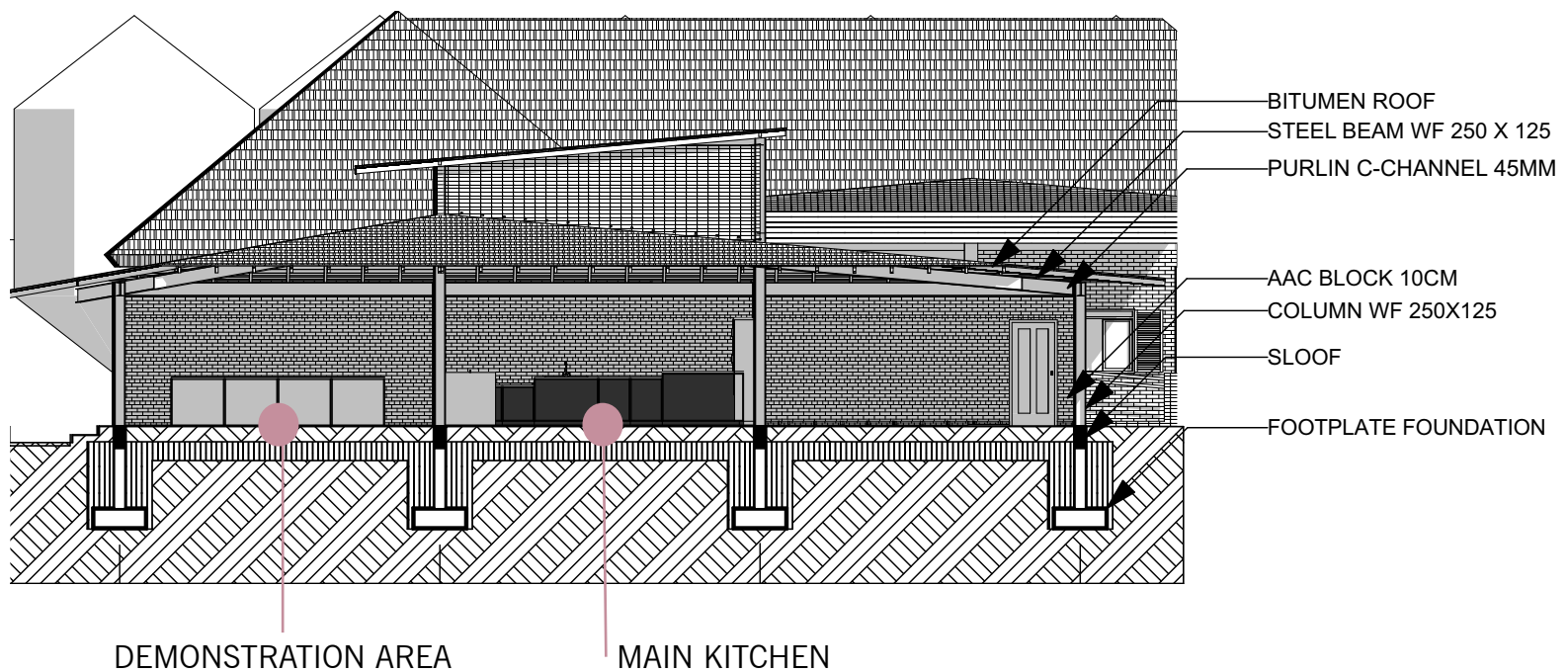


Fig.4.8 Community Hall Section
Source: Author (2025)



4.9 Community Interior
Source: Author (2025)



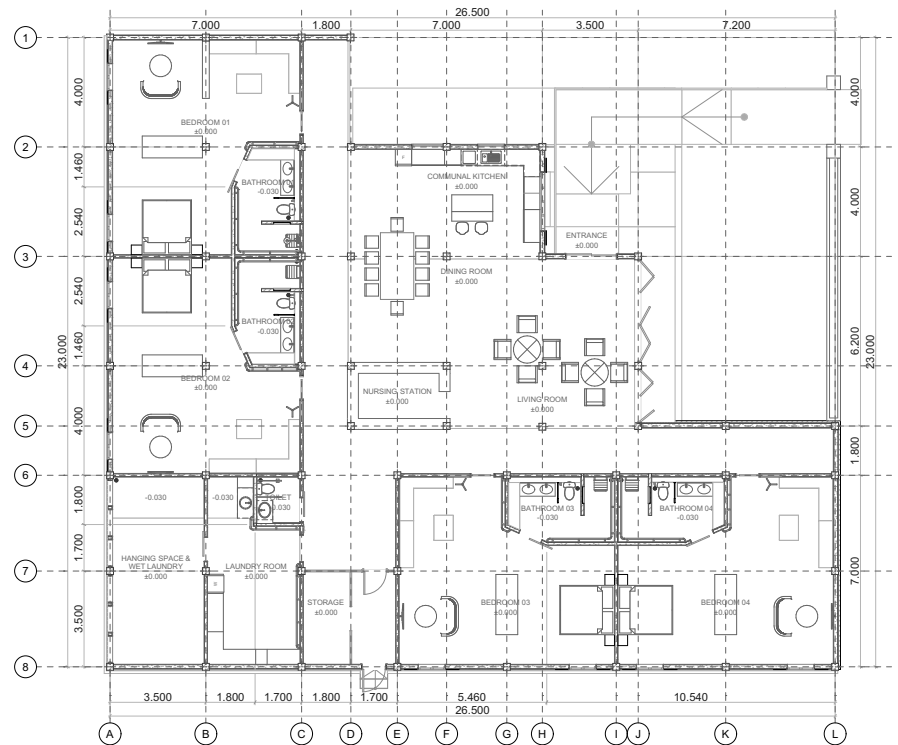


With brick as the main material, the community hall is dominated by deep reddish-brown hues. Besides helping residents recognize the community zone, this color provides a warm and grounded feeling. It is further enhanced by the lighting effect created through the brick arrangement on the skylight, offering additional sensory stimulation in a space designed for shared activities.

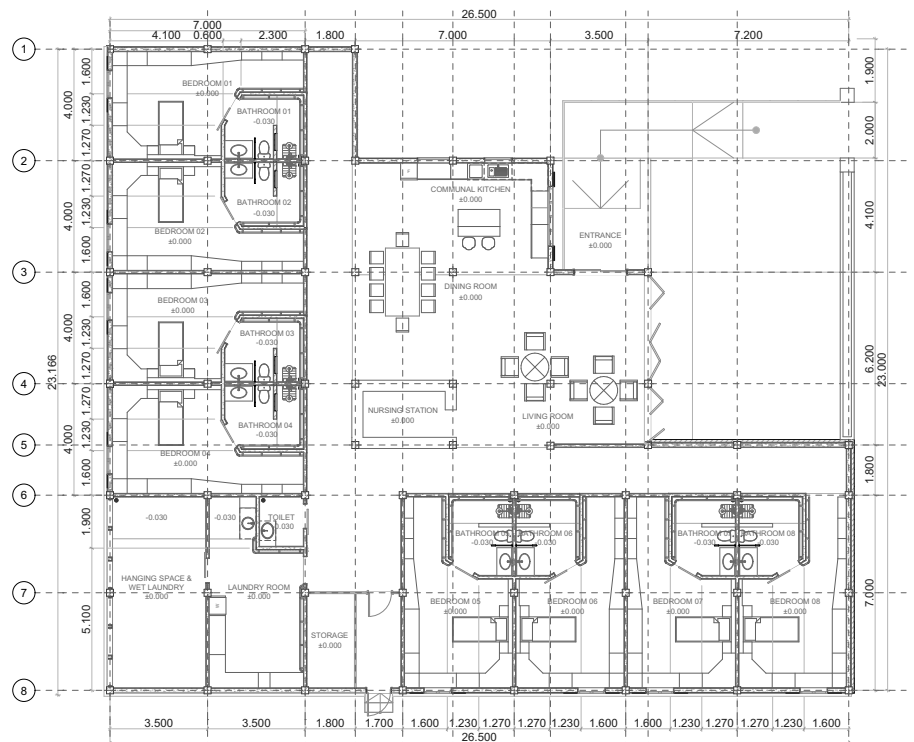
RESIDENTIAL

FLOOR PLAN

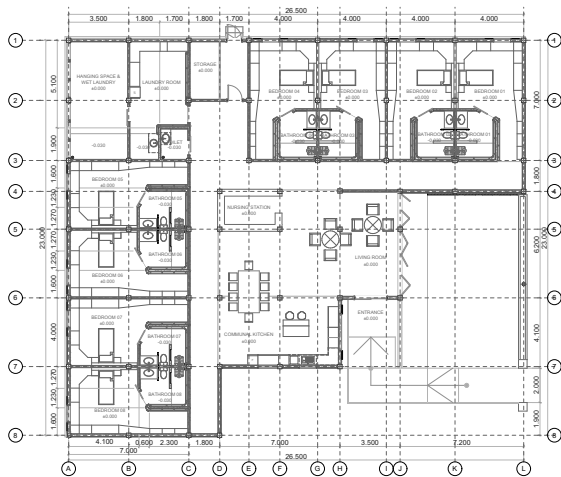
Each unit are grouped into couple/family, women, and men. L shaped bedroom area with open plan in the middle help resident to orient themself, reducing confusion and all area can be seen. There is also a communal garden for them to stimulation from physical (motor skill, balance, and flexibility) and sensory. The color of toilet are make complementary so resident mmore focus on what they want to do. and redue confusion if there will be a same color.



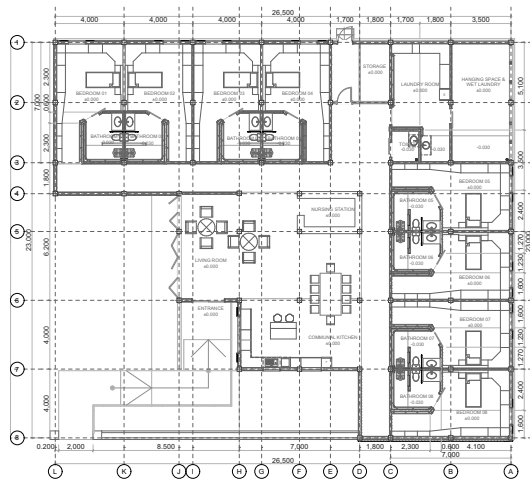
UNIT 01



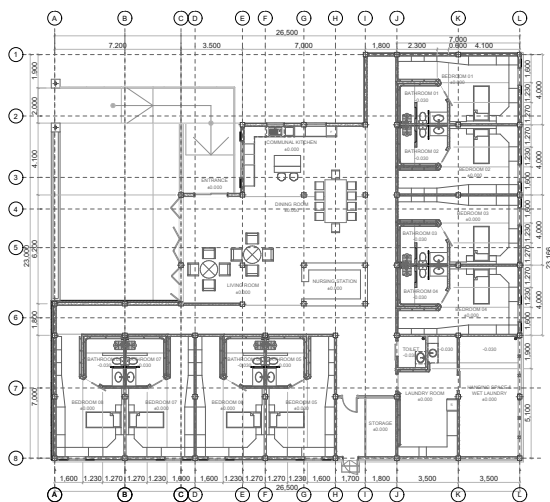
UNIT 02



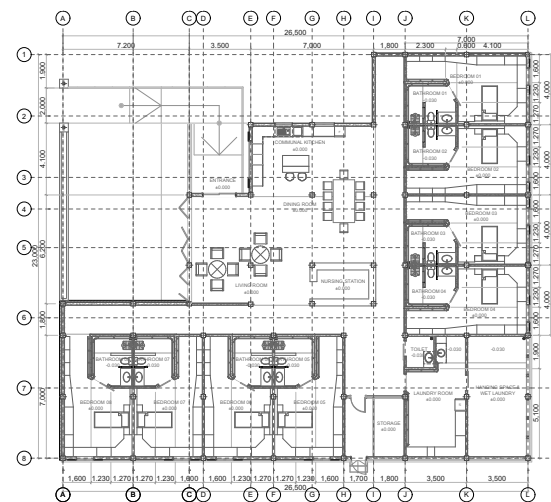
UNIT 03



UNIT 04



UNIT 05



UNIT 06

Fig.4.7 Housing Unit Floor Plan
Source: Author (2025)

PARTIAL FLOOR PLAN

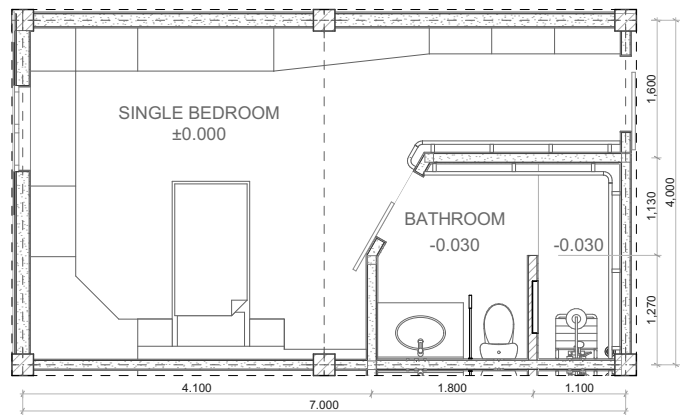


Fig.4.8 Single Room Partial Floor Plan
Source: Author (2025)

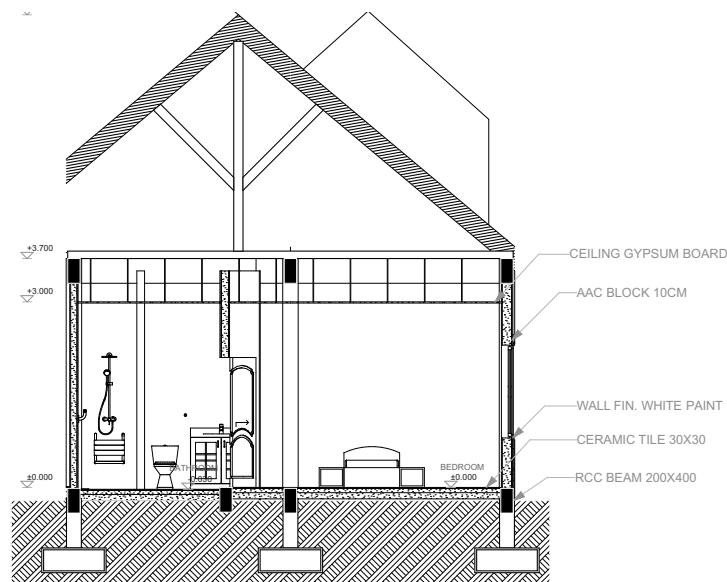


Fig.4.9 Single Room Section
Source: Author (2025)

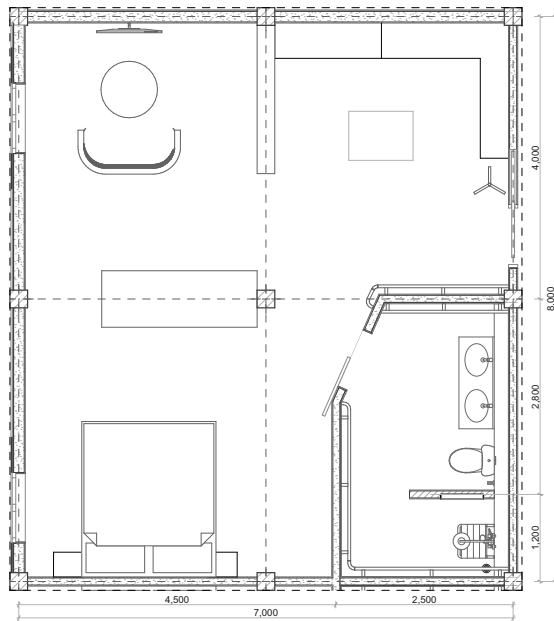


Fig.4.10 Couple Room Partial Floor Plan
Source: Author (2025)

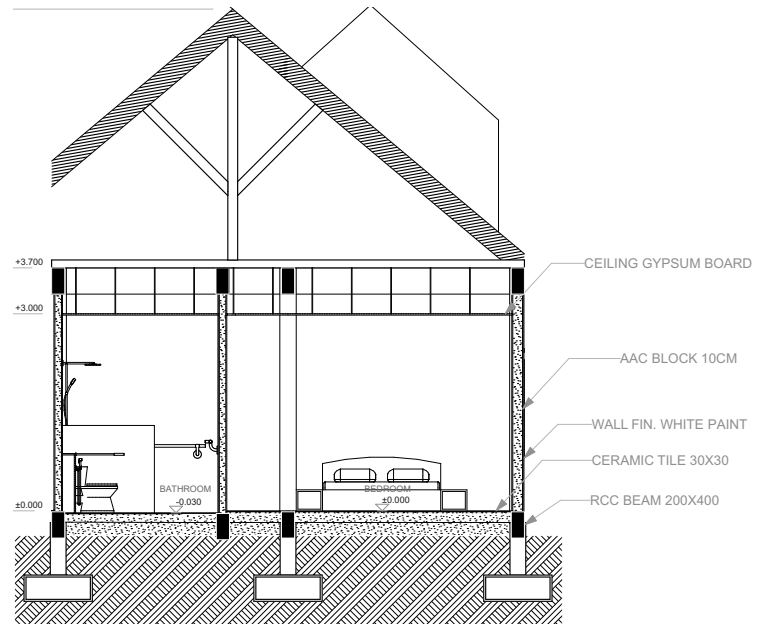
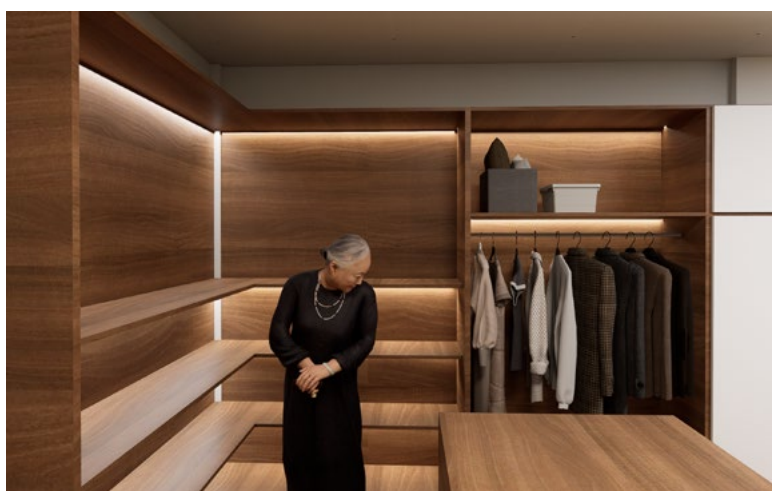
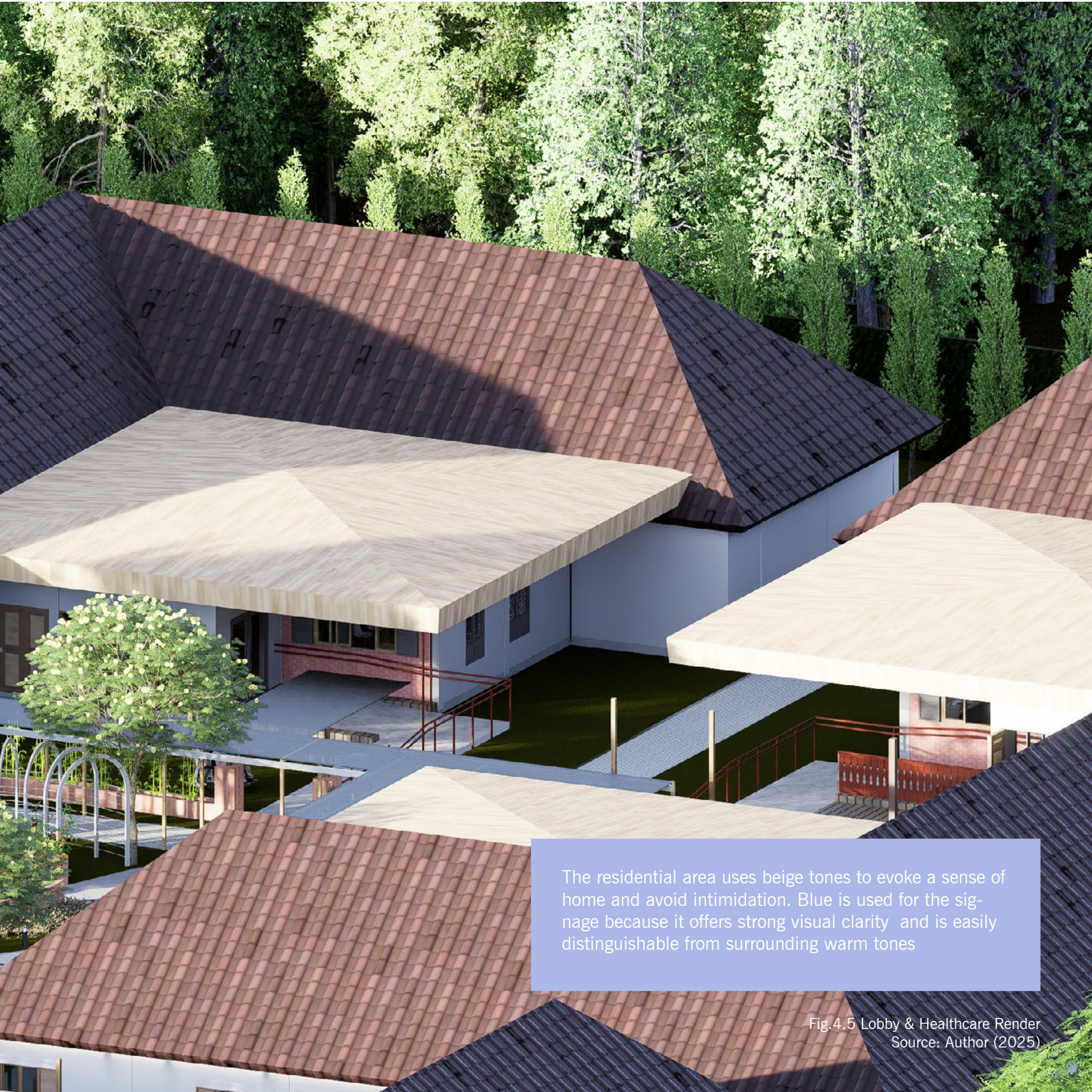


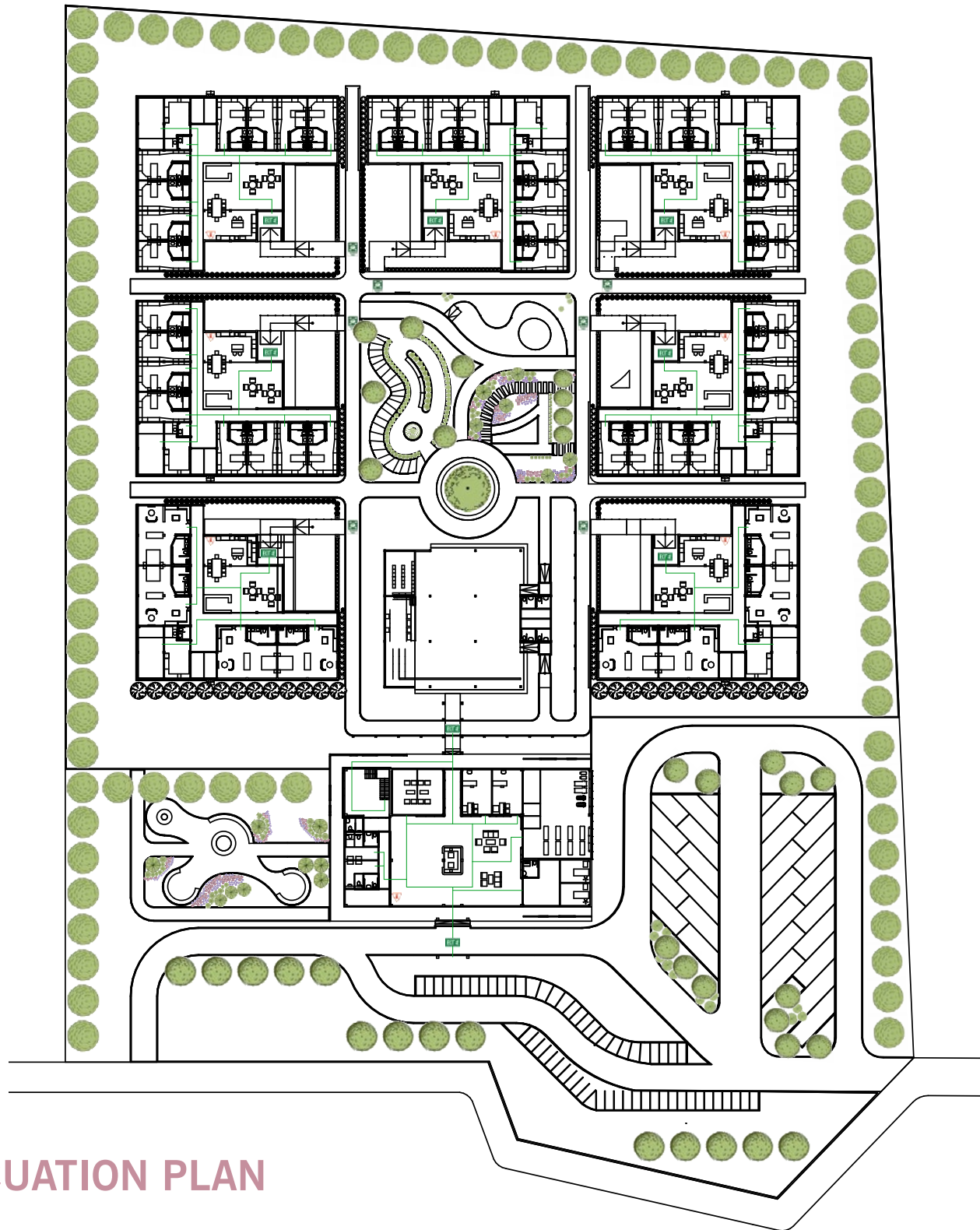
Fig.4.10 Couple Room Partial Section
Source: Author (2025)



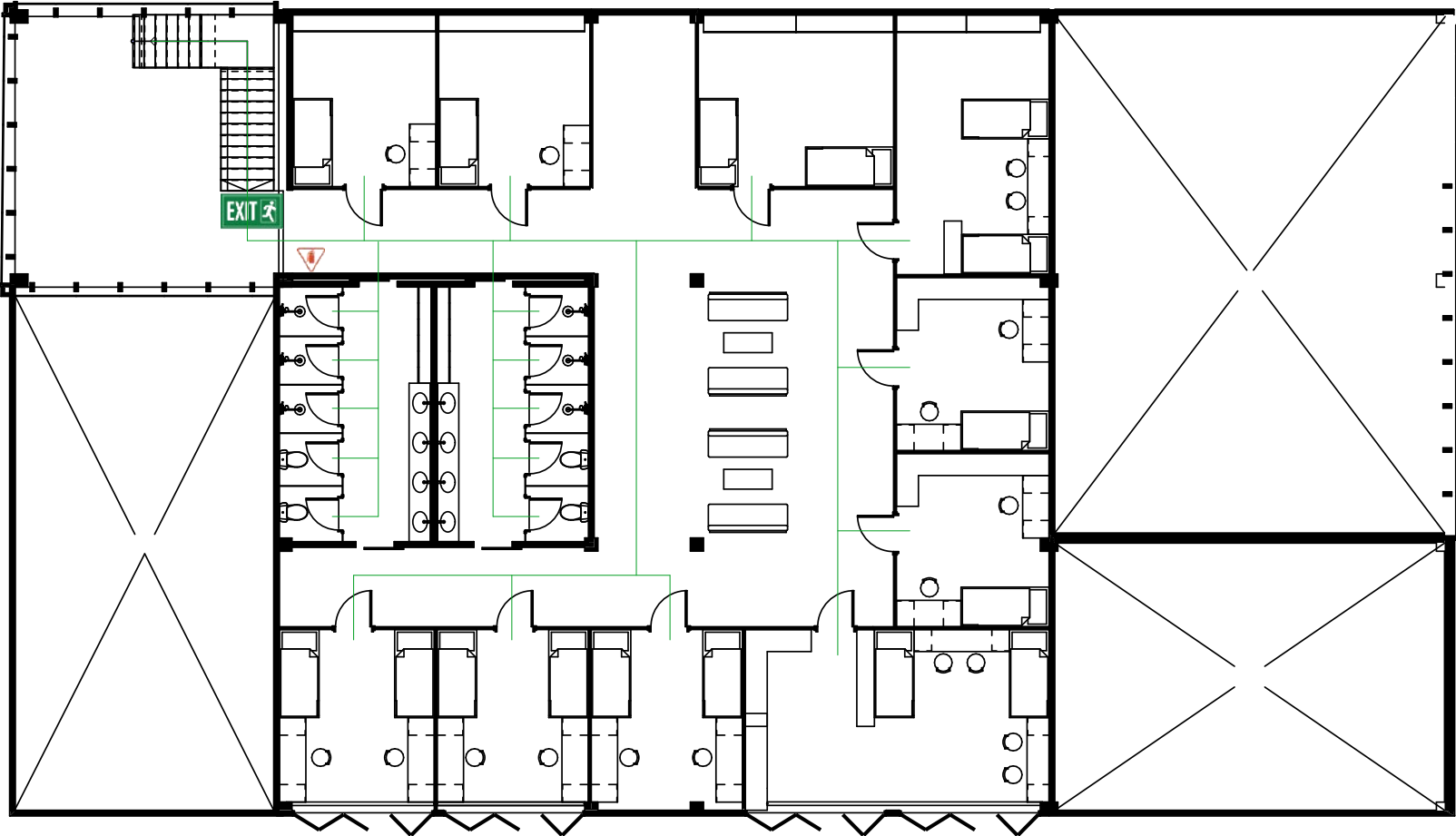


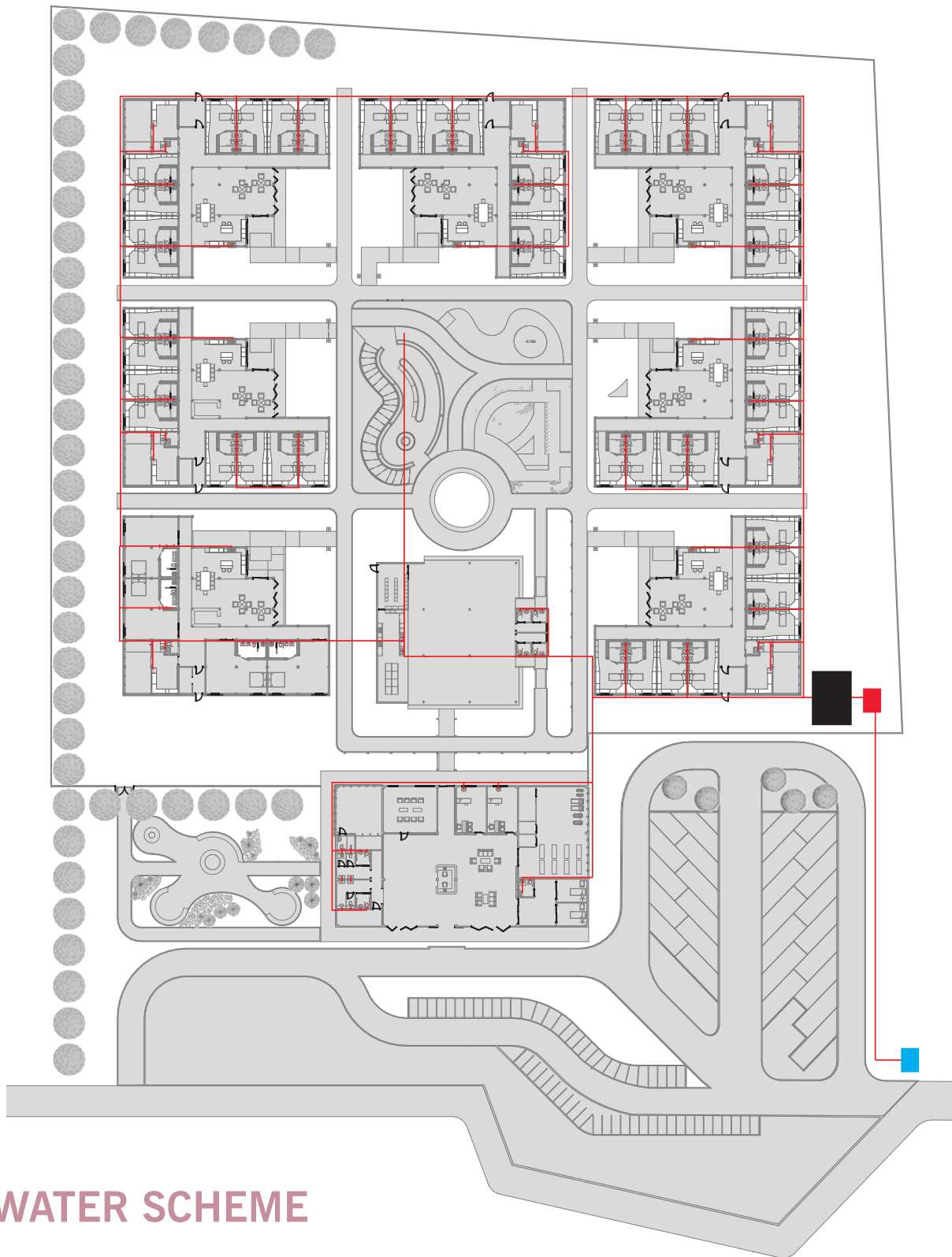
The residential area uses beige tones to evoke a sense of home and avoid intimidation. Blue is used for the signage because it offers strong visual clarity and is easily distinguishable from surrounding warm tones

Fig.4.5 Lobby & Healthcare Render
Source: Author (2025)

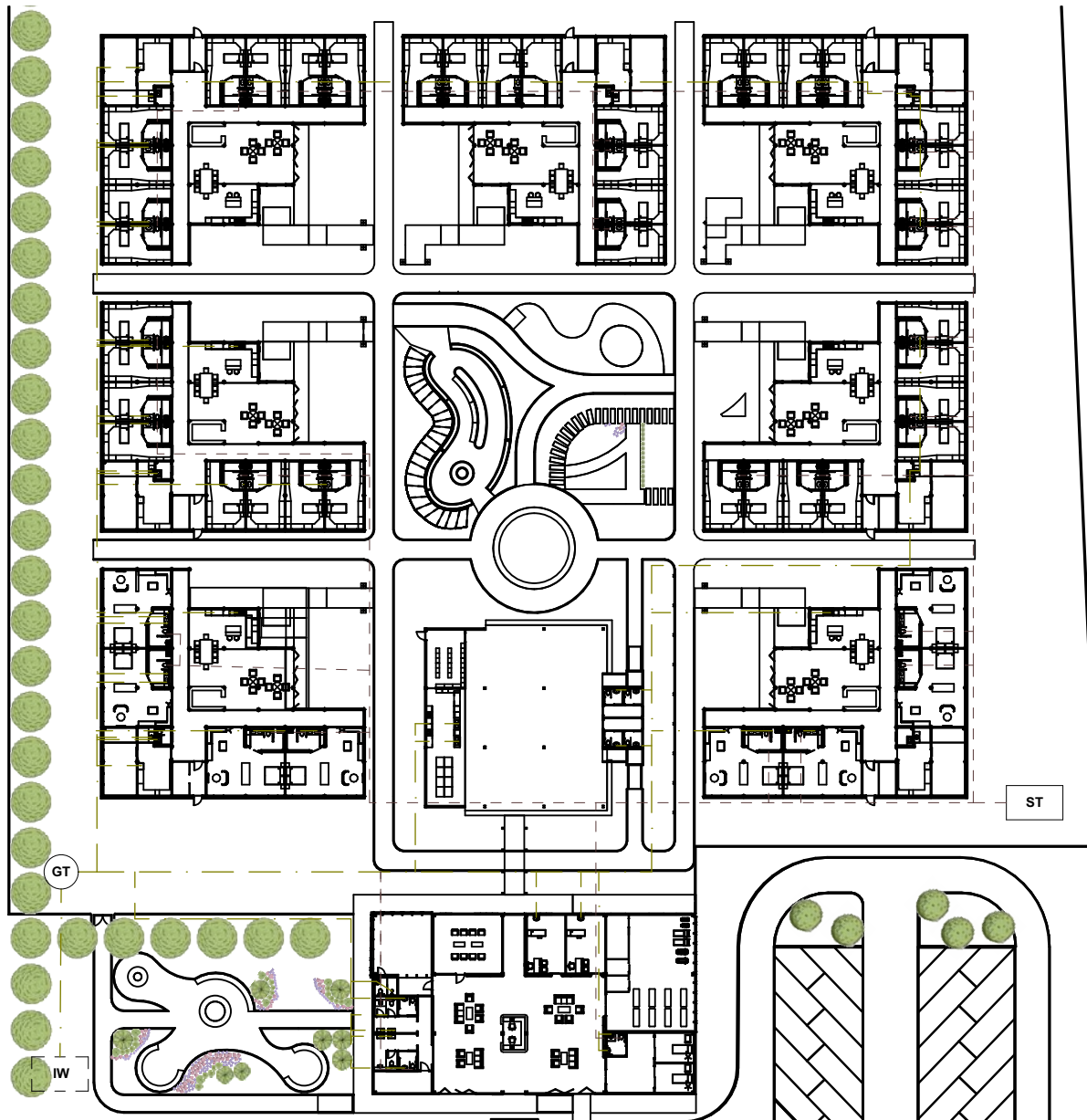


EVACUATION PLAN

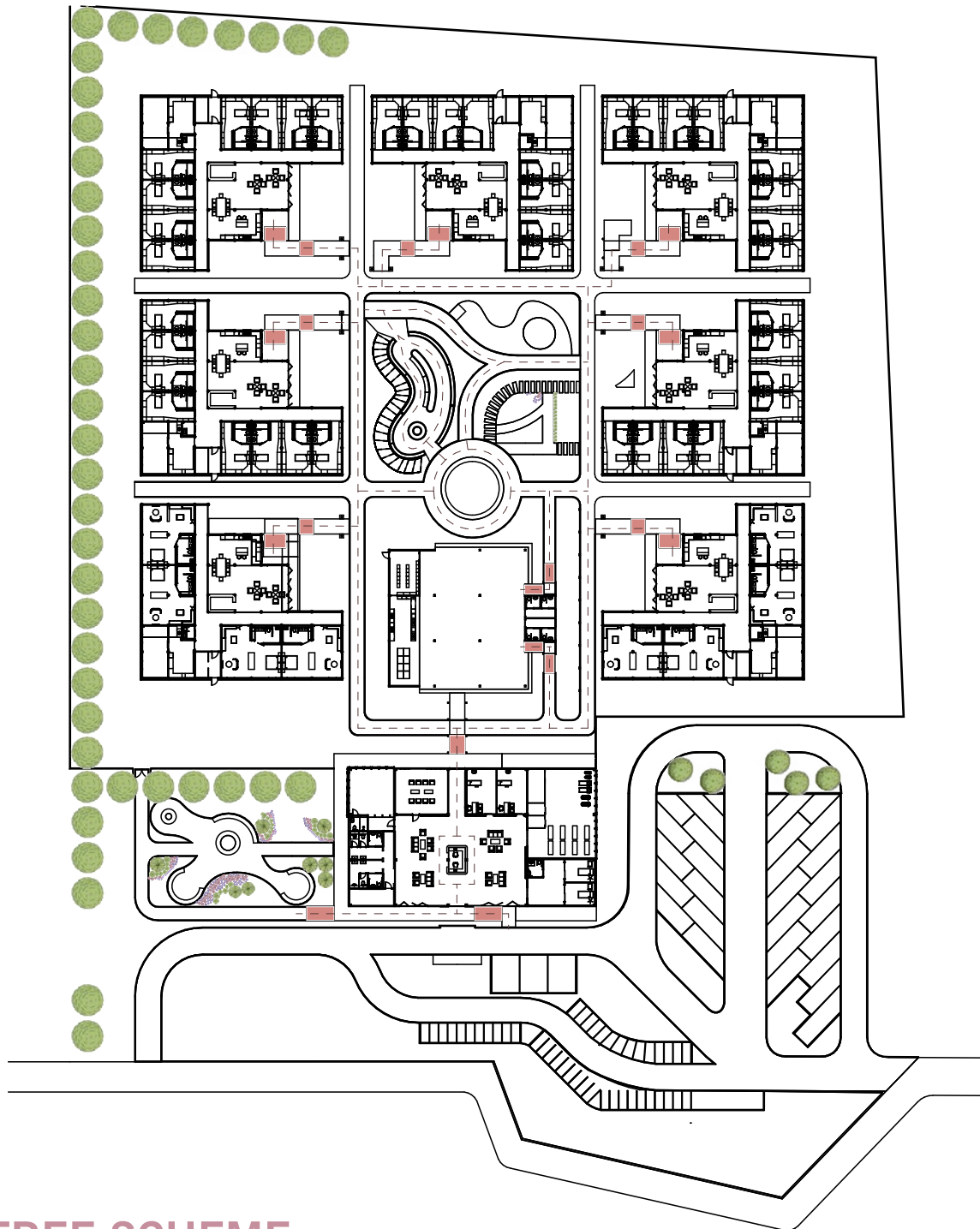




CLEAN WATER SCHEME

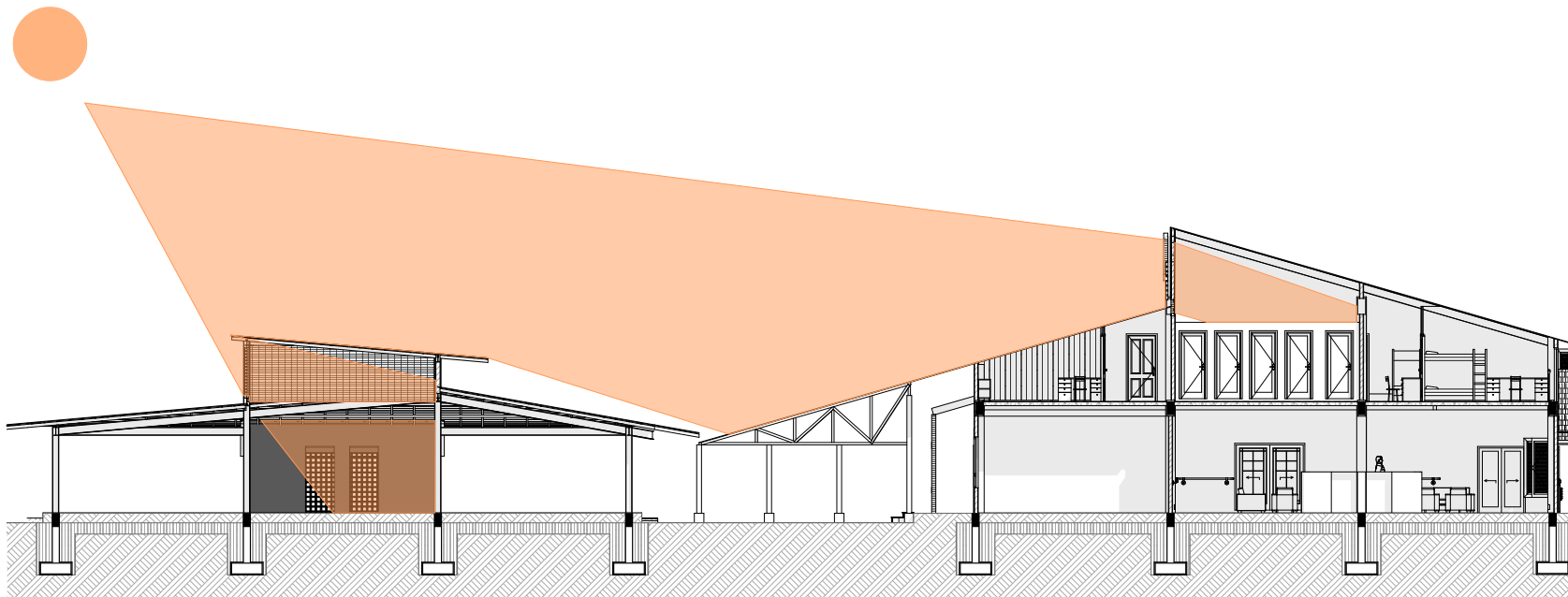


BLACK & GREY WATER SCHEME

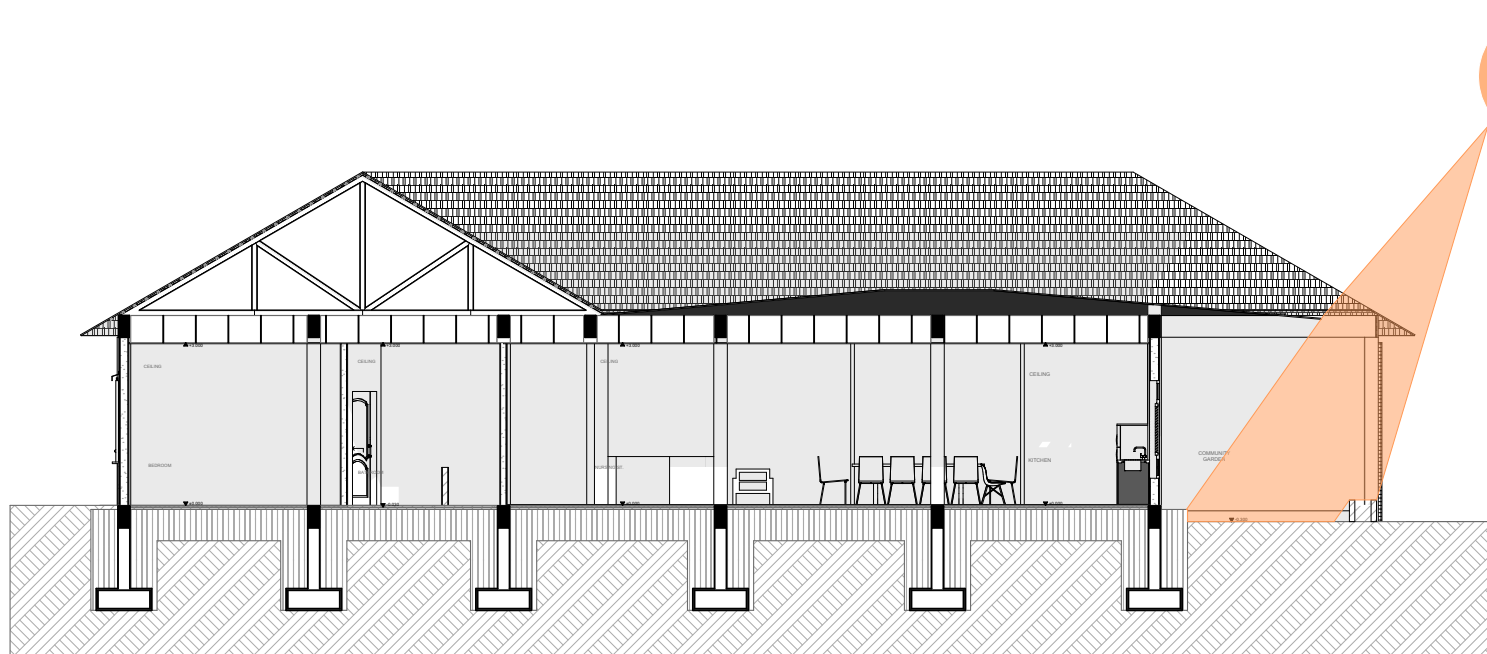


BARRIER FREE SCHEME

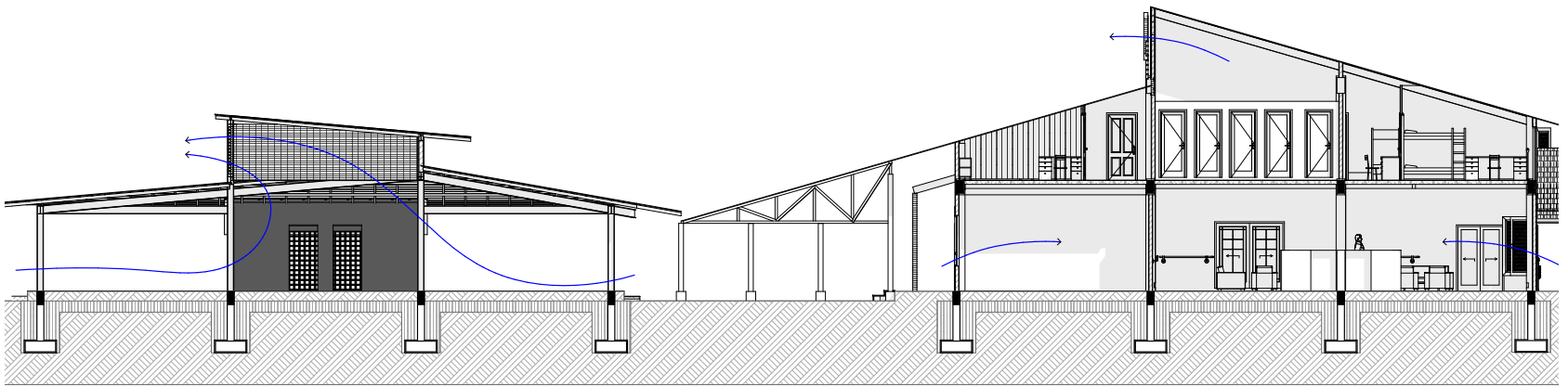




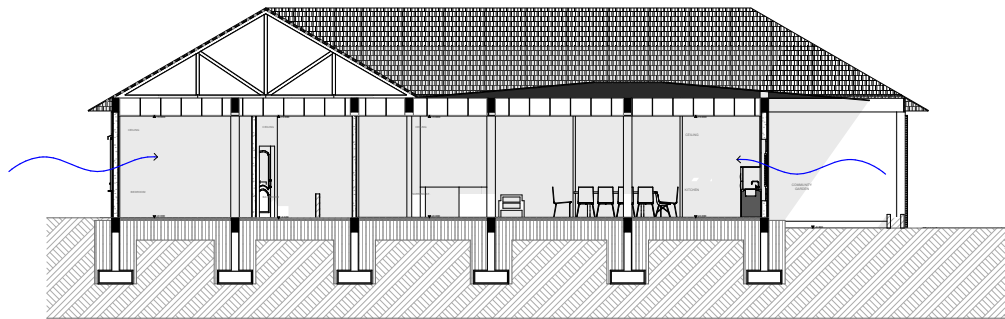
NATURAL LIGHTNING SCHEME A



NATURAL LIGHTNING SCHEME B



NATURAL VENTILAION SCHEME A



NATURAL VENTILAION SCHEME B

SENSORY GARDEN FOR DEMENTIA CARE

Sensory garden is designed as a therapeutic landscape that stimulates five senses such as taste, touch, smell, sound, and sight while supporting autonomy and emotional well-being for People with Dementia (PwD). The garden is combining between functional where resident can touch and eat available vegetation, and reflective for aromatic and visual experiences.

TOUCH & TASTE

Raised bed that contain edible vegetation allow resident to harvest, touch, and chance to taste similar vegetables. Vegetation act as familiarity food that they ate mostly.

TOUCH & SMELL

Raised bed that contain aromatic vegetation provide strong scents that evoke memory and familiarity in term of food ingredients.

FOCAL POINT

A rain tree act as focal point and transition between communal space and garden, while providing shade and sense of shelter.





SOUND

Vegetation that attract birds create natural sounds along with bamboo as wind chimes. This create calming auditory stimulation for resident

VISUAL

Edible vegetation allow resident to harvest, touch, and chance to taste similar vegetables. Vegetation act as familiarity food that they ate mostly.

VEGETATION PALETTE

SENSORY GARDEN

VEGETATION	NAME	LATIN	SENSORY TYPES	NOTES
	Passion Fruit (Markisa)	<i>Passiflora edulis</i>	Touch & Taste	
	CHERRY TOMATO (To- mat Ceri)	<i>SOLANUM LYCOPERSICUM</i> <i>VAR. CERASIFORME</i>	Touch & Taste	
	WATER SPINACH (Kangkung)	<i>IPOMOEA AQUATICA</i>	Touch & Taste	
	BIRD'S EYE CHILI (CA- BAI Merah)	<i>CAPSICUM FRUTESCENS</i>	Touch & Taste	
	BASIL (Kemangi)	<i>OCIMUM BASILICUM</i>	Touch & Taste	
	LETTUCE (SELADA)	<i>LACTUCA SATIVA</i>	Touch & Taste	
	GREEN AMARANTH (Bayam Hijau)	<i>AMARANTHUS TRI- COLOR</i>	Touch & Taste	
	SPRING ONION (Daun Bawang)	<i>ALLIUM FISTULOSUM</i>	Touch & Smell	

VEGETATION	NAME	LATIN	SENSORY TYPES	NOTES
	Jasmine	<i>Jasminum sambac</i>	Touch & Smell	
	Lemon Grass (Sereh)	<i>Cymbopogon Citratus</i>	Touch & Smell	
	Fragrant Pandan	<i>Pandanus Amaryllifolius</i>	Touch & Smell	
	Chives (Kuai)	<i>Allium Schoenoprasum</i>	Touch & Smell	
	Ruella (Kencana)	<i>Mexican Petunia</i>	Visual	
	Paper Flower (Bunga Kertas)	<i>Bougenvillea</i>	Visual	
	Jungle Geranium (Asoka)	<i>Ixora</i>	Visual	
	Pink Jasmine	<i>Jasminum Polyanthum</i>	Visual	
	Red Shoots	<i>Syzygium Myrtifolium</i>	Visual	

VEGETATION	NAME	LATIN	SENSORY TYPES	NOTES
	Snake Plant (Lidah Mertua)	<i>Sansevieria spp.</i>	Visual	

TREE

VEGETATION	NAME	LATIN	SENSORY TYPES	NOTES
	Red Sandalwood (Angsana)	<i>Pterocarpus Indicus</i>	Touch & Taste	
	Rain Tree (Trembesi)	<i>Samanea Saman</i>	Touch & Taste	
	False Ashoka (Glodokan)	<i>Polyalthia longifolia</i>	Touch & Taste	

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05

DESIGN EVALUATION

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CONCLUSION

Based on evaluation, the design already develop in spatial layout but need to add wayfinding clearer and technological integration as part of design solution. The comment highlight areas where the create a better support for main user, people with dementia, who rely heavily on environmental cues for orientation and comfort.

Fig.5.1 Revision on Residential Wayfinding
Source: Author (2025)

IMPROVING IN WAYFINDING

Color Palette for Residential Unit

UNIT	COLOR REPRESENTATION	VEGETATION REPRESENTATION
01	<div></div> <div>Yellow - #F7E8B2</div>	Cosmos (<i>Cosmos sulphureus</i>)
02	<div></div> <div>Blue - #B7D0DA</div>	Butterfly Pea Flower (<i>Clitoria ternatea</i>)
03	<div></div> <div>Pink - #DCA1A1</div>	Paper Flower (<i>Bougenvillea</i>)
04	<div></div> <div>Brown - #B3937E</div>	Monstera
05	<div></div> <div>Purple - #A29FCE</div>	Mexican Petunia (<i>Ruellia Simplex</i>)
06	<div></div> <div>Orange - #DFB992</div>	Paper Flower Peach (<i>Bougenvillea</i>)
07	<div></div> <div>Grey - #807D7E</div>	Paper Flower Cream (<i>Bougenvillea</i>)

Table 5.1 Color Palette for Residential Unit
Source: Author (2025)



Fig.5.2 Perspective of Color as Residential Cue
Source: Author (2025)

The shading in each area varies, reflecting the color representation of each residential unit. This figure shows four areas, Units 1 through 4. The contrasting, yet discreet, colors are intended to make it easier for residents to identify their respective spaces.

In addition, each building area (lobby & healthcare, community, and residential) have color representation.



Fig.5.3 Toilet
Source: Author (2025)

Fig.5.4 Building Interior
Source: Author (2025)

IMPROVING IN TECHNOLOGY USAGE

RFID TAG AS SAFETY MONITORING

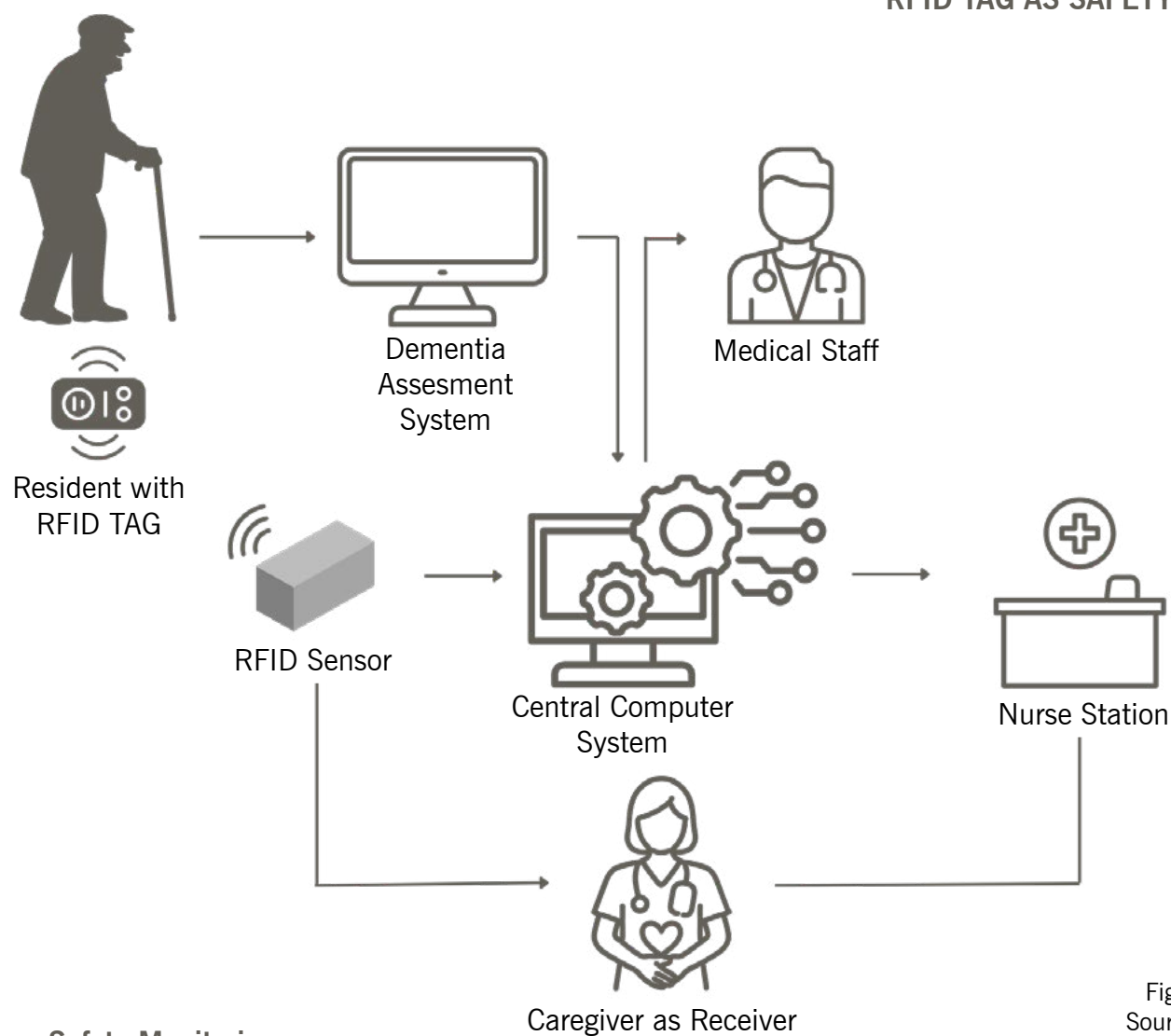


Fig.5.5 RFID System
Source: Author (2025)

Indoor & Outdoor Safety Monitoring

STEP	DESCRIPTION
Signal Transmission	The RFID Tag that worn by resident automatically transmits a radio signal
Location Detection	Resident are tracked 24/7, whtn they approach dangerous area like exit or boundaries, the tag will signal to the nearest RFID reader
Server Analysis	From reader, the data will sent to central system and analyzing whenever the resident loca-tion is
Alert Trigger	If they ever go to “danger” location, the central system will trigger an alarm
Caregiver as Receiver	The alarm is sent to caregiver’s device and nursing station so they can respond immediately

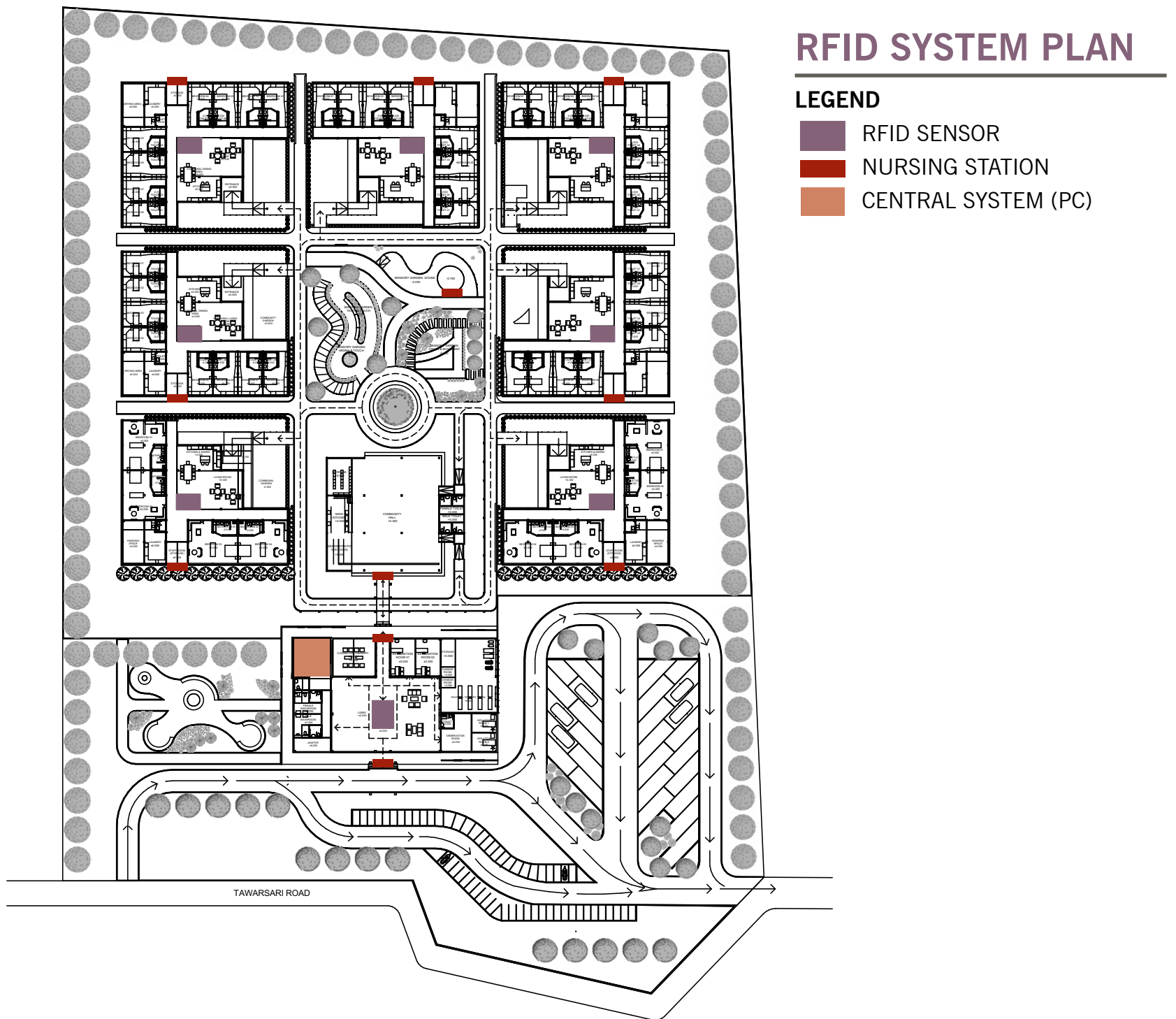


Fig.5.6 RFID System Plan
Source: Author (2025)

IMPROVING IN TECHNOLOGY USAGE

PRESSURE SENSOR MAT AS SAFETY MONITORING

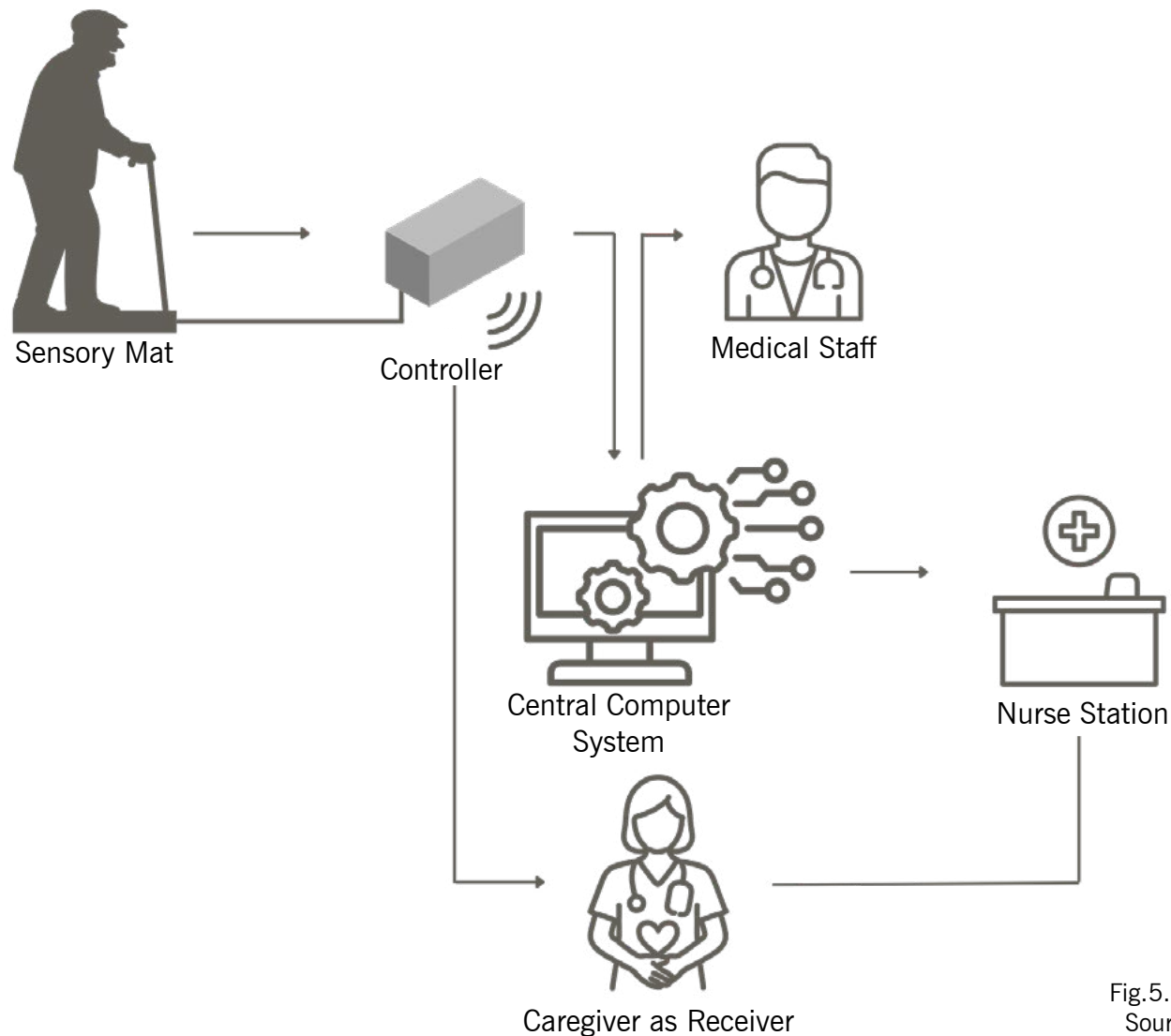


Fig.5.5 Pressure System
Source: Author (2025)

To make sure that residents, people with dementia, are safe the pressure sensors installed on the floor. This provides opportunities to be alone (P8). The floor finishing material uses matte tiles for the bathroom and vinyl for the bedroom. This aims to reduce the risk of slipping (P1). Pressure sensors installed in the floor detect abnormal resident movement, such as falls or wandering at night. This system sends a direct signal to the nurse. A cable installed in the mattress transmits the signal to the nearest controller.

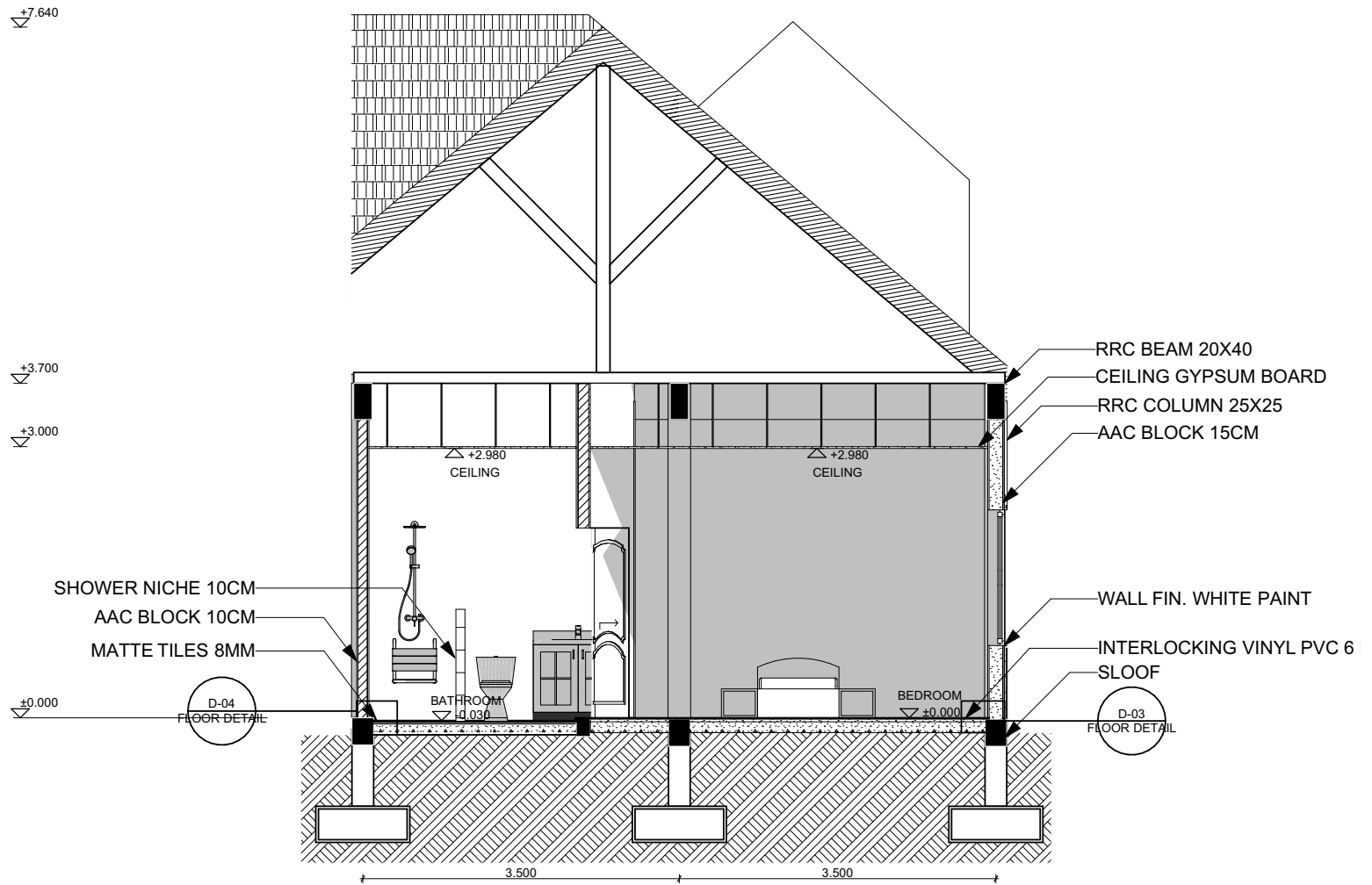
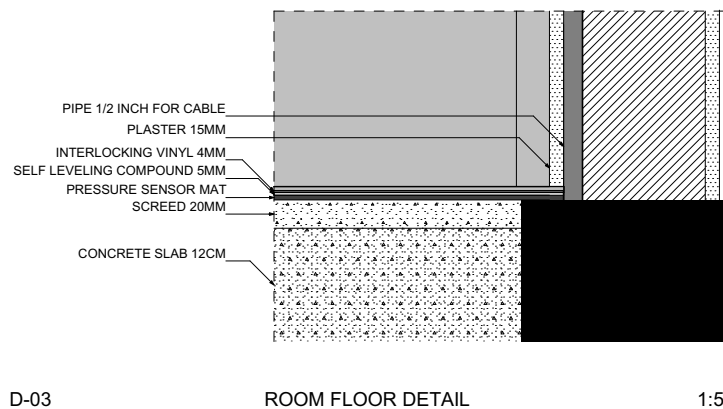
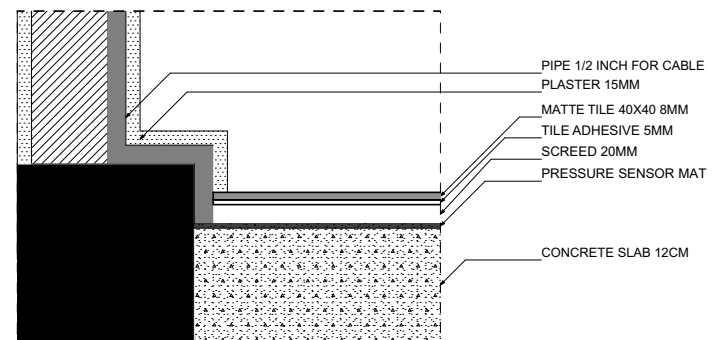


Fig.5.7 Updated Single Room Unit Section
Source: Author (2025)



D-03 ROOM FLOOR DETAIL 1:5



D-04 BATHROOM FLOOR DETAIL 1:5

Fig.5.8 Room Floor Detail
Source: Author (2025)

Fig.5.9 Bathroom Floor Detail
Source: Author (2025)

06

ATTACHMENT

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PLAGIARISM CHECK



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SURAT KETERANGAN HASIL CEK PLAGIASI

Nomor: 123756773/Perpus./10/Dir.Perpus/VII/2025

Bismillaahirrahmaanirrahiim

Assalamualaikum Wr. Wb.

Dengan ini, menerangkan Bahwa:

Nama : Jenny Chairani Saban
Nomor Mahasiswa : 21512153
Pembimbing : Arif Budi Sholihah, S.T., M.Sc., Ph.D
Fakultas / Prodi : Teknik Sipil dan Perencanaan/ Arsitektur
Judul Karya Ilmiah : Designing a Specialized Dementia Villages Using a Dementia-Friendly Design in Yogyakarta

Karya ilmiah yang bersangkutan di atas telah melalui proses cek plagiasi menggunakan **Turnitin** dengan hasil kemiripan (*similarity*) sebesar **7 (Tujuh) %**.

Demikian Surat Keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Wassalamualaikum Wr. Wb.

Yogyakarta, 12/5/2025

Direktur

Muhammad Jamil, SIP.

TECHNICAL DRAWING

Scan the QR code to access technical drawing





KAMPUNG SRAWUNG

Designing a Specialized Dementia Villages Using a Dementia-Friendly Design in Yogyakarta

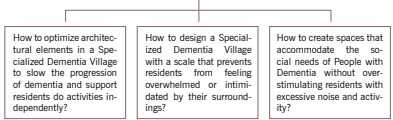


BACKGROUND

According to Badan Pusat Statistik (2023), the province of DI Yogyakarta has the highest proportion of elderly residents in Indonesia, with 16.02% of its population aged 60 years and older. Consequently, the Special Region of Yogyakarta also records the highest prevalence of dementia, affecting approximately 20.1% of this age group. In districts such as Kulon Progo, Bantul, and Gunungkidul, the growth of the productive-age population is slower than that of the non-productive age group. Despite this rising demographic trend, dementia is often misunderstood as a natural part of aging, leading to neglect and accelerated decline. However, in reality, dementia is not simply about forgetfulness or physical weakness. It is a progressive and widespread deterioration of cognitive functions including memory, learning, orientation, language, comprehension, and judgment classified as a major neurocognitive disorder (NCD).

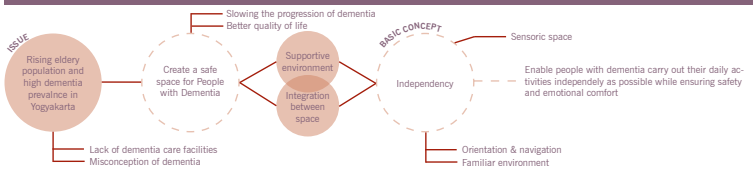
GENERAL PROBLEMS

How to design a Specialized Dementia Village in Yogyakarta that supports the needs of People with Dementia using a Dementia-Friendly Design approach to slow the progression of the disease?



Design a Specialized Dementia Village focusing on the People with Dementia (PwD) to support their independence and social activities. Creating a facilities that accommodate their needs while adapting the impairments of dementia.

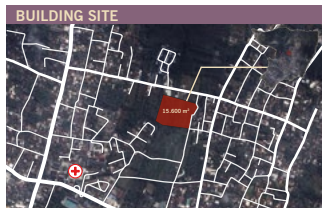
CONCEPT



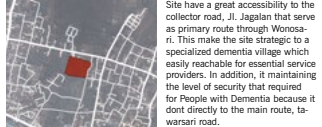
USER

User	Stage	Capacity	Notes
Main User: Residential	Mild-Moderate	40 people	
Main User: Residential	Severe	24 people	
Main User: Caregiver	-	20 people	ratio 1:4 caregiver for mild-moderate stage & 1:3 for severe stage
Secondary User: Medical staff (Doctor, Nurse, Physician)	-	5	
Secondary User: Housekeeper & Gardener	-	15 people	

Dementia is a progressive condition that affects memory, thinking, and daily functioning. In the mild-moderate stage, residents may still recognize familiar places, engage in routines, and benefit from supportive environment that encourage independence. They require a supervision but can participate in social and sensory activities. While in severe stage, residents experience significant cognitive decline, disorientation, and loss of autonomy. They rely heavily on caregivers for safety, daily care, and emotional supports



Location	Tawansari, Kapanewon Wonorejo, the capital of Gunung Kidul Regency.
Site Area	15.600 m ² / 15,6 ha
BCR	52,6% 8.200 m ²
FAR	1.5
GAR	47,4% 7.400 m ²



Site have a great accessibility to the collector road, Jl. Jagalan that serve as primary route through Wonorejo. This make the site strategic to a specialized dementia village which easily reachable for essential service providers. In addition, it maintaining the level of security that required for People with Dementia because it dont directly to the main route, tawansari road.



As shown in the elevation, This has undulating terrain where the area marked at +180m represent the lowest point of site. It make natural valley enclosed by higher ground at +190m.

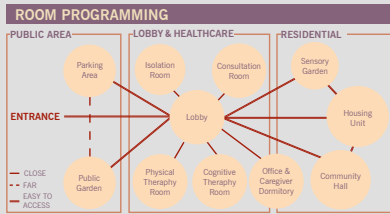


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THEME



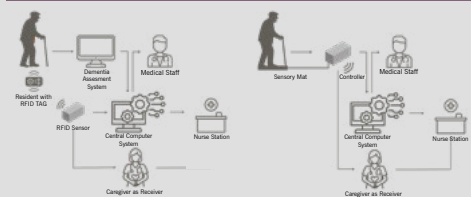
USER FLOW



ZONING

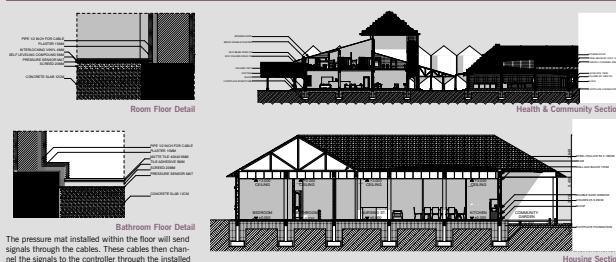


SYSTEM MANAGEMENT



First, each resident have RFID tag for tracking their movement. When they come to the exit or near dangerous area, the RFID tag will alarm the caregiver. Second, to make sure that residents, people with dementia, are safe the pressure sensors installed on the floor. This provides opportunities to be alone (PB). The floor finishing material uses matte tiles for the bathroom and vinyl for the bedroom. This aims to reduce the risk of slipping (P1). Pressure sensors installed in the floor detect abnormal resident movement, such as falls or wandering at night. This system sends a direct signal to the nurse. A cable installed in the mattress transmits the signal to the nearest controller.

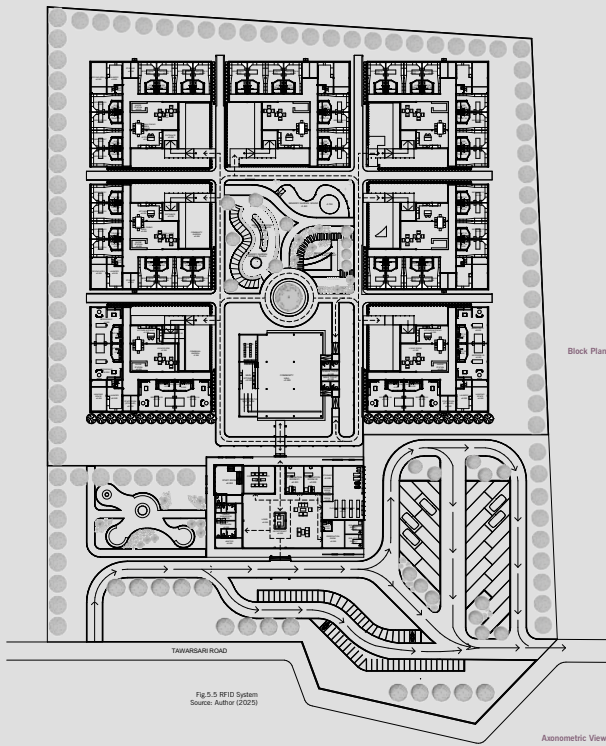
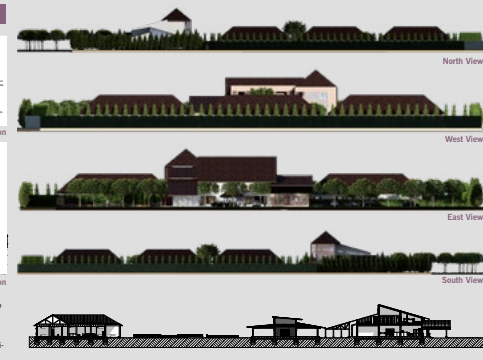
DETAIL & SECTION



The pressure mat installed within the floor will send signals through the cables. These cables then channel the signals to the controller through the installed conduit. Once the controller receives the data, it is forwarded to the central system management, where caregivers and medical staff can monitor the activities of residents with dementia. This also applies to the RFID reader cables, which will be routed through the same conduit. In addition, resident don't feel they are being monitored by the staff.

In the first section, it illustrates how the medical and community areas operate. The community area is designed to be open so that both caregivers and residents can easily observe what is happening. Additionally, the placement of the dormitory and staff room facing the residential area helps caregivers monitor the residents more effectively. In the housing area, the nursing station is positioned at the center to ensure easy access for residents, whether they are coming from their rooms or from outside. This central placement also supports caregivers in monitoring the residents more efficiently.

MASSING



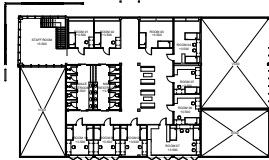
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LOBBY & HEALTHCARE

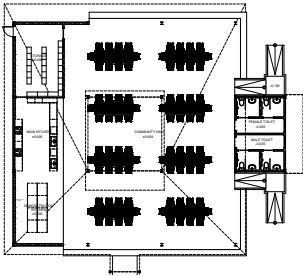
Lobby is combined with healthcare, designed with welcoming and feels like living room. Nursing station and receptionist located in the middle of area so they can see all of the area of building. A small consultation room provide basic medical care. There is also isolation area as emergency just in case resident become agitated.



Future resident can saw receptionist placed in the middle of lobby, ensuring all visitors immediately directed. To the upper right, there is examination rooms where doctor belong to for initial consultations and routine assessments. There are two therapeutic area which is Cognitive therapy and physical therapy. For cognitive therapy room for a quieter space designed for group sessions or focused one on one behavioral work. On the other hand, physical therapy room have several treatment like mats, stairs, and additional sport equipment. On the second floor, there is a dormitory for caregiver. It's placed in this building to create a space for resident and for caregiver. For dormitory, there is 10 room with different layout of room. Staff room using curtain wall so they can track on residential unit while doing on break.

COMMUNITY

The community hall is serve as social space of dementia village. It provides spaces where residents and caregiver in all unit can gather, share meals, and participate in event that hold by organizer. There is also communal kitchen where resident can do activity cooking together guided by organizer. The design emphasizes visibility so resident can feel included.

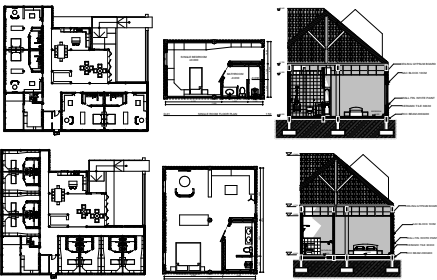


session where resident, caregiver, or even family join. These activity help resident to strengthen their memory through cooking with someone they know. The open floor also allow exercise and movement therapy like rooming stretching or dance session. There will be a monthly or annual events like storytelling, traditional performance, or collaboration with local organizer. During quiet hours, community hall can be transformed into a space for crafts, yarn, or small group discussions. It is a flexible layout supports both large gatherings and activities. Beyond its function the hall symbolize belonging act as main area where everyday routines, cultural practices, and community converge

Placed in the middle of the site to ensure that people from all unit can easily see and sense what is happening inside, reducing feelings of isolation and encourage them to join the activity. two ramps are positioned on opposite sides of building, connecting between residential area to community and lobby & healthcare to community. This building act as communal kitchen aside their housing to prepare three meals a day for residents. This can make resident join the cooking routines. Using aroma of meal preparation as stimulation. Moreover, the community hall support cooking together

RESIDENTIAL

This residential area separated into several unit to avoid institutional character. This more like household rather than institution to create a sense of familiarity. Each unit type is arranged with L shape private area with open plan toward communal space for visibility and orientation.



UNIT TYPE	TOTAL UNIT	RESIDENT PER UNIT	TOTAL RESIDENT
INDIVIDUAL (MILD-MODERATE)	3 Unit	8 Resident	24 Resident
INDIVIDUAL (SEVERE)	2 Unit	8 Resident	16 Resident
COUPLES (MILD)	2 Unit	8 Resident	16 Resident
COUPLES (SEVERE)	1 Unit	8 Resident	8 Resident
TOTAL	7	-	56 Resident

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SENSORY GARDEN FOR DEMENTIA CARE

Sensory garden is designed as a therapeutic landscape that stimulates five senses such as taste, touch, smell, sound, and sight while supporting autonomy and emotional well-being for People with Dementia (PwD). The garden is combining between functional where resident can touch and eat available vegetation, and reflective for aromatic and visual experiences.

TOUCH & TASTE

Raised bed that contain edible vegetation allow resident to harvest, touch, and chance to taste similar vegetables. Vegetation act as familiarity food that they ate mostly.

TOUCH & SMELL

Raised bed that contain aromatic vegetation provide strong scents that evoke memory and familiarity in term of food ingredients.

FOCAL POINT

A rain tree act as focal point and transition between communal space and garden, while providing shade and space of shelter.

SOUND

Vegetation that attract birds create natural sounds along with bamboo as wind chimes. This create calming auditory stimulation for Resident.

VISUAL

Edible vegetation allow resident to harvest, touch, and chance to taste similar vegetables. Vegetation act as familiarity food that they ate mostly.

PLANT PALETTE

TOUCH & TASTE



Cherry Tomato
Solanum lycopersicum var. *ceresiforme*

+ Encourage engagement through harvesting with strong color



Water Spinach
Ipomoea aquatica

+ Easy to harvest



Bird's Eye Chili
Capiscum frutescens

+ Visual stimulation



Basil
Ocimum basilicum

+ Calming scent



Lettuce
Lactuca sativa

+ Easy to harvest



Green amaranth
Amaranthus biolor

+ Easy to harvest

TOUCH & SMELL



Jasmine
Jasminum sambac

+ Strong fragrance



Lemon Grass
Cymbopogon Citratus

+ Strong fragrance with sturdy leaves



Fragrant pandan
Pandanus amaryllifolius

+ Familiar smell for cooking



Spring onion
Allium fistulosum

+ Easy to harvest



Chives
Allium schoenoprasum

+ Easy to grow and gentle sensory stimulation

VISUAL



Ruellia Mexican Petunia

+ Contrast between rest of vegetation



Paper Flower Bougainvillea

+ Vibrant shrubs to bold the visual garden



Jungle Geranium

+ Stimulate attention with bright colour



Pink Jasmine
Jasminum polyanthum

+ Soft pink as calming visual cues



Red Shoots
Syngium myrtilloflum

+ Vibrant color



Snake Plant
Sansevieria spp.

+ Strong geometric texture

TREE



Red Sandalwood
Pterocarpus indicus

+ As shading and seasonal color for seasonal awareness



Rain Tree
Samanea saman

+ As focal point and shading



False Ashoka
Polyalthia longifolia

+ As privacy screen & windbreaks



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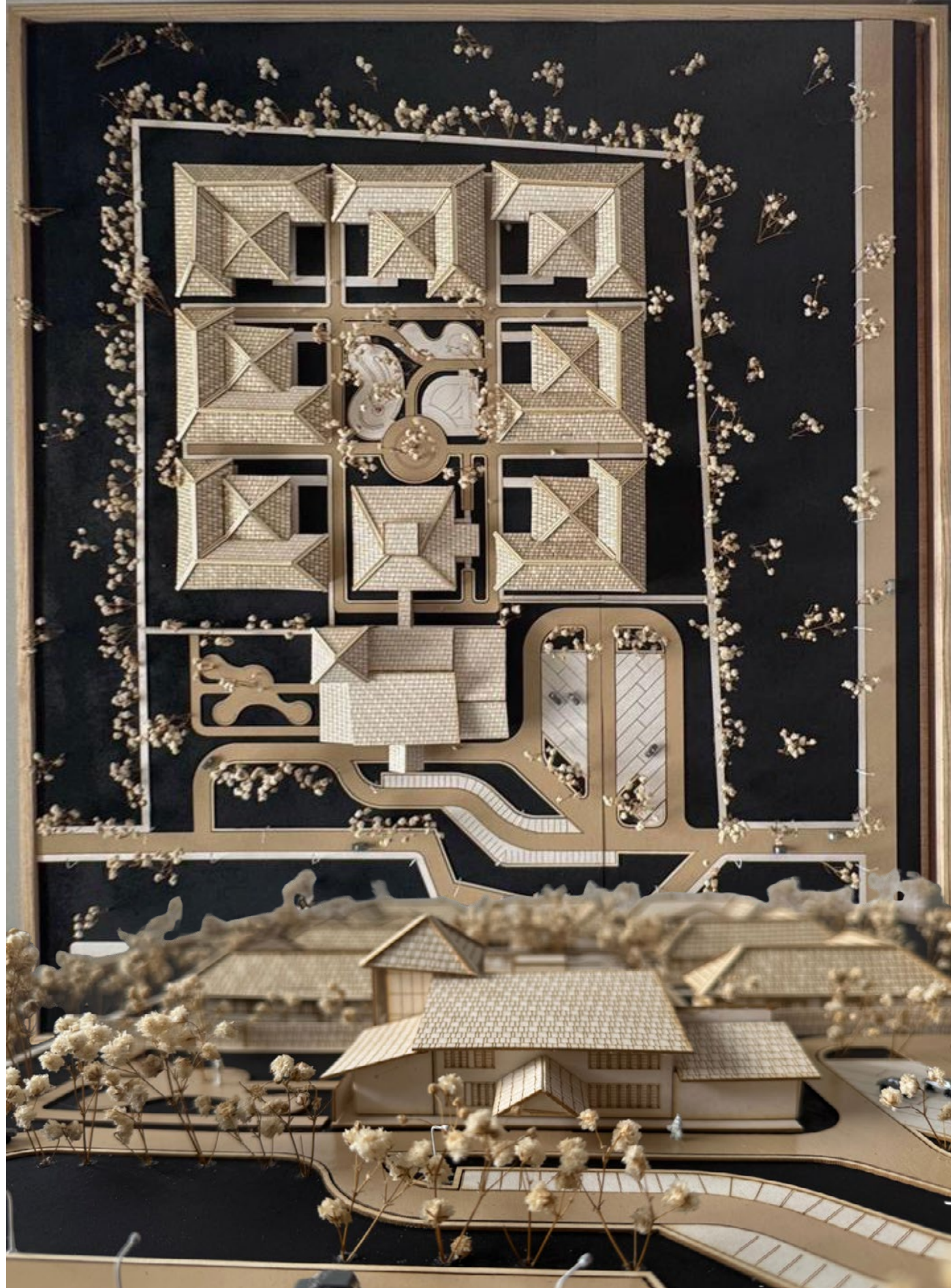
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3D MOCK UP

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