Aging Together:

A Two-generational Living Solution Focused on Aging in Place

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A Practicum Submitted to the Faculty of Graduate and Postdoctoral Studies of
The University of Manitoba
in partial fulfillment of the requirements of the degree of

Master of Interior Design

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Abstract

By 2060, one in three Germans will be over 60 years old; this aging population presents a housing challenge today (Centre for Public Impact, 2018). In Bad Kreuznach, where 23.4% of the population is already over 65 and 43.8% of households are single-person, it is necessary to reconsider traditional housing models that do not support the desire of older adults to age in place while maintaining their independence. This practicum investigates how interior design strategies can enable two-generation households to support aging in place within the German cultural context that prioritizes autonomy and independence.

Unlike the permanent three-generation co-residence model common in other cultures, this project proposes a “living together but apart” living solution (Isengard & Szydlik, 2012), featuring separate dwelling units for each generation within a common building. The design solution balances three interconnected principles, namely, accessibility, privacy, and connection.

The project delivers a multi-unit intergenerational residential building (MUIRB) design situated in Bad Kreuznach, Germany, to demonstrate how thoughtful interior design can foster voluntary intergenerational interaction and informal caregiving without sacrificing individual autonomy. This context-specific solution offers transferable design principles applicable to similar aging demographic contexts across Germany and Western Europe.

Acknowledgments

To my practicum advisor, Shauna Mallory-Hill, I am profoundly grateful for your guidance throughout this practicum journey. Your expertise in universal and gerontological design, along with your thoughtful feedback, pushed me to deepen my understanding of how interior design can truly support aging in place. Thank you for believing in this project's potential to address Germany's demographic challenges and for your patience as I navigated the complexities of designing for intergenerational living.

To my committee members, Umid Abdullaev and Michelle Porter, thank you for generously sharing your time and expertise. Your critical insights during the intermediate presentation helped me refine my focus towards a two-generation household model and clarify the cultural nuances of German society.

I am also grateful to the researchers and authors whose work formed the foundation of this project, particularly those studying aging in place, accessible housing design, and intergenerational housing. Your evidence-based research gave me the tools to design with intention and empathy.

To my brother Isaac Oluwade, thank you for your endless patience and encouragement throughout this demanding program. Your support sustained me through long research sessions, countless design iterations, and moments of doubt. This project would not have been possible without you by my side.

Most importantly, to my parents, Funke and Josiah Oluwade, thank you for instilling in me a deep respect for aging with dignity and the value of family connection. Your own experiences navigating intergenerational relationships inspired my passion for creating spaces where older adults can maintain independence while staying connected to those they love. This work is dedicated to you.

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Important Terms and Definitions

Intergenerational Housing (German: Mehrgenerationenhaus)
Housing models designed to bring multiple generations together in shared living environments that promote social interaction, mutual support, and community building. In Germany, *Mehrgenerationenhäuser* often serve as community centers offering programs for all ages.

Multigenerational Living
When two or more adult generations of a family live under the same roof, sharing common spaces while maintaining separate living quarters.

Aging in Place
The practice of older adults continuing to live in their homes and communities safely, independently, and comfortably as they age, regardless of age, income, or ability level.

Gerontological Design
A design approach that specifically addresses the needs, preferences, and capabilities of older adults, incorporating research from gerontology (the study of aging) into the built environment.

Universal Design
The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. Universal design benefits people of all ages and abilities.

Quality of Life (QoL)
A multi-dimensional construct that measures the overall well-being of an individual, encompassing physical health, psychological state, social relationships, and environmental factors (Doumit & Nasser, 2010).

Older Adults
In the context of this practicum, older adults refer to individuals aged 65 years and above, consistent with Germany's retirement age and standard gerontological research classifications.

Multi-unit Residential Building (MURB)
A building containing multiple separate dwelling units, such as an apartment building or condominium.

Multi-unit Intergenerational Residential Building (MUIRB)
A term coined for this practicum to describe residential buildings specifically designed to house multiple family units across different generations, with intentional design features that support both privacy and intergenerational connection.

Aging in Place Support
Design features, services, and spatial configurations that enable older adults to remain in their homes safely and comfortably as their physical and cognitive abilities change over time.

Interior Patio
An enclosed, interior threshold space located between individual apartment entries and the main corridor. Unlike an outdoor patio, this interior patio functions as a semi-private buffer zone where residents can sit, lounge, or engage in quiet activities while remaining visible to neighbors passing through the hallway.

INTRODUCTION

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CHAPTER 1 | Introduction

1.1 Problem Statement

This Master of Interior Design practicum project explores how thoughtful interior design can enable intergenerational households in Germany to support aging in place through a multi-unit intergenerational residential building (MUIRB) in Bad Kreuznach, Germany.

The population in Germany is aging. Data shows that by the year 2060, over half of the German population will be over 50 years, and one in three Germans will be over 60 years (Centre for Public Impact, 2018). Currently in Bad Krueznach, a city in Germany where this project is based, 23.4% of the population are over 65, and 58% are over 40 years of age (United Nations New York, 2010).

Many older adults express a strong desire to age in their homes rather than relocating to institutional care facilities (Mann-Lewis, 2014). A reason for this preference is the risk of losing independence in institutional care facilities. These facilities are also often perceived as restrictive and impersonal (Salvage et al., 1989). However, older adults aging in their homes present challenges if the home is not designed to support the specific needs of older adults as they age. These challenges could include decreased mobility, limited home accessibility, and social isolation.

These challenges can be addressed through the implementation of multigenerational living arrangements. A multigenerational living arrangement is when two or more adult generations of a family share a home. This kind of living solution is quite common in cultures across Africa and Asia, and has been proven to be a source of daily companionship, shared caregiving responsibilities, and a built-in social network to help make aging in place more manageable (Harrigan, 1991).

In Germany today, multigenerational living is not very common due to the cultural and societal norms. German society, as many other Western societies, puts a greater value on individualism and independence over familial bonds and interdependence. However, there is a growing interest in intergenerational communities that bring together people of different age groups. Although this concept is not fully ingrained in contemporary German society. Germany currently has only 530 documented *Mehrgenerationenhaus* nationwide, and 80.71% of German households consist of just one or two people (Centre for Public Impact, 2018). In Bad Kreuznach specifically, 43.8% of households are single-person households (AdminStat Gemania, 2025). This housing landscape reflects a cultural shift away from traditional extended family structures. Yet the demographic shift demands new models that can support aging populations while fostering intergenerational connection and shared caregiving.

This practicum will utilize the term “intergenerational” or “intergenerational living” to refer to intergenerational living solutions in which different generations are brought under one roof as understood by the *Mehrgenerationenhaus* concept. In this context different generations may or may not have familial ties. “Multigenerational” and “multigenerational living” will be utilized to refer to the household with different generations that have familial ties as found in many traditional Asian and African societies.

Therefore, the main challenge this practicum seeks to respond to is how interior design can enable intergenerational living with elements of multigenerational households to support aging in place in contexts where this model is not culturally prevalent. Specifically, what spatial strategies can balance the competing needs for privacy, connection, and accessibility across multiple generations living under one roof?

Using Bad Kreuznach Germany, as a representative case study, this project develops evidence-based design strategies that can be applied to similar demographic contexts across Germany and beyond.

1.2 Project Purpose

The purpose of this project is to address the gap in most of the contemporary residential buildings in Bad Kreuznach, Germany, which prioritize nuclear family units or individual living (Wagner & Cifuentes, 2014). The project investigates and applies interior design strategies that will enable intergenerational households to support aging in place in a German society. The design strategies are centered around three critical aspects, which are privacy, connection, and accessibility.

The processes taken to achieve this purpose are as follows:

- Analyzing existing research on aging in place, intergenerational living, and spatial design for older adults to establish evidence-based design principles.

- Examining cross-cultural precedents from a few societies with long-standing multigenerational living traditions (Turkey, Japan, Nigeria) to understand how architecture has historically solved challenges of privacy, flexibility, and social connection.

- Studying the German context through the *Mehrgenerationenhäuser* movement and demographic analysis of Bad Kreuznach to understand local needs, cultural attitudes, and existing infrastructure.

- Developing a design solution for a multi-unit intergenerational residential building, with design guidelines from multigenerational housing models of Asia and Africa, in Bad Kreuznach that demonstrates how interior design can create environments where:
    1. Accessibility features support older adults' independence and safety
    2. Privacy zones allow each generation autonomy and personal space
    3. Connection spaces foster voluntary intergenerational interaction and mutual support

1.3 Design Inquiry and Objectives

This practicum is guided by one central research question:
What interior design strategies enable intergenerational households to support aging in place by balancing privacy, connection, and accessibility?

To answer this question comprehensively, the research is organized around three interconnected lines of inquiry:

Inquiry 1: ACCESSIBILITY for Aging in Place

What is the impact of interior design on the mental and physical well-being of older adults in intergenerational households?
This inquiry aims to understand how design elements can improve mental health, prevent and manage physical health conditions, and enhance the overall quality of life for older adults. It examines evidence-based design features related to:

- Way-finding and spatial organization
- Lighting and thermal comfort
- Universal design and barrier-free accessibility
- Autonomy and sense of control
- Safety and fall prevention

Inquiry 2: PRIVACY in Intergenerational Settings
What design strategies balance privacy, independence, and social interaction within intergenerational households?
This inquiry identifies interior design solutions that allow for both intergenerational connection and the preservation of personal space. It examines:

- Spatial zoning and hierarchy of privacy
- Acoustic and visual separation strategies
- Separate entries and circulation paths
- Personalization and territorial control
- Flexible spaces that adapt to changing needs

Inquiry 3: CONNECTION and Cultural Context
How does German culture perceive and approach intergenerational living, and what design strategies, learned from multigenerational housing models of Turkey, Asia and Africa, foster intergenerational connection?

This inquiry investigates cultural perceptions of aging, family, and communal living in Germany, while identifying spatial features that encourage voluntary interaction. It examines:

- German demographic trends and housing needs
- *Mehrgenerationenhäuser* precedents and lessons
- Shared spaces that promote natural interaction (kitchens, courtyards, activity zones)
- Cross-cultural strategies for social connection (from Turkish, Japanese, and Nigerian precedents)

These three inquiries directly inform the design objectives:
- To develop spatial strategies that support safe, independent aging in place through accessible design
- To create clear privacy zones that respect each generation's need for autonomy
- To design connection spaces that foster natural, voluntary intergenerational interaction
- To ground all design decisions in evidence-based research and proven cultural precedents
- To develop a context-specific solution for Bad Kreuznach that demonstrates transferable principles

1.4 Design Methodology

This practicum employs multiple research methods to develop evidence-based design strategies for intergenerational living:

Literature Review
A comprehensive literature review identifies existing theories and research on aging in place, intergenerational living, and design for older adults. The review draws from architecture, gerontology, sociology, and cultural studies to identify specific spatial needs and design strategies. The literature is organized to directly address the three core inquiries: accessibility for aging, privacy in shared living, and connection across generations.

Design Precedent Analysis
Cross-cultural case studies provide insights into proven approaches to intergenerational housing. By examining Turkish, Japanese, and Nigerian architectural traditions, this research identifies time-tested strategies for privacy (Turkish courtyards and zoning), flexibility (Japanese adaptable spaces), and connection (Nigerian communal courtyards). The German *Mehrgenerationenhäuser* movement is analyzed to understand contemporary approaches within the target cultural context. Each precedent is evaluated for transferable design principles applicable to Bad Kreuznach.

Site Analysis
A thorough analysis of the chosen site in Bad Kreuznach examines demographic data, existing building conditions, accessibility, proximity to amenities, and climate considerations. This analysis establishes why this location is appropriate for testing intergenerational design strategies and how the design can respond to local context.

Design Development Process

The design process integrates findings from literature, precedents, and site analysis into a cohesive architectural solution. The iterative process includes:

- Concept development based on the three core strategies (accessibility, privacy, connection)
- Space programming for multiple generations
- Schematic design with floor plans, sections, and spatial diagrams
- Design development showing material strategies, accessibility features, and spatial relationships
- Visualization through renderings and detail drawings

This methodology ensures that design decisions are grounded in research evidence, informed by cultural precedents, and responsive to the specific needs of Bad Kreuznach's aging population.

1.5 Project Scope and Limitations

The following are the clear boundaries around what the project will and will not address.

What This Project WILL Address:

Primary Focus: Interior design strategies that balance privacy, connection, and accessibility in intergenerational households to support aging in place.

User Group: Two-generation German households in Bad Kreuznach choosing to live together for practical reasons (eldercare, economic benefits, family support). This includes:

- Traditional German families adapting to demographic realities
- Immigrant families maintaining cultural practices

Design Scale: One multi-unit intergenerational residential building (MUIRB) in Bad Kreuznach, containing fully accessible living quarters for grandparents (65+) and middle aged children (30-64).

Key Design Questions:

- How can accessibility features support aging in place without feeling institutional?
- How can spatial zoning provide privacy while enabling connection?
- What shared spaces foster voluntary intergenerational interaction?

Research Approach: Evidence-based design drawing from gerontology, environmental psychology, and cross-cultural architectural precedents (primarily 2010-2025 sources to reflect contemporary understanding of aging).

What This Project WILL NOT Address:

Healthcare/Medical Services: This project is on spatial design, not medical care. The design accommodates visiting healthcare professionals but does not include clinical facilities.

Policy/Financing Models: While acknowledging economic benefits, this practicum does not develop financial structures, government subsidies, or policy recommendations for intergenerational housing.

Institutional Care Alternatives: This is not assisted living or nursing home design. The project assumes residents are capable of independent living with family support.

Universal Application: While strategies may be transferable, this project is specifically designed for the German context and may require adaptation for other cultural settings.

Intergenerational Programming: Unlike *Mehrgenerationenhäuser* community centers, this is residential design. Social programming and organized activities are outside the scope.

Single-Family Homes: The focus is on multi-unit buildings that can house multiple families/households, not single-family house conversions.

Researcher Positionality:

I am a woman in my twenties with Nigerian heritage, studying in Canada and investigating interior design in a German context. I bring an outsider perspective that allows an investigation of German housing challenges through cross-cultural comparison. My interest comes from observing how my own culture has successfully integrated multigenerational living and questioning why Western contexts have largely abandoned this model despite its potential benefits. However, I recognize that cultural values around independence, privacy, and family structure differ significantly. This project seeks to adapt universal design principles to German cultural expectations rather than imposing one cultural model onto another.

My bias is that I believe that intergenerational living, with elements of multigenerational living, offers benefits for aging populations. However, I acknowledge that it is not the only solution, nor will it work for all families. This project explores how design can make it an option for those who desire it, not a mandate for all.

1.6 Why Bad Kreuznach, Germany?

This project focuses specifically on Bad Kreuznach, Germany as a representative case study for several reasons:

- First, Bad Kreuznach's demographic profile, with 23.4% of residents aged 65 and older, 43.8% living in single-person households, and only 530 intergenerational households nationwide, reflects the broader German housing challenge (AdminStat Gemania, 2025).

- Second, the German government has already demonstrated interest in intergenerational solutions through the *Mehrgenerationenhäuser* program, indicating cultural openness to this model as it meets the political, cultural and societal norms of the country. However, it is important to note that the *Mehrgenerationenhäuser* function primarily as community centers rather than residential housing. They bring generations together for activities, but do not address where and how different generations actually live.

- Third, with the decrease of the working age population, there is bound to be economic pressure, like rising housing costs, limited eldercare capacity, and a shrinking workforce. All these could make intergenerational living a viable solution for German families. Finally, Bad Kreuznach's existing infrastructure, like healthcare facilities, schools, and community services, makes it an ideal location to test whether well-designed intergenerational housing can be attractive to contemporary German society.

LITERATURE REVIEW

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CHAPTER 2| Literature Review

Introduction

This literature review is organized to directly answer the central research question: What interior design strategies enable intergenerational households to support aging in place by balancing privacy, connection, and accessibility?

To answer this comprehensively, the review examines four interconnected areas:

Section 2.1 investigates accessibility: Identification of design features that support safe, independent aging in place. Drawing from gerontological research and environmental design studies, this section identifies evidence-based strategies for wayfinding, lighting, thermal comfort, and universal design that enhance older adults' physical and mental well-being.

Section 2.2 examines privacy: How spatial design can provide independence and personal territory within shared intergenerational households. This section synthesizes research on privacy needs, territorial control, and spatial zoning strategies that allow each generation autonomy while living under one roof.

Section 2.3 explores connection: The design features that foster voluntary intergenerational interaction and social support. This section reviews research on communal spaces, social participation, and architectural elements that encourage natural encounters while respecting individual choice.

Section 2.4 contextualizes these strategies within German society, examining demographic trends, cultural attitudes toward aging and family, and existing intergenerational housing models. This section establishes why this research is relevant to contemporary Germany and how design can address cultural expectations around independence and privacy.

Together, these four sections provide the theoretical foundation for developing design strategies that are evidence-based, culturally appropriate, and responsive to the needs of all generations in a shared household.

Literature Selection and Methodology:

This review prioritizes contemporary sources (2015-2025) to reflect current understanding of aging, well-being, and design for older adults. Research on quality of life, mental health, and accessibility has evolved significantly in recent years, and this analysis draws primarily from recent scholarship in gerontology, environmental psychology, architecture, and interior design.

Sources were identified through:

- University of Manitoba library databases
- Google Scholar and Elicit searches
- Relevant practicum and thesis projects
- Government and non-profit organization reports
- Culturally specific architectural literature (including German and Turkish sources, translated when necessary)

The review adopts a state-of-the-art approach by Grant & Booth, 2009. It synthesizes current knowledge to inform design practice rather than conducting a systematic review.

Fig 1. Aging Together Collage

2.1 ACCESSIBILITY: Design Strategies for Aging in Place

Introduction

To support older adults to stay safely in their homes as they age, the physical environments must adapt to the changing cognitive and physical abilities of older adults. This section investigates how interior design, environmental features, and accessibility considerations can support aging in place and intergenerational living in the German context. This literature analysis synthesizes findings from gerontological research and ecological design studies to investigate the impact of evidence-based design strategies like wayfinding, lighting, thermal comfort, and universal design in a intergenerational living environment.

Quality of Life (QoL)

Quality of life (QoL) is a multi-dimensional construct for measuring the overall well-being of an individual, encompassing subjective and objective factors across all aspects of human life (Doumit & Nasser, 2010). For older adults, QoL can be influenced by various factors, including physical health, psychological health, social relationships, and living environment (Levasseur et al., 2009). Understanding QoL in the German context is particularly relevant, as Germany is one of only five "super-aged" societies globally, with the population aged 65 and older projected to reach nearly one-third of the total population by 2050 (Centre for Public Impact, 2018)(AARP, 2025)

The QoL for older adults can be categorized into three primary areas: personal factors, social participation, and environmental factors. Personal factors play a significant role in determining quality of life through physical health, mental well-being, and cognitive ability (Levasseur et al., 2009). Physical health is typically seen as a crucial factor affecting QoL because it correlates to how well an older adult can engage in daily activities and maintain independence. Research across European populations, including Germany, confirms that poor health restricts mobility and reduces social participation (Vitman Schorr & Khalaila, 2018). The term "inner life" encompasses psychological and emotional well-being, including personal beliefs, values, and attitudes toward aging (Levasseur et al., 2009). A positive attitude toward life and aging, along with adaptation to disabilities and acceptance of aging effects, significantly affects older adults' QoL and creates a sense of peace with oneself.

A study using data from the Survey of Health, Aging, and Retirement in Europe (SHARE), which included Germany among 15 European countries, found that accessible access to needed services in the living environment is associated with a lower level of loneliness and therefore a greater QoL for older adults (Vitman Schorr & Khalaila, 2018).

Universal Design and Accessibility Principles in German Housing

The physical housing environment is particularly important for facilitating activities of daily living (ADL) for older people. Research comparing German and Swedish older adult populations found that inaccessible environments can lead to ADL dependence and increase the need for informal caregiving and support (Slaug et al., 2017). This study identified the top five environmental barriers in German homes which include:

1. Wall-mounted cupboards and shelves placed extremely high in the kitchen
2. Doors at entrance that do not stay in open position or close quickly
3. Insufficient maneuvering areas in the kitchen
4. Heavy doors without automatic opening at the entrance
5. Very high, very low, and/or irregular heights of risers at the entrance stair

Systematically removing these barriers reduced average housing accessibility problem scores from 148 to 134. The findings provide evidence that an accessible home can maintain independence and reduce the need for formal care services, which is both individually beneficial and economically relevant for an aging society (Slaug et al., 2017).

In Germany, the barrier-free design is regulated by DIN 18040 series of standards, by the German Institute for Standardization (Deutsches Institut für Normung). Based on both the German DIN standards and other international research, universal design principles essential for aging in place include:

Wayfinding and Spatial Organization

Wayfinding principles can also be applied to intergenerational housing because it can assist older adults in navigating shared spaces independently. Successful wayfinding is essential for older adults to maintain independence and confidence when navigating their homes. Spatial organization directly impacts whether older adults can easily locate destinations and remain active (Engelen et al., 2022). Wayfinding can be incorporated by using design elements like signage, contrast in finishes, and structural applications. Leung et al. (2019) study of how the indoor built environment (IBE) impacts the quality of life for older adult individuals with dementia in care homes recommends using signage with recognizable icons. Furthermore, when destinations are located along clearly defined pathways or corridors, they are more likely to be used by older adults, and this contributes to a more active lifestyle (Leung et al., 2019, pp. 96). The study also highlights a positive correlation between indoor recreational walking and the perception of looped corridors. However, there was a negative correlation between indoor recreational walking and the number of stories of the building in assisted living facilities (Leung et al., 2019, pp. 96). It should be noted that people living with dementia have an easier time navigating through paths with clear signs to their destinations than paths with changing directions (Leung et al., 2019). The takeaway from these findings is that important destinations should be positioned along clearly defined, frequently used pathways. Also, looped hallways should be utilized to encourage indoor walking.

Lighting and Thermal Comfort

Lighting and thermal comfort are important when designing intergenerational homes in the German context. While specific studies on lighting optimization for German older adults are limited, research from a similar climate can provide relevant insights. In the study conducted by Wang and Guo (2023), the authors investigate how specific design variables impact the daylighting and thermal performance of bedrooms for older adult individuals in Tianjin, China. The results show that older adults, who typically spend more time indoors than other age groups, are particularly sensitive to indoor environmental quality (Wang & Guo, 2023). Therefore, it is important to optimize the daylight and thermal comfort in older adults' living spaces.

Wang and Guo (2023) measured daylighting performance by using daylight autonomy (DA) and useful daylight illuminance (UDI). The findings show that the optimized bedroom designs for older adult individuals increase DA by 42.7%, UDI by 4.9%, and reduce the proportion of thermal discomfort hours (PDH) by 1.7% (Wang & Guo, 2023). These improvements are crucial for older adults' health and daily comfort. Adequate daylight not only illuminates the space but also supports the biological rhythms of older adults. For instance, receiving more than 1000 lux of natural light for at least one hour daily helps maintain melatonin levels and ensures better sleep quality (Wang & Guo, 2023).

Wang and Guo (2023) also emphasizes that thermal comfort in bedrooms is best achieved when older adult individuals are housed in middle rooms, as these spaces are buffered by adjacent rooms, leading to more stable temperatures. Additionally, the optimal room orientation for older adults' bedrooms is south or slightly southeast, which ensures better daylight access without the negative impacts of west-facing windows that tend to overheat the interior. Smaller depth-bay ratios and bay windows are also recommended to create a more stable thermal environment. Bay windows, in particular, serve as thermal buffers and reduce exposure to external temperature fluctuations (Wang & Guo, 2023).

Importantly, the balance between daylighting and thermal comfort is critical for older adults, as excessive daylighting can inadvertently lead to overheating and discomfort. The study's results highlight that while a higher daylight factor can improve the lighting quality of a space, it must be carefully balanced with thermal comfort considerations to ensure that indoor temperatures remain within a comfortable range (Wang & Guo, 2023). Consequently, design strategies that include adjustable shading, careful window-to-wall ratios, and optimized window forms, such as bay windows, can help achieve a harmonious balance that caters to the unique needs of older adult residents.

Autonomy and Control

In her article on the design for older adults, Miso Kim (2023) discusses the importance of having autonomy and control as older adults. She argues that autonomy is linked to well-being and that understanding the principle of autonomy is essential in designing services for the older adult population. According to Kim, autonomy can be categorized into four key dimensions: the power to make decisions, capacity for action, sense of control, and self-governance (Kim, 2023). It is important that older adults be involved in decisions that pertain to them rather than being passive recipients of care. Therefore, the design process should involve input from older adults and create conditions that enhance opportunities for autonomy. Having autonomy is very important because it allows individuals to make choices that align with their values and preferences (Kim, 2023). Studies indicate that when individuals' needs for autonomy are met, they experience a greater sense of well-being, while a lack of autonomy can lead to feelings of powerlessness and alienation (Kim, 2023). The takeaway is that design solutions should avoid a one-size-fits-all approach and allow for control and personalization.

Design for Social Interaction and Mental Well-Being

A study by Snowden et. al, 2010 reveals that older adults can experience a slight decline in mental well-being as they age (Snowden et al., 2010). The study tracked the mental well-being of older adults aged 65-74 over 10 years from 1995 to 2005 and discovered that the mental well-being score decreased by 2.9% over the years. The decline in mental well-being was significantly associated with worsening emotional and psychological well-being (Snowden et al., 2010). The study also found that an increase in physical ailments was linked to a decline in mental well-being. Although increases in chronic conditions were not associated with changes in mental well-being scores (Snowden et al., 2010). Older adults face several key mental health challenges, including an increased risk of mental disorders like neurological disorders, depression, and dementia. Mental health conditions in older adults are frequently not diagnosed or treated adequately (Javed, 2022). An editorial by Afzal Javed (2022) indicates that many older adults' ailments go underdiagnosed, leading to affected older adults struggling without the proper help, which can lead to distress and reduced QoL.

Having a community is crucial for older adults as it significantly contributes to their sense of belonging, emotional well-being, and overall quality of life (Fortune & Butler, 2023). The study by Fortune and Butler (2023) on the role of community centers in fostering a sense of belonging among older adults highlights that older adults who feel connected to a community are less likely to experience depression and anxiety. Also, a strong sense of belonging can help older adults cope with the challenges and losses that often come with aging (Fortune & Butler, 2023).

Multigenerational households can serve as a significant source of community for older adults. Living in a multigenerational household can provide older adults with regular social interaction (Salvage et al., 1989). Also, multigenerational living situations can be a source of built-in support networks for older adults. Family members can assist with daily tasks, provide transportation, and help with healthcare needs, which can be particularly beneficial as older adults face mobility or health challenges (Burgess & Muir, 2020). In Gupta and Wong's (2024) report, we see that older adults living in multigenerational families have a 23% lower chance of experiencing frequent mental distress compared to those living alone (Das Gupta & Wong, 2023). The presence of shared spaces within the households, such as open kitchens and communal living areas, can help foster interaction and engagement among family members (Mnea & Zairul, 2023).

In the German multigenerational housing context, the term "intergenerational" is more appropriate (see p. 12). The Wohnen für (Mehr)Generationen program emphasizes the importance of mutual support between generations and recognizes that intentional social design can combat isolation while respecting older adults' need for independence and privacy (Molinsky et al., 2023). However, elements of the multigenerational living model can address some of the issues such as the lack of intergenerational connection that may be present in the German *Mehrgenerationenhaus* model.

The study by Li et al. 2020 highlights the development of interactive systems designed to enhance social connections and improve the quality of life for older adults (Li et al., 2020). The study suggests that strengthening the social circles of older adults involves enhancing their self-confidence by creating opportunities to focus on what they already find interesting. They interviewed seventeen older adults ranging from 81 to 92 years, along with their caregivers, and found that most had a strong interest in connecting with family members, especially their children (Li et al., 2020). The study also highlighted the importance of storytelling for older adults. The older adults from this study had feelings of nostalgia and kept physical mementos from their past lives. So, having the opportunity to tell stories from their past life could create in them a sense of achievement and self-confidence (Li et al., 2020).

When designing for social interaction for older adults, it should conform to their current life habits and be integrated into daily routines rather than being forced. The study by Li et al. 2020 highlights three case studies of assisted living facilities that focused on the residents' existing daily activities and routines to come up with a design solution that naturally encouraged social participation. The case studies showed that older adults in the facility had the habits of people watching through a window, reading in public areas, or talking with peers. It is encouraged that social interactions be promoted through natural and unconscious means. This can be achieved by integrating it into the existing older adults' daily habits and activities.

Section 2.1 Summary: Design Strategies for Accessibility

Based on the reviewed literature, key design strategies for supporting aging in place include:

Environmental Features:
- Optimized natural lighting (south-facing, bay windows, adjustable shading)
- Thermal comfort through strategic room placement
- Clear wayfinding with visual landmarks and consistent circulation
- Single-level or easily accessible multi-floor layouts

Spatial Organization:
- Looped circulation paths
- Clear sightlines to key destinations
- Middle placement of elder bedrooms for climate buffering
- Proximity to shared spaces without requiring navigation of complex routes

Autonomy Support:
- Adjustable lighting, temperature, and privacy controls
- Multiple gathering spaces offering choice
- Opportunities for personalization
- Non-institutional aesthetic

Social Infrastructure:
- Activity zones that build on existing routines
- Spaces for both active participation and passive observation
- Visual connections between spaces
- Display areas for personal artifacts and storytelling

These strategies inform the spatial planning, environmental design, and material selection in the design proposal. (See Chapter 6)

2.2 PRIVACY: Spatial Strategies for Independence in Shared Living

Introduction

While intergenerational living offers significant benefits, lack of privacy is consistently cited as the primary concern for residents (Judd, n.d.). Privacy is not merely about physical separation, it is also about control over social interaction, personal space, sensory environment, and information (Berado, 1998). This section examines how interior design can provide meaningful privacy while allowing for social interaction.

Defining Privacy in Intergenerational Households

Berado (1998), in his article about family privacy issues and concepts, defines family privacy as the right of families to control access to their personal information and to maintain boundaries that protect their intimate relationships (Berado, 1998). Berado addresses family privacy by examining its significance, challenges, and the evolving landscape influenced by societal changes and technology. Family privacy is essential for fostering trust, intimacy, and security within family units (Berado, 1998).

Furthermore, Gale and Park 2010 define the concept of privacy in the context of family living arrangements as the ability of individuals to have personal space where they can be alone and engage in activities without interruption. Privacy is associated with having designated areas within the home, such as bedrooms, where family members can retreat to be alone (Gale & Park, 2010). This space is crucial for maintaining individual autonomy and self-identity, especially in a intergenerational setting where multiple generations share living quarters. The study by Gale and Park (2010) highlights that privacy is not just about physical space but also about having control over that space.

Participants expressed a desire for areas that they could claim as their own, where they felt secure and undisturbed. This sense of ownership contributes to their overall satisfaction with the living environment (Gale & Park, 2010, pp. 31). The study emphasizes the importance of balancing privacy with opportunities for interaction. While family members need spaces for personal reflection and solitude, they also benefit from communal areas that facilitate family bonding and shared activities. This dual need for privacy and interaction is particularly significant in intergenerational homes, where the dynamics of relationships can be complex (Gale & Park, 2010, pp. 25).

Bruce Judd conducted an online survey of 392 residents from intergenerational and multigenerational households in Australia and revealed that most respondents (78%) indicated companionship and support as positive aspects of intergenerational living (Judd, n.d.). Other benefits included practicality and convenience (12%), intergenerational solidarity (11%), and care arrangements (5%). The survey highlighted several concerns related to dwelling design. The most cited issue was a lack of privacy and interference (59%), followed by negative impacts on family relationships (19%) and tensions over shared chores (14%). Space inadequacy (9%), lack of flexibility (7%), and noise (3%) were also noted as significant concerns (Judd, n.d. pp. 139). The findings indicated that inappropriate housing design contributed to problems such as privacy issues and intergenerational tensions. This suggests that the physical environment plays a crucial role in the overall satisfaction of intergenerational living. Therefore, it is important to consider both the social dynamics and physical design in creating a supportive environment for intergenerational households (Judd, n.d.).

Amanda Gale & Nam-Kyu Park, in their study, interviewed 10 families to investigate the dynamics of intergenerational living. The study focused on how home environments can support both privacy and interaction between older parents and their adult children. The study found that most of both older adult parents and adult children identified the bedroom as the primary space for privacy, while the kitchen was cited as the most common area for family interactions (Gale & Park, 2010). This aligns with previous research, which indicates that individuals often feel they have the most control when they have privacy. The study also highlights that environmental factors, such as spatial layout and the types of rooms, significantly affect residents' perceptions of privacy and interaction. The design of the home should support the needs of both the older adult parent and the children, allowing for a blend of personal space and communal areas for interaction (Gale & Park, 2010, pp.28).

TAKE AWAY

Types of Privacy Needed:

- Visual privacy: Control over being seen
- Acoustic privacy: Control over being heard
- Territorial privacy: Control over personal space
- Informational privacy: Control over personal information
- Interactional privacy: Control over social encounters

Design Implications:

- Privacy requires both physical design features and a sense of control
- Different spaces require different levels of privacy
- Privacy needs vary by generation, culture, and individual preference
- Color-coding by floor helps residents identify "their" territory
- Provide display areas for personal belongings and photos
- Allow customization of private spaces (paint, fixtures, layouts where possible)
- Create identifiable zones for different family units
- Include built-in storage for personal items
- Use material/color differentiation to establish territories

Design Application

The takeaway from the studies and surveys above suggests that homes should be designed with flexibility in mind to allow spaces to serve multiple functions. For instance, rooms that can be easily adapted for different activities. For instance, a family room can also serve as a workspace (Gale & Park, 2010, pp. 37)

The design should also allow the incorporating of elements that allow family members to personalize their spaces can enhance their sense of ownership and satisfaction with the home. This could include features like built-in storage for personal belongings or areas that can be decorated according to individual preferences (Gale & Park, 2010, pp. 38). Also, designers should consider the varying needs of different age groups within intergenerational households. For example, older adults may require accessible features and quiet areas, while younger adults may prioritize spaces for socializing and activities. Tailoring designs to these needs can improve the overall functionality of the home and provide a supportive environment for all members of the household. Finally, Gale and Park 2010 recognize the limitations of their study and suggest that further research be done on intergenerational families from diverse geographic groups and cultures. The design of intergenerational homes should be culturally sensitive and adaptable to different family structures and values.

Spatial Zoning and Hierarchy of Privacy

Traditional intergenerational architectures often employ hierarchical privacy systems with graduated zones from public to private.

How Turkish Culture Approaches Intergenerational Living

Turkish traditional architecture is a strong precedent for multigenerational living with strong implications for addressing generational interaction issues in intergenerational living. The layout of the homes is usually influenced by historical traditions, religious values, climate adaptation, and social structures.

Over time, the interior design of Turkish homes has evolved to meet the changing needs of upcoming generations. There is a focus on the relationship between indoor and outdoor spaces, and to ensure that room settings and orientations are flexible and adaptable.

As Islamic values became more influential in Turkish society, interior layouts prioritized privacy, especially for women. The open galleries of the early Hayat houses gradually evolved into internal courtyards surrounded by higher walls (Özge et al., 2019). Homes were designed with strict divisions between male and female spaces, and often the finest, best-lit rooms were reserved for male guests during the day and reverted to family use at night. This change in layout created a safe, enclosed space where women, children, and older adult family members could engage in daily life without being exposed to the outside world (Özge et al., 2019).

A layout plan that emerged was the cruciform plan layout, which resembles a cross with a central space and symmetrical wings extending in four directions (Kelly, 2021). This plan layout made it easier to create segregated areas for men and women. Each wing served a distinct function and helped to create separation between private family areas and guest spaces. To allow for more privacy, rooms opened inward toward the central space, which was the sofa, rather than outward toward the streets. In larger homes like the Koceoglu or Yasinci palaces, the cruciform shape is mirrored along a vertical axis to create distinct male and female quarters (Özçalik, 2021).

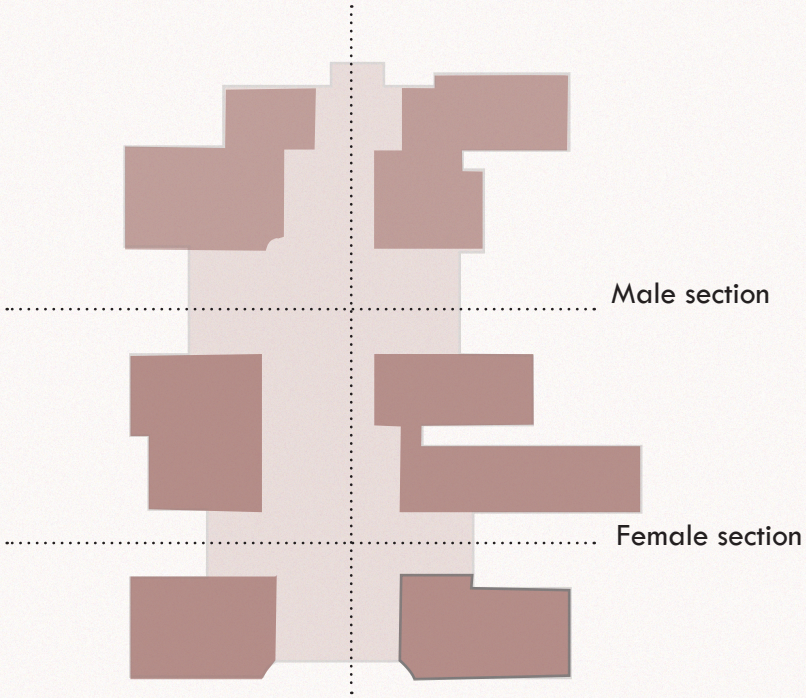


Fig 2. Koceoglu Palace showing cruciform plan

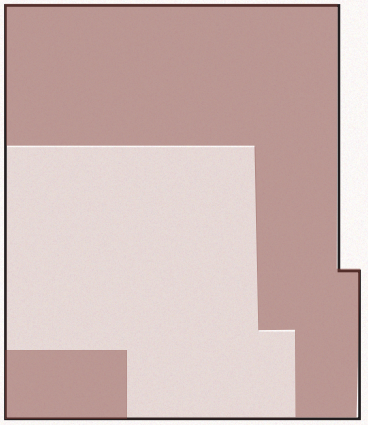


Fig 3. Halil O'zyavuz Harran house plan

Communal area

Private quarters

Take away from the Turkish approach:

- Cruciform plan layouts create segregated areas
- Rooms oriented inward toward the central sofa, not outward to the street
- Transition spaces (hayat, sofa) buffer between zones
- Multiple access points for different user group

Privacy Approach in Nigerian Architecture

Babangida and Katsina (2018) provide an overview of a four-bedroom duplex that was redesigned to incorporate the Islamic Design Principles (IDP) for achieving family privacy. The redesign focused on reorienting spaces such as bedrooms and living areas to enhance privacy. For instance, bedrooms were placed away from public areas of the house, and the windows were designed to minimize visibility from outside (Babangida & Katsina, 2018, pp. 11). The design of the bungalows featured an enclosed courtyard that provided a private outdoor space. The idea of spatial segregation was also explored in the study. Separate entrances were incorporated for male and female family members to provide privacy for the female family members. In terms of multigenerational living arrangements, this approach can be applied by providing separate entrances for the various generations to preserve privacy between the generations. The use of screens and fences was also incorporated to provide an extra layer of privacy. The rooms within the home were oriented to ensure that private areas (like bedrooms) are not directly visible from common areas (like living rooms or dining areas) (Babangida & Katsina, 2018, pp. 10). This arrangement helps to minimize direct visibility and interaction with visitors who may not be part of the immediate family. By orienting windows strategically and using architectural elements that block sightlines, the design protects occupants from direct and indirect views from the outside, such as from passersby and neighboring houses (Babangida & Katsina, 2018, pp. 15).

The article by Babangida & Katsina (2018) also outlines a hierarchy of privacy that is reflected in the layout of the house. The first level of privacy protects occupants from the outside world, while the second level controls interactions between female family members and unrelated male visitors. The innermost level of privacy is reserved for close family members, allowing for comfortable interactions among them (Babangida & Katsina, 2018, pp. 17). The layout incorporates various design elements, such as verandas or shaded areas, to provide visual privacy for specific spaces, like kitchens, where female members may work (Babangida & Katsina, 2018, pp. 14).

Take Away from the Nigerian Approach:

- Courtyard as a buffer between the outside world and family quarters
- Separate entrances for different family members/guests
- Zaure (threshold space) serves multiple privacy functions
- Rooms oriented away from public areas

Design Implications:

- Organize spaces in graduated zones from public to private
- Use transition spaces (hallways, courtyards, buffer rooms) between zones
- Orient bedroom windows away from shared/public spaces
- Provide multiple circulation paths so users can choose the level of interaction
- Consider separate or semi-separate entrances for different family units

Acoustic and Visual Privacy Strategies

For this section, I looked into the case study of Çakıraga Mansion in Turkey and how privacy is achieved through multiple strategies.

The Çakıraga Mansion was built in 1761 to the Çakıraga family. The mansion was for a wealthy merchant who wanted to house his extended family (Inci Kuyulu Ersoy, 2025). This mansion provides valuable insights into how architecture can promote privacy and flexibility for a large family living under the same roof. Firstly, the Çakıraga mansion is divided into two distinct zones, the harem and the selamlik zone. The harem zone is for family members, is located on the upper floors and rear sections. This zone is restricted to family members and houses the family's sleeping quarters and gathering spaces (Inci Kuyulu Ersoy, nd). The selamlik zone is located on the lower floor and is used for formal functions and to entertain guests. These zones are separated by transition spaces such as hallways, inner courtyards, or shared kitchens. Privacy without isolation is established with wooden screens called mashrabiya. The house also makes use of thick walls and specific layout orientation to minimize acoustic transfer (Inci Kuyulu Ersoy, nd).

There are multiple points of entry into the house, and sections of the house are not equally accessible to everyone. Certain parts of the home are accessible only to specific family members, which helps to preserve autonomy within the home. Within the house, multiple eating and gathering spots also allow for choice and autonomy while also allowing the family members to interact with one another (Inci Kuyulu Ersoy, nd).

Takeaway from Çakıraga Mansion:

- Mashrabiya (wooden screens) provide visual privacy while allowing airflow
- Thick walls minimize acoustic transfer
- Specific layout orientation reduces sound transmission
- Multiple eating/gathering spots reduce crowding and noise
- Layer privacy strategies (visual + acoustic + spatial)
- Use screens/partitions for flexible privacy
- Position buffer spaces between private and shared zones
- Select materials that absorb sound in shared spaces
- Avoid bedroom-to-bedroom shared walls when possible

Flexibility and Adaptability

Flexibility Approach in Japan Architecture

In many Asian cultures, multigenerational living is supported through architectural implementations that allow spaces to adapt organically to the changing needs of families. An example of this is the Japanese Minka homes that employ flexible layouts that can be easily reconfigured to serve multiple functions throughout the day. The rooms in Minka homes are not defined by the fixed placement of furniture but by the sequence of function within the rooms (Kotrc, 2020). Due to the minimal presence of furniture, it is easy to rearrange the room's layout multiple times a day to serve varying purposes.

Also, rooms do not have obvious entrance and exit locations between spaces. However, spatial hierarchy is established through the application of different floor materials, varying floor heights, and wall systems. The raised floor height is set so that the eye level of a person sitting on the floor aligns with a person standing on the adjacent lower floor (Kotrc, 2020). Furthermore, rooms are demarcated using lightweight screen sliding panels. These movable partitions allow rooms to serve multiple functions throughout the day. For instance, a room can transform from a communal gathering area during the day to a private sleeping space at night (Rashid & Ara, 2015).

An additional approach developed in Indonesia, known as "Satu untuk Tiga" which means one for three, addresses the need for both shared interaction and individual autonomy (Widiyanto & Carina, 2021). This approach integrates shared spaces, such as kitchens and living areas, with private quarters tailored to each generation. By doing so, it encourages safe interaction while maintaining personal space and identity for all age groups (Widiyanto & Carina, 2021).

Takeaway from Japanese Minka homes

Japanese Minka homes offer valuable lessons in designing for flexibility and adaptability. The idea of rooms serving multiple functions throughout the day aligns well with the dynamic needs of a three-generational household. In my proposed design, I can incorporate flexible spatial arrangements by minimizing fixed furniture and using sliding partitions or curtains to allow rooms to shift between communal and private use depending on the time of day or the activities taking place.

The spatial hierarchy in Minka homes, created through varying floor levels and materials, also presents an opportunity to subtly delineate between shared and private zones without resorting to solid, permanent walls. This can be especially useful in colder climates like Germany, where open-air courtyards may not be feasible year-round. Instead, interior zoning through materials and raised platforms could visually and functionally divide spaces while maintaining a sense of openness and flow.

Japanese Minka Strategies:

- Sliding partitions (fusuma, shoji) allow rooms to expand/contract
- Multi-functional spaces serve different purposes throughout day
- Minimal fixed furniture enables reconfiguration
- Floor level changes and material transitions define zones without walls
- Seasonal room use (summer rooms vs. winter rooms)

Indonesian “Satu untuk Tiga” Approach:

- “One for three” integrates shared spaces with private quarters
- Adaptable spaces accommodate changing family structures
- Safe interaction points with retreat options

Design Implications:

- Use movable partitions rather than all fixed walls
- Design rooms for multiple functions
- Provide furniture flexibility (built-in storage, not fixed layouts)
- Consider seasonal use patterns
- Plan for lifecycle changes (children aging, parents’ needs changing)

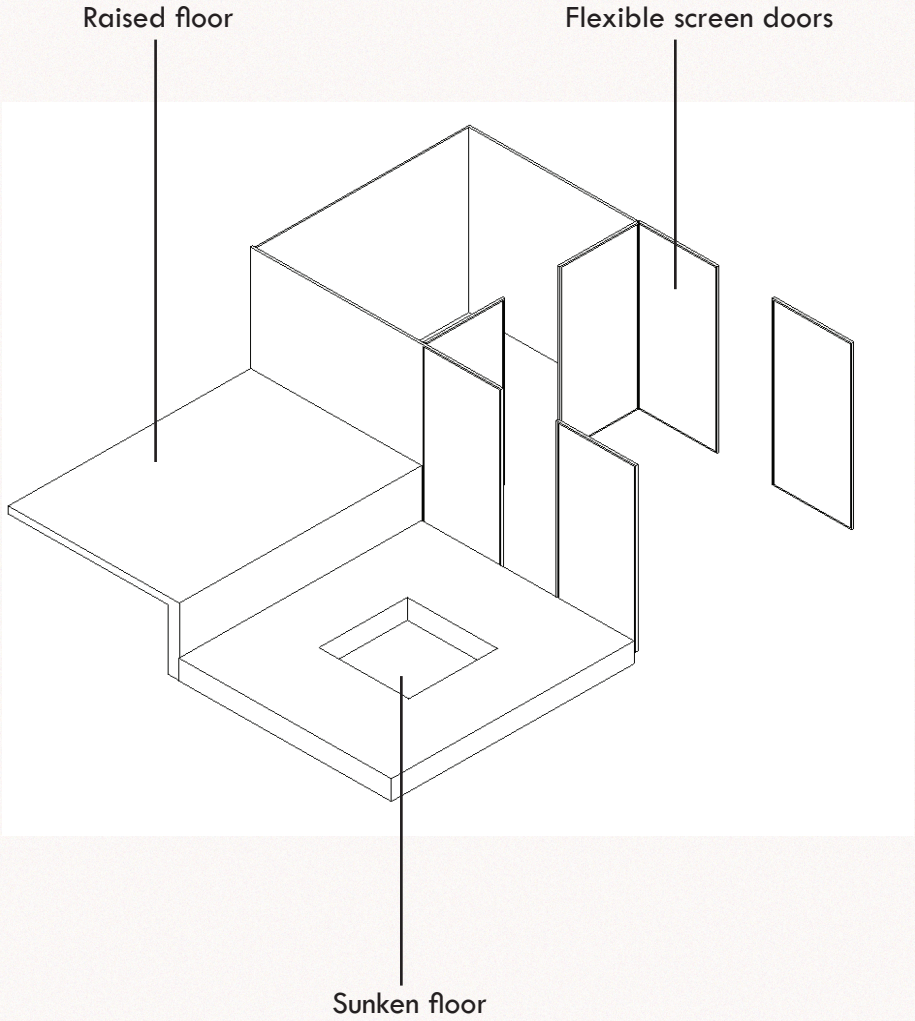


Fig 4. Spatial hierarchy in Minka homes.

Personhood Theory and Contact Theory

Personhood theory advocates for person-centered care, which asserts that every individual is worthy of respect and high-quality interpersonal care (Radha Krishna & Alsuwaigh, 2015). This involves recognizing the unique needs, values, and abilities of individuals, regardless of their age (Radha Krishna & Alsuwaigh, 2015). The theory identifies several tenets that indicate a person's well-being, including the ability to express emotions, initiate social contact, and experience affection and creativity (Norouzi et al., 2023). These aspects are crucial for fostering meaningful interactions between older adults and children in intergenerational settings. The principles of personhood theory can guide architects in creating spaces that promote independence, well-being, and cultural sensitivity. "By designing environments that allow for empowerment of choice and autonomy, architects can facilitate positive interactions and enhance the quality of life for participants" (Norouzi et al., 2023. pp.500). The article suggests that combining personhood theory with contact theory can provide a comprehensive approach to architectural design (Norouzi et al., 2023, pp.501). While contact theory focuses on the conditions necessary for positive intergroup interactions, personhood theory ensures that the individuality and dignity of each participant are respected.

Contact theory highlights the need for informal interactions that can lead to deeper connections and understanding between individuals of different ages. The principles of contact theory can inform architectural design by guiding the creation of spaces that encourage intergroup interactions (Norouzi et al., 2023, pp. 501). By designing environments that facilitate equal status and cooperation, architects can enhance the quality of intergenerational programs and promote positive relationships (Norouzi et al., 2023, pp. 501). Combining contact theory with personhood theory can provide a holistic approach to designing intergenerational spaces.

The Ring Theory of Personhood

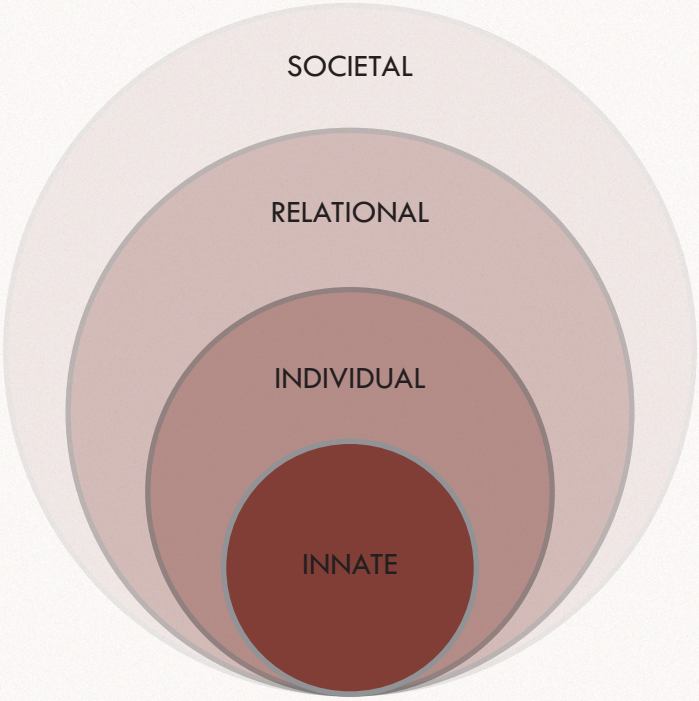


Fig. 5. The Ring Theory of Personhood presents personhood as multi-dimensional, with each ring reflecting different aspects of human identity. The innate ring is the start of life itself, the individual aspect is shaped by personal identity, the relational ring is influenced by close relationships, and societal ring is formed by the broader community, cultural norms, legal standards, and societal expectations (Radha Krishna & Alsuwaigh, 2015).

Key takeaways

- Participants in Gale & Park study emphasized desire for spaces they could "claim as their own"
- Personalization contributes to overall satisfaction with living environment
- Even in shared buildings (Wohnpark), residents decorate doors with personal artifacts

Color-coding by floor helps residents identify "their" territory

Design Implications:

- Provide display areas for personal belongings and photos
- Allow customization of private spaces (paint, fixtures, layouts where possible)
- Create identifiable zones for different family units
- Include built-in storage for personal items
- Use material/color differentiation to establish territories

Section 2.2 Summary: Design Strategies for Privacy

Based on reviewed literature, key strategies for privacy in intergenerational households include:

Spatial Organization:

- Hierarchical zoning from public to private
- Transition/buffer spaces between zones
- Multiple circulation paths offering choice
- Separate or semi-separate entrances for family units

Sensory Privacy:

- Visual screening (partitions, strategic windows, level changes)
- Acoustic separation (thick walls, buffer spaces, sound-absorbing materials)
- Layered privacy strategies (not relying on walls alone)

Flexibility:

- Movable partitions for adjustable privacy
- Multi-functional spaces
- Seasonal adaptability
- Lifecycle accommodation

Territorial Control:

- Personalization opportunities
- Material/color differentiation between zones
- Display areas for personal artifacts
- Identifiable “ownership” of spaces

These strategies will inform zoning, circulation, material selection, and spatial configuration in the design proposal.

2.3 CONNECTION: Design for Social Interaction Across Generations

Introduction

While privacy enables autonomy, connection provides the social and caregiving benefits that make intergenerational living a valuable option. Research consistently shows that social participation and interaction improve well-being and happiness for older adults (Fernandez-Portero et al., 2023). Yet these interactions must feel natural and voluntary rather than forced. This section examines how spatial design can facilitate intergenerational connection while respecting individual agency.

Social Connections and Community Engagement

Having a community is crucial for older adults as it significantly contributes to their sense of belonging, emotional well-being, and overall quality of life (Fortune & Butler, 2023). A study by Fortune and Butler (2023) on the role of community centers in fostering a sense of belonging among older adults highlights that older adults who feel connected to a community are less likely to experience depression and anxiety (Fortune & Butler, 2023). Also, a strong sense of belonging can help older adults cope with the challenges and losses that often come with aging (Fortune & Butler, 2023).

Intergenerational households with elements of multigenerational living can serve as a significant source of community for older adults. Living in this hybrid multi- and inter-generational household can provide older adults with regular social interaction (Salvage et al., 1989).

Also, this type of intergenerational living situations can be a source of built-in support networks for older adults. Family members can assist with daily tasks, provide transportation, and help with healthcare needs, which can be particularly beneficial as older adults face mobility or health challenges (Burgess & Muir, 2020). In Das Gupta and Wong's 2024 report, we see that older adults living in multigenerational families have a 23% lower chance of experiencing frequent mental distress compared to those living alone (Das Gupta & Wong, 2023). The presence of shared spaces within the households, such as open kitchens and communal living areas, can help foster interaction and engagement among family members (Mnea & Zairul, 2023).

The physical environment plays a crucial role in promoting social interactions among older adults. Engelen et al. in their 2021 review on the design for healthy aging, highlight that the built environment for older adults should be designed to facilitate social interactions (Engelen et al., 2022).

Intergenerational Households as Social Support:

Intergenerational households, with elements of multigenerational living, can provide built-in social networks to help reduce isolation. Research shows older adults in multigenerational families have a 23% lower chance of frequent mental distress compared to those living alone (Das Gupta & Wong, 2023). The study by Li et al. 2020 highlights the development of interactive systems designed to enhance social connections and improve the quality of life for older adults (Li et al., 2020). The study suggests that strengthening the social circles of older adults involves enhancing their self-confidence by creating opportunities to focus on what they already find interesting. They interviewed seventeen older adults ranging from 81 to 92 years, along with their caregivers, and found that most had a strong interest in connecting with family members, especially their children (Li et al., 2020). The study also highlighted the importance of storytelling for older adults. The older adults from this study had feelings of nostalgia and kept physical mementos from their past lives. So, having the opportunity to tell stories from their past life could create in them a sense of achievement and self-confidence (Li et al., 2020).

When designing for social interaction for older adults, it should conform to their current life habits and be integrated into daily routines rather than being forced. The study by Li et al. 2020 highlights three case studies of assisted living facilities that focused on the residents' existing daily activities and routines to come up with a design solution that naturally encouraged social participation. The case studies showed that older adults in the facility had the habits of people watching through a window, reading in public areas, or talking with peers. It is encouraged that social interactions be promoted through natural and unconscious means. This can be achieved by integrating it into the existing older adults' daily habits and activities.

Takeaway

Social interactions should be promoted through natural and unconscious means by integrating connection opportunities into existing older adults' daily habits and activities (Li et al., 2020).

Design Implications:

- Position seating near windows for people-watching opportunities
- Create reading nooks visible from circulation paths
- Design activity zones where different generations can work side-by-side
- Integrate display areas for storytelling through photographs and mementos
- Ensure shared spaces are "on the way" to other destinations, not isolated
- Opportunities for storytelling and sharing past experiences
- Visual connection between activity zones
- Shared spaces positioned along natural circulation paths
- Activity pockets near communal areas
- Display opportunities for personal mementos and storytelling
- Spaces that accommodate both active participation and passive observation

Courtyards and Central Gathering Spaces

Traditional multigenerational architecture across cultures consistently employ central courtyards as social anchors. Vernacular Nigerian architecture is characterized by courtyards that serve as a gathering point for family meals, celebrations, and conversations. Courtyards in Yoruba homes, known as Agbo Ile, are deeply rooted in Yoruba beliefs of interconnectedness (Paul Agboola & Zango, 2014). The courtyards symbolize harmony and shared living and embody a balance of privacy, communal living, and interaction with nature. They are usually rectangular or square open spaces surrounded by rooms and verandas (Paul Agboola & Zango, 2014). According to the Yorubas, the Agbo Ile is a very important aspect of the family home because it serves as a nucleus for social connection and family gatherings. The Yoruba people place importance on family ties and community connections because they believe we all come from a common ancestor called Oduduwa. Agbo Ile is where family members can come together to have small-scale ceremonies like traditional marriages, family meetings, funerals, and so on. Courtyards are seen to be very necessary in fortifying family ties (Osasona, 2008). Its spatial organization supports the unique needs of aging family members while fostering interaction among younger generations, to offer a solution to the challenges of aging in place.

The cruciform layout in traditional Turkish homes not only allowed for privacy, but having the rooms arranged systematically around a courtyard allowed for rooms to be easily added and removed (Kelly, 2021). This horizontal flexibility encouraged the expansion of families while maintaining communal living. Furthermore, modular expansion was further established in the Harran houses. Harran houses originated in Southeastern Turkey, which is a hot and arid desert climate. The home layout featured rooms designed as conical domes connected by courtyards (Kelly, 2021). This layout allowed families to live in clusters around a shared communal dynamic space where food preparation, gardening, celebrations, and daily socialization took place.

This modular flexibility directly mirrored the organic growth of extended families and allowed generations to live side-by-side in evolving spatial arrangements without needing to relocate. In Harran houses, the number of rooms is determined by the income of the building owners and the size of the household. As the family increases, new rooms are added to the perimeter of the home, typically, along the east-west axis of the courtyard. As shown in figure 5, arranging the rooms along one side was initially done to create a thermal buffer from the solar radiation from the west (Özdeniz et al., 1998).

Adaptation for Contemporary German Context:
In cold climates like Bad Kreuznach, where outdoor courtyards may not be usable year-round, an indoor atrium or multi-story central space can serve similar functions. The Envelope House precedent (Singapore) demonstrates how a triple-volume indoor courtyard with water features and greenery can create a social anchor regardless of exterior climate.

Design Implications:
- Create central visual/spatial anchor visible from multiple floors
- Design neutral gathering spaces not “belonging” to one generation
- Include green elements (plants, water features) even in indoor courtyards
- Provide seating for both active participation and passive observation
- Ensure courtyard is naturally encountered during daily circulation
- Consider multi-story visual connections for awareness across generations

The Kitchen as Social Anchor

Participants of a 2024 study of 7 older adults in London, aged 67 to 80, emphasized that "the kitchen is not merely a place for cooking but also serves as a central hub for family interactions and communication (Sal Moslehian et al., 2023). One participant described baking with her granddaughter as "something we do together," noting the intergenerational knowledge transfer from cooking together to the granddaughter, who is now creating "wonderful cakes on her own (Sal Moslehian et al., 2023)." Another participant described the kitchen as the setting for family gatherings and celebrations, stating, “We party with friends and we gather the family together there (Sal Moslehian et al., 2023).” The kitchen is seen as not just a space to prepare meals but a space for family members to create and share pleasant memories.

The study also examined the physical environment of the kitchen, focusing on spatial layout and ergonomics with particular attention to storage space, worktop heights, cabinet accessibility, and ease of movement for users of different ages and abilities. Participants emphasized the importance of these practical design features, highlighting the need for adequate storage, accessible cabinets, and thoughtfully designed layouts that support mobility (Sal Moslehian et al., 2023). They also stressed the importance of minimizing physical strain and expressed a clear preference for furniture and appliances that prioritize usability, comfort, and functionality. Lighting issues were also a concern; therefore, multigenerational designs should ensure work surfaces are well-lit. The review examined four feature categories with implications for intergenerational design. Kitchen size and layout findings show that centrality of kitchen layout enables social interactions between household members, with open-plan configurations facilitating family interaction more than closed kitchens (Sal Moslehian et al., 2023). Furthermore, a 2023 review, examining kitchen and dining spatial design impacts, notes that younger adults show preferences for an open kitchen layout with a combined dining, whereas older adults prefer a layout with well-defined boundaries between the kitchen and dining room (Sal Moslehian et al., 2023).

Miller et al.'s (2003) conducted a study of 24 multigenerational families and identified that the kitchen was the most common location for family interaction, particularly for parent-child relationships. Multigenerational connections occurring in kitchen spaces included talking, eating, doing homework, and reading. All these activities happen simultaneously in the evening when families are home together (Miller & Workplace, 2003). Miller et al.'s (2003) studies revealed that families expressed a strong preference for spacious kitchens that can accommodate multiple activities like cooking, dining, cleaning, homework, and conversations simultaneously (Miller & Workplace, 2003). Therefore, the kitchen design should allow for flexibility to meet the varying needs of different family members and adapt as children grow older. While kitchens dominated parent-child interaction, sibling interactions occurred more frequently in living rooms, where activities included watching television, playing games, and engaging in dramatic play (Miller & Workplace, 2003, p. 56). This suggests that intergenerational homes require multiple social spaces to serve different relationship dynamics.

Design implications

Spatial Layout and Connectivity

- Use open-plan or connected kitchen configurations to encourage intergenerational interaction.
- Incorporate open archways between the kitchen and adjacent spaces for visual and physical connection.
- Design high ceilings to create a sense of spaciousness and openness.
- Ensure visual and physical connections between the kitchen and outdoor spaces to extend social activity areas.
- Include clear circulation paths to accommodate multiple users simultaneously and support mobility for all ages.
- Design for peak-use times (e.g., evenings and mealtimes) when household overlap and social interaction are highest.

Social and Functional Zoning

- Create generous, multi-functional kitchens that act as primary social hubs for family activities.
- Add activity pockets or alcoves within or near the kitchen for simultaneous or parallel activities.
- Provide secondary gathering spaces (e.g., living rooms or dining areas) to support different types of interaction.
- Use sociopetal seating arrangements that promote conversation and togetherness, avoiding sociofugal layouts that discourage engagement.
- Include sufficient dining space to accommodate all age groups and facilitate shared meals.

Ergonomics and Accessibility

- Prioritize modular and adaptable design, allowing countertops and cabinetry to be adjustable according to users' physical abilities.
- Provide varied counter heights (e.g., 28–30 inches for wheelchair accessibility) and multiple work surfaces/stations for flexibility.
- Ensure cabinet accessibility, adequate storage, and ease of movement to reduce physical strain and improve efficiency.
- Select furniture and appliances designed with high usability, comfort, and safety in mind.

Supportive Features and Household Integration

- Include abundant storage and strategically located utilities (e.g., laundry rooms) to keep family members in proximity during chores.
- Integrate kitchen islands that can convert into dining or social spaces, reinforcing the kitchen's role as a central hub.
- Design environments that balance independence and interdependence, supporting the autonomy of older adults while encouraging family connection.

Section 2.3 Summary: Design Strategies for Connection

Based on the reviewed literature, key strategies for fostering intergenerational connection include:

Spatial Organization:
- Central courtyard or atrium as visual/social anchor
- Kitchen as primary social hub with generous space
- Multiple gathering zones for different interaction types
- Positioning of shared spaces along natural circulation routes

Activity Support:
- Activity pockets enabling parallel/simultaneous activities
- Sociopetal seating arrangements encourage conversation
- Display areas for storytelling and personal history sharing
- Connection to outdoor spaces extends social zones

Design for Natural Interaction:
- Integration with existing routines (not forced programming)
- Opportunities for both active participation and passive observation
- People-watching and visual connections between spaces
- Neutral territories not belonging to one generation

Theoretical Foundations:
- Equal status between generations (Contact Theory)
- Respect for individual autonomy and dignity (Personhood Theory)
- Support for cooperation on shared goals
- Informal encounter opportunities

These strategies will inform the design of communal spaces, circulation paths, and activity zones in the design proposal.

2.4 CONTEXT: Intergenerational Living in German Society

Introduction

By 2060, over half of the German population will be aged 50 or older, and one in three Germans will be over 60 (Centre for Public Impact, 2018). This has been influenced by the reduced birth and death rates, meaning there are fewer young people and people are living longer. To respond to the demographic shifts, German cities and municipalities are adjusting their structures and services to ensure they meet the needs and remain appealing to all generations (Ammann & Heckenroth, 2012).

Demographic Shift In Germany

Over the last 40 years, the average number of children born to women in Germany has remained around 1.4 children per woman. This birth rate is not sufficient to maintain population stability, as it only replaces about two-thirds of the parental generation (Labus, 2015). For there to be a balance, 2.1 children per woman are needed to keep the population steady. Meanwhile, life expectancy in Germany has consistently increased in the last fifty years. Since 1960, men have added an average of 10.8 years to their lifespan, and women 10.4 years (Labus, 2015). This upward trend in life expectancy is expected to continue. Many people now reach old age while remaining physically and mentally fit, and the number of years spent in good health is also growing.

Germany's total population is projected to remain close to its current level until around 2030. Initially, there may be a slight increase, but a decline is expected afterward (Labus, 2015). In contrast, the number of people in the workforce, those aged 20 to 66, is predicted to fall by as much as 3.5 million in the same period. This means that while the overall population might stay steady for a while, the working-age segment will shrink significantly. This is also due to the baby boomer generation getting to retirement age by the late 2020s (Labus, 2015).

Age and Sex Structure of Germany, 2009 and 2050

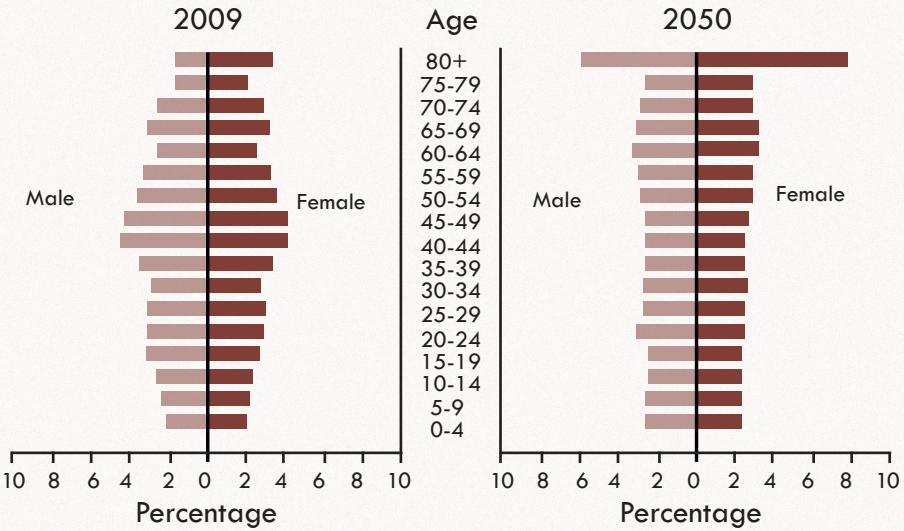


Fig. 6. German population prospect, 2010.

Between now and 2030, the number of people over 67 is expected to rise by 27 percent, and the group aged 80 and older could increase by as much as 43 percent compared to 2015 numbers (Labus, 2015).

Alternative scenarios that assume a birth rate of 1.6 children per woman, modest gains in life expectancy, and a net migration balance of 200,000 people per year would result in a smaller population decline to around 76.9 million. Although an increase in birth rates is theoretically possible, current trends do not show this happening.

All available models suggest that the declining and aging population is an irreversible process (Labus, 2015). Recognizing the profound impact of these demographic shifts, the German Federal Government has outlined key objectives and areas for action (Labus, 2015). The demographic policy framework aims to ensure prosperity for all generations and improve the quality of life. Specifically, the policy focuses on ten areas:

- Good Partnerships for Strong Families
- Youth Shapes the Future
- Motivated, Qualified, and Healthy Work
- Self-Determined Living in Old Age
- Alliance for People with Dementia
- Strengthening Regions in Demographic Change - Promoting Quality of Life in Cities and Rural Areas
- Mobilizing All Potentials to Secure the Skilled Labor Base
- Tapping Foreign Labor Potential and Creating a Welcoming Culture
- Promoting Educational Biographies
- The Public Service as an Attractive and Modern Employer

Particularly Relevant Priorities:

- Self-Determined Living in Old Age: Emphasizes enabling older adults to remain independent and be active in their communities. This directly aligns with aging in place principles.
- Alliance for People with Dementia: Recognizes the need for supportive environments for older adults with dementia and the importance of accessibility and wayfinding design strategies.
- Strengthening Regions in Demographic Change: Acknowledges that mid-sized cities like Bad Kreuznach must adapt its infrastructure and services to remain appealing to all generations (Ammann & Heckenroth, 2012).

Mehrgenerationenhäuser in Germany

Over time, German society has experienced a significant shift in family structures and living arrangements. While traditional multigenerational households have declined, there's a growing interest in alternative forms of intergenerational living. Today, there are over 540 intergenerational houses in Germany. These houses were launched by the Federal Ministry of Family, Older adult, Women, and Youth in 2006 with an aim to strengthen intergenerational relations (Centre for Public Impact, 2018). *Mehrgenerationenhäuser* II was initiated in 2012 as a second phase of the policy, which serves as a community centre that offers open gathering spaces for people with different age backgrounds or social groups to meet (Centre for Public Impact, 2018). These gathering spaces were located within large townhouses that offered areas for a variety of activities. The main goal was to encourage intergenerational connections. As the Federal Ministry for Family Affairs, Older adult Citizens, Women and Youth puts it: "The older adult woman helps a student with his homework, and in return, he teaches her how to use her smartphone" (Centre for Public Impact, 2018). Within these houses, there were childcare services, youth groups, support for young mothers, daycare for the older adult, and advice centres. This served as a universal community centre where all age groups could receive support tailored to their specific needs. These houses were also established as a response to the demographic shift happening in Germany. The houses provide inexpensive services and support to the daily activities of older adults like shopping, cleaning, food and care services.

Mehrgenerationenhaus Heslach in Stuttgart is a successful example of the *Mehrgenerationenhaus* program. The *Mehrgenerationenhaus* Heslach was established in 2004 as an adaptive reuse of an existing brewery (Labus, 2015). The living complex features five stories and includes 72 apartments designed for a diverse demographic, ranging from young families to older adult residents and individuals with special care needs (Labus, 2015).

By incorporating shared spaces such as community centers, daycare services, meeting rooms, and a restaurant operated by residents, the design fosters daily interaction across generations. Architectural adjustments in these intergenerational homes typically address accessibility and flexibility. In the Heslach project, for example, apartments are designed to be barrier-free, with features like elevators and emergency call systems, allowing older adult residents and those with mobility issues to remain independent for as long as possible (Labus, 2015). Such barrier-free design principles are a hallmark of the broader *Mehrgenerationenhaus* program, which emphasizes an inclusive design for all approach.

The program also focuses on integrating communal and social functions within the built environment. Many *Mehrgenerationenhäuser* include semi-public spaces, such as shared kitchens, playrooms for children, and hobby rooms. These spaces promote informal meetings and build a strong sense of community (Centre for Public Impact, 2018). These spaces are intentionally designed to blend private and communal life, supporting both personal privacy and communal living.

Moreover, the architectural layout of intergenerational houses is designed to strengthen ties between residents and their surroundings. Projects like the Heslach house are strategically located within walking distance of key amenities, such as schools, churches, hospitals, and public transportation (Labus, 2015). In doing so, these buildings support not only residents' independence but also their ongoing participation in civic life.

Table 1. The Mehrgenerationenhaus Model

Social Connections	Services & Programs	Architectural Design	Urban Integration
• Intergenerational interaction • Mutual support (caregiving, knowledge exchange) • Community building • Social inclusion	• Childcare services • Older adult care / Daycare • Youth programs • Advice & support centers • Affordable services (shopping, cleaning, food, care)	• Barrier-free design • Flexible layouts • Shared spaces • Private + communal living balance	• Central location • Easy access to civic amenities • Supports residents' independence & participation in civic life

Application

The *Mehrgenerationenhäuser* program in Germany offers valuable insight into how architecture can be leveraged to support intergenerational interaction while addressing the evolving needs of aging populations. One of the key takeaways from these intergenerational houses is the integration of communal spaces that encourage informal interaction without compromising individual privacy. In my design, shared spaces such as a multi-purpose room, communal kitchen, or a hobby room can serve as everyday meeting points that foster organic connections between family members of different ages.

The inclusion of support services like daycare, elder care, and community advice centres within the same building highlights the value of designing with flexibility and service integration in mind. While my project is focused on a private family home rather than a community centre, spatial zones within the house can still be designed to accommodate visiting care professionals, wellness activities, or even small-scale intergenerational exchanges (e.g., homework help sessions or shared tech lessons between younger and older family members).

German Cultural Values Regarding Privacy, Independence, and Family Living

A cross-cultural study that examined family-related values across Germany, Turkey, and India identified three family models which are independence, interdependence, and emotional interdependence (Mayer et al., 2012). Germany was characterized as having a predominantly independent family model, with a high level of autonomy and personal independence in family relationships. Household structures with nuclear families with underage children were seen to be the norm. While the extended family lived separately, but remained in proximity geographically (Mayer et al., 2012). The study found that Germany reflects the characteristics of Western individualistic societies, where independence is a dominant cultural value (Mayer et al., 2012). Although this doesn't reflect that German culture does not value all forms of familial connection. Furthermore, the study indicates that German families balance autonomy with relatedness, combining independence with maintained emotional bonds. Germany was classified as a society of "low interdependence and high independence" compared to Turkey and India, which showed higher levels of interdependence (Mayer et al., 2012). The research showed that German mothers and adolescents largely favored the independent family model, which aligns with the broader Western emphasis on individualism (Mayer et al., 2012). This preference is also consistent with social patterns characterized by higher economic affluence, nuclear family structures, and lower fertility rates.

A more recent study in 2022 examined 25 detailed interviews with parents of preschool-aged children in Germany to explore how they navigate closeness and distance with their children. The findings of this study revealed that German parents expressed complex and at times contradictory attitudes toward parent-child relationships. The parents valued autonomy and independence as key parenting goals while also expressing a "longing for interdependence," or a desire for emotional closeness with their children (Sieben, 2022).

The parents described daycare as the "first step toward independence," because they encouraged self-sufficiency from an early age. This also reflected a cultural expectation that young adults should leave home to pursue their independence. The German parenting practice prioritizes children's cognitive, social, and emotional development through having a structured environment. Parents taught children not to ask overly personal questions and to respect personal space, not as signs of detachment but as expressions of respect (Sieben, 2022).

Another study conducted 47 in-depth interviews with young adults in Berlin and their parents. To examine how housing transitions are shaped by intergenerational family support in the context of Germany's society of renters. Germany has one of the lowest homeownership rates among Western nations, with Berlin's rate at just 15%, offering a unique cultural context for understanding independence and family support (Lennartz & Helbrecht, 2018). For many young German adults, moving out of the parents' home is considered a key life milestone and an essential marker of autonomy. While spatial proximity between generations is common, maintaining separate households is strongly preferred. The closeness allows for support, such as informal childcare or occasional assistance, while also preserving independence. Although interdependence is expressed through proximity and support, intergenerational households remain uncommon in Germany (Lennartz & Helbrecht, 2018). The cultural norms favor separate residences for each generation over co-residence.

Design implications from the three studies above indicate a strong preference for spatial separation between generations and a need for independent dwelling units. The value placed on autonomy indicates the importance of private spaces and clear boundaries between family members. While Germans maintain emotional ties, the cultural emphasis on independence suggests resistance to traditional intergenerational household arrangements.

Housing should support autonomy while allowing proximity for maintained relationships. Therefore, nearby but separate residences are preferred over shared living spaces. Furthermore, German families value structure and routine, suggesting the importance of well-defined spaces for different activities. Cultural emphasis on independence from a young age suggests children's spaces should support self-sufficiency. Balance is needed between family togetherness and individual privacy.

The final takeaway is, intergenerational housing projects should emphasize independent units with shared amenities rather than shared living spaces.

Reconceptualizing Multigenerational Living for the German Context as a New Intergenerational Model

From Three Generations to Two: A Cultural Realignment

The research and literature review I have presented above highlight the values of multigenerational living; however, a deeper examination of German cultural values and the reality of its demographics reveals a need for a slightly different approach. The initial concept of housing three generations permanently under one roof, which has been proven successful in cultures with strong traditions of extended family cohabitation, needs to be adapted to accommodate contemporary German social norms.

The research presented in previous chapters remains foundational to this project. The benefits of multigenerational living for aging in place, the importance of multigenerational connection, and the design principles derived from Turkish, Japanese, and Nigerian precedents all continue to inform the spatial solution.

However, rather than forcing a model that contradicts deeply held German values of youth independence, this project now proposes a more culturally responsive approach: a two-generation household comprising middle-aged adults (aged 45-64) and their older adult parents (65+). This model includes flexible spaces to accommodate visiting adult children and grandchildren, all situated within a broader community-living setting that includes amenities for all ages.

Cultural Values of Independence and Autonomy

German culture prioritizes individual autonomy and independence. These values can be seen in their living arrangements. While intergenerational households exist in Germany, they are not very common. Most Germans prefer to maintain separate households, but have family members live in proximity (Statistisches Bundesamt, 2023). My understanding is, the preference to live separately does not indicate weak family bonds; rather, it reflects a different expression of intergenerational solidarity. The kind that is characterized by frequent contact rather than a shared residency situated in a broader community living setting with amenities for all ages.

The Rise of Informal Caregiving and Policy Support

With the rise of the aging population in Germany, there is also a rise in the implementation of polices that support informal caregivers and family members who provide care to aging relatives. The Pflegestärkungsgesetze, which are the Care Strengthening Acts introduced by the government between 2015 and 2017, provide support for informal caregivers, including wage replacement during care leave, pension credits, and respite care services (Bundesministerium für Gesundheit, 2017). The implementation of these policies suggests that the German government recognizes that informal family care will play a significant role in addressing the needs of the aging population in Germany. Furthermore, informal care provided by family members accounts for about 70% of all long-term care recipients in the U.S. and Germany (Korfhage & Fischer-Weckemann, 2024).

A study done in 2023 on the informal caregivers in Germany reveals that informal caregiving is frequently provided by individuals aged 45 to 64 years (Fuchs et al., 2023). These caregivers are typically adult children caring for their aging parents. Oftentimes, they are still managing their own jobs and, in many cases, supporting their own young adult children. Typically, the informal caregiver in Germany is not a young parent with school-age children living under the same roof as the grandparents, but a middle-aged adult who maintains their own household while providing regular, daily care for aging parents (Gösenbauer et al., 2025).

Intergenerational Proximity as an Alternative Model

The research on intergenerational relationships in Germany demonstrates that being in proximity rather than living together characterizes many of the family support relationships. A 2007 study found that while only approximately 6% of older Germans live in the same household as their adult children, nearly 40% live within 5 kilometers of at least one child (Hank, 2007). This pattern of living together but apart allows for intergenerational exchange while respecting the cultural preferences for household independence. This pattern of living works because the adult children usually have careers, social obligations, responsibilities to grandchildren, and routines that may be disrupted by co-residency (Isengard & Szydlik, 2012).

Applying Research Findings to a Two-Generation Model

I recognize that there is a shift from a three-generation co-residential model to a two-generation household with visiting younger generations. However, this does not invalidate the research findings that were presented in earlier chapters. Rather, it follows the principle that design solutions must be adapted to the specific cultural context while still maintaining its core objectives.

Application Design Principles

All of the key design strategies identified through the literature review and case studies still remain relevant to a two-generation household:

Privacy and Autonomy:
The need for a private space where individuals can retreat to still remains important. Both generations require quarters that support their distinct routines, preferences, and needs (Gale & Park, 2010). The primary informal caregivers need restorative spaces that will allow them to balance caregiving responsibilities with their own well-being. While the recipients of care require spaces that cater to their specific needs.

Flexible Spatial Organization:
The flexible design principles observed in Japanese Minka homes and Turkish courtyard houses are even more relevant in this model. Spaces must be able to temporarily change to accommodate grandchildren's and other family members' visits.

Social Interaction Zones:
Spaces for intergenerational connection still remain paramount. The central courtyard from Nigerian architecture, the communal dining areas from Turkish traditional homes, and the shared activity spaces from the *Mehrgenerationenhäuser* model can still be applied. This is because they all support the goal of intergenerational bonding.

Accessibility and Universal Design:
The gerontological design principles remain essential, as the primary residents include older adults who may experience mobility limitations. Features such as barrier-free design, appropriate lighting, clear wayfinding, and spaces that support autonomy and control are fundamental to enabling parents and grandparents to age in place.

Project Context: A Design Prototype for German Intergenerational Housing Policy

The German government has invested significantly in the Mehrgenerationenhäuser model. However, this model provides community programming rather than residential solutions. To address this, the government launched the Wohnen für (Mehr)Generationen project, as a complementary initiative specifically focused on housing, providing grants for 30 intergenerational housing projects across Germany (Molinsky et al., 2023). In 2024, the federal government allocated about 150 million euros specifically aimed at programs that allow older adults to remain in their homes rather than moving to care facilities (Charles Kingston, 2024).

Aging Together positions itself as a conceptual contribution to this ongoing movement by serving as a design prototype that does the following:

- Extends the Mehrgenerationenhäuser philosophy into residential design but still incorporates community engagement. The ground floor of the Aging Together building will have community spaces that serve both building residents and the broader neighborhood.
- Builds on the Wohnen für (Mehr)Generationen precedent by applying evidence-based design strategies that balance accessibility, privacy, and connection.
- Responds to the cultural realities of German society by proposing a two-generation model ("living together, but apart") that respects German values of independence and household autonomy while enabling informal family caregiving.
- Offers a model that could be adapted by cities facing demographic pressures similar to Bad Kreuznach.

2006
Mehrgenerationenhäuser I is launched

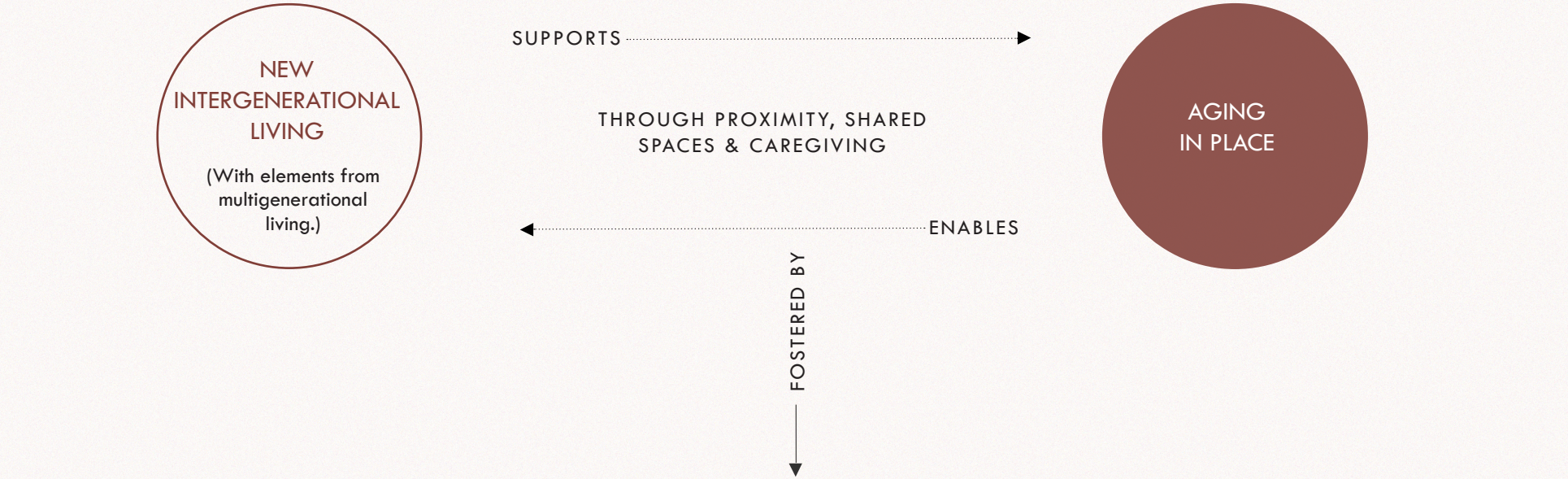
2009 - 2015
Wohnen für (Mehr)Generationen program

2012
Mehrgenerationenhäuser II is launched

2024
Germany government dedicated 150,000 million euros to aging in place programs

2025
The Aging Together design prototype, i.e this practicum, is proposed

2.5 Theoretical Framework



INFORMED BY

PERSONHOOD THEORY
Radha Krishna & Alsuwaigh, 2015; Norouzi et al., 2023.

CONTACT THEORY
Norouzi et al., 2023

ENVIRONMENTAL GERONTOLOGY
Mann-Lewis, 2014; Engelen et al., 2022

RING THEORY OF PERSONHOOD
Radha Krishna & Alsuwaigh, 2015

3 CASE-STUDIES OF MULTIGENERATIOONAL LIVING
(Turkish, Nigerian and Japanese)

INTERIOR DESIGN APPLICATION

UNIVERSAL DESIGN | SPATIAL ZONING | LAYERED PRIVACY

PRECEDENT ANALYSIS

03

3.1 Precedent One - Hogeweyk Dementia Village

Established: 2009
Architect(s): BuroKade
Title: Hogeweyk
Location: Weesp Netherlands
Size: 27 houses, 6 or 7 residents per house

Description

Hogewyk is a dementia village that was established as a paradigm shift from traditional home care. Rather than focusing on the disease, the village rehumanising the care for people living with dementia. The goal is to create environments that provide care on a smaller scale that enabled people with dementia to continue to live the routine of a normal life. The village feels and looks like an ordinary Dutch neighborhood and prioritizes autonomy, familiarity, and independence.

Neighborhood Structure

The village comprises of 27 homes, where 7 like-minded people live together to form a household. The homes are arranged around six distinct courtyards with varying landscaping designs which helps to provide natural way-finding. The amenities include, a cafe, a restaurant, a theatre, clubrooms, salons, health center and a supermarket. The buildings are one and two-stories and are designed after typical Dutch buildings. However have distinct designs that allows them to become landmarks and points of interest. This reduces the need for large signs and traditional way-finding elements. The streets are pedestrian only and weaves through courtyard clusters to create recognizable “home territories”. The amenities in the village are all real and not made as props to represent reality. The supermarket is equipped with real staff, the theatre host real performances. Along with family and friends, locals from surrounding areas are encouraged to visit to also use the amenities.

https://ichef.bbci.co.uk/news/976/cpsprodpb/6ECB/production/_128636382_1.theaterplein-theatresquare.jpg

Fig 7. Hogeweyk Demntia Village

The casualness and openness of the village creates a space that does not feel controlled. The residents do not feel like their day is structured and scheduled. They are free to move freely and live a normal life. The spaces are functional and support actual daily routines. It was important to the creators that the space does not feel like a simulation of real life but actually be a normal environment that the residents can relate with and maintain their personal identities.

How Care is Approached

Care is integrated naturally as carers do not wear uniforms but operate as neighborly support. There is a privacy protocol that care team must ring the doorbell before entering homes. Also amenities are positioned in strategic places that allows for generic interaction between residents and carers. For instance residents can go to the supermarket for shopping with their carers who is dropping by the cafe for a cup of coffee. The staff in the amenities are trained on how to fulfill their roles and relate with individuals with dementia.

Organic Socialization and Autonomy

There is a park with a pond placed in front of the restaurant where people can socialize with other people. Carers do not accompany residents and this allows residents to socialize on their own accord if they feel like it. Participation is not compulsory but activities and opportunities for socializing are arranged around regular routines and traffic patterns. The gardens are accessible and unlocked allowing residents to move freely. The front doors of the home open to the street and this reinforces a perception of spatial hierarchy and creates a threshold between public and private space.

The households are also managed by residents themselves. As much as they are able, residents carry out daily activities such as washing, cooking, shopping, going to the restaurant, pub, cinema, or simply walking in the village as they choose. The common areas are decorated by the staff but residents are allowed to decorate their personal rooms with familiar and personal items. The kitchens are real, not industrial, and the arrangement of the furniture provide visual cues and encourage appropriate use. For instance seating areas in the lounge or dining sets in the dining room.

Color and contrast is used to highlight features such as doors, skirting boards, handrails, and toilet seats and basins. Also the flooring is uniform because changes in color can be interpreted as steps or holes.

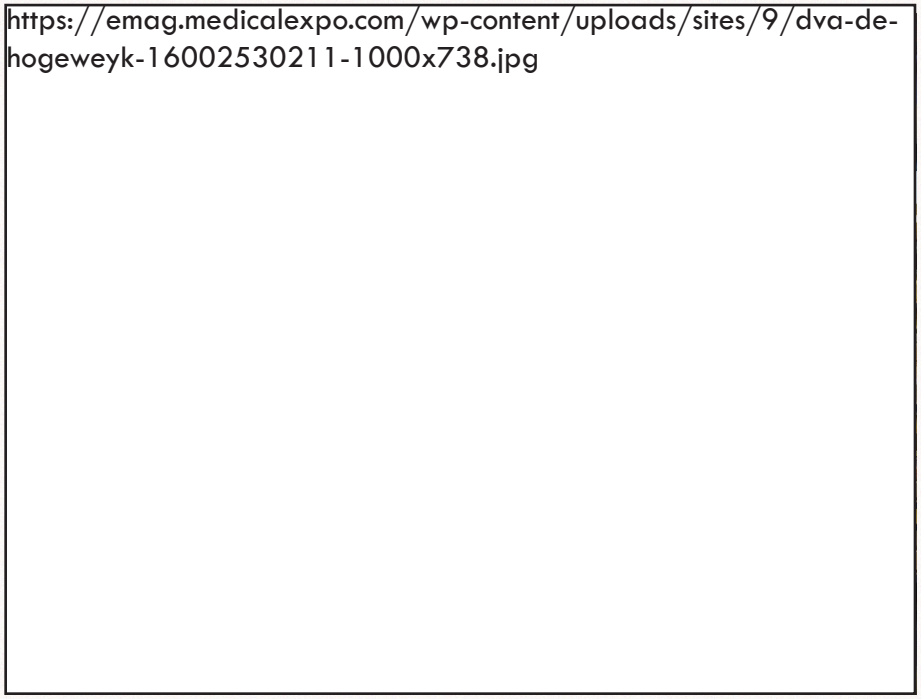


Fig 8. Hogeweyk Demntia Village Grocery Store

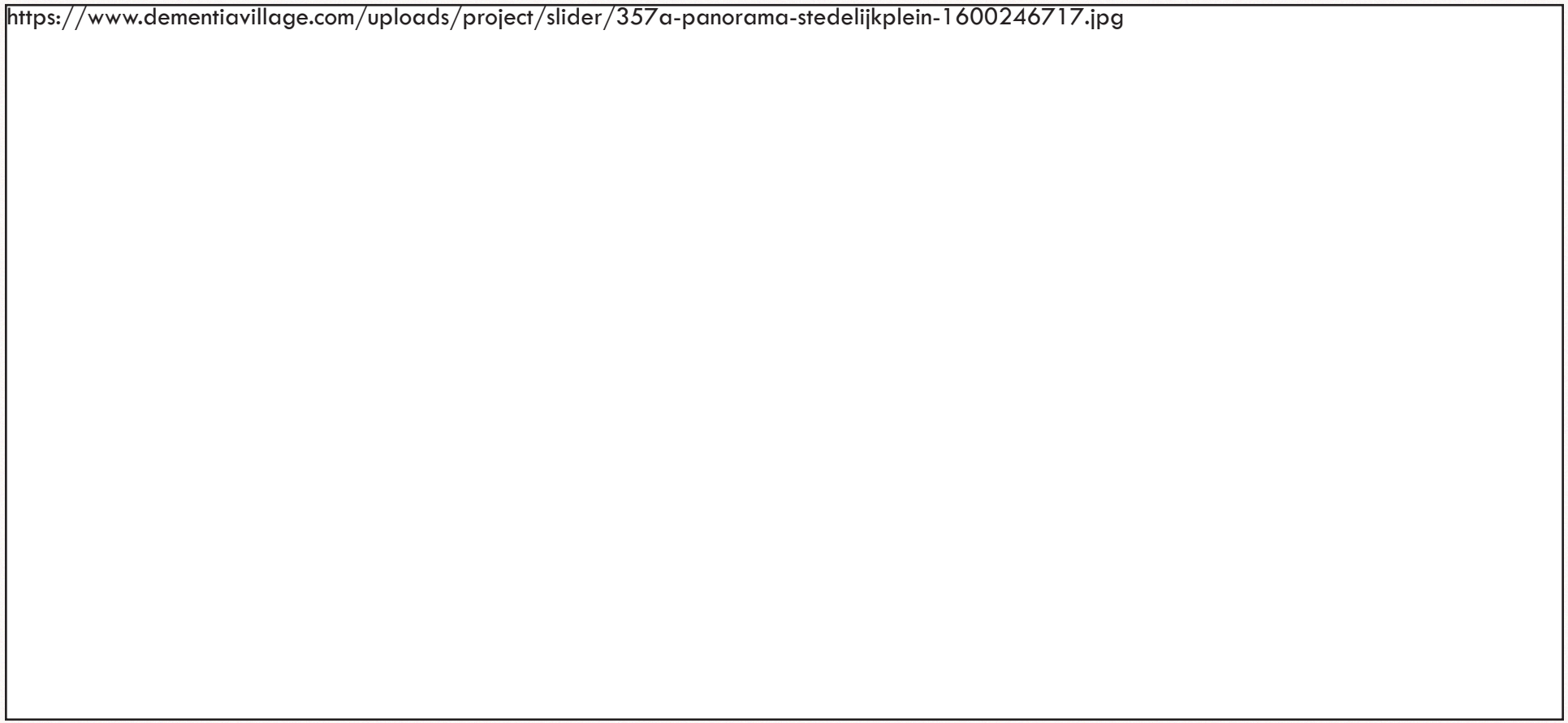


Fig 9. Hogeweyk Dementia Village

Design Applications

While my project addresses intergenerational living rather than dementia care, Hogeweyk's de-institutionalization strategies offer a good precedent. This precedent demonstrates how to avoid institutional aesthetics while providing high levels of support. Also, the village typology shows how to create community without institutional monotony.

Here are some transferable principles that can be applied to the practicum:

- Neighborhood clusters rather than a single large building
- Courtyards are used as wayfinding anchors and social centers
- Streets are designed for pedestrians and provide a neighborhood feel
- Amenities are publicly accessible
- Care and support spaces that do not look clinical
- Professional care is delivered as neighborly care
- Communal spaces are open and free to use
- Multiple gathering spaces
- Residential materials and furnishings that are familiar to the residents
- Visual markers of institutional care, like uniforms and signage, are not used

3.2 Precedent Two - Older Adults Co-housing Model

Established: 1993
Architect(s): Jan Lundqvist Arkitekter
Title: Färdknäppen
Location: Södermalm, Stockholm, Sweden
Area: 650m^2

Description

Färdknäppen is a community housing for the “second half of life”. The “second half life” is a phrase that expresses the reality of adults aged 45+ who are becoming empty nesters. It has about 43 rental apartments that are connected by common areas. Such as a library, living room, sauna, roof terrace, workshop, exercise room and a little garden. As of 2025, there are 55 people living in the building aged between 50+ and 90+, spanning two generations. One of the rules to qualify for an apartment in Färdknäppen is to not have children aged 18 and below living at home. Half of the tenants are still working while half are retired. It functions as a co-housing system where tenants take turns to prepare communal meals and have communal style dinners 5 days per week. The dinner is served in the communal dinning room and attendance is voluntary. Those who eat pay through a coupon system that covers food costs only. Also participation is not equal as expectations are based on each persons ability. The shared meal not only provides social connection but also helps reduce individual food costs and effort. Residents rotate cleaning common areas, stairwells, and landings. Simple maintenance and garden care is also handled by tenants. The house provides many opportunities for social interactions. Groups are formed based on personal interests.

The focus of Färdknäppen is to provide a co-housing community that provides common rooms where the residents can cook and eat together, watch films, do carpentry or take advantage of some other interest and socialize together but also have their own private apartments.

Fig 10. Färdknäppen

Building Context and Spatial Description

Färdknäppen is designed with multiple layers of privacy and gives tenants control over their social participation and engagement. The house has 43 units ranging from one to three-bedroom apartments. Each unit, size 37 to 75m^2, is a self-sufficient dwelling unit, with a full functioning kitchen, complete bathroom, living spaces, and storage. Residents have the choice to go to common spaces or stay in their apartments. Also, having varying apartment sizes provides options for different dynamics and preferences of families. There are also smaller apartment units that can be rented out for a small amount to accommodate friends and family visiting from out of town. There is over 400m^2 of shared common space, with most of it located on the ground floor. The ground floor acts as the primary social hub with the kitchen and dining area. A small garden with trees, flowers, and lawn can be reached from the dining room. There is also a giveaway shelf where residents can put items they no longer need to be rehomed.

There are rooms for many hobbies like sewing, carpentry, bicycle repairs, and furniture restoration, scattered across the building. There is also a laundry room equipped for ironing. On the top floor, there is a meeting room with a fireplace that leads to a terrace. A gym, sauna, collective pantry, and individual storage rooms are in the basement. There is a small office, equipped with a computer, scanner, copying machine, and office supplies, which can be used by everyone.
With 43 apartments across 6 floors, each floor likely houses 6-8 households. This allows for micro communities to be created with floor-level neighbors.

The apartments are quite small, so guests can be entertained in the common rooms. Children are also very welcome at Färdknäppen and spend time with grandparents in the common rooms, hobby areas, and gym.

Fig 11. Färdknäppen Communal Kitchen

Fig 12. Färdknäppen Event Hall

Fig 13. Färdknäppen outdoor Courtyard

Design Applications

This precedents directly applies to the program of the practicum because it addresses creating a living solution for two generations aged 50 and above. Here are some transferable principles that can be applied to the practicum:

- Fully equipped private apartments (45-65 m^2)
- Variety in sizes to accommodate different household compositions and preferences for privacy
- Central hub with kitchen and dining
- Small guest rooms about 12-15 m^2 each with a private bathroom
- Pause points in circulation - window seats, small alcoves with chairs
- Visual connection but acoustic separation between cooking and dining
- The kitchen has multiple work zones to accommodate 4-6 simultaneous cooks
- Flexible dining table configurations to be able to rearrange for different group sizes

3.3 Precedent Three - Multigenerational Home

Established: 2020
Designer/Architect(s): Asolidplan
Title: Envelope Home
Location: Singapore
Area: 620m^2

Description

This is a multigenerational home for three generations: two grandparents, a middle-aged couple with a child, and a single adult. The house has private spaces, common spaces, an indoor garden, and a roof garden. The house was designed around an indoor courtyard that allows for informal encounters between family members. The house is also connected to the outdoors with an indoor water feature and a tall indoor tree. Rather than maximizing the floor area, the design prioritizes the quality of space over quantity, allowing for extensive greenery throughout.

Rationale

The Envelope Home successfully addresses how privacy and connection can be achieved in a multigenerational setting. It also addresses how the unique needs of each generation can be met while simultaneously catering to the overall family well-being.

One of the primary goals of the design was to cater to the individual lifestyles and preferences of family members. Privacy is achieved through the zoning of spaces across three floors, tailoring each floor to the specific needs of the family members inhabiting it. For instance, the grandparents occupy the second floor. This ensures that the grandparents are close to shared spaces while ensuring a degree of separation and that their routines and quieter lifestyle are respected. The aunt's quarters on the same level also offer her flexibility and accommodate her independent lifestyle. The quarters can also be used as a space for a live-in assistant, such as a nurse, in the future.

The third floor with a private entrance and staircase houses the parents and their child. This space provides a greater level of autonomy for the nuclear family.

Building Context & Spatial Description

The Envelope home, situated in the hot humid climate of Singapore, responds to its climatic context through its double-skinned structure that incorporates an outer envelope of greenery and an indoor courtyard garden. The architectural language is not just an aesthetic feature, but it also serves as a shield from the harsh sun. The house is characterized by a central courtyard located at the center of the house. This courtyard features a triple-volume indoor water garden, a staircase that weaves through the garden, and an indoor tree with a sky bridge above it. This courtyard serves as a landmark and connects all three levels of the house to create an opportunity for chance encounters and interactions.

Fig 14 & 15. Envelope Home Central Staircase

The house relies on passive cooling methods like ventilated skylights, an indoor garden, the strategic positioning of window openings to allow for cross ventilation and enlarged landings that serve as balconies. A simple material palette of alabaster plaster and paint was incorporated to allow the bold structure and greenery to stand out. The low, horizontal ribbon windows on the outer skin provide sun-shading at the west-facing facades, while large apertures receive daylight for the internal vegetation. The views of the interior softscape and the park across the canal behind the house are framed by the windows in the inner skin. The windows that look into the central courtyard provide some rooms with three-sided ventilation and visibility within the house.

The Envelope Home is designed to have public, semi-public, and private zones connected by various architectural elements that promote visual and physical interaction without compromising individual privacy. The three-story central courtyard is a space that anchors the house and allows for visual connection along all levels. The staircase within the courtyard is a functional structural element that facilitates movements and creates an immersive experience for the family members as they journey through it. The sky bridge, which connects the front and rear wings of the third-level living quarters, allows family members to visually connect without being overbearing.

Fig 16. Envelope Home Second Floor

Fig 17 - 19. Envelope Home

3.4 Precedent Four - Lange Eng Co-housing, Denmark

Location: Albertslund, Greater Copenhagen, Denmark
Architect: Dorte Mandrup Arkitekter
Completed: 2008
Scale: 54 owner-occupied apartments (72-135 m²), 200+ residents (100+ adults, 100+ children)
Building Type: Danish block configuration around central courtyard
Cost Model: Owner-occupied cooperative
Cultural Context: Represents the third phase of Danish co-housing (after 1970s communes and 1980s-90s consolidation)

Description

Lange Eng represents Denmark's implementation of the co-housing movement that began in the 1960s to 1970s as a response to the changing family structures and a desire for community without sacrificing privacy. This project is considered the largest contemporary co-housing community in Denmark. Lange Eng follows the "third way" approach, which accommodates about 200 residents, from children to older adults, living in separate privately owned apartments but shared communal facilities. Lange Eng is a relevant precedent because it addresses the preference for privacy while also providing opportunities for connection and intergenerational support.

Rationale

Like Germany, Denmark is also facing a growth in the aging population. Germany and Denmark share similar cultural values around privacy, autonomy, and quality of life. Lange Eng helps in understanding how architecture can support family proximity without requiring co-residence. Also, Lange Eng supports the idea that participation should be natural rather than forced. The optional shared dinner system in Lange Eng supports individual choice and autonomy.

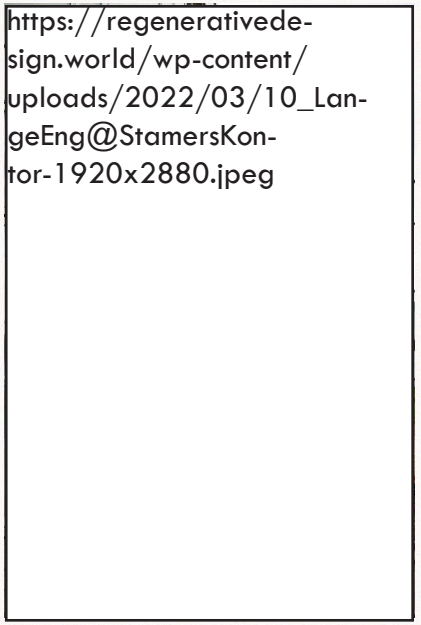


Fig 20 & 21 Lange Eng Co-housing, Denmark Outdoor Courtyard

Apartment Breakdown:

- 54 owner-occupied apartments total
- Size range: 72 m² to 135 m² (775 sf to 1,453 sf)
- 43 different apartment types (flexible layouts despite standardized structure)
- Unit variety:
  - Mini-apartments (1-2 room)
  - Small family units (3-4 room)
  - Large family units (5-7 room)
  - Cluster/shared apartments (8-10 room for communal living groups)

Resident Demographics:

- 100+ adults spanning ages from young professionals to retirees
- 100+ children from infants to teenagers
- Intergenerational by design - no age restrictions

Community Facilities

Main Community House (Ground Floor, Central Location):

- Industrial-sized kitchen: Professional equipment for cooking meals for 200
- Dining hall
- Children's play areas
- Lounge & café space
- 20-seat cinema
- Storage for shared equipment

Courtyard (Central, Accessible from Every Unit):
Total courtyard area: Approximately 2,000-2,500 m^2

The apartments are organized by “continuous room arrangements” rather than segregated boxes. Each apartments have large windows in the living and dining rooms facing the central courtyard that they can use to passively view activities happening in the courtyard.

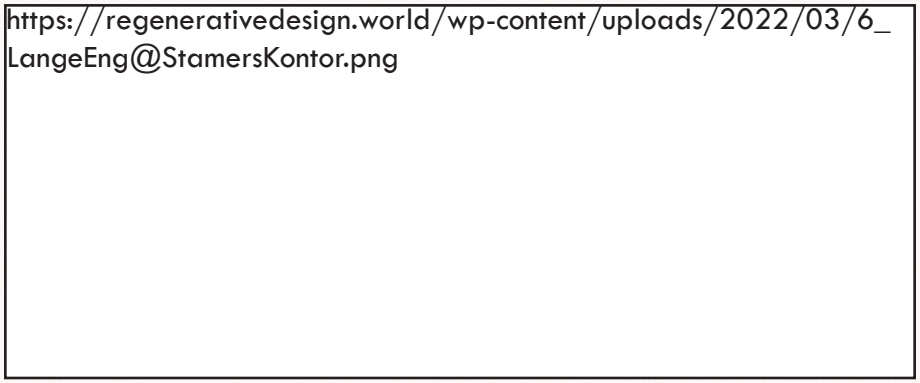


Fig 22. Lange Eng Co-housing, Denmark Outdoor Courtyard

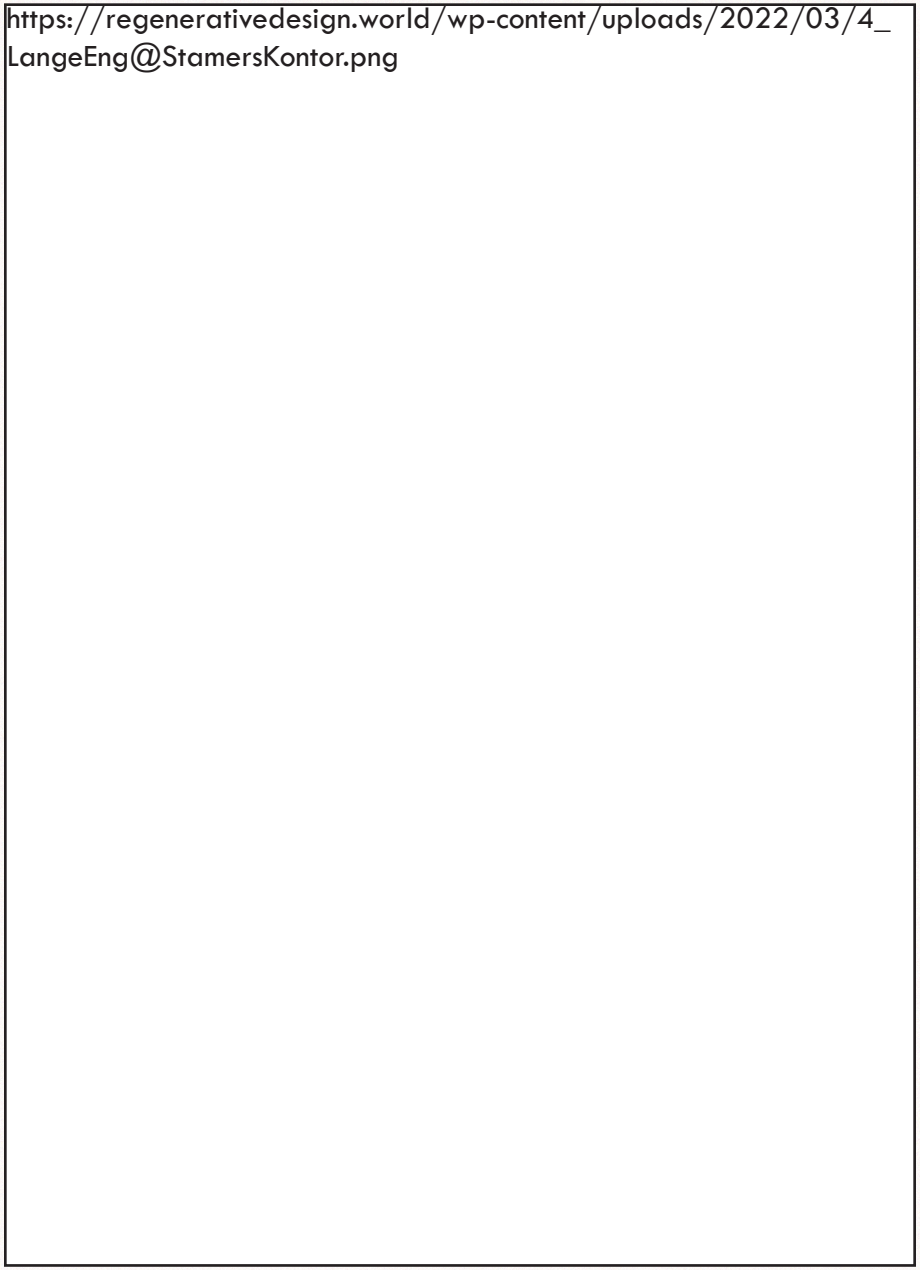


Fig 23. Lange Eng Co-housing, Denmark Apartment

https://regenerativedesign.world/wp-content/uploads/2022/03/7_LangeEng@TorbenEskerod.png

Fig 24. Lange Eng Co-housing, Denmark

Building Configuration:

Lange Eng adopts the classic Danish "closed block" (karré) typology. Which is characterised by four building wings enclosing a shared courtyard. This is an urban form with deep roots in Copenhagen and other Danish cities.

The outer perimeter towards forest has a relatively closed facade that reduces noise and creates privacy from the public realm. The inner perimeter toward courtyard is light and open and is characterized by glazing and visual connection from the apartments to shared garden.

BUILDING OVERVIEW & ANALYSIS

04

CHAPTER 4 | Building Overview and Analysis

Introduction

The proposed location for Aging Together is John-F.-Kennedy-Straße 4, 55543 *Bad Kreuznach*, Germany. This chapter explains the rationale behind selecting this location and an analysis of the site.

4.1 Site and Building Rational and Background

The building on the site currently houses the Wohnpark Sophie Scholl assisted living facility. Constructed in 2014, this living facility offers a range of care and living arrangements for older adults. With a focus on gerontopsychiatric care for older adults with dementia.

The facility is situated in an urban area close to various bus stops, supermarkets, pharmacies, a church, and a kindergarten. The building is accessed through existing foot and bike paths, and a two way vehicle road. The interior of the building is currently designed with a focus on accessibility and safety, with features like wide corridors equipped with grab bars, elevators, living units with accessible bathrooms, fire rated barrier-free doors.

The facility has communal spaces like cafeterias, lounge areas, a library and an outdoor garden space. All rooms are equipped with television and telephone connections. Residents are welcome to furnish their rooms with personal furniture to create a home-like atmosphere. Each room is equipped with a nursing bed, bedside table, and wardrobe. The bathrooms are also equipped with a call button for emergencies.

The facility is operated by the Stiftung kreuznacher diakonie, which is a foundation, established in 1889 by Pastor Hugo Reich to provide social and healthcare services to individuals in the region.

Fig 25. John-F.-Kennedy-Straße 4, 55543 Bad Kreuznach Germany

Wohnpark Sophie Scholl

Fig 26. John-F.-Kennedy-Straße 4, 55543 Bad Kreuznach Germany

4.2 Site Rationale

Bad Kreuznach is a town in the Rhineland-Palatinate region of Germany. It is known for its rich history and a strong sense of community. *Bad Kreuznach*'s demographic is made up of a mix of aging residents and younger families. This makes it an ideal location to explore the intersections of intergenerational living and the needs of aging individuals.

German architecture values, innovation, efficiency, craftmanship, and sustainability. By analyzing the Wohnpark Sophie Scholl building, this practicum hopes to uncover design strategies that balance functionality, community integration, and cultural sensitivity, to contribute to the discourse on creating inclusive and adaptable living environments for all generations.

4.3 Site History

Fig 27. Site History

4.4 Demographics

As of May 15, 2022, *Bad Kreuznach*, has a population of 50,034 residents. The gender distribution is approximately 48% male and 52% female. The town covers an area of 55.63 square kilometers, resulting in a population density of about 953 inhabitants per square kilometer.

The age structure is as follows:

- 0-17 years: 8,786 individuals
- 18-64 years: 31,503 individuals
- 65 years and older: 12,773 individuals

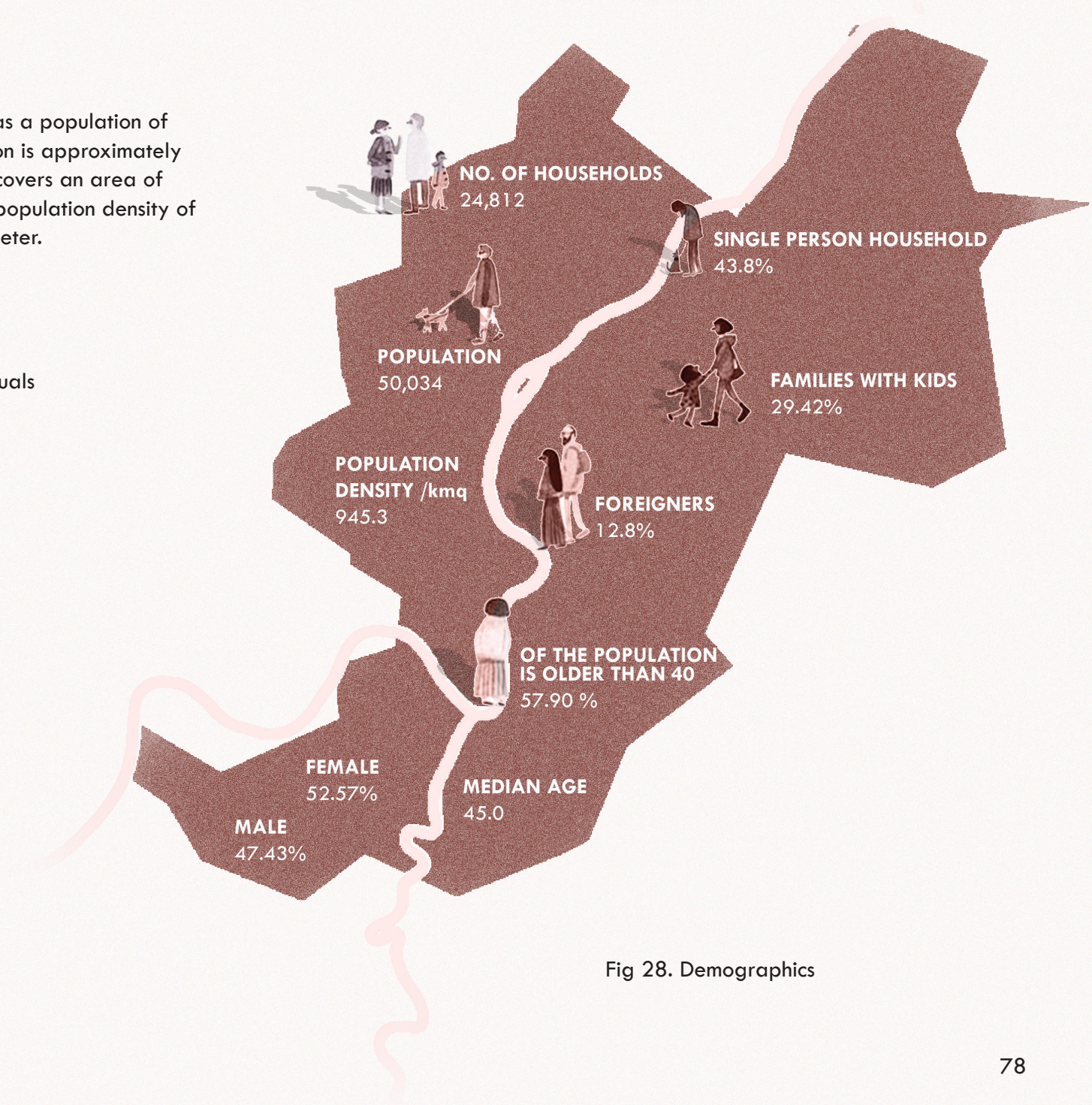
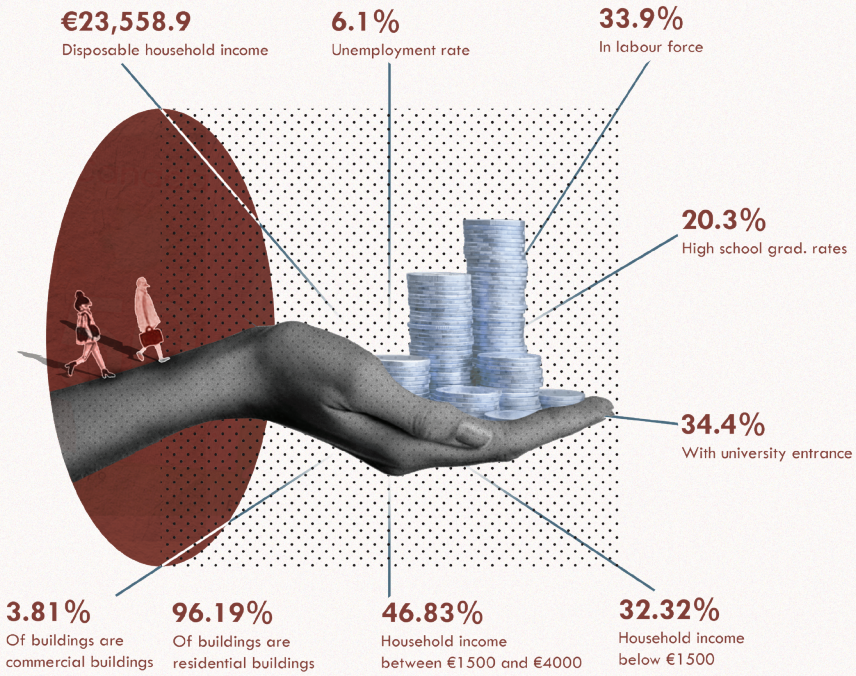


Fig 28. Demographics

4.5 Economic Analysis



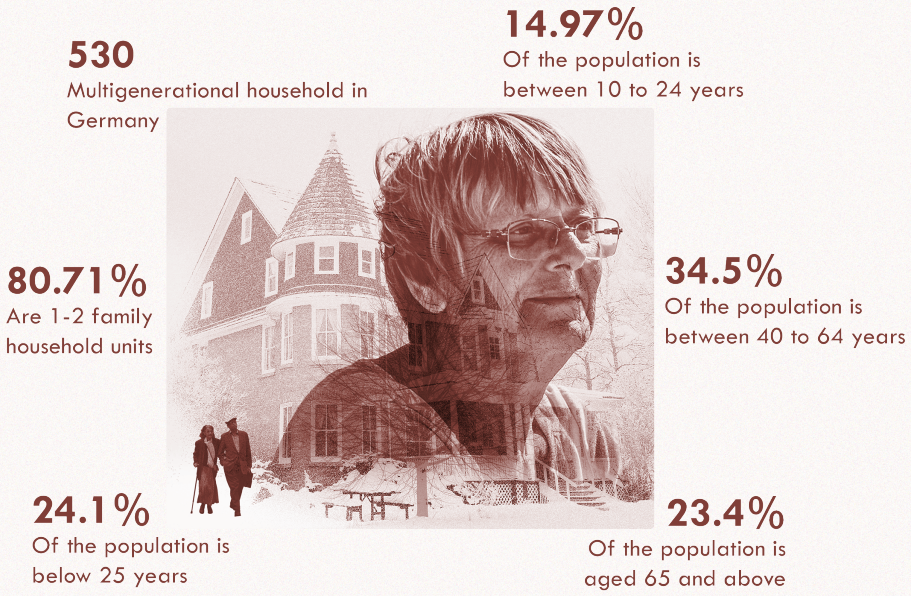


Fig 29 & 30. Economic Analysis

4.6 Site Amenities and Landmarks

Fig 31. Site Amenities

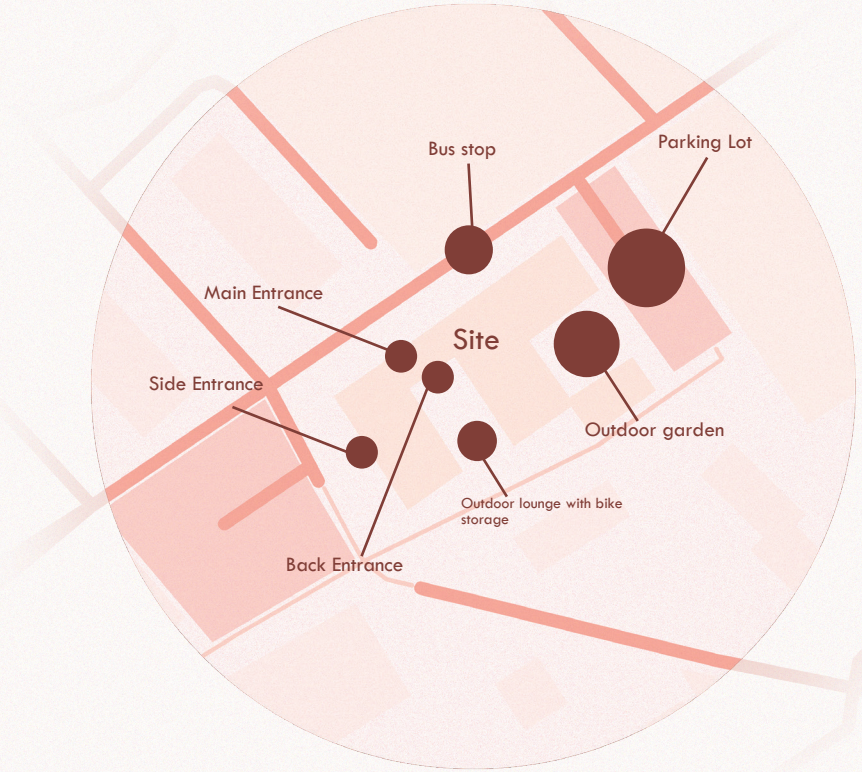
Site

Bank
Cafe
Fitness Centre
Gas Station

Restaurant
Hospital
School
Sport Field

Park
Clothing Store
Bus stop
Church

Fig 32. Site Landmarks



4.7 Temperature and Climate analysis

According to Köppen–Geiger Climate Classification the *Bad Kreuznach* Region of Germany falls under the Temperate Oceanic classification which is characterized by characterized by cool summers and mild winters. The average annual temperature in *Bad Kreuznach* is 10.3 °C | 50.5 °F. Approximately 706 mm | 27.8 inch of rainfall occurs on a yearly basis.

Fig 33. Precipitation Levels

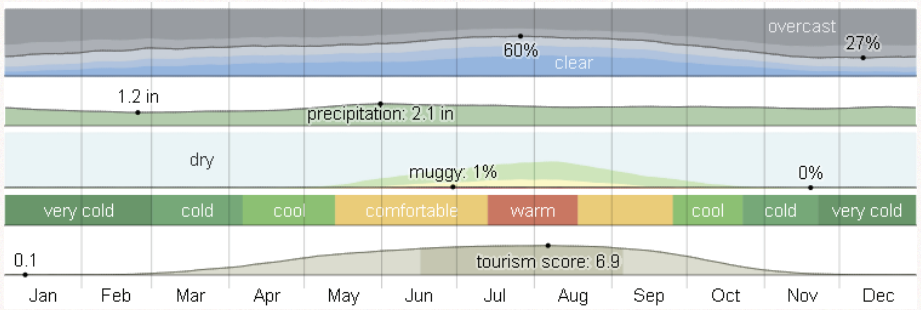
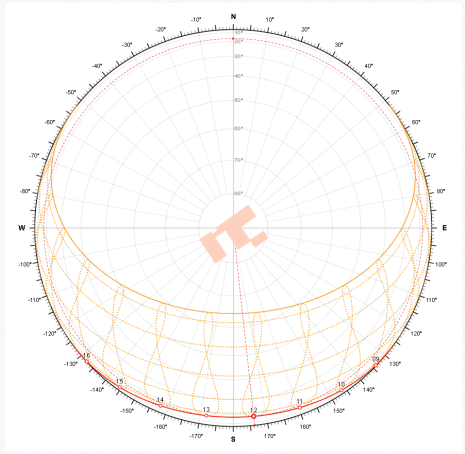
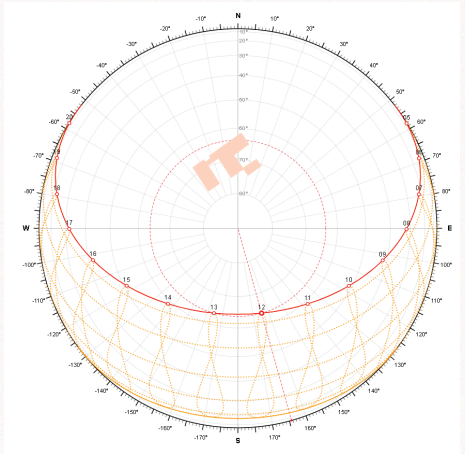


Fig 34. Sun position at 12 noon



Winter Solstice



Summer Solstice

SITE

Fig 35. Average monthly temperature

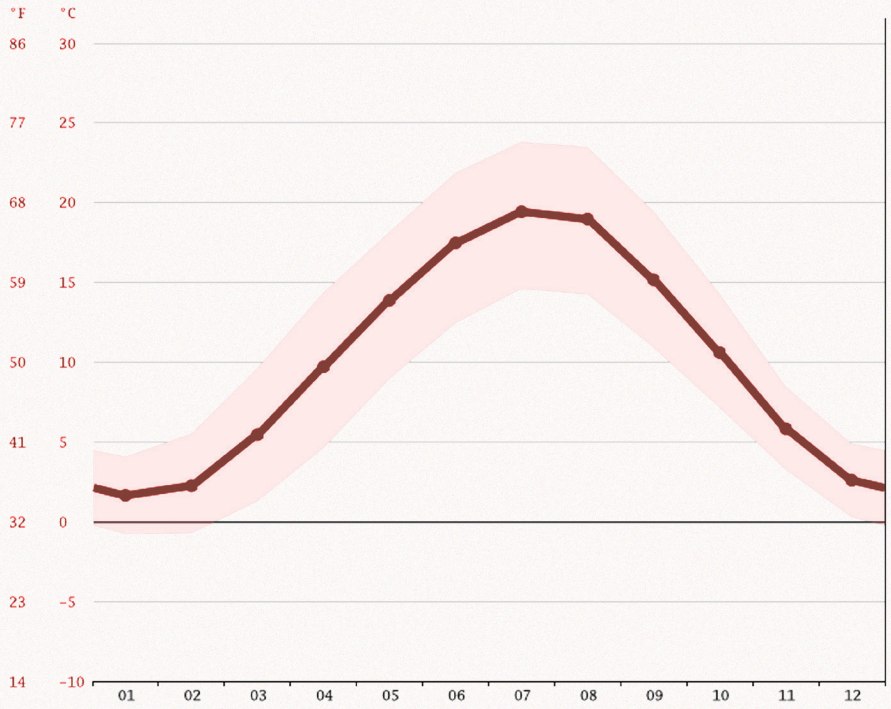
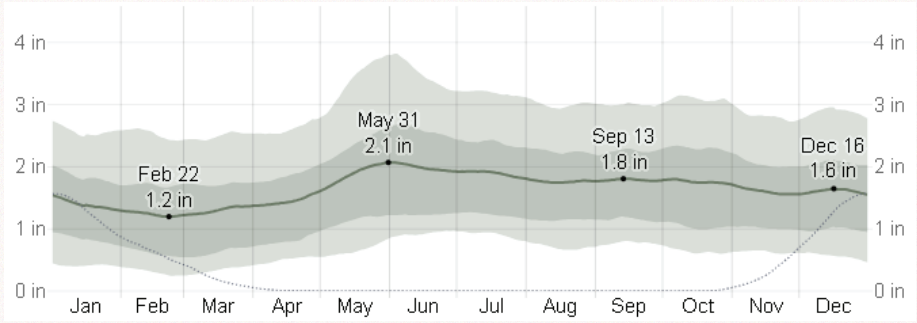


Fig 36. Average monthly rainfall



4.8 Rationale

Wohnpark Sophie Scholl was chosen as the practicum site because its location and structure align with the central themes found in my research on intergenerational living and aging in place. Which are, the importance of proximity to amenities, community integration, accessible and inclusive design.

The building's existing framework provides a real-world example of how architecture can address age-friendly design through thoughtful design and community-centered planning. Additionally, Germany's progressive approach to aging in place and intergenerational living can offer valuable insight to inform design solutions for similar contexts in other parts of the world, including Canada.

Fig 37. Building Character Collage

4.9 Building Analysis

The interior of the Wohnpark Sophie Scholl assisted living facility is designed to provide a comfortable environment. A notable aspect of its interior design is that every floor has a distinct color scheme for its flooring materials and doors. Assigning unique color schemes to each floor creates landmarks and recognizable zones that allow residents to navigate the facility easily. The use of vibrant color palettes also contributes to a lively and uplifting environment.

1st Floor 2nd & 3rd Floor 4th Floor

Fig 38. The doors of resident rooms are painted in colors that match the flooring material. Each floor has distinct colors.

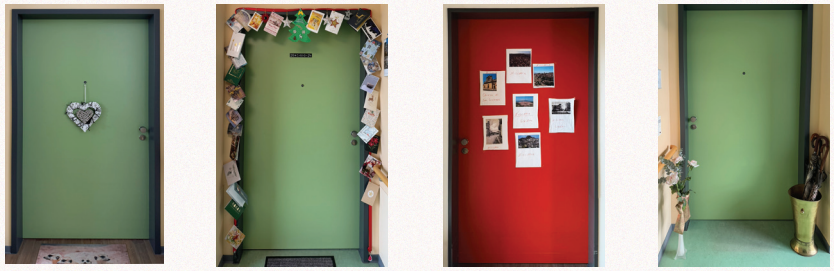
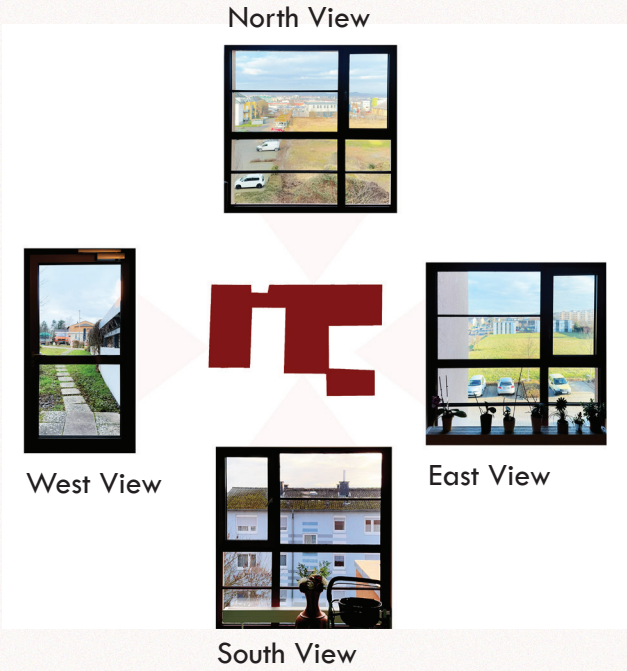


Fig 39. The personality of the residents are established in various ways in the facility. The doors of some residents are decorated with artifacts and items from their personal life.

Fig 40. Building Materials

1. ACT Ceiling
2. Wall paper
3. Fire escape wall paint
4. Ceramic wall tile
5. LVT flooring
6. LVT flooring
7. Ceramic floor
8. Ceramic floor
9. Ceramic wall tile

Fig 41. Building Window Views



4.10 Entrances and Accessibility Analysis

The center features key accessibility implementation to ensure the building is safe and usable for all persons. The building has two main entrances at the front and back of the building with various other entrances at the four fire escapes, an entrance leading to an outdoor patio at the south side of the building, and an underground garage entrance used for large vehicle deliveries and ambulances.

Fig 42. The main entrance is at the north side of the building with two entrances one that leads to an elevator for wheelchair users and another that is accessed by a staircase.

Fig 43. South entrance leading to back patio

Fig 44. Fire escape entrance

Fig 45. Two elevators adjacent to the main entrance and positioned central to the reception lobby.

The interior of the facility is equipped with large hallways with 4.5 cm grab bars placed at 84.5cm height from the ground and two central elevators.

Fig 46. Large hallways with grab bars

PROGRAMMING

05

CHAPTER 5| Programming

5.1 Programmatic Concept

Aging Together is a multi-unit intergenerational residential building (MUIRB) in Bad Kreuznach, Germany, designed to support aging in place through a two-generation household model embedded within a broader community living context. The building houses middle-aged adults (aged 45-64) and their older adult parents (aged 65+) as the primary residents. The building will also have flexible spaces to accommodate visiting adult children, grandchildren, and extended family members.

This design model responds to the fact that informal caregiving in German society today is commonly provided by adults aged 45-64 caring for their aging parents. These middle-generation caregivers usually maintain careers, manage their own households, and balance multiple responsibilities while providing daily support to their older adult parents.

The design balances three core principles:

- Accessibility: Universal design features support aging in place with dignity and independence.
- Privacy: Separate dwelling units and clear spatial boundaries respect German cultural values of autonomy.
- Connection: Shared community spaces foster voluntary intergenerational interaction during regular family visits.

Unlike traditional multigenerational models that require permanent co-residence of three generations, Aging Together creates a “living together, but apart” environment that accommodates:

- Primary residents: Two-generation households (adult children 45-64 + older adult parents 65+)
- Regular visitors: Adult children, grandchildren, and extended family
- Community members: Neighbors accessing shared amenities

The building functions as both a residential community and a social hub, with ground-floor community spaces open to the broader neighborhood. This idea expresses the essence of the German *Mehrgenerationenhäuser* model while maintaining private residential quarters above.

5.2 Core Programming Principles

This programming analysis translates the research findings from Chapters 2-4 into functional spatial requirements for Aging Together. The programming framework addresses the needs of two distinct user groups while incorporating cultural sensitivity, accessibility requirements, and German building standards. Building on the three core principles of **accessibility, privacy, and connection,** the programming is organized around six key frameworks.

1. Two-Generation Household Core
- Primary dwelling units designed for middle-aged adults and their older adult parents
- Each generation maintains separate living quarters within proximity
- Shared family spaces enable daily interaction and informal caregiving
- Design supports "aging in place" without institutional aesthetics

2. Aging-in-Place Support System
- Universal design throughout all spaces
- Accessible circulation with integrated grab bars and wide corridors
- Adaptable private quarters that can accommodate increasing care needs

3. Flexible Accommodation for Visiting Generations
- Guest bedrooms and convertible spaces for grandchildren's visits
- Adequate social spaces for extended family gatherings
- Overnight accommodation for out-of-town adult children
- Activity zones that activate during visits without being underutilized

4. Community Integration Hub
- Ground-floor spaces serve both residents and neighborhood
- Multi-purpose rooms for cultural events, health services, and social programs
- Design supports the *Mehrgenerationenhäuser* philosophy without requiring permanent three-generation co-residence

5. Caregiving Support Infrastructure
- Spaces accommodate visiting healthcare professionals
- Respite areas for informal caregivers
- Health monitoring and wellness zones
- Professional service integration (physiotherapy, nursing consultations)

6. Cultural Responsiveness
- Spatial separation honors German values of independence
- Clear boundaries between dwelling units
- Proximity enables support without sacrificing autonomy
- Design adaptable for diverse family structures within German society

5.3 Client Profile

Project Name: Aging Together: A Two-Generation Living Solution Focused on Aging in Place

Target Population: German families in Bad Kreuznach adapting to demographic realities

Client: Community Housing Initiative, Bad Kreuznach

Location: John-F.-Kennedy-Street, Bad Kreuznach Germany

Funded by: Local Government of Rhineland-Palatinate

Primary User Group:

- Middle-aged adults (45-64) serving as informal caregivers
- Older adult parents (65+) requiring varying levels of support
- German families seeking alternatives to institutional care while maintaining cultural values of independence

Client Needs:

- Separate but connected dwelling units for two generations
- Flexible spaces for visiting grandchildren and extended family (weekends, holidays, school breaks)
- Universal design supporting aging in place
- Respite and restorative spaces for caregivers
- Community spaces fostering voluntary intergenerational connection Professional caregiving support infrastructure

Client Goals:

- Support aging in place while respecting German cultural values of independence
- Enable informal family caregiving without requiring permanent three-generation co-residence
- Create flexible housing that adapts as families' needs change
- Demonstrate that intergenerational proximity (not necessarily co-residence) can work for contemporary German families

Client Values:

- Independence and autonomy
- Family support and connection
- Aging with dignity
- Community integration
- Accessibility and universal design

5.4 User Profile and Needs

Table 2

Primary Users (Daily Residents)	Population	Role	Needs	Activity
Middle-Aged Adults (Ages 45-64)	2-4 individuals per household unit	• Primary informal caregivers • Household managers	• Work-from-home spaces • Private quarters separate from parents • Respite and stress-relief areas • Spaces supporting work-life-caregiving balance	• Remote work/professional responsibilities • Caregiving coordination and support • Meal preparation and household management • Personal wellness and relaxation • Social entertaining
Older adult Parents (Ages 65+)	2-4 individuals per household unit	• Recipients of informal care • Occasional caregivers for visiting grandchildren	• Accessible, barrier-free living spaces Medical support proximity • Social connection opportunities • Autonomy and independence-supporting design	• Daily living activities (bathing, dressing, meal preparation with support) • Light exercise and physical therapy • Social interaction and cultural activities • Hobbies, reading, meditation/ prayer • Occasional grandchild care during visits

Secondary Users (Regular Visitors)	Frequency	Role	Needs	Activity
Adult Children (Ages 25-44)	Visiting 1-2 times per month to weekly	• Supportive family members • Parents of visiting grandchildren	• Comfortable visiting spaces • Places to supervise children during visits • Overnight accommodation	• Family meals • Holiday and family celebrations • Checking in on grandparents
Grandchildren (Ages 0-17)	Visiting on weekends, holidays, school breaks	• Spend time with grandparents	• Safe play areas • Activity zones • Overnight accommodation	• Playing • Doing homework • Family activities • Intergenerational learning

Extended Family Members

- Visiting relatives from Germany or abroad
- Need temporary accommodation
- Participate in family celebrations and cultural events

Tertiary Occupants (Occasional Users)

Care Professionals:
Visiting nurses, physiotherapists and home care workers. They will need professional workspace, equipment storage, private consultation areas.

Community Members
Neighbors using ground-floor shared facilities to participate in cultural and community programming.

Service Providers
Maintenance staff, delivery personnel, tutors, cultural educators, spiritual leaders.

5.5 German Building Code Analysis

Applicable Regulations

Musterbauordnung (MBO) - Model Building Code
- Fire safety requirements for residential buildings >2 stories
- Accessibility standards (DIN 18040-2)
- Sound insulation requirements (DIN 4109)

Barrier-Free Design Requirements (DIN 18040-2)
- Door clear width: Minimum 80cm (31.5 inches) clear width when door is open at 90 degrees
- Corridor/hallway width: 120cm (47.2 inches) minimum, 150cm (59 inches) preferred
- Threshold heights: Maximum 2cm (0.8 inches); new draft proposes 1cm (0.4 inches) maximum
- Turning space: 150cm x 150cm (59” x 59”) diameter required for wheelchair maneuverability
- Operating element heights (light switches, handles): 85cm (33.5 inches) recommended, maximum 110cm (43.3 inches)

Fire Safety Requirements
- Maximum travel distance to exits: 35m
- Minimum stair width: 100cm
- Fire-rated separations between units
- Smoke detection systems required

Occupancy Density Standards
- Residential: 1 person per 9m² minimum
- Community spaces: 1 person per 2.5m²
- Assembly spaces: 1 person per 1.5m²

5.6 Spatial Requirements & Activities

Table 3

Ground Level

Space	Size m^2	Activities	Primary Users	Requirements
Reception	15-20m^2	• welcome • information • mail distribution • security monitoring	Staff, all residents, visitors	• reception desk (accessible height 75-80cm) • seating for 2-3 • visual connection to main entrance and lobby • mailbox wall visible • computer station • emergency call system
Lobby With Mail Wall	60-80m2	• mail collection • informal gathering • wayfinding • visual connection to courtyard	All residents and visitors	• tree-like landmark element around column • mailbox wall (lockable compartments) • lounge seating • view to outdoor courtyard • natural lighting • durable flooring (non-slip) • adjacent to reception
		• informal seating • conversation • waiting • pre/post-meal gathering	All residents, visitors, families	• comfortable mixed seating (sofas, armchairs) • coffee tables • task lighting + ambient lighting • adjacent to communal dining • view to courtyard • warm finishes • accessible pathways (150cm turning radius)

Ground Level:

Space	Size m^2	Activities	Primary Users	Requirements
Communal Dining	120-140m^2	• shared meals • community gatherings • celebrations • informal meetings	All residents, visiting families, staff	• seating for 40-50 people • mix of table sizes (2-person • 4-person • 6-person) • accessible aisles (min 120cm) • adjustable-height tables option • natural lighting • acoustical treatments • direct access to communal kitchen • visual connection to lobby lounge
Communal Kitchen	80-100m^2	• meal preparation (staff + residents) • cooking classes • baking activities • food storage	Staff, interested residents (all ages), visiting family	• commercial-grade appliances • multiple work zones • seated work areas (700mm height) • pull-out shelving • side-opening ovens • induction cooktops • lever handles • 150cm turning radius • task lighting • ventilation system • servery window to dining
Flexible Conference/ Conversation Space	50-70m^2	• presentations • workshops • family meetings • game nights • movie screenings • private celebrations	All residents, families, external groups (support groups)	• stackable chairs (40-50) • movable comfortable lounge chairs • side tables with task lamps • wall-mounted TV/projector screen • acoustical panels • dimmable lighting • movable partition option for privacy • natural lighting with blackout shades

Ground Level:

Space	Size m^2	Activities	Primary Users	Requirements
Donation Zone	12-15m^2	• item exchange • community giving • book sharing • clothing swap	All residents, local community	• open shelving (various heights 40-180cm) • sorting table (accessible height) • donation bins • adjacent to central circulation (stairs/ elevator) • easy visual monitoring from circulation
Laundry Room	35-45m^2	• clothing washing/drying • linen care • folding area	All residents, staff	• 6-8 front-loading washers (raised on platforms 50cm high) • 6-8 dryers (stacked or raised) • folding counter (80-85cm height) with knee clearance • seating area for waiting • utility sink • sorting bins • drying racks • ventilation system • sound insulation • bright lighting
Garden Reading Nook with Computers	25-30m^2	• digital literacy • email • video calls with family • reading • quiet work	Primarily older adults, some middle-aged adults	• 3-4 computer stations (adjust-able-height desks 68-80cm) • bookshelf • comfortable reading chairs • task lighting • power outlets • WiFi

Ground Level:

Space	Size m^2	Activities	Primary Users	Requirements
Wellness Zone - Gym	100m^2	• low-impact exercise • strength training • balance work • physical therapy	All residents (with emphasis on age-appropriate equipment), visiting therapist	• gym and wellness equipments
Wood Workshop/Repair Room	40-50m^2	• woodworking • furniture repair • hobby projects • tool library	Primarily middle-aged residents, some active older adults	• work benches (adjustable height options) • tool storage (pegboard + locked cabinet) • project storage shelves • dust collection system • ventilation • bright task lighting • safety equipment (first aid • fire extinguisher) • sound insulation • easy equipment access
Daycare and Family Centre	100-120m^2	• childcare • intergenerational programs • playgroups • parent meetups	Young children (0-6), parents, grandparents, caregivers	• child-sized furniture • play zones (quiet + active) • toy storage • children's toilets (40cm height) • diaper changing station • small kitchenette • adult seating area • visual connection to outdoor courtyard • bright colors • sound insulation • direct outdoor access • secured entry

Ground Level:

Space	Size m^2	Activities	Primary Users	Requirements
Convenience Store	30-40m^2	• basic grocery shopping • household goods • grab-and-go items	All residents, staff, local community	• Convenient store equipments
Salon	25-35m^2	• hair cutting/styling • nail care • social interaction	All residents (with focus on older adults who value this service) visiting stylists	• Salon equipment
Guest Room - Standard (x2)	100-120m^2	• overnight family visits • short-term stays	Visiting family members, out-of-town guests	• single/double bed • bedside table • lamp • wardrobe • small desk/chair • accessible ensuite bathroom (shower • grab bars) • TV connection • WiFi • luggage storage • emergency call button • sound insulation • natural lighting
Guest Room - Family Suite	150-200m^2	• extended family visits • multi-day stays	Visiting families (2-4 people)	

Table 4: LEVEL 100-300

Space	Size m^2	Activities	Primary Users	Requirements
Fireplace Lounge (Landmark)	45-55m^2	• passive socialization • reading • conversation	All residents, visiting family	• Bio-ethanol or electric fireplace (focal point) • circular seating arrangement • armchairs • benches) • coffee/side tables • bookshelf • warm materials (wood, soft textiles) • ambient + task lighting • positioned along main circulation path near elevator
Planters with Seating	15m^2	• quiet reading • individual reflection	All floor residents	• 2-3 comfortable chairs • side tables with lamps • small bookshelf • natural lighting • acoustical separation from circulation • soft finishes
Reading Nook	10-15m^2	• overnight family visits • short-term stays	Visiting family members, out-of-town guests	• single/double bed • bedside table • lamp • wardrobe • small desk/chair • accessible ensuite bathroom (shower • grab bars) • TV connection • WiFi • luggage storage • emergency call button • sound insulation • natural lighting

Space	Size m^2	Activities	Primary Users	Requirements
Tenant Storage Room	60-75m^2	• Personal item storage	All floor residents	• 16 lockers (48" x 48" / 122cm x 122cm each) • secure locks (keyed) • clear numbering system
Accessible Apartment for Older Adults (x4)	70-85m^2	• independent living • sleeping • cooking • bathing • socializing with visitors	Older adults 65+, occasional visiting family	• See below

Accessible Apartment for Older Adults (x4)

General:
- non-slip flooring
- lever door handles throughout
- thermostat at accessible height (85cm)
- natural lighting
- emergency alert system connection to designated neighbor apartment

Living/Kitchen: Open plan:
- 1500mm turning radius
- pull-out shelving
- side-opening oven
- lever handles
- seated work zone (700mm)
- visual connection to corridor (privacy blinds)

Bedroom:
- space for a queen bed + furniture
- bedside emergency call
- natural light

Bathroom:
- Roll-in shower (zero threshold)
- fold-down shower seat
- grab bars (fixed + fold-down)
- wheelchair turning radius (150x150cm)
- emergency call button
- motion-sensor night light

Space	Size m^2	Activities	Primary Users	Requirements
Family Apartment for Middle-Ages Adults (x4)	95-115m^2	• multi-functional living • remote work • hosting grandchildren/parents • cooking • flexible activities	Middle-aged adults 45-64, visiting children/ grandchildren, visiting parents	• See below

Family Apartment for Middle-Ages Adults (x4)

General:
- generous coat closet
- sightline to corridor

Living Area:
- open plan
- flexible furniture arrangement
- space for dining table (6-8)
- natural lighting
- potential workspace zone

Kitchen:
- accessible design (height-adjustable island option)
- pull-out features
- accommodates visiting older parents
- adequate storage
- space for multiple cooks

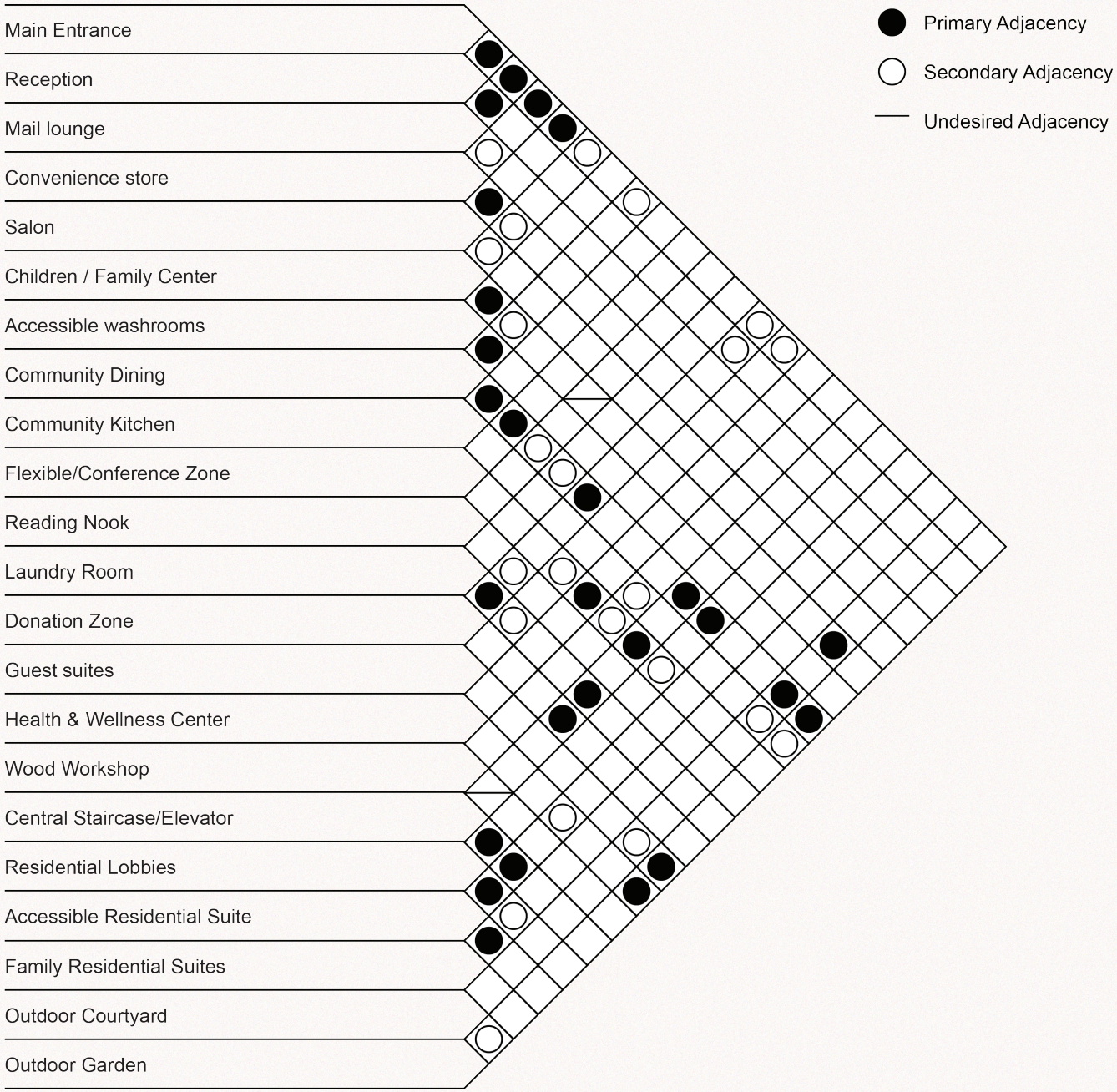
Bedroom 1 (Primary): Queen/king bed
- storage
- natural light

Bedroom 2/Flex Room: Convertible space - home office
- guest room for children/grandchildren
- built-in desk option
- murphy bed or convertible sofa'

Bathroom: Full bathroom with tub/shower combo
- grab bars installed or backing for future installation
- accessible features for when parents visit
- emergency call system option

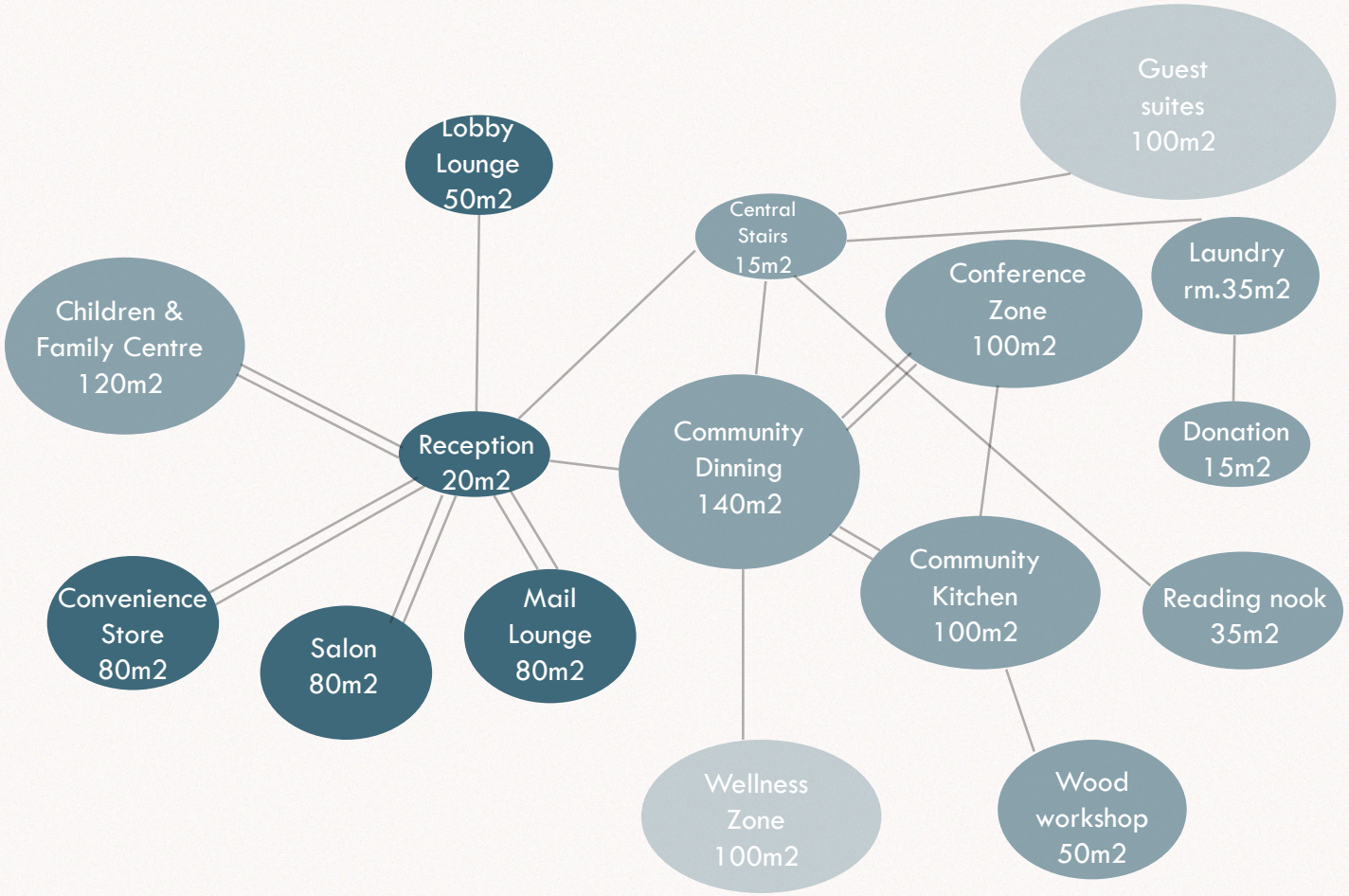
Storage: Generous closets
- room for visiting family belongings
Balcony/Terrace: Private outdoor space (if applicable)
- accessible threshold

5.7 Spatial Adjacencies



5.8 Spatial Bubble Diagram

Ground Floor



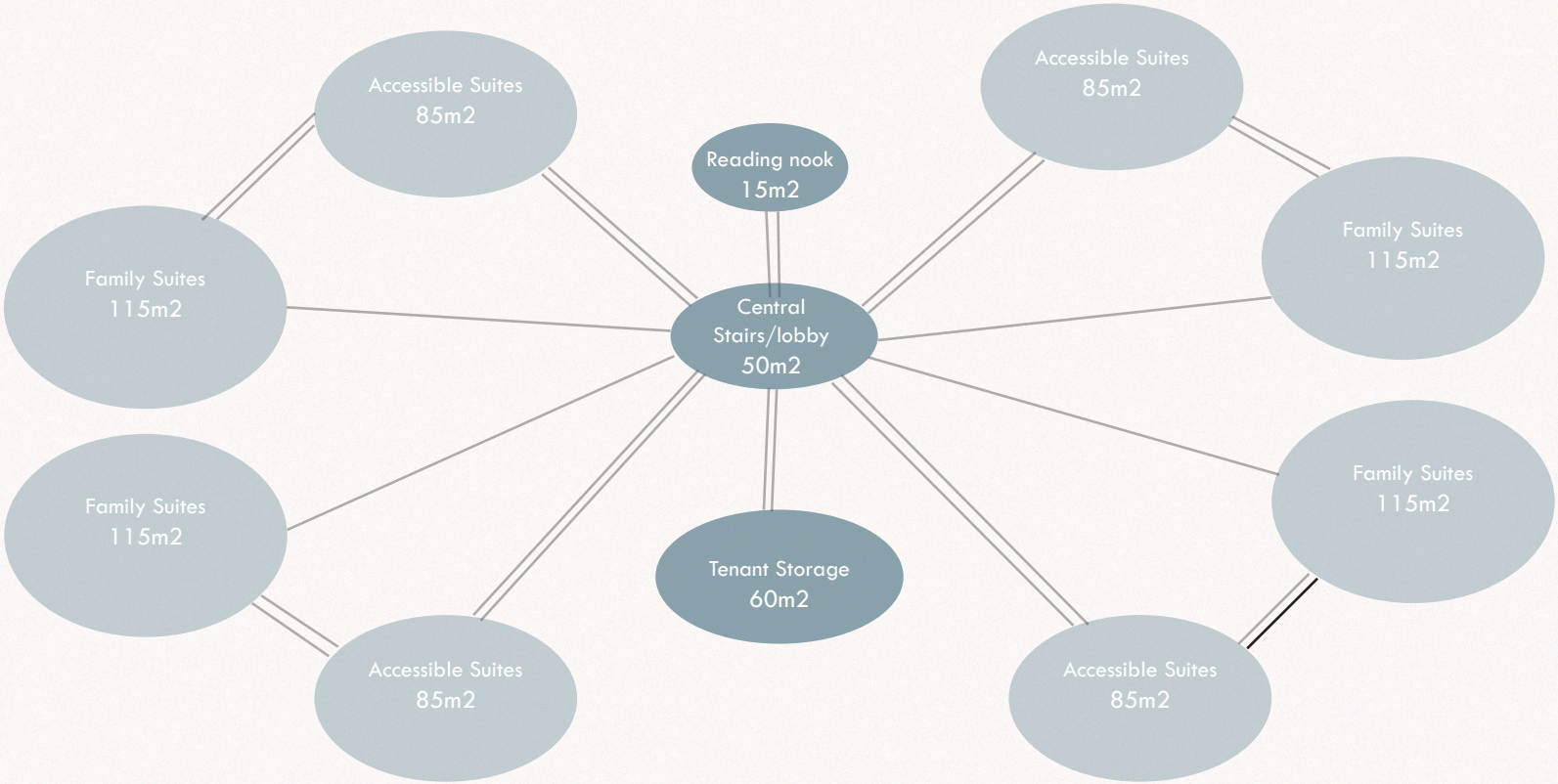
LEGEND

Central/Primary Community Spaces

Secondary Community & Family Spaces

Private & Support Spaces

Level 100 & 200

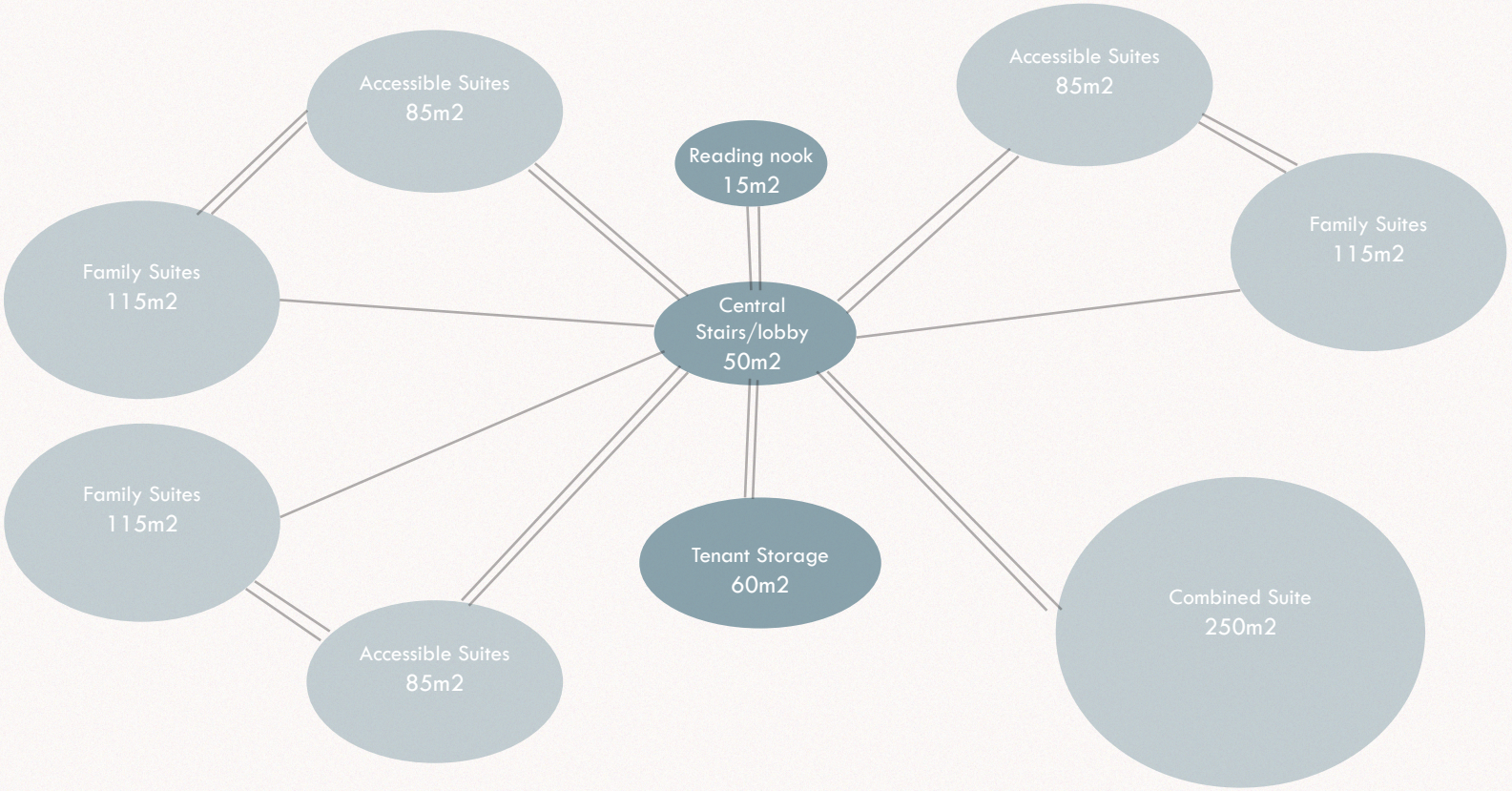


LEGEND

Secondary Community & Family Spaces

Private & Support Spaces

Level 300

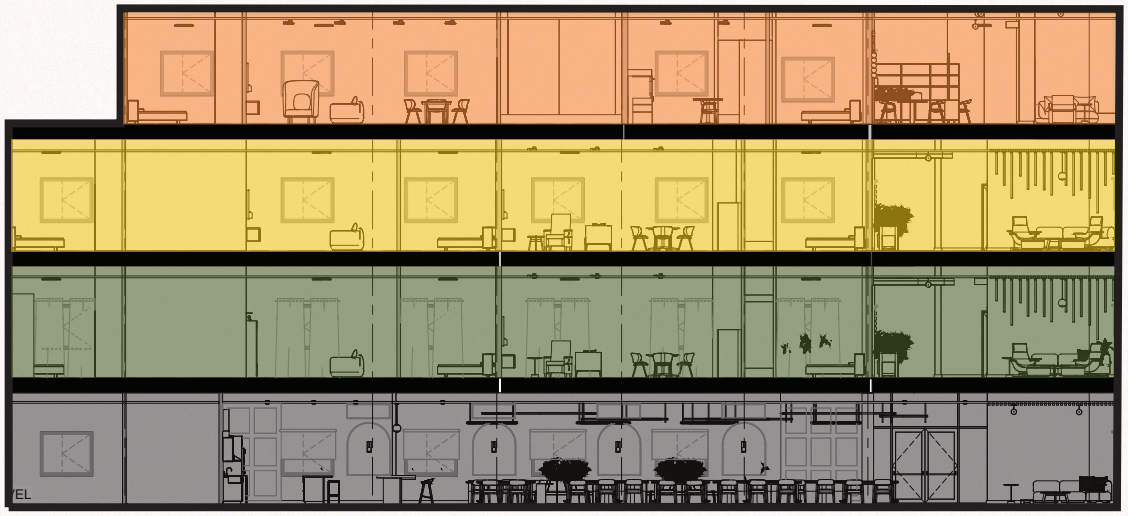


LEGEND

Secondary Community & Family Spaces

Private & Support Spaces

5.9 Vertical Adjacencies



FLOOR 3 - Residential/Private
lobby, lounge, accessible & family apartments

FLOOR 2 - Residential/Private
lobby, lounge, accessible & family apartments

FLOOR 1 - Residential/Private
lobby, lounge, accessible & family apartments

GROUND FLOOR - Communal/Public
reception, admin, lobby, dining, kitchen, flexible zones, guest suites, salon, convenience store, workshop, courtyard

Occupancy: 23 residential units supporting 40-60 residents

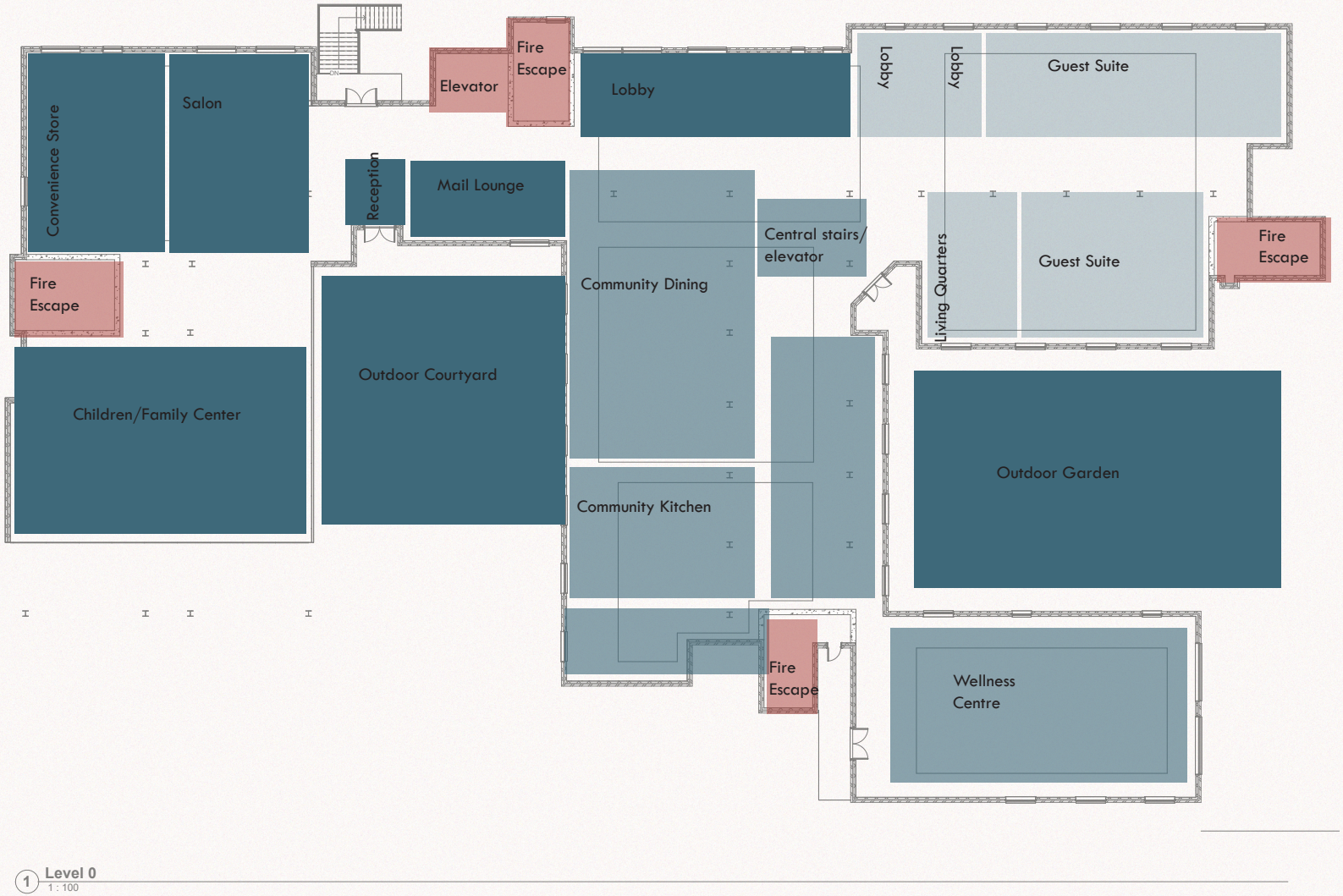
5.10 Space Blocking

Central/Primary Community Spaces

Secondary Community & Family Spaces

Private & Support Spaces

Egress



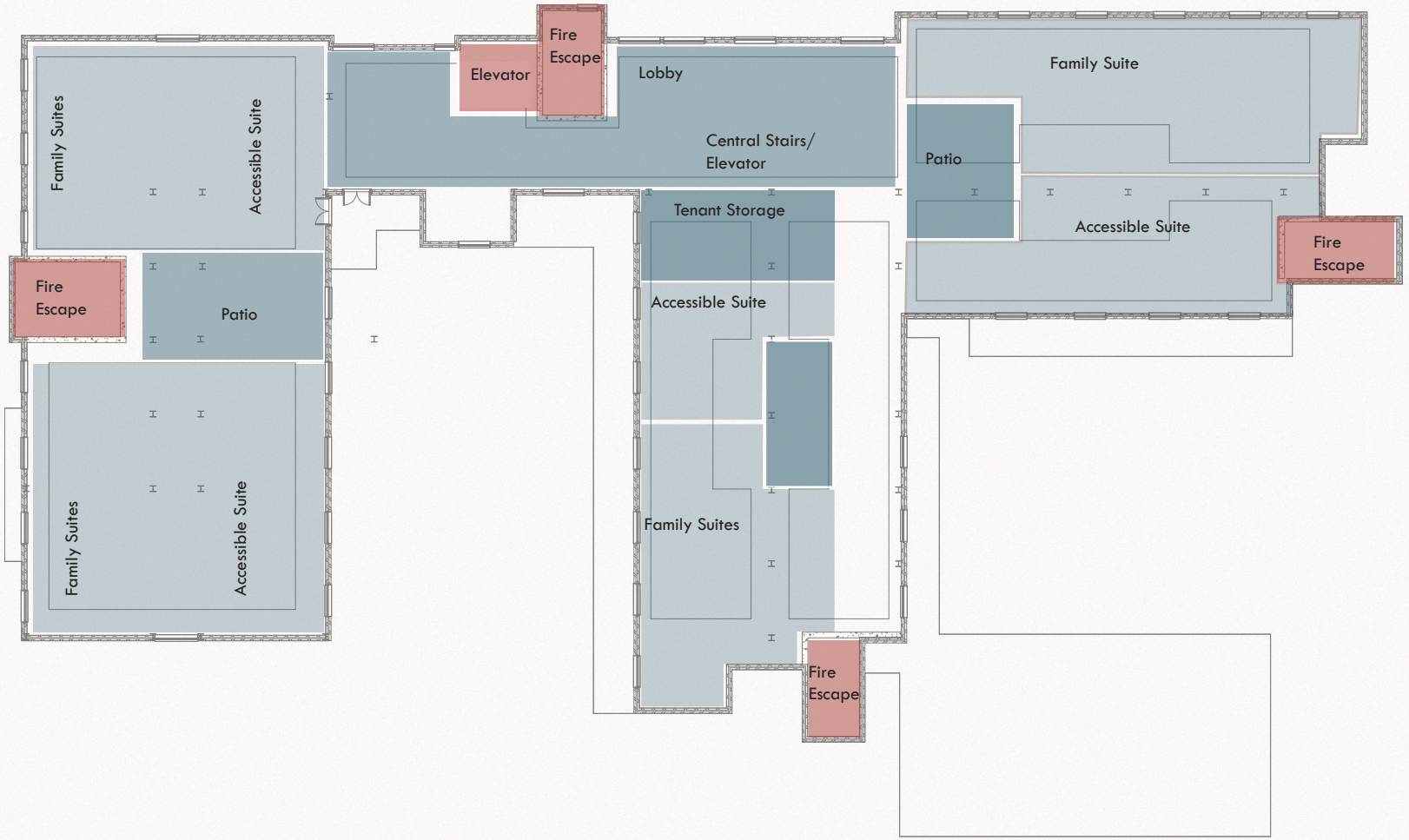
1 Level 0
1 : 100

Central/Primary Community Spaces

Secondary Community & Family Spaces

Private & Support Spaces

Egress



1 Level 1
1 : 100

Central/Primary Community Spaces

Secondary Community & Family Spaces

Private & Support Spaces

Egress

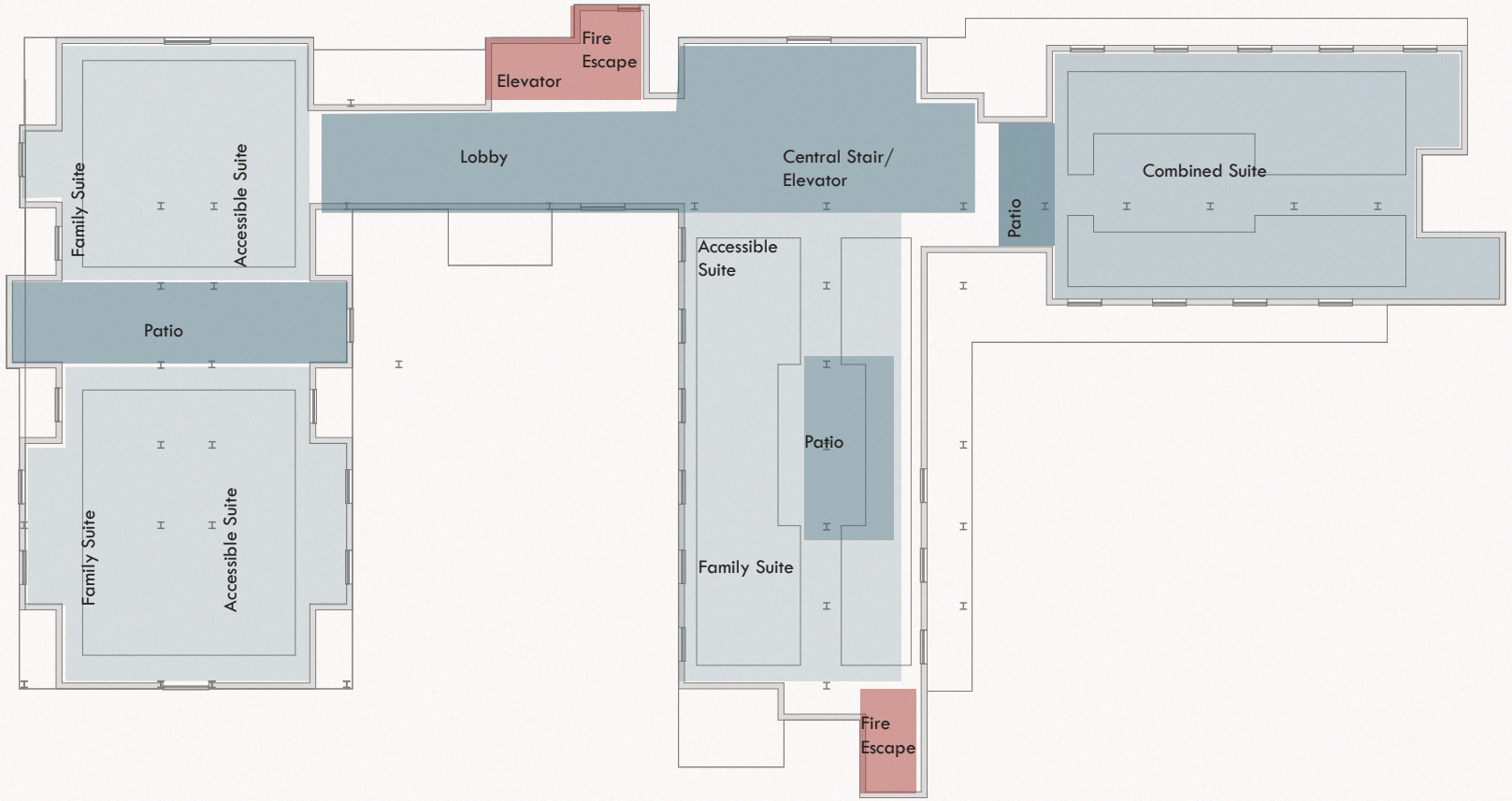
1 **Level 2**
1 : 100

Central/Primary Community Spaces

Secondary Community & Family Spaces

Private & Support Spaces

Egress



1 Level 3
1 : 100

5.11 Key Design Strategies

Landmark Circulation Strategy: Each floor's landmark feature is positioned along the main circulation path near elevators to maximize passive observation and natural encounters while respecting privacy for those not wishing to participate.

Clustered Caregiving: Apartment layouts position adult units directly adjacent to middle-aged units, with a shared patio space between them for natural, informal checking in.

Universal Design Approach: All apartments incorporate accessible features, with older adult units having the highest concentration. This avoids segregation and stigmatization.

German Cultural Alignment: Two-generation model emphasizes "living together but apart". Therefore, separate dwelling units with opportunities for support, not co-residence unless explicitly chosen (i.e, in level 300's connected unit).

Flexibility: Family apartments accommodate visiting grandchildren or visiting older parents, supporting the fluid nature of German family relationships.

Non-Institutional Character: Landmarks (fireplace, garden, tree) help in wayfinding and create a sense of place.

5.12 Space Organization Framework

Community building is encouraged through shared spaces, such as communal kitchens, gathering areas, and activity zones. These spaces encourage natural encounters and promote intergenerational participation. Proximity to nearby amenities also allow residents to connect to the neighborhood. Family Integration is encouraged through the provision of opportunities that allows for organic interaction between generations. In this setup, grandparents can share wisdom and traditions with children, parents can both give and receive caregiving support, and family bonds grow stronger through daily routines and shared responsibilities in communal areas. Private Quarters ensure each generation has its own personal space for solitude and reflection. Together, these three elements create a balanced environment where community connection and family support can thrive without sacrificing individual autonomy.

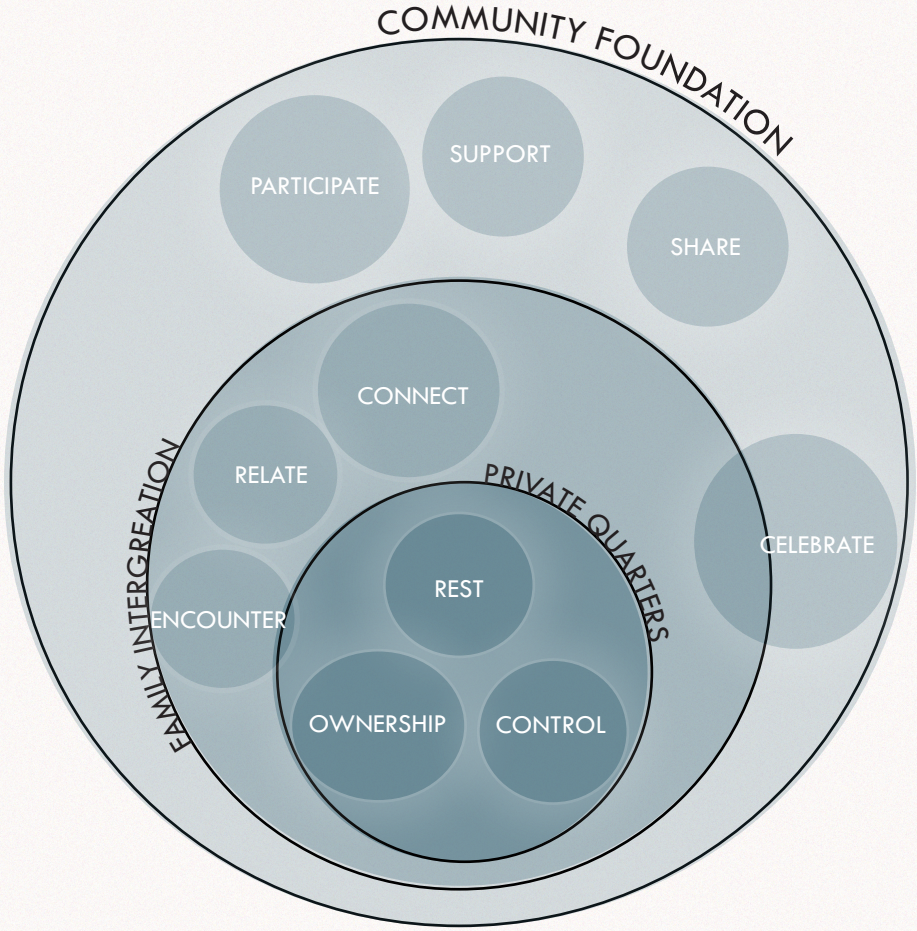


Fig 47. Spatial Organization Framework

DESIGN PROPOSAL

06

CHAPTER 6| Design Proposal

6.1 Design Intent

Aging Together is a re-imagination of intergenerational living to suit the contemporary German society. It honors both the practical need for family caregiving and the cultural value of independence. The design provides multiple models of intergenerational proximity by providing options for co-residency and for separate but nearby units. This allows families to choose the level of connection that works for them.

The design responds to the current demographic reality in Germany that informal caregiving to aging parents is usually provided by their adult children aged 45-64. This generation, usually referred to as the “sandwich generation,” juggles professional responsibilities, their own households, and sometimes supports their own adult children.

6.2 Design Strategies Gotten from the Research Chapters

The central Heart Space
Inspired by Yoruba Agbo Ile + German Mehrgenerationenhaus

- Indoor courtyard/atrium as the social nucleus
- Multi-level visual connections with bridges/ walkways
- Adaptable for cultural ceremonies, daily meals, and informal gatherings
- Incorporates plants/greenery referencing both Nigerian gardens and German biophilic design

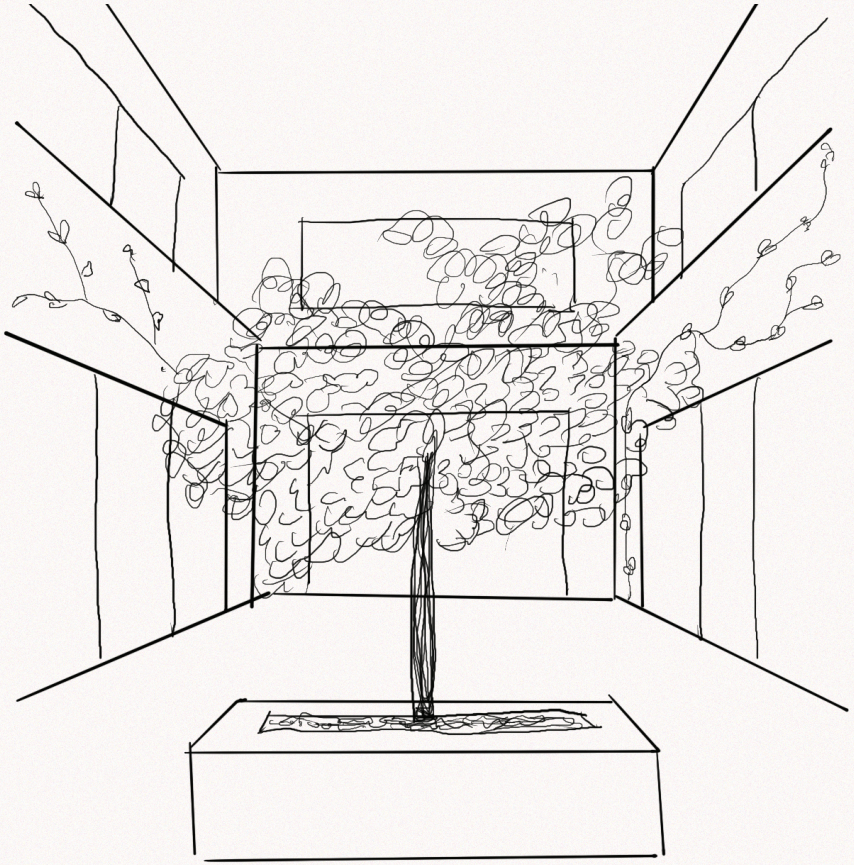


Fig 48. The Central Heart Space Created by Deborah Oluwade

Layered Privacy Zones
Inspired by Turkish + Nigerian precedents

- Outer Zone: Semi-public spaces (shared kitchen, living areas)
- Middle Zone: Family interaction spaces (dining, activity rooms)
- Inner Zone: Private quarters for each generation
- Transition Spaces: “Hayat-like” buffer zones between public and private

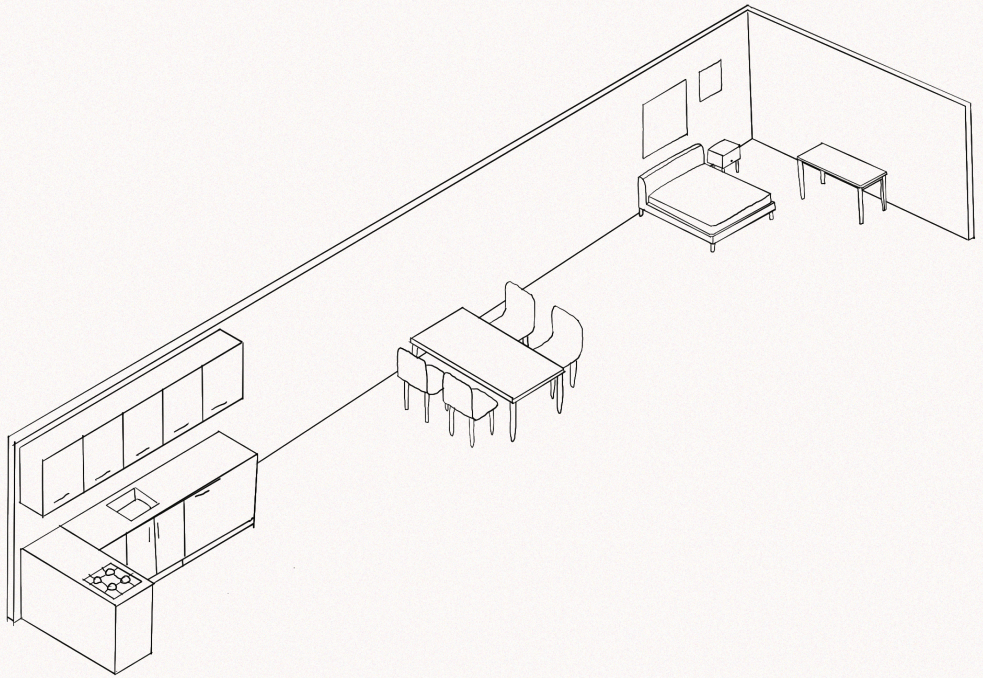


Fig 49. Layered Privacy Zones. Created by Deborah Oluwade

Flexible Adaptation Framework

Inspired by Japanese Minka influence

- Sliding partitions and movable elements
- Multi-functional rooms that transform throughout the day
- Future-proofing for changing mobility needs
- Seasonal spaces (referencing Turkish winter/ summer room concepts)

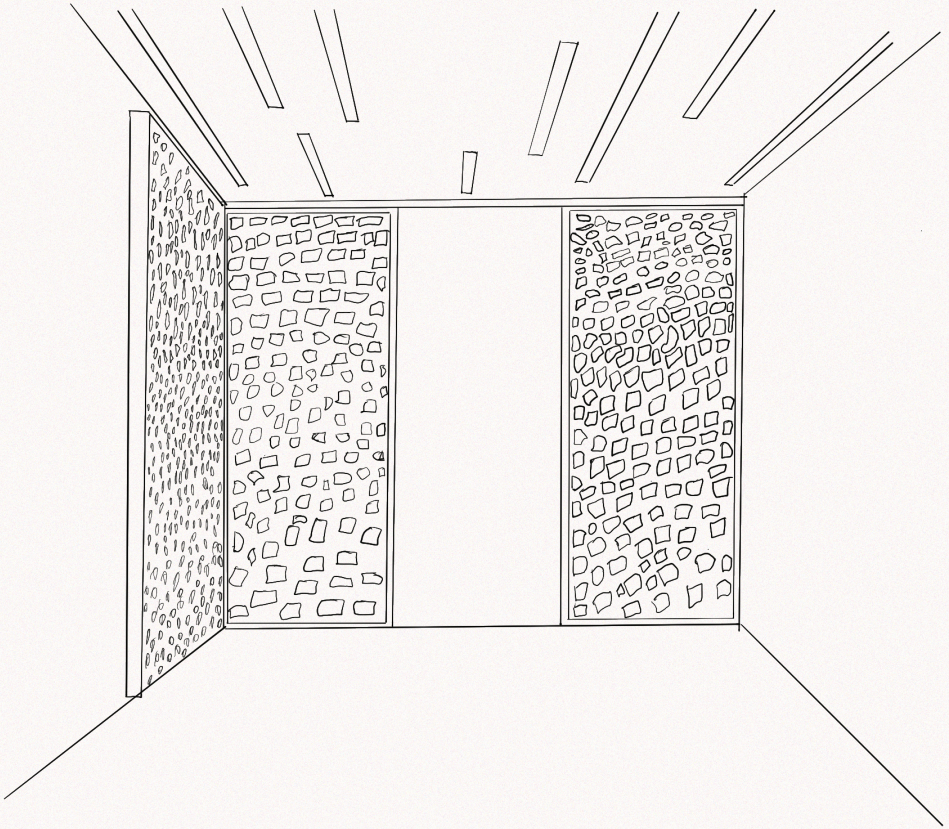
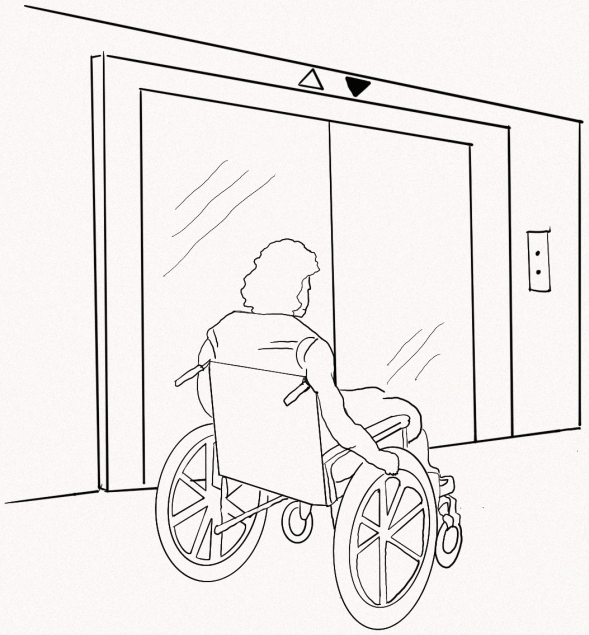


Fig 50. Flexibility Adaptive Framework.. Created by Deborah Oluwade

Aging-in-Place Features

- Universal design throughout
- Technology integration for health monitoring
- Accessible outdoor connections
- Clear sight lines for informal caregiving



Note:
Ground Floor Accessibility will prioritize universal design for aging in place. This will include wider doorways, zero-threshold entries, accessible bathroom fixtures.

Fig 51. Aging in Place Features. Created by Deborah Oluwade

6.3 Projects Core Design Philosophy: Accessibility, Privacy, Connection

ACCESSIBILITY enables older adults to age in place safely and independently through barrier-free design, fall prevention strategies, and spatial
organization that supports declining mobility and cognitive function.

PRIVACY preserves individual autonomy and dignity through fully self-contained dwelling units, acoustic separation, and clear spatial boundaries.

CONNECTION creates opportunities for voluntary intergenerational interaction through strategically positioned communal spaces that support both
passive observation and active participation, enabling informal caregiving networks to form naturally without forced programming.

Note: These three principles work in tension and balance. Too much accessibility without privacy creates institutional environments that undermine
dignity. Too many connections without privacy violates cultural norms. Too much privacy without connection defeats the purpose of proximity-based
living. The design proposal demonstrates how interior architecture can hold these values in productive equilibrium.

6.4 Design Applications

Site Plan

Fig. 52. Site Plan

Axonometric Views

FLOOR 3 - Residential/Private
lobby, lounge, accessible & family apartments

FLOOR 2 - Residential/Private
lobby, lounge, accessible & family apartments

FLOOR 1 - Residential/Private
lobby, lounge, accessible & family apartments

GROUND FLOOR - Communal/Public
reception, admin, lobby, dining, kitchen, flexible zones, guest suites, salon, convenience store, workshop, courtyard

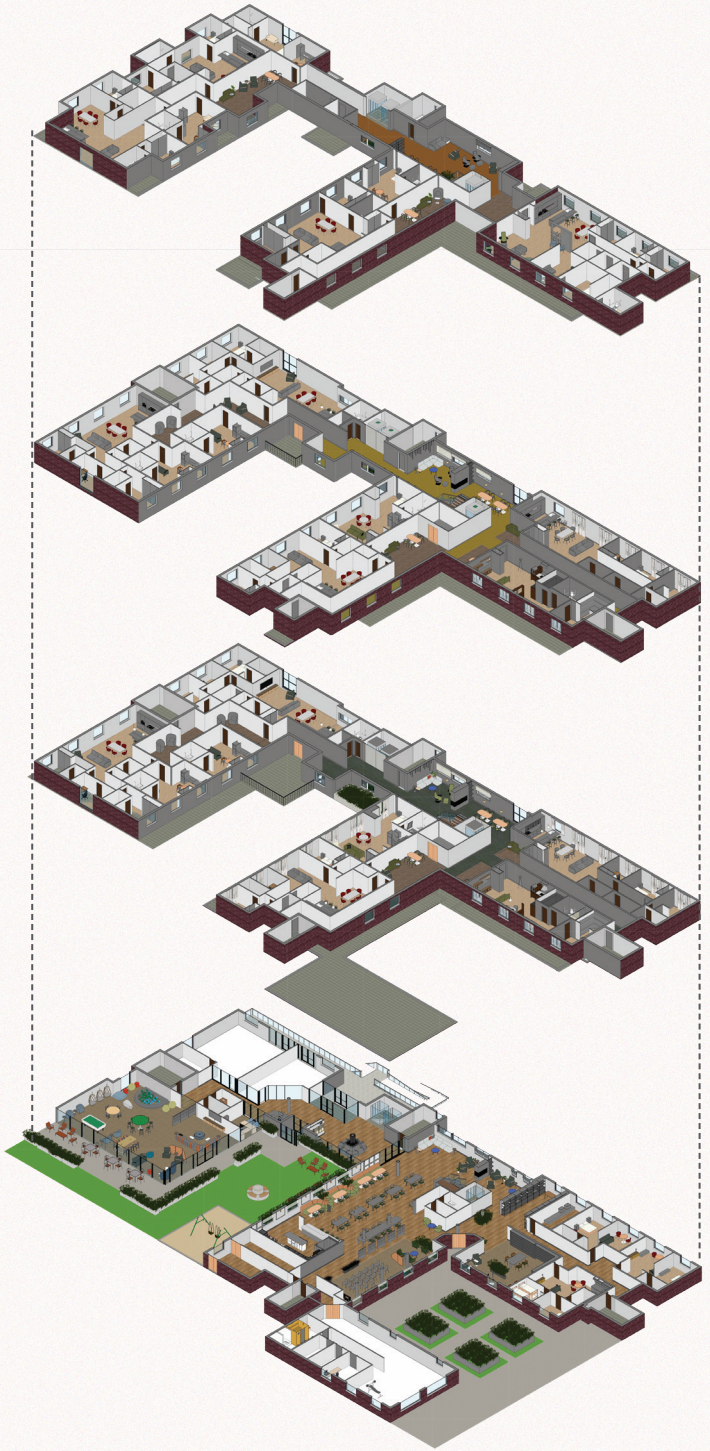


Fig 53. Front Entrance Perspective

Fig 54. Outdoor Courtyard Perspective

Spatial Organization and Zoning Strategy

The ground level of Aging Together is organized along an east-west gradient from public/active to semi-public/quiet, creating a diversity of atmospheres that accommodate different activities, noise levels, and user groups throughout the day. This zoning strategy allows the building to serve both the resident community and the broader public of Bad Kreuznach.

Fig 55. GROUND FLOOR PLAN - 1:120

Western Zone: Arrival and Connection

The western portion of the building embraces activity, noise, and public engagement. Here, the daycare and family center anchors the most vibrant zone, positioned to capture afternoon sunlight and provide direct access to the outdoor courtyard. The large glazed facade allows natural supervision. Older adult residents and staff can observe children at play from within the building, creating a natural intergenerational connection through visual engagement. The sounds of children's laughter and activity bring this area to life.

Adjacent to the daycare, the salon and convenience store face the street, providing services to both residents and the local community. This retail frontage activates the building's street presence, inviting passersby to enter and engage with the building as a neighborhood resource rather than a private residential space.

The reception area is positioned slightly west of center, creating a natural control point that allows staff to monitor both the active western programs and the quieter eastern zones.

Immediately east of the reception, the letters corner serves as both a functional mail distribution area and the building's primary social landmark. A wall of individual lockable mailboxes provides secure mail delivery for all residents, while a sculptural tree-like element wrapped around the existing structural column creates a memorable gathering point. This landmark serves multiple purposes:

- Wayfinding anchor: "Meet me under the tree" becomes a natural orientation point
- Daily ritual: Checking mail is a routine activity that brings residents together predictably
- Passive socialization: Bench seating arranged around the tree allows residents to linger, rest, observe, and chat informally
- Connection to nature: The tree metaphor brings organic warmth to the interior, countering institutional aesthetics

The letters corner is positioned along a full-height glazed wall overlooking the outdoor courtyard. This allows natural light to flood in and creates a visual connection between interior social life and the exterior landscape. This transparency encourages **"meaningful observation".** Which is the ability to feel connected to community activity without necessarily participating directly.

Fig 56. WESTERN ZONE

Fig 57. Reception Perspective

Fig 58. Reception Elevation

Fig 59. Letters Corner \ The Tree Lounge Perspective

Fig 60. The Tree Lounge Perspective

Central Core: Communal Dining and Kitchen

The communal dining room is the heart of the ground floor, positioned between the active western zone and the quieter eastern zone. This central placement makes the dining room accessible from all parts of the building while creating it as the social center of the community. The dining space accommodates 40-50 people at a mix of table sizes, allowing for both intimate conversations and larger family gatherings.

The communal kitchen is directly adjacent to the dining room, with a server window or pass-through allowing for visual connection between the kitchen and the dining area. The kitchen is designed to support both staff meal preparation and resident participation. It is equipped with adjustable-height counters, multiple work zones, and accessible appliances, enabling older adults who wish to cook to do so comfortably, while middle-aged residents can prepare meals for their parents, and families can cook together for celebrations.

The central staircase and elevator core are positioned immediately adjacent to the dining area, creating a vertical connection between the communal ground floor and the private residential floors above. This placement is strategic to allow residents coming down from their apartments for their laundry or activities to pass through the communal dining area, creating opportunities for spontaneous encounters.

Fig 61. CENTRAL CORE

Fig 62. Communal Dining Perspective

Fig 63. Communal Dining Perspective

Fig 64. Communal Dining Elevation

Central/Eastern Core: Flexible and Conference Zone

Moving east from the central dining core, the building transitions to quieter, more contemplative programs. The flexible conference/conversation space is positioned off the dining room but separated by hanging acoustic panels rather than solid walls. This separation strategy is crucial because it allows the space to function independently for workshops, presentations, family meetings, or game nights without disturbing diners, while maintaining a visual connection that makes the space feel part of the larger communal area rather than isolated. The stackable chairs and movable furniture allow residents to adapt the space to their needs.

Further east, a reading nook with computers and planters provides a quiet retreat for individual activities. The inclusion of computers acknowledges the digital literacy needs of older adults. The computer stations feature adjustable-height desks, ergonomic chairs, large-button keyboards, and glare-free screens positioned to avoid window reflection.
Integrated planters with aromatic herbs and low-maintenance greenery soften the technology zone. The reading nook is positioned to receive natural eastern light in the morning. While remaining shielded from the afternoon western sun that illuminates the active daycare zone.

The donation center is strategically positioned near the central circulation (stairs and elevators), making it visible and accessible without being visually prominent. Open shelving at various heights and a sorting table allow residents to exchange books, clothing, household items, and other goods. This space supports a community exchange culture, reducing waste while creating opportunities for interaction. The positioning near the laundry room is intentional, as residents dropping off or picking up laundry might browse donated items, combining practical errands with community engagement.

The three guest suites are positioned in the quietest corner of the ground floor, separated from the active communal programs to ensure restful sleep for visiting family members. Two standard guest rooms provide simple accommodations with a bed, an ensuite accessible bathroom, a small desk, a wardrobe, and a TV. One larger family suite includes two separate sleeping rooms, a kitchenette with a small refrigerator and microwave, a dining table for four, a living area with TV, and an accessible bathroom.

These guest accommodations are essential to the building's two-generation model. Because the project assumes that young adult children (ages 18-40) maintain independent households elsewhere. The guest suites enable these adult children to visit their middle-aged parents and older adult grandparents comfortably for weekends, holidays, and extended stays.

Fig 65. CENTRAL/EASTERN CORE

Fig 66. Flexible / Conference Zone Perspective

Fig 67. Flexible / Conference Zone Elevation

Connecting Design to Research Focus

This ground-level design directly addresses the project's three research focus:

ACCESSIBILITY: The communal kitchen and dining area demonstrate accessible design. Residents who cannot safely cook alone in their apartments can participate in meal preparation in the safer, more spacious communal kitchen. The gym and wellness area support physical health maintenance that enables continued independence. All spaces incorporate barrier-free circulation, adequate maneuvering space, and universal design features.

PRIVACY: The gradient from public to private allows residents to choose their level of social engagement. Those seeking activity can gravitate toward the western daycare/family zone; those preferring quiet can retreat to the eastern reading nook. Guest suites provide private accommodations for visiting family without invading residents' apartments. The separation of communal ground floor from residential upper floors creates clear boundaries between public and private realms.

CONNECTION: The strategic positioning of the letters corner as a daily gathering point ensures regular encounters between residents. The glazed wall to the courtyard creates a visual connection even for those who prefer observation over participation. The mix of programs, for instance, some serving only residents (laundry, donation center), some serving the broader community (daycare, salon, convenience store), integrates the building into the neighborhood fabric while creating diverse opportunities for intergenerational connection.

Levels 100, 200 & 300: The Core Residential Floors

These levels house the majority of the building's two-generation resident community, with each floor accommodating eight households. Four middle-aged family units and four accessible units for older adults. These floors are nearly identical in spatial organization, differing only in their distinctive floor color theme: Level 100 features a green theme, while Level 200 features a golden amber theme. This intentional variation creates unique identities for each floor.

Spatial Organization: Clustered Neighborhoods
The residential floors are organized around a central core-to-perimeter strategy that strategically positions different apartment types based on mobility needs and lifestyle patterns:

Central Core: Three elevators, one central staircase, and one fire-rated stair are positioned in the centre with three more fire escapes at the perimeter of the building. This ensures that no apartment is excessively far from emergency egress routes, a critical safety consideration for a building housing older adults.

Inner Ring (Adjacent to Core): The four accessible apartments for older adults are clustered immediately around the elevator and stair core, minimizing walking distance from elevator to apartment entry.
The floor landmark, which is a fireplace lounge, occupies prime real estate at the intersection of circulation paths, positioned where residents naturally pass when moving between elevators and apartments.

Rather than segregating older and younger residents into separate wings, which would create institutional "seniors' sections", the apartments are arranged in alternating clusters that form micro-neighborhoods.

Level 300 houses three older adult accessible apartments, three middle-aged family apartments, and one two-generation connected unit.

Fig 68. LEVEL 100 PLAN - 1:120

LEVEL 100 RENDERED
1 : 100

Fig 69. Level 100 Lobby Perspective

Fig 70. 1st Floor Lobby Elevation

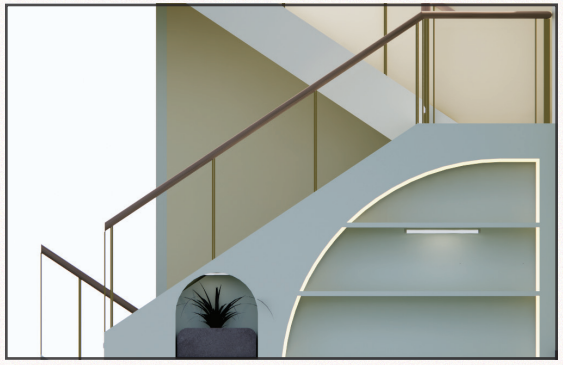


Fig 71. Centre Staircase Elevation

Family Apartments: Visitable Design for Active Adults

The family apartments (95-115m² each) on all three residential floors house middle-aged adults (typically ages 45-64) who may be caring for older parents living in the accessible apartments while simultaneously supporting adult children living independently elsewhere. These units are designed with a concept called “visitable design”. This term expresses a home that is fully functional for active, able-bodied residents but incorporates accessible features that accommodate visiting older parents or family members with temporary mobility impairments.

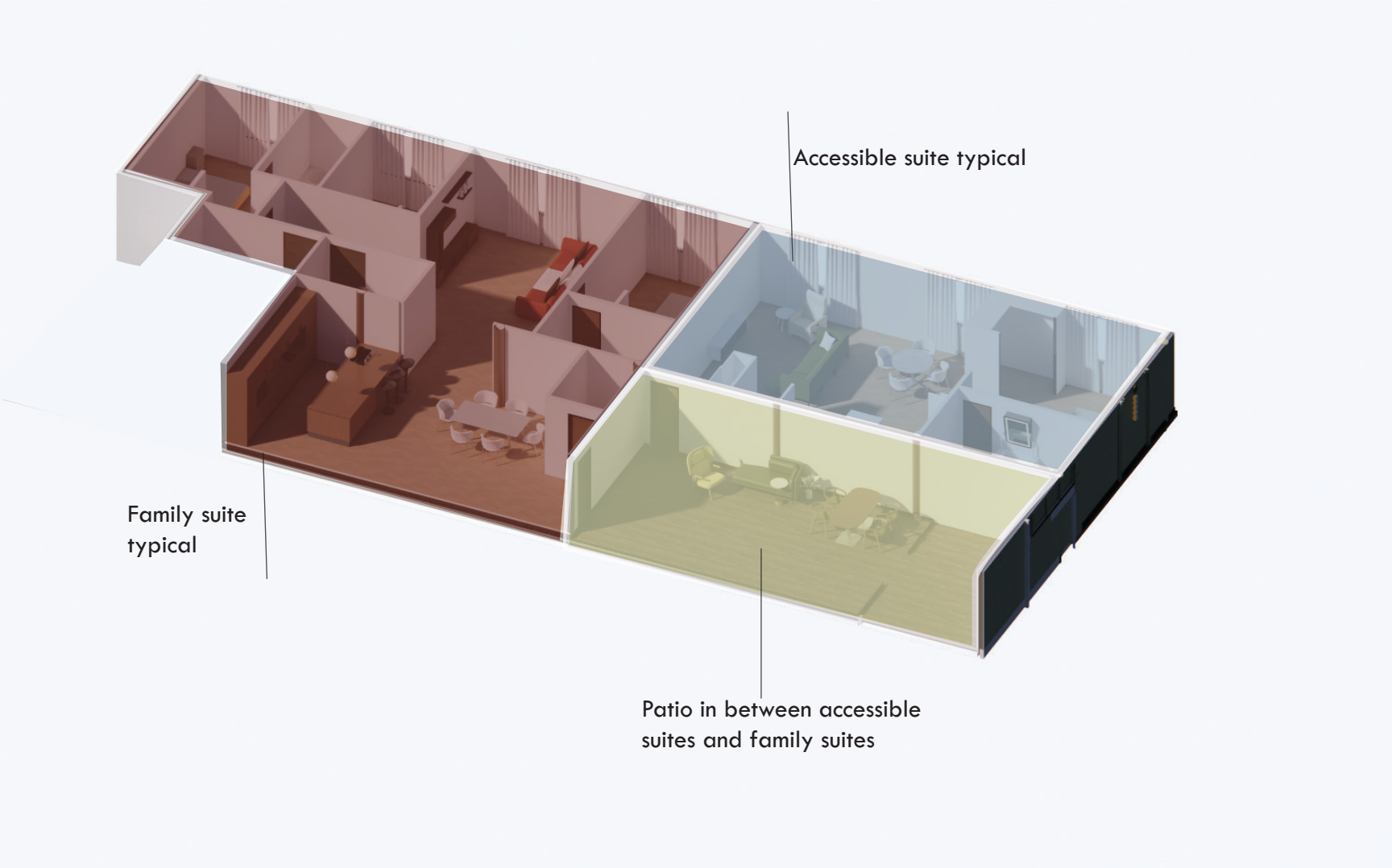
Spatial Organization

The family apartments feature open-plan layouts connecting kitchen, dining, and living areas. This openness serves multiple purposes: it maximizes daylight penetration from perimeter windows, creates flexible furniture arrangement possibilities, allows residents hosting dinner parties to interact with guests while cooking, and provides visual supervision when visiting grandchildren are present.

The Visitable Kitchen

The kitchen incorporates a height-Adjustable Island Counter. The central island features a section that can be raised or lowered (typically 28”-34” range) electronically. When adult children or middle-aged residents use the kitchen, the island sits at standard height (34”). When older parents visit, the island can be lowered to 28”, reducing shoulder strain and allowing seated work if needed. This one feature transforms the kitchen from “young adult optimized” to “intergenerationally functional.”

Fig 72. Relationship between family and accessible suite isometric diagram.



The accessible suites and the family suites share a common wall or are positioned at a corner junction, with entries facing toward or adjacent to each other. The relationship between accessible units and family units is characterized by a shared interior patio threshold. The interior patio incorporates comfortable lounge seating and a mini dining area for shared meals. The patio provides critical sight lines to observe movement and activities happening in the communal areas and entrances. The shared patio is positioned at the same level as the apartment entries.

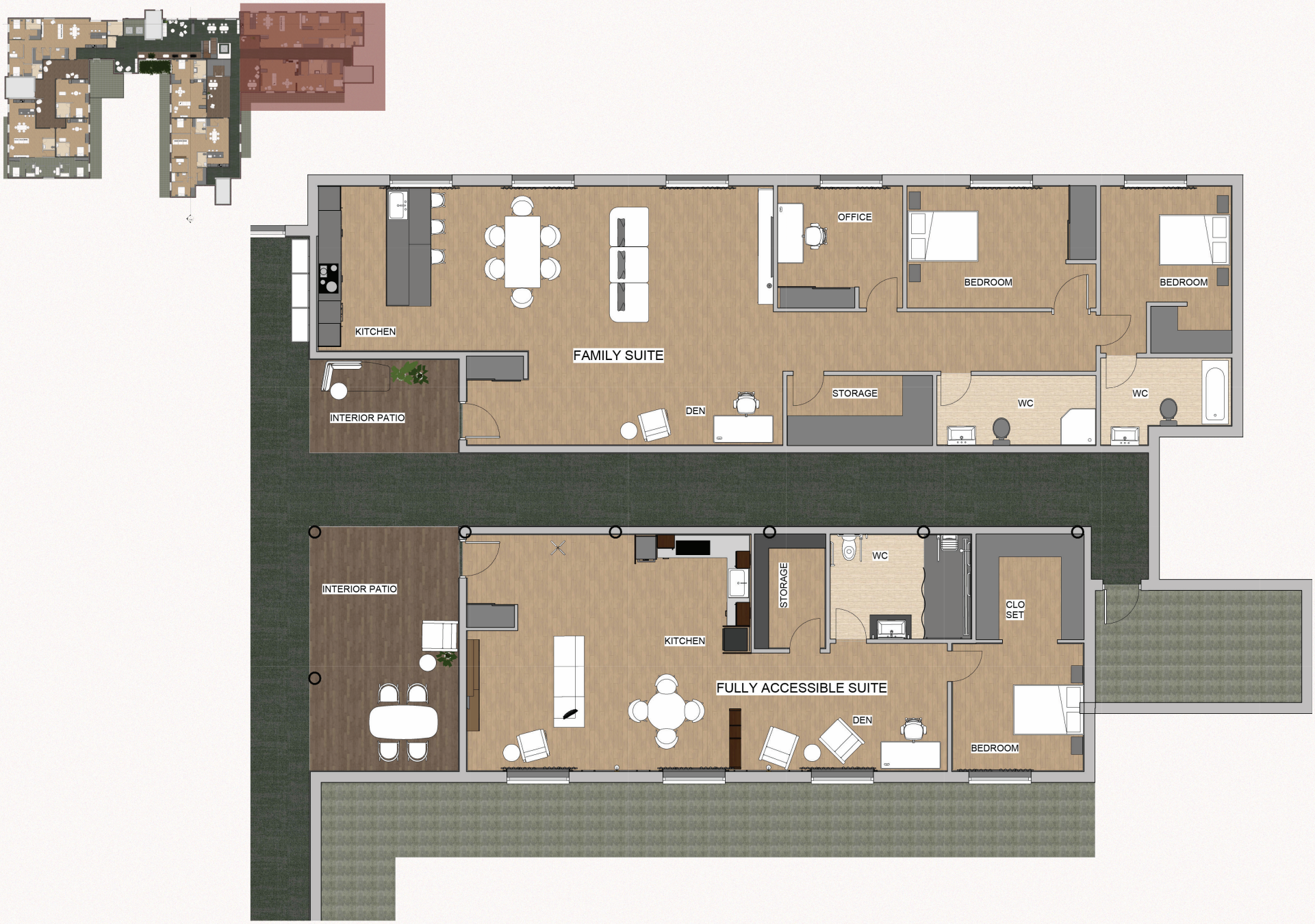


Fig 73. FAMILY AND ACCESSIBLE SUITE TYPICAL

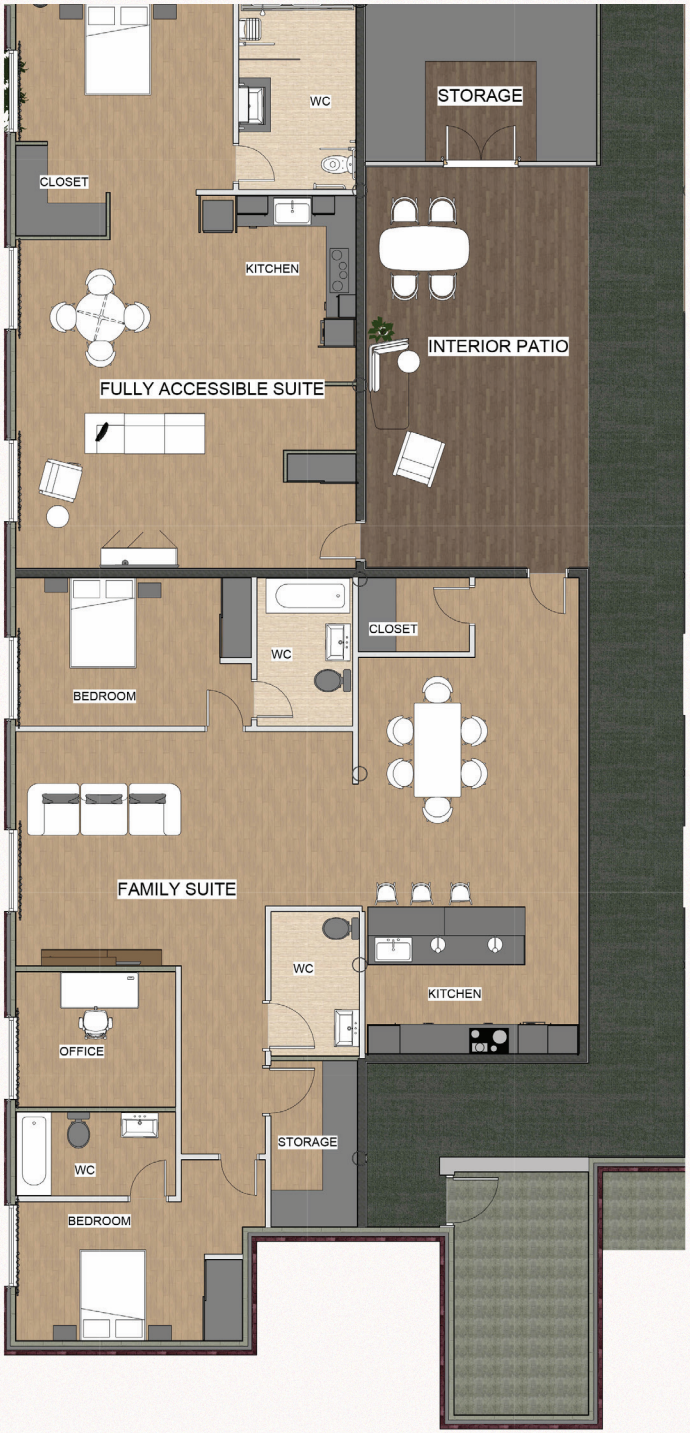


Fig 74. FAMILY AND ACCESSIBLE SUITE TYPICAL

Fig 75. LEVEL 200 PLAN - 1:120

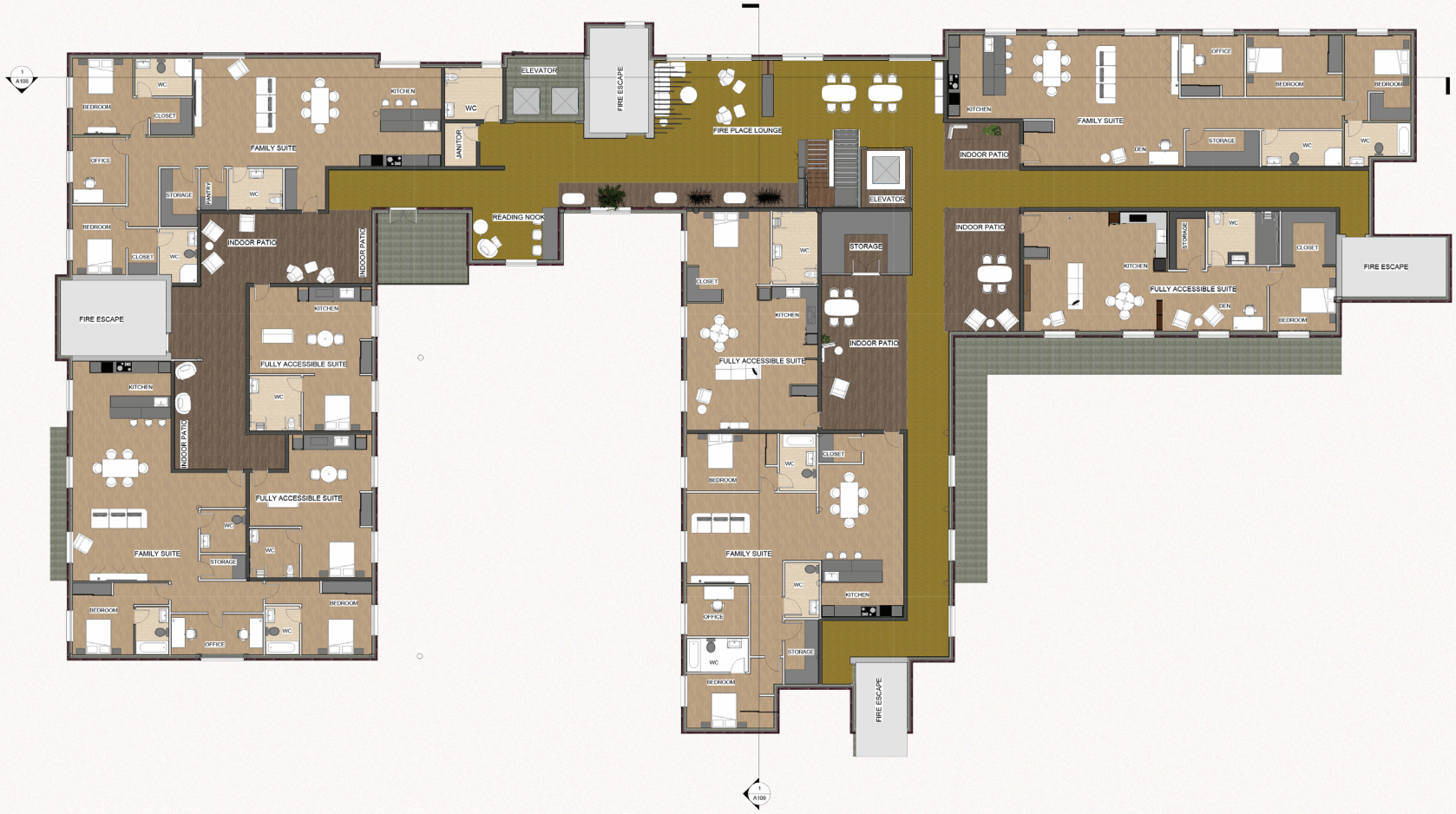


Fig 76. Level 200 Lobby Perspective

Fig 77. LEVEL 300 PLAN - 1:120

Fig 78. Level 300 Lobby Perspective

Fig 79. COMBINED SUITE TYPICAL

Accessible Suites: Full Barrier-Free Design for Older Adults

The accessible apartments serve as primary residences for older adults (typically ages 65+) who wish to live independently while benefiting from proximity to middle-aged family members and supportive building amenities. These units comply fully with DIN 18040-2 (German barrier-free design standard) while maintaining residential character rather than institutional or medical aesthetics.

Unlike the spacious family apartment kitchens designed for hosting and entertaining, the accessible unit kitchens are scaled for solo or couple cooking. Despite the barrier-free accommodations, the kitchens avoid clinical aesthetics. Cabinetry uses wood veneer finishes rather than industrial laminate, and colors give a more residential and warm feel. The goal is accessible without looking medical. Fully accessible bathrooms prioritize safety while maintaining dignity and feature a zero threshold entry roll-in shower.

Fig 80. Accessible Suite Isometric Diagram

A. Patio allowing for passive participation and natural social encounters
B. Small dinning room
C. Accessible kitchen
D. Den that can be used for face down work
E. Accessible Bathroom
F. Bedroom
G. Accessible walk in closet

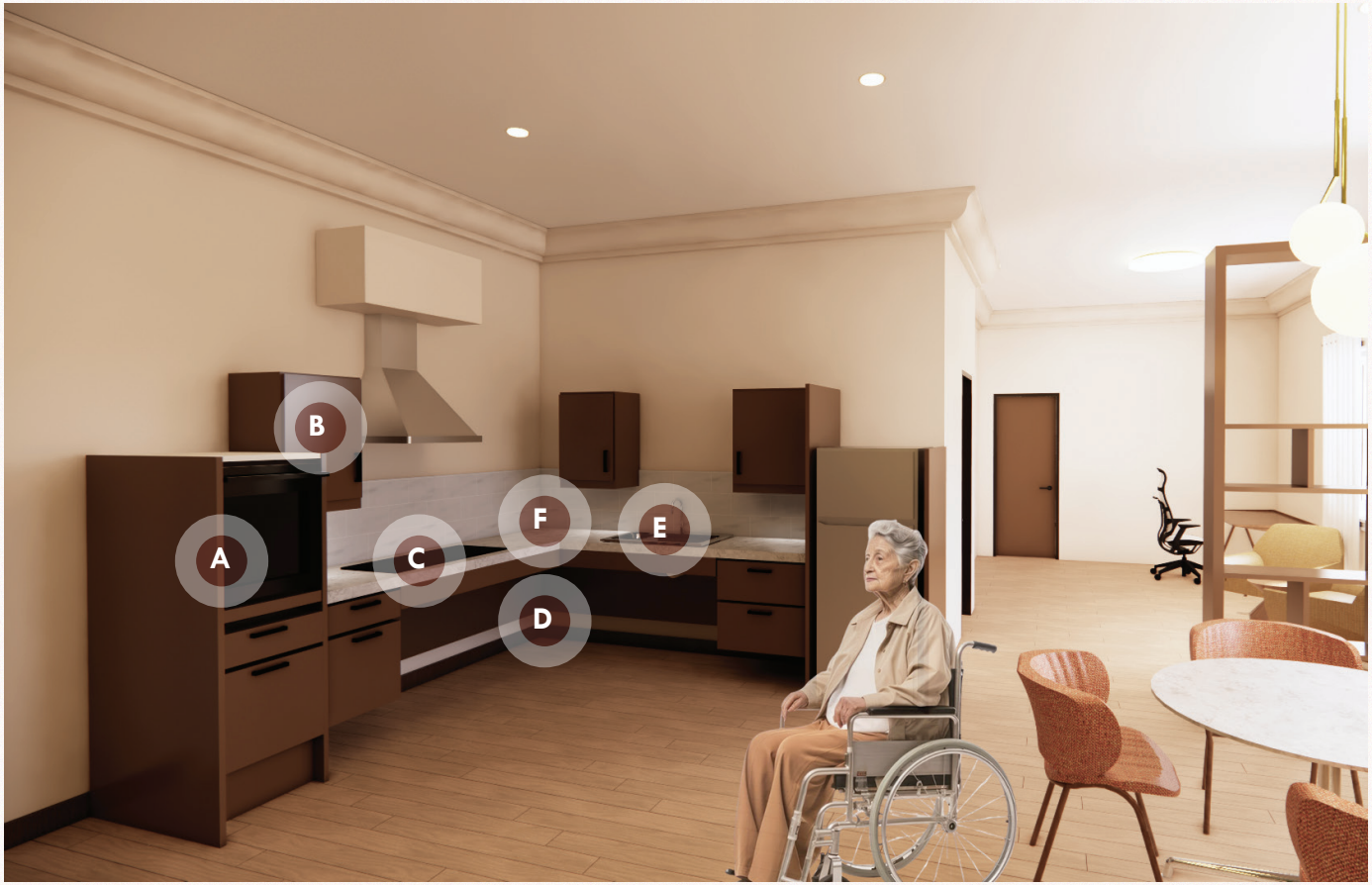
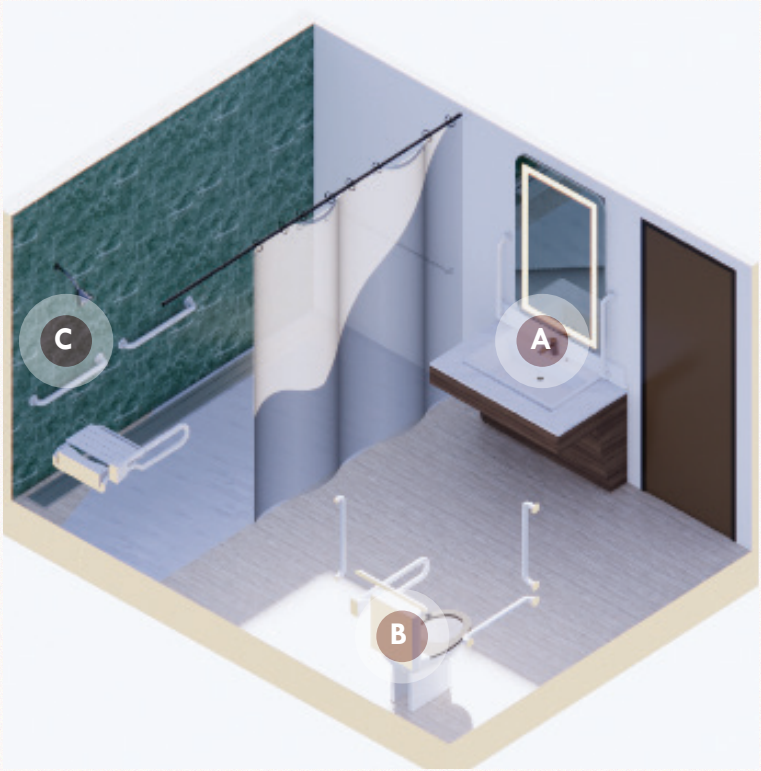


Fig 81. Accessible Kitchen Perspective

A. The oven is positioned at counter height.
B. Task Lighting: Under-cabinet LED strips with motion sensors or touch activation provide bright, shadow-free lighting at work surfaces.
C. Induction Cooktop: Eliminates open flame risk.
D. Seated Work Zone with knee clearance below, allowing seated work from a wheelchair or stool.
E. Lever Handles, Touch Controls, Voice Activation: All faucets, cabinet pulls, and appliance controls use large, easy-to-grip lever handles or touch/voice activation rather than small knobs requiring fine motor control and grip strength.
F. Continuous Counter Surfaces: The kitchen arranges sink, primary prep zone, and cooktop along one continuous counter.

Fig 82. Accessible Bathroom Isometric Diagram



A. Accessible vanity with knee clearance
B. Accessible toilet with grab bars
C. Accessible shower with shower curtain and pull down seat. Linear floor drain is used to catch water.

Conclusion

This practicum began with a question: How can interior design enable aging in place within intergenerational households? Through the research process, this question evolved into something more culturally specific and spatially precise: What interior design strategies enable intergenerational households to support aging in place by balancing privacy, connection, and accessibility in a German society?

The evolution of this question reflects a deeper understanding gained through literature review and cultural analysis. Initial concepts of three-generation co-residence proved culturally inappropriate for German society, where independence is not merely preferred but is understood as an expression of respect between generations. This cultural insight required reconceptualizing the project from permanent three-generation households to a two-generation proximity model: middle-aged adults (ages 45-64) living in the same building as their older adult parents (ages 65+), with flexible accommodation for visiting adult children and grandchildren.

The research revealed that successful intergenerational housing for German society requires focusing on three design focuses: **accessibility, privacy, and connection**. Most existing housing typologies prioritize one principle at the expense of others. Institutional care maximizes accessibility but destroys privacy and connection. Isolated senior apartments preserve privacy but sacrifice connection and eventually compromise accessibility.

Aging Together in Bad Kreuznach demonstrates that all three principles can be achieved simultaneously through strategic spatial relationships. Accessible apartments for older adults are positioned immediately adjacent to family apartments. This transforms informal caregiving from burdensome cross-town visits into effortless daily micro-interactions. A patio between adjacent apartment entries serves as an intermediate zone. The older adult sitting on the patio signals openness to interaction while maintaining the option for privacy. This creates ambient awareness without intrusion and respects dignity through voluntary participation.

Family apartments integrate accessible design like height-adjustable kitchen counters, adequate turning radius, accessible guest bathrooms, and zero-threshold entries. The older parent can visit for dinner, help with meal preparation while seated, and use the bathroom independently, then return to her own apartment. The integrated system creates conditions where sustainable informal caregiving becomes possible within a framework that honors German cultural values of independence and autonomy.

Germany, like most Western nations, is moving towards an aging population. This project proposes a third way: proximity-based intergenerational living where families can provide informal care within a living arrangement that preserves dignity, autonomy, and privacy.

Researcher's Reflection

As a Nigerian woman in her twenties studying in Canada and investigating German housing, I approached this project from an outsider perspective. This position offered both advantages and challenges. My cultural background, where extended family co-residence is normal and encouraged, initially made me biased, and I tried to force the multigenerational concept into German society. The research process taught me that proximity and co-residence are not synonymous, and that cultural values shape which spatial arrangements feel supportive versus intrusive. In the Nigerian context, shared domestic space demonstrates family commitment; in the German context, separate households demonstrate respect. Both cultures value family bonds; they simply express them through different spatial relationships.

I leave this project with deepened appreciation for the complexity of culturally responsive design. The same spatial configuration can signal care or control, support or surveillance, respect or neglect, depending on cultural context and resident autonomy. Good design must be grounded in understanding the specific population it serves, their values, their challenges, and their aspirations for later life.

Appendix A - Materials and Finishes

Fig 83. Ground Level Material Board

Fig 84. Level 100 Material Board

Fig 85. Level 200 Material Board

Fig 86. Level 300 Material Board

Appendix B - Material Schedule

No.	Name/Type	Specification	Location	Manufacturer
1	Nordic Brass	Polished Brass	Light fixture finishes	Inox Scheiftechnik
2	Wood Veneer	American Walnut	All doors unless otherwise specified	Mundy Veneer
3	Upholstery Green	Hint Sea Green	100 level lobby area, mail-wall lounge	Designtex
4	Upholstery Orange	Mackintosh Salmon	300 level lobby area, mail-wall lounge, accessible apartment	Designtex
5	Upholstery Yellow	Wollin	100 level lobby area, mail-wall lounge, ground level lobby	Vescom
6	Upholstery Beige	Croise Collobrieres	All apartments, mail-wall lounge, communal dinning, all level lobbies	Ficelle
7	Solid Surface Slab	Sand Storm	Communal kitchen, all apartment kitchens, all bathrooms	Corian
8	Wood Laminate	Refined Oak	Commnal kitchen, all apartments, reading nook, confference zone	Laminex
9	Paint	Varnished Ivory - eggshell finish	All walls/ceilings except otherwise specified	Behr
10	Wood Slats	Planked Walnut	Acoustic ceiling wood slats in confference zone, level 100-300 lobbies	Alpi
11	Stone	Royal White Splitface Stacked Stone	Communal kitchen, level 100 and 200 lobby	MSI
12	Faucet Finish	Black	All door handles, all faucets unless otherwise specified	Kingston
13	Carpet Beige	Tempo	Conference zone, staff private office, ground floor lobby, ground floor reading nook	Shaw contract
14	Handrail	Fumed Oak	Staircase rails	House of forgings
15	Hardwood Floor	Thatch	100 level flooring	Shaw contract

No.	Name/Type	Specification	Location	Manufacturer
16	Hardwood Floor	Hearth	Apartment flooring	Shaw contract
17	Bathroom Wall Tile	Le Gemme wall tile green	100 level apartment toilets	Bisazza
18	Upholstery Green	Facet Topiary green	100 level lobby area, 100 level patio area	Designtex
19	Upholstery Green	Lounge Mallard	100 level lobby area, 100 level patio area	Designtex
20	Upholstery Lemon	Wollin 7050.43	100 level lobby area, 100 level patio area	Vescom
21	Upholstery Green	Tuscany II - Cactus	100 level lobby area, 100 level patio area	Sanderson
22	Paint	Healing Plant	100 level lobby area	Behr
23	Paint	Minted Lemon	100 level lobby area	Behr
24	Carpet Yellow	Grounded Harmony Invent	Level 200 lobby	Tarkett
25	Toilet Wall Tile	Le Gemme wall tile yellow	200 level apartment toilets	Bisazza
26	Upholstery Yellow	Facet Topiary yellow	200 level lobby area, 200 level patio area	Designtex
27	Upholstery Yellow	Sidetrack Marigold	200 level lobby area, 200 level patio area	Designtex
28	Upholstery Green	Wend Topiary	100-300 level lobby area, 100-300 level patio area	Designtex
29	Upholstery Yellow	Brushed Flannel Yellow Gold	200 level lobby area, 200 level patio area	Designtex
30	Paint	Midsummer Gold	200 level lobby area	Behr
31	Paint	Spirited Yellow	200 level lobby area	Behr

No.	Name/Type	Specification	Location	Manufacturer
32	Carpet Green	Plain Green Chenille	100 level lobby	Shaw contract
33	Carpet Orange	Grounded Harmony Connate	Level 300 lobby	Tarkett
34	Bathroom Wall Tile	Luz Aragosta	300 level apartment toilets	Marazzi
35	Upholstery Orange	London Crypton Ginger	300 level lobby area, 300 level patio area	Designtex
36	Upholstery Orange	Micro Tweed Terra-cotta	300 level lobby area, 300 level patio area	Designtex
37	Paint	Japanese Koi	300 level lobby area	Behr
38	Paint	Cactus Blooms	300 level lobby area	Behr

Appendix C - Lighting Typicals

Product Name: Mirror Ball Pendant
Location: Reception, Kitchens
Manufacturer: Tom Dixon

Product Name: IC Pendant
Location: Kitchen Islands
Manufacturer: Flos

Product Name: Ceiling Wash
Location: Ambiance lighting all through floor plans.
Manufacturer: Focal Point

Product Name: Pendant Light
Location: Communal Dining, Conference Zone, Level 100-300 lobby
Manufacturer: Snelling Studio

Product Name: Clara Ceiling Wash Light
Location: Communal Dining, Conference Zone, Level 100-300 lobby
Manufacturer: Flos

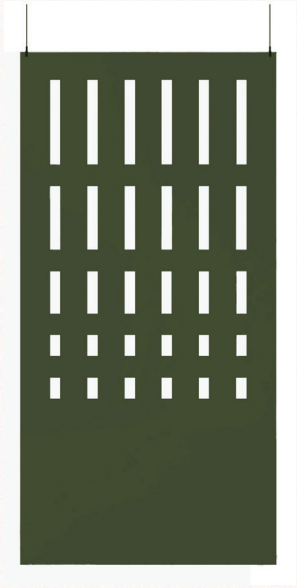
Product Name: Campfire Big Lamp
Location: Reading Nooks
Manufacturer: Steelcase

Product Name: Under cabinet lighting
Location: Kitchens, lobbies
Manufacturer: Good Earth Lighting

Appendix D - Acoustic Solutions Typicals

Product Name: Sonic Suspended Acoustic Ceiling Cloud
Location: Communal Dining
Manufacturer: Lamvin

Product Name: Woodworks Linear Veneered Open
Location: Floor 100-300 Lobbies, Conference Zone
Manufacturer: Armstrong Ceilings



Product Name: Bar Acoustic Room Dividers
Location: Conference Zone
Manufacturer: Hush Acoustics

SYMBOL LEGEND

DRAWING REFERENCE SYMBOLS

SECTION CUT

DRAWING NUMBER
SHEET NUMBER

INTERIOR ELEVATION

DRAWING NUMBER
SHEET NUMBER

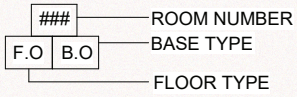
EQUIPMENT SCHEDULE

KEYNOTE SYMBOL

CEILING ASSEMBLY

CEILING FINISH TYPE

ROOM NAME & FINISHES



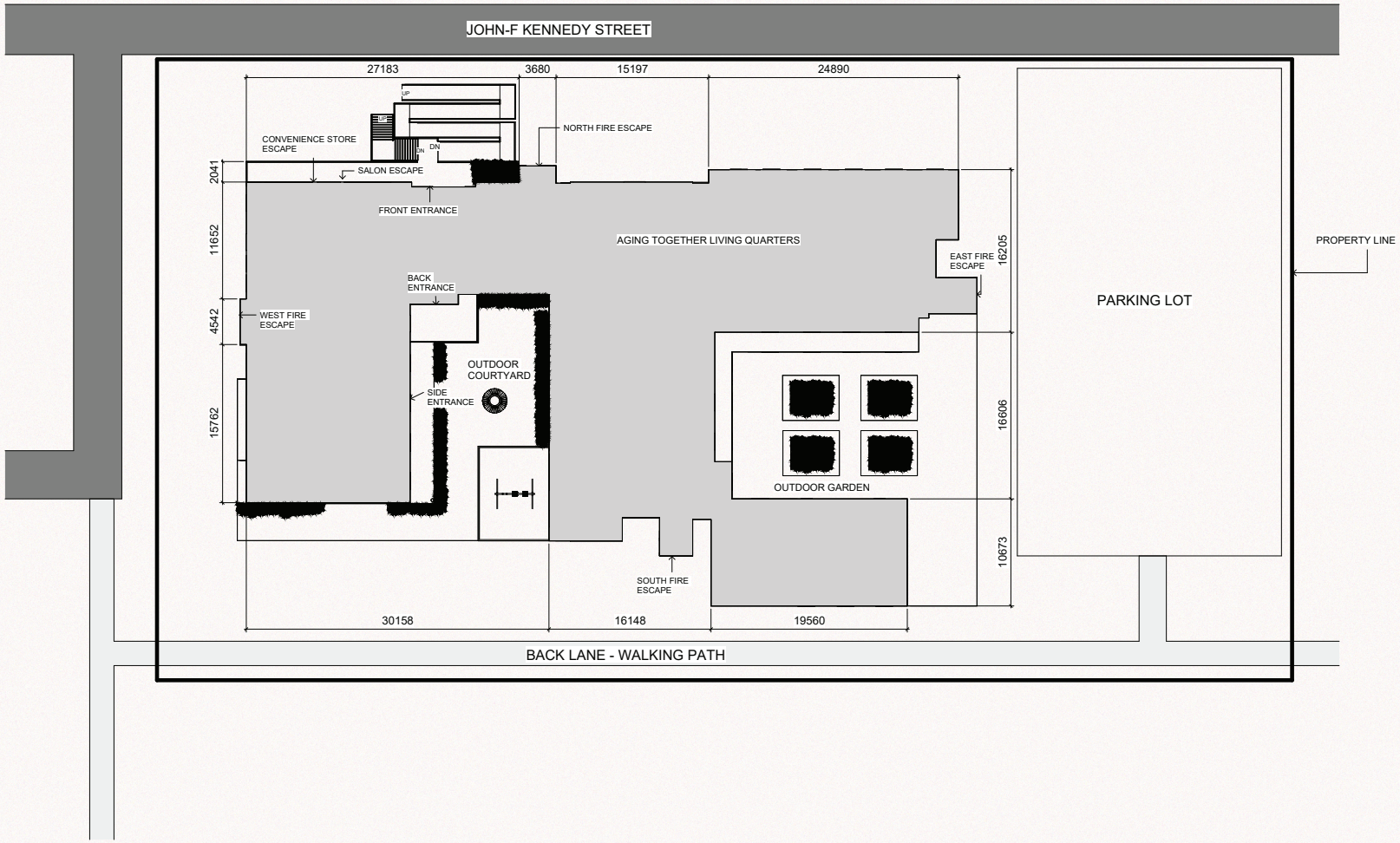
ABBREVIATIONS

A.F.F	ABOVE FINISHED FLOOR
GWB	GYPSUM WALL BOARD
PL	PLYWOOD
LD	LED
TB	TIMBER
LV	LAVITORY
SD	SOAP DISPENSER
PTR	PAPER TOWEL DISPENSER & RECEPTICAL
WC	WATER CLOSET
GB	GRAB BAR
HPL	HIGH PRESSURE LAMINATE
RWB	RUBBER WALL BASE
CT	CERAMIC TILE
GYP.	GYPSUM
PT	PAINT
ACT	ACOUSTIC CEILING TILE

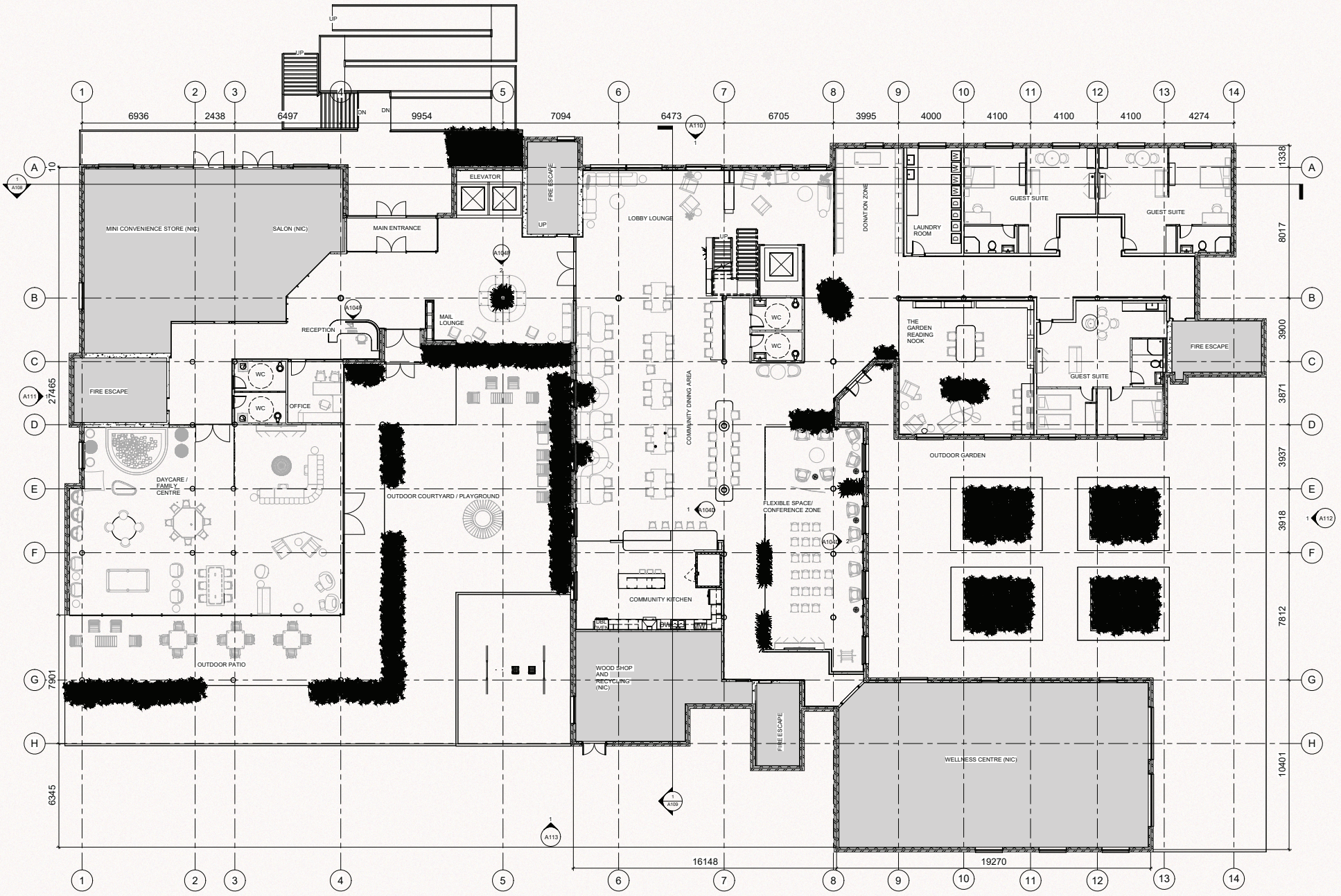
DISCLAMER

THIS DRAWING SET IS IN REFERENCE TO THE 2015 NATIONAL BUILDING CODE OF CANADA

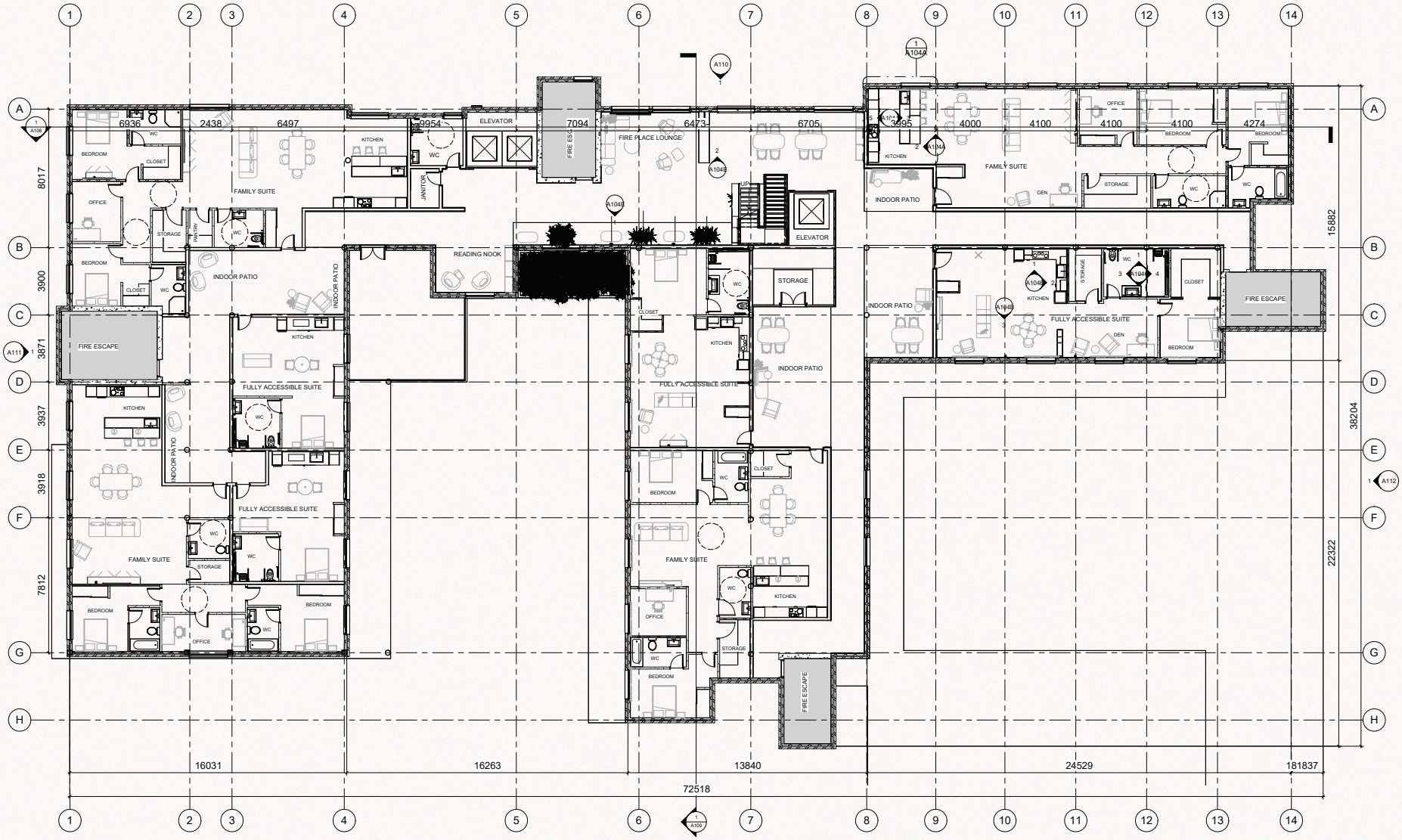
DO NOT SCALE DRAWING, WORK TO FIGURED DIMENSIONS



1 SITE PLAN
1 : 200



1 GROUND LEVEL
1 : 100



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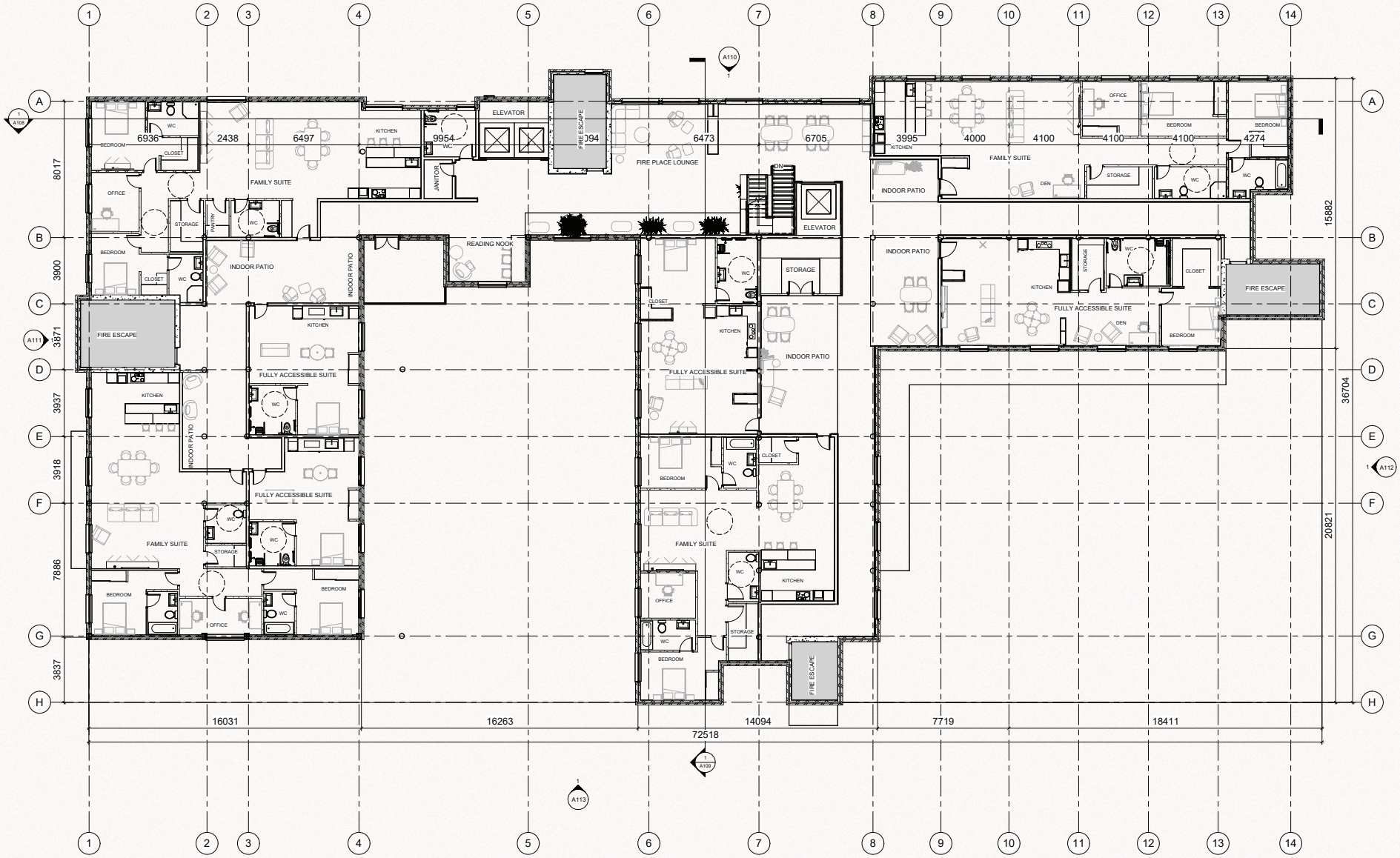

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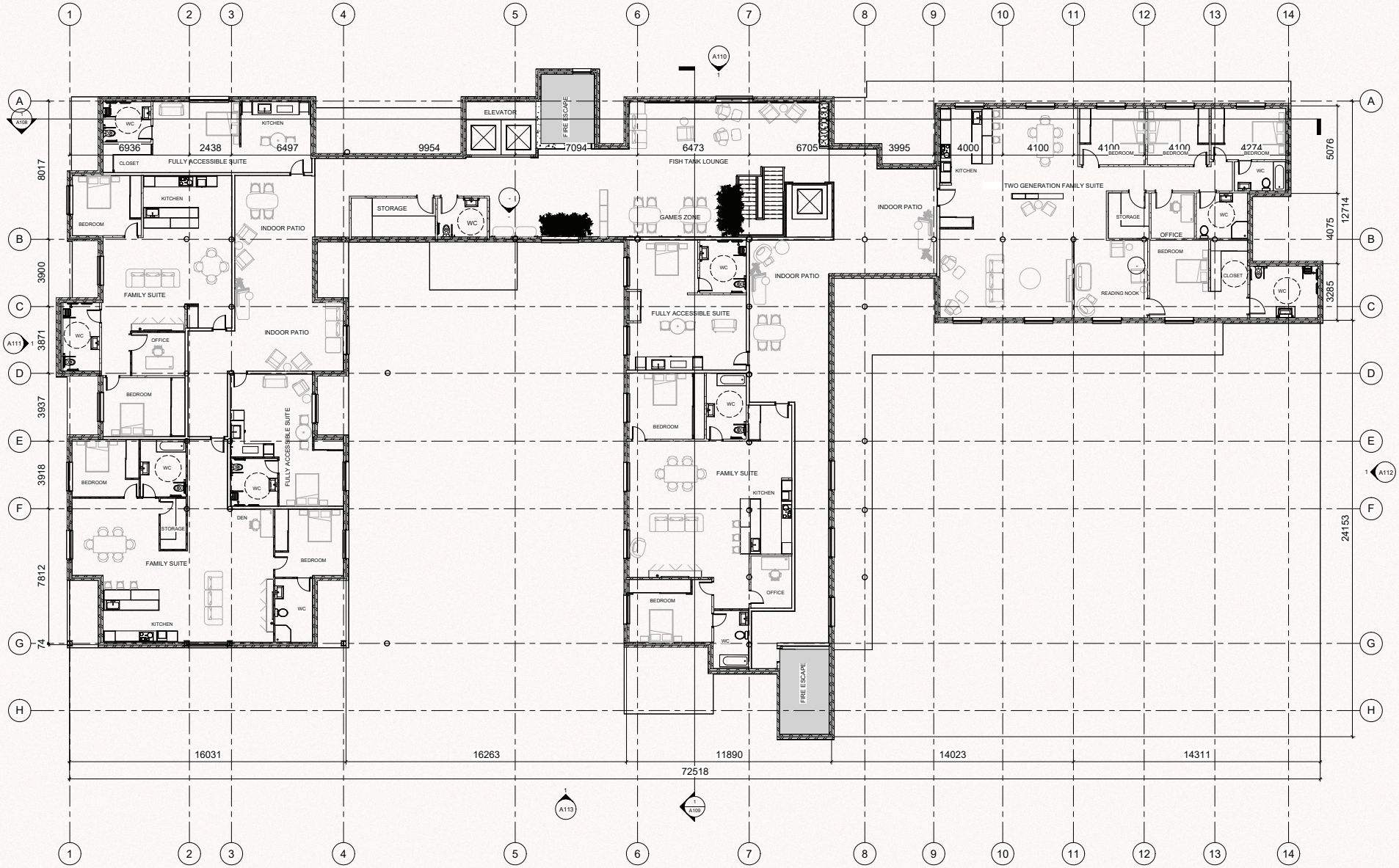

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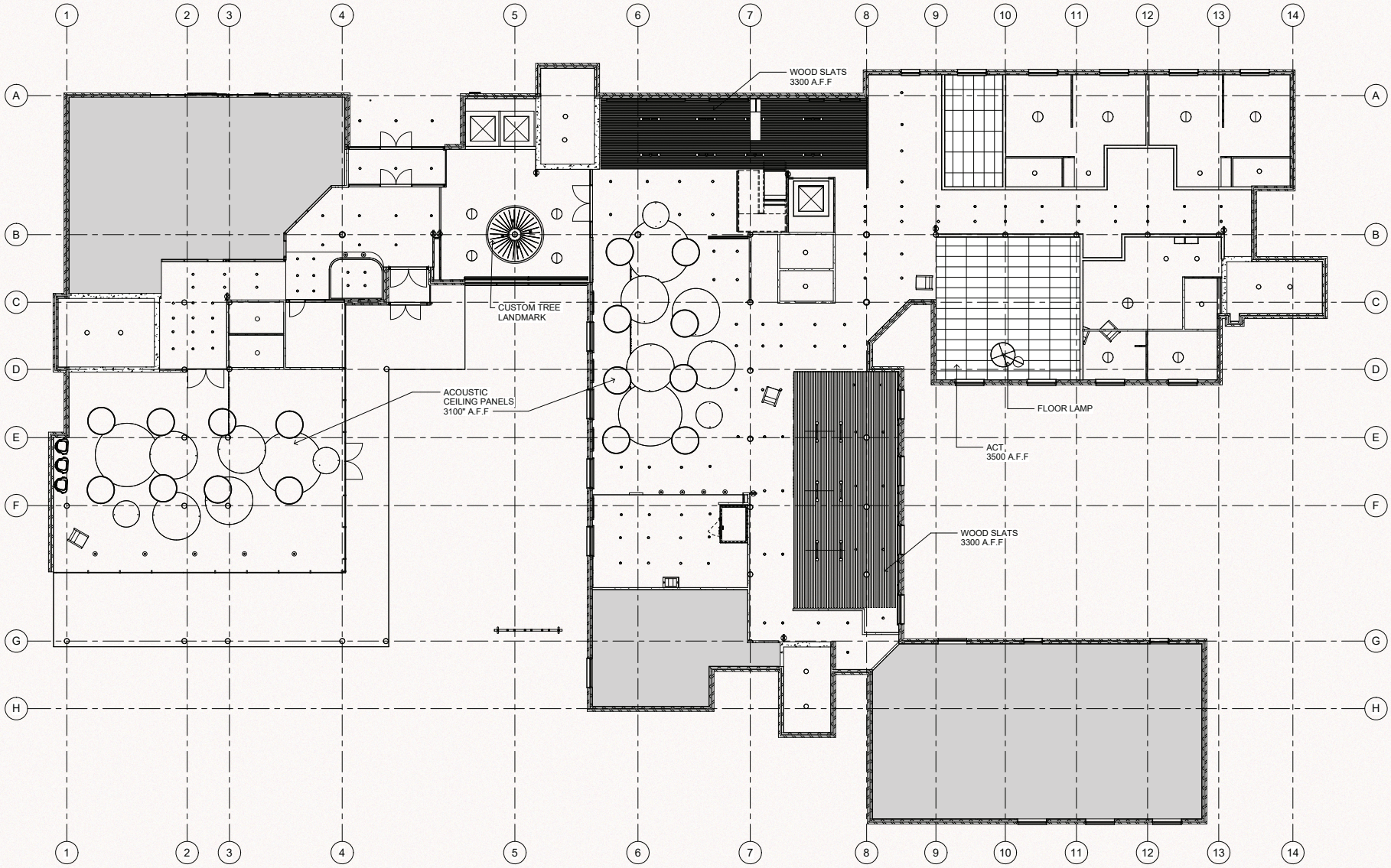


1 GROUND LEVEL REFLECTED CEILING PLAN
1 : 100

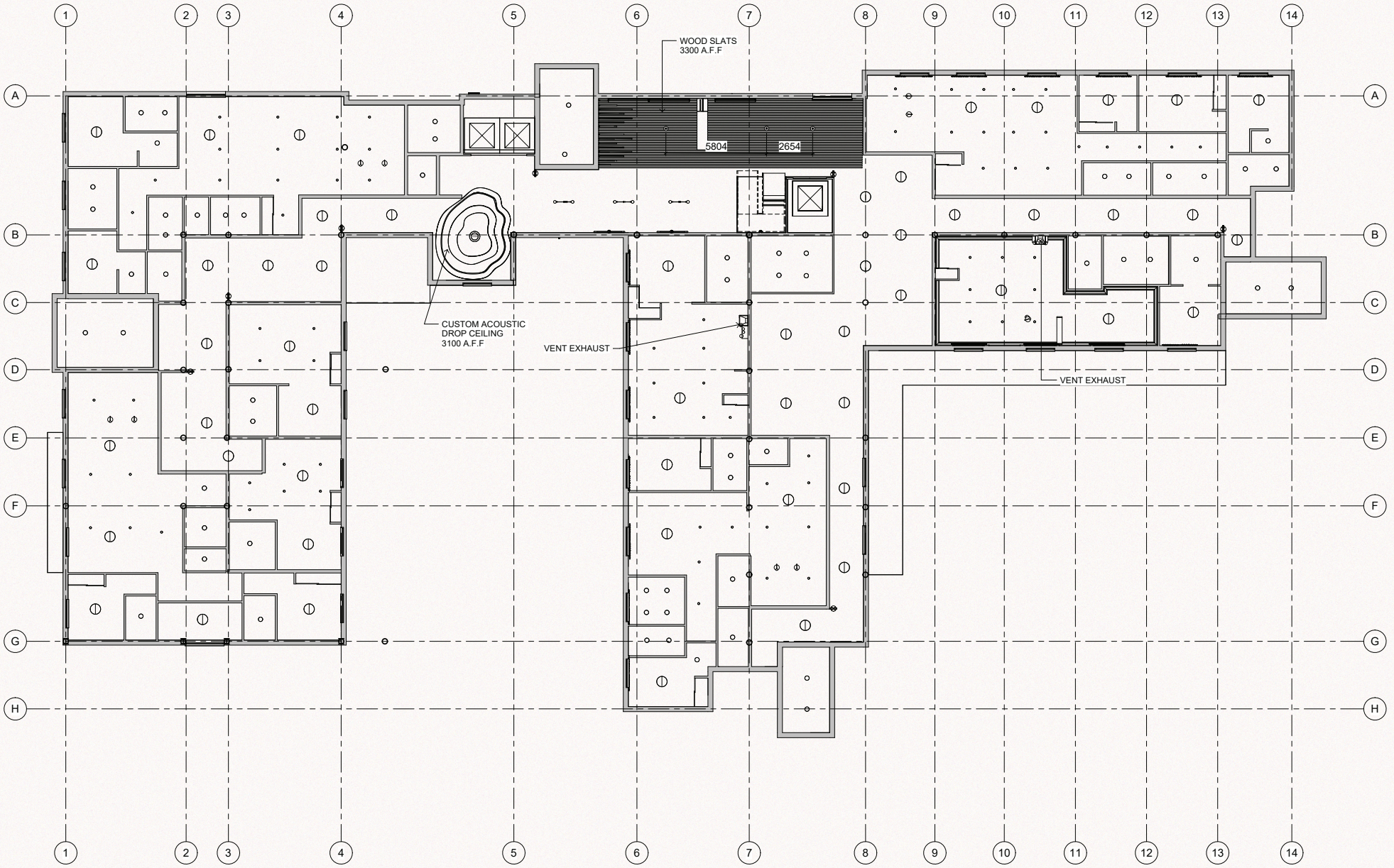
SYMBOL LEGEND

LED DOWNLIGHT RECESSED LIGHT	PENDANT LIGHT	LED DOWNLIGHT RECESSED LIGHT	PENDANT DOWNLIGHT
LED DOWNLIGHT RECESSED LIGHT	RECTANGLE PENDANT LED RECESSED LIGHT	PENDANT DOWNLIGHT	EXIT SIGN

1 LEVEL 100 REFLECTED CEILING PLAN
1 : 100

SYMBOL LEGEND

LED DOWNLIGHT RECESSED LIGHT	PENDANT LIGHT	LED DOWNLIGHT RECESSED LIGHT	PENDANT DOWNLIGHT
LED DOWNLIGHT RECESSED LIGHT	RECTANGLE PENDANT LED RECESSED LIGHT	PENDANT DOWNLIGHT	EXIT SIGN

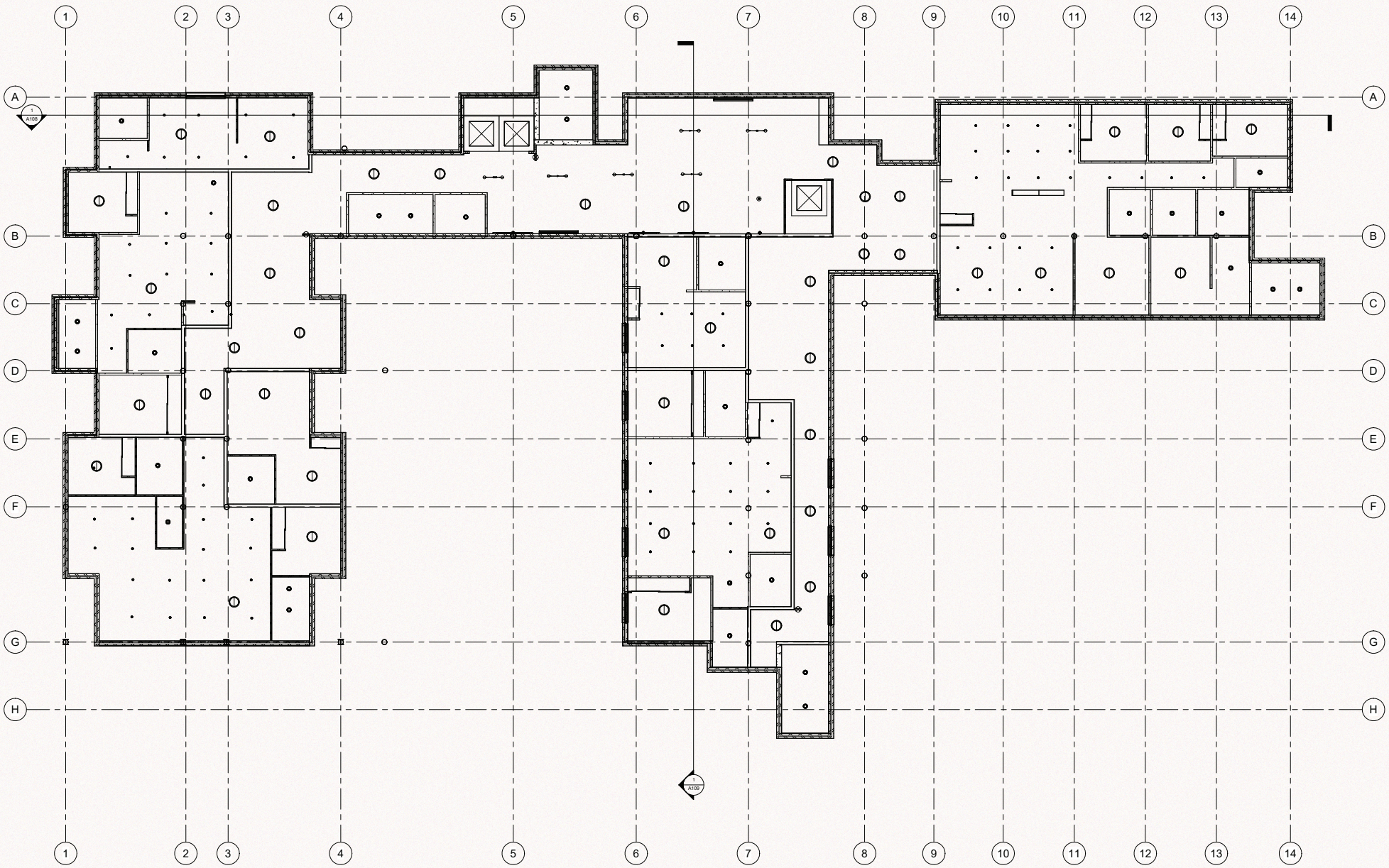


1 LEVEL 200 REFLECTED CEILING PLAN

1 : 100

SYMBOL LEGEND

LED DOWNLIGHT RECESSED LIGHT	PENDANT LIGHT	LED DOWNLIGHT RECESSED LIGHT	PENDANT DOWNLIGHT
LED DOWNLIGHT RECESSED LIGHT	RECTANGLE PENDANT LED RECESSED LIGHT	PENDANT DOWNLIGHT	EXIT SIGN



1 **LEVEL 300 REFLECTED CEILING PLAN**
1 : 100

SYMBOL LEGEND

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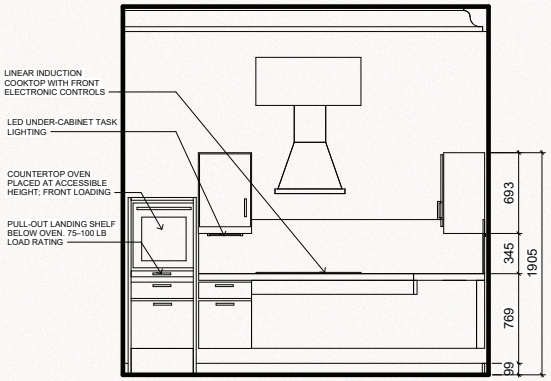
LED DOWNLIGHT RECESSED LIGHT	RECTANGLE PENDANT LED RECESSED LIGHT	PENDANT DOWNLIGHT	EXIT SIGN



1 ACCESSIBLE KITCHEN LEFT ELEVATION
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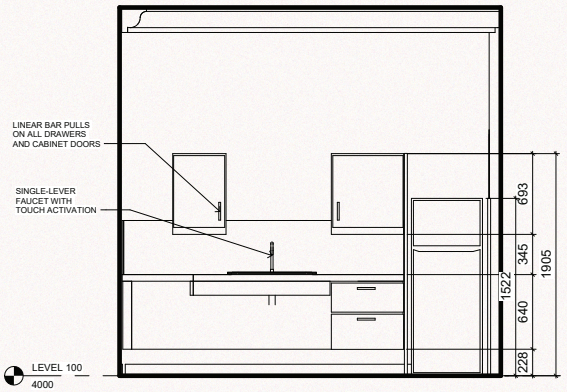

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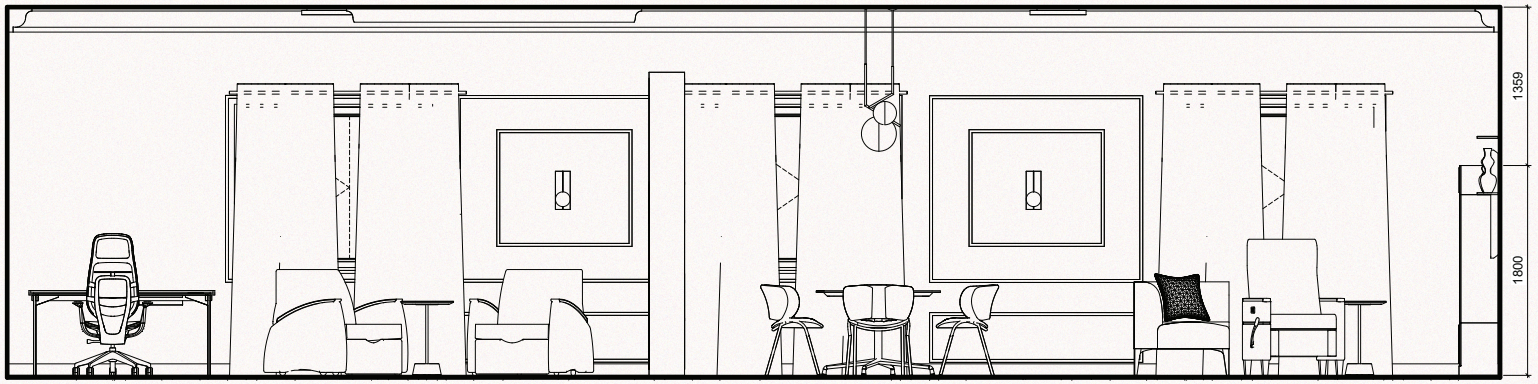
1 : 20



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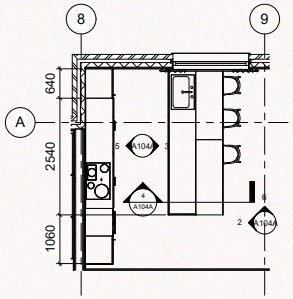
1 : 20



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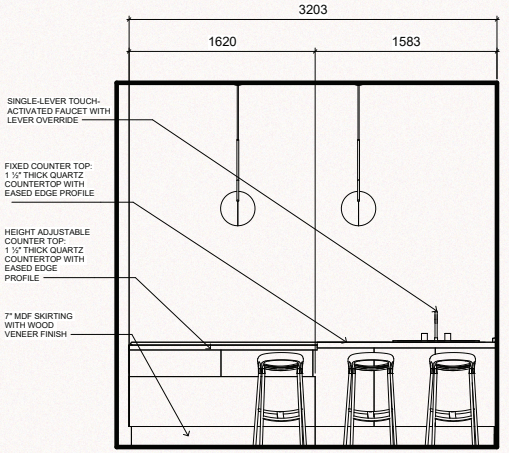

2 VISITABLE ISLAND FRONT ELE.
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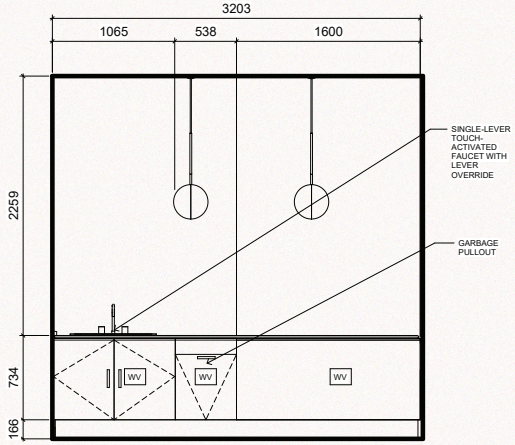
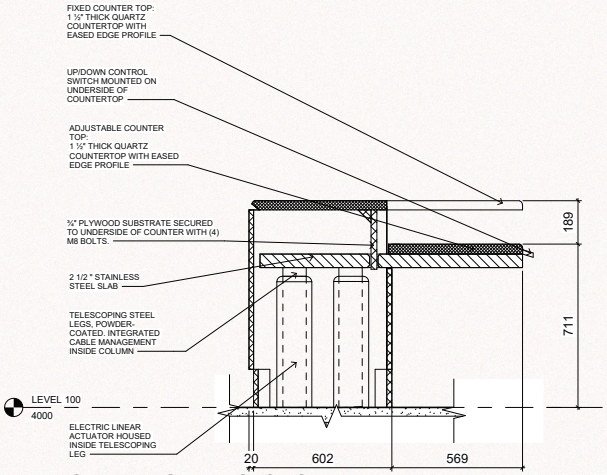


3 VISITABLE KITCHEN BACK OF ISLAND ELE.
1 : 20



4 VISITABLE ISLAND SECTION
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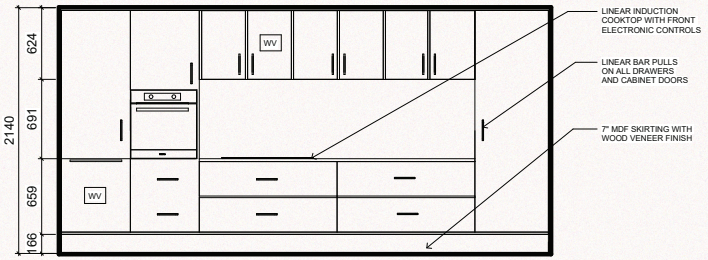
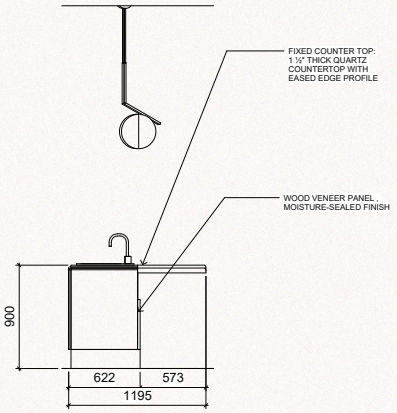


5 VISITABLE KITCHEN ELE.
1 : 20



6 VISITABLE KITCHEN SIDE ELE.
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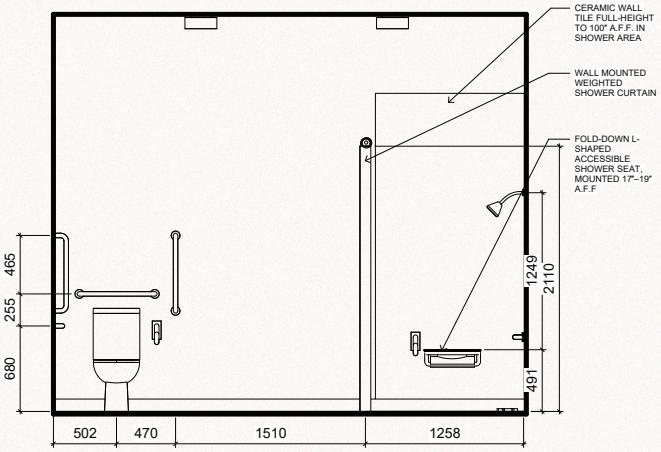

1 ACCESSIBLE BATHROOM BACK ELEVATION
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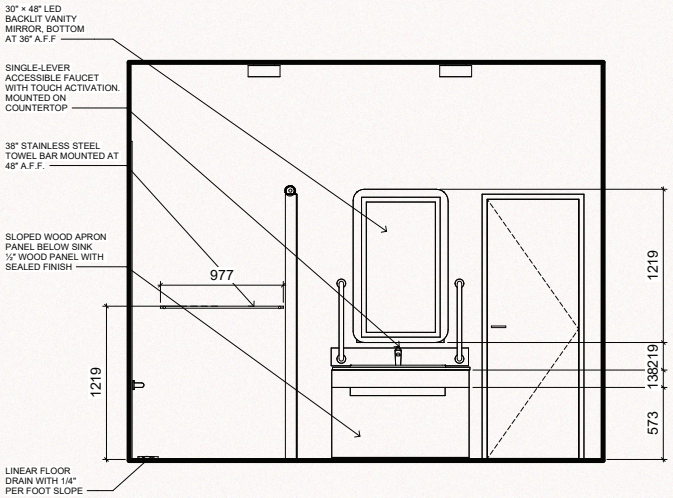

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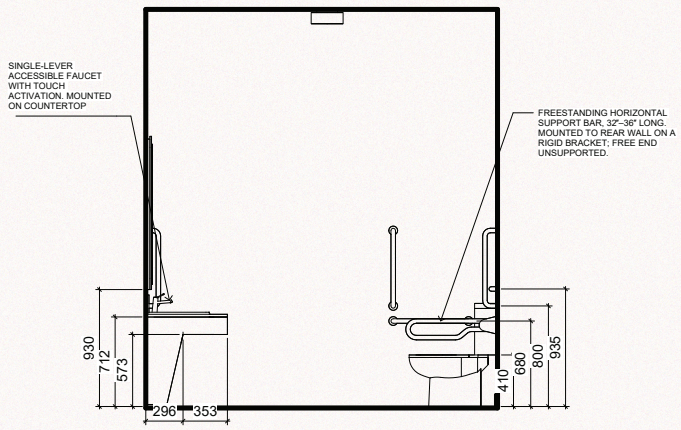

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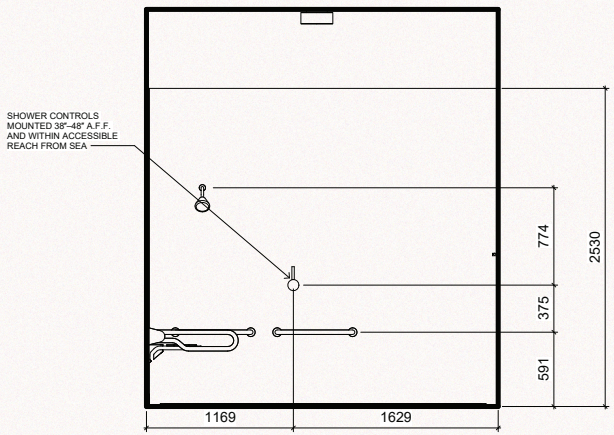
1 : 20



4 ACCESSIBLE BATHROOM RIGHT ELEVATION
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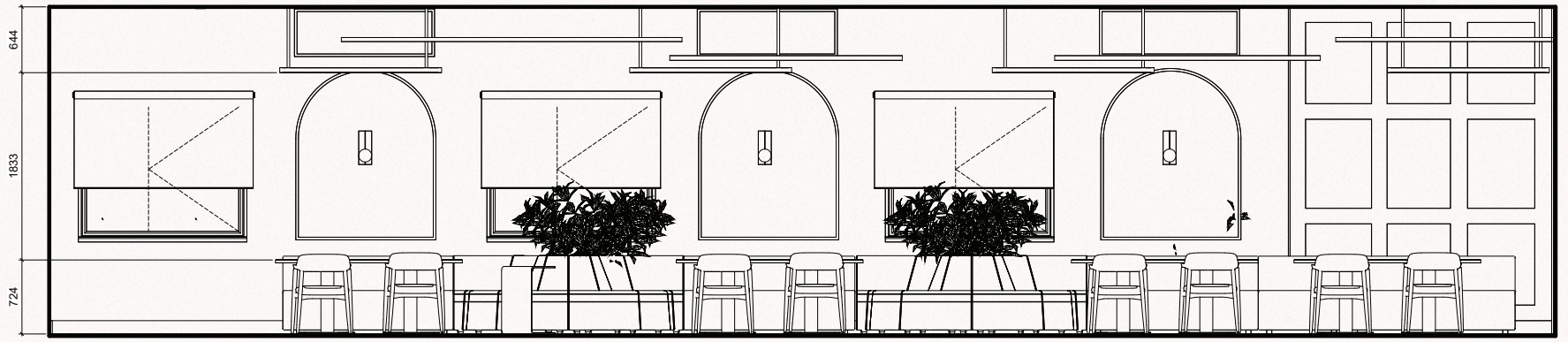

1 COMMUNAL DINING ELEVATION
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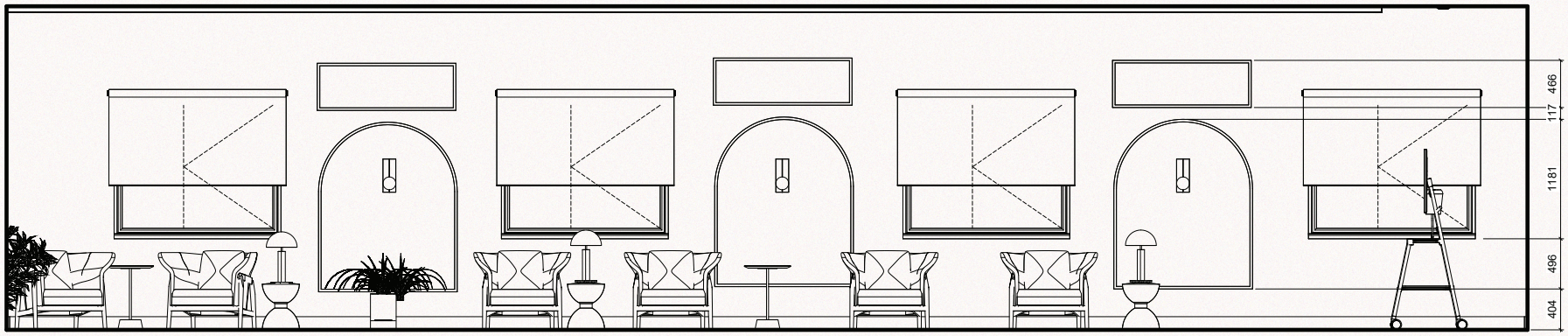

2 CONFERENCE ZONE ELEVATION
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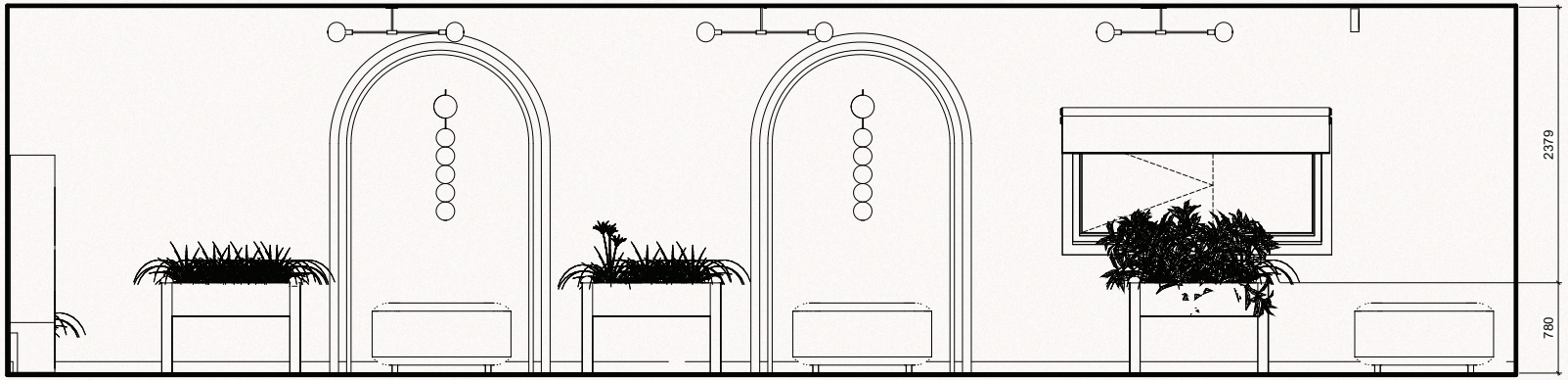

1 **LEVEL 100 LOBBY ELEVATION**
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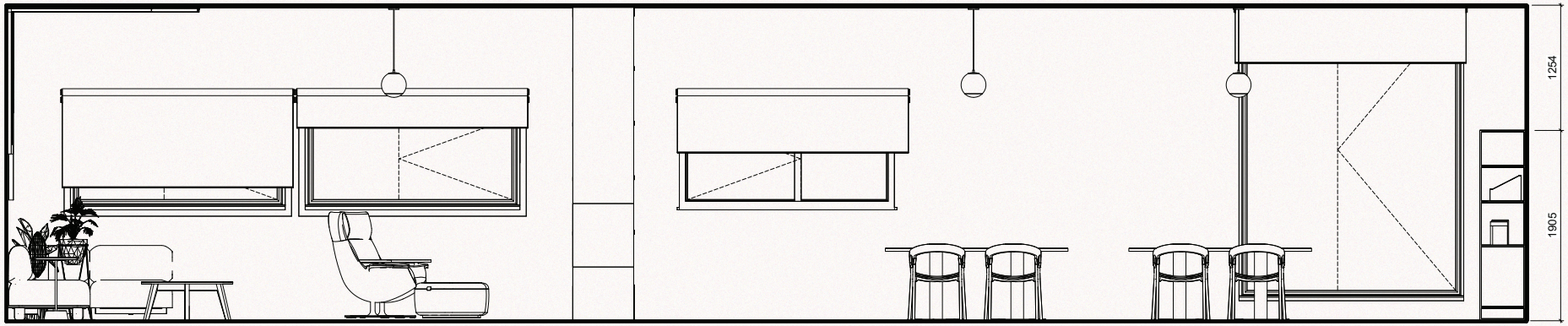

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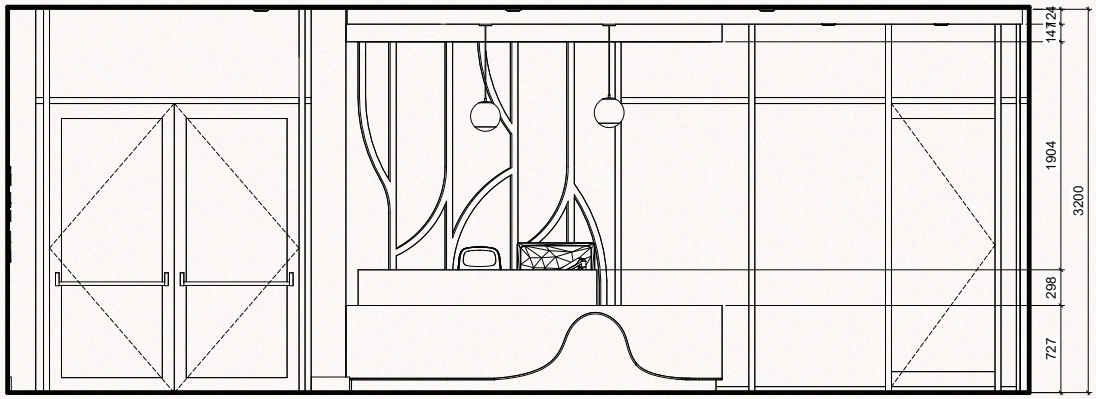

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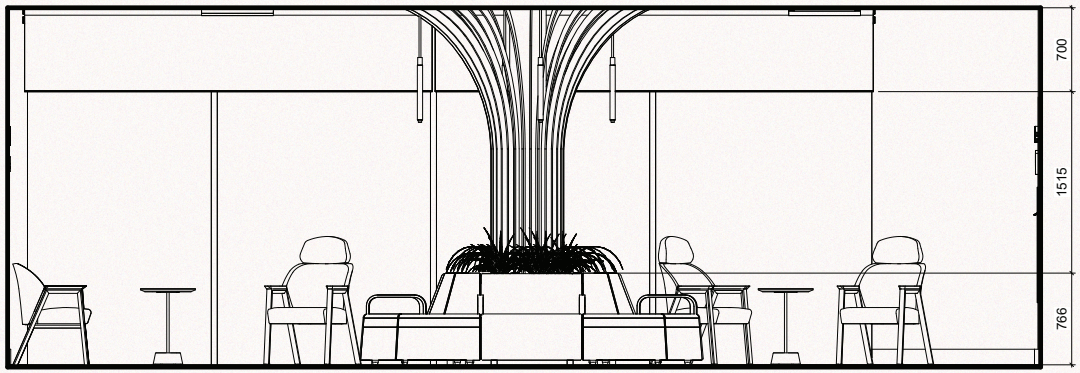

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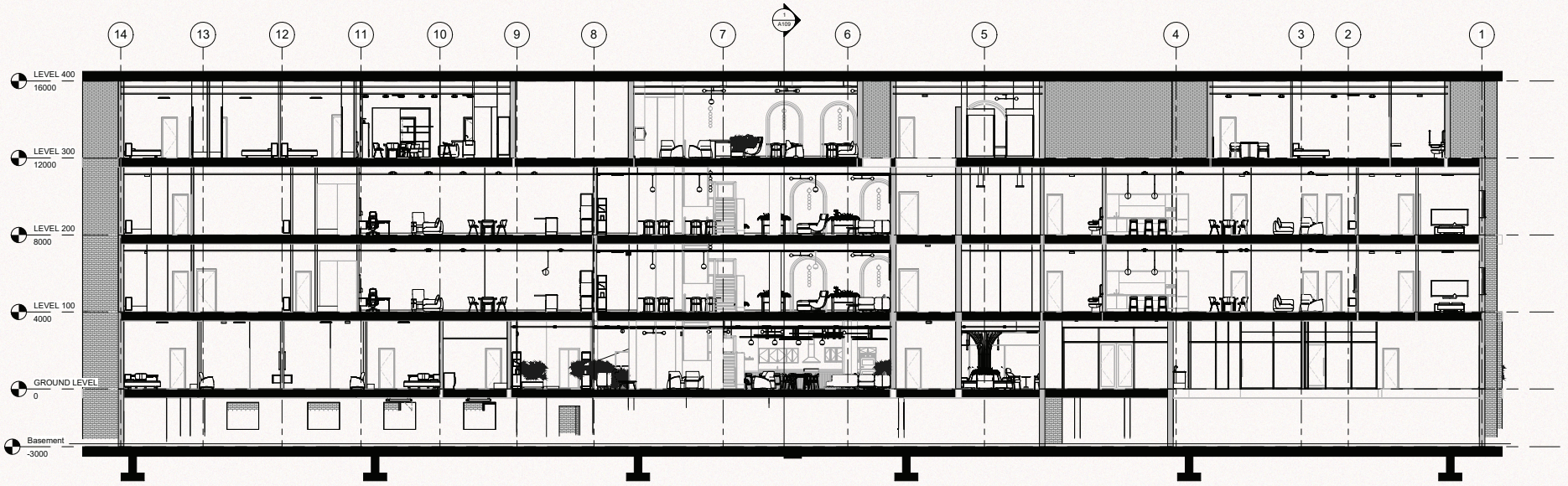

1 LONGITUDINAL SECTION
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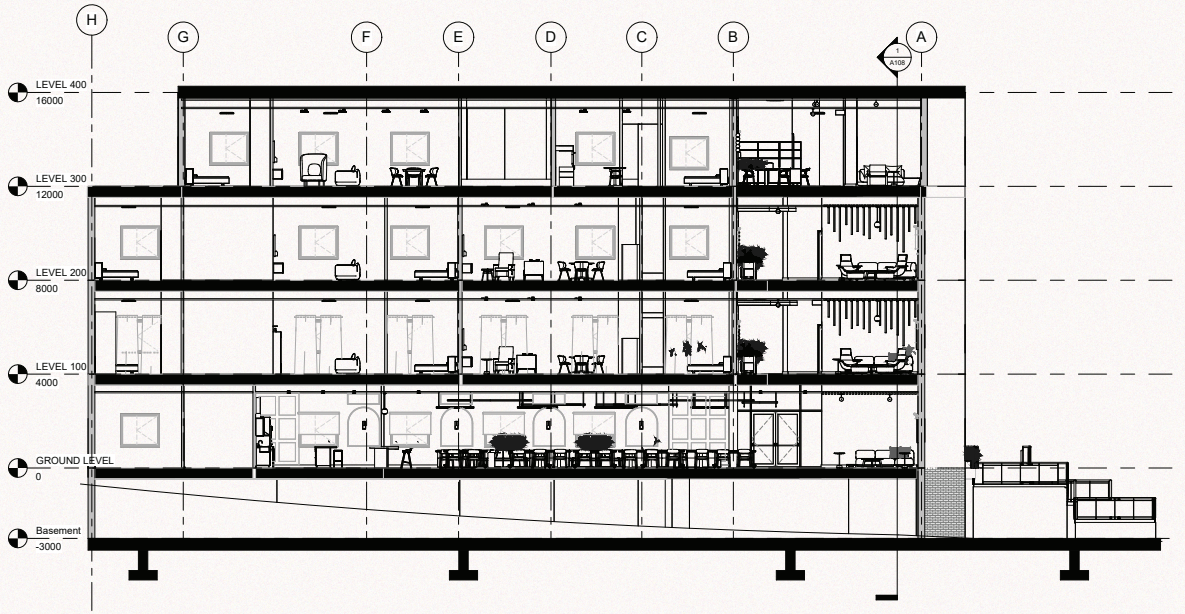

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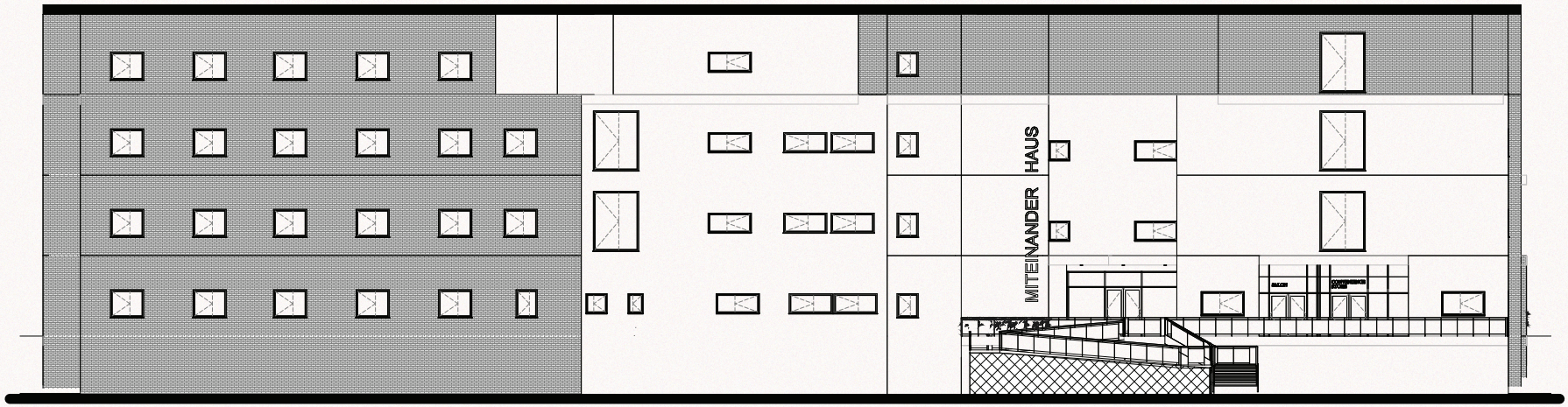
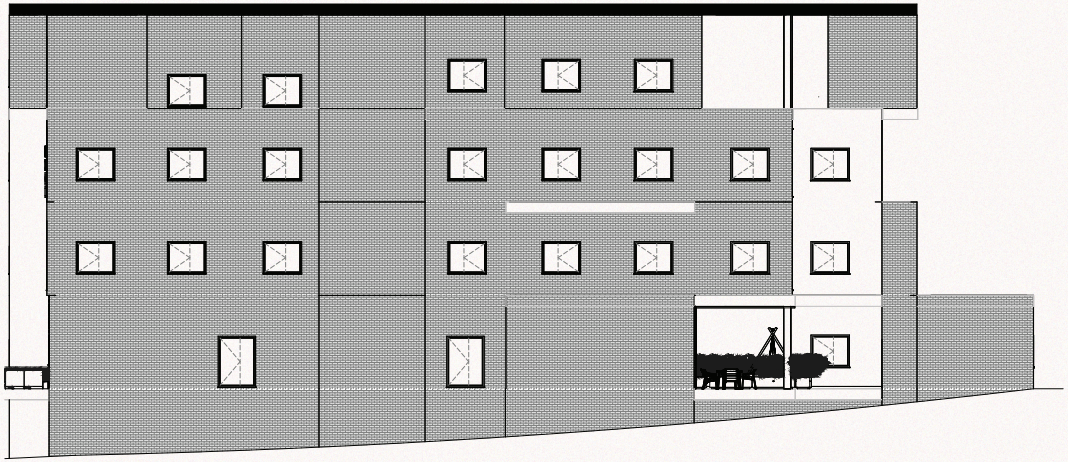


1 NORTH ELEVATION
1 : 100



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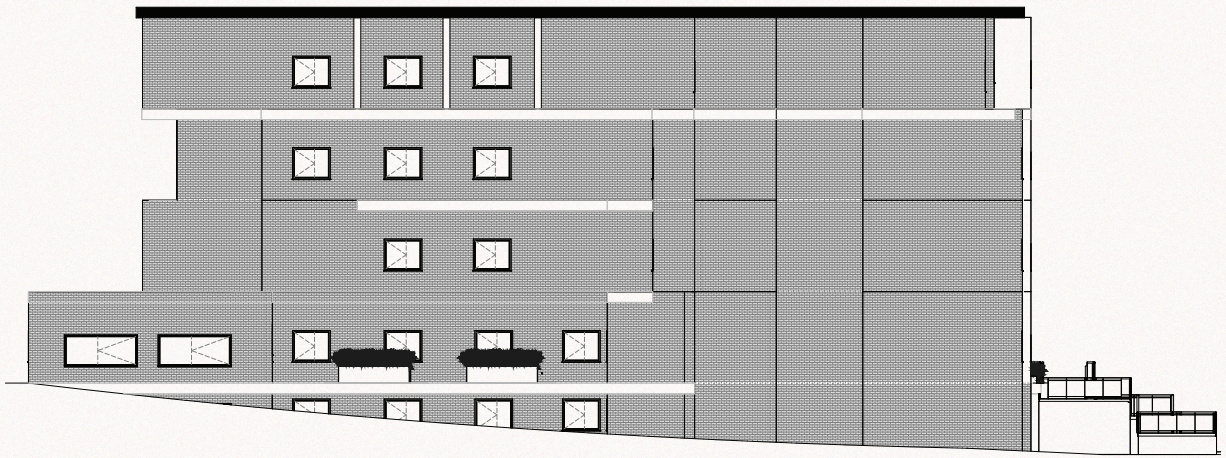
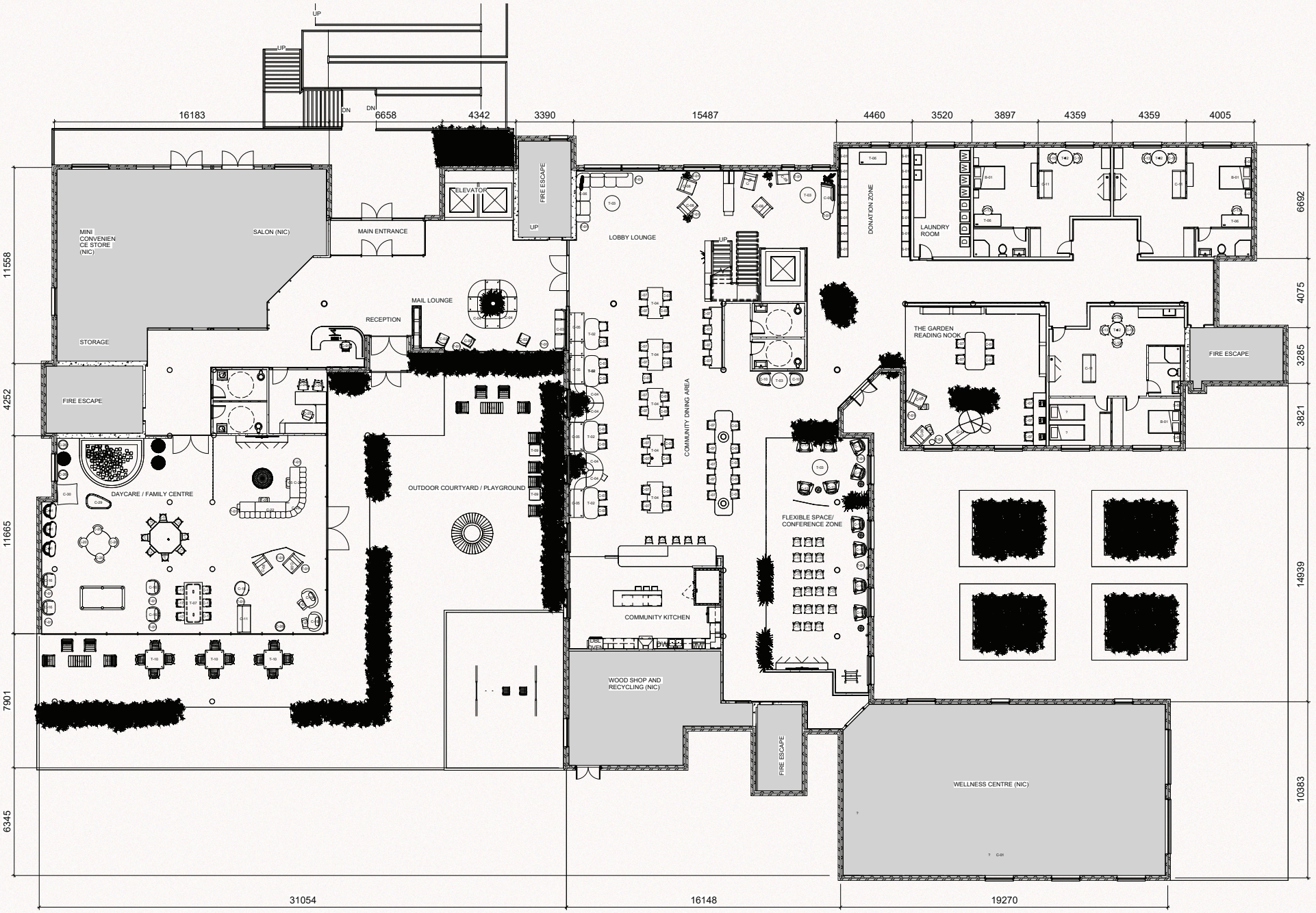
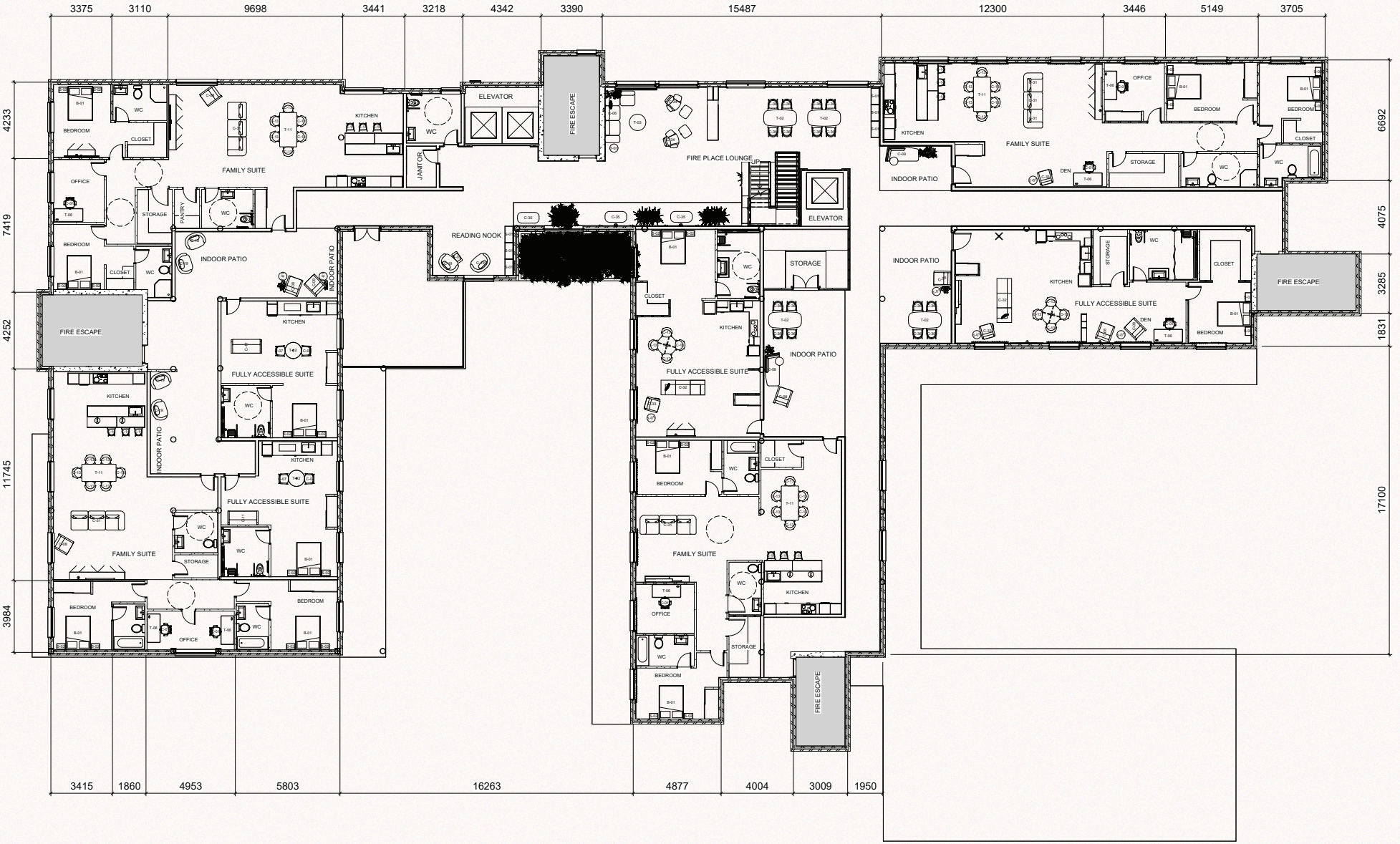


1 **WEST ELEVATION**
1 : 100

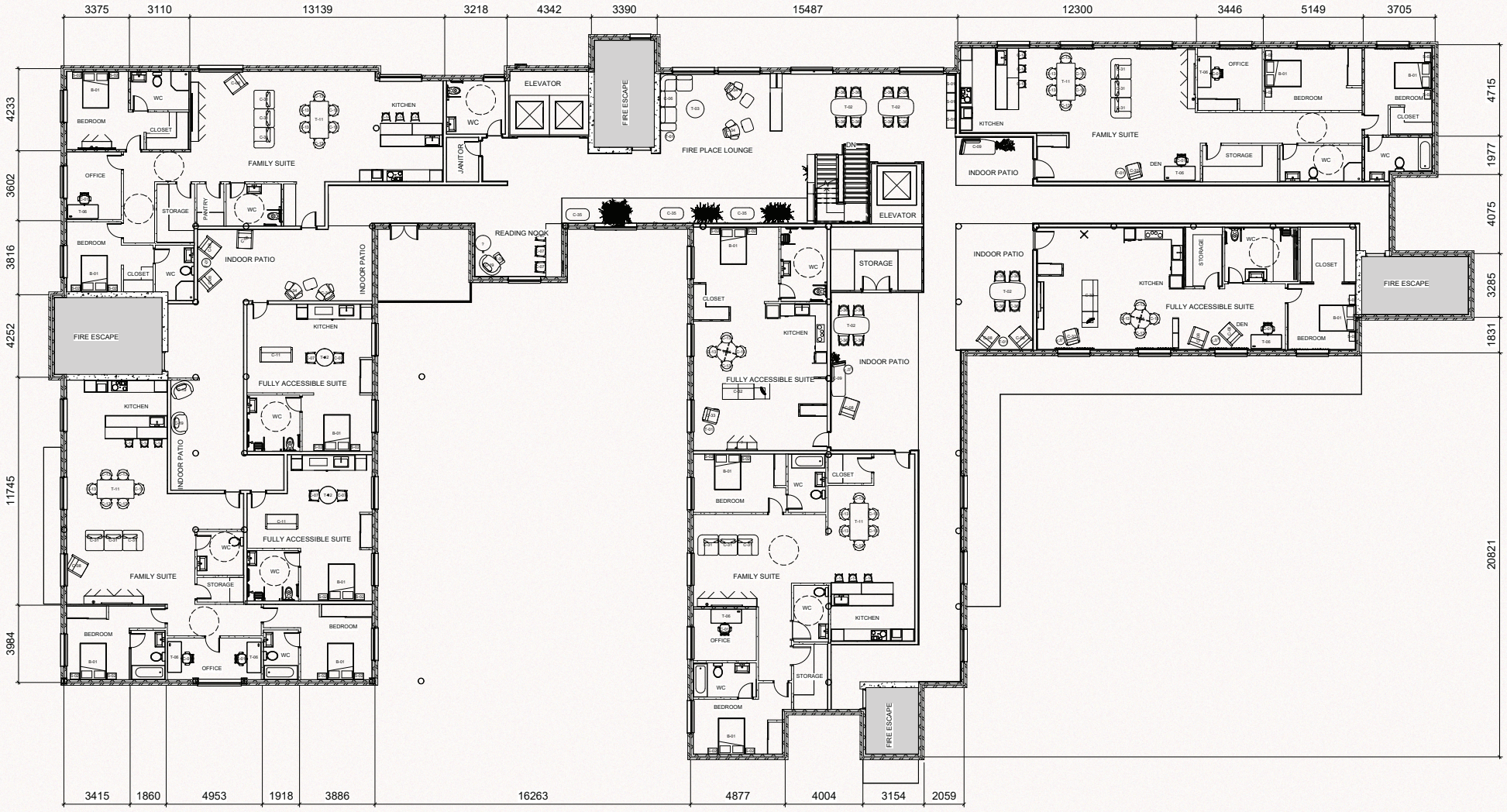
1 **SOUTH ELEVATION**
1 : 100



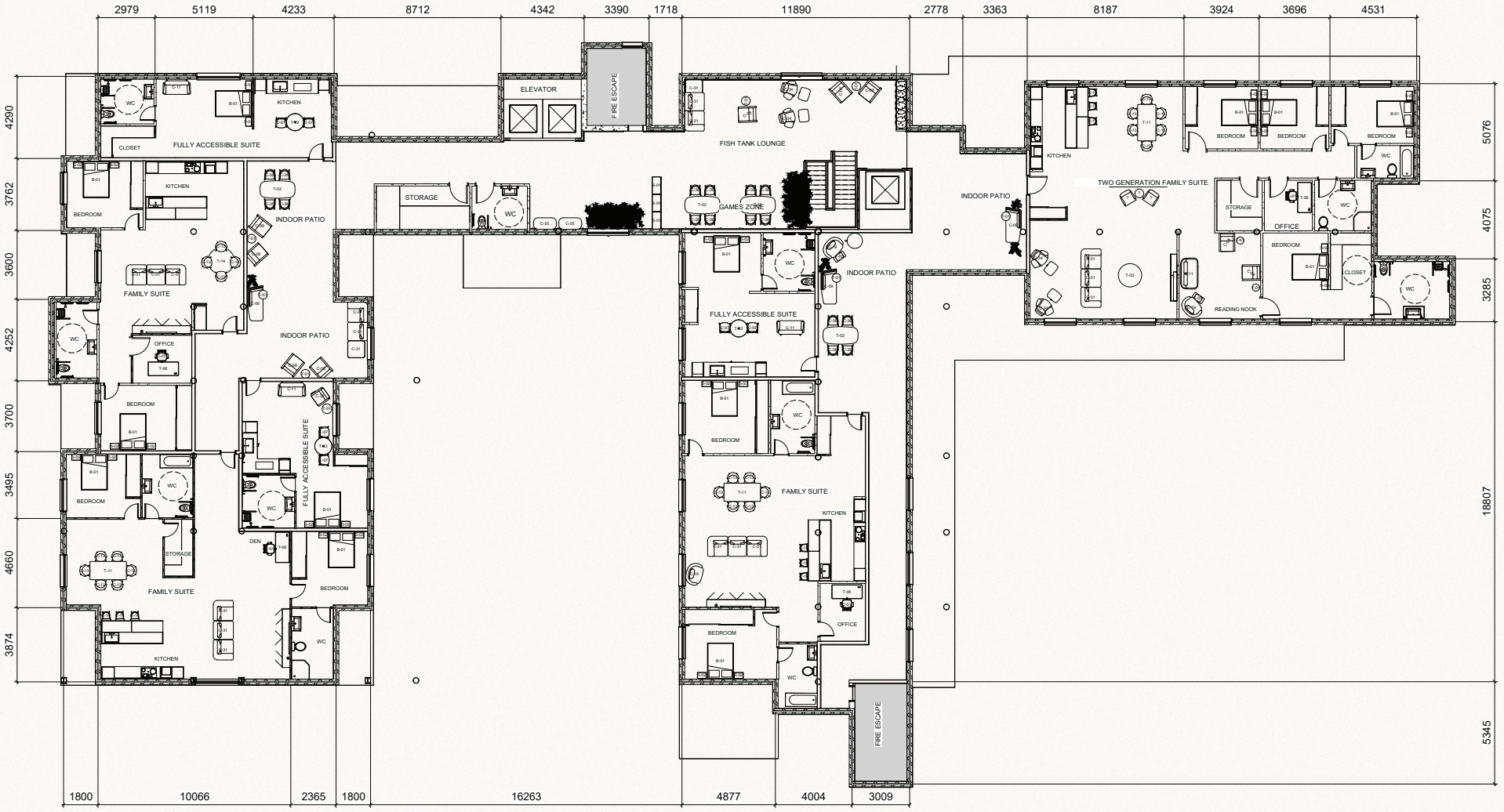
1 GROUND LEVEL FURNITURE PLAN
1 : 100



1 LEVEL 100 FURNITURE PLAN
1 : 100



1 LEVEL 200 FURNITURE PLAN
1 : 100



1 LEVEL 300 FURNITURE PLAN
1 : 100

Appendix F - Furniture Schedules

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
C-01	TASK CHAIR	RECEPTION	KARMAN CHAIR	STEELCASE
C-02	CHAIR	MAIL LOUNGE	EMBOLD CHAIR	STEELCASE
C-03	CHAIR	MAIL LOUNGE	EMBOLD MULTISEAT	STEELCASE
C-04	CHAIR	MAIL LOUNGE	CAMPFIRE EDGE	STEELCASE
C-05	CHAIR	MAIL LOUNGE/ COMMUNAL DINING	CAMPFIRE HALF	STEELCASE
C-06	CHAIR	GROUND FLOOR LOBBY LOUNGE	COALESSE	STEELCASE

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
C-07	CHAIR	COMMUNAL DINING	CROSSHATCH SIDE CHAIR	HERMAN MILLER
C-08	CHAIR	GROUND FLOOR LOBBY LOUNGE, READING NOOK, DAYCARE/FAMILY CENTRE	MITRA SLEEPER	STEELCASE
C-09	CHAIR	GROUND FLOOR LOBBY, APARTMENT PATIOS	BLOKE CHAISE	BLUDOT
C-10	CHAIR	COMMUNAL DINING	SWIVEL CHAIR	COR ROC
C-11	CHAIR	READING NOOK, SUITES	MITRA LOUNGE	STEELCASE
C-12	CHAIR	FLEXIBLE SPACE/ CONFERENCE ZONE	HAVN LOUNGE CHAIR	TEKNION

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
C-13	CHAIR	APARTMENTS, SUITES	FUNDA CHAIR	VICCARBE
C-14	STOOL	COMMUNAL DINING	SHE SAID STOOL	MATTIAZZI
C-15	CHAIR	FLEXIBLE SPACE/ CONFERENCE ZONE	GC COMET	GLOBAL FURNITURE
C-16	CHAIR	DAYCARE/FAMILY CENTRE	FUUGA ARMCHAIR	BOLIA
C-17	STOOL	DAYCARE/FAMILY CENTRE	MARIEN STOOL	COALESSE
C-18	CHAIR	DAYCARE/FAMILY CENTRE	MITT LOUNGE CHAIR	BERNHARDT

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
C-19	CHAIR	DAYCARE/FAMILY CENTRE	FUUGA NESTING ARMCHAIR	BOLIA
C-20	KIDS CHAIR	DAYCARE/FAMILY CENTRE	FAT SEAT	TOM DIXON
C-21	SWING CHAIR	DAYCARE/FAMILY CENTRE	EXPORMIM	NAUTICA
C-22	SOFA	DAYCARE/FAMILY CENTRE	BELLE LOUNGE TWO SEAT	WEST ELM
C-23	SOFA	DAYCARE/FAMILY CENTRE	BELLE LOUNGE CORNER SEAT	WEST ELM
C-24	SIDE CHAIR	OFFICE	MARIEN SIDE CHAIR	COALESSE

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
C-25	OFFICE CHAIR	OFFICE	THINK 1 OFFICE CHAIR	STEELCASE
C-26	OTTOMAN	DAYCARE/FAMILY CENTRE	APEL BENCHES	BERNHARDT
C-27	OUTDOOR CHAIR	OUTDOOR COURTYARD	CUMARU LOUNGE CHAIR	VAYA
C-28	OUTDOOR CHAIR	OUTDOOR PATIO	CUMARU CHAIR	FACTOR
C-29	OTTOMAN	DAYCARE/FAMILY CENTRE	4832 LOUNGE SEATING	BERNHARDT
C-30	SIDE CHAIR	DAYCARE/FAMILY CENTRE	MEGA BEAN BAG CHAIR	BOLIA

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
C-31	SOFA	FAMILY SUITES	JALIS COUCH	COR
C-32	SOFA	ACCESSIBLE APARTMENT	MESA HEALTHCARE LOUNGE	WESTELM
C-33	RECLINER	ACCESSIBLE APARTMENT	MINERAL RECLINER	STEELCASE
C-34	CHAIR	LEVEL 100-300 PATIOS	MASSAUD	COALESSE
C-35	BENCH	LEVEL 100-300 PATIOS	COMMON BENCH	VICCARBE
C-36	DINING CHAIR	INTERIOR PATIOS	SHE SAID GUEST CHAIR	MATTIAZZI

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
T-01	SIDE STOOL	SCATTERED ACROSS ALL FLOORS	MAISIE SIDE TABLE	WESTELM
T-02	DINING TABLE	COMMUNAL DINING	SIMPLE TABLES	STEELCASE
T-03	CENTRE TABLE	LOBBIES	OCCASIONAL COFFEE TABLE	BLUDOT
T-04	DINING TABLE	COMMUNAL DINING	BUTCHER TABLE	SMITH SYSTEM
T-05	SIDE TABLE	LOBBY, CHILDREN/FAMILY CENTRE	LAGUNITAS TABLE	COALESSE
T-06	DESK	SUITES	ACENTRIC DESK	BOLIA

TAG	NAME	LOCATION	PRODUCT NAME	MANUFACTURER
T-07	RECTANGLE TABLE	DAYCARE/FAMILY CENTRE	VERLAY TABLE	STEELCASE
T-08	OUTDOOR CENTRE TABLE	OUTDOOR COURTYARD, PATIO	CUMARU TABLE	VAYA
T-09	OUTDOOR SIDE TABLE	OUTDOOR COURTYARD	VIVIDGLASS SLAT TABLE	VAYA
T-10	OUTDOOR TABLE	OUTDOOR PATIO	FACTOR TABLE	FORMS AND SURFACES
T-11	DINING TABLE	FAMILY SUITE	DINING TABLE	CARL HANSEN
T-12	DINING TABLE	ACCESSIBLE TABLE	DINING TABLE	STEELCASE

Appendix G - German Building Code Analysis

Project Description

The proposed project, Aging Together: A Two-Generational Living Solution, involves the interior redesign of an existing four-storey residential building currently operating as the Wohnpark Sophie Scholl assisted living facility. The project transforms the facility into a two-generational living community supporting aging in place for adults 45+.

Project Location: John-F.-Kennedy-Straße 4, 55543 Bad Kreuznach, Germany

Major Occupancy:

- Existing: Residential Care Facility
- Proposed: Multi-Family Residential with shared community spaces
- Building Classification: Building Class 4 per MBO

Building Area:

Floor	Area (Approximate)
Ground Level	800m^2
Level 100	700m^2
Level 200	700m^2
Level 300	600m^2
Total Building Area	**2,800m^2**

Number of Storeys:

- Above Grade: 4 storeys
- Total Building Height: Approximately 15.75 m (63 cm floor-to-floor height × 4 floors)

Application Regulations: 5.1 Musterbauordnung (MBO) – Model Building Code

- Fire safety requirements based on building classes (Gebäudeklassen)
- Accessibility requirements for residential buildings (DIN 18040-2)
- Sound insulation requirements (DIN 4109)
- Fire behavior classification of building materials (DIN 4102 / DIN EN 13501)

Barrier-free Design Requirements (DIN 18040-2)

Requirement	Standard
Door Clear Width	Minimum 80cm when doors open at 90 degrees
Corridor/Hallway Width	120cm minimum, 150cm preferred
Threshold Heights	Maximum 2cm
Wheelchair Turning Radius	150cm diameter
Operating Element Heights	85cm recommended, 110cm maximum

Fire Safety Requirements (DIN 4102)

General Fire Safety Requirements

- Maximum Travel Distance to Exits: 35 m
- Minimum Stair Width: 100 cm
- Minimum Number of Exits: 2 per floor
- Smoke Detection Systems: Required in all units and common areas
- Sprinkler System: Required for buildings >4 storeys or housing vulnerable populations
- Fire Alarm System: Required throughout building

Fire Resistance Ratings (DIN 4102-2)

Building Element	Fire Rating (German)	EU Classification
Apartment Separating Walls	F90-AB (Fire Resistant)	REI 90
Apartment Separating Floors	F90-AB (Fire Resistant)	REI 90
Corridor Walls	F30-AB (Fire Resistant)	REI 30
Apartment Entry Doors	T30 (Self-closing)	EI 30-C
Stairwell Enclosures	F90-A (Non-combustible)	REI 90

Note: F30 = 30 minutes fire resistance; F60 = 60 minutes; F90 = 90 minutes. The suffix 'AB' indicates components with non-combustible essential parts; 'A' indicates entirely non-combustible materials.

Sound Insulation Requirements (DIN 4109)

Airborne Sound Insulation (R'w)

Building Element	Minimum R'w Value
Apartment Separating Walls	Greater or equal to 53 dB
Apartment Separating Floor/Ceilings	Greater or equal to 54 dB
Walls to Corridors (Common Areas)	Greater or equal to 53 dB
Apartment Entry Doors	Greater or equal to 27 dB

Impact Sound Insulation (L'n, w)

Building Element	Minimum L'n,w Value
Apartment Separating Floors (Horizontal)	Greater or equal to 50 dB
Floors Above Communal Spaces	Greater or equal to 50 dB
Staircase Landings	Greater or equal to 53 dB

Occupancy Density Standards

Space Type	Density Standard
Residential Units	1 person per 9 m^2 minimum
Community Spaces	1 person per 2.5 m^2
Assembly Spaces (Dining Hall)	1 person per 1.5 m^2

Requirement Category	Applicable Standard
Barrier-Free Design	DIN 18040-2
Fire Protection	DIN 4102 / MBO (Musterbauordnung)
Sound Insulation	DIN 4109
Egress/Exits	MBO Paragraph 33-35
Occupancy Density	MBO

Universal Design Strategies for the Kitchen

In compliance with the **CSA/ASC B651:23 Accessible design for the built environment.**

Counter Heights

- Standard work surface: 34-36 inches (86-91cm) above finished floor (AFF)
- Accessible work surface: 28-34 inches (71-86cm) AFF
- Seated work surface: 28-30 inches (71-76cm) AFF with knee clearance below
- Varied heights: Include multiple counter heights in same kitchen to serve different users and tasks

Clearances and Circulation

- Parallel counters: 42-48 inches (107-122cm) minimum
- U-shaped layout: 60 inches (152cm) minimum between opposing counters
- Work triangle: Keep sink, stove, refrigerator within efficient reach while maintaining clearances
- Behind seating: 60 inches (152cm) minimum

Knee and Toe Clearances

- Toe clearance: 9 inches (23cm) high minimum, extending 6 inches (15cm) deep
- Knee clearance: 27 inches (69cm) high minimum, 30 inches (76cm) wide, 19 inches (48cm) deep minimum
- At cooktop/sink: Provide clear floor space 30” x 48” (76cm x 122cm) for forward approach

Storage and Cabinets

- Upper cabinets: Install 3 inches lower than standard (15 inches above counter rather than 18 inches)
- Lower cabinets: Replace with pull-out drawers and shelving
- Pantry: Pull-out pantry systems with adjustable shelving
- Lazy Susans: For corner cabinets to eliminate deep, hard-to-reach areas
- Pull-down shelving: Brings upper cabinet contents within reach

Appliances

- Wall oven: 31-34 inches (79-86cm) to oven floor (adjustable based on user)
- Cooktop: Front or side-mounted controls; consider induction for safety
- Microwave: Counter-height or below, not above range
- Refrigerator: Side-by-side or French door styles; water/ice dispenser at 48 inches (122cm) maximum
- Dishwasher: Drawer-style or raised standard dishwasher 6-12 inches above floor

Lighting

- Task lighting: Under-cabinet LED strips, pendant lights over islands
- Ambient lighting: Recessed lighting with dimmers, wall wash rather than downlights
- Natural light: Maximize through windows
- Controls: Rocker switches at 36-48 inches (91-122cm) AFF; consider motion sensors

Bathroom Design Specifications

Toilet Specifications

ADA standards and accessibility guidelines specify a toilet height of 17-19 inches (43-48cm) measured from finished floor to top of seat, known as “comfort height.” This approximates wheelchair seat height and reduces strain during sitting/standing transfers

Additional Specifications:

- Centerline from side wall: 16-18 inches (41-46cm)
- Clear floor space: 60 inches (152cm) wide x 56-59 inches (142-150cm) deep (depending on wall vs. floor mount)

Appendix H - Bibliography

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