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As a result of the conducted research between P1 and P2 several guidelines formed points of departure for the design of the intergenerational housing concept in the Tarwewijk. Although these guidelines form a theoretical base for the design, the execution in the design process between P2 and P4 required a more focused insight into how the alleviation of loneliness can be materialized in architecture, i.e. spatially, programmatically and visually. It is, again, essential to understand that while developing high-quality intergenerational programming and housing is valuable, it is not a straightforward solution to loneliness, as the issue is complex and multifaceted (Moore et al., 2023). One of the many things that challenged the design of the housing units and the intergenerational communal spaces (ICS). The design had to accommodate the needs of both current and future students in Tarwewijk and elderly residents in the housing project in Tarwewijk, and account for “futureproofing” as the trend of lonely elderly and students may decrease in the future and other future trends might be prioritized in Rotterdam (e.g. more housing for young professionals or young families).

DID MY APPROACH WORK?

In a certain sense my design guidelines provided me with a lot of options for departure points on both the Urban, Block, and Interior scale. However, choosing which guidelines to focus on and doing that in a consistent way was a challenge, as each individual guideline seemed essential for creating architecture that could combat loneliness. Alternatively, the interior scale was only investigated on the surface during the design process, due to the extensive work that was needed to first investigate the urban and block level and its context in the urban fabric. On the other hand, it is logical that the interior level of the design would require a more detailed base of both the urban drawings (i.e. masterplan) and block-level drawings (i.e. facades, floorplans, sections etc.). At the

beginning (after P2), it still seemed that the interior guidelines were still consisting of too rich of a data to pass on. But for the design approach to work, I was advised to choose 3 main themes in which the project could find its foundation. This helped to shape the design and structure better what the most essential aspects are in the design of a building that could combat loneliness.

It was helpful to structure both the vision and how this vision to materialize as seen below:

VISION (WHY?)

**FOSTERING SENSE OF BELONGING
FOSTERING SOCIAL WELL-BEING
FOSTERING SOCIAL ENGAGEMENT ACROSS GENERATIONS**

DESIGN FOCUS (HOW?)

1. PROVIDING **INTERGENERATIONAL PROGRAMMING (ICS)** WHICH BECOMES THE FOUNDATION FOR BUILDING MEANINGFUL RELATIONSHIPS
2. PROVIDING **GREEN AMENITIES** FOR LOCAL RESIDENTS WHICH IS HIGHLY DEMANDED BY LOCAL RESIDENTS
3. CREATING **FLEXIBLE COMMUNAL SPACES** WHICH ALLOWS FOR VARIOUS SOCIAL ACTIVITIES TO TAKE PLACE ACROSS GENERATIONS

Though, the research did form a strong “validation-system” whether something would or would not work. For example, in the research “seeing each other” helped combat loneliness and was often the first step in doing that (Gehl, 2010). By wanting to add transparent facades in the communal tower (stacked part of Intergenerational Communal Spaces) it became clear that this would help with the readability of where these spaces are from street level and allow for an inner world that would be inviting to see from the outside. The local knowledge of the Tarwewijk residents (especially of the elderly, young people and community initiatives) and the specific knowledge acquired by the fieldwork done at the Liv Inn in Hilversum, helped in understanding

and brainstorming solutions for combating loneliness through architectural means. Especially when one idea did not work out as planned, it helped to have the specific “expert knowledge” of this target group to find a work around solution.

In short, no I don't think my approach fully worked as it was lacking a clear structure and focus throughout the design process. And the research, which consisted of many detailed interior analyses, lacked a complete understanding of which incentives were needed to bring people together in their homes and in the communal tower, as the provided programs do not necessarily allow for the stimulation of social well-being, intergenerational interaction and use of green amenities on their own (Kaplan et al., 2020). Designers will have to account for the incentives as to why elderly and students will use these spaces such as sharing resources with neighbours.

Alternatively, the preliminary research did allow for a proper materialization of some aspects to alleviate loneliness. Where casestudies of the Liv Inn showed a limited volunteer pool, the design allows for a bigger volunteer pool by considering the (spatial) needs of both the (future) residents of the building, as well as the local residents of Tarwewijk. The building becomes both a residential and public block in the urban context.

Publicly, the variety of intergenerational programming is the first step in combating loneliness, programs suitable for effective ICS as mentioned in Kaplan et al. (2020) such as (rooftop) gardens, theatre spaces, communal kitchens, library, recreation zones, gyms etc. Also making all of these spaces flexible in design allows for (un)foreseen needs of the residents who might have specific preferences based on their interests, cultural backgrounds and age. Each ICS is compartmentalized with the use of slidable glass doors with

causes an interplay between more private and enclosed spaces, or hyper social spaces. The openness (between every two floors) accounts for the first visual connection needed to encourage familiarity amongst the users and hopefully spontaneous interaction which could lead to meaningful relationships (Gehl, 2010; McCay, 2021). The design also accounts for natural strategies when it comes to the multisensory design of the ICS, with floor-to-ceiling windows allowing for natural daylight to penetrate through, which can add to the atmosphere which in turn can create emotional connections to a space, enhance social well-being and can establish identity within ICS (Kaplan et al., 2020; Lee, 2022;). It also allows for readability of a space, making it feel safer and more comfortable, which can help elderly (and students) with their sense of orientation (Petermans et al., 2019). The choice for the bare wooden texture of CLT as a main construction element allows for tactile diversity with the large glass windows, various floor tiles, other colored CLT or Glulam materials. The openness of the design also allows for a controlled smell from the communal kitchen (excessive odours are mechanically ventilated), and sound of people and social activity which adds to the liveliness (Petermans et al., 2019).

Additionally, in the residential sphere the same principles apply, yet the winter gardens on the streetside of the building (south) allow for resource-sharing, spontaneous interactions and the proximity of green spaces help residents to meet all-year round. The latter was a concern from several people in the surveys who claimed that it helped them feel less lonely during the winter if there was nearby green space where they could interact with friends, neighbours or family. By making these “winter gardens” the design builds on the points of current residents of the Tarwewijk who highlight that such collective spaces can enhance community involvement, tackles issues like pover-

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ty, and alleviates feelings of loneliness (Wijkprofiel, 2022). The radical choice of a collective garden of two to three houses might also help to know each other better as only 25% of Tarwewijk's residents claim to know their neighbours (Wijkprofiel, 2022).

REFLECTION UPON THE FEEDBACK THAT WAS GIVEN BY THE MENTORS

Sustainability and circularity: The sustainability and circularity of the design proved to be a topic that still needed a lot of research. It was advised by the BT teacher, Jasmina Campochiaro, to first make an inventory of what is available and what could be reused, and in terms of climate design strategies to first look at ways in which passive strategies can be implemented before looking at the mechanical strategies. This advice, and in combination with the tutoring of the architecture tutors, Koba Macco and Birgit Jurgenhake led to the choice of implementing of skylights, adding glass walls on the ground floor that could open in the summer and the use of greenery to shadow the transparent parts of the façade. Also, regarding circularity and sustainability, it led to the idea of reusing pallet wood used in the nearby industry area and from when the building would be built, to create Circular CLT (C-CLT). Also allowed to reuse parts of the existing building (so to not fully demolish), and challenged how to integrate both old and new parts of the building.

Facades and Floorplans: Both architecture tutors helped in understanding how architectural means could help to create lively spaces where people would want to interact and socialize, hence providing a solution for loneliness. One way for example, was to create balconies where the visual connection is present so neighbours could "see each other" and thus meet each other when they want. Another example was positioning the entrances of the residential units next to

each other with lively sitting areas across from each other to encourage social interaction but also privacy when necessary. Lastly, the feedback on how people bump into one another in the communal tower (stacked part) allowed for "skybridges" and an open design, which would allow for maximum visual connections in between floor, so people could see each other and meet.

How I've learned from my own work and how does it affect my choice of method (how) and argumentation (why)

I learned that my sketches speak louder than my rendered or prints from the computer software I used as this was very strict and almost set in stone, which did not allow for a lot of space to portray the initial idea behind it and caused more for a discussion that focused on the details, its aesthetics. It also caused for a less clear story because it often did not resonate fully yet with the idea (in my head) I was trying to portray to others.

Also, I should spend more time on working drawings out, rather than relying on my verbal communication skills to tell the story. As this was the case many times and caused for a vague and blurry story. Rather, it would have been better if I've invested time in the drawings to make the discussion more focused and specifically substantive.

I also learned that there are layers that must work together to achieve the goal of combating loneliness. For example, while transparency (in the façade) plays a crucial role in providing an inviting gesture to the outside world to come inside of the building, more measures are needed to really get people to use the building. Making an atrium on the ground floor with similar materiality as the adjacent alleyway can naturally bring people inside of the building when the glass doors are open in the summer. But also, the decision to make the facades of the communal tower with a

double floor height (“dubbellaags”), also gives a clear gesture of what is communal and public and what is residential. Additionally, people from the outside have a better readability as to what happens inside. Before, I made the communal tower’s facade in somewhat the same architecture as the residential part, which caused for a lack of clarity which part was consisting of a specific program.

What is the relation between your graduation project topic, your master track (Ar, Ur, BT, LA, MBE), and your master programme (MSc AUBS)?

This graduation project shows, on one hand, the complex nature of the issue of loneliness, and on the other how possible solutions for promoting social wellbeing and diminishing loneliness requires a vast amount of knowledge from neighbouring academic fields (e.g., sociology, psychology, anthropology, environmental psychology, urban design etc.). As the Dwelling Studio, Designing for Health & Care, addresses the design of housing that is inclusive, healthy and consists of (informal) care, designing housing with inter-generational communal spaces (ICS) with a sensory design focus aligns with the studio’s objective. The ICS with a sensory focus aims to make communal spaces accessible and (socially) appealing for anyone, regardless of their (cultural) backgrounds or (dis)abilities. Thus, through promoting an inclusive approach, which is grounded in multidisciplinary research, other neighbouring fields (U, BT, LA, MBE) might consider the results and findings of this project as inspiration or a foundation for future human-centered projects.

How did your research influence your design/recommendations and how did the design/recommendations influence your research?

Through sensory-designed public spaces, my graduation project tackles loneliness in urban

neighborhoods, which is a pressing matter and especially relevant in the Dutch context where elderly and students alike report feeling lonely more often in urban areas. ICS promote (social) wellbeing and building meaningful relationships. It fosters inclusivity on a social level, educates architects on how to build for care and resilience on a professional level, and fills in knowledge gaps in environmental psychology and urban sociology by offering practical, empirically supported solutions for socially and environmentally sustainable and flexible communities that span generations.

How do you assess the value of your way of working (your approach, your used methods, used methodology)?

I think the research phase provided me with a lot of relevant and local insight, and knowledge on the topic of loneliness. Although, it did cause for a loss in focus when starting the design process as there were too many guidelines I perceived as “essential” to reach the goals. Luckily, through constant feedback of the tutors, I’m able to assess what’s really needed and the most essential in creating architecture that not only combats loneliness but also promotes social engagement across generations. In hindsight, a structured plan of action and following this plan would prevent this struggle better.

How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?

Thinking about how to design for social wellbeing for elderly, students whilst prioritizing the connection and exchange of knowledge and interactions between them challenges designers to design inclusively as balanced measures are required to accommodate the need of both. Secondly to stacking communal spaces with a strong visual connection and programmatic connection between them provides new insights for

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similar projects, where traditionally the intergenerational programs are spread out over one floor, the stacked concept allows for a typology that might be more suitable for collective urban living

How do you assess the value of the transferability of your project results?

Due to the aim of this residential design project, which was to provide a liveable and socially well-designed building for lonely students and elderly in urban neighbourhoods, the relevance and urgency of the findings show that the problem is multi-faceted and can't simply be undone by an architectural designer alone.

However, the design implications of Interconnection does pose some answers which can be experimented with after said building were to be built (e.g. carefully choosing the demanded intergenerational communal spaces, the vertical visual connection, private vs public zones and the flexibility in the usage of space due to foldable glasswalls).

So although I believe the findings are transferable to other urban projects to cater to this mixed-living trend of elderly and students, it's still too early to say what measures will work and how they will affect the specific target groups. Follow-up research will help clarify this in the given context.

How does my project address spatial inclusion across age, ability, and cultural background — and where might it still fall short?

At its core, this project hopes to tackle socially include everyone into a supporting and active social network. That means accounting for the differences and similarities between elderly people, students and other residents in the Tarwewijk. One example is including outdoor spaces that both elderly people and students can use in both the winter or summer due to foldable glass walls. Elderly will tend to use the designed balconies

on the northside, while students will tend to reside on the balconies on the warmer southside of the building. This side is also a bit noisier due to the car traffic and tramline. Alternatively, the design purposefully focuses on sensory design elements (e.g. acoustic measures, recognizable colours/textures) and easily accessible access systems (e.g. the elevator, main staircase and 'leefgalerij' at the southside) to help with the inclusion of both elderly and students in these spaces. As a noisy space might cause avoidance of lonely elderly who have hearing deterioration.

How does my project strengthen interconnection between private, communal, and public realms — and how do these transitions impact the experience of belonging?

The design carefully layers thresholds between private units, semi-public communal spaces, and the surrounding neighborhood. By integrating shared gardens and open sightlines through courtyards, residents are gently invited into social life without pressure. These spatial transitions promote a sense of safety and gradual participation, enhancing the feeling of belonging for both introverted and extroverted users.

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