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HOUSING DEVELOPMENT PROJECT IN STENLILLE

ZEALANDSENIORS

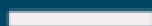


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Background

Stenlille is a small town located in Sorø Municipality, in rural Zealand. Stenlille has a population of approximately 2000 citizen. Stenlille is a small, railway town that has a lot of charm and an active local community. However, in recent years due to an economic slowdown the town has struggled and has seen some local business close down and as well as faces the problem of deteriorating buildings located within the town centre. A lack of investment towards local improvement has led to a vicious circle, in which the lack of investment leads to a lower willingness to invest which negatively affects the image and the life of the city. However, there is a strong demand from local citizens for an increase in development work within their town. And recently a large supermarket chain have entered the town, giving many local residents and community leaders hope that their town has the potential to grow and is on a path of positive development. Currently, there are very few homes suited for the elderly, small families or low -income individuals in Stenlille and there is generally a shortage of houses available. This is seen especially among local seniors, as they are worried that they will be pushed out of their hometown when they wish to downsize and move from their current houses.

Stenlille Udvikling ApS, a Danish property company, is looking to invest in a sustainable housing project to give back to the local community. There is an increasing need for affordable housing within the community and Stenlille Udvikling is looking to meet this important need while providing an important option for local residents. Gateway has already purchased a plot of land, located centrally in Stenlille. The report has been prepared by a team of student consultants from Millennial Consulting. The purpose of the report is to do a preliminary market analysis regarding the feasibility of developing a sustainable housing project in Stenlille as well as serve as a potential future tool to aid in grant or funding applications, help with the design of the project and as well as serve as a potential roadmap for future steps.

Stenlille Land Plot

The land is a sizeable plot located centrally in the heart of Stenlille, right beside the cultural centre. The former owners of the plot left it contaminated, as a factory used to be located there. The current owner, Stenlille Udvikling has invested in several studies relating to the land contamination and locating where it is safe to build and how to properly deal with it to ensure the safety of the residents. The plot of land is 17.400 sqm2 and is located right next door to Stenlille culture house. At the cultural centre, local people can gather for recreational activities. The plot of land is located only a short walk from Stenlille train station, as well as a multitude of shops and only a short distance from a supermarket. Several of the local citizens have expressed their excitement regarding the location of the plot of land as it is central in the city, close to shops and the train station, as well surrounded by nature.



Methodology

In order to understand what the local citizens desires, wishes and concerns surrounding the project are, a number of different research methods were employed. A survey was distributed to the local citizens in-person at an event at the local cultural house, as well as through the township's official Facebook page. The survey aimed to gain an overview of the profile of those who have an interest in this project. The profile section of the survey consisted of the respondent's current residence, age, gender, social status etc. Furthermore, the survey garnered an overview of the stakeholder's desires for the project., for example, what kind of facilities they want, what the size of the homes should be or what type of housing they prefer. In total 115 respondents filled out the survey, with the majority being current residents of Stenlille.

A meeting was also held with members of the government of Sorø Municipality, which included the Mayor of Sorø Municipality. During this meeting the government's role and limitations regarding the project were outlined as well as their desires for the plot of land and project ideas. The meeting also helped gain a better overview of the local context, other important projects that the municipality has been involved in as well as information about the citizens.

In order to gain a qualitative view of the resident's wishes, desires and underlying emotions regarding this project, a focus group, with 16 local attendees, was also conducted. The focus group allowed for emotional and unfiltered expression from local stakeholders and garnered us detailed insight into their wishes for the housing project and worries for the future of Stenlille. It is important to note however, that the focus groups participants were almost exclusively seniors with only several being middle-aged.

Lastly, a site visit was orchestrated to a co-living community of Skråning in Lejre, to gain inspiration, and understand how the residents manage their lives in a co-living society. This visit was organized by the company Casa.

Profiles of Survey Respondents

In total 115 people responded to the survey. The respondents were between the ages of 24 and 83. The majority of respondents were over the age of 50 (75%).

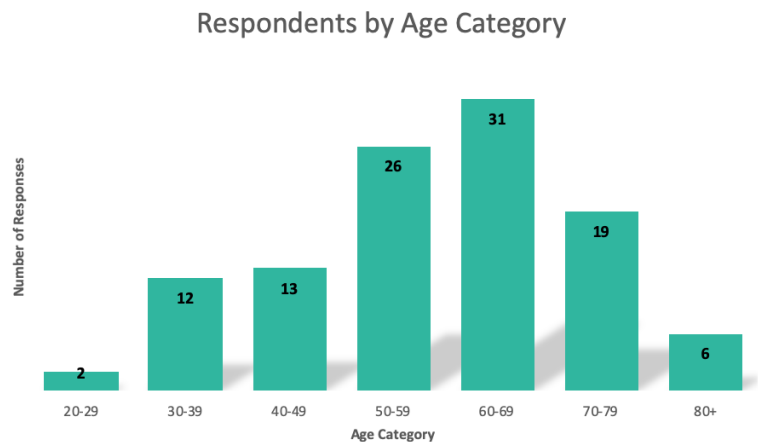
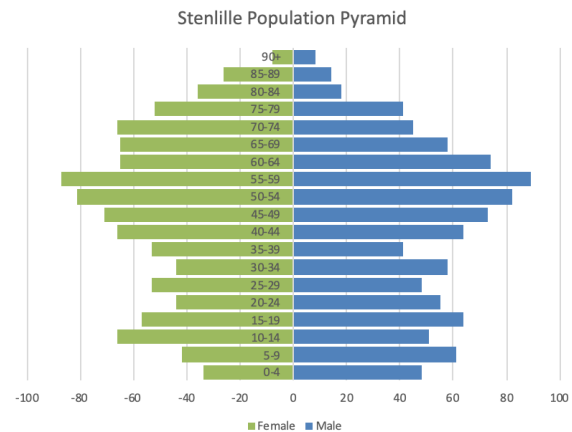
The ages of the respondents tell us that the interest in this project skews heavily towards those that are above the age of 50.

Of the 115 respondents 87 of them are current citizens of Stenlille. A large minority is from the neighboring town of Nyrup. The rest of the respondents are scattered in adjacent town Sorø, Munke Bjerghby, Slagelse, Dianalund, Store Merløse.

With two respondents from Vanløse near Copenhagen and one from Nørager in Northern Jutland.

55% of our respondents currently live with their spouse, while 25% are living alone. Only 7% of respondents live in households with children under the age of 10, and 13% live in households with children between 10 and 18.

75% of all respondents are current homeowners, while 20% are renting their current homes. The rest live in cooperative home ownership unions.



Market Analysis

Consumer Segmentation

Through the study we found that several different consumer segments could potentially be targeted for the housing development project. These include local seniors, young citizens, local workers and students.

Local seniors, could be seen as the segment that has the most potential. This segment displayed great concern relating to the fact that they may be forced to leave their hometown, when they are too old to take care of their current homes. There are very smaller homes available to seniors in Stenlille and only one assisted living facility. Many seniors have been forced to move to nearby towns, Dianalund, Nyrup, Sorø and Slagelse due to the lack of housing availability that meet their required financial and design specifications. For these seniors, the trip to Stenlille, where their friends and family reside, is long and difficult. Therefore, for many seniors their wish is to construct a facility, where they are able to age comfortably, in Stenlille. They are looking for a place they could stay instead of assisted living or smaller housing options in the nearby larger towns.

Local workers may be another important segment to address as Stenlille is about to experience an influx of new jobs due to a new project related to the underground natural gas chamber. This project is estimated to bring approximately 100 new employment opportunities to the town, which could mean more people looking for suitable housing.

The last identified segment can be categorised as young citizens. As per the focus group, many young families are looking for affordable renting opportunities in or around Stenlille. Smaller housing units may be very accommodating for this age segment as they may lack the necessary financing to purchase larger homes.

The final segment can be classified as students. Stenlille is only a short distance away from Roskilde University. Therefore, may be potential in making rental housing for students who face budgetary constraints and who are willing to live in more rural districts of Zealand.

Housing & Community Living Demand

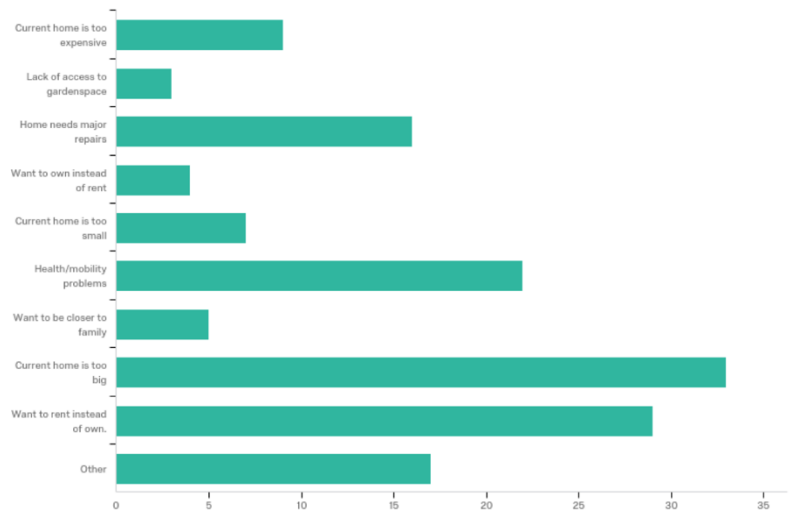
When the survey respondents were faced with the question: “Would you be interested in living in a social community?”, 72% of the respondents showed a positive interest in joining a communal living facility with 54% of the respondents replying ‘yes’ and with 18% of the respondents replying ‘definitely’. 21% had no opinion on the question, and 6% replied either ‘no’, or ‘definitely not’. The 6% that showed negative interest in the project, were in their 20’s and 30’s, and thus, once again, suggests that this age group in specific may not be interested in living in a social community. This type of acceptance to a community living project was also echoed in our focus group and chats with local community members.

The survey also sought to better understand the willingness of the respondents to move, to help reach a better understanding of what type of need there is for housing currently. 47 respondents were interested within the next 2 or 5 years and were mostly above the age of 60 and who either lived alone or with a partner. Several respondents were also families with kids under the age of 10 with only some having kids under the age of 18. 9 respondents were interested in moving within the next year and were mostly over the age of 70. 34 of the survey respondents were not interested in moving for at least 10 years. Predominantly these respondents are under the age of 60, and state that they either want to wait until their kids have left home, or until they are unable to take care of their current larger homes and larger gardens.

As to why the respondents want to move, several reasons were given. The most popular reason to move was the large size of their current home, which was too big for their needs and demanded too much maintenance, especially regarding gardening. Another top reason for respondents was the desire to rent instead of own. This could be understood through information collected during fieldwork as many respondents stated that they are either already retired or close to retirement and

would like to live off the profits from selling their house. Health and mobility issues, were also highlighted as an important reason. Several of the respondents do not suffer from these issues as of yet but worry that they will in the future. Therefore, they are looking for smaller single-floor homes, due to a potential inability to climb stairs. This is something that was expressed heavily at the focus group, as well. The seniors that are interested in this housing project, wants these homes to be the final place they live. Therefore, they do not want stairs, to be ready if mobility issues do arise.

Q14 - Please review and rank in order of importance which reasons would prompt you to move?



Why this project is important, what problems does it address?

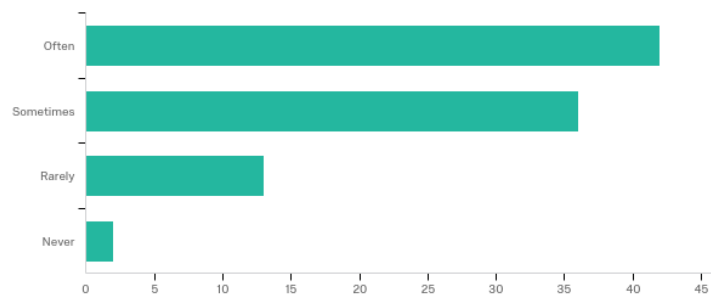
The importance and broader impact of this project may be particularly demonstrated in four key domains. These are social aspects of loneliness and togetherness, sustainability, meeting Stenlilles housing demand, and promoting development within the town. Each of these dimensions describe wishes and worries expressed by local citizens and prominent community members.

Loneliness and togetherness

As stated by one informant at a meeting at Stenlille cultural centre, loneliness is a very common issue among senior citizens. Many have lost their spouse and are now living alone in a large house. Even more have lost friends and neighbors, and see themselves as living trivial lives, without the company of their loved ones. These seniors have retired from the workforce, and struggle to make their days go by. There are also senior citizens that have been forced to move away from the community, because there was no affordable housing available for them. Even though they have only moved to

neighbouring town, the journey to Stenlille is very difficult for them to embark upon. They are unable to drive, and public transportation is rarely senior friendly, as expressed by one informant. Social housing is a solution to this problem. Through neighborly camaraderie the informants that have expressed feelings of loneliness, can

regain their social life. The figure above shows the answers to the question: “Do you participate in regular social activities?”. A large section of the respondents answered often, but the majority



answered either sometimes, rarely or never. These are the same respondents that express feelings of loneliness. With this social housing project, the hope is to help these respondents come together and form a community. Social isolation is a major risk factor for the well-being of seniors, sociability helps lessen psychological distress such as feelings of depression and emptiness, that may accompany the loss of important relationships. Developing a community where seniors can cohabitate together, may counteract many of negative effects associated with social isolation as it can facilitate networking and connections between members which appears as an adequate alternative to seniors living and aging alone.

Sustainability

There are two sections to the sustainability dimension; social and environmental. Social sustainability regards the notion that this facility needs to be a lasting project, and that it can attract new residents when others leave, as well as enhance the feeling of camaraderie experienced by residents. Social sustainable solutions could be to construct a common room, where residents can gather, cook dinner, do knitting club, book club, have coffee etc. The common room should be open for all residents at all times, as to encourage an open and welcoming atmosphere.

When asked what kind of activities the respondents partake in, there was a multitude of answers.

Race cycling, volunteer work, bingo, gymnastics, dining clubs, knitting café, thrift shopping, concerts,

walking-group, church arrangements etc. These are all activities that could be incorporated into the social life of the facility, in order to promote social sustainability.

As for environmental sustainability, social solutions should be taken into consideration. The social solution would be there to encourage the residents to live sustainably. Making the facility sustainable will also make it more attractive to potentially new residents, seeing as most of our informants, express a wish to live sustainably. Suggestions to solutions could be; shared laundry room, proper garbage sorting, shared shed with tools and gardening supplies for all, a food delivery service for all residents, item exchange station where residents can swap items etc.

Other suggestions from informants include rain water recycling, shared composting and solar cells. Environmental sustainability should also be addressed in terms of the housing units themselves. This could be the use of recycled materials, choosing environmentally friendly designs and putting environmental considerations first when outfitting the units. This could include choosing energy efficient appliances, installing advanced thermostats and implementing other products or features that are environmentally friendly. Other, considerations could be made for power generation including the installation of solar cells or the usage of geothermal heating. Additionally, environmental sustainability can be promoted by the shared usage of common amenities such as a collective laundry room. Green space around the community as well as a common vegetable garden could help promote green living and environmental sustainability.

Supply and demand

All of our informants have described a huge demand for affordable housing in Stenlille. Houses in Stenlille are selling so fast, that most are not put to sale publicly. However, there is a pressing lack of rental opportunities, especially for people looking for smaller homes. Stenlille is a small town, and as such does not have apartment complexes, which would usually be cheaper than houses. Not everyone who wants to live in Stenlille are able to afford a house. Therefore, building a facility with smaller units would fill the market gap. From an online investigation, it was found that there are homes listed in Stenlille, however, the majority are larger “farm” houses with large upkeep requirements.

Development

Lastly, but most importantly, is development. Because Stenlille was hit hard by the financial crisis of 2009, the town has been in a process of deterioration. The citizens have now taken to action, to rebuild the town to its former glory. Outside chain grocers such as REMA 1000, have recently opened up in town also offering hope to both town officials and residents that Stenlille is a town worth investing in and has growing potential. The town is also about to see an influx of over 100 new jobs resulting from a project relating to the town's natural gas storage chamber. The citizens hope is that this will bring younger people, who can work, create businesses and further invest in the town. Additionally, more people coming to the town could help support the local transportation infrastructure. Some residents expressed concern relating to the future state of public transportation of Stenlille, in that the local train station might get shut down if there is an insufficient number of people using it which could mean a huge blow to the city. Furthermore, many of our informants also express interest in bringing more young people to Stenlille, with one informant stating: *"It would be nice, if there were more young people. It would bring a bit of life to the city. We need a bit of life"*. This would help ensure the sustainability of businesses and overall town development within the long term.

Sorø municipality, that governs over the township of Stenlille, has already made development plans for the city, that will be finalized in 2025. These include; renovation on the main street with main focus on renovating the facades of the houses, renovate roads and sidewalks, plant trees, prepare urban space inventory such as benches, renovations on the train station and build a town square.

Psychological and Social Needs of Seniors: Co-housing Considerations

Special considerations should be made during project develop to inspire a support within the co-housing community. For example, encouraging community members to ask for help when needed, accept help when needed and finally give help to others. Often seniors need neighborly help rather than skilled care, these considerations can be implemented into a community living support model

where residents can nominate other residents who can organize necessary assistance for them when needed. Types of assistance might include grocery shopping, preparing meals, visits, company on physician visits, dog walking, and even personal care.

Benefits of shared community housing for elderly can include:

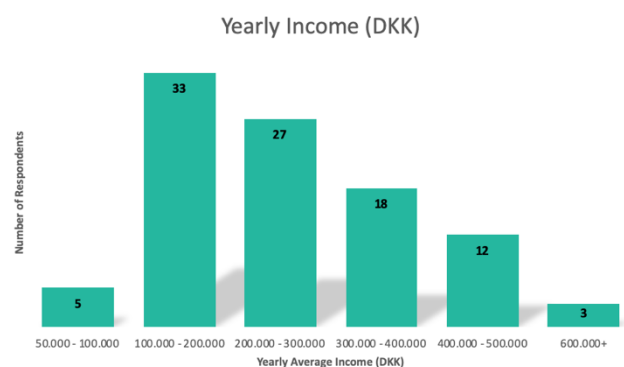
- A potential for people to watch out for each other and familiarity that helps residents feel safe
- The valuable combination of having their own homes but not feeling alone
- Having the security of knowing that a neighbor would notice if something happened to them
- Being with people who can relate and understand because the same things are happening to them

Financial Considerations

Preferences: Rent Versus Buy

To better understand future structure of the project, it was important to understand which type of model is preferred by local residents, either a rental model or a purchase model. Answers arising from the fieldwork and the survey were quite different. The meeting with the mayoral office, the focus group and chats with local mainly senior residents all confirmed that the elderly

are not interested in buying and show a much greater interest in renting. Many of the local seniors have the majority of their liquidity in their current homes. And to achieve their desired lifestyle in retirement they would prefer to live off the profits made from selling their house, their pensions and housing grants. Moving into rental units is preferred because they do not have to make another big investment decision and have their money locked up in a property. However, the survey data shows that this decision is less unanimous. 54 people out 94 respondents would prefer to rent the apartment representing the 57% on the sample, while still being the majority, there was still a significant number of respondents (43%) who would rather buy property then rent. It is important to consider, however, that the majority of the participants in the fieldwork were seniors and the survey



does have a more representative age dispersion. When the survey data analysis accounted for age it showed that those is the senior age group those above 60, 65% were interested in renting whereas 35% were interested in buying. For those 50 and under, it was an almost even split with 49% wishing to rent and 51% wishing to buy. If you specifically look at those aged 40 and under there is a strong preference to buy, with 11 out of 13 respondents that favour buying.

Affordability Analysis

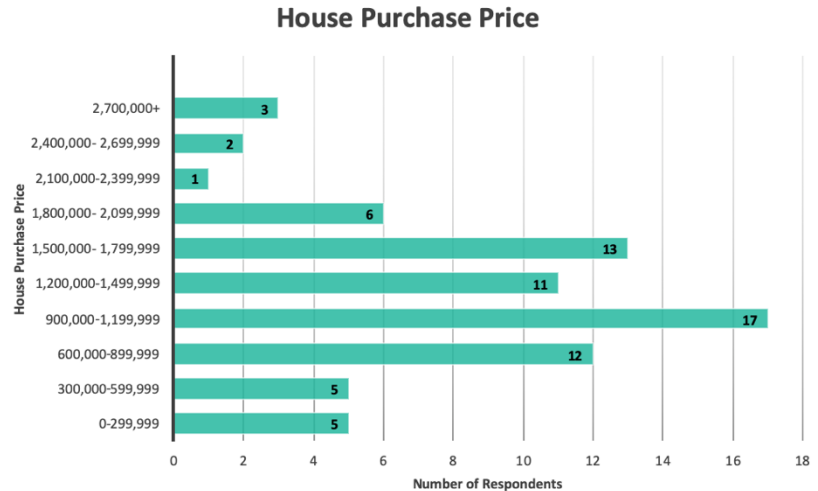
Because many of Stenlille's residents fall into a low income bracket it may be beneficial to understand which types of support may be available to them. Housing benefits may be a main source of income for future residents. Therefore, it is important to understand how much housing support future residents could receive. Housing benefits are dependent on how much the rent is, how big the home is, how many people live together as well as the resident's total income and wealth a housing allowance is administered by the municipality. The total maximum monthly installment for housing benefits dkr. 4.134¹. Your housing benefit is paid out as a subsidy if you live in a rented unit and as a loan if you live in an owner-occupied or cooperative housing.

Focus group participants were quite vocal about how much they would be willing to spend in rent. Most thought it would be acceptable to pay in the range of 6.000-7.000 dkr per month for a housing unit that was approximately 80sqm². For a smaller apartment of approximately 50sqm² they were willing to pay approximately 4.000-5.000 dkr. According to the mayoral office the monthly rent in the area should be capped at approximately 7.000 dkr. Though they stated that rents are higher in Sorø, they said that Stenlille rental prices are less due to the location. They also brought up concerns that the rent should not be too low in order to attract the right type of renters.

¹ <https://www.aeldresagen.dk/viden-og-raadgivning/penge-og-pension/tillaeg-og-tilskud/gode-raad/boligyldelse#>

The survey also sought to understand the willingness to spend of respondents to better understand how to establish future housing unit prices. The survey asked: “What price would be acceptable if you were to buy a house? Please give an estimate.” The results showed that most respondents would be comfortable purchasing in the 900,000-1,199,999 range.

The survey data showed a wide range in different acceptable house prices, however, most respondents, would buy in the 600,000-1,799,999-price range.



A small analysis of the current housing market was also undertaken through visiting online real-estate websites. It found that most properties fall in the price range of somewhere between 1 and 2 million DKK. Some houses are available for less, and some for more. By far, most of the houses currently up for sale are available for between 1.2 million DKK and 1.8 million DKK. According to Association of Danish Mortgage Banks during 2018², in Zealand region, house prices rose by 4.6% y-o-y to an average of DKK17,042 (EUR2,283) per square meter.

Self-Sustaining Operations

The project must meet the criteria of being self-sustaining in order to cover the full investment costs however does not need to be profitable. It will be necessary to create a financial feasibility plan to see if it will be possible to generate sufficient revenue to cover all costs associated with building and operating the housing development project. It will be necessary to keep rents or housing prices relatively low in order to cater for low-income individuals, especially those on fixed incomes to ensure affordability for the current and future unit residents.

² <https://www.globalpropertyguide.com/Europe/Denmark/Price-History>

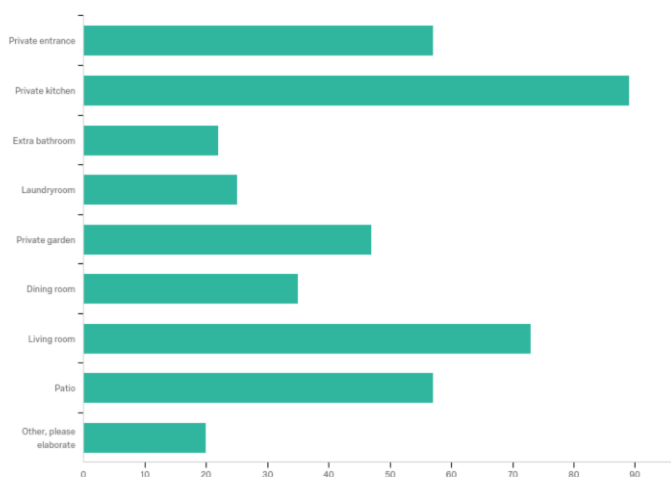
most popular last ranked option, making them the most polarizing decision of the selection. For senior respondents, the detached house option was by far the least popular housing choice this was contrasted by those under 60 whose least favourite decision by far was the apartment option.

From our focus group it was discovered that there is a preference for smaller homes among Stenlilles senior residents. Most are considering moving due to a preference towards downsizing. With this said however, our survey data revealed that respondents are not interested in the tiny home category which includes homes under 46m² with only 4 out of 94 respondents saying they would live in a housing option under 50m². 8 respondents stated they would live in a 50m²-60m² housing option, 23 respondents 60-70m² option with the bulk of respondents. With 59 respondents stating they would need to live in a housing option that was 70m² or more. The survey data also showed that the majority of respondents want a housing option with over 3 rooms (58 respondents) following this was 4+ rooms (24 respondents) with more than 2 rooms (9 respondents). Only 3 respondents stated they would need a housing option with over 5 rooms. Almost all respondents within the senior age group preferred houses with 3 to 4 rooms. Only 4 respondents preferred 2 rooms. However, in the focus group discussions most participants were okay with limiting the average unit size if this meant cost savings, as they were quite concerned over affordability rather than space.

Amenities that are needed in each housing unit were also explored through both survey and focus group questions. Respondents were asked to rank on the basis of importance which

features they find to be the most important in a housing unit. 94% of respondents expressed the need to have a private kitchen, as well as 77% expressed the need for a living room and, 60% the need for both a private entrance and a patio, 49% were interested in having a private garden. Other amenities were seen as being less important for the respondents such

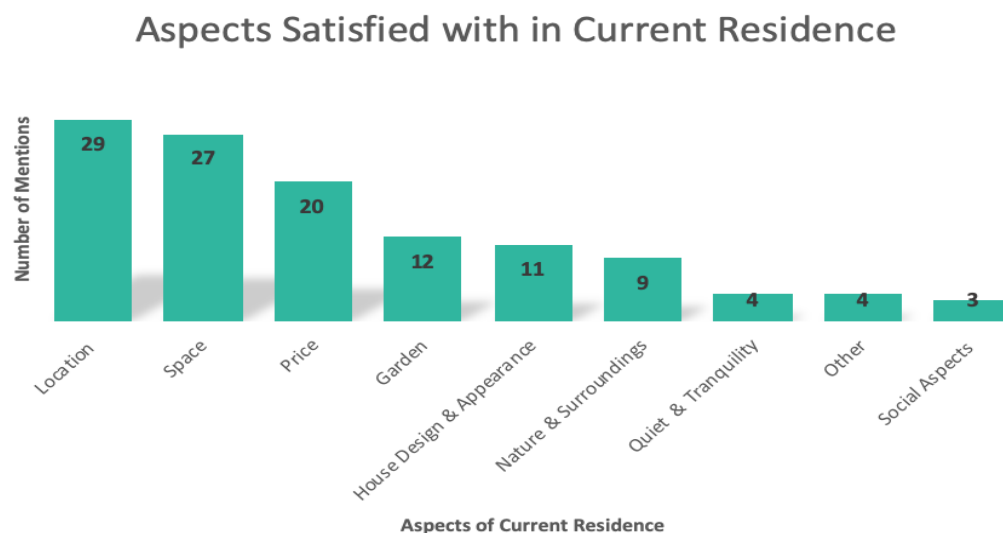
Q18 - What amenities do you need in-house? Rank in order of importance.



as a private dining room (37%) or an extra bathroom (23%) with significantly less respondents expressing interest. According to the focus group washing machine units are not needed within each individual unit and instead a shared laundry facility would be fine for most households, this is in coherence with the with the survey findings that only 26% of respondents would want private laundry facilities. Other respondents expressed interest in other features such as guest bedrooms, a conservatory, an office, a shed and a utility room.

In the focus group they did express the need to have their own kitchen appliances such as a fridge and stove within the unit. And other features such as floor heating was brought up in the focus group as being a nice extra feature.

The survey also asked respondents to comment on what features they are most attracted to in their current residence. Popular answers included the location, space, price, garden space and house design & appearance.



Survey Respondents were also asked on what difficulties they faced in their current residence, popular answers included difficulties with stairs (13), garden upkeep (6) and difficulties surrounding

cleaning and maintenance (6). Seniors within the focus group also expressed their dislike for stairs within any housing complex. Accessibility concern should be an important consideration for future housing design as many of the seniors interviewed plan to age in these residences. Therefore designs will need to account for low physical effort, equitable use among residents and limited use of stairs.

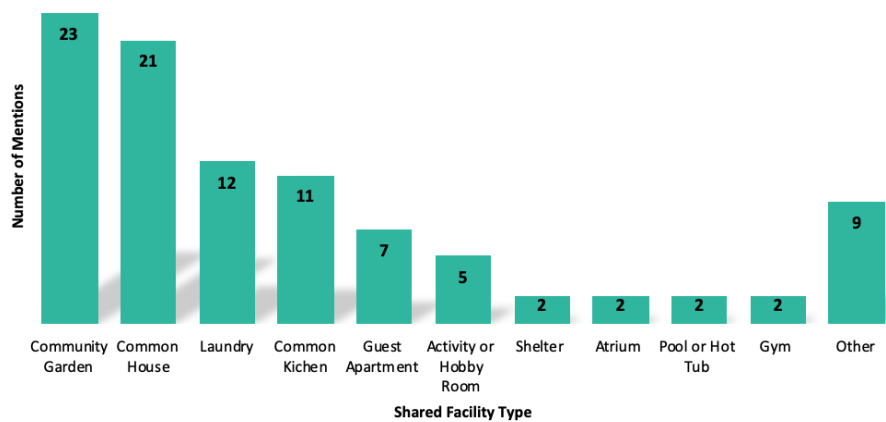
Participants in the focus group were also quite vocal regarding the final appearance of the possible housing development project. The participants did not like the overall look of the housing development project Casa and even referred to it as an “Box Town”. They expressed that they are not so interested in something “beautiful” but rather something that has some personality. According to the municipality and the previous land planning document there is quite a bit of design freedom for the look of the units as long as they follow the size restrictions outlined in the document. Therefore, it is recommended that a further study looks further into design preferences of the potential consumers.

Design considerations may also need to include aspects that will allow them to fall within the allowed specifications for residences to be eligible for housing support. These could be size constraints, or specific requirements for example, the need for a separate kitchen with inlet water and sewage drains.

Facilities & Shared Amenities

Facilities & shared amenities was also studied both in the focus group, meetings and in the survey. The survey sought to uncover which collective facilities or amenities the respondents would be interested in having within the housing development. The most popular idea was that of the creation of a community garden which was mentioned by 23 of the respondents and a common house which was mentioned by 21 of the respondents. Other popular ideas included a shared laundry, a common kitchen, shared guest apartments and activity or hobby rooms.

Interest in Shared Facilities



Survey respondents were also asked about their desire to share a car with other members of the housing community. However, 57% of respondents were against the idea. Participants in the focus group also had mixed feedback regarding a shared car.

The creation of a common house was a popular discussion point during the focus group. Most participants expressed an interest in having a common house with a common dining hall and a kitchen, essentially a smaller version of the pre-existing culture house. A space where they could hold events or meetings and have the ability to reserve it when needed. A shared kitchen within the common house was important to the focus group participants, however they stated that it does not need to be an industrial kitchen but can be a more modest kitchen. Though the possibility of cost savings relating to not creating a common house and rather utilizing the pre-existing space of the local culture house was explored. However, this idea was not supported by the participants of the focus group as access to the culture house is restricted.

Participants of the focus group were also very keen on having a space reserved for guests who may want to visit the residents. Due to the limited size of the development project and the costs associated with creating unique guest quarters, they agreed that there could be a special space designated within the common house for guests to stay. A shared space for laundry was also accepted amongst most of the participants, as they thought it would be a good way to increase affordability of the units. A shared garden was also accepted by most focus group participants

reflecting similarities to the survey data. Other ideas that arose from the focus group included the creation of a small coffee house within the common house or simply a cozy area for residents within the common house to relax with a coffee machine and a nice area to sit.

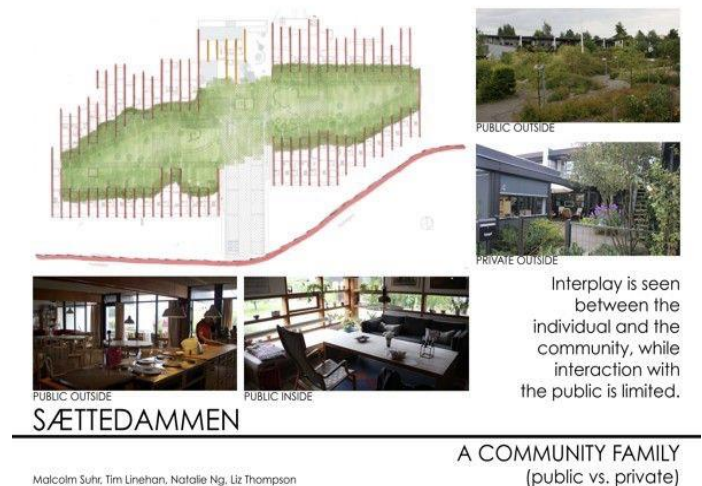
Since sociability is so important to be maintained, it is crucial that the cohousing community is physically designed with shared common spaces to facilitate social contact. These can include a common building with a kitchen, library or exercise room. Patios and gardens are positioned in a way to promote interaction. As a result, residents engage in communal meals and other activities. Furthermore, to secure that the cohabiting and interactions go well, it is critical to establish a set of shared values. Examples are the desire to promote environmental sustainability or social justice, or a shared lifestyle. Common elements include a community vision statement that articulates important principles along with a hierarchical governance and decision-making structure.

Project Inspiration

The following section shows a selection of interesting co-living projects that have been developed or in the process of development mainly within Scandinavia. This section aims to give future inspiration for design and possible features and amenities.

Saettedammen³, Denmark

Saettedammen in Hillerød, was the first co-housing community in the world. Currently the community is home to 60 adults and 20 children with 35 separate households and can be classified as an inter-generational community. In Saettedammen, communal meals are a staple,



³ <https://cohabitas.com/news/128/coliving/Cohousing+in+Denmark+-+A+visit+to+Saettedammen%2C+the+world%27s+first+co-housing+community>

residents are expected to clean shared areas. Many resources are shared like laundry, outdoor tools and play equipment. The houses themselves are built using a modular design and are between one and two stories. The houses are made with stacked brick that allow the interior walls to be moved around according to living needs. They have a program where each household needs to make one communal meal per month. They also have shared laundry facilities.

Senior Collective Housing, Denmark⁴

This is a concept designed by Nord Architects, to create a sustainable housing project catered towards seniors. The project specifically tries to address creating a sense of community within the housing project, trying to bring together seniors through recreation and activities. Additionally, it has in mind the features seniors need to age comfortably and that is in line with a “welcoming Nordic atmosphere”. The project has a natural feeling, as they try to use wood extensively and they also take sustainability considerations into account by using environmentally-friendly wood. The design uses green paint on the outside to try to give the housing unit more identity.



⁴ <https://www.nordarchitects.dk/midgard>



Eco-village.dk Projects⁵, Denmark

Eco Village strives to re-imagine traditional housing options in Denmark based on the values of shared economics, community and environmental awareness. They have similar sized projects as the

⁵ <https://www.eco-village.dk/>

potential housing project in Stenlille. Features of the communities include shared community meals, shared common facilities such as dining rooms, bicycle workshops, fitness rooms, offices, shared laundry and guest rooms. They also try to incorporate environmental sustainability by using energy and heat-saving technologies and by using sustainable materials in their construction. Other initiatives include the use of solar energy and water recycling. Currently, they have several projects in progress.

Eco-Village Community
Vandkanten, Vejle
Grønne Eng, Ørestad Syd
Strømmen, Hørsholm
Rullestenen, Roskilde
Æbegården, Ballerup
Skråningen II, Lejre
Sundsholmerne, Aalborg



Karise Permatopia, Denmark⁶

Is a self-sufficient, modern living community that ensures both low cost of living and environmental sustainability. Permatopia was established in 2018 and is both a residential and agricultural community in the town of Karise. It abides by the permaculture principles in both design and the way in which the community operates. The community includes residential buildings, agricultural land, an apple orchard and has a private forest. It also has its own power generation facilities that make the community self-sufficient for both electricity and heat. The community has 90 terraced houses that range from 70 to 115 square meters and have 2-stories with a private garden. Some are rented (50

⁶ <https://www.facebook.com/karisepermatopia/>

units) while others are part of a cooperative housing arrangement (40 units). The community consists of approximately 150 adults and 70 children. There are also common facilities such as a shared dining hall, a kitchen, laundry facilities and a communal yard. The agricultural part is run by a part-time organic farmer.



Bårliskogen sheltered housing⁷ : C.F. Møller Architects, Denmark

Bårliskogen is a residential housing complex designed for 16 people with disabilities. The building is made in 3 wings which are linked by a centrally located administration block, which contains common rooms and the canteen. The residences are on the ground floor, and all have terraces which allow the residents to have easy access to the surrounding nature that surrounds the property. Architectural considerations help bring life to the complex, and they make use of slanted roofs to make a unique design. Each unit also has large windows that help bring in natural light and add to the design. To help blend in with the surrounding environment the design used natural materials such as stained wood and zinc.

⁷ <https://www.cfmoller.com/p/Baarliskogen-sheltered-housing-i2168.html>



Urban Village Project, Denmark⁸

Effekt Architects along with Space 10, have created a new concept based on modular living and creating housing communities called the Urban Village project. The main goal is to help make “everyday more liveable, sustainable and affordable”. The communities would be inter-generational that include customized modular homes that are connected to a large variety of common facilities

⁸ <https://www.urbanvillageproject.com/>

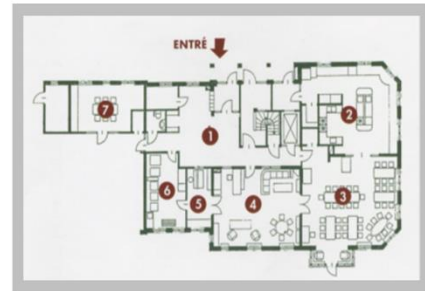
and services. Shared facilities could include, urban farming, communal dining, shared transportation, day-care and fitness centres. They have also devised a new way to keep the homes affordable by creating a subscription-based model that is linked to how big your unit is as well as the desired features and amenities. Residents would be able to purchase shares if they wish, and progressively grow their ownership. The pre-fabrication of the units also helps reduce costs significantly. The modularity of the units also allows the following of circularity principles. As resident's housing needs change modular units allow them to add or subtract space or change functions of their current rooms. The building materials are flat packed which helps reduce the carbon emissions from transportation and are made from sustainable materials. The components would also be designed to enable recycling in the future. Other environmentally sustainable considerations the project makes are about recycling, localized composting, farming, water harvesting and finally clean energy production.



Färdknäppen⁹, Sweden

Färdknäppen is an apartment house, owned by a municipal housing company, located on the island Södermalm in Stockholm. The house has 43 apartments comprising 1, 2 or 3 rooms each (plus a fully equipped kitchen) measuring between 37 to 75 square meters, plus ca. 400 square meters of common areas.

The design of the space was done flexibly to account for the diverse needs of the residents. Most of the common space is located in the ground floor. The common area includes amenities such as a library with TV and a computer, a weaving room, a laundry room, a common dining room and kitchen, and a room for woodwork. There is also a collective garden.



The ground floor of Färdknäppen includes a large entrance area (1), a common kitchen (2), dining room (3), living room with library, internet PC and sewing corner (4), weaving room (5), laundry room (6) and a hobby/carpentry room (7).



There is a fully equipped recycling area at the ground floor. All refundable bottles are communally collected, and the money is donated to charities. The basement includes individual storage rooms and collective pantry/food storage rooms plus a recreational/exercising room and a sauna.

Gardens Elderly Centre in Örebro: Sweden¹⁰

Gardens is a two-story complex that will be a care home for the elderly in Örebro, Sweden designed by Marge Arkitekter. Currently, it is in the construction process. The complex will try to integrate three important values into the design which are, attractiveness, being close to nature and finally a design that promotes integration. The first aspect, attractiveness includes aspects such as the design

⁹ http://www.fardknappen.se/public_html/In_English.html

¹⁰ <https://architizer.com/projects/gardens-elderly-centre-in-oerebro/#> =

aesthetic and the degree of cleanliness which influences senior's activity level. The second aspect, being close to nature, was deemed as an important element to promote stress reduction and further sociability among the residents. The final element integration is the idea of fostering a sense of belonging and participation among residents through designing elements that bring people together, maintain community dynamics and promote integration among not only the people living there but the staff and visitors as well. This is in the hope that it will help battle the social isolation.

The complex has a pattern design on the façade and different building sizes to contrast nicely with the flatness of the landscape. The complex envelopes gardens within its walls.



Other Interesting Projects



Name: New Frogner Nursing Home

Architect: CF Møller

Link: <https://www.cfmoller.com/p/New-Frogner-Nursing-Home-i3119.html>



Name: Alzheimer Village in Oslo

Architect: Nord Architects

Link: <https://www.nordarchitects.dk/furuset>



Name: Co-Existence Village

Architect: Nord Architects

Link: <https://www.nordarchitects.dk/co-existence-village>



Name: Hospice Djursland

Architect: CF Møller

Link:

<https://www.cfmoller.com/p/Hospice-Djursland-i2176.html>




Name: Alzheimer Village in France

Architect: Nord Architects

Link:

<https://www.nordarchitects.dk/alzheimer-dax>

	<p>Name: Alzheimer Village in France</p> <p>Architect: Nord Architects</p> <p>Link: https://residonia.dk/projector/bdfe1553b4f05030e70b5d5e4812118MNETP/LV08apA4a4QoDyCT7y0NW37p6aKCTIGBu_0rUAFK3_20</p>
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Next steps

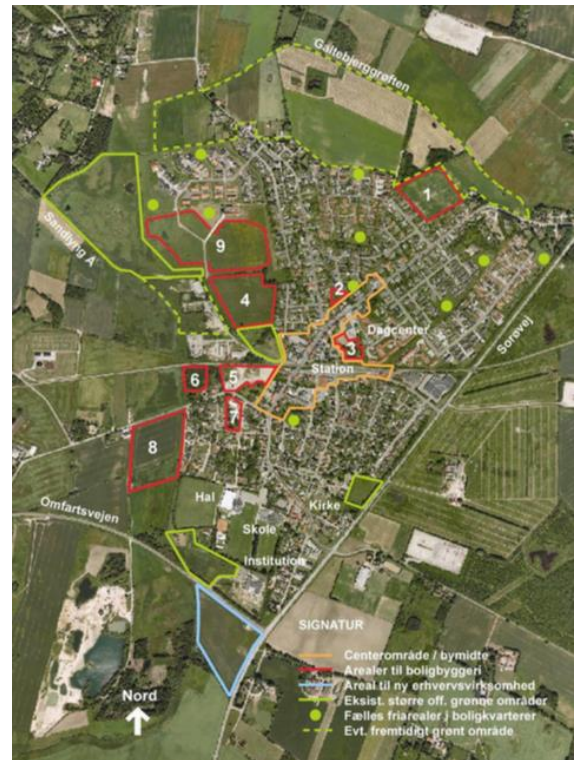
At this stage of the project certain large steps have already been taken such as the purchase of the land, a basic market analysis, zoning by the municipality as well as an almost complete environmental analysis. Future important steps include:

- Terminating the Environmental Analysis
- Creating a Business Plan that Includes a Financial Feasibility Report
- Applying for Grants or Funding
- Hiring an Architect Firm
- Finalizing the Design Concept (New Zoning May Be Needed)
- Selecting a Contractor
- Choosing a Project Lender, Partner or Investment Group
- Finalizing Budgets
- Ensuring Legal Agreements and Contracts are in Order
- Finding Purchasers or Renters
- Starting Construction
- Operations Management

Future Projects

According to our informants, there is an abundance of potential in Stenlille for future building projects. They have described several plots of land, some with abandoned building on them, that have been unused for years. It is in their interest to develop these plots and bring more people to Stenlille.

As seen in the figure to the right, there are plenty of options for future projects in Stenlille. Those that are marked in red, are available for building housing units. The plot of land that will be used for this project is marked at number 5. Both plots 9, 4, 8 and 1 are larger or similar in size to plot 5, making space for many units. Those marked in green are existing green areas, that will be developed by the municipality within the next 5 years, until 2025.



Conclusion

This report highlights specific considerations and requirements for Stenlille Udvikling to proceed with a sustainable housing development project on the Stenlille land. Through multiple meetings, surveys and a focus group this report was generated. The overall findings suggest that there is a strong demand for a housing community within Stenlille, and despite the original project ideas of targeting the project exclusively towards seniors there may be other market segments such as local workers and young families who may also have potential. This report also gives a basic overview of certain key financial elements as well future design considerations. A limit of the study, however, was that most of the fieldwork was focused on senior respondents. This did not allow for the collection of in-depth qualitative data looking at other potential market segments. Future studies may wish to look at these other segments. Other future considerations could look at the design aesthetic preferences of the potential market. Additionally, a study in grant opportunities or funding may be highly beneficial.