

**ENHR 2009 International Conference**

**“Changing Housing Markets: Integration and Segmentation”**

**Dwelling quality and everyday life for senior citizens.**

How can planned housing development provide a better integration of the elderly?

**Dag Kittang**

SINTEF Building and Infrastructure,  
Trondheim, Norway  
*dag.kittang@sintef.no*  
Phonenumber: +47 93 05 86 26

**Solvår Wågø**

SINTEF Building and Infrastructure,  
Trondheim, Norway  
*solvar.i.wago@sintef.no*  
Phonenumber: +47 92 48 30 60

**Karin Høyland**

Faculty of Architecture and Fine Art  
Norwegian University of Science and Technology (NTNU)  
Trondheim, Norway  
*karin.hoyland@ntnu.no*  
Phonenumber: +47 93 02 89 01

**Björg Horntvedt Østnor**

Faculty of Nursing Education  
Sør-Trøndelag University College  
Trondheim, Norway  
Phonenumber: +4773552904

## **Dwelling quality and everyday life for senior citizens.**

How can planned housing development provide a better integration of the elderly?

### **Abstract**

Out of consideration for the welfare of senior citizens and the resources of local authorities, domiciliary health care has a very high priority in geriatric care. During the 1990s a number of private "senior-citizen dwellings" were built for elderly people requiring accommodation more suited to their needs. By means of various studies, SINTEF has examined how well these dwellings are suited to a group of senior citizens who with advancing years have a growing need for care and nursing. During these investigations we have posed a number of questions: Do these dwelling concepts provide sound integration of the elderly into society and improve their everyday life? How well do these dwellings cater for the needs of senior citizens with respect to social contacts, stimulation and security? Are the dwellings located and executed so that reduced functionality will not give rise to reduced accessibility or increased isolation? Does this type of dwelling provide the basis for sound domiciliary care and make the best use of available resources?

Based on studies of layouts, and through questionnaires and interviews, we have evaluated differing housing projects adapted to the needs of the elderly and have made a number of significant discoveries: Senior citizens emphasise that being able to live at home is an important precondition for self-reliance, independence and quality of life. A sound integration in community life presupposes easy access to society's infrastructure as well as social meeting places. The close proximity of nursing and health-care services, together with caring neighbours, helps provide a feeling of security. The areas examined exposed substantial deviations with regard to the fulfilment of these wishes.

This Paper discusses the various strategies that ought to form the basis of planned housing development in order to meet the needs of an increasingly ageing population and create a basis for sound integration of the elderly into society.

**Keywords:** Planning for elderly; housing development, quality of life; safety; social integration; care; diversity;

## An ageing population

A continuous reduction in the death rate (mortality) of the upper age groups, combined with age composition of the population, will lead to a marked increase in the number of elderly the next fifty years. According to Statistics Norway (SSB)'s projections, the number of 67-year-olds and older in Norway could increase from 614,000 in 2008 to approx. 1.5 million in 2060, more than twice the present number. Furthermore, we could have nearly five times as many aged over 90 years as today (Brunborg et al. 2008). Life after 70 will come to represent a quarter of one's life cycle for a substantial proportion of the population. We will have a large group of elderly people who are physically active and enjoying an active lifestyle, but also many who will need nursing and care. With this ageing of the population, various types of illness such as cancer and senile dementia will become far more widespread. This in turn will lead to a substantial growth in the need for nursing and care in the population while at the same time there will be a dearth of workers to provide nursing and care for the elderly. This development is becoming even more pronounced in other European countries.



Fig. 1: Change in population structure 1950 – 2060. SSB 2008

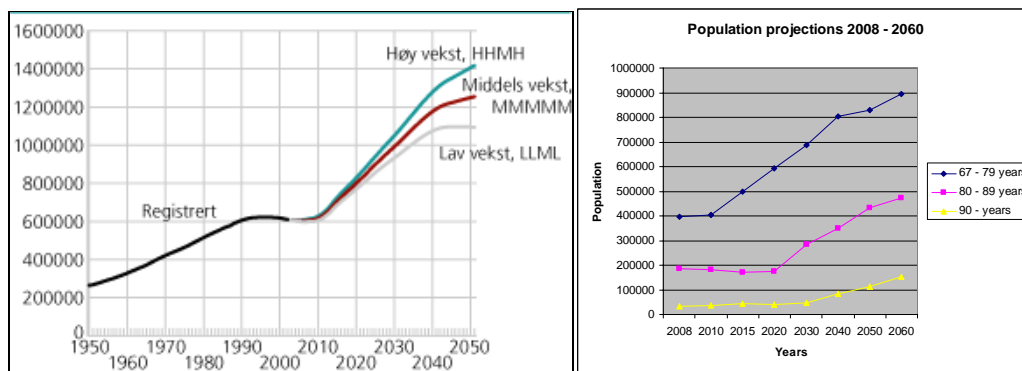


Fig. 2: Population projections. No. people aged 67 and over. Registered 1950 – 2002 and projection (SSB 2008)

In order to meet this challenge, it is important to ensure that senior citizens can cope with everyday life in their own home for as long as possible by building dwellings suited to old age and by adapting the local environment. Focus in the past has mainly been on physical adaptations regarding the various reductions in functionality associated with old age. One has tended to regard the dweller/dwelling relationship primarily as a functional relationship. Very little emphasis has been placed on

psychosocial conditions such as the need for security, social contact, inspiration and stimulating experiences in everyday life. The reduction in quality of life in a continually expanding group of senior citizens represents a considerable challenge for our geriatric care services. The manner in which the dwelling parameters provide for activity and the development of a social network are important preconditions for quality of life. Lack of contact and “togetherness” with other people, as well as general emptiness in everyday life, also represent substantial challenges for many relatively healthy senior citizens.

### **Aim of the project**

The project “Dwelling quality and everyday life for senior citizens” is an evaluation of various housing concepts intended for elderly people (Wågø and Høyland 2009). The aim of the project is to determine which conditions are important in order that a growing number of senior citizens can master everyday life in their own home for as long as possible. The project has examined the significance of physical adaptation with regard to communal fellowship, as well as the significance of location and local environment with regard to the dwellers’ everyday life. The conditions examined are: organisation of the housing, availability of informal meeting places, common areas and premises that can function as formal meeting places, and the degree in which the physical surroundings provide opportunities for living an active life as well as provide opportunities for physical and social contact with others. Physical parameters are of considerable importance in determining how one can maintain, lose or build up new social networks that give a feeling of participation, provide a sense of security and a feeling of being useful to society.

We wish to study how the dwellings function over time, whether anyone has moved, if so why, what works well and what does not work so well. Two of the projects that were examined ten years ago are incorporated in this investigation. The new investigation also includes two fresh example areas. In order to study the effect they have had, these projects incorporate some qualities that proved to be absent in the projects examined ten years ago. Based on these four housing projects (two built in 2005 and two built in 1995) we have investigated which aspects are most important so that the growing number of senior citizens can be offered attractive residential facilities enabling them to cope with everyday life in their own home for as long as possible. The results of the investigation will provide the input for developing strategies and measure for future municipal housing policies. It is important that the numerous senior-citizen dwellings to be built in the years to come are designed for the optimal well-being and security of those who will be living in them.

### **”Senior-citizen housing – municipal strategies” – The 1997 investigation**

The background and reference point for this project is “Senior-citizen housing – municipal strategies,” a project that was completed in 1997 and which examined five housing projects in Trondheim intended for elderly people (Kittang 1995; Støa 1997). In the project “Dwelling quality and everyday life for senior citizens” we wish to examine how those who lived in the housing areas in 1997, find the housing situation today. Do these residential solutions that they chose ten years ago still work now that they themselves have grown older and become more infirm? Do these dwellings still work for a group of residents becoming increasingly challenged, functionally as well as orientationally, and do these dwellings help promote communal fellowship and provide the basis for a sound residential environment.

The 1997 - investigation showed that the target group for “the senior-citizen housing concept” was primarily healthy married couples between the ages of 50 and 70, whereas those buying care accommodation are generally older and in need of more nursing care. The first group moved to achieve a simpler everyday life and gain more leisure time, and not in order to be living with an increasing need for nursing and care. They attached importance to social affiliation to the area, sun and view, and price. The apartment had to be easily cared for, with a lift (elevator) from the parking basement and be on one level, but not necessarily with Lifetime Homes Standards (standards intended to make homes more easily adaptable for lifetime use). The 1997 - investigation showed great variations in neighbour contact that was due to the organisation of the buildings. Many of the residents

had little interest in how the dwellings would function in a life circumstance with increased need for nursing and care and with increased isolation and passivity as consequence, something that also affects the psychic and somatic state of health. They were more interested in reducing costs, running and maintenance tasks. Arranging accommodation that would facilitate mastery of age-induced nursing and care was looked upon as being more of a local-government responsibility than a private matter.

## Research questions

In this new project, based on experience from the above project, we wished to focus on the relationship between the physical environment and the psychosocial dimension. What significance does contact with neighbours, activity opportunities and location have on the everyday life of senior citizens? To what extent does this affect the quality of life as well as the possibility and desire to remain a resident? In what way can the dwellings be designed so that they can optimise the residents' self-reliance level and sense of security? How should the dwellings be located and designed so that they can encourage contact with neighbours and the development of social networks as well as improve the possibilities for residents with reduced mobility to reach the shops, services, etc.

In this study "Dwelling quality and everyday life for senior citizens" we wish to look at the connection between physical solutions and how these affect communal fellowship facilities and the possibility of being able to live in own home for as long as possible. We want to acquire knowledge and insight into how the expanding group of elderly people can be offered accommodation that renders them able to master everyday life in own home that can provide input to reinforce future municipal housing policies for senior citizens.

- To what extent have the housing solutions contributed towards an active and worthy old age in own home?
- To what extent have the oldest senior citizens chosen to stay as residents?
- What has made it possible for them to stay on as residents?
- What are the motives behind any possible plans to move?
- To what extent have they established networks in the residential environment?
- How do networks influence wanting to stay and look after ones self?
- How important is close proximity to service functions, town centre and public transport?
- What does it mean to be independent and be able to move around in safety?
- How can the outdoor and indoor common areas enhance the residential environment?
- How can a location with good access to service facilities and means of public transport encourage further participation in society and enhance the possibility of an active life?

In the investigation we have therefore focused upon:

- Residential qualities and location
- Residential environment and contact with neighbours
- The importance of common areas

Unlike many other European countries, Norway has a very large proportion of owner-occupier dwellings and a small proportion of rented accommodation. It has been a declared aim of the authorities in Norway that one should preferably own one's own dwelling, either direct or via housing co-operatives. This has resulted in a large proportion of senior citizens living in their own dwellings on which the mortgage has usually been repaid. The elderly therefore possess substantial capital in the form of housing. This allows them considerable freedom to adapt their dwelling situation to the special requirements that they might need as senior citizens. The authorities have therefore strongly recommended that more senior citizens should acquire better suited accommodation so that they can live in their own homes for the rest of their lives, instead of using state/municipally-run institutions for the elderly where it is more difficult to adapt care facilities to the actual needs. Domiciliary care is sound social economics while, at the same time, increasing the ability to manage one's own old age.

## Four senior-citizen housing projects in Trondheim

The 4 housing projects in the new investigation comprise Siriusveien Terrasse and Birkehaug senior-citizen housing that were also included in the 1997- investigation. Included in addition are the care accommodation dwellings at Valentinlyst and Havstadtunet. A common factor for the projects is that they have a large proportion of elderly residents. With the exception of Siriusveien Terrasse, they are all organised as housing co-operatives and, with the exception of Valentinlyst, are privately owned. The projects differ with regard to physical layout and arrangements for communal fellowship. The four examined dwelling examples represent varying levels of care availability and satisfy the older residents' varying requirements in different ways.



Fig. 3: Overview of the housing projects

### Siriusveien Terrasse

Comprises 52 apartments in two privately-owned terraced blocks that were completed in 1995. The residential area lies 5-6 km south of Trondheim city centre with a long way to the nearest shop or bus stop. Most of the residents are single and are aged between 60 and 80. The majority are functionally healthy, but some have a considerable need of assistance. The majority moved from one-family houses (villas) in various parts of the city. The apartments are single level with a lift (elevator) and parking facilities in the basement. They do not have Lifetime Homes Standards, but have advantages such as sun and views as well as spacious private patios. There are no indoor common rooms. At the approach to each of the blocks there is a common outdoor sitting area. There is poor visual contact between the private patios and the common approach/outdoor sitting area.

Siriusveien Terrasse would be a suitable dwelling for senior citizens who lead an active life and have a good social network. It is not, however, conducive to communal fellowship. .

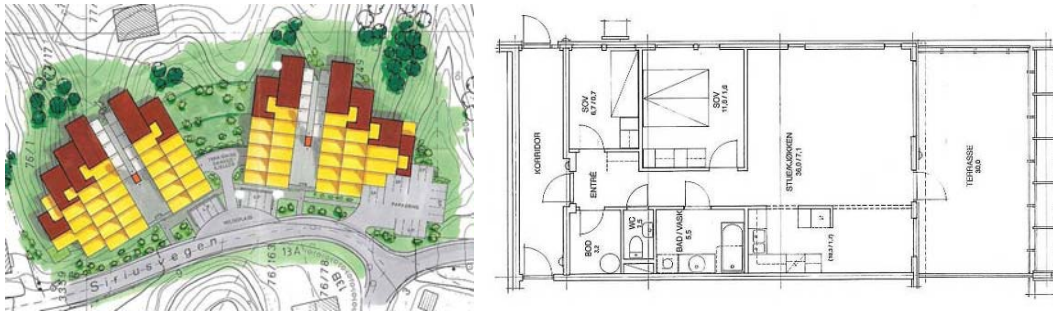


Fig. 4: Siriusveien Terrasse

Response to our questionnaire shows that the level of social activity among neighbours is far less than in the other areas. Well-being in the residential environment is somewhat lower than in the other areas. When asked about the changes they would like to find if they moved house the residents of Siriusveien Terrasse, more than the residents in the other areas, replied that they would emphasise common areas, both indoors and outdoors, as well as greater social fellowship. One half of the residents who lived here in 1997 have since moved.

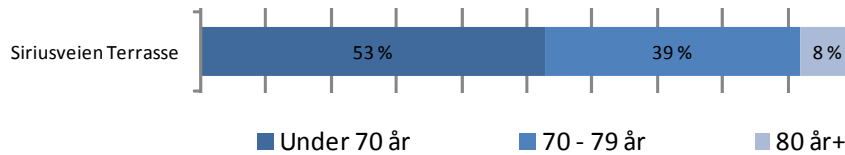


Fig. 5: Age composition - Siriusveien Terrasse (2006)

### Birkehaug senior-citizen dwellings

were built by a private entrepreneur in 1995 and comprise 53 apartments in four blocks around a common square. The housing area lies approx. four kilometres from the city centre and is surrounded by countryside. It is far to walk to the nearest shop and public-transport services are poor. The apartments have lifts (elevators), parking facilities in the basement and Lifetime Homes Standard. The largest apartments have two levels. During the building phase it was decided that an available area in the basement should be allocated as a common area. The courtyard comprises a large central common outdoor area with several small sitting groups providing opportunities for informal meetings.

80 % of the residents at Birkehaug are between 60 and 80 years, and a large proportion are over 80. The resident composition in Siriusveien and Birkehaug was virtually the same in 1997, but the residents in Birkehaug have to a larger extent chosen to remain there. Most of the residents are functionally healthy, but those needing help have a greater need of assistance than in the other areas. The residents at Birkehaug came mainly from one-family houses (villas) and the majority had lived in the area. The level of social activity has been high and well-being in the residential environment is among the highest in the examined housing areas. The residents rank access to free areas and country walks as the most important attributes.



Fig 7: Birkehaug senior-citizen dwellings

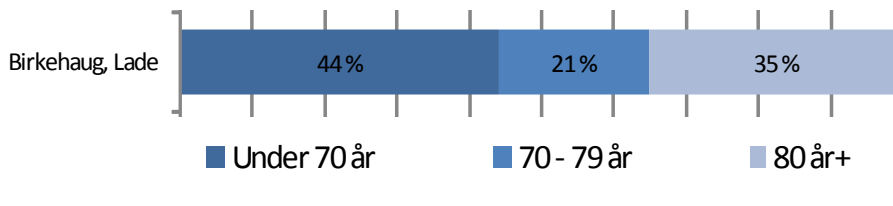


Fig. 6: Age composition - Birkehaug senior-citizen dwellings (2006)

### Havstadtunet care accommodation

was completed in 2005 with Trondheim and District Building Co-operative (TOBB) as developer/builder and comprises 34 apartments in two blocks around a common courtyard. The city is 4-5 km away, but there is only a short distance to shop, post-office, bus stop and other service facilities. Public-transport services in the vicinity are good and have frequent bus departures. Havstad Residential and Service Centre with daytime café, gymnasium and swimming pool is within walking distance. It is convenient to live here, with parking facilities in the basement, lift (elevator), Lifetime Homes Standards and caretaker (janitor) service. In the approach there is a large common room with exit to a common patio and garden. The level of social activity is the highest of the four examined housing areas, and Havstadtunet scores highest on well-being. The residents regard the nearby paths for country walks, the common areas and the short distance to the shop, post-office, pharmacy and buses as being the most important attributes of this care accommodation. .

Most of the residents are older than 80 years. There is a wide range of functional ability, but the need for assistance is generally less per resident than at Birkehaug or in Siriusveien. The residents at Havstadtunet come mainly from one-family houses (villas) or apartment blocks in the vicinity.





Fig. 8: Havstadtunet care accommodation

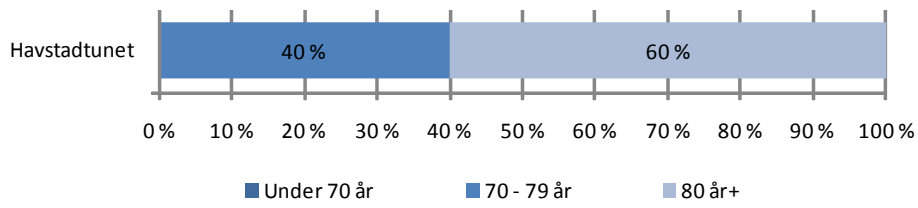


Fig. 9: Age composition - Havstadtunet care accommodation (2006)

### Institutional care accommodation at Valentinlyst Health and Welfare Centre

was completed in 2005 with Trondheim Municipality as developer. The dwellings were built concurrently with the rest of the centre which comprises a day-care centre, local café, domiciliary-care service, nursing home and shared accommodation. It comprises 19 apartments all of which are well equipped to provide additional assistance. It is 2-3 km from the city, only a short distance to a good bus service and the Valentinlyst Centre with shops, cafés, post office, etc. is just across the road. The majority of the residents are in their 80s. The residents have the lowest functional abilities of all the residents in the four areas we have examined, but each resident has less need of assistance per week than those needing help at Birkehaug or in Siriusveien. The residents come mainly from terraced houses and apartment blocks. Among the amenities are elevators (lifts), basement parking and Lifetime Homes Standards. The common area lies at the approach. The level of social activity is high, and in this area they visit each other more than in the other residential areas. The residents appreciate such amenities as close proximity to shops, bank, post-office, as well as the attraction of pleasant walks in the neighbourhood.

The accommodation, however, presents itself more or less as an institution for elderly in need of help than as an open residential area adapted to meet the needs of a continuously increasing group of functionally capable senior citizens. This accommodation functions best for the oldest aged with the most need for care or with reduced functionality.

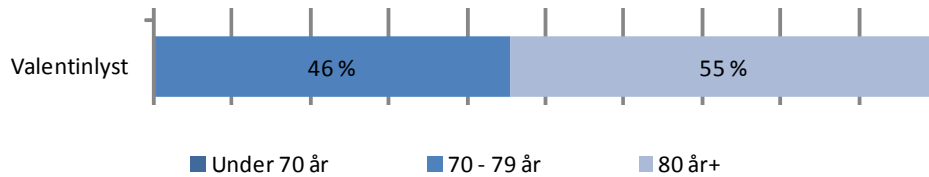


Fig. 10: Age composition - Valentinlyst Health and Welfare Centre



Fig. 11: Valentinlyst Health and Welfare Centre

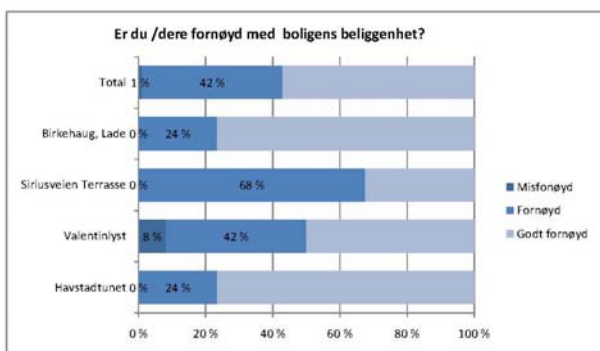
## Results from the investigation

There are three factors that in the 1997 examination stood out as being important when elderly people were choosing a dwelling:

- A sense of belonging (affiliation) to the area
- Close proximity to service facilities, shops, public transport, etc. and
- Close proximity to health and care facilities.

In the investigation from 2008 we notice that the residents still emphasize a location of the residential area which makes it possible to go on living in the same area where they feel belonging and have their social network. But the 2008-investigation also underlined the physical layout of the accommodation and the importance of establishing common areas.

## Location and local environment

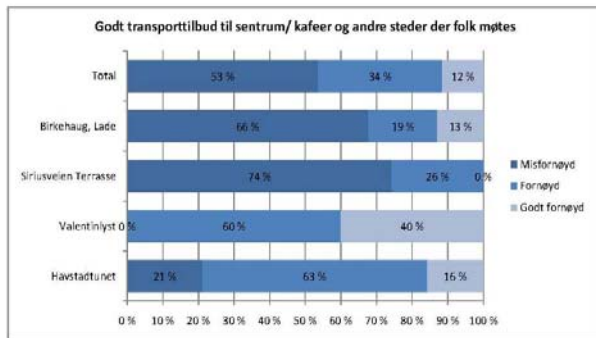


How satisfied are you with the dwelling's location?

Fig. 12: Attitudes regarding location

Very few are directly dissatisfied with "the location;" Birkehaug and Havstadtunet have the most satisfied residents regarding the dwelling's location. When asked what it is about the location that they are satisfied with, emphasis is placed on distance to service and cultural amenities in addition to public transport facilities. At Birkehaug they are on the whole very satisfied, except for the public transport and distance to service facilities. This is the reason why some people have either moved or are considering moving.

In the interview material from 2008, many residents stated that they appreciated living in a familiar local environment, or had the opportunity of visiting old friends. They also see clearly the advantage of not being dependent on a car. Positioning near nursing and care facilities is also strongly emphasised by many.

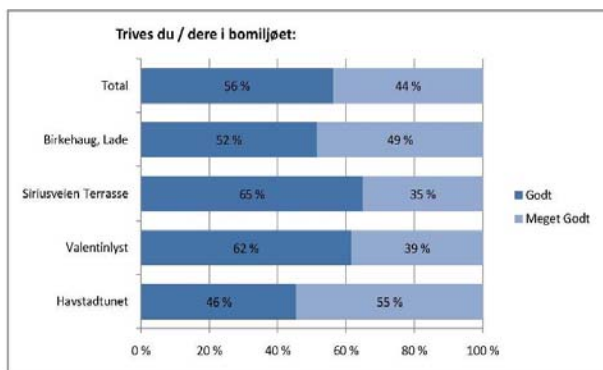


Good public-transport service to city centre/cafés and other places where people meet

Fig. 13: Attitudes regarding public-transport service

Siriusveien, which has no common meeting places in the dwelling facilities, was where the distance to public services was felt most keenly. Siriusveien also has a large proportion of "younger" senior citizens who come from different parts of the city. In the interviews they also say that the reason for them not using the city so much, is that they soon become tired walking in the town, or that it is inconvenient to take the bus. The lack of a good public-transport service at Birkehaug is also revealed here. .

### Well-being in the residential environment.



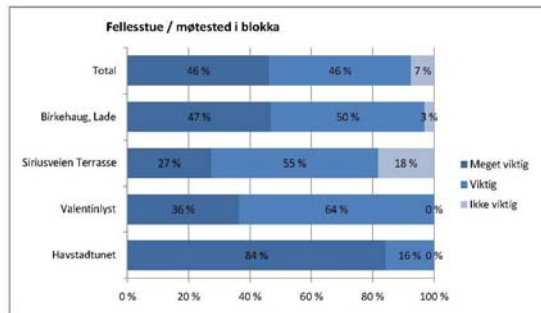
Are you satisfied with the residential environment?

Fig 14. Well-being in the residential environment

In the survey covering the four housing areas, no one indicated that they were dissatisfied. Residents were happiest at Havstadtunet where as many as 55 % said that they were "very satisfied." Contact with neighbours could perhaps be a contributory factor why the majority "feel so at home." Here too Siriusveien Terrasse stands out by having fewer that are "very satisfied" compared with the other areas.

One of the questions in the survey was: "Which facilities do you think are important in dwellings for elderly people?" Both the interview material and the questionnaire responses from the 2008 survey clearly show that residents consider common areas to have an important function in the residential environment, in order to become acquainted and make new friends. Common areas serve as a neutral zone, making social contact easier and non-committal compared with actively calling on people. All the interviewees maintained that all senior-citizen housing ought to have common areas. Siriusveien

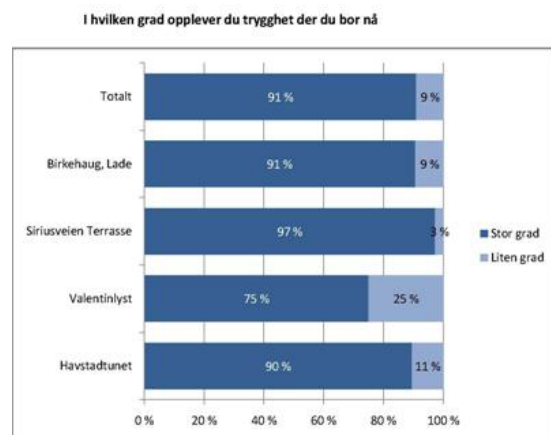
Terrasse, where they do not have any common areas, stands out because many (18 %) do not regard this as being important. The majority of respondents in all areas except Siriusveien maintain that common outdoor areas are also very important.



Common rooms/meeting places in the block

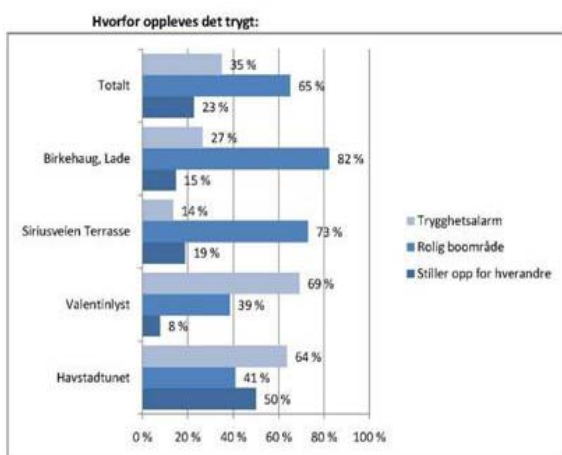
Fig. 15: Attitudes regarding indoor common areas

We posed the questions: "How safe and secure do you feel where you are living now?" and "Why do you feel safe and secure?". The residents in Siriusveien feel most safe/secure and the reason given by the majority is that it is a "quiet place to live" whereas the lower average age of the residents at Siriusveien, compared with the other areas, could have influenced the answer. The residents at Valentinlyst are those that feel the least safe/secure. They give safety alarm as the reason for feeling safe. This is strange as the residents of Valentinlyst care accommodation is next door to the Health and Welfare Centre, and the domiciliary-care service is based in the building. The explanation is probably associated with the advanced age of the residents. At Havstadtunet the reason for feeling safe/secure is given as "being there to help each other," second only to "safety alarm."



How safe and secure do you feel where you are living now?

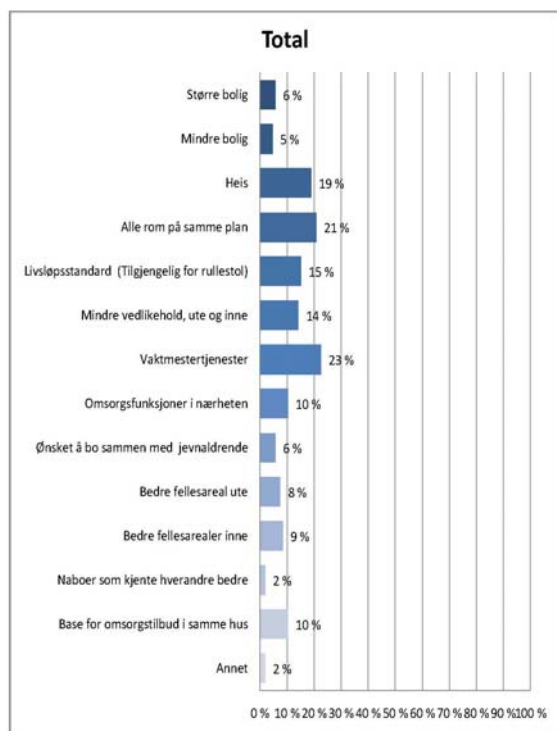
Fig. 16: Sense of security



Why do you feel safe and secure?

Fig. 17: Why do you feel safe and secure

Residents were also asked about what they would prioritise when moving house. Accessibility comes high on the list, together with elevators (lifts) and Lifetime Homes Standards. Caretaker (janitor) service was also perceived as being important. Strange as it may seem, accessibility to health and care services were given a lower priority.



Larger dwelling  
 Smaller dwelling  
 Lift (elevator)  
 All rooms on same level  
 Lifetime Homes Standards (wheel-chair access)  
 Less maintenance – outside and inside  
 Caretaker (janitor) service  
 Care facilities in the vicinity  
 Wishing to associate with those of similar age  
 Better common outdoor areas  
 Better common indoor areas  
 Neighbours who were better acquainted  
 Base for care facilities in the same building  
 Other

Fig. 17: Priorities when moving house

## Municipal strategies

How can society arrange for senior citizens to remain in their own homes for as long as possible?

The investigation revealed that residents were mainly satisfied with their accommodation. This comprised an organisational form with joint responsibility for the running of the dwellings, dwelling design including Lifetime Homes Standard and common areas, as well as a location obviating the need for a car. The numerous senior citizens are naturally all different and have differing preferences. They must therefore be offered a wide and varied range of alternatives so that genuine choices can be made

1. Housing for senior citizens should be built in close proximity to town/regional centres, health stations and care/nursing facilities. One must ensure that a wide variety of dwelling types are provided in each area. Over time this will mean that people can move internally in an area while still maintaining their social networks. The elderly prefer to live “centrally” and it is therefore important to ensure universal design of these dwellings. By “central” we do not necessarily mean near the town/city centre, but in close proximity to service facilities as well as easy access to the town centre by public transport.
2. Arrangements should be made to provide more senior-citizen dwellings in existing residential areas so that the elderly can remain in their homes with support from their existing social networks, thus preventing segregation. The municipality will profit in the long run by supporting and advising senior citizens to move to dwellings that are more suitable for the elderly before they have a genuine need for care. The investigation would indicate that residential environments having “accommodation with Lifetime Homes Standard,” while managing to establish a social network over time, could reduce the demands on municipal accommodation for the poorly.
3. Well-developed domiciliary-care facilities are a precondition for remaining in one’s own home for as long as possible. The feeling of security is linked to the possibility of getting requisite help as well as the close physical proximity of service facilities to which one has become accustomed. The investigation shows that great savings can be made by investing in preventative measures to ensure that residents become better acquainted. Social networks can compensate for close accessibility to municipal care and welfare services.

Should this investigation be used as the basis for developing strategies for the municipal planning of senior-citizen residential facilities, it should be in order of priority.

1. Development of physical parameters for communal fellowship and contact with neighbours by means of easily accessible indoor and outdoor common areas, thus stimulating a socially active life and improving the parameters for supervision and care and thereby relieving the municipal nursing and care services.
2. Proximity to country walks, service and public-transport facilities are the prerequisites for a physically active and healthy existence.
3. Accessibility to nursing and care centres provides added security.
4. Lifetime Homes Standards improve the conditions for remaining longer in an apartment/dwelling.

More senior-citizen dwellings should be built near urban and local centres, health institutions and nursing/care facilities. Arrangements should be made to provide more dwellings for senior citizens in existing housing areas, so that they can continue living there with the support of existing social

networks. However, one must ensure that there is a diversity of housing in the area thus preventing segregation and promoting integration.

The investigation shows that dwellings that are adapted for communal fellowship create better conditions for help from neighbours, something that leads to an added feeling of security and support, with residents choosing to stay for the rest of their lives. This presupposes that arrangements are made for physical solutions that make it possible for a resident to cope alone should one become physically or orientationally challenged.

Deleted: -----Page Break-----

## **Bibliography:**

Brunborg, Helge, et al. (2008). Nye befolkningsframskrivinger. *Økonomiske analyser*. SSB Statistisk sentralbyrå. Oslo.

Kittang, Dag (1995). Eldreomsorg og boligpolitiske utfordringer. Trondheim, SINTEF Arkitektur og byggtknikk.

SSB (2008) Eldrebølgen slår lenger inn over Europa enn Norge. DOI:

Støa, Eli (1997). Boliger for eldre. Kommunale strategier. Trondheim, SINTEF Bygg og miljøteknikk, Arkitektur og byggtknikk.

Wågø, Solvår and Karin Høyland (2009). Bokkvalitet og hverdagsliv for eldre. En evaluering av ulike boligkonsepter. Trondheim, SINTEF Byggforsk.

----- o O o -----