NEW COMBINATIONS OF HOUSING AND CARE FOR THE ELDERLY IN THE NETHERLANDS

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1 Introduction

Compared to other countries, the Netherlands has a large percentage of elderly people living in an old people's home or a nursing home: about 20 per cent of people over 75 (Coolen, 1991). The policy of the government is aimed at reducing this share. A growing proportion of elderly people and a shortage of funds make it necessary to consider the alternatives. It is true that existing homes meet the major need. But at the same time, the elderly themselves have been voicing objections. The nursing home is mainly criticized for its lack of privacy and its one-sided emphasis on institutional health care. With regard to the old people's home, the objections include the small rooms and regimented care. In terms of space and care, then, the old people's home falls short of its primary function: to offer the ageing population a protected housing environment. More and more homes for the elderly are developing into nursing homes, due to the higher average age of the residents and their increasing need for care.

In the mid-eighties, these objections helped start a wave of innovation in Dutch housing for the elderly (Janzen, 1991; Tunissen and Knapen, 1991; Bergvelt, 1992; Bergvelt et al., 1992; Rohde et al., 1992; Van der Wel et al., 1992). These innovations can be roughly quantified: in 1984 researchers counted 15 new projects; by 1987 there were around 150 (Moeskops et al., 1984; Van Eck et al., 1988). In the search for alternatives for the traditional residential facilities, the Dutch government and umbrella organizations created room for experiments, thus promoting innovation. The *'housing care projects'* offer an interesting alternative to old people's homes (COSBO/LOBB, 1991). They differ from the latter by upgrading the housing function and by being better equipped for individualized care. These new combinations of housing and care are still in an experimental phase. In the meantime, a framework of policies to regulate their financing is being prepared (Donk and Houben, 1992; D'Ancona, 1992; D'Ancona et al., 1993). Over the past few years, the government has repeatedly presented its points of departure for financing, but these were strongly criticized.

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One of the problems is that the financing has to fit into a large-scale revision of the systems for public housing and public health. This re-orientation is itself an indication of the fundamental character of the developments in Dutch housing for the elderly. In fact, a major shift in paradigm has taken place since the mid-eighties.

In this article, concepts combining housing and care are discussed in relation to this change in paradigm. Some practical examples from a recent architectural evaluation of seven combinations of housing and care (Breuer et al., 1992) serve to illustrate current developments. The analysis of the research material considers to what extent the architectural design of the buildings studied follows the housing care concept. It focuses on the appreciation expressed by the residents themselves with regard to the novel concept and accommodation. The results provide grounds on which to recommend permanent quality improvement.

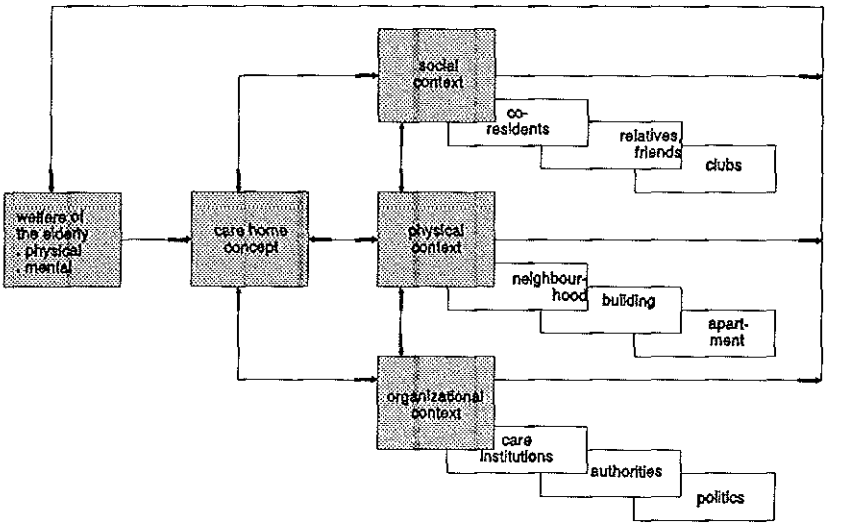
2 *Innovative concepts for combining of housing and care*

A concept is a concise summary of whatever it is the initiators wish to attain, expressed in words and/or images. It links the objectives - which are generally quite abstract - to a programme of requirements concerning the organization and the building. In practice, housing care concepts prove to have an important communicative function (Wind et al., 1987; Van den Boom, 1988; Van Eck et al., 1988; Houben, 1992). They provide a distinct and efficient way of comparing one combination of housing and care, or *care home*, to similar projects. A concept is the outcome of the stock-taking and creative phases. Thus, it is also an important aid in directing the next phases in the design process (Zeisel, 1981). Figure 1 presents a diagram of the intermediate function of the housing care concept.

This diagram is an adaptation of a model developed by Cohen and Weisman (1991). Care homes aim at creating favourable conditions for the mental and physical health of elderly people, by means of providing a suitable physical and socio-organizational environment. Physical well-being, for example, makes demands on a building; its design should be ergonomically sound. In this case, care is translated into design and size requirements. These pertain to physical proportions and abilities (such as a suitable number of steps and height of the risers in a flight of stairs), accessibility, convenience, ease of operation (e.g. blinds or window openers) and safety. Mental well-being can include the need for privacy, shelter and social contacts. These requirements also make demands on the building and the socio-organizational context, e.g. a balance between the abilities and desires of the elderly person and the support lent by volunteers and professionals.

A certain level of routine know-how will often be apparent in the formulation of concepts derived from an existing paradigm that has proven its value. It is possible to fall back upon a fully developed understanding of quality standards. This is not the case for concepts within an emerging paradigm, as yet only partly

Figure 1 **Diagram of the relations between objectives and means, i.e. the well-being of elderly people and the adjustment of their socio-spatial environment**



explored and tested. Obviously, in a new paradigm, new frames of reference and new quality standards have to be hammered out. One of the factors triggering a different view of housing for the elderly was the outcome of a study concerning the potential housing needs of elderly people (Houben et al., 1984). Many participants expressed a very strong desire to stay on their own as long as they could. The central value of independence was also emphasized by the umbrella organization of elderly people (COSBO, 1983) then functioning. During the same period, the Welfare State was subject to discussion (Achterhuis, 1980). Critics claimed that care 'from the cradle to the grave' made people overly dependent upon an omnipresent government. It was also increasingly clear that, in the long run, the cost of the Welfare State would become prohibitive. The first austerity measures, which were also felt in the sector of housing for the elderly, prompted a search for alternatives. At the time, new views on the process of growing older and the provision of assistance were also appearing in gerontological publications (Lehr, 1980). This heralded a departure from the *'deficit model'*, in which the elderly were mostly seen as people functioning less and less well as they grew older. Modern gerontological views of care, on the other hand, also consider the positive sides of growing older. Gerontology now promotes the view that older people should go on using their abilities to the full. In light of the central value of independence, it is important for people to remain in charge of their own situation and give meaning to their life and their relationships (Houben, 1992). In housing care concepts, this shows up in the value attached to quality housing

Table 1 Paradigms in housing and care for the elderly

Area	Common orientation: 'facilities central to paradigm'	Emergent orientation: 'independence central to paradigm'
Care technology and gerontology	- need for care can be objectively determined - need for care increases with age (deficit model)	- need for care fluctuates and can be influenced - besides need for care, see possibilities for development in other areas; search for causes of care demand (compare aging healthfully/successfully)
Planning types of housing	- closed circuit spacewise most efficient for assistance - care needy move to most appropriate facility	- control of functions of housing, health care and welfare by finances (function-directed regulation) - adapting and maintaining houses and environment for elderly in need of care by area-oriented approach
Policy objectives and social values	- right to professional care and facilities - protection of the weaker, guiding them towards facilities - preferably receiving deviating behaviour in institutional care	- older person in charge of own existence like anyone else - older person to decide how and where to live and which assistance needed; offering choices - care customized
Subjective experiences and attitude to control	- sense of circumstances determining life - few contacts; often superficial - satisfied with provisions available to elderly - strong identification with housing situation caused by loss of social roles	- sense of self-determination - varied and confidential contacts, also with younger people - selfconfident, assertive, and critical of offer - against banishing elderly to separate housing

and care made to measure. Elderly people are increasingly considered to be mature and emancipated clients, as capable as any other adult of getting the care they need, if available, in consultation with social and/or medical advisors.

Table 1 shows the principal changes. Key words indicate the classification of the still existing but disintegrating *institutional paradigm* and the developing *independence paradigm*.

The importance attached to spatial efficiency was characteristic for the paradigm prevailing up to the mid-eighties. This view caused country-wide

policies to strictly link the need for care to the type of housing. An increase in care dependence would force the older person, who might have started out in a home for the elderly, to move (often by way of an intermediate facility) to a place where more care was offered. The housing career of care-dependent older people thus was like climbing a ladder. Whenever the need for care was substantially increased, the person wen to a higher rung by moving to a building where a wider range of facilities was offered. This 'closed circuit' did not allow any facilities to overlap (Houben, 1988).

Around the mid-eighties, the government took measures to undo the strict connection of housing and care required by the closed circuit which prevailed at the time. Neighbourhood facilities, followed by substitutions that were allowed as part of an experiment, founded a policy aimed at reducing institutional types of care (Ministry of WVC, 1983; Tweede Kamer (Dutch Parliament) 1985-1986). In a number of substitution pilot projects, different financial and organizational structures for the provision of care were tried out, based on a departmental regulation which was function-oriented (Ministry of WVC, 1991; ODO, 1991). When this regulation was introduced, financing was no longer granted to the institutions on the basis of their specified provision of care. Rather, financing was determined by the degree of assistance needed by a person to compensate for specific handicaps. This reduced the dominance of standard facilities in favour of a functional mix adapted to the needs of elderly individuals. It also made the assistance thus far only found in residential homes more widely available. That level of care was made available in intermediate facilities or care homes as well as to older people housed independently in the neighbourhoods.

3 Pilot study of seven care home projects

A pilot study of seven recently built or renovated care homes was conducted. The aim of the pilot study was to investigate the spatial and architectural implications of innovative concepts combining housing and care (Breuer et al., 1992).

3.1 Methods

In selecting the projects, different housing care concepts and types of buildings were included, as well as geographically diverse projects. The history and the current situation were documented for each care home. Observations of the researchers were recorded and group discussions with residents and staff members were held. This material illuminated the use and practical experience of the innovations. Table 2 provides a summary of the research items.

Table 2 Research items of the pilot study

	Registration prev. history	Registration pres. history	Evaluation by residents, staff and researchers
1. Socio-organizational context	development concept of housing care	objective; signature; profile of residents; organization	why this home was selected; assessment concept; assessment organization; assessment profile of residents
2. Architectural environment	initiative; programme of requirements; building team cost and financing; building regulations	town-planning data (location, reachability facilities, building mass, entrance, orientation); floorplan analysis (areas available, surface analysis, opening up, accessibility, view, and orientation); interior (materials, finish); construction (type, flexibility); installations	use and appreciation of apartments; same for areas supporting housing function; same for areas supporting care function; same for areas supporting welfare function; points of special attention (such as accessibility, safety)

3.2 Housing care concepts

Compared to more traditional projects, the housing function has clearly been upgraded. This is a main characteristic in all seven projects. Furthermore, some of the projects have sought to separate housing and care in an organizational and financial sense. Table 3 summarizes the concepts which were used.

The following opinions on upgrading the housing function are widely shared:
- it meets the desire of elderly people to live and be housed independently as long as possible;
- it lowers the threshold for informal visiting;
- it saves costs by enabling the resident to function more independently in an adapted sanitary unit and kitchen;
- it exercises a positive influence on well-being and health, as people stay active and busy with useful and time-structuring household chores;
- it allows people to express their own identity by furnishing their own apartments; this will help them to reduce confusion if their memory starts declining and they grow disoriented;

Table 3 Housing care concepts of the projects studied

- Offering older people who have applied for admission to an old people's home an independent type of housing and assisting them with a flexible service and a protected and adapted housing environment (Nieuw Doddendaal).
- Independent housing of older people who have applied for admission to either a service flat (catered living) or an old people's home, including supplementary assistance by means of complete apartments and care made to measure, no internal moving with growing need for care unless the resident should apply for admission to a nursing home, abolishing the division between institutional care ('intra mural') and external care ('extra mural') by cooperation with home help and home nursing (Jan Meertens, Nancy Zeelenberg).
- Integration of older people who have applied for admission to an old people's home with older people who are definitely eligible for a nursing home (physical and/or psycho-geriatric) in a small-scale facility, as part of a local network of facilities for older people within the region; care made to measure; preventing forced internal moves; maintaining social contacts with the former residential environment; limited facilities for the neighbourhood (Borchleen and De Westerweeren).
- Housing and caring for older people who are no longer capable of living independently and for whom round-the-clock availability of assistance is indispensable (Mgr. Bekkershuis).
- A supportive environment with the help of which older persons will regain a larger extent of their independent functioning (De Beerendonck).
- A holistic view of people, i.e. a person as a whole in which physical, mental and social aspects are closely connected. Refraining from viewing the resident as a subject of care, for whom the organization should take responsibility, but considering him/her a person in their own right, shaping their own life. This includes the part of life for which s/he needs assistance. This requires a flexible organization, in which the measure of assistance lent is not determined by the organization but rather by the residents making their need for care known (De Beerendonck).
- Lending support to older people, in cooperation with other support facilities, to maintain an independent life through the provision of neighbourhood functions (De Beerendonck)

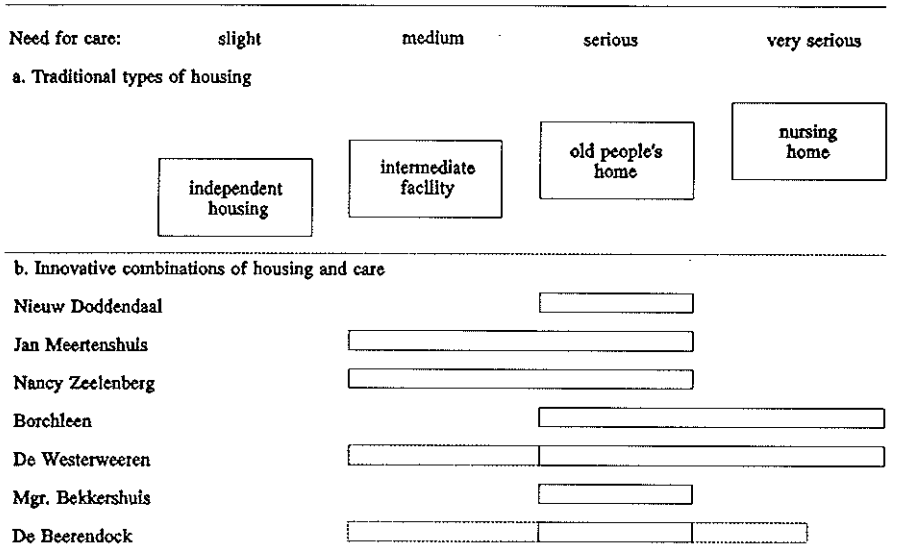
- it adheres to the principle that living in an apartment with its own front door and address means that residents are indeed 'residents' instead of 'patients': staff members will respect the resident's privacy and not simply walk in.

The conviction that independent housing prevents people from becoming institutionalized and disoriented is clearly manifest in some of the arguments mentioned above. In this view, quality housing contributes to the physical and mental well-being of elderly people.

The second element, disconnecting housing and care, enables the staff in some care homes to differentiate their services. This implies a wider target group (Figure 2). In these homes, residents are not compelled to move when they grow more dependent on assistance.

Determining the target group is the most essential element of the concept. This can be deduced from the wording of the concept and the argumentation it has been based on. It is also the hardest element to make operational. The disconnection of housing and care is an infringement on the sectarian system and the financial backing of the facilities. But all kinds of experimental regulations

Figure 2 Target group of the care homes studied



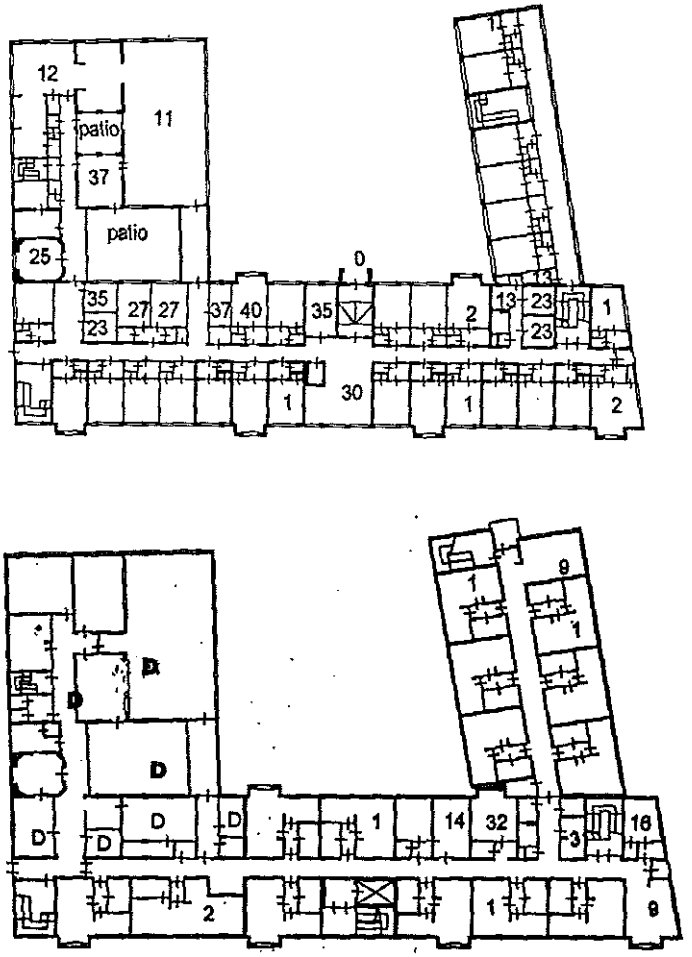
have been instated. These offer the possibility to extend specific standard facilities by utilizing neighbourhood services. The attempt to differentiate services has resulted in the cooperation of various kinds of institutions. This means tapping more than one financial source, as long as the function-directed regulation has not yet been implemented.

3.3 Architectural aspects

The innovative elements of the housing care concept can partly be deduced from the floor plans of the buildings. The following figures show the plans of three projects.

Nieuw Doddendaal
Figure 3 shows the ground floor plan of housing centre Nieuw Doddendaal in Nijmegen, before and after renovation. The old situation dates back to 1960, when it was called Doddendaal Home, a home for 63 elderly people. The residents' rooms open onto a central corridor. There are a number of communal facilities, such as the dining room (11), infirmary (27), main kitchen (12) and pantries (13), as well as several care and care-supporting facilities like communal bathrooms (23), a staff residence (40) and a mortuary (25). The residents used to spend a large part of their days in the dining-cum-recreation room. Since the renovation in 1989, the layout is entirely different. The wing holding the main kitchen and dining room is now an activity centre. The mortuary and the former

Figures 3 Nieuw Doddendaal, first floor



above = before renovation
below = after renovation

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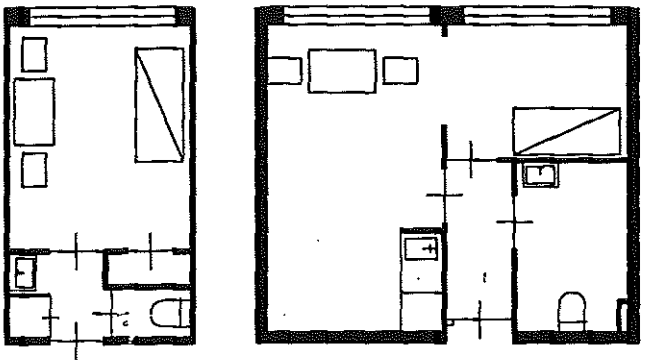
staff residence have been remodelled to serve as offices and conference rooms for this centre. The central corridor is still flanked on both sides by residents' rooms. But by joining two rooms, these have been upgraded to form quite acceptable apartments (Figure 4). The upper floors house the remaining rooms and facilities. At present, Nieuw Doddendaal accommodates 40 elderly people.

Figure 4 Nieuw Doddendaal, from room to apartment



Before renovation: hall + kitchenette, bedsitter, toilet and storeroom, totalling 13.5 m^2 for a single apartment, and 20 m^2 for a double apartment;
After renovation: hall; sitting room + open kitchen, bedroom, bathroom with shower and toilet, totalling 27 m^2 for both single and double apartments.

Jan Meertens

The Jan Meertens Care Home in Rotterdam is also an example of extensive renovation. This home, built in 1964, originally comprised 268 rooms for the residents of the home proper, as well as 74 catered living flats. Figure 5a shows the plan of one of the floors before remodelling: a communal sitting room (9), a pantry (13), a communal bathroom (23) and residents' rooms on two sides with a long corridor running through the middle. A single room consisted of a tiny entrance hall with a closet and toilet, and a bedsitter; in total, around 14 m^2. The rooms situated in the corners were almost twice that size. A double room in the catered living flat measured almost 34 m^2, and offered a separate sitting room and bedroom. The remodelling in 1988 adhered to the principle of a central corridor flanked on both sides by rooms (Figure 5b). The original main kitchen with annexes (11) has also been maintained, as well as nurse's stations and communal bathrooms. By joining three original rooms, it was possible to create more adequate apartments, some with only a bedsitter, but most offering separate sitting rooms and bedrooms (Figure 6). All apartments now have their own bathroom with shower and toilet, and all have a kitchen or kitchenette. At present, the home houses 176 residents, which is about half of the former total. Of course, this has made the house less lively.

De Westerweeren

A third example is De Westerweeren, a home for the elderly in Bergambacht offering care and nursing. It is part of the so-called satellite project Krimpenerwaard-Oost. The original plan was to build a single house for 120 residents in

Figure 5a Jan Meertens, first floor before renovation

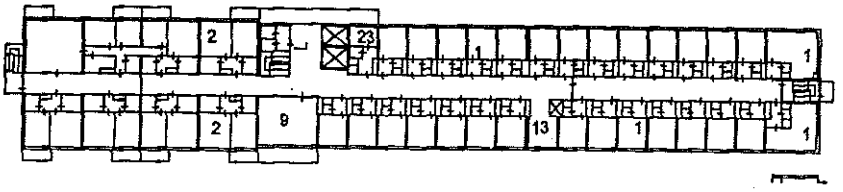
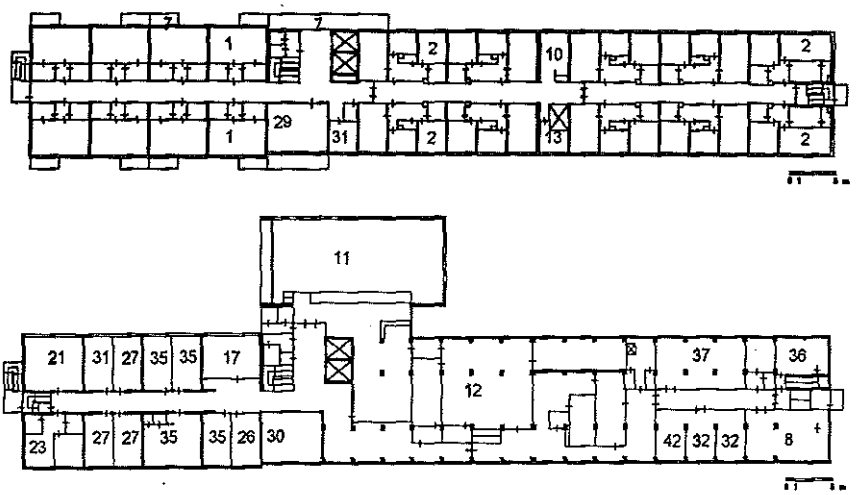


Figure 5b Jan Meertens, ground floor (below) + first floor (above) after renovation



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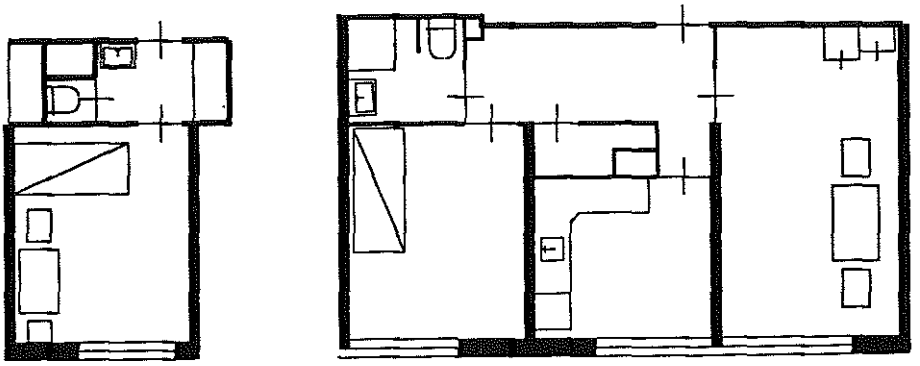
Schoonhoven. Later it was decided to build four smaller homes, close to the original houses of the residents. A decentralized approch was chosen because the surrounding municipalities are situated at some distance from the town of Schoonhoven and are quite different in character (small industry as opposed to agriculture, and Dutch Reformed versus Roman Catholic). De Westerweeren consists of a main house for the care and nursing of 30 residents, as well as a service centre and 31 'sheltered dwellings' (Figure 7). The main plan consists of a central corridor flanked by apartments and some communal facilities, among which are 'living-supporting' rooms such as the recreation room (11), two communal sitting rooms (9), a sitting area (10), the main kitchen (12), and a multi-purpose room (29), as well as care and care-supporting rooms such as a communal bathroom (23), a nurse's desk and station (30/31), and a linen room, a sleuth room, and a medicine dispensing room (32, 33, 34). The apartments comprise a bedsitter with kitchenette and a private bathroom with washbasin, shower and toilet, totalling 29 m^2 (Figure 8).

Figure 6 Jan Meertens: from room to apartment



Before renovation: hall, bedsitter, toilet, totalling 11 m^2;
after renovation: hall + kitchen, sitting room, bedroom, bathroom with shower and toilet, sometimes a separate storeroom; varying from 32 m^2 to 45 m^2 depending on the type

Figure 7 De Westerweeren (excluside of sheltered accommodation)

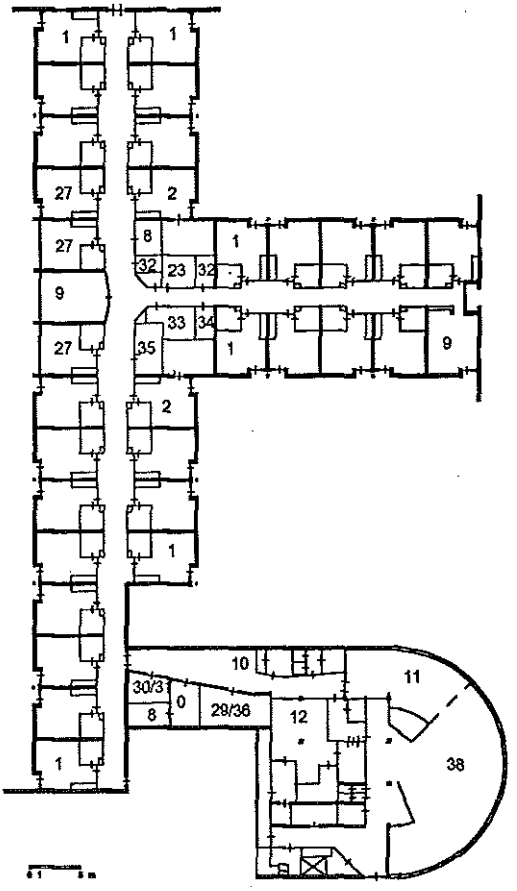


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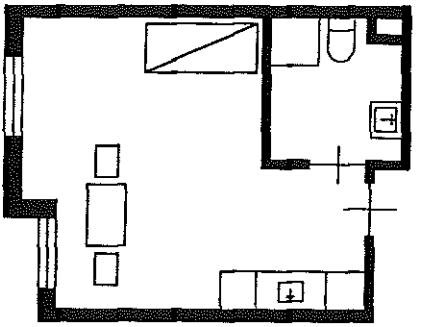
Figure 8 Apartment of De Westerweeren



Bedsitter + open kitchen, bathroom with shower and toilet, totalling 30 m^2 for a single apartment and 42 m^2 for a double apartment

4 Analysis and evaluation

One way of looking at a building is to see it as the petrified reflection of an active interplay of forces between a large number of acting parties with different objectives, preferences and expectations. It is not an easy task to design a high-quality building within the context of such an interplay. Changing views or circumstances and conflicts of interest will often oblige the various parties to adjust the programme of requirements and to compromise with regard to the building. One key question is to what extent the examples discussed above follow the housing care concepts used. And another is how residents and staff appreciate the new views on care and the architectural design resulting from them.

4.1 Relation between concept and building

The housing care concepts of the three care homes discussed in the previous section are summarized below:

a. Nieuw Doddendaal
Before remodelling: traditional home for the elderly, focused on permanent accommodation with a uniform set of care tasks.
After remodelling: independent housing of older people eligible down for an old people's home who have the ability and the desire to cope for themselves in a well-accessible building with adequate apartments and customized care.

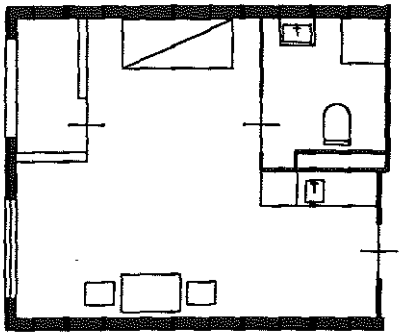
b. Jan Meertens
Before remodelling: traditional home for the elderly as well as catered living flats.
After remodelling: independent housing of older people eligible for an old people's home or a catered living flat, in adequate apartments and with customized care; no internal moving if the care task grows heavier, unless the resident is assigned to a nursing home; the distinction between intramural and extramural care is abolished as a result of the cooperation with home help and district nursing services.

c. De Westerweeren
Newly built: integration of elderly people signed up for old people's homes and for nursing homes (somatic and psycho-geriatric) in a small-scale facility, as part of a local network of facilities for the elderly; forced moves are prevented; social contacts with the former residential environment are maintained; limited neighbourhood function.

Many of these elements can be traced on the plans shown here. Some examples of an obvious *correspondence* between the housing care concept and the building are:
- The strengthening of the housing function and emphasis on independence are clearly visible in the roomier apartments with their own kitchens or kitchenettes, and their own bathrooms with washbasin, shower and toilet.
- Emphasis on independence and self-help is also clearly shown in the increased attention to accessibility for the physically handicapped. Compared to the past, considerably more effort is made to avoid thresholds, bridge differences in height with ramps or lifts allow, allow adequate manoeuvring space for wheelchair users, etcetera. This increased attention obviously has to do not only with the ability to cope, but also with the higher average age of the residents, which increases the chance of physical handicaps. Furthermore, the fact that the rest of society is more tuned in to accessibility certainly also played a role.
- Another point of convergence between concept and building is visible in De Westerweeren. Both the desire to integration older people who are admitted to either a home for the elderly or a nursing home and the desire to prevent forced moves can be recognized on the floorplan. For both categories of residents, the apartments are identical.
- In Nieuw Doddendaal the choice in favour of well-equipped apartment kitchens and the deliberate abolishing of the main kitchen are the logical result of the chosen housing care concept. That concept is based on the view that older people independently living prepare their own meals, at least in principle. Should this task become impossible, people can order their meals from a catering service.

Nevertheless, our examples also show *discrepancies* between building and basic concept. The initiators of Jan Meertens consider this house a 'care home' for

Figure 9 Apartment in De Beerendonck



Hall + kitchenette, bedsitter, loggia, bathroom with shower and toilet, totalling around 30 m^2

older people living independently with supplementary assistance. Cooked meals are catered from outside, dispensing with the need for a main kitchen inside. Yet the provincial authorities have declared that the standards for 'homes for the elderly' apply to this home as well. Their policy can be traced in the presence of nurse's stations, common bathrooms, an infirmary, pantries, and a main kitchen. Many of these rooms (with expensive equipment) are rarely used or have been given another use.

In the other projects studied, the relationship between concept and building is also *ambivalent*. An example is De Beerendonck housing centre in Venlo. The plan of a typical apartment is shown in Figure 9. Here, the provincial authorities have demanded a maximum acoustic insulation between sitting room and (semi) public corridor, analogous to the regulations for independent housing outside. Simultaneously, the choice was made in favour of undivided apartments, one large space for living, cooking and sleeping, since the units were (in the architect's words), 'rooms within one large home'. It seems that in this case, the views on the building as a 'housing centre' and as a 'care centre' were mixed up. In one and the same project, the objective to offer independent housing to active older people who determine their own level of care is at odds with the necessity to admit the most urgent cases. The pressure of the waiting lists forces this 'housing centre' to grow more and more into a 'home for the elderly', as demonstrated by the extensive use made of the nurse's stations.

The comparative analysis of the seven projects showed that, apart from the concept itself, the relationship between concept and building is influenced by four more parameters.

- **General social trends**, such as increased consumption in the housing market. Among the elderly, too, this results in demands for higher standards, which are made known either by themselves or by their relatives and interest groups.
- **Economic motivation**. On the one hand the increase in prosperity leads to higher quality demands (sanctioned by the threat of vacancy, should these demands not be met). On the other hand, limited budgeting leads to all kinds

of concessions. In this context it should be noted that a division between living and sleeping accommodation was only observed in the renovated projects. Joining two or three former single rooms appears to yield enough space for a separate bedroom, which is rarely feasible in newly constructed buildings. An example at hand is De Westerweeren. There, a conceptual requirement was that an increase in care dependence would not force residents to move. As mentioned above, this requirement resulted in identical apartments for the two categories of residents. Accordingly, the people designated for a nursing-home got considerably better amenities than is usual in nursing homes. But it meant that the division between living and sleeping accommodations, desired by the initiators, had to be relinquished in favour of adequate space to manoeuvre around a hospital bed that might be required.

- **Rules and regulations.** Regulations are insufficiently attuned to the current demands and desires. Therefore, spatial-architectural solutions which are more or less direct consequences of the housing care concept at hand may not prove to be feasible. Of course, the reverse may also be true: undesired facilities will sometimes (have to) be built.
- **Uncertainty about the future.** Many homes find themselves in a more or less transitional stage. They have the characteristics of both the old-style home for the elderly and a modern care home. The developments in (the desires of) the target group and the care workload cannot be predicted with any certainty. Thus, spatial arrangements common to the traditional home are encountered in the building alongside the elaboration of later ideas.

In addition to this, the customary construction process - formulating objectives, i.e. a housing care concept; drawing up a programme of requirements; drawing up a design - is not always followed in this order where renovation is concerned.

In practice, the reason to initiate an innovative housing care project is not always exclusively found in changing views of the physical and mental well-being of older people. It is also rooted in the necessity to reduce the number of beds. The need to (re)build resulting from that necessity will then form the impetus for new thinking about housing and care of the elderly. With regard to the model in Figure 1, this means that the sequence of the planning process does not run only from left to right, but also vice versa! Therefore, programming turns out to be a cyclical process instead of a linear one.

4.2 Use and experience

The study demonstrated that the widening of the target group and a differentiated provision of care are supported by the majority of the residents. The realization that there will be no need to move in case of an augmented need for assistance makes people feel secure. But the consequences of people with different needs for care living together in one facility have not been taken into account sufficiently. The traditional homes had this problem as well, but on a

much smaller scale, due to the narrower focus on need for care. Elderly people with a moderate need for care often find it hard to live among co-residents with a more serious infirmity, particularly where socio-psychological problems are concerned. The daily confrontation with elderly people who have serious disabilities, and with the care needed by them, undermines the intention of the healthier elderly to continue their independent way of life.

The application of the principle of independence and customized care appears to be experienced in different ways by the residents. In Nieuw Doddendaal, for example, the principles are regarded positively by vital people who show initiative, but disapproved of by people lacking these traits. The expectations of the latter group have clearly been defeated. The reluctance of the staff to offer unsolicited help and their tendency to support 'with folded arms' was interpreted by some older people as a lack of dedication and attention. It appears to be a difficult art to at tune the principle of independence to the diversity of the residents, while avoiding a split between them.

With regard to the building, many ergonomic bottlenecks were observed, despite the increased attention to accessibility: doors are too narrow, windows and skylights are hard or impossible to operate by elderly people, and staff members have insufficient room to manoeuvre, especially when helping the residents inside the sanitary units.

Various people feel that the atmosphere in their home suffered from the introduction of individualized care and emphasis on independence. The ease with which casual meetings used to be conducted (communal coffee drinking, a chat in the apartment) have more or less disappeared.

A related problem is the link between the apartment and the outside world. Practically all sitting rooms and bedrooms are facing the outside world. The hall, kitchen and bathroom often act as a buffer between the sitting room and corridor. In many projects, the corridor itself resembles a long narrow street with nothing but closed front doors set into closed fronts. No contact exists between sitting room and corridor or vice versa. Staff members sometimes have to invent excuses to enter an apartment and find out how the resident is doing. Residents described how at times they would stand behind their own front doors just to catch some sounds from the corridor. This impedes the chance of spontaneous contacts. The visual monotony has been reduced by making the corridors more attractive (local widening; bends; variations in material, colour and shape of the walls and lighting fixtures). But this is not enough to counterbalance the lack of activity and liveliness. Very rarely does the design include a window set into the inner front wall of the apartment. Although many residents have covered these windows with curtains to ensure privacy, its absence would be keenly felt, because it lent identity to the apartment.

A certain level of subdivision is considered positive. The main advantage mentioned is a more gradual transition from the public part of the apartment to the more private part (hall » sitting room » bedroom). Also, the temperature of the separate rooms can be regulated separately (warm sitting room but cool bedroom). It was cited as a disadvantage that sectioning off the apartment made

it cramped and required extra smoke alarms. One home gave the residents a degree of choice by providing folding partitions between the living and sleeping quarters. In practice this solution is rarely used. Most residents pull out the partition only halfway to hide the bed from view, leaving it in that position permanently.

A walk-through bathroom (entering through one door and exiting through another) is considered especially useful for wheelchair users. Extra doors take up wall space, however, reducing the options for interior decorating.

The residents place a high value on private outer space, and keenly feel the lack if it had not been included in the design. Ample storing space is also considered important. Often, part of the bathroom is used for storage.

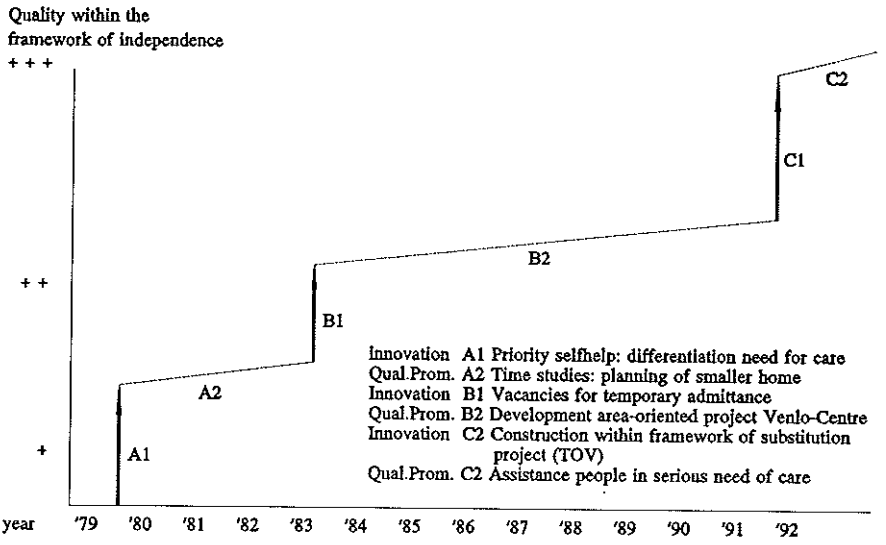
5 Permanent quality promotion

The reactions of residents and staff members discussed above indicate that using innovation to raise quality is a risky business. It may well lead to unforeseen problems, as shown in the widening of the target group. Yet innovation is unavoidable in view of the change in paradigm, which requires different quality standards. Various authors (Imai, 1986; Harteloh and Casparie, 1991; Severijns, 1992; Houben, 1992) have argued for permanent quality promotion to lessen the risks of innovation. The main characteristic of 'quality care' is a continuous effort to raise the quality of the care home (especially from the viewpoint of the user) after implementation of an innovation. Innovation is an abrupt rise in quality rather than a piecemeal process of improvement. A home in which quality improvement is one continuous effort limits the risks of innovation, as it need not take such a big leap. Another advantage is that the concentrated energy needed during an innovation process will not vanish immediately afterwards. Instead, it continues to be utilized (Imai, 1986).

The innovations with an abrupt character and improvements in the framework of permanent quality promotion which have been implemented in De Beerendonck are all shown in a graph and plotted out in time (see Figure 10). The three vertical arrows (A1, B1 and C1) each symbolize an innovation in the policy concept of the home, which was mainly directed at enlarging the independence of the residents. The arrows slanted more horizontally (A2, B2 and C2) symbolize the permanent quality-promoting activities. This summary is based on an interpretation of the results from studies conducted during the eighties as well as the recently executed architectural evaluation (Houben et al., 1984; Huijsman and Knegtel, 1991; ODO, 1991; Breuer et al., 1992).

The first innovation (A1) relates to the strengthening of self-help and the introduction of individualized care. The main impetus for this innovation was the observation that too many elderly people not really in need of the care offered (and actually better off on their own) applied for a place in the home. No longer did all residents of De Beerendonck receive their meals, coffee and tea in their apartments, nor were everyone's rooms automatically cleaned for them.

Figure 10 Innovations and quality improvements in De Beerendonck



Food and other products needed could be purchased in a small shop within the home. Also, a choice of menus was introduced. After a period of working along these new lines, the residents were classified on the basis of their own reactions and those of the staff. The classification currently used implies that:

- around 65 residents live virtually independently and need about five minutes a day of care, mainly in the form of attention;
- around 75 residents need a little help during the day, for instance with showering and dressing; the average time needed to assist these people is 20 minutes a day;
- around 45 residents need to be assisted several times each day, averaging a total of 2-2.5 hours a day.

With this classification, the provision of care for the first two categories could be reduced, cutting back the staff to below average. Based on this data, construction plans were drawn up for a smaller home which would focus on the third category of residents, those heavily dependent on care (A2). According to the new philosophy, less dependent residents should remain in their own dwellings as long as possible. It goes without saying that this would suppose dwellings of certain standards as well as home help being available.

The second innovation (B1) relates to the creation of a certain level of vacancy, guaranteeing elderly people in the neighbourhood that if the need arose they could be admitted either temporarily or permanently. This had such a calming effect that the waiting list became shorter and people were no longer focused on the home merely out of precaution. The neighbourhood function of

the restaurant and other facilities were extended. This called extra attention to the needs of older people living independently. It also led to cooperation with other institutions to prevent or delay admittance to a home for the elderly.

Within the framework of the substitution pilot project *Overall policy for the elderly in Venlo*, an area-oriented policy for the town centre has been developed. Members of the target group could make themselves heard through a programme of participation. The design of the construction replacing the old home attuned the number of apartments and the housing of the neighbourhood facilities, in particular, to this area-oriented approach (C1). A neighbourhood team in which the primary facilities were represented assigned people to a certain level of assistance. This approach centred on keeping and reinforcing the independence of older people, with the advice for admittance as a last resort.

Such a policy allows a great deal of attention to be directed toward the smaller average number of residents who are presently considered to be in much need of care. A level of care comparable to that in a nursing home is now being developed for this group (C2).

6 Towards a decision-making framework for combining housing and care

After all comments and analyses had been studied, and the seven projects had been compared methodically, alternatives were drawn up. These may serve as a frame of reference for the projects still to be (re)built. These alternatives and the observations of residents and staff offer important material for discussion, on which basis well-argued choices can be made. The following points for decision-making with regard to the programme of requirements can be deduced from the differentiation in *housing care concepts*:

- target group (age, lower and upper limits of need for care, either restricted to residents or also aimed at those living in the neighbourhood);
- area of competence (neighbourhood, town, region);
- quality of housing function and activities supporting accommodation and welfare;
- offer provision of care (standard set of care activities, or flexible individualized packages; average and maximum work loads in relation to staff capacity; upper limit of care, e.g. inclusive or exclusive of nursing).

The choices made in this respect carry important consequences for the set-up of both the organization and the building. With regard to *organization*, the following issues are examples of what needs to be decided:

- care by internal or external staff;
- work centred around task or around persons (with each staff member attached to a certain group of residents);
- meals cooked and delivered by internal staff or catered;
- personal laundry done in-house or outside;
- the same decisions must be made for other care functions (church services in-

house or attending services outside; lying in state of the deceased in-house or outside);
- physical care in the apartments or in communal areas (aiding in taking showers, caring for sick people, physiotherapy);
- housekeeping and/or technical service by internal staff or outside agency.

With regard to *the building*, the following issues are important in the decision-making process:
- type of building (compact vs. pavilions);
- access (one entrance or several, design centred around a hall or along a corridor);
- positioning of rooms (in relation to each other and to the entrance and outside area);
- estimate of number of rooms and amount of floor space needed (with or without main kitchen, mortuary, nurse's stations, communal day care areas, hair dressing salon);
- with or without integration in a service centre;
- layout of the apartments (bedsitter or separate living and sleeping compartments; kitchenette or well-equipped kitchen; kitchen open or closed; single toilet or well-equipped bathroom; private exterior space on balcony or loggia; amount of storage space).

7 Conclusions and recommendations

The care homes included in the study clearly illustrate the observed change to a paradigm emphasizing the housing function, independent living and individualized care. The new paradigm is clearly visible in the housing care concept and the architecture of recently constructed or renovated homes. It is true, however, that discrepancies between concept and building have crept in. This is largely due to the fact that the concepts themselves are still subject to development. Other factors playing a role in this regard are the limiting conditions of a modest budget, lagging laws and regulations.

Another characteristic of many innovative housing care projects is the widening of the target group and the differentiated provision of care accompanying it. This differentiation meets the essential housing needs of elderly people. But though an innovative concept may appeal to many older people, by no means will it satisfy all of them. Conflicts of interest may thus arise, e.g. between residents with a moderate need for care and more infirm ones. This did in fact occur in the early eighties, when many homes made their communal areas available to older people in the neighbourhood. A number of residents considered this an improvement, because it increased the variety of social contacts, making the home more lively. But other residents felt it to be an intrusion of their privacy. A solution might be found in opening up only part of the communal areas to the neighbourhood and reserving one or more sitting rooms as

(semi-)private areas for the residents. A great deal of creativity, however, will still be required to find organizational and architectural solutions satisfying all such highly divergent preferences and desires.

Many alternatives have been found by systematically comparing the seven projects involved. The comparison considered not only the housing care concept and the facilities adopted but also their spatial-architectural form. The discussions with residents and staff members yielded a good account of certain advantages and disadvantages experienced in daily life. This has made an important frame of reference available to initiators of projects still to be (re)built. The pilot study was small in scale. It would be useful to extend this frame of reference in further studies by including more, and also different, housing care facilities for the elderly in the analysis. Furthermore, certain aspects warrant more in-depth study. Prominent items include the relations between apartment and outside world (view, climatization, type of outside area), and between apartment and inside world (particularly the transition between public and private areas). This poses a challenge to designers. They will have to devise a transition between apartment and communal interior area whereby the resident, who is generally not very mobile, can be more in touch with the corridor from his or her sitting room, and vice versa.

Other points for further investigation are the possibilities and limitations of further scaling-down and integration of assistance and nursing. De Westerweeren is an example of a far-reaching integration of various categories of residents. This concept has proven to be a viable one. The small scale of the home and the fact that many residents have known each other for a long time are added advantages. Together, the concept and these factors make for a relatively large degree of mutual tolerance. The main questions - regarding the extent to which this concept can be used elsewhere and a way to develop criteria for a 'balanced' group composition - are still open to research.

A last point warranting further research should be mentioned here. This is the future value of the present buildings for housing and care of elderly people. We have seen the wide fluctuations to which supply and demand in the housing sector are subject. During the life span of the buildings, minor and major remodelling takes place on a regular basis. It is therefore desirable to gain more insight into the costs and benefits of design measures to facilitate these renovations. This could take the shape of:

- a division between supporting construction and added construction;
- a favourable sizing system, minimizing the shortage or surplus of space due to dividing or joining rooms during remodelling;
- a flexible installation of the 'fixed' equipment of bathrooms and kitchens etcetera, facilitating adaptation of such spaces to other uses.

The future value of the buildings can also be enhanced by including extras such as some surplus space in rooms, or surplus (multi-functional) rooms. But it seems rather extravagant to include a fully equipped main kitchen in homes which have their meals catered from outside. This should be seriously recon-

sidered if it is done with the sole aim of allowing this building to revert 'back' to a more traditional home for the elderly. In such cases it seems more sensible to ensure that the specifications the supporting structure are flexible enough to incorporate all kinds of different functional layouts.

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Legend to numbers on plans:

0	=	entrance
1	=	single apartment
2	=	double apartment
7	=	balcony
8	=	storeroom
9	=	communal sitting room
10	=	sitting area
11	=	recreation/dining room
12	=	main kitchen
13	=	pantry
14	=	communal kitchen
16	=	guest room
17	=	boutique (shop)
21	=	activity centre
23	=	communal bathroom
25	=	mortuary
26	=	doctor's office
27a	=	infirmary
27	=	neighbourhood service room
29	=	multi-purpose room
30	=	reception desk
31	=	nurse's station
32	=	linen room
33	=	sleuth room
34	=	medicine dispensing room
35	=	office/administration
36	=	conference room
37	=	staff room
40	=	staff residence
42	=	waste disposal room
D	=	neighbourhood service centre