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Design and the Senior Citizen :

An Examination of their Relationship from Perception to Product Design.

by

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Submitted to the
Faculty of History of Art and Design and Complementary Studies
in Candidacy for the
Degree of Bachelor of Design

1998

Acknowledgements

I wish to express my gratitude to the following people, whose help and encouragement were invaluable in the preparation of this thesis : my tutor, Dr. Paul Caffrey; David Lee, Dublin Central Mission; Denis Handy, Architect; Sr. Elena Goulding, Warden of Ailt an Óir Sheltered Accommodation; Professor James PirkI; Susan Brennan, Occupational Therapist, National Rehabilitation Board; Tina Leonard, European Institute of Design and Disability and Mrs. Pelosi, Resident, Ailt an Óir.

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Introduction

The age structure of our society is changing. With improvements in nutrition, medicine and standards of living, more people are living longer now than ever before in the history of humanity. Combine this with a fall in birth rates, (a phenomenon experienced in all countries as they make the transition from developing to developed economies) and the result is a community of people with widely differing characteristics, outlooks and desires but with the same requirements common to all; the need for suitable housing, and an artifact environment that enables them to carry out the tasks of daily life with independence and dignity.

This thesis seeks to define the relationship between design and perhaps the most hitherto ignored section of the community; senior citizens.

Understanding this relationship raises the following questions : is it one of mutual exclusion, both sides regarding the other with suspicion, and not a little contempt, armed with the weapons of ignorance, preconception and myth? Why is it imperative and economically logical to design with senior citizens in mind? What is the representation and resultant perception of senior citizens in today's culture? What are the needs of this section of society and what has been the response from designers, or has the principle of laissez-faire been adopted by the design community? Who are the designers that would seek to extend the hand of friendship and inclusion and how successful have their attempts been to bridge the intervening no-mans land? What constitutes inclusive design and what needs to be done to ensure its instigation? Shall the twain ever meet in a peaceful atmosphere of appreciation, building on each others strengths to the benefit of both?

The term "senior citizen" is used in this thesis as opposed to the term "elderly" because this is the preferred description chosen by those over sixty, surveyed throughout the E.U. in a Eurobarometer Survey carried out in 1993, the European Year of Older People and Solidarity between Generations (Commission of the European Community, 1993, p.11). The result of the

survey showed that 30.9 percent favoured “senior citizens” while only 6.6 percent wished to be called “elderly”. A possible reason for this is that the term “senior citizen” denotes an individual with civic rights and functions and emphasizes the role of older people rather than defining them as a separate group based purely on chronological age.

In order to answer the questions raised above it was necessary to establish a framework for this thesis. It is possible to trace the development of design theory in relation to senior citizens through a literature survey examining the work of the main figures in this field and reports from various organisations involved in this area. Interest in this topic was initially spurred from reading Victor Papanek’s, Design for the Real World and subsequently the work of James PirkI carried out with Anna Babic and PirkI’s later publications. He is probably the most notable exponent of design to include the needs of all generations and those with functional limitations, coining the phrase “Transgenerational Design” in the mid-eighties to describe his theory of design for all. Other designers and their theories studied were Patricia Moore (*Through other eyes*), Alan Tye (*Healthy Industrial Design*), Roger Coleman (*Design for our Future Selves*) and the work of organisations such as the Design for Ageing Network and the University of the Third Age and companies like Ergonomi Design Gruppen and I.D.E.O. Though their approaches may vary, each promote the inclusion of the widest range of users by incorporating their needs from the outset.

To set this theory in a cultural context, Featherstone and Wernick’s, Images of Aging (1995) provided an analysis of cultural representations of senior citizens along with Eric Midwinter’s report, Old age, the Press and Broadcasting (1991). Examples regarding images and portrayals of senior citizens and the construction of popular myths are to be found around us in the media. Research on specific case studies was carried out by physical examination, interview and reading selected reports on related projects and topics. Various internet sites have provided valuable information on up-to-date developments.

Chapter 1 : The Changing Structure of Society, Demographics, Lifestyle and Potential Market.

Who is old? The answer to this is a question of perception. To a 10 year old a 50 year old appears elderly while to an 80 year old they are still youthful. For the purposes of this thesis, the arbitrary figure of 65 will be taken to mark the point from which one is considered a senior citizen, as this figure is commonly used by governments and statisticians, taking their cue from Otto von Bismarck, 19th century German Chancellor, who set retirement age at 65 in the knowledge that the average age of a worker was 45 (PirkI, 1994, p.39). This illustrates the problem with labelling; what is applicable in a particular place at a given time is not necessarily suitable to another, given changing factors of race, environment, lifestyle, and life expectancy. Ken Dychtwald, a leading U.S. Gerontologist, suggests a new set of age designators : 40 to 60 should be called middle age, 60 to 80 late adult and over 80 old age (PirkI, 1994, p.18).

This reappraisal of terms is a result of the fact that people are leading more healthy, active lives. Fig. 1 shows the increase in life expectancy in the U.S. from the beginning of this century. This trend is also to be found in Europe with a projected life expectancy in 2021 of approximately 80 (Coleman, 1993, Pg. 37). The result of this increase is that by the year 2000 the world population of those 65 and over will reach 419 million, 34.9 million of those living in America (See Fig. 2) (PirkI, 1994, Pg. 16). In the E.U. the projected figure of those over 50 will reach 150 million in the year 2000 (Coleman, 1993, Pg. 41).

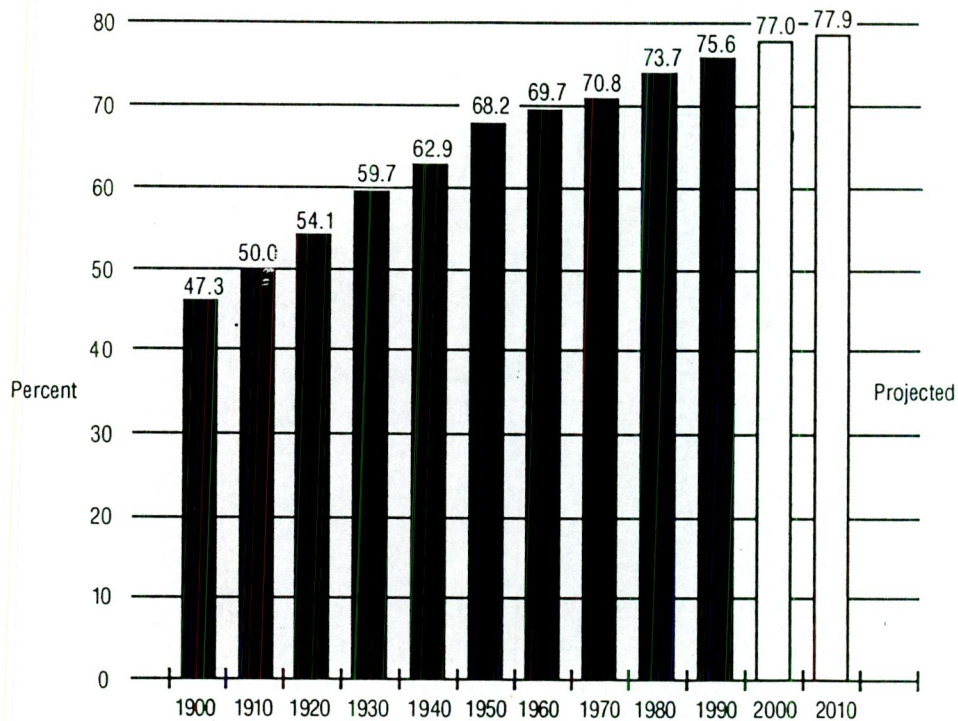


Figure 1 Life Expectancy at Birth in U.S. (1993)

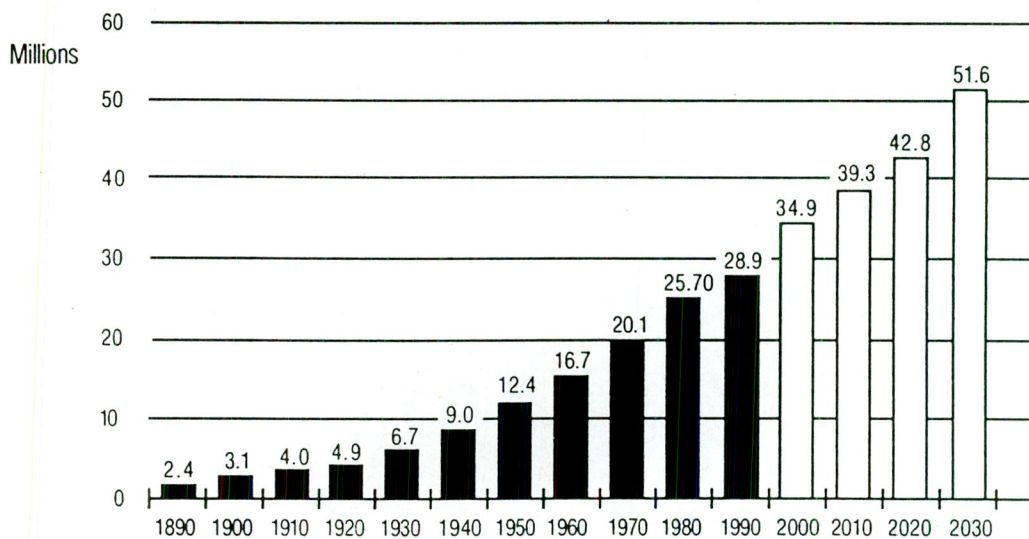


Figure 2 U.S. Population age 65 and over (1993)

The significance of these figures is not just their magnitude; when combined with the fact that the birth rate is falling, the result is that the percentage of senior citizens of total population is increasing disproportionately.

“In the E.C. a birth-rate of around 2.1 surviving children per woman of childbearing age is required to replace the population. In fact the average E.C. birth-rate is 1.59 and has been declining since the mid 1960's when it stood at 2.63” (Coleman, 1993, Pg.34).

As the “baby boom” generation (babies born in the aftermath of World War 2) matures from middle to old age, the percentage of senior citizens of total population will increase further. Fig. 3 shows the percent of total U.S. population age 65 and older with a projected figure of 13 percent by the year 2000. These figures have potentially serious social and economic implications. “By the end of the decade those of retirement age will amount to some 25 percent of those of working age (18-64) and a considerably higher proportion of the actual working population” (Coleman, 1993, p.40).

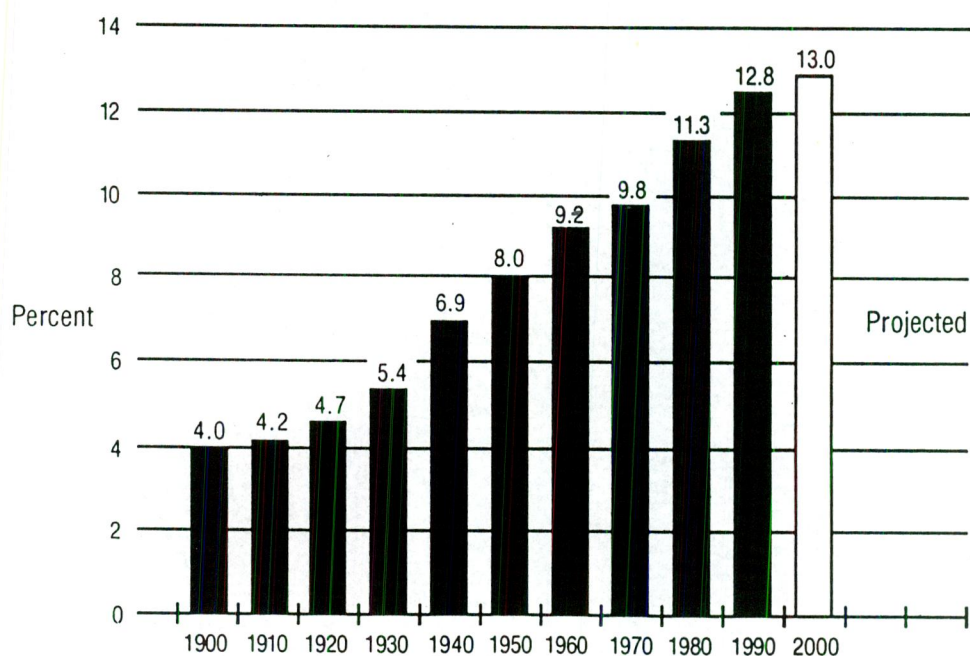


Figure 3 Percent of total U.S. population age 65 and over.

Society must re-examine the role of senior citizens in the workplace. At the moment those over 40 find it difficult to find re-employment after redundancy. To avoid a situation therefore, where an increasing number of senior citizens reaching retirement age possibly become dependent on a decreasing number of young people; employers must realise the experience and potential of this age group.

How do senior citizens support themselves financially? Financial and economic security of a person in old age is a function of their employment status during their working life and the pension system available in their particular country. Because of this relationship, older women may have a lower income and standard of living than men. The E.U. has recognised the importance of financial security for old people if they are to achieve full European citizenship. The Charter of the Fundamental Rights of Workers, adopted in December 1989 as part of the Social Chapter of the Maastricht Treaty states, in paragraphs 24 and 25 :

Every worker of the European Community must, at the time of retirement, be able to enjoy resources affording him or her a decent standard of living.

Every person who has reached retirement age but who is not entitled to a pension or who does not have other means of subsistence must be entitled to sufficient resources and to medical and social assistance specifically suited to his (sic) needs. (Walker and Maltby, 1997, p. 43)

The main sources of income for senior citizens are contributory pensions followed by non-contributory pensions, state benefits and interest on investments. There are four main trends in the living standards and pensions of senior citizens in Europe (Walker and Maltby, 1997, p.48).

One, living standards, in general, are rising. This is due to many varied factors in different countries and is uneven in impact.

Two, there is wide variation between countries in the level of protection their schemes provide to people on retirement.

Three, there is a widening gap in living standards within the older population. This is particularly prevalent in Britain where there is a polarisation occurring in the living standards of senior citizens.

Four, despite rising living standards there is a continuing problem in some countries of poverty among a minority of older people.

It is important to be aware of the gap mentioned in point three. The emergence of the WOOPIE (well-off older person) in Britain in the late 1980s was not related to a major shift of senior citizens up the income distribution but was due, rather, to increasing inequalities among this group. This created a false impression that all senior citizens were financially secure. However this impression was created by a small proportion of senior citizens, typified by recently retired, mainly males, generally of the higher social classes with a history of secure employment. Their sources of income include occupational pensions and interest on assets and savings. At the other end of the scale is a group, five times larger, composed of predominantly older women, less likely to have been in secure employment, lower class, depending on national insurance pensions and income support. It is estimated in Britain that one in five senior citizens below income support level do not claim social assistance because of lack of information and the stigma attached to means-tested benefits (Walker and Maltby, 1997, p.53).

However, in general, income and living standards among senior citizens in Europe are rising especially among the 50-74 year-old age group. This is due in part to the high replacement ratio (retirement pension as a percentage of final earned income) of pensions and various policies in the different member states (Walker and Maltby, 1997, p.48). In France for example, pensions are indexed to wages or prices, whichever figure is

higher, ensuring pension increases in line with the cost of living. While in Germany, time spent outside paid employment providing community care attracts increased pension benefits. Similar income increases among senior citizens are occurring in the U.S., as described by PirkI and Babic,

The purchasing power of today's older population is estimated to be more than \$68 billion. This amount increases annually as more and more people with inflation-affected incomes reach age 65. Much of this money is available for discretionary purposes (PirkI and Babic, 1988, p.21).

Along with the dramatically changing demographics and more available income there is another significant change among senior citizens; their lifestyle. Previously, retirement was seen as a few years rest after a lifetime of work in which to relax and enjoy the fruits of labour. However, with redundancies, early retirement schemes, partial retirement and an increased emphasis on the quality of life, this is not now the case. Walker and Maltby (1997, p.69) state that retirement is no longer the straightforward entry point to old age it once was and therefore it is an increasingly anachronistic as a definition of older people. With people now retiring at age 55 or below and increased life expectancy of 77 or over it is possible that some people will spend as long in retirement as they did in employment.

Dychtwald suggests that our view of life span as a linear progression of education-work-retirement will change to one of a series of cyclical activities spread throughout our lives and extending well into old age (PirkI, 1994, p.19). See figure 4. This view is borne out by the fact that eight per cent of over 65s questioned in a Eurobarometer report were involved in organised voluntary work (Commission of the European Committees, 1993, p.11). Older people are enjoying greater health as a result of medical advances and better health education. As a result they are more active and taking part in an increased range of activities.

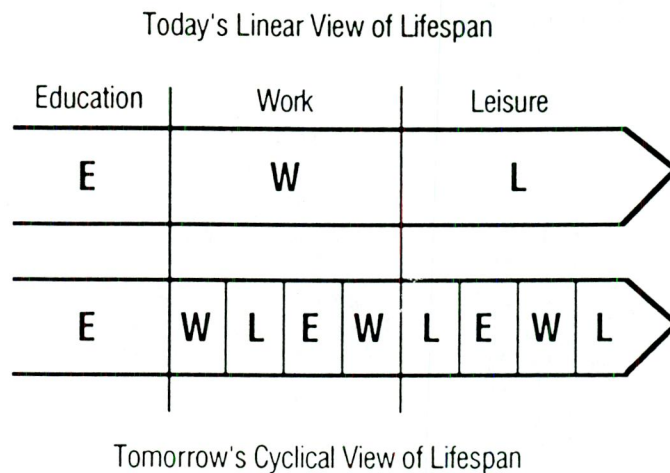


Figure 4 Changing views of life span.

This point has not escaped those involved in marketing. According to Anita Shalit, a specialist on ageing issues at the U.S. Department of Health and Human Services' Administration on Ageing, "Business is just beginning to realise that it is both reasonable and profitable to adopt and develop products that are suitable to an older person's mature physical characteristics and lifestyle preferences" (PirkI, 1993, p. 21). It makes increasing economic sense to target senior citizens as their disposable income rises. As companies formulate their future marketing strategies, it would be foolhardy of them to ignore the burgeoning numbers of senior citizens and their requirements. However, as is normally the case, it is a question of industry responding to a lucrative market in its own self-interest rather than a morally felt obligation to provide for needs of a previously ignored section of society.

Danielle Barr, director of Third Age Marketing summed up the future relationship between marketing, design and senior citizens very succinctly while addressing the international Design Renaissance conference in Glasgow in September 1993:

Good design practices applied to products, packaging, fashion, appliances and domestic equipment, will help marketers in their quest to satisfy consumer needs. The marketers, in return, will realise that products must be designed to satisfy a larger older segment. They will promote their products not only to older people, but as better designed products for all. On their part, designers have the key to starting this virtuous circle. They know that by taking into consideration the needs of older people they create a better design for all and extend the marketability of the product. Adopting this philosophy will accelerate the acceptance of the reality that the over 50s are no longer a niche - we are the new mainstream (Coleman, 1993, p.42).

Chapter 2 : Exploring and Exploding the Images and Myths of Age in Today's Popular Culture

Of any group in society, senior citizens are probably the subject of the greatest number of myths based on preconceptions and former truths that are no longer the case. Perhaps the most prevalent is that once retired senior citizens shuffle off to the nearest institution to spend what time they have left in a senile haze. This is a completely inaccurate view. In fact only 4 to 5 percent of those over 65 live in an institution (PirkI and Babic, 1988, p.19). PirkI identifies no less than ten of these myths; the myth of senility, disability, asexuality, homogeneity, poverty, lonely isolation, dependency, the Rocking Chair, inability and retirement. Of these the first two create the greatest stigma regarding senior citizens and are the most inaccurate.

The myth of senility refers to the belief that senior citizens naturally become more forgetful, confused and lose contact with reality. There is no basis for this belief. While some conditions such as Alzheimer's and Parkinson's disease are more prevalent in senior citizens, it is wrong to assume that all or most senior citizens suffer from such conditions.

The myth of disability holds that older persons with severe functional disabilities experience a greater number of associated diseases than those with less severe disabilities (PirkI, 1994, Pg.5). While senior citizens are more susceptible to functional disabilities, this does not necessarily mean that they are debilitated. Vigorous older people may remain independent despite the presence of disease or functional limitations.

How are these myths created and once created how do they continue in the public mind? As stated above, some are based on former truths that are no longer the case, for example the myth of poverty. Before the introduction of pension schemes and social security older people were more financially dependent on others. Indeed, that is cited as one of the reasons for large

families in developing countries without such schemes. A large number of children is a form of insurance; there will always be someone to support the ageing parent.

However, most myths regarding senior citizens are seeded in beds of ignorance and preconception, germinated by lack of understanding and indifference and propagated by various media. Take the following incident involving a female member of the University of the Third Age (an English organisation for older people) for example : The woman in question - a trained teacher, working part-time, with an Open University degree - is an experienced climber with expeditions in Nepal, the Alps and Canada, ten marathons in various countries, including a record for a 60 plus woman and a gold medal in the World Veteran Games to her credit. On her 63rd birthday she fell while mountain walking in Scotland. The following are some of the headlines and opening statements in the subsequent reports,

Surrey Comet : "Pensioner plunges down mountainside"

Daily Telegraph : "A grandmother who tumbled 600 feet...."

Capital Radio : "Granny plunges 600 feet and defies death"

Wimbledon Informer : "Pensioner plunges 200 feet and survives - miracle escape for super-fit Joyce on her 63rd birthday!" (Midwinter, 1991, p.47).

These reports hold a significant insight into the presumptions made about the woman once it was learned she was 63. Despite having no grandchildren, half the reports automatically labelled her "granny", or "grandmother". The fact she was a part-time teacher was ignored in favour of the title "pensioner". One account acknowledges she is "super-fit" but none mention the fact that she is an experienced climber and excellent athlete. The resulting picture received from the reports creates an inaccurate impression of incompetence and inability on the part of the woman by removing her experience and capabilities in those surroundings; but by using labels such as "granny" and "pensioner" they are tacitly linking the

impressions and labels, thereby compounding the misconceptions i.e. that all women 63 or over are pensioners and/or grannies; and that it is normal for pensioners/grannies to engage in unsafe activities beyond their capabilities. Where do these myths come from? What has been the role and portrayal of senior citizens in the past that has led us to the current position ? Possibly the first writings on the subject was Cicero's essay De Senectute written in 50 B.C. (PirkI, 1994, p.8) in praise of old age and the wisdom it brings. (An assumption being used by Guardian Direct Insurance Co.; the main thrust of their current campaign is " now, that you're a little older and wiser... "). PirkI states that early society held their senior citizens in high regard for two reasons. One, they were repositories of knowledge and wisdom acquired from a lifetime of experience and two, they were rare (PirkI, 1994, p.8). Senior citizens , therefore, held a venerated position in society.

However with the advent of the Industrial Revolution and now the Technological Revolution, our value systems are different. Information technology developments mean that vast amounts of detailed information are available through various sources such as the Internet. With the increase in life expectancy, it is no longer so unusual for people to reach ages of 100 and beyond. What then is the image of the senior citizen in a society where qualities of speed, youth, flexibility and change are paramount? George Minois, in his study, A history of old age : from Antiquity to the Renaissance points out that all societies relish physical strength and bodily vigour, meaning automatically that old age meets with some disfavour. He believes that each society shows admiration and contempt towards their senior citizens at the same time (Midwinter, 1991, p.25). In Images of Aging, (1995), Featherstone recognises this ambivalence towards senior citizens.

When we examine popular cultural representations of old age in contemporary western societies we tend to find two sets of images. In the first place there are the "heroes of aging", those who adopt a positive attitude towards the aging process and seem to remain "forever youthful" in their work habits, bodily posture, facial expressions and general demeanour. The second refers to

those individuals who experience severe bodily decline through disabling illness to the extent that the outer body is seen as misrepresenting and imprisoning the inner self (Featherstone and Wernick, 1995, p.227).

However, it is an unfortunate fact that the majority of representations of senior citizens in the media fall into this second category, especially portrayals of senior citizens on television, which is the principal maker and shaper of images today (Midwinter, 1991, p.6). B.B.C. research shows that older people are much less well represented visually than other minority groups, being under-represented at a ratio of only one in three of what would be a normal representation of their proportion in the population. (Midwinter, 1991, p.29) However, the problem is not just quantitative but qualitative. Because the number of representations of senior citizens is disproportionately small, it is even more important that these give a realistic view of old age. This, however, is not the case. According to Midwinter :

Advertisements do not invent, but rather stimulate and play on existing beliefs. The suggestion is that when the older person is caricatured, often through a brief appearance in a T.V. commercial, the communicators are heavily reliant on their audience having already in mind a particular view of old age (Midwinter, 1991, p.5).

So rather than give a true picture of old age, it would appear that some program and advertisement makers are actually basing their representations of senior citizens on the very myths and preconceptions they should be avoiding, thus ensuring their continuance. The role of older people in advertising is to primarily illustrate a message rather than to attract the group as consumers of the product in question (Leeson, 1996, p.22). For example a recent campaign run by Levi's (see figures 5 and 6) features a 79 year-old American teacher with long white hair pictured from the back (to obscure her age) and then the front. The caption reads " Levi's jeans modelled by original wearer " (Elle, 1996, p.25). The model is used purely to illustrate a message of tradition and originality. The target market of this advertisement

is not senior citizens, but rather the young. The image is used as it is striking and has "shock" value.



Figure 5 Levi's "Original wearer" advertisement 1, (Elle, August, 1996)





Figure 6 Levi's "Original wearer" advertisement 2, (Elle, August, 1996)



POWER OVER TIME



R É N É R G I E

D O U B L E P E R F O R M A N C E , A N T I - W R I N K L E
A N D F I R M I N G T R E A T M E N T

*RÉNERGIE HAS A UNIQUE FORMULA WHICH HELPS YOUR SKIN RESIST THE
SIGNS OF AGEING. SCIENTIFICALLY PROVEN TO DIMINISH THE APPEARANCE
OF WRINKLES AND TO FIRM AND STRENGTHEN YOUR SKIN, RÉNERGIE IS
FOR THE FACE AND NECK IN A CHOICE OF SILKY CREAM OR LIGHT FLUID.*

POWER OVER TIME IS IN YOUR HANDS.

LANCÔME
PARIS

Figure 7 Lancome, Renergie "Power over Time" (Elle, Sept., 1997)



Figure 7 shows an advertisement for Lancome's Renergie, an anti-wrinkle cream which " helps your skin resist the signs of aging ". There are a multitude of such products on the market and their well funded advertisement campaigns pervade through all forms of media, especially television and magazines. Entire industries are based on the creation of the fear of aging and then blithely offer us a solution. These campaigns instil a commercially orientated message into popular culture that old age is unattractive and undesirable.

The picture, of course, is not all doom and gloom. There are some well considered views of aging. In America, the series Golden Girls made major strides in challenging stereotypes. The comedy followed the lives of four female senior citizens living life to the full. They are active, feisty, positive about aging and lead "normal" social and sex lives. A recent and controversial campaign by Age Concern (an organisation supporting and promoting the rights of senior citizens) aims to highlight the fact that people can remain active and attractive as they grow older. In response to the Wonderbra advertisements featuring Eva Herzigova, Age Concern used 56 year old former actress, Pearl Read in a similar pose (figure 8). Although Age Concern could also be accused of using shock tactics, this campaign raises awareness of the one-sided nature of youth-oriented culture and advertising and brings the issue of age-bias into the public forum.



Figure 8 Age Concern's Age Awareness Campaign (1998)

In general, portrayals of senior citizens in the media are either conspicuous by their absence or, when present, by their inaccurate view of senior citizens. This has begun to change as illustrated by the example above. However, this campaign was instigated by an organisation dedicated to breaking generational barriers. It is not until advertisers and program makers address the age issue that a real change in the public perception of senior citizens can take place.

The nearest one might hope for is a general assertion of the truth about older age, some assurance that all or most of those involved with the media have some understanding of it, and some resolve on their part to use that knowledge as a criterion. It is a matter of making producers, directors and writers more sensitive (Midwinter, 1991, p.53).



Chapter 3 : The Ageing Process : Breaking the Link between Age and Disability.

An understanding of the changes brought about by aging is necessary to appreciate the significance of their affect on design when developing products or services that will be used by senior citizens. As stated earlier it is inaccurate to equate age with disability. However, there are some conditions that are more prevalent as we get older. It is important to remember though, that we are all aging continuously; it is a process that begins at birth and ends when we die. Also there are inter and intra-personal differences in the aging process, i.e. aging affects different people in different ways and within each person age affects some parts of the body more than others, depending on the activities we engage in, our diet, exercise routine, environment and hereditary factors. Therefore a long distance runner may have "old" knee and hip joints but a "young" heart and lungs. In fact some middle-aged people and their children may be in worse physical condition than their parents and grand parents because of the sedentary nature of modern life. Some people may be affected by one or more of the conditions described below and some not at all. William Howell of the American Psychological Association states that "age is not the reliable index of functional impairment that society has customarily taken it to be" (Fisk and Rogers, 1997, p.4).

While the aging process defies exact description, it is generally thought to occur at biochemical and cellular levels with gradual damage caused by a range of factors from gene mutation, protein degradation and accumulation of toxic substances to cell senescence - the genetic programming of cells to age. Although there is no "one" theory to describe aging, functional declines in older people generally stem from these sources: disease, inactivity and senescence (the aging process) (PirkI, 1993, p.32). Age-related conditions can be broken up into three categories, psychological, physical, and sensory.

Psychological

Aging causes the gradual slowing down of all organs including the brain. However, this does not mean that function is necessarily decreased, but reaction time increases. Intelligence does not appear to be affected unless there is a degenerative neurological disease present such as Alzheimer's. This condition is not a normal part of aging and can occur at any age but generally appears after 50 and affects five percent of those over 65 (PirkI, 1993, p.65). Learning ability is also unaffected by age but may take longer and methods of problem solving change. Older people tend to think a problem through rather than use methods of trial and error favoured by younger people. Slight memory changes do occur with an age-related decrease in short-term memory. However, long-term memory may remain virtually complete.

Physical

Our ability to remain independent hinges on our bodily movements. As we age our range of movement decreases due to a reduction in the efficiency of muscles and joints needed to perform large and small motor movements. From age 30 to 80 the number of muscle fibres and size of the motor units decrease bringing about a linear decline (PirkI and Babic, 1988, p.81). Also there is a reduction in the elasticity of collagen and cartilage in the body thus rendering joints less flexible.

Arthritis affects 4 percent of young adults, 50 percent of those in middle age and 80 percent of those in their seventies (PirkI, 1993, p.53). Arthritis is the name given to many degenerative conditions that affect the joints. The most common of these is osteoarthritis and is the main cause of disability of those over 65 although also present in one third of those over 35. However it is not a result of aging and may occur from over use of certain joints. The second

most frequent form is rheumatoid arthritis, incidences of which actually decrease after age 65. However those suffering from this condition become progressively disabled and their functional abilities decrease.

Sensory

Most of us will experience some form of sensory decrease as we age. While sensory reduction may not affect independence as much as loss of mobility, it has a great affect on quality of life and how we make sense of, and perform in, our environment. There are, therefore, serious implications for the designer to provide an artifact environment that compensates for these losses. Of all the senses, vision impairment affects the greatest number of people. As we age physical changes take place in various parts of the eye affecting its function. The lens loses its elasticity and clarity and cataracts may form . The aqueous humour that fills the eyeball tends to disperse light. Muscles that expand and contract the eyeball allowing it to focus and control the amount of light entering become less effective and the retina loses receptors. These changes combine to reduce the various functions of the eye and reduce certain visual abilities. These are visual accommodation (the ability to focus on near objects), visual acuity (clarity), field of vision, bright and darkness adaptation and increased sensitivity to glare.

Hearing loss is not a normal condition of age, however most people will experience some degree of hearing reduction as they grow older. The ear drum becomes thin and atrophies making it less sensitive to sound waves. Wax build up and new bone growth can block transmission of sound. Membranes in the ear lose their elasticity and receptors atrophy. These factors reduce hearing acuity (ability to hear sound at "normal" volume), frequency and speech discrimination and directional hearing. (Pirkl and Babic, 1988, p.75)

Our sense of touch also decreases with age. Tissues and fibres become less elastic, the outer layer of skin (epidermis) thins, sebaceous glands reduce their production of oil and there is a decrease in the number and size of receptors. Thus there may be a reduction in our ability to sense forms and textures from touch (tactile sensitivity), to feel movement or action (pressure sensitivity) and to receive sensations of hot and cold (thermal sensitivity).

These age-related changes have many implications for the designer. While designing products and environments the limitations brought about by these changes must be taken into account and features provided to alleviate them. Products should be easy to use and require the minimum amount of physical exertion in operation, minimizing the need to rotate, flex and twist the torso, joints and muscles. Controls should be unambiguous, provide adequate lighting and contrast and give the user a definite feedback when activated. This can be achieved by redundant cueing, i.e. providing feedback in a way that appeals to as many senses as possible ensuring the user receives the necessary information to successfully operate a product.

Chapter 4 : Development of universal design theory.

The demographics are indisputable; our society is aging, giving rise to a growing, experienced and increasingly vociferous group of consumers with changing abilities and thus requirements. Although below the threshold of what is described as disability, these changing abilities may become problematic if neglected by designers (Coleman, 1993, p. 44). Therefore, a person with a slight impairment may have the problem compounded by a disabling product or environment and therefore denied the right to take full participation in society.

This right of full participation has been recognised for people with disabilities in the United States with the passing of the Americans with Disabilities Act which came into effect in 1992 and “ extends to individuals with disabilities comprehensive civil rights protections similar to those provided to persons on the basis of race, sex, national origin and religion “. It is an enforceable law that “ prohibits discrimination on the basis of disability in places of public accommodation “ (PirkI, 1993, p.101). This legislation will obviously have a wide-ranging affect on design in general and how people view it. As disabled people gain (long-overdue) equal access to public buildings and other facilities it is a natural progression for the spotlight of equality to be placed on consumer products. Not far behind the disabled will be a group of people, including senior citizens, demanding that design serve their needs rather than dictate them.

In acknowledgement of the needs of senior citizens, many individuals and groups around the world have been, and are, becoming involved in the formulation of theories and guidelines to be incorporated when designing. One of the pioneers in this area is Patricia Moore. When in her twenties she conducted an experiment to gain a first-hand insight into life as an old woman. Disguising herself as an old woman and restricting her movement and senses, she travelled around 200 U.S. cities for three years,

experiencing life as a senior citizen. Her findings were influential on an emerging design movement termed "universal design".

In 1991, responding to the interest in universal design, the Pratt Institute in New York conducted a pilot study to formulate a curriculum to teach universal design to industrial design students. In a subsequent talk at the Industrial Design Society of America, Robert Anders and Daniel Fletcher described the basis of this approach :

Universal design is a methodology that maximises the number of people who can use a building, a product or other object, and attempts to reduce the need for separate accessible or adaptive design solutions. It does this by going beyond the needs and abilities of average, healthy adults to include those with motor and sensory disabilities, children and other adults during the design process (Coleman, 1993, p.46).

To evaluate existing designs and provide guidelines for future projects a group of advocates of universal design at Princeton University, working in a wide range of disciplines from product and environmental design to architecture, formulated the following seven principles in an effort to educate both designers and consumers about the characteristics of more useable products and environments :

1. Equitable use : The design is useful and marketable to any group of users.
2. Flexibility in use : The design accommodates a wide range of individual preferences and abilities.
3. Simple and Intuitive use : Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.

4. Perceptible Information : The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

5. Tolerance for error : The design minimizes hazards and the adverse consequences of accidental or unintended actions.

6. Low Physical Effort : The design can be used effectively and comfortably and with a minimum of fatigue.

7. Size and Space for Approach and Use : Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture or mobility.

While providing these guidelines, they also recognise that there are other factors to be taken into account :

It must be acknowledged that the principles of universal design in no way compromise all criteria for good design, only universally useable design. Certainly, other factors are important, such as aesthetics, cost, safety, gender and cultural appropriateness, and these aspects should also be taken into consideration when designing (wisc.edu/text/univdesn/ud_princ/ud_princ.html).

James PirkI, working at the University of Syracuse developed the theory of "transgenerational design" with Ann Babic and published their findings in 1988. In order for the design community to meet the needs of an aging population he suggests :

That products be designed at the outset to accommodate the needs of the older user. With few exceptions, most products, during their conception and throughout their development, could be designed for use by a "transgenerational" population, which includes the elderly as well as the young and able-bodied - without penalty to either group (PirkI and Babic, 1988, p.12).

This approach ensures a better, non-stigmatising, product for people of all ages and provides for those with temporary impairments caused by injury or illness. In addition, by virtue of a larger market, this allows economy of scale to come into effect and solves the problem at no extra cost to the manufacturer or the senior citizen.

In England, Alan Tye developed the concept of Healthy Industrial Design, in response to problems such as repetitive strain injury being encountered with some products. His intention is to promote the health and enjoyment of the user through appropriate movement (Coleman, 1993, p. 49). He reiterates the fact that senior citizens do not need special products; “ provided older people are considered at the design stage, normal standard designs will suit them, and special designs are not in principle required (Hamlyn Foundation, 1986, p. 56).

I.D.E.O., an international design company has developed many successful products encompassing the needs of senior citizens. Figure 9 shows an eye drop applicator produced for Clement Clarke International. It is designed for use with a standard size bottle. The large easy-grip sides are good for people with reduced manual dexterity and minimise the amount of pressure required to administer a dose. The approach used in the company is design by story-telling, i.e. they seek first to understand and observe the potential user and then create scenarios around the user as a means of reaching the widest possible user-group.

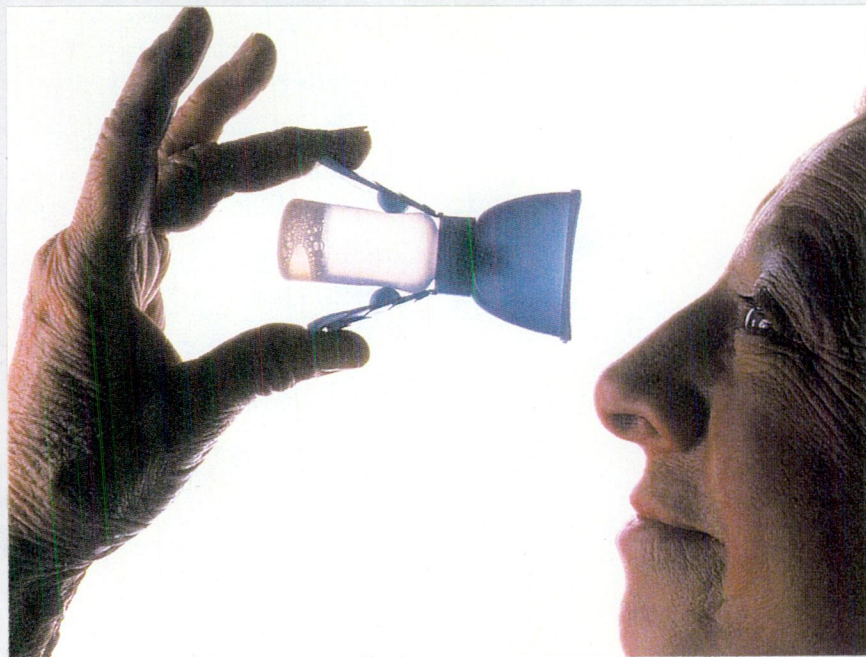
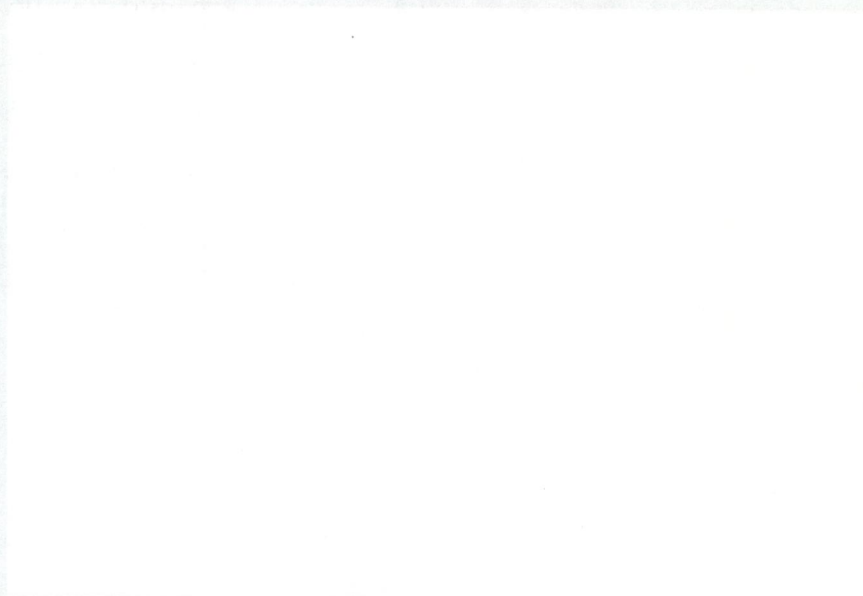


Figure 9 I.D.E.O. Eye-drop Applicator (1992)



Denis Handy, a prominent Irish architect and founder member of the European Institute for Design and Disability (Caffrey, 1996, p.342), involved in the design of many housing projects for senior citizens, proposes the theory of design for instinctive use, i.e. through their semiology, products tell the user how they are to be operated. He uses the example of door handles. Both sides of a door are equipped with handles that suggest they must be pulled to open, while in fact the door opens in one direction. The resulting confusion necessitates additional instruction in the form of “push” or “pull” signs. This could be avoided by one side being operated by a push-plate which engages the mechanism and the other, opening side, by a handle.

All these design theories point to a similar conclusion; in order to appeal to the widest possible target market, the needs of all sections of that market must be taken into account. No particular group likes to be singled out for special treatment and products designed in this way only serve to further stigmatize those for whom they were intended. As Pirkel stated in a speech delivered in the University of Industrial Arts, Helsinki in 1995, (attended while studying there for five months as part of the Erasmus Exchange Programme) “ we should design for an aging rather than an aged population. And there is a big difference between these concepts “.

Chapter 5 : Case study : Ailt an Óir Sheltered Accommodation. An example of universal design.

This chapter takes a case study of Ailt an Óir (the name means a rocky cleft which reflects gold), a housing project providing fifty units of sheltered accommodation at Glenageary, Co. Dublin and uses it to demonstrate how the application of the principles of universal design can result in a solution capable of extending the independent period of the lives of its users.

The project was commissioned by the Dublin Central Mission, a charitable organisation run by the Methodist Church of Ireland, in response to the long waiting list for another of their sheltered housing schemes "Margaretholme" in Sandymount, Dublin. Margaretholme was the first scheme of its kind in Ireland when it was built in 1965, in that it accepted both sexes, and couples, regardless of religious background. The size of the flats in that scheme became the national standard.

The brief of the project was to develop modern sheltered housing of a high standard, suitable for senior citizens at a reasonable cost to the Dublin Central Mission. The architects chosen were Ryan O'Brien Handy.

There is no definition for the term "sheltered housing". However it is normally considered to refer to a scheme where the occupancy of dwellings is mainly restricted to senior citizens and where usually there is a resident warden and/or alarm system connected to each dwelling (Silke, 1994, p.33). The normal target group for such schemes are fully mobile and virtually independent older people who may be too frail or vulnerable to stay in private accommodation.

The objectives of the project were as follows :

To provide suitable comfortable accommodation for residents.

To create a situation whereby the residents are looked after in an unobtrusive way.

To promote activity and participation through recreational facilities.

To maintain residents independence by allowing them as much freedom in their daily activities as possible.

To ensure there is adequate access to social and transport networks within reasonable distance.

The result of the project, completed in October 1990, is a sensitively designed community that blends with its landscaped gardens and surrounding view out to Dún Laoighaire harbour. It consists of forty ground floor units (six double) arranged on either side of three glazed “streets”. Each street is linked to the community building resulting in one large enclosed and controlled environment. See figure 10. A particular difficulty with the site was a steep north to south slope. However this was used to great advantage by arranging the streets in an east to west direction and terracing the garden thus maximising the amount of natural light available from the southerly aspect.



Figure 10 Enclosed and temperature controlled corridor, Ailt an Óir (1990)

The housing units themselves are quite spacious (single units being 378 sq. ft. and double units 436 sq. ft.) while still being small enough to manage and heat easily (see figure 11). Each house consists of a hallway, living room, kitchen, bedroom and bathroom. The accommodation is carpeted, curtained, includes a fridge and cooker and is wired for telephone and cable television and there is a link by a vocal system to the resident staff member on duty.

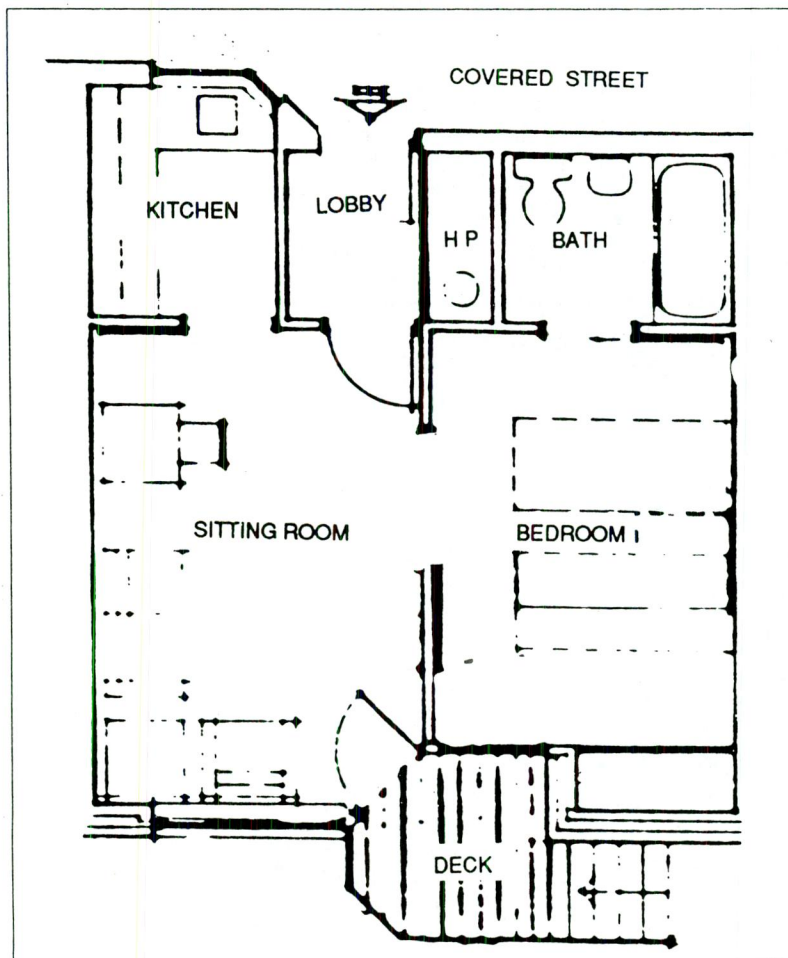


Figure 11 Single House Plan, Ailt an Óir (1990)

Every resident has his/her own front door key, a point emphasized by the architect, Denis Handy. He wanted to create a feeling opposite to that of the anonymity of a hotel with rows of identical doors running along identical corridors. Therefore each house has its own front door opening to the outside and another door opening onto the covered street. The feeling of a link to the outdoors is promoted as much as possible, each kitchen window is angled so that the owner has a view up or down the street and each unit has a small front garden which is cared for by the resident if they choose. The whole complex is designed for ease of access and safety.

In the execution of this project the focus was firmly on the users. Every effort was made to avoid connotations of a nursing home and emphasis was placed on the residents' integrity and independence. The warden, Sr. Elena Goulding, explains that assistance is at hand at all times should it be required but otherwise staff are as unobtrusive as possible. Each resident has a sign in their window displaying whether or not they require attention which is checked each morning. There is also a call system in each unit and at various points throughout the building to call for assistance. Dinner is served in the Community building at 1p.m. each day (see figure 12). Residents can chose whether or not to eat there but must sign a log if they are not going to attend. Otherwise, residents are free to come and go as they choose. There are many activities available such as an exercise room, hobbies/craft room, indoor bowling and an activity room with stage where local drama and musical groups give performances. Other services provided are an "essentials" shop library, physiotherapy and hairdressing. Residents have a choice of continued care by their own doctor or a visiting doctor and convalescent care on return from hospital is provided by a visiting nurse if required. Such measures allow the residents to conduct their as independently as they want to, safe in the knowledge that help is at hand when needed.



Figure 12 Dining Room, Community Building, Ailt An Óir.

There are many features throughout the building that facilitate senior citizens and make it an example of what can be achieved through the implementation of the principles of universal design. For example, in figure 13, a view down the main corridor in the community building, grab rails can be seen on either wall. Light switches are lowered to avoid stretching and electrical sockets raised to avoid stooping. The carpet has a low pile to prevent stubs while still providing a comfortable and hard-wearing surface. Figure 14 shows the Hewi lever door handles which are used for all the interior doors. This type of handle is recommended for use in housing for senior citizens by Dublin Corporation in their report, Housing for Senior Citizens, (Dublin Corporation, 1982, p.5) in preference to twist knobs as the levers require a minimum amount of physical effort to operate and can be used by people with reduced grip. All the taps throughout the building are also lever action for the same reason. This is especially important, as a combination of wet or soapy hands with a condition such as arthritis could make a simple task such as turning off a tap impossible with many of the conventional twist models available.



Figure 13 View down main corridor, Community Building, Ailt an Óir.



Figure 14 Hewi lever action door-handles used in Ailt an Óir.

By applying the principles of universal design already mentioned in Chapter Four, it is possible to evaluate whether this project is a successful example of universal design. Not all the seven principles are relevant here.

Equitable use : Ailt an Óir provides the same facilities for all its residents, there is no segregation or stigmatizing according to abilities, religious beliefs or financial status. To qualify for state funding 70 percent of residents must be eligible for Local Authority Housing while the other 30 percent fund themselves by means of an interest free loan which is returned should they decide to leave or on their death.

Flexibility in use : The design of Ailt an Óir accommodates a wide range of individual preferences and abilities. Users are free to come and go as they choose and the design and layout of the building allows this as each resident has access to their home independent of the community building. They can choose be involved in the activities and community or remain in privacy. The pace of activities and services provided are adaptable to suit the resident's requirements.

Simple and intuitive use : Ailt an Óir was designed to be as easy to use by its residents as possible. All the enclosed streets and areas of the community building used daily are at the same level. Facilities such as the laundry room can be reached by stairs or lift. There is a natural flow to the design of the building, leading residents easily to the essential facilities. Throughout the building there are grab rails and as mentioned all door and tap handles are lever action. Safety elements such as the alarm call and fire points are clearly and unambiguously presented.

Perceptible Information : This refers to the provision of information in different modes (pictorial, verbal, tactile) to maximise transmission of this information by appealing to different senses. Fig 15 shows the alarm panel inside each unit. The large push controls are simple to operate and conform

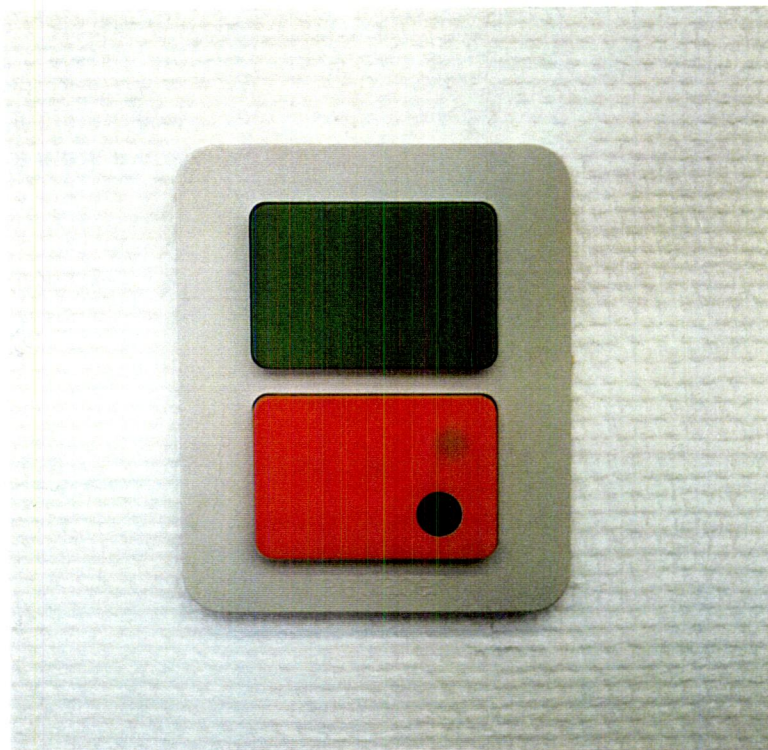


Figure 15 Alarm panel to call assistance inside each unit, Ailt an Óir.



Figure 16 Fire Alarm and Key Panel, Ailt an Óir.

to standard colour coding; red summons assistance while green turns off the alarm signal. Fig 16 shows a fire point containing a key to the exit door. Clear, contrasting text, colour and a large simply operated mechanism provide the necessary information to use this unit intuitively.

Low Physical Effort : The three covered streets stem from the community building, thus minimizing the distance to the end units (see Site Plan : Appendix A). All the most often used facilities are arranged on the same level as the residential units. A lift is provided for access to other levels.

Chapter 6 : Product design and the senior citizen

Transgenerational, universal and inclusive design are not just elements of political correctness brought into the design arena, there is a genuine need for design to meet the needs of all its users and to realise the consequences that ill-considered design can have.

The slicing knife and cutting board pictured in Fig 17 is a good example of the application of transgenerational design and the subsequent wide ranging appeal of products so designed. It was designed by Maria Benktzon and Sven-Eric Juhlin, members of the Ergonomi Design Gruppen, in Stockholm in 1974 and is manufactured by Gustavsberg, A.B.

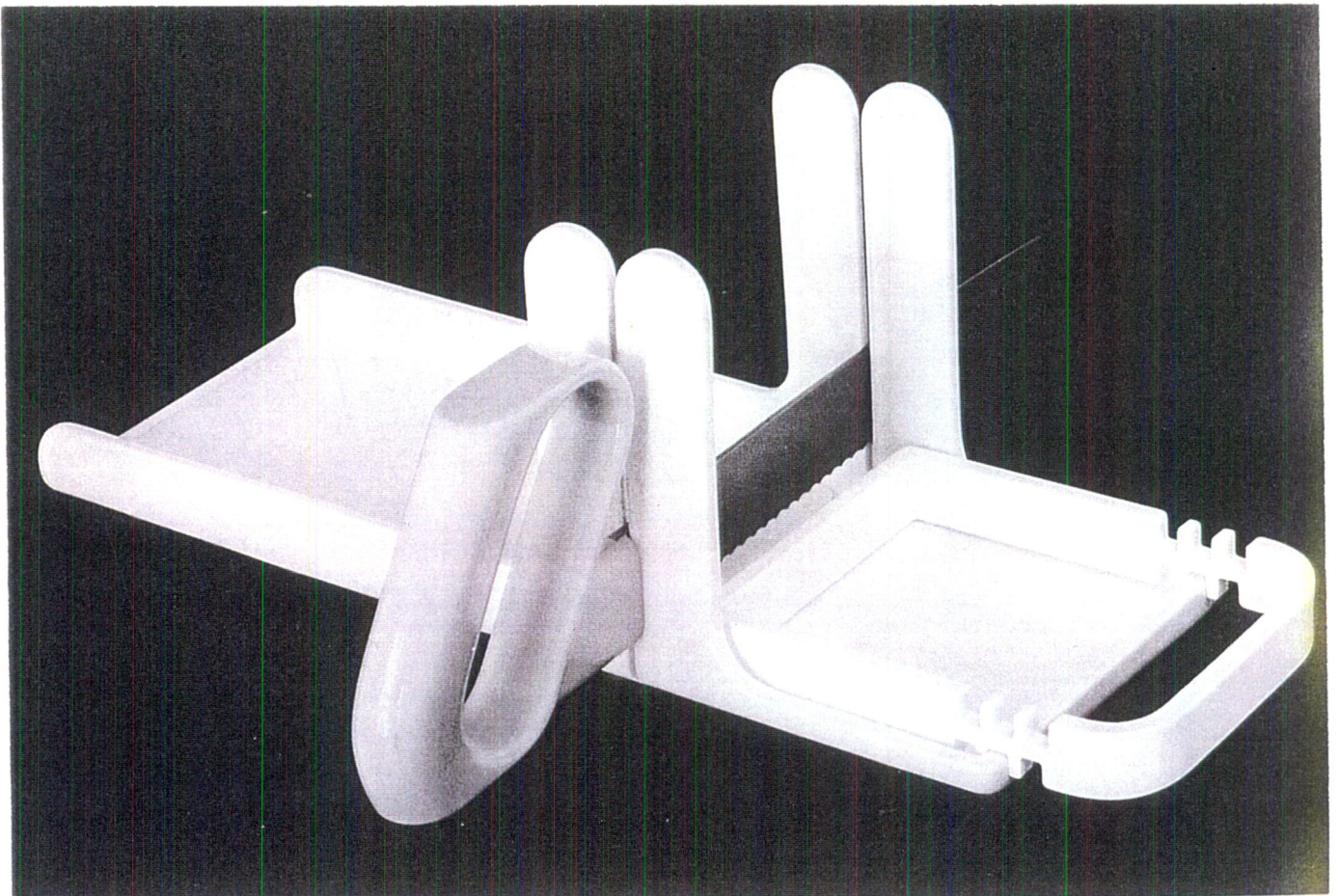


Figure 17 Ergonomi Design Gruppen, Knife and cutting board, (1974)

Identifying how difficult it is for a person with reduced grip strength to grasp a loaf of bread or vegetable and straight handled knife firmly and then exert the forces necessary to cut, the E.D.G. designed this effective ergonomic solution to make cutting a safer and easier task. Here we have the essence of transgenerational design. Though the impetus of the product was initially to solve a problem experienced by senior citizens, by considering *all* users the result was so effective (increasing wrist efficiency by 85 percent), that E.D.G. have captured a large part of the home market and secured excellent export sales (Papanek, 1983, p. 20). This was achieved by taking the process of cutting back to first principles, analysing and resolving each part logically and producing a stylish and marketable combination of ergonomics, use of materials and manufacturing processes.

Another very successful example of transgenerational design is A.T.&T.'s Big Button Phone shown in figure 18, designed by Henry Dreyfuss Associates. The buttons are large and touch-sensitive requiring little accuracy and allowing easy location and operation for users with limited manual dexterity or hand tremor. The graphics are large and bold and placed on a contrasting background which aids users with reduced vision. There are three pre-programmed speed dial buttons for the emergency services denoted by clear unambiguous graphics using standard pictograms for fire, police and medical units, enabling use by children and bridging language barriers. The standard numerical layout can be easily memorized and has found favour among blind users who can operate the phone without a braille template. Various versions of this phone have been mass marketed by A.T.&T. for the last twenty years (Pirkel, 1994, p.156).



Figure 18 A.T.&T. Big Button Telephone, (1991)

The need for an assistive device is an (often ignored) acknowledgement that the original product or environment has failed or is unsuitable for its users. Take for example packaging design. According to the Home Accident Surveillance System : 19th Annual Report 1995 (Consumer Safety Unit, 1995, p.30), in 1995 accidents involving containers / wrapping caused six deaths, 3,389 accidents requiring hospitalization and estimates the total number of such accidents to be 62,000 per annum. Pictured in figures 19 and 20 are devices designed to make opening containers and packaging easier, the most common being bottle and jar openers. There are a multitude of such devices on the market at the moment. The question must be asked why is there so much effort put into designing products aimed at particular



markets when the obvious solution is to correct the problem at source by redesigning the actual packaging, making it easier to use for everyone and alleviating the need for assistive devices.



Figure 19 Assistive devices to aid opening packaging



Figure 20 Assistive devices to aid opening packaging.

The role of assistive devices in comparison to transgenerational design is discussed by PirkI in Transgenerational Design, Products for an Aging Population, (1994). This comparison is presented in graphic form as shown in figure 21. During the aging process people reach a Critical Support Point (C.S.P.). At this stage we rely increasingly on our environment to provide sufficient support to allow us to carry out the activities of daily life and live independently. Assistive devices prolong the C.S.P. to an extent, however because of the negative connotations of some of these products they are not always used. Transgenerational products promote a positive self-image and psychological boost for senior citizens and this, combined with their physical support to compensate for declining functional ability, delays the onset on the C.S.P.

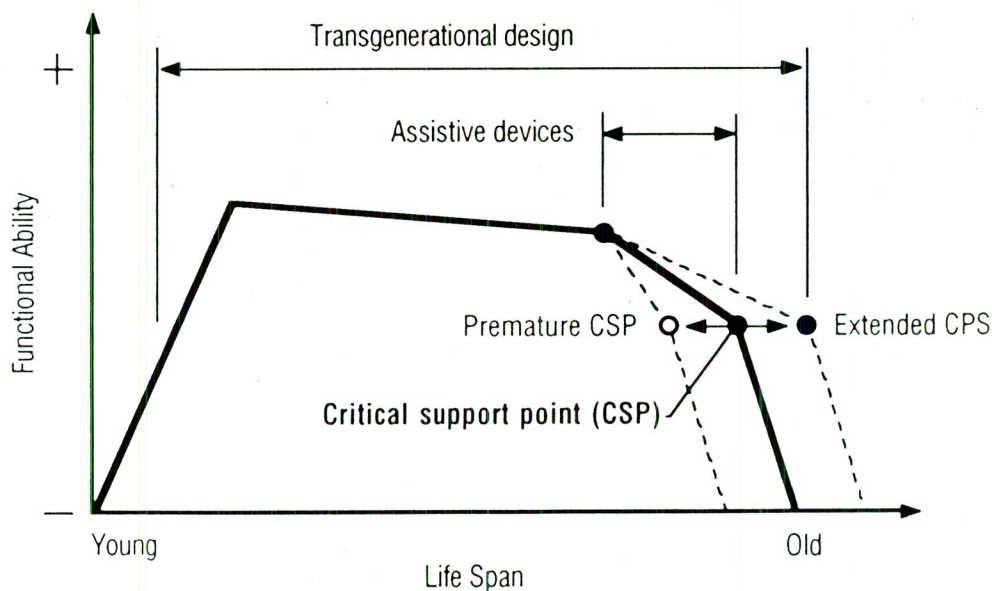


Figure 21 Critical Support Point

While there is, of course, a need for assistive devices in certain circumstances of disability, it has been shown that the all too common equation of disability and age is false. For people with mild functional

limitations these devices only provide a “quick fix” solution and do not address the wider issue of why assistance is needed in the first place. “Such discriminating designs are rejected by all except those whose condition demands that which is immediately available” (PirkI, 1994, p. 35) Therefore it is just as illogical to ask a 75 year-old woman with reduced grip strength to use a “special” product to open a jam jar as it is to ask the same of a 10 year-old boy.

The legacy of this assumption that design suitable for senior citizens comes in the form of assistive devices is that the aesthetics and style of much design “for” senior citizens reflects the myths of institutionalization and disability previously discussed. These designs are more akin to prosthetic devices and medical equipment than products intended for daily domestic use. Take the following different solutions to the same problem for example. Figure 22 shows four various aids designed to assist sitting and rising from the lavatory. These are taken from Fannin’s Healthcare Catalogue, the leading Irish supplier of domestic healthcare products and are the only choices available for this type of product in the catalogue. While they each perform their intended function to varying degrees of success they have one element in common : their aesthetic is cold, clinical and summons images of hospitals, sickness and dependency. The designers obviously never asked themselves what it would be like to use a product one would expect to find in a hospital at home. These examples demonstrate the link between the myths of aging and how designers perceive senior citizens and the attitudes designers adopt when designing for their needs.



Figure 22 Four devices to assist in use of lavatory.

In contrast to these, figure 23 shows the transgenerational approach taken to the same problem by Design Continuum Inc. in developing the Metaform Personal Hygiene System for the Herman Miller Corporation.

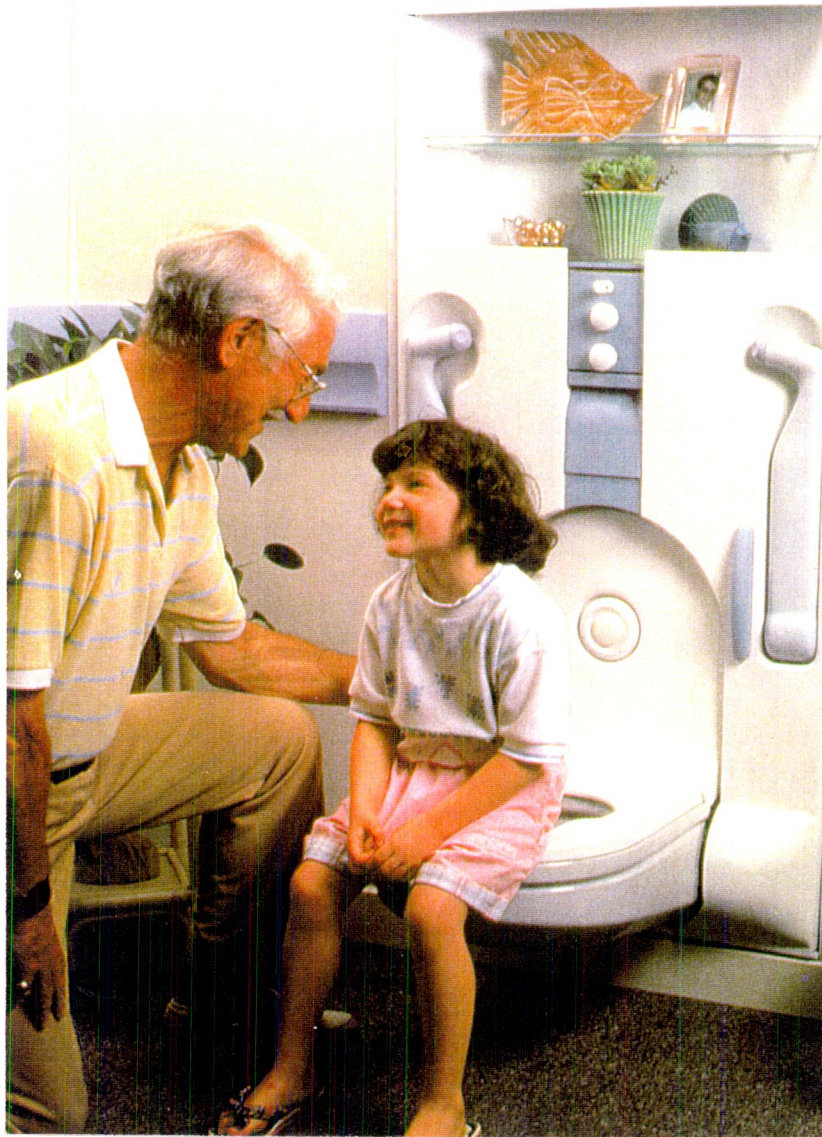


Figure 23 Metaform Personal Hygiene System, Lavatory Node (1990)

The system consists of a series of three “activity nodes”, sink, lavatory and shower/tub. “Each node is a dynamic module designed to adjust rapidly to the needs of individual users within a household, offering features that accommodate and appeal to users of all ages and abilities” (PirkI, 1994, p. 184). Push-button controls adjust the height of the lavatory node to



accommodate sitting or standing users and allows equal access to an adult, child or wheelchair user. Controls for flushing the lavatory and using the bidet can be activated by the elbow. The controls themselves are made from a tactile elastomer which offers redundant cueing. Fold down arms on the lavatory allow easier transferring from a wheel chair, and aid less flexible users to sit on and rise from the lavatory performing the same function as the dedicated products discussed above. The arms have an outer layer of resilient and easy-clean foam offering users a secure grip.



Figure 24 Metaform Lavatory with support arms down.

The aesthetic of this lavatory is much more soft and comforting than the devices above. Care and attention to detail has been paid by the designers to produce a comfortable and non-stigmatizing object that serves the needs of every user in the household.





Figure 25 Metaform Lavatory in use

It is the opinion of Hartmut Esselinger, founder of the German design company, Frogdesign, and one of the designers involved in the R.C.A.s New Design for Old exhibition held in 1986 that, "Enhancing the ergonomics and physical structures of products to suit older people should not lead to any deterioration in style" (Hamlyn Foundation, 1986, p.28).

The cookware shown in figure 26 is an example of this, the non-slip bakelite handles are shaped to minimise required hand strength and provide



maximum leverage and control. Extra long flame guards and rounded edges add to the safety features. However the styling of these products is the key to their success. They do not scream "We are products for senior citizens", instead they surreptitiously provide the support needed in an aesthetically pleasing way, ensuring appeal to young and old users. By using dynamic (and ergonomic) forms for the handles they are imbued with a sense of character in much the same way as recent products by Alessi. Thus the range would be equally at home in the kitchen of a young style conscious person as it would in the home of a senior citizen. The salient point being that as the young person ages the cookware will provide the physical support necessary for continued use, rather than forcing them to realise their needs have changed, that their familiar environment does not cater for these changes and they must invest in new solutions to what they then perceive as their age "problem".

Ergonomic Cookware

- Minimises required hand strength.
- Provides maximum leverage and control.
- Easy to grip, non slip bakelite handles.
- Extra long flameguards.
- Round edged.



Figure 26 Ergonomic cookware, (1995)

Chapter 7 : Future Directions for the Design / Senior Citizen Relationship.

The purpose of design lies above personal reputation and profit. Design will have no contribution to make if not founded on the needs of "all people" in a time of accelerating change and technological opportunities. Design may be the only means of relating future technology and environments to human needs (Caffrey, 1996, p.342).

The above quote from Denis Handy clearly states his view of the relationship between design and all its users. This view holds in common with the theories of transgenerational and universal design that the needs of the widest possible range of users must be taken into account at the beginning of the design process for the resultant product or environment to meet the requirements of all potential users. This is the basis on which the future relationship between design and senior citizens should be built.

However, from personal experience in design employment in Ireland, it is obvious that not all professional designers share this view, or indeed, are even aware of the particular requirements of senior citizens. Thus, education is where the potential lies to generate an appreciation for methods such as universal and transgenerational design (especially in the first two or three years of undergraduate study when working methods and outlooks are formed). PirkI emphasizes the role of education in the relationship between design and the user :

The relationship between industrial design and people is clear. The student now needs to know some of the overall characteristics of this fast-growing, extremely diverse group of people whom we designate as "old". With this added knowledge and awareness, students should be better prepared to design transgenerational products without alienating the potential consumer concerned with safety, convenience, comfort and ease of use (PirkI, 1988, p.13)

The focus of design education needs to be fixed firmly on the end user. It is all too easy in a educational establishment composed of young active students to lose sight of the fact that not all users are young, in full health or without functional limitations. It is certainly the case among student designers that they regard their work as “ objects d’art” and lose sight of the fact that they are designing for people and not the front page of I.D. magazine. It is unfortunate that there is a tendency among student designers to model themselves on Philippe Starck rather than Victor Papanek or James Pirkel. While particular projects may be run to design products for senior citizens or disabled, there needs to be emphasis on the fact that transgenerational and universal design are methods to be applied to each project encountered, not simply a coat to be worn for one project a year and returned to the wardrobe.

An example of the importance of user-focused design is provided by a project run by the Netherlands Design Institute, Eindhoven in 1995 (<http://www.design-inst.nl/home.html>). The brief was to design cutlery suitable for use by those with reduced manual capabilities due to conditions such as arthritis. The twenty three participating students presented the finished prototypes to be tested by a user group in a nearby residential home. Only one design was accepted by the users as an improvement on existing designs on the basis of function, aesthetics and ease of use. This was a result of the students making assumptions about the needs of the users based on their preconceptions about senior citizens. Instead of finding out their real needs from consultation at the beginning, the students worked on the basis of their assumptions and thus had their work rejected. Although this was a valuable lesson it could have been avoided had the project been user-focused and referred to the users at critical stages in the project. It is only by this designer / user interaction, rather than a presumption that “designer knows best”, that products of merit can be created.

There is a tendency in design education to separate design history and theory from practice and studio work. This can lead to an apathetic attitude

to design history on the part of some students who may fail to see its vital relevance to the formation of their outlook. Combining the two in a more active role involving co-operation between the two disciplines would promote students ability to see themselves as future links in the design tradition and as bearers of responsibility to incorporate or refute, but at any rate develop on, the work carried out by their predecessors. Addressing the areas of age, gender and ethnicity (an issue virtually ignored in Irish design education, despite the fact that many graduates work on an international stage) while students will give designers an appreciation of the issues involved and this will be carried into their professional careers helping to tilt the balance towards a more inclusive approach to design.

The design process should have a more multi-disciplined approach taking on board the expertise and opinions of not only the designer and the other professionals but also those of the intended user from the outset. This opinion was shared by Occupational Therapist, Susan Brennan working in the National Rehabilitation Board. Initially surprised to be asked her opinion on design, she provided a valuable insight into the frustrations of people, who, due to illness or accident related limitations suddenly find that their once accessible and comfortable environment has become a source of threat and handicap. Thus by combining the knowledge of professionals gained by experience in related fields, the designer can tap into a wealth of resources. Allaying this with user requirements can create a multi-faceted product that satisfies the demands made on it at every level.

Pirkl claimed in 1988 that information in regard to design for senior citizens was fact rich and theory poor (Pirkl and Babic, 1988, p.12), referring to the in-depth knowledge of physical, psychological and social changes that take place due to aging but the lack of theories or guidelines for the successful execution of this knowledge by designers i.e. drawing design conclusions from the facts and placing them in a cultural framework. The theories discussed earlier show that this imbalance has been addressed and there is

now a wealth of theory and practical guidelines relating to this subject. However it is not enough for this information to exist and for research to be regarded as an end in itself. It is now time for the dissemination and implementation of these theories among students, design tutors, professionals and users themselves. For this to be most effective lectures must be backed up by active workshops and collaborations combined with meeting user groups and using case studies to add a sense of realism and impress the vital nature of this work on participants.

Conclusion

Apart from any sense of moral rectitude on the part of the designer, it is economically viable to design with the senior citizen in mind. This is due, not only to the expansion of the market in terms of size, but also the fact that this market section have more leisure time and disposable income than ever before. They are increasingly more discerning when it comes to product selection and more demanding in terms of product performance and their requirements. Designers however, should be careful to avoid assumptions and preconceptions of senior citizens and not to fall into the trap of designing "for" senior citizens. This is a counter-productive effort stigmatizing the product and intended user and leads to an undesirable situation whereby generational and functional differences are marked by user-specific products.

Designers should instead include the needs of the broadest range of users from the beginning of the design process thereby ensuring the resultant product or environment is suitable and comfortable for use by a cross-generational market including those of all ages with functional or sensory limitations.

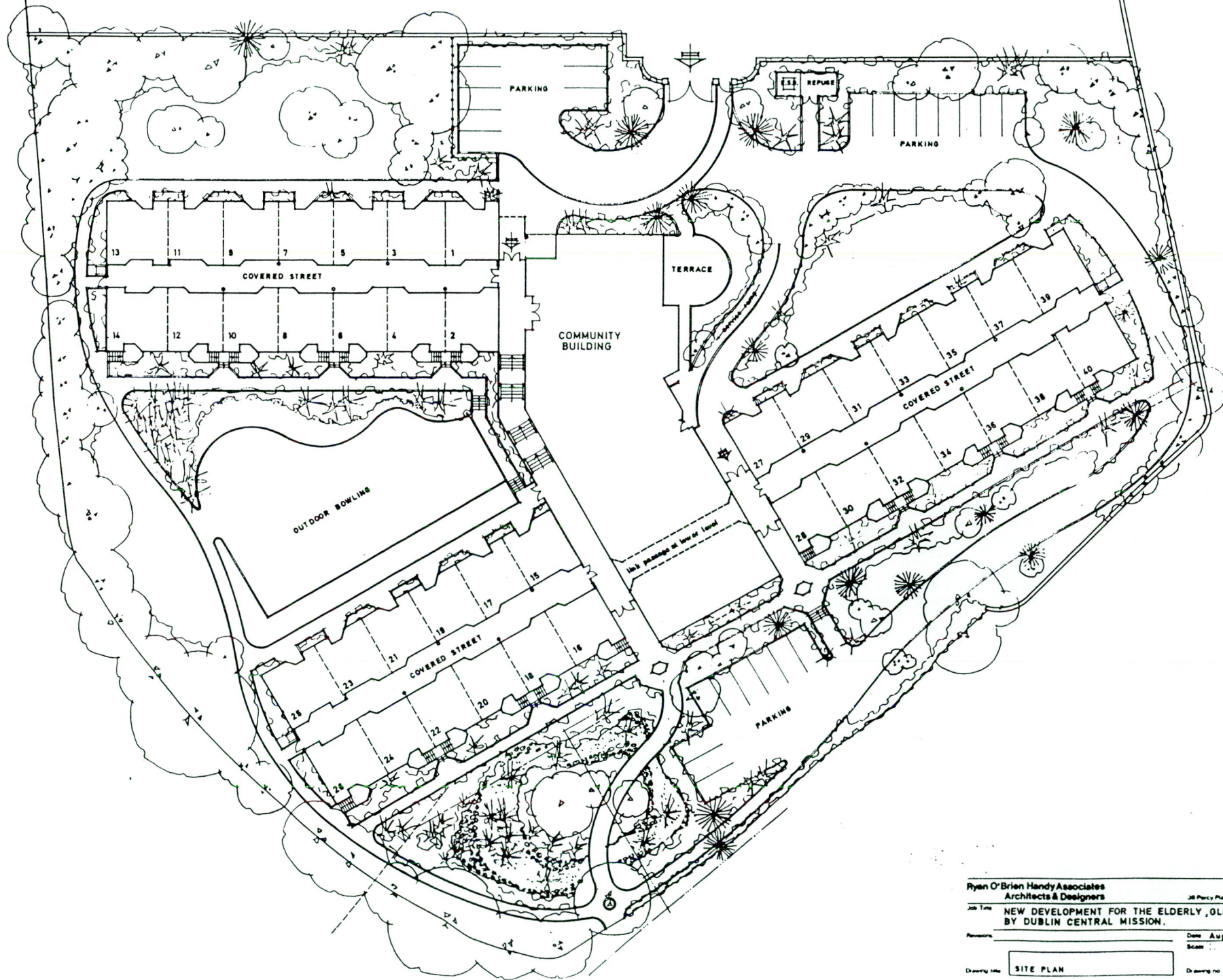
Senior citizens do have particular requirements due to age-related reductions in functional and sensory abilities. However, these conditions only affect some older people and it is inaccurate to equate old age with disability. They do not need or want specifically designed products to cater for these requirements. As long as they are considered throughout the design process products and environments suitable for them will also be easier to use by the rest of society.

There is much excellent work being done in the area of research and the formulation of theories and guidelines regarding design and senior citizens by a variety of individuals, institutions and organizations. However there is little evidence to suggest that this work is being utilized to the full extent. The

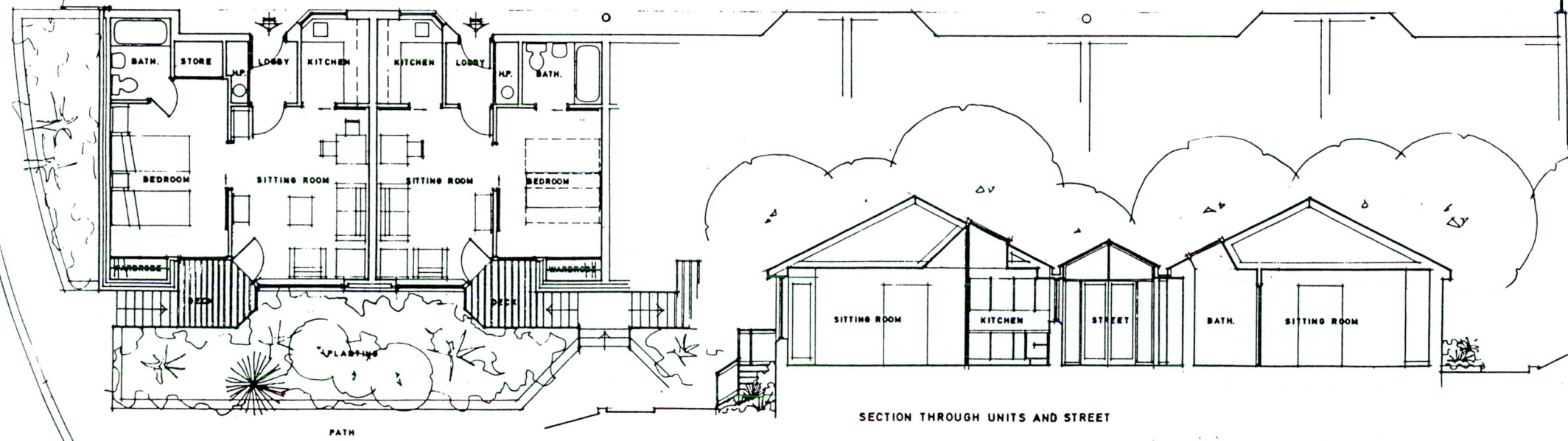
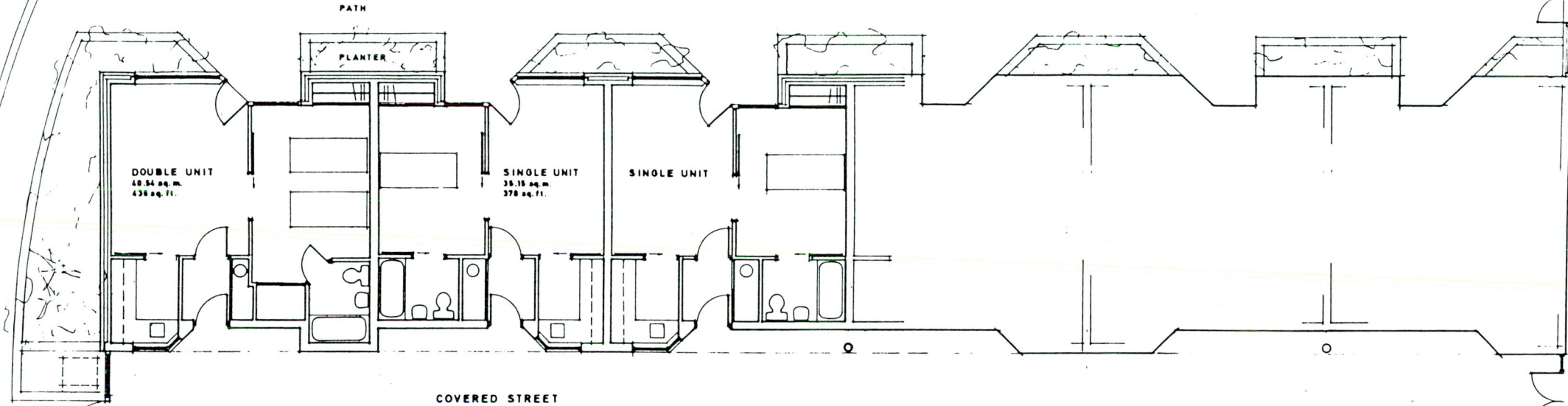
focus of design education should be fixed on the end user and encompass universal and transgenerational design principles throughout the course of study. In this way students will become familiar with this approach to design and carry this experience and knowledge into their professional careers.

Designers should take a more holistic approach to their work, viewing products not merely as objects we use to perform a task but as extensions of ourselves that can expand our capabilities and enrich the quality of our lives. Viewing products in this way allows the designer to build usage scenarios that offer insights into the requirements of all potential users.

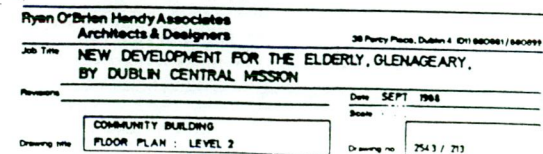
Appendix A : Site maps of Ailt an Óir



| | | | |
|---|--|--|------------------------|
| Ryan O'Brien Handy Associates Architects & Designers | | 38 Percy Place, Dublin 6, D01 H8C6H1/BAU/001 | |
| Job Title | NEW DEVELOPMENT FOR THE ELDERLY, GLENAGEARY, BY DUBLIN CENTRAL MISSION. | | |
| Revision | Date | | Aug. 1988 |
| | Scale | | |
| Drawing title | SITE PLAN | | Drawing no. 2543 / 200 |



TYPICAL LAYOUT : DOUBLE & SINGLE UNITS



LOWER FLOOR
LEVEL 1

UPPER FLOOR
LEVEL 3

MAIN FLOOR
LEVEL 2

Ryan O'Brien Handy Associates
Architects & Designers

Job Title: NEW DEVELOPMENT FOR THE ELDERLY, GLENAGEARY,
BY DUBLIN CENTRAL MISSION.

Revision: Date: Aug. 1988
Scale: 1

Drawing title: COMMUNITY BUILDING / FLOOR PLANS Drawing no: 2543 / 201

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