

"Social Responsibility in the Practice of Interior Architecture"

(A practical model for aged care and disability support by design intervention with suggested future research strategies, costs and regulatory considerations)

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1.00 OUTLINE OF ACCOMMODATION NEEDS AND RELATED "ATTITUDES".

Preamble

This paper will focus initially on the professional responses that should be forthcoming from the legitimate designers of interior spaces for 'People with Disabilities' (PWD) & 'Frail Elderly People' (FEP) Additionally it will relate that response to current developments of a technological nature and reference it to costs and further development, through structured research efforts.

Background

It is clear from my researches, that there is almost as wide a variety of accommodation options for people who are frail and elderly as there are opinions as to which is the most appropriate, acceptable and cost effective.

Before professional designers launch themselves into providing what they feel to be the "ideal solution" it would be prudent to consider what is really meant by the ageing condition.

What effects does it have in particular respect to personal habitation in today's world, how much do we really know about elderly peoples real needs and finally, to what extent are we capable of responding positively and effectively to those needs.

My formal training as an Architect, Interior Designer and Disability Access Planner had not particularly prepared me to deal with such issues.

However at the age of 69 and with some 38 years of continuous involvement in health care, access and disability rehabilitation issues together with formal post graduate qualifications at both a professional design and personal level, I am now better equipped to comprehend and respond positively to most matters in this field, which is just as well since I deal with such matters on a daily basis and am rapidly approaching the chronological age that is considered elderly !!

I appreciate that people who are elderly are not necessarily disabled and might well resent the suggestion that they might be, however it is an unfortunate and undeniable fact that elderly people are, vulnerable to increasing levels of deteriorating health and falls trauma, the effects of which can often be devastating and certainly debilitating.

Indeed it is fair to say that in general terms the most vulnerable in society are the very young and the very old, for quite opposite reasons.

Responding to those levels of vulnerability is not merely a natural & compassionate reaction, it is also quite irresponsible not, to do so!

As [Dr Johnson's](#) biographer [James Boswell](#) wryly commented on

“We have but two absolute certainties in life, one is to grow old & the other is to die, and the former is infinitely more desirable than the latter “

You would think, would you not, that knowing this fact would motivate us to design our living, work and recreational environments with that certainty in mind, sadly as we know that is not currently the case.

Old age can for some people, whose health has deteriorated to the extent of seriously diminished mobility, visual and audio capacity, old age can be quite unattractive and for some a disagreeable and painful burden.

While there are significant design challenges with major tasks ahead of designers of many disciplines, at the heart of the matter ageing is certainly not just a design problem in isolation.

Incredibly, designers themselves are often overlooked as the problem solvers (in conjunction with others) in respect of those design challenges because of negative and ill-informed expectations of their professional training and abilities.

It is important to look critically at the causal factors in this wide spread neglect of design talent.

1.01 PERCEPTIONS OF DESIGN SKILLS/INVOLVEMENT

At one level there is the media inspired public notion of a designer being primarily concerned with the needs of the privileged and wealthy, thus inadvertently creating the negative impression that design issues of social consequence are at a low level of-priority for many practitioners.

At another level (beyond the public's perception of a designers worth) are some entrenched attitudes that regrettably still exist within the design profession itself, design educators and aided and abetted by the producers of glossy design publications, that insist on emphasising the superficialities and cosmetic aspects of designers work.

There is unfortunately more than a grain of truth in the assertion by Brunel University research fellow in health economics, Justin Keen:

“Architects and other Designers have so far made few specific contributions to the lives of elderly people in their own homes”

"Interiors; architecture in the lives of people with dementia" [Keen J.](#) (1989, P-1)

In this regard I am not referring only to the design of retirement villages that are currently mushrooming in just about every city, suburb and country town in Australia and indeed in many other parts of the world.

I refer to the dearth of research at design level (that needs to connect with appropriate sociological research) that should be initiated by professional designers and universities targeting current and future needs in aged care housing.

All too often, if designers are involved at all it is regrettably after all the basic decisions have been made by others, leaving the designer with a substantially "cosmetic" design task. Sadly many designers do not rise above this role and compliantly "decorate" the spaces they have been requested to "design".

Visiting American design consultant and fellow keynote speaker at this colloquium, [Patricia A. Moore](#) refers eloquently and effectively in the "abstract" of her paper about "Design for Humanity". I totally agree with those sentiments and suggest that "Design for Humanity" is the best possible starting point for any design education program that seeks to prepare design practitioners for a holistic approach to the needs of a total community, irrespective of age, disability and cultural circumstances, rather similar to a "cradle to grave" philosophy in sociological and design terms.

1.02 WHAT KIND OF ACCOMMODATION? RETIREMENT VILLAGE OPTIONS

It seems to me to be a sad commentary on current attitudes in the "developed" world that when accommodation needs for elderly people are discussed in open forum, there appears to be a general tacit acceptance that retirement and nursing homes (for the most frail and vulnerable) are possibly the best answer to the "problem" of accommodation for aged people.

Interestingly, the more primitive and generally less developed society's in the world would appear to find the care of the elderly . within the framework of community and family life, unaffected by generalist government social policies as the most natural and practical solution, surely there is a simple lesson to be learned from that.

Irrespective of the levels of sophistication and complexity of modern life in the "developed" world, basic humanity does not change, regrettably however, it seems our attitude to it does !!

It would therefore be instructive to consider the dimensions of the "problem" prior to arriving at any kind of a solution.

Since there is quite clearly no simplistic answer to the accommodation needs of aged people, nonetheless the choice as to which best suits a person at a personal, social and economic level, should rightfully belong to the individual aged person along with their supportive family,

This suggestion of course pre-supposes that the aged person has the benefit of a supportive family (hopefully also a caring one) and indeed is also capable of understanding the "options" before them and deciding accordingly.

In this regard it is important for architects and designers to develop communication skills with their elderly clients unencumbered by unnecessary technical and sanitised politically correct jargon.

Any proposals aimed at solutions to accommodation needs, must equally consider the relationship and needs of the supportive family and particularly the specific "carers" (where such support exists) if it is to have any chance of success.

1.03 PRIVACY/PERSONAL CONTROL FACTORS.

High on the list of essential requirements in aged care accommodation is the need for personal privacy, a capacity to understand the physical environments that are created for them and above all, a feeling of control over their lives.

Justin Keen* refers to Booth's comment:

"...the provision of accommodation that is generally accepted as being adequate to most needs, tends to overlook critical needs of privacy and control over personal living preferences,"

"Interiors; architecture in the lives of people with dementia"

Keen J. (1989, P-1) Home truths; Old peoples homes & the outcome of care- Booth T. Gower, Aldershot (1985)

This comment together a recognition of the importance of, appropriate dialogue with designers to ensure that their personal needs and preferences are being recognised and embraced into the culture of accommodation design, are valuable indicators for design practitioners seeking to achieve "best practice"

One of many guiding principles for designers of accommodation for people who are elderly and coping with a range of diminishing capacities, is to understand the effect of environmental space that has grown from a domestic cottage scale to that of a multitude of cottages encapsulated within a retirement village complex, complete with associated administrative and service facilities.

The effect of which can often result in confusion to the inhabitant of those spaces, simply because the exponential growth in the scale of environmental space can and often does seriously cause disorientation in basic matters such as " way finding".

This disorientation extends beyond the obvious problems of "way finding" within a retirement living complex, to the equally important aspects of social disconnection with immediate family, close friends and neighbours.

Unless retirement villages are designed with all of these factors in mind and with the greatest levels of sensitivity to the expressed needs of its inhabitants and most importantly with appropriate physical and transportation connections to the mainstream of community life, they run the risk of becoming sanitised ghettos.

There seems to be a pre-occupation with some social planners (and certain business interests) with the separation and concentration of elderly people into specific types of habitats, isolated from mainstream community life.

The accumulated wisdom and capacity of senior citizens to continue to make a real contribution to community and family values, provides a case for a lesser concentration of aged people in one locality and for much more social contact at all levels to the benefit of community life.

1.04 ENVIRONMENTAL AND DESIGN CONSIDERATIONS "FAMILY HOUSE" OPTIONS.

I suggest, not so much as an alternative but as a related option, an accommodation model that brings elderly people family and community within an umbrella of care and within extended specially designed "one family" housing, or "einfamilienhausen", encompassing the full chronological spectrum of a single family but with separate areas of accommodation for each section of that family.

This suggestion, it is recognised has strong personal connotations and will only find favour if it suits the personality and personal economic capacities of individual families.

If it is to take any new directions in a design sense a new and rigorous examination of existing planning and building regulations needs to be undertaken at research level initially, with even more emphasis on "performance based standards" in the regulatory process at local government level.

Important though regulatory guidelines are in the design process, they are but benchmarks and I detect in the work of some practitioners a tendency to timidly work up the regulatory "edge" and then go no further, the application of performance based standards together with some good old fashioned lateral thinking can work wonders in the hands of a dedicated practitioner.

1.05 PHYSICAL CAPACITIES

All of the clinical evidence available, informs us that the single common denominator that adversely affects frail elderly people is the progressive diminishing of a range of human capacities.

Diminished capacities such as hearing, vision, mobility, dexterity, memory and energy levels all require us as designers to carefully consider what effect such diminishing will have on an aged person's use and enjoyment of their personal space. Problems related to mobility alone, should cause us to focus additional design attention on interior space, simply because generally speaking, much more time is spent indoors than otherwise.

Some of the factors that will influence this view will be, the prevailing physical climate, the health and mobility status of the individual person and the degree of support from their family (i.e., frequency of outings etc.).

Therefore, notwithstanding the obvious importance of external landscaped space and spaces in public use buildings (i.e., libraries, places of entertainment and hospitals etc.) a special concern with the design and subsequent human use of interior space is of paramount importance.

1.06 CLIMATE CONSIDERATIONS

As any elderly person or health care professional will tell you, the older one gets the more susceptible one becomes to extremes of climatic change.

Chills and colds resulting from draughty interior spaces or inappropriate or non-existent heating systems that adversely affect everyone, simply have the potential to be more serious for elderly people.

A minor cold that may be the result of the above mentioned conditions in a young quite fit person, can often cause quite serious pulmonary infections in a relatively inactive elderly person, ergo, climate control and thermal insulation factors in housing design are critical for human comfort and the maintenance of good health.

A table of climatic conditions related to work efficiency included in "Workplace Accessibility" Sprintz H. (1998) has equal relevance to frail elderly people at home with obvious design adjustments being allowed for the higher incidence of their relative levels sedentary activity.

Ergonomics and anthropometrics, human comfort and response to climate and temperature

| Degrees F⁰ | Degrees C⁰ | Effect |
|------------------------------|------------------------------|---|
| 110 | 43 | Just tolerable for brief periods |
| 90 | 32 | Upper limits of reasonable tolerance |
| 80 | 26 | Extremely fatiguing to work in, performance deteriorates badly and people complain a lot. |
| 78 | 25 | Optimal for bathing, showering. Sleep is disturbed |
| 64 | 18 | Physically inactive people begin to shiver. active people are comfortable |
| 60 | 16 | Manual dexterity impaired (stiffness and numbness of fingers) |
| 50 | 10 | Lower limits of reasonable tolerance |
| 32 | 0 | Risk of frost-bite to exposed flesh |

2.0 SAFETY CONSIDERATIONS

With regard to basic safety issues in housing design (simple matters, such as the provision of non slip floor surfaces and good lighting etc..) it should be understood by younger people, that if they fall, they risk possibly bruises only to their bodies and ego's.

A similar fall to an elderly person can have the traumatic effect of causing major hip fractures, potentially bring on traumatic shock and serious long term health problems or in some extreme cases, fatalities.

Some four years ago at the request of the Prince of Wales Medical Research Institute, I conducted a workshop on the architectural implications of falls trauma in the built environment related to frail elderly people, they also asked me to review the publication, "[Stay on Your Feet](#)" Garner E. (1994) published by the North Coast Public Health Unit, Lismore NSW. [Back up research details to the Stay on Your Feet brochure.](#)

This compact and useful booklet is aimed at assisting elderly people to cope with their imperfect environments by alerting them to the hazards and consequences of falls, I commend it's homely wisdom to architects and designers who I feel sure will also be alerted to hazards in building design and construction that designers can easily eliminate.

The basic outcome of my workshop and Everal Garners book, which was discussed at length, has been a more detailed consideration of safety issues generally and more particularly for frail elderly people in a paper focusing on design intervention aimed at achieving safety in the built environment. "Strategies for minimising disabilities caused by accident trauma" Sprintz H, 2nd International rehabilitation Congress, Dubai UAE 1998.

2.01 DESIGN RESPONSIBILITIES AND AUTHORITY

While not wishing to be an apologist for architecture that seriously fails to meet the needs of frail elderly people, it is worthwhile noting that much of the built environment is, I regret to say, not actually designed by architects or interior designers but often as not, by people who in building design terms are simply amateurs.

Unfairly such buildings are often judged by ill informed critics as being the responsibility of the non existent architect or designer all of which is unhelpful in redressing negative public perceptions of the value of design intervention.

2.02 LIGHTING/COLOUR AND TEXTURE FACTORS

A basic but often overlooked problem related to diminished vision (that apparently affects just about everyone over sixty) requires designers to consider lighting with particular care.

Consideration of colour and texture rank equally with lighting, in design terms in the context of achieving maximum safety and personal confidence in building design for those people whose age has caused significant diminishing of sensory functions.

Not only is it necessary to be concerned with increased lighting levels, but perhaps more important is the placing of the lighting source, for reasons of safety and convenience.

For example lighting to steps, stairs, kitchen and laundry worktops should desirably be located at the "target area" i.e., directly close to foot traffic and household working activities, well clear of "shadowing" problems.

The issues of lighting, colour and texture are considered in some detail in the publication issued by the RNIB (Royal National Institute for the Blind) ["Building Sight"](#) Barker P. Barrick J. Wilson R. (1997) and are also referred to in the context of the workplace environment in, * "Workplace Accessibility" Sprintz H. (1998)

Both of these publications offer design guidelines for people with physical disabilities and therefore offer useful information to designers considering the needs of elderly people who represent a high proportion of people with partial visibility problems.

3.0 RHEUMATOID ARTHRITIS AND AGE/OCCUPATION RELATED INJURY FACTORS

Perhaps the major problem for the majority of elderly people is arthritis in all it's forms (which unfortunately I also share) a condition which varies from a restriction in mobility and dexterity to downright pain, discomfort and seriously restricted mobility.

Dr Anthony Clarke in his book [Rehabilitation in Rheumatology - The Team Approach](#) Clarke A. Allard L. Braybrooks B. (1987) remind us that in the UK alone, arthritic related back pain accounts for at least 35 million days lost annually to British industry.

These statistics leaves a sad legacy for those who are now elderly and have worked most of their lives, it should be borne in mind that many elderly people bear, in addition to the general forms of progressive arthritis, problems associated with their previous working conditions that because of significantly less enlightened working environments in past years, produced disablement such as "vibration white finger", RSI, back injuries & industrial deafness.

In his introduction Dr Anthony Clarke, refers to the wide range of arthritic conditions that are described medically by different terminology and may well have a hereditary basis, but also points to the environmental linkage from an occupational cause that has the capacity to cause quite serious

degenerative conditions such as severe osteoarthritis.

He further points out that as far back as the late 1960's a classic study in the USA relating disability to rheumatic disease, found that that locomotive diseases represented the largest group of impaired people in the country, amounting to one third of the total.

However in the elderly, this figure rose to 40%. Thus in a population of 100,000, over 1,000 will have rheumatoid arthritis, 120 will be severely disabled and 25 will be chair or bed bound, the same population will have 300 or more patients with severe osteoarthritis of whom 50 will be totally immobile.

Detailed reference to the above mentioned occupational related disablements that in particular affect elderly people in their retirement years, is also made in the paper authored by Robert Feeney ` 'Ergonomics in the design, use and selection of hand tools" Feeney R. Sheffield 1997.

4.0 FURNITURE/EQUIPMENT/SERVICES

The design and location of the above items presents yet another opportunity for designers to exercise their design skill (mixed hopefully with some compassion) by arranging door furniture, light and power switches and sanitary ware faucets in "anthropometrically and ergonomically" appropriate positions to assist people to use them comfortably and conveniently.

Yet another consideration in the design of interior space, is the detailed design and location of built in furniture and fitments. By carefully detailing such furniture/fitments so that a minimum of low bending and high stretching is required to access space within the fitment, the general practicability and convenience of such storage facilities is greatly enhanced.

4.01 PLANNING FOR CLIENT'S KNOWN PROGNOSIS

Many elderly people who are living in traditional housing and who are fully "ambulant" may unfortunately in their declining years develop a deteriorating condition that causes them to be "non-ambulant" or confined to a wheelchair. In such conditions the designer needs to design the interior with that prognosis in mind. !

After all, if design is a euphemism for "creative thinking" then planning is but another euphemism for "thinking ahead", in this context I am talking about planning. !

4.02 ERGONOMIC/ANTHROPOMETRIC FACTORS

If there is a benchmark for designers to better understand how human interface with environmental spaces, furniture and equipment affects the lives of elderly people it must surely be the study of ergonomics & anthropometrics.

The work of the late [Henry Dreyfuss](#), famous American industrial designer

* "[Humanscale 1/2/3](#) Diffrient N. Tilley A.R. Bardgiy J.C. (1974) is possibly the most important publication of it's type and should be, I suggest an essential item on the bookshelf of any serious architect or designer,

Recent studies by eminent British ergonomist/engineer [Robert Feeney](#) of RFA Ergonomist, Loughborough Leicester in his paper supporting an Ergonomics Society seminar "Ergonomics in the design, use and selection of hand tools" Feeney R. Sheffield 1997 reveals much valuable information for architects and designers to apply in their daily work.

There are of course many other examples I could cite, but I think the general point has been made with challenges clearly before interior designers and architects as professional designers of interior spaces to learn the appropriate skills and apply them in daily practice.

4.03 ELECTRONIC TECHNOLOGY TOOLS

The skilful utilisation of current electronically based technology is yet another "tool" to be skillfully applied in a range of assistive devices that have the potential to make interior spaces work more effectively for the benefit of elderly people.

Basic devices as hand held controls for the T.V. radio and video recorder can with relative ease be applied to operate the opening closing of doors, cupboards, air-conditioning/heating systems and security systems etc.. It is important however for the designer not to be completely seduced by this persuasive and pervasive technology, bearing in mind that for many aged people this technology is as daunting as it is potentially useful.

The term used by Australian expatriate author Robert Hughes now a resident of the USA *"The Shock of the New" Hughes R. BBC publications 1982 (which is actually the title of the book) is particularly appropriate here, even a relatively "young/elderly person" like myself can readily empathise with attitudes that may seem to younger people as being somewhat "Ludite".

4.04 TECHNOLOGICAL CONSIDERATIONS, INFORMATION AND ALTERNATIVE TECHNOLOGY

My professional activities have required me to learn to cope with the "information revolution" thus gaining the obvious benefits electronic literacy can offer, but like many of my chronological contemporaries I reserve the right to occasionally reject it and even sometimes resent it !

As I have mentioned in several of my recent papers on design for disability issues, it is important for architects and interior designers to accept their limitations and realise that all solutions to "access" matters in buildings generally and housing in particular simply cannot always be achieved by conventional architectural/building techniques.

In such circumstances it is vital that they understand and have respect for the unique skills of industrial designers, mechanical and bio-medical engineers.

In many instances in my practice, the appropriate and timely application of their design skills have been invaluable in solving seemingly insoluble problems within the building environment.

An example of this point is in the design of short distance vertical lifts and "inclinators" for otherwise inaccessible locations, together with a "systems design" approach to climate control, security systems and fire/smoke detection, all of which are usually designed by professional Engineers.

My respect and admiration for engineering/industrial design ingenuity is based initially on my military experiences in the Royal Engineers and Royal Australian Engineers wherein I was required to function as a (Military) Engineer in close collaboration with "all arms" colleagues.

Examples of my collaboration with industrial design/engineering colleagues on design projects for clients with disabilities were displayed in the "Poster Presentations" that ran alongside the "Colloquium" program.

It may seem to be self evident, but it is nonetheless worthy of note, that possibly the most important collaboration a designer needs to engage in and nurture, is the one that needs to occur between the aged person (client) their carers, occupational and physiotherapists.

5.0 INTERFACING COMPLIMENTARY HEALTHCARE AND DESIGN SKILLS

- Health care professionals (O.T's, Physio's, District Nurses, Carers etc.) in this context are, in addition to their unique professional skills, somewhat akin to "infantry forward scouts" in observing and reporting on specific needs, that if overlooked or not, understood by the designer will almost certainly detract from the value and effectiveness of the final design result.

Therefore this collaboration is essential in order to properly understand the fundamental parameters of client needs and as such is vital to the ultimate success of the design project

To minimise and hopefully eventually eliminate much of the confusion that exists in the public's mind as to which of the many "experts" in building design they should consult with, I have recently completed a research study of professional relationships between design and health care practitioners in the context of my recent MA Design/Research for Disability dissertation presented at London Guildhall University (July 1998)

Within this dissertation I developed a series of "protocols" defining the specific skills, abilities and values of those who are possibly best equipped to identify problems, such as the above mentioned health care practitioners, carers and of course the client. The group that are best equipped to actually solve presented problems, are architects, interior/industrial designers, bio-engineers and manufacturers of specialised equipment/services.

The following tables (originally published in my MA dissertation) sets out a suggested protocol for the consultative process that has the best chance of achieving a successful outcome, with commonsense and mutual respect for each others specific skills and abilities being the basic operational benchmark.

Typical example of a strategic project consultancy relationships

| Consultant | Task |
|--|--|
| Architect/access consultant | Overall design, documentation, coordination of consultants and contract administration of project. |
| Occupational/physiotherapist ergonomist, client with disability personal carer or clients family | Definition of the extent and/or limitation of mobility, vision, hearing or comprehension, etc. of the client to assist in an understanding of the clients needs and problems |
| Industrial designer design Bio-engineer | Investigation and development and/or of technological devices as necessary in the overall solution. |
| Structural, mechanical systems as electrical, hydraulic or acoustic Engineers | Investigation and design of all structural and/or "service" engineering support or as necessary in the overall design solution. |
| Building contractor and specialist contractor/suppliers | Early collaboration (where a "negotiated contract" is either acceptable or feasible) to achieve a construction program that is mutually satisfactory to client and contractor alike in the context of "staged works" |

Client or "core" group.

- Client with a disability, or carer/supportive family as appropriate Planning committee of "board"

representing organization providing residential/work/personal care support facilities for clients with profound disabilities.

Design, or "problem solving" group.

- Architect/Access Consultant
- Industrial/interior Designers
- Structural and "Service" Engineers.
- Ergonomic and Acoustic consultants
- Contractors and specialist Manufacturers

Health/Care Practitioners or "problem identification" group

- Occupational and Physiotherapists
- District/Community Nurses
- Specialist Medical Practitioners
- Home Care/Personal Care Providers
- Social Workers/Employment Support organisations

Institutional and/or funding group

- Appropriate National and Local Government Agencies
- "Peak" Representational Organisations (i.e., RADAR in the UK and ACROD in Australia)
- Boards of Organisations providing funding and other support facilities etc.,.

This listing is by no means exhaustive and can be supplemented with other people/organisations with specific and pertinent skills as and when required.

6.00 SKILL ENHANCEMENT REQUIREMENTS

I must stress that in mentioning Architects and other designers in this context I only mean those who have undertaken additional post graduate study or CPD (continuous professional development) training in disability/access and aged care matters as a basic enrichment of their architectural and design training and as a preparation for this specialised aspect of design.

Having said that I also believe that basic access awareness in respect of all forms of disability and aged care issues should be mandatory in any architectural or design course in Australia and as such should become part of the fundamental "culture" of design thinking henceforth.

A great deal of confusion occurs when design practitioners go about their business in relationship to aged care and disability access matters without being fully briefed by the clients and specialist practitioners such as O.T's carers, district nurses and home care workers.

Similarly and with equally potentially disastrous results, O.T's and other health care practitioners would be well advised to restrain themselves from presenting as design consultants, when a focusing on the deploying their unique and valued skills in the all important area of "problem identification" is clearly more productive in a 'team' situation.

Regrettably there are many examples I have encountered in the UK and Australia where highly skilled health care practitioners have set up design practices without the benefit of even a basic design training in architecture, interior or industrial design.

The real answer in my view lies in close collaboration between health care and design practitioners both at the earliest possible moment in a project to ensure an effective "information pathway" for the project and of equal importance as a TQA (Total Quality Assurance) monitoring service throughout a project up to its completion and beyond into PCPRP (Post Contract/Project Review Process)

6.01 MEETING FUTURE DESIGN CHALLENGES THROUGH RESEARCH-CURRENT RESEARCH MODELS

At the moment in Australia there exists good and internationally respected medical, paramedical and sociological "models" for research related to the needs of aged and disabled people.

At the design level however, with the notable exception of the development of design standards that are currently framed into building regulations, there is far too little effective design research work being undertaken.

One possible reason for this regrettable state of affairs is the commonly held notion that ageing and disability in all its forms is a medical, or at best a therapy and sociological problem.

Clearly it is a problem that should be engaging our best minds in all of those fields in close and frequent collaboration with architects, planners, landscape, industrial, graphic, interior designers and engineers (of all disciplines) and social scientists.

6.02 NEW ORGANISATIONAL DEVELOPMENTS

A recently established organisation in Sydney named the [Centre for Developmental Disabilities](#), has been formed, sponsored by the Spastic Society of NSW and operated by people from that organisation and the Universities of Sydney, Macquarie and Western Sydney.

This is a basically good development and I applaud its formation, but I am deeply disappointed that specialist "access" architects and designers (of all disciplines) are notable by their absence in research appointments and similarly disappointed that the centre is focusing on developmental disabilities rather than a holistic approach to all disabilities, which I believe to be the most sensible and cost effective way to approach the task and achieve a successful outcome.

Being a rather direct person I have, naturally enough, made my thoughts on this-matter known to the recently appointed director of the "C.D.D." Professor Trevor Parmeter, who has assured me that he is amenable to the professional input of architects and designers in a "team situation".

I certainly hope that this will in fact be the case and fully intend to monitor the situation there and vigorously advocate for a full and effective design participation in the work of the new "Centre".

There has quite recently over the past year (1998) been much talk and committee activity at a National level with the aim of setting up an "Access Institute of Australia".

Such an institute would hopefully be concerned with ageing and aged care as a natural connection with the disabling conditions that are often a part of the ageing process.

In the event that the proposed Access Institute of Australia comes to fruition (the establishment of which I support in principle) it has the potential to bring about some focus on research issues that are critical for future success at design and care/support levels.

In which case that possibility along with the current encouraging initiatives of the Queensland University of Technology in relationship to issues of [gerontology](#) that can engage the skills of -architects, interior/industrial designers, engineers and planners, offers some real hope for advancement in this field and as such deserves to be fully supported by both health care and design practitioners alike.

7.0 POSSIBLE FUTURE RESEARCH "MODELS"

(a personal response to current paucity of design/research)

This unacceptably low level of understanding of the importance of professional design input into disability, safety and aged ;care research provoked in me, sufficient personal concern to take a course of action that has caused me (since presenting this paper) to absent myself from my family, relinquish my private practice and earnings, for up to two years, to complete a "Research Masters" in "DESIGN RESEARCH FOR DISABILITY" London Guildhall University (Sir John Cass Department of Design and Technology)

My decision to take this (for me) drastic course of action and attempt to survive as post graduate student in the country of my birth, (at this rather mature stage of my life) ,had been made a little easier economically, by having become the 1996 recipient of the "Byera Hadley Traveling Post Graduate Scholarship" awarded by the Board of Architects of New South Wales, which is the principal annual award for architecturally related research, together with the encouragement of my family and colleagues.

I might point out that Australia is not alone in a paucity of design research in disability matters.

I discovered that the course I undertook was the only one of it's kind in the English speaking world at Masters level, which is surely a particularly depressing state of affairs, given the trumpeting that goes on about our alleged concern for people with disabilities and the frail aged in the electronic and print media.

Perhaps the most important and inspiring aspect of the course at London Guildhall University and one that sets it apart from other courses (that are currently at undergraduate level) is the practical and daily interaction between both the post graduate candidates and their lecturers, who are purposefully drawn from both the design and health care professions.

The quality of teaching was first class with just the right balance of research objectivity and practical "hands on" activity.

Quite clearly the purpose of the course was not to convert designers into O.T.'s or O.T's into designers, but rather and more importantly to learn how to practice the art of professional collaboration on projects, to the ultimate benefit of their respective clients.

This "interfacing" of skills and information is the cornerstone I suggest, for real success and positive progress in practical research and ultimately "best practice" in our respective fields.

After the successful conclusion of my formal MA studies, I had the opportunity to present a series of guest lectures and papers to a variety of architectural and design universities, institutes and related organisations in the fields of access, aged care and accident prevention, which included the presentation of a paper " Strategies for minimising disabilities caused by accident trauma" Sprintz H. 2nd International Rehabilitation Congress Dubai UAE 1998.

My research and lecturing activity in the UK extended for a further six months culminating with the authorship of a book commissioned by the RNIB (Royal National Institute for the Blind) entitled "Workplace Accessibility"

This is a book of reference, targeting building owners and their facility managers, with the aim of guiding them through the regulatory and design mechanisms that can and must improve employment opportunities for people who are either temporarily or permanently disabled by accident trauma or congenital impairment.

It is important I believe, if we as a design profession are serious about achieving best practice, to go beyond the minimalist standards that currently exist and are based on the regulatory standards of the BCA (Building Code of Australia) but more importantly seek to address the issues that are revealed by a full understanding of the DDA (Disability Discrimination Act)

7.01 RESEARCH AIMS

The primary purpose of a "R & D" program, in the context of aged care, safety and access matters generally, is I suggest,

- i. To establish a data base of information defining a full range of problems identified by the users, owners and designers of buildings.
- ii. To develop design solutions that fully embrace all available influences, associated skills and technologies to at least "prototype" for field testing and preliminary marketing evaluation.
- iii. To fully develop the final designs to a construction and/or manufactured level after a full evaluation of field testing including client/market responses

Developing a research program for access in new housing design is daunting enough, however the current main thrust of building activity worldwide, is unquestionably in the retrofit and adaptation of existing housing and buildings generally, which in design terms significantly increases the challenge to designers i.e., it is generally accepted that retro-fit work is much more demanding of creative and technological skills.

My choice for priorities in research work is unhesitatingly related to safety and in particular emergency evacuation from housing in situations of fire, followed by accident prevention and safety at all levels.

7.02 RESEARCH PRIORITIES - SAFETY AND ACCIDENT PREVENTION

If there is a starting point in this complex matter of an appropriate design response to aged care and disability support, it must surely be the prevention of accidents resulting in injury of death, where that option is available to us. To take one example, the current situation in buildings with regard to fire escape is quite unsatisfactory in spite of serious and concentrated effort by those who frame regulatory controls in the building industry.

Specifically in the event of fire one of the first service to be curtailed is power, thus eliminating electrically operated stair lifts and inclinators etc., which just happens to be possibly the most satisfactory method of achieving vertical circulation within any form of housing, if one is either infirm, frail elderly or disabled.

The problem of evacuation from hazardous situations in housing is exacerbated when the building is a multi storied structure and in spite of laudable efforts by many researchers, to the best of my knowledge there is currently no acceptable solution to the problem, other than the recently suggested changes in the "B.C.A." that are intended to meet the requirements of the "D.D.A." (Disability Discrimination Act 1992) related to "Place of Refuge"

In my view and the considered opinion of other colleagues in this field, a research program on fire escape that meets all building users, but focusing on disability needs is both essential and urgent.

Research resources exist in this important area by former UTS Professor of building, Hamish A. McLennan, Principal of Holmes Fire and Safety, Sydney NSW in the form of two papers "Alternative evacuation systems" Nelson H.E. McLennan H.A. - UTS 1995 and "Emergency Movement" McLennan H.A. Ulawoye J. - Insearch UTS 1993, along with specific and ongoing research work at the University of Ulster under the direction of Dr Jim Shields.

8.00 REGULATORY REVIEW PROCESS AS A DESIGN TOOL.

In collaboration with Architect /Planner colleague John Sparks ASTC (Arch) Dip C.D.RAIA MRAPI AVLE (Econ) I have recently completed a review of the Australian Building Codes Board's (A.C.B.C.) [Regulation Document \(RD 97/01\)](#)

This review document proposes an amendment to the "Building Code of Australia" (BCA) which the Australian Building Codes Board considers will satisfy the requirements of the [Disability Discrimination Act 1992](#) (DDA) The review was carried out by John Sparks and I on behalf of the Royal Australian Institute of Architects as the RAIA official response to RD 97/01.

I fully realise that for many designers any close study of the regulatory process, may well seem to be "as

exciting as watching grass grow" nonetheless regulations are at least a fundamental benchmark for a design study and therefore should be utilised firstly as a "Design Tool" and secondly as a guide to the achievement of a designers "Duty of Care" that any designer disregards at their peril!

The important thing for designers to take careful note of, is that with the D.D.A now fully operational, it has got genuine legal "teeth" and that building control legislation and disability discrimination legislation are very different in their method of administration, with the former being primarily a, design standard and a pre-construction approval process, while the latter is, complaint based, usually after a building is constructed and occupied, the former also covers the base building, while the latter covers all aspects of the building environment.

While it would be ideal to see the quality of design services at the highest possible level for altruistic reasons, it must be recognised that any failure by a design practitioner to perform to the minimum prescribed regulatory standards, will expose them to considerable legal risk.

So, in our local Australian vernacular, "Do the right thing"! even though it may be for the wrong reasons!

9.00 COST CONSIDERATIONS - WHAT IS NORMAL

Like many architects, designers and researchers I generally consider myself to be tolerant towards the views of others, the exception for me is the "tunnel vision" attitudes that come to the fore when costs are under discussion.

Inevitably the view that is expressed (usually by someone with absolutely no knowledge of the real needs of the client and the design or construction process) is that the costs to provide either new or retrofit facilities for elderly or disabled people

"Will cost much more than normal costs"

My standard answer to this example of mindlessness is to say " What is a normal cost ?! "

9.01 COST PRINCIPLES

I am very aware that the term "normal" is highly controversial at almost any level particularly when related to costs, insofar as so-called normal costs related to the provision of accessible building are frequently referred to as additional costs. I believe it is helpful to revisit the United Nations principle 21.0 referring to "inclusion" and associated recommendation 21.1 which states,

" New methods and principles are needed for analysing cCosts and benefits for "inclusion", a redefinition of "normal costs" is needed to deal effectively with the frequently asserted argument that accessible design incurs "additional costs" historical experience is not a valid method for determining "normal costs" because it is based on exclusionary principles."

From the viewpoint of a practicing architect I can only totally support those U.N. principles and recommendations, partly because I had a small part in assisting in framing them way back in the 1980 U.N. conference on "Inclusion" in Houston USA.

More specifically because the design of any building or facility such as say, a manufacturing plant requiring specific services and facilities with which to basically operate, those services and facilities would quite clearly be regarded as essential and therefore a natural part of the brief, hence therefore "normal".

Providing basic access in buildings for general public usage within established regulatory guidelines demands equal consideration in design and cost planning with any other part of a construction, it is within the ambit of a designers "duty of care" to make this clear from the outset of any project.

9.02 COST COMPARISONS

Referring once again to the publication* "Workplace Accessibility" Sprintz H. (1998) I developed in collaboration with a London based quantity surveyor colleague a series of cost matrices that considered two examples in particular,

Example 1 was a "new build" typical 5,000 sq mts total area office building in central London with no particular site, geotechnical or heritage complications, with 5 stories each of 1,000 sq mts, then with the minimum UK regulatory standards for accessibility (i.e., "Part M of the UK Building Regulations") expressed in a costs that is a component of the total cost and finally expressed as a percentage of the total built cost.

The answer in example No 1 was, 0.34%

Example 2 was the exact same sized building with the same site pre-conditions but was an existing office building to be retro-fitted. Again applying the same minimalist part M UK building regulations for basic access and computing the cost for that work which was then extrapolated from the total cost and expressed as a percentage of that total.

The answer in example No 2 was 7.5%

In summary it can be said that the difference in the two costs are entirely consistent with the normal percentage cost differential between new and retro-fit works on the one hand and on the other that the percentage cost impact of "Part M UK Building Regulations" on the total building costs are quite modest,

Perhaps the most important point to make about costs in respect of access that embraces the UN charter on "inclusively" in community life is that they cannot realistically now, in view of the regulatory & legislative framework of the BCA and DDA be ever considered again as "additional costs".

They simply are an integral part of building costs in the political, legal and regulatory climate of today.

10.00 ULTI-DISCIPLINARY APPROACH

Although housing and building design generally is very much in the province of Architects, with the design of interior spaces shared between interior designers and those architects who presumably have the necessary talent and appropriate training, it is important to recognise that a breakthrough in solving any one of many problems in building design (as mentioned earlier in this paper) often lies in the professional province of those design, technical and health care professionals, whose skills are referred to in 4.00 - Technical Considerations".

10.01 ADDITIONAL TRAINING NEEDS

In spite of my genuine respect and regard for fellow architects and interior designers, unfortunately they frequently fail to grasp that it simply is not possible to achieve all of the design outcomes in respect of aged care that they aim for, by traditional architectural methods.

Regrettably some appear to be oblivious of the need for additional specialist training in access and aged care issues.

It just is not enough to be a trained architect or interior designer to become an access consultant, just as it is equally insupportable to state a claim to access expertise from the health care professions.

In both cases additional post graduate training is necessary to be capable to deal effectively and honestly with this specialised level of consultancy, from the clients point of view anyone presenting as an access consultant or aged care planner should be accredited by an independent body concerned with high level consultancy standards and appropriate accountability to the client i.e., "duty of care".

Which is yet another reason for adopting a research philosophy that requires the person who directs the research to have an understanding of and respect for other professional skills that directly contribute to a successful outcome.

10.02 CROSS CONSULTING

As I have pointed out in earlier papers, in my practice I work closely and productively, with all of the healthcare and design practitioners referred to in 2.00, sharing of our skills at appropriate stages in the design process.

In this regard I have been ably and generously assisted by many district nurses ,Homecare personal care coordinators, Occupational/Physiotherapists and medical practitioners all of whom provide services to disabled/aged clients.

Further encouragement and inspiration is also offered to me by my youngest daughter who is now a sociologist working professionally with young and elderly people with a wide range of physical disabilities and is herself, physically disabled with Cerebral Palsy.

Her job basically is to facilitate her clients aims in transitioning from institutional care to models of independent living in our local community, together with recreational planning,

In summary, the design research methodology that is most likely to produce practical and cost effective results is one that utilises the full and appropriate range of multi-disciplinary professional skills. In that respect I am particularly encouraged by the multi-disciplinary initiatives that have been established at the Faculty of Built Environment and Engineering, School of Architecture, Interior and Industrial Design of the, Queensland University of Technology.

From the information I have received from [Dr Malgosia Zlobicki](#), (Research Associate in Social Gerontology at Q.U.T's AIID) on their educational aims at AIID, they appear to going in precisely, the right direction, all of which reflects considerable credit on QUT, the academic leaders, teaching staff and students alike.

11.00 CONCLUSION -PLANNING FOR AGEING

It has been suggested by some academics and demographic planners in Australia that perhaps by even the year 2036 as many as 60% of our population will be over 60 years of age for the first time in our recorded history.

Irrespective of the precise date of this projected occurrence and if indeed it is to be the case, there is surely a case for urgency in respect of collaborative and coordinated inter-disciplinary research in respect of the impact of the ageing sector of our population that would then be the majority condition.

Fundamental questions such as the effect the ageing factor will have on the tax base and GNP which in turn questions how public welfare resources, already under stress, will cope with a lower tax base and correspondingly more reliance on Government funding raised from those diminishing tax resources. If anything, these considerations of the fast approaching future in demographic and economic terms place even more responsibility on those who will direct research and the research of others.

At the level of design activity, some of the answers to those difficult questions almost certainly lie in our province to solve, in the context of future planning for the built and manufactured environment.

12.00 DESIGN CHALLENGES AND OPPORTUNITIES

It would be both a negative indictment of the design professions and an unacceptable waste of talent together with being yet another lost opportunity if we did not rise to the challenges offered by the rather daunting projections of our ageing population.

Designers of almost all disciplines are constantly complaining that they are not taken seriously, perhaps they should reflect on the degree to which they approach their levels of social responsibility and match that concern with the application of their respective professional abilities.

I am convinced that such an approach would engender greater awareness of the contribution designers can and do make and earn them the respect in society that they will have earned.

In spite of all of my professional and personal experiences over the past 47 years in the architectural and interior design profession, some of which has had its bruising moments, I still obstinately and perhaps irrationally remain an optimist.

I therefore feel absolutely confident that if Australian designers, are prepared to learn from others but equally have faith in our own abilities and judgment, we can rise to the design challenges, in conjunction with other professional disciplines and thereby achieve best practice, which is surely just another way of saying "lets get it right".

This challenge in short, is to place the ageing process and its related accommodation needs at the level of importance befitting a country that espouses the principle of a "fair go", or to put it more elegantly, "a just and compassionate society".

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