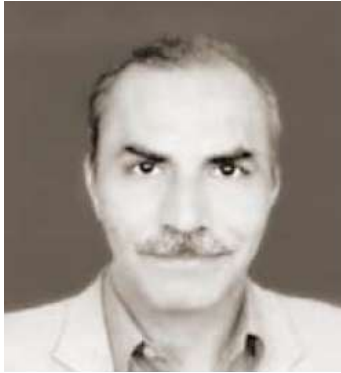# Design for All

Cork Institute of Technology
Cork Centre for Architectural Education

Chairman's Desk:

Dr. Sunil Bhatia

I was perplexed to the idea what the contribution of 'frustration' could be. More I have brooded over the phenomena of frustration more surprises are surfacing. It is being noticed all over the world that a few readers in library tear out certain pages from the books since these are useful to them in future. Books are loaned by the libraries, photocopying is possible over nominal charges even then they damage the books. 'Is it not a mystery?' Is it not act of sheer frustration? There is another example which I have observed the scratches on leather cloth fabric (most popularly known as raxine) of sofa sets placed outside in the public & private offices for the visitors. That scratch with nail is nothing but an act of frustration and it indicates that what type of personality is of officer and how badly does he treat visitors and it also reflects the character of the visitor who damages the fabric out of helplessness. My mind was occupied with this idea how it turns over into an important tool for designing that has long been ignored by our modern professional designers. While travelling in Delhi metro rail I notice that the authorities have pasted transparent route maps on the side glass walls of the seats to help & inform the commuters. It is pasted with

such strong glue that it is just not possible to remove. I have found at places where people have tried with nails to damage that route map. It is an act of frustration of the few who are mentally disturbed and are uneasy with themselves. Sometime people are not happy with the services being provided by the transport authorities and they indulge in such activities. It is nothing but an expression of revolt or anger for inefficient services being provided and the commuters indulge in such negative acts since their minds are preoccupied with their own problems and solutions are not within their reach that makes them to do such disturbing activities. Why I am citing examples because I wish designer should know how users have varied frames of minds set in different times in which frustration is natural and it surfaces any moment, anywhere and designers have to prepare themselves to meet this challenges while designing their products/ services and would checkmate such possible eventualities as far as possible. Earlier railways were placing the foam with leather fabric covered chairs for the visitors. It was designed for comfort and relaxation of the passenger. Later on it was found that some of them have cut the seat covers with some sharp tools and it they don't find such sharp elements they use their nails for possible damaging by scratching. It looks ugly and it is no more useful for next users or lives of the chairs are reduced or their maintenance demands constant expenditure. It is no longer in practice and railways designers have replaced with their better designed materials of steel and many chairs are so clubbed that it eliminates the chances of damaging & stealing the public property. It is obviously resisting the challenge of frustration and other negative feelings of the users. Maintenance has also turned more economical. I have encountered in many occasions when a person

finds the specific floor of his desire is already pressed and light is indicating of elevator inspite of that he keeps on pressing the button for registering the floor of his choice. They are well informed people and they know how to use the elevator. Once it is registered there is no use of further pressing the button. 'Is it this not acts of frustration?' Modern designers have solved such act of frustration of some users by designing the system in such a way that repeated pressing does not affect the performance of the elevator and frustration does not disturb the system.

Why does man scratch with the nail? If his mind is preoccupied with certain problems and solution is not striking to his mind or it is momentarily out of mental reach that has blocked his thought process or near future no solution is possible and complete blocked is on his way of solution, he indulges in such act of venting out his frustration. This is involuntary act and all civilized society insists that we should not indulge in such destructive activities because later on it may grip one to violent act for mass destruction. 'How does frustration surface?' Are human beings only victims of frustration or other animals do possess the similar drawbacks? Is irritation reason of generation of frustration? Do animal feel irritations? Man's biggest weakness is that his mind is unable to handle repetitive work with desired efficiency and chances of committing of errors are very high. Possibilities of such errors in outcome generate frustration that forces us to look for some better alternative which can overcome such human vices. In this process, man has succeeded in designing the devices. 'Machines are product of frustration to eliminate the chances of committing errors.' Some may say that man is born lethargic and to do the same work with minimum energy for larger outcomes. I say the idea of saving the

energy for future is the byproduct of frustration. Role of frustration in designing the devices cannot be ruled out. 'Act of frustration is responsible of birth of machines & devices in this world.'

Modern man has inherited the thoughts from his ancestors for designing the machines and tools for making his own life comfortable. Mind design devices for solving specific problems but these have invited new associated problems. Initially Television was designed to operate manually. As technology improved and designed remote was aiming for solving some problems of manual operation but it has invited new problems associated with remote control. It is vicious circle and human mind is occupied in solving every time new problems which emerge on surface. In this process he has lost his basic character of caring and remaining sensitive toward others and final outcome is modern man has turned individualistic. His expectations from political governing party touch new heights and he forgets collectivism has its own compulsion for governing. He moves with obsessive ideas which lead to the frustrations and drives him to arrogance & aggression. Political frustration pushes individual to act for mass destruction so that authority may pay heed to his ideas. It is nothing but consequences of frustration. No terrorist is born terrorist and he is not product of poverty. If it is so every poor person would have turned to terrorism. Terrorists are product of political frustration.

Action of divorce is another kind of frustration .When two persons are not united at soul level and reason of living together is enjoy materialism, it leads to life of rights and not about duties & sacrifice for making one other happy, divorce is bound to happen or ultimate frustration will attain such height that person will think to eliminate other party. Sometime man experiences frustration in such a way

where rationality fails to justify. Road rage is product of frustration. Man is never happy with what he has. His craving for unknown makes him frustrated. I remember an incidence when I used to come back after attending school and mother offers food that I refuse inspite of I feel little hungry on that particular time. Why am I behaving in such way is still unknown to me .She offered me all possible dishes she can make in no time with available items in home but I was in denial mood and reason unknown to me. Denial reaches to height that frustrates and I leave home for controlling agitating mind. Her favorite word disturbs me 'you are not hungry. Hungry person never questions & demands, he accepts whatever offers to him'. Sometime we experience frustration reason is not crystal clear. Is it inbuilt character in human to be in state of frustration without reason? Is expression of frustration is seeking attentions? Is frustrating mind solve the problem? In my opinion agitating mind never allow caring for consequences of actions and generally fails. When I look for bunch of keys I kept in a particular place and under the influence of frustration I fail to locate. My attempts for solving the mathematics problems generally better results when mind is at peace and agitating mind does not yield that result for I keep on trying and that frustrate and I am bound to commit silly mistakes. I keep aside that problem for a while and again attempt with cool mind and new energy that problem solves.

When people perceive that they are being prevented from achieving a goal, their frustration is likely into turn to aggression. The closer you get to a goal, the greater the excitement and expectations of the pleasure. Thus the closer you are, the more frustrated you get by being held back. Unexpected occurrence of the frustration also increases the likelihood of aggression. Frustration is surfacing

because of specific mind set as well under the influences of level of hormonal changes. Football crowd may become aggressive when if team of choice starts to lose. People in business can also become aggressive when others start to frustrate their ambitions. There is story about invention by Michal Faraday that he threw magnet out of frustration and there was deflection in needle triggered the idea of magnetic flux for designing dynamo .

Bette Nesmith was an executive secretary at a Dallas bank in 1951 when her boss rewarded her with a new electric typewriter. Nesmith was not a great typist, and the carbon film ribbons wreaked havoc on her attempts to make corrections. She invented the Liquid paper out of frustration of making typographical errors. She filed for a patent and changed the name to Liquid Paper. Very often the best inventions are the result of personal frustration at wishing someone would invent a product that you need at a particular point in time. The innovative side of human mind is not always under pressure of work. There is another product that is thermostat which has come to the existence to counter our frustration. Umbrella was designed in Egypt almost 3400 years back and it is most popular product among people since it protects from sunlight, rain or even heat. It has many drawbacks that frustrate the user like it goes inside-out, break, poke in the eye, limit your visibility, don't protect back, etc. Many designers faced this frustrating and find themselves in helpless condition. That has made them to think for its better design. But as adverse situation passes that interest to solve better solution also vanishes. Rarely designers are attempting for better design of umbrella. 'User frustrations are an excellent source of new product ideas.'

Interface designers are using the technique for elimination of frustration by using limit of lower and upper for variables. Between such levels it will accept otherwise it will refuse to move to next level. They also designed alphabets, numerals or both for coding to eliminate the human error while feeding the inputs and helps in controlling the one of the reason of surface of frustration. At the time of interrogation repetitive questions irritate the person and out of frustration he confesses so called truths. Is frustration an essential part of video game design? I guess it is a vital part of mastery for designing successful game. Is it not frustrating when thread refuses to go into the eye hole of the needle?

'Art of speaking is vital for everyone who wishes to be successful.' When someone designed the questions and expects the answers that does not turn out to his expectation, leads to frustration. Similarly user interface is nothing but speaking with devices .When we design the FAQ or operation manual we generally deal with frustration of the users. Designers are aware about general level of problem that any users with common perception which they feel. 'What, when & where if it is not handle with care generally aggravates chances of frustration in users .Training is nothing but making the users aware that such problems are inbuilt and they should not feel frustrate with specific outcome. When I look at the struggle of the aged people for opening the bottles or containers I feel like to appeal the packaging industrial designers that it needs proper attention otherwise it will enhance the frustration level among this age group. The packaging industry needs to do more to develop 'frustration-free' packaging for the old people. When we find ourselves frustrated, angry, and upset, it's probably because of something that happened that we could not control: even something

small. The key of keyboard or mouse cursor is not working well. When we type, some of the words are stuck together. This leads to frustration because we are pressing the key or rolling the mouse and nothing is happening. The key to our front door doesn't work very well. When you try to turn it, it sticks. Another tiny frustration which we face many times and it would upset our daily working and makes us to believe world is not working as what we wish and it generates frustration. These things add up; and turn us unhappy on day-to-day basis. To make people happy, we have to let them feel like they are in control of their environment. To do this, we need to correctly interpret their actions and curtail the reasons of frustration.

A broken object delivers frustration because it doesn't achieve its functionality. Repair is beautiful & delivers satisfaction. Just because it has been done before, doesn't mean you can't build one yourself. It's all about imagination, vision, ideas, prototypes and an extreme amount of joy and frustration, followed by satisfaction. Our satisfaction never allows us to be at rest and we find in situation of frustration. It is vicious circle and man will never experience that he is in frustration free environment. Frustration is integral part of the much of mankind. If it has company of creativity it benefits the society otherwise it leads to that level of destruction where losses are unimaginable and impossible to regain. Society is designed in such a way that it encourages creativity and tries hard to control its associated negativity. Frustration's best companion is capability. If it goes in incapable hands, destruction is inevitable.

We are thankful to Prof Jim Harrison of Cork Institute of Technology who wrote me a long letter when we extended invitation for special issue. That letter's each word reflects his concern for concept of

universal design and his efforts for recognition by present society that is in constant denial and wishes to remain in inertia is frustrating but hope is still alive within him . This special issue is product of his hope and persuades two students to be Guest Editor for special issue. Cathy and Tomas put in a lot of effort and Prof Jim as well as our team of Design For All Institute of India is grateful to them for that .His sincerity has paid the dividends and result is this wonderful special issue in such a short notice. I pay respect and salute for his dedication for noble cause of Universal Design.

With regards

Dr. Sunil Bhatia

Design For All Institute of India

www.designforall.in

dr_subha@yahoo.com

Tel 91-11-27853470®

Content of June 2013 Vol-8 No-6

Other Regular features

Forthcoming issues
July 2013 Vol-8 No-7

Christian Guellerin is president of Cumulus, the International Association of Universities and Schools of Design, Art and Media since 2007. The organization counts 178 establishments in 44 countries. He is also the executive director of the Ecole de design Nantes Atlantique, which trains professionals to create and innovate for socio-economic development, with an interface between technology, economics, and the sciences. Today they're expanding to China and India. He writes on design and pedagogy. He will act as philosopher & guide for this special issue and students of different streams will participate in this special issue.

August 2013 Vol-8 No-8

Dr. Antika Sawadsri PhD in Architecture, Planning and Landscape University of Newcastle upon Tyne, UK. Lecturer, School of Interior-Architectural Design (2004-present) Faculty of Architecture King Mongkut's Institute of Technology Ladkrabang (KMITL) Thailand will supervise this special issue of student designers.

September 2013 Vol-8 No-9

"Inclusive Tourism: international perspectives, accessibility and inclusion in the Brazilian tourism" is topic suggested by Prof Regina Cohen Pro-Access Group - Federal University of Rio de Janeiro and she will be Guest Editor.

"Women Designer year of 2014"

January 2014 Vol-9 No-1

IMMA BONET Executive Patron of Design For All Foundation has accepted the invitation of Guest Editor for our inaugural issue of our declared new series for highlighting the contributions of women in social movements of Design For All/ Universal Design.

March 2014 Vol-9 No-3

Margaret H. Teaford, PhD , Honors Director ,Associate Professor-Clinical, School of Health and Rehabilitation Sciences, The Ohio State University would like to focus on assessing the needs of women in designing environments and applying Universal Design. And she will be the Guest Editor of special issue

April 2014 Vol-9 No-4

Rachna Khare is a Professor of Architecture and the co-ordinator of Centre for Human Centric Research (CHCR) at School of Planning and Architecture, Bhopal. Prior to this she was Senior Research Fellow, Jamsetji Tata Universal Design Research Chair at National Institute of Design, Ahmedabad. Rachna is a recipient of the Fulbright Doctoral Fellowship and was affiliated with Georgia Institute of Technology, Atlanta, USA during her PhD in Inclusive Design. Her interest in the field of 'Universal Design' has earned research grants and awards nationally and internationally. She has published extensively and is one of the authors of Universal Design India Principles released in 2011.

June 2014 Vol-9 No-6

Josyane Franc is the Director of the common Department of International Affairs for the Cité du design and Saint-Etienne higher school of art and design (ESADSE). France

Dr. Jim Harrison

Dr. Jim Harrison joined the Cork Centre for Architectural Education in April 2007 to teach on the new BSc (Hons)

Jim graduated with BArch (Hons) from the University of Sheffield (more years ago than he cares to remember) and is a Qualified UK Architect. He started his practical experience at Peterborough New Town in England and worked in practice in Zambia and Malawi. He began teaching design at the Portsmouth School of Architecture and then had 18 years at the School of Architecture, National University of Singapore, where he was Associate Professor, teaching studio design and lecturing at all levels in both Bachelors and Masters courses. When his contract with NUS ended he took a 'gap year', travelling in Asia and lecturing in Australia, Pakistan and Vietnam.

Having particular research interests in user-friendly design for ageing and disability, Jim is proud to have played a part in promoting these topics in Southeast Asia; he has regularly been an invited United Nations Expert for the Economic and Social Commission for the Asia Pacific Region in Bangkok, running regional training programmes for design professionals as well as advising the Singapore Construction Authority on their Code on accessible

buildings. Over the years he has published and researched widely on these topics and, on the strength of related publications, he was awarded a Higher Doctorate (LittD) by the University of Sheffield in 2003.

As a teacher committed to improving standards of design in the built environment he has contributed to successful course development, the design of subject modules and innovative teaching techniques for architectural design, including integrating technological aspects and working with specialists to make these topics meaningful and applicable in design education. He is inclined to follow Edwin Lutyens' maxim that "Architecture is always serious, but seldom solemn."

He hopes to continue these initiatives and finds the prospect of being part of a developing school of architecture an exciting challenge and he is enjoying the opportunity to live and work in Cork as well as discovering more of the culture and landscape of Ireland.

EDITORIAL

The examples presented in this edition are the work of the two educational establishments in Cork City that offer courses in design of the built environment: the Cork Centre for Architectural Education (CCAE) and the Department of Architecture at Cork Institute of Technology (CIT). The first is a relatively new school of architecture, offering BSc and MArch Honours courses with professional architectural accreditation, as well as postgraduate research facilities; the Centre, which is part of Ireland's second oldest university, University College Cork (UCC), was developed as a joint initiative with the other third-level institution, CIT, where two BSc Honours courses, Architectural Technology and Interior Architecture, are well-established. Between these two institutions a comprehensive range of professionally accredited architectural design curricula are taught, whilst postgraduate activity encompasses user-friendly environments in its sphere.

The principal course outcomes are design project work and, in the upper years, written dissertations, both of which comprise the main areas of assessment in the courses. The work included here is an attempt to be representative of the range of topics, chosen by the students themselves, which address issues relating to inclusive design.

The Irish Context

Universal Design in the built environment and its application in the Irish context relates strongly to the Republic's membership of the European Union and its legislation. The following articles describe some of the initiatives and legislation to encourage good Universal

Design standards – the 'carrot and stick' approach to sustaining the impetus for design professions. Universal Design also applies to product design, communications and services, with strong links to management and awareness of staff involved in the provision of these. Hopefully the students' dissertation studies describe how these two 'arms' of UD are underpinned by government policy, not least of which has been the setting up of the Centre for Excellence in Universal Design, under the aegis of the National Disability Authority. Although quite a small organization CEUD is made up of professionals from a range of design disciplines and actively encourages and informs the design professions through various initiatives; in addition to a useful range of advisory publications, including 'Building for Everyone' (website **www.universaldesign.ie**), they organize an annual design competition and, most recently, have commissioned a Universal Design module for tertiary education institutes.

The CEUD's "24 Hour Design Challenge", devised and introduced by Julia Cassim of London's Helen Hamlyn Centre at the Royal College of Art, (http://www.hhc.rca.ac.uk/) is held annually, presenting a different design challenge in a chosen area of design each year. In 2010 Cathy Dalton, PhD student at CCAE, was a member of the team which won the People's Choice Award for its proposal "SOLAS": System of Obelisks for Accessible Streetscapes".

The proposal SOLAS utilises visual markers, in the form of "obelisks", which function first at the level of the streetscape, defining principal and secondary entry points to Dublin's principal shopping area. Their forms draw on existing city landmarks, and serve also to create a set of spatial reference points. In the detail of their design, they provide a range of accessible services, including a re-modelled inclusive ATM, information portals, accessible toilet facilities and combined seating area. The portals also provide a simple, multiuser navigational facility.

Cathy came to research after many years of practice in accessible design and healthcare design. Her PhD takes the form of design research and theory, regarding the use of wireless sensor networks in the built environment. The proposal is based on the concept of using integrated sensor systems to maximise individual environmental fit, (congruence) both functional and psychosocial, for users with cognitive and physical impairment. The integration of affective computing is regarded as a critical component in an envisaged responsive architecture where an individual's personal life-space forms the user interface.

The NDA have also recently sponsored the development of a teaching module on Universal Design that, although a very appropriate teaching vehicle for some courses, is aimed principally at entry-level students in Information and Communication Technology (ICT) rather than architectural or related courses. Proposals to extend the scope of such modules to building design have been put forward and could lead to greater connectivity of the elements of universal design now being taught at various points in courses; we look forward to these initiatives with interest.

As well as these 'carrots' that the CEUD promote there are the annual Irish Architecture Awards jointly organized by the Royal Institute of Architects of Ireland (RIAI) and the Office of Public Works (OPW); these have included a category for accessible buildings. A traveling exhibition of this work is displayed each year in a number of centres, including CIT, as well as being published. (www.irisharchitectureawards.ie)

Architectural Education in Cork

In both the Cork Centre for Architectural Education (CCAE), and Interior Architecture courses at CIT, the main teaching and learning method is through specific design projects, each set by the Year Design Co-ordinator and each with different module outcomes in the form of a piece of design or related study – sometimes in the form of a Group Study. In addition, specialised tutors are tasked with integrating technical aspects into design studio projects, emphasizing functional aspects of user needs in addition to construction and structures. Relevant legislation on providing safe and barrier-free environments is introduced quite early in the undergraduate course and, as it detailed more thoroughly in the

following edited dissertation reports, these include 'Part M' of the building regulations, which addresses these issues. The following student dissertation extracts focus on the limitations of the current legislation in regard to a lack of 'inclusivity'.

As tutor Jim Harrison mentions in his Foreword, an informal arrangement of reciprocal teaching between CIT and UCC tutors has become a regular part of the course; Architectural staff teach First Year Occupational therapy students about plan reading and drawing and as well as how architects work to develop accessible and inclusive environments, particularly for older users. In turn, members of UCC's Occupational Therapy School provide a compact (and sadly too short) introduction and access simulation exercise for architecture students in which they have the chance to experience using wheelchairs, both manual and motor-propelled, crutches, blindfolds and other assistive devices in environments with which they think they are familiar. The School of Architecture's dedicated 'disabled' toilets, for instance, are found by students to be less than usable by an individual in a standard wheelchair, even though they conform to the building regulations in place at the time of construction. This same issue has emerged in Cathy Dalton's practice in accessible design. The statutory standard does not appear to be Universal in application. However, it is important to remember that statutory standards must attempt to mediate between the varying needs of a wide group of users. Roger Coleman's term "Inclusive Design" is perhaps closer to the mark in describing the task facing designers who aim to deliver accessibility.

A group of Year 2 Architecture students at CCAE being shown how to use a wheelchair by OT Linda Horgan, before experiencing it for themselves.

Although not yet officially part of the course, Interior Architecture students at CIT have, on their own initiative, brought a wheelchair into their design studio, using it to widen their experiences of in limitations in access, such as narrow corridors and doors, limited space in toilets and other typical difficulties. Students, in the main, are intrigued by designing for people with abilities other than their own and this sort of first-hand experience is invaluable in demystifying the topic of Universal Design, thus sensitizing, and equipping the designers of tomorrow with the knowledge and ability to make the environments that they design more user-friendly. The vital act of turning the important though negative 'stick' of legislation that prescribes certain actions, to a positive 'carrot' of understanding the value of bringing in all human inhabitants, is fundamental in providing for their wide-ranging needs. Design practice should regard inclusivity regarded as an integral component of good design, where "user-centred" design, in its many manifestations, becomes the watchword. When inclusivity is

regarded as the norm, rather than as an unwanted imposition of an afterthought, it can become a spur to genuinely creative and innovative solutions. This applies as much in the world of information technology and ICT as in built environment meet, as is increasingly the case.

Opinions given within these selected and edited works are the students' own conclusions and are not necessarily those of the educational bodies where they studied.

In editing the work it has been necessary to abridge some sections, particularly where long bibliographies are appended. If you would like a copy of the full text or information on reference sources, or you would like to know more about studying at UCC or CIT, please feel free to contact **jim.harrison@cit.ie**

Dr. Jim Harrison
Senior Lecturer
T: 353 (0)21 +353 21 429 8421
F: 353 (0)21 +353 21 429 8419
E: jim.harrison@cit.ie

Guest Editor:

Ms. Cathy Dalton is a final-year PhD candidate at the Cork Centre for Architectural Education, Cork, Ireland, where she is researching potential use of ambient technologies in residential environments for elderly people, as part of the NEMBES embedded technologies project. She held a NEMBES PhD scholarship from 2009 to 2012 and is a qualified architect, with experience in the design of healthcare buildings.

Tomás Maher is a Final Year Student in the BSc Architectural Technology course at the Cork Institute of Technology.

An In-depth Study of Access in the Built Environment with regards to Universal Design

Davan Swanton, Year Four Honours candidate in Architectural Technology at CIT

The aim of the dissertation research was to evaluate access in the built environment and examine how Universal Design, if implemented correctly, can improve the built environment for all users. It is to examine the historical developments of Universal Design, the current legislation surrounding access in Ireland, and examples of how Universal Design benefits the overall design. The methods used to undertake the research included an extensive analysis of existing literature, interviews with professionals working in the fields of access and Universal Design, and a photographic survey of different examples to back up arguments. Types of literary supports include published works, journals, official publications, government documentations, conference proceedings and online sources. These methods of research will give a balanced view to the topic being discussed throughout the dissertation.

From the research undertaken it became clear that in order for Universal Design to be implemented more in the built environment, amendments of the current legislation will have to take place. While the building regulations provide the necessary minimum requirements, more needs to be done in order to ensure that environments are inclusive to all. Another route that must be considered when attempting to make Universal Design commonplace is taking the bottom up approach and introducing Universal Design modules into college and school curricula. Universal Design is in

danger of becoming another resented piece of legislation that designer and clients see as a hindrance in the process of designing and constructing buildings. While introducing stricter legislation is necessary it is important to ensure that the topic is not over enforced and that enticements such as awards become a major part of its future development.

Introduction

Universal Design includes designing buildings, products, services and environments to be accessible by all people with different degrees of ability. For the purpose of this dissertation the research carried out regards specifically to Universal Design in access to the built environment. It goes beyond the minimum requirements that already exist in current building legislation and focuses on providing for every disability. The definition of Universal Design states that it is the "Designing buildings, products, services and environments to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life."
(The Center for Universal Design, 2008)

Rationale

While designers have produced built environments that consider their end users in the past, there has been a lack of consideration of the implications the design may have on every possible future user. While issues surrounding the access of wheelchair users have been largely solved through minimum requirements in building regulations in the past, there are still issues that need to be resolved in order to achieve integrated access for all people with different nobilities. Too often have designers generated a design to which they subsequently attempt to fit the access requirements on to as an

afterthought, or just adhere to minimum requirements set out in the building regulations. This can often result in a design that has unattractive access ramps or components that take away from the overall design. Universal Design is about taking these requirements and integrating them into the design in order to produce an environment that is not only accessible to everyone, but is also aesthetically pleasing and creates a positive experience.

It is important to note that it is much more than designing for people with disabilities and if the design of an environment can be accomplished with Universal Design in mind then all people no matter what their mobility will always be catered for in a way that does not highlight their disability. Possibly the simplest example of Universal Design in terms of access is level entry into a building. This makes access to a building easier for many people with different circumstances. A parent pushing a pram, a person pulling a wheeled luggage case or an elderly person who finds steps difficult to overcome will all benefit from this design and not just a wheelchair user. Universal Design acknowledges that people's needs differ, but good design will always accommodate anyone regardless of their ability or disability.

Hypothesis

Access to the built environment can be improved for all users through better implementation of Universal Design.

The Universal Design philosophy has been slow to take off and was only christened so by American Ron Mace in 1985. While the concept has been introduced to a lot of countries around the world it is still slow to advance.

The Dublin-based Centre for Excellence in Universal Design was established to research and promote it through best practice guidance. While these are steps in the right direction there is still a long way to go in the recognition and development of Universal Design standards. In order for Universal Design to be taken seriously by designers there needs to be a mandatory set of standards or guidelines to which they can follow. Currently Part M of the Irish building regulations are the only governance surrounding the area of access to the built environment and these only provide minimum requirements. However, because it is such a broad concept, Universal Design is difficult to legislate. There are often many different scenarios that make a complete universally designed project problematic to achieve. Site shape and size along with the combinations of different people with numerous physical abilities can make it difficult to assemble a complete list of standards to suit every situation. There are numerous factors that dictate the provision of all inclusive access to different buildings. A good example being that many of Ireland's public buildings are conservation buildings where universal access is restricted. The focus of the study undertaken is to investigate how Universal Design can be more effectively implemented in terms of access to the built environment.

While Universal Design is now beginning to be recognised around the world the time has come where it needs to be put into common day practice in both the minds of the public and more essentially the designers. The Irish context is a good example of how Universal Design has been accepted and documented in legislation but the work of correctly implementing the principles is far from complete. The minimal recognition of the philosophy seems to merely be a way

of dealing with a growing issue without really solving any of the problems. There needs to be a clear way of implementing Universal Design through legislation with the introduction of guidelines or criteria that in turn will be enforced. By following a strict methodology the aims and objectives described in this study can be achieved, resulting in an accurate report with related conclusions and recommendations highlighting the need for more effective implementations of Universal Design to make access in the built environment better for all users.

Origins and Developments of Universal Design

Universal Design is a relatively new concept in the built environment and came into existence towards the beginning of the 20 th century, a time where civil and human rights issues were being brought to the attention of the developing world. Medical developments around this time lead to a changing population. People were not only living longer but more people were also living lives with permanent or temporary disabilities and illnesses. Universal Design as it is seen today has evolved over recent decades. For years designing for the disabled was seen as being sufficient. Only recently is it being recognised that it is not good enough to design to certain criteria under disability legislation as it does not cater for people with temporary disabilities, but that everyone needs to be catered for no matter what their status in life is.

The concept of Universal Design first originated in the US during the post WWII era of the late 1940s and 1950s. As well as the demographic changes that were occurring at the beginning of the 20 Th century, the two world wars conceived a population of veterans with war inflicted disabilities that were capable of surviving their

injuries due to the medical developments at that time. This led to the widespread acknowledgment that people with disabilities needed to be recognised as equal members of the population and be provided for in all aspects of life. Story (et al., 1998) highlights that the public acknowledgement of Universal Design was developed through new legislation encouraged by the disability rights movement, the barrier-free design to Universal Design movement, and the development in assistive technology.

Story continues by looking at the barrier-free movement in the 1950s. The establishment of this movement was as a result of appeals made by disabled war veterans and bodies supporting the cause for people with disabilities to create opportunities in education and employment by removing the physical barriers that were commonly found in built environments. Following the Civil Rights Movement of the 1960s, Federal legislation surrounding disability rights began to be established in the US. Discrimination towards people with disabilities was prohibited by these laws and access to educational, public and transportation facilities began to be provided for.

Preiser & Ostroff (2001) explore the formation of Universal Design as a concept. Barrier-free design became a worldwide term and in 1961 an international conference was held in Sweden. This was one of the first major international efforts made to "reduce the barriers to the disabled" (ISRD, 1961). The term Universal Design was first used by American Ronald Mace in 1985. His 1988 definition of Universal Design is quoted in several chapters of Preiser & Ostroff's Universal Design Handbook (2001): "Universal Design is an approach to design that incorporates products as well as building

features which, to the greatest extent possible, can be used by everyone." He recognised that a much broader view had to be taken to fully acknowledge the true meaning of the concept and he noted that minimum standards are an important part, but not the definition of Universal Design.

European Developments

Ginnerup (2009) looks at the European position on Universal Design and lists out the historic international events that play an important role in understanding the current position of it. There have been a number of European conventions, treaties and initiatives that have had a significant effect on the equality of people with disabilities since the first European Convention for the Protection of Human Rights and Fundamental Freedoms took place in Rome on 4 November 1950. Examples include the EU Technology Initiative for Disabled and Elderly People (TIDE) between 1991 and 1994, and the first version of the European Concept for Accessibility (ECA) in 1996. While these dealt with the needs of people with disabilities, it wasn't until 2001 that the Council of Europe Resolution ResAP(2001)1 stated that the principles of Universal Design needed to be introduced into the curricula of all occupations working in the built environment. Since then the Council of Europe Resolution ResAP(2007)3 on "Achieving full participation through Universal Design" was adopted. Ginnerup (2009) concludes that there is a Universal Design definition present in Europe and it recognises that definite actions are needed and good intentions are no longer enough.

For Universal Design to become common place around the world, global unions such as the EU need to lead from the front, putting in

place policies that member states are obliged to follow. The many equality treaties and initiatives that have been put in place over the years have been crucial in the development of Universal Design to date. It is important however that the EU doesn't stop now that it has simply been established. Ways of enforcing Universal Design and controlling how designers design our built environments are crucial to ensure that we can live in a society where everyone has the equal opportunity to gain access.

Universal Design in Ireland

In the Irish context, there have been important changes in disability policy within the last 20 years. These began with the publication of the Report of the Commission on the Status of People with Disabilities in 1996. This report put forward comprehensive proposals for reform of law and policy and in turn was the result of a major consultative process involving people with disabilities (NDA, 2012). This marked the beginning of a flurry of different legislation surrounding the area of disability and equality. The Employment Equality Act 1998, the Planning and Development Act 2000, the Equal Status Acts 2000 & 2004 and the Disability Act 2005 were all introduced.

September 2004 saw the launch of the National Disability Strategy by the Irish Government and includes positive action measures to ensure that people with disabilities are included for in all aspects of life. The first key element of the strategy included the Disability Act 2005. Within this the first major development of Universal Design in Ireland has been the inclusion of a definition of Universal Design in the Disability Act 2005. This will be looked at in more detail in a later chapter. Towards 2016 is the current Social Partnership Agreement

between Government and Social Partners which was agreed in 2006 and sets out strategic objectives that are to be achieved by the deadline of 2016. (Department of Justice and Equality, 2009) .

The National Disability Authority (NDA) is currently the main state agency on disability affairs. The duty of the NDA is to provide independent expert advisor to the government on policy and practice (NDA, 2012). The Centre for Excellence in Universal Design (CEUD) was established within the NDA under the Disability Act 2005 in January 2007. Its intention is to assist the progress of the achievement of excellence in Universal Design by committing to develop and improve standards. The centre has three main roles; to contribute to the development and promotion of standards in Universal Design, to ensure education and the professional development of Universal Design and to promote public awareness of Universal Design. (Koornneef, 2007). The CEUD have published a series of booklets; 'Building for Everyone: A Universal Design Approach' extensive, that provide best practice guidance on how to design, build and manage buildings. (available online at www.NDA.ie)

Universal Design is a slowly developing concept that is only now beginning to be put into practice. The days of ignoring the issue of accessibility to the built environment are long over and as human rights are now commonly accepted, it is inevitable that Universal Design will evolve and eventually become common practice in the professional bodies of the built environment. It is interesting to note how the development of policy regarding disability has done a lot of the ground work for the progress of Universal Design into the future. However this has also left a stubborn legacy that will be difficult to

break. Because of the common use of the word "disability" throughout years of policy and legislation, it is difficult to make people see that disabled design isn't simply enough. Universal Design is much more than designing for the needs of people with disabilities. While Universal Design has been recognised under Irish legislation, it is only a small step towards the level at which is needed to ensure that everyone, no matter what their status in life is, will have equal access and use of the built environments we design and build.

Legislation and Standards

All around the world the concept of Universal Design is being developed. Some countries have recognised it as Inclusive design, design for all or barrier-free design but these are ultimately all the same issue. In Ireland the issue of Universal Design has been considered and as a result a definition was introduced into the Disability Act 2005. This has been a big step in the right direction but in order for Universal Design to develop further in the built environment the legislation surrounding it will have to be improved. This section looks at the different legislation that surrounds access in the built environment and Universal Design in Ireland. They are examined to see how far they currently go and to see what can be improved in them. Irish legislation is largely determined by recommendations and legislation at international level due to it being a member state of the European Union, Council of Europe and the United Nations. This may be why the Irish standards are so minimal as they are happy to be seen to comply with the international requirements forgetting about what proper implementation of such legislation could provide.

The Disability Act 2005

The legislation affecting Ireland with regards to access within the built environment is the Disability Act 2005. Fahey (2005) states that the Disability Act 2005 was accomplished to develop and establish the participation of people with disabilities in everyday activities by the provision of disability services and the improvement of access to public services. He goes on to say that it allocates responsibility to public bodies to make buildings and services accessible to people with disabilities, and also provided for the establishment of the Centre for Excellence in Universal Design. The Disability Act is a core component of the National Disability Strategy. This advances on existing policy and legislation including the Employment Equality Act 1998, the Equal Status Act 2000, the Equality Act 2004, and the Education for Persons with Special Educational Needs Act 2004 and on the policy of mainstreaming services for people with disabilities. (Fahey, 2005)

The Department of Justice, Equality and Law Reform (2005) outlines the 6 provisions of the Act and establishes a basis for -

• *an independent assessment of individual needs, a related service statement and independent redress and enforcement for persons with disabilities;*

• *access to public buildings, services and information;*

• *Sectoral Plans for six key Departments which will ensure that access for People with disabilities will become an integral part of service planning and provision*

• *an obligation on public bodies to be pro-active in employing people with disabilities*

• *restricting the use of information from genetic testing for employment, mortgage and insurance purposes*

• *a Centre for Excellence in Universal Design.*

These provisions outline the main aims of the Act and they do ensure that equality becomes more important in public bodies. They take into account the different aspects that have traditionally been problems relating to equal rights in public places and the main aim of the Disability Act 2005 was to create a wider participation of people with disabilities in everyday life. It has to some extent achieved this with regards to access to public buildings. Existing public buildings around the country have been, and are currently being retrofitted in order to make them accessible and some have achieved this successfully. The courthouse in Cork is a good example of where the original stepped entrance has been left untouched while the side doors have been made the main entrance for all users.

The opposite of this is Skibbereen courthouse where again there are original steps at   the entrance of the building. The difference this time is that there is no permanent fully accessible entrance and a temporary steel ramp is fixed in place at a different entrance whenever it is needed. While this does solve the problem to an extent, it is demoralising and often embarrassing for the user who requires this to be done especially for them. This is where the Act falls down and improvements could be made. It needs to ensure that more than just the minimum requirement is achieved and that the experience is the same for all users.

The most relevant section of the Act in terms with this research is Part 6 section 52 where Universal Design is defined as:

   1) *the design and composition of an environment so that it may be accessed, understood and used*

i.   *to the greatest possible extent,*

ii.   *in the most independent and natural manner possible,*

iii.   *in the widest possible range of situations, and*

iv.   *without the need for adaptation, modification, assistive devices or specialised solutions, by any persons of any age or size or having any particular physical, sensory, mental health or intellectual ability or disability, and*

2) means, in relation to electronic systems, any electronics-based process of creating products, services or systems so that they may be used by any person.

(Disability Act 2005)

The way that the government chose to introduce this section into the act was quite clever. They took the decision to attach Ireland to Universal Design rather than the other titles used around the world such as Design for All, Inclusive Design and Barrier Free Design. As Neil Murphy [1]stated, the definition lists all of the various ranges of human abilities that cover everyone. And this is what "makes Universal Design different to disability design, in that once you design something that everyone can use, then someone with disabilities should be able to use it as well as everyone else."

However there are aspects of the definition that show weaknesses that ultimately end up leading to the lack of implementation of the issue, criticised as "a broad brush definition which attempts to capture as much as possible. It says 'to the greatest possible extent' rather than 'by all' as there is a recognition that there is a difficulty in providing access in all situations." It is due to this that many

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[1] *Neil Murphy – See Interview following*

buildings have taken the quick fix solution of addressing Universal Design such as Skibbereen courthouse mentioned above. If the legislation were to give greater details on how the problems should be addressed then it would give Universal Design a greater chance of being better implemented.

Part M – Access and Use (2010), Technical Guidance Documents.

There are two Technical Guidance Documents (TGD) regarding Part M in Irish building regulations. One is Part M – Access and Use for People with Disabilities (2000) which is an amendment to the original Building regulations (1997) and covers access for people with   disabilities including the visit ability of new dwellings and extensions by people with disabilities. The other is Part M – Access and Use (2010) which deals with the access of the built environment.

Part M regulations provide a minimum standard and realistically minimum requirements to which no one will fall below are needed. However the problem is getting people to see beyond these minimum requirements and take things from a broader view point. Michael Mohan describes TGD M 2010 as "prescriptive" and discusses how it doesn't take into account the numerous different situations affecting people with different degrees of disability. He takes the example of stair risers and questions why they have to have a minimum height of 150mm when 75mm can be more beneficial for people with arthritis who find lifting their feet difficult. It is important to realise this argument from both sides however as many more people would have a problem with too low a riser because it may cause people to trip over it. This is an example of

how Universal access is always going to be extremely difficult to achieve and the minimal requirements that are currently being provided are only merely providing a target to which many designers are happy to achieve. Part M (2010) of the Technical Guidance Documents has progressed and like the Disability Act 2005 it contains a reference to Universal Design. However in order for legislation like this to be successful it needs to be continually reviewed. It is not enough to simply provide minimal regulations and expect people to take the initiative and produce what is in their view unnecessary but is in reality ideally needed.

Disability Access Certificate

In 2010 the Disability Access Certificate was introduced as a means to enforce Part M building regulations. The certificate is required for any building work which needs both planning permission and a fire certificate. An application for a Disability Access Certificate is made to the local authority and must include an application form, duplicate copies of the building drawings showing how the building complies with Part M, a report discussing how the design meets Part M and the €800 fee. (Cork County Council, 2013) .

There has been a mixed reaction to the Disability Access Certificate. A survey carried out by Rogerson (2006) to 110 people with wide ranging experience of disability showed that only 12% felt that building regulations were applied and enforced and that 89% supported mandatory Access Certificates. It is important to ensure that the minimum requirements that are ultimately needed are enforced and hence the logic behind such a certificate is correct. However since its introduction in January 2010 the cert has come under a lot of scrutiny. The problem lies with how the Disability

Access Certificate is conducted. Interviewee Neil Murphy[2] stated that he felt the Department of the Environment stepped away from it once they brought it in and have left it up to the local authorities to bring their own interpretation of it. This lack of nationwide policy is a problem that Michael Mohan also identified. There are 37 local authorities that administer the regulations as they see fit, leaving applicants having to ascertain what approach to take from each authority. For such a certificate to work there needs to be a more uniform approach to it across the entire country. Another weak point of the cert is the fact that it has been named a "Disability" Access Certificate. It focuses too much on disability and puts in people's minds that regarding access to a building we should be looking at disability and that is not the case at all. There were suggestions to change the wording of the cert but legal issues prevented them from changing it. A revision of the certificate is required and it should incorporate a means of including a more universal approach. The label of disabled access needs to be moved away from and access for all should be looked at more closely.

The Centre for Excellence in Universal Design

In 2007 under the Disability Act 2005, the Centre for Excellence in Universal Design (CEUD) was established as part of the state body, National Disability Authority (NDA). The Centre claims to be committed to the principles of Universal Design, allowing people in Ireland to partake in a society that treats everyone equally and provides environments that everyone can enjoy regardless of their individual ability. The Centre's ambition is to accomplish excellence in Universal Design in Ireland through promoting the awareness and

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[2] *Neil Murphy – See Interview*

understanding of the philosophy, liaising with the built environment bodies and professionals, ensuring it is built into the training and education of the various professions, and contributing to the development of standards. (CEUD, 2013).

The most significant accomplishment of the CEUD with regards to the built environment is the "Building for Everyone: A Universal Design Approach" series of booklets. These provide best practice guidance on how to design, build and manage buildings universally. Each booklet individually covers the topics of the External Environments, Entrances and Horizontal Circulation, Vertical Circulation, Internal Environment and Services Sanitary Facilities, Facilities, Building Types, Building Management and Planning (CEUD, 2012). The guidelines that the series layout gives are a comprehensive coverage on how Universal Design should be achieved and provides a useful checklist at the end of each section. It is arguably the best guidance available to designers in Ireland and while it does apply the principles of Universal Design considerably well it could be argued that this series of booklets is still not enough. The checklists provided are good but applies to all building types. The access to buildings is different depending on the buildings use and therefore checklists should be designed for different types of buildings. Perhaps the direction such guidelines need to take is obtaining independent building types and applying these standards to each type individually. This way designers would have a more specific set of guidelines or standards to follow for their own circumstances.

Legislation is a key factor when it comes to the implementation of any issue. While the current legislation surrounding access in terms

of the built environment does provide a minimum standard, there are possibly areas that need to be revisited. There is still too much focus on disability in access when by in large this problem has been resolved. Relating access issues to disabled design into the future will only hold it back from getting to where it needs to be. The publication of standards by the Centre for Excellence in Universal Design is a major step forward in the way of thinking but as outlined perhaps it still isn't enough. A motion that certainly needs to happen is the continual reviewing of regulations and the introduction of references to standards such as the "Building for Everyone" series of booklets within the legislation.

While implementing Universal Design through building regulations is important, it can become possible to over-enforce the issue as well. Care needs to be taken to ensure that people and designers don't see Universal Design as just another piece of 'red tape' or obstacle that is in the way of their design. In an interview with Jim Harrison[3] he used the interesting metaphor of the "stick or carrot approach". This implies that too much legislation is only trying to force something on someone that will only lead to them resenting it. Possibly a more fruitful tactic might be to try and entice people to engage with Universal Design.

Implementing Universal Design

Access to the built environment should be an experience that everyone can enjoy and not simply just a function that the building or environment requires. Implementing Universal Design will ensure this is the case. This chapter discusses the principles to which the philosophy has been built around and investigates how they have

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[3] *Jim Harrison, Lecturer at the Cork Centre for Architectural Education*

had an impact on Irish guidance and awards regarding the implementation of Universal Design.

The 7 Principles of Universal Design

In 1997 a group of people consisting of working professionals such as architects, engineers, product designers and environmental designers, developed principles to which Universal Design could be applied to. The 7 Principles taken from North Carolina State University (1997) are as follows:

o **PRINCIPLE ONE: Equitable Use**

The Design is useful and marketable to people with diverse abilities

o **PRINCIPLE TWO: Flexibility in Use.**

The design accommodates a wide range of individual preferences and abilities

o **PRINCIPLE THREE: 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.

o **PRINCIPLE FOUR: Perceptible Information**

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

o **PRINCIPLE FIVE: Tolerance for Error**

The deign must minimise any hazards and the adverse consequences of accidental or unintended actions.

o **PRINCIPLE SIX: Low Physical Effort**

The design can be used efficiently and comfortably and with a minimum of fatigue.

o **PRINCIPLE SEVEN: 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.

The purpose of these principles is to give guidance on new designs including environments, products and communications. The late Ronald Mace led this development of Universal Design at the Center for Universal Design in the North Carolina State University. The development of the 7 Principles has been a major step towards helping people get a better understanding of Universal Design and begin to see that it is more than designing for people with disabilities. Each Principle is looked at using the same format. The principles name and definition are given, followed by guidelines regarding the individual principle.

Overview of the Principles

The 7 principles have been crucial to the overall development of Universal Design across the world. However, they do come up against some criticism. They can be described as being quite vague and difficult to understand. In terms of the built environment the argument can also be made that some of them are more applicable to products and services. This is due to the fact that the principles were initially designed for everything. They were developed to take in a wide range of areas but the result of that now means that they can be too general and difficult to apply to a specific field.

As part of the research undertaken, an attempt was made to identify examples to which each individual guideline can be related to. (It was found that it is somewhat difficult to attain examples of each principle that can be said to be entirely Universally Designed. The result of this research was a list of examples that each contained elements that can contribute to creating an environment that is accessible and usable to all. If you take guideline 2a from Principle 2: Flexibility in Use for example. This image does show a simple and effective interpretation of the specific guideline. However who is to say that this particular example is Universally Designed? There are other aspects of it that can be used as an argument against it. One being that it doesn't accommodate Principle One: Equitable Use, which states that the design should be made appealing to all users.

Overall it was found that the principles are too general and it is ultimately up to the interpretations of the reader to decide how they see them. The principles are outlined for an ideal world where new

buildings and environments are built on green field sites and perhaps this may be true for a country such as the USA where they were first generated. However, to take these principles and attach them to some of the built environments that smaller urban areas or existing historic buildings that Ireland is home to is almost impossible in some cases. The principles don't allow for the numerous different scenarios that may inhibit the implementation of their guidelines. There has to be alternative solutions that special cases can adapt to. This is ultimately the biggest problem with trying to legislate Universal Design. It is very difficult to nail down guidelines to which everyone has an obligation to follow.

Irish Universal Design Guidelines

As mentioned in chapter three, Universal Design has been given a definition in Irish legislation and the Centre for Excellence in Universal Design has been set up to research and promote it. This centre has produced a set of best practice guidelines that they have interpreted from the 7 Principles of Universal Design and applied to different areas within the built environment. The "Building for Everyone: A Universal Design Approach" series of booklets includes External Environment, Entrances and Horizontal Circulation, Vertical Circulation, Internal Environment and Services, Sanitary Facilities, Facilities, Building Types, Building Management and Planning (CEUD, 2012). It provides guidance to new buildings, and the use and adaption of existing environments while recognising that it does not represent the only possible solutions (CEUD, 2012). Again, depending on the many different scenarios that can exist at a particular environment, some solutions may be more suitable than others. If you take, for example, a Georgian terrace house that is located along a street with no room at the front of the building to

build any form of a ramp, and compare it to a Georgian house that is located back off the road with plenty of space and even has the possibility of creating the main entrance through a door at basement level.

Upper Leeson Street, Dublin.   *Clyde Road, Dublin.*

This highlights the difficulties that can arise when dealing with access to different buildings. In the case of the street side house there will have to be another solution to the problem as generally the conservation issues of such buildings will take preference over the access issues. The rear of the building will probably have to be looked at in order to for people who require using a ramp to gain access and even in some cases this won't always be possible. The Building for Everyone series does provide a comprehensive guide to designing a building that caters for the needs of everyone regardless of their degree of ability. It is fully compatible with Part M of the Building regulations and shows that if designers are willing to go further than just the minimum requirements, a Universal Design is possible to achieve.

Award Winning Standards

The RIAI/OPW Awards for best accessible building sets a good benchmark for where building standards regarding access should be.

An Interview with Michael Mohan[4] revealed exactly what they require from buildings nominated for good accessibility. The main criteria that they look for is that the building not only complies with regulations but that it also incorporates Universal Design features which "make it exceptional and go beyond Part M" of the Technical Guidance Documents. The fact that he mentions Universal Design indicates that the principles must be seen to be implemented. He goes on to discuss the assessment analysis they use to judge the building. They study them in terms of to what extent they have achieved equality and inclusiveness for everybody with regards to the access, the use and the safety of the building. The assessment takes into account the following areas:

• The External Environment and Approach

• Transportation, Parking and Means of Arrival

• Circulation and Way finding

• Internal Environments

• Security and Safety

Ultimately it is the buildings that have gone beyond Part M, and therefore have better usability, that are seen to be worthy of recognition. It is awards like this that will result in people being more driven towards successfully achieving a Universally Designed environment. As was mentioned previously, there possibly needs to be more enticements such as awards that are more open to all building types and not just public buildings, to get better implementation of Universal Design into Irish architecture rather than trying to completely force the issue with legislation.

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[4] *Senior Partner of Michael Mohan Architects; specialist in Inclusive Design"*

Building Control

In order to get better implementation of Universal Design within the built environment, not only will it have to be introduced into the legislation at some scale, but enforcement of it will also be required. As it stands presently there is extremely poor enforcement of the minimum requirements of the building regulations. Despite the introduction of the Disability Access Certificate there are little or no inspections or site visits to ensure the regulations are being applied. The building control authorities have had to take on the role of Disability Access Certificate assessors at a time when there is an embargo on staff recruitment increasing the existing staff's workload considerably. The resources just aren't there currently for the kind of building control that is needed.

Universal Design Principles Vs Building Legislation

In theory if all of the principles are correctly implemented to access within the built environment then Universal Design will be achieved. However, the problem lies within the gap between the building regulations and the 7 principles. While considerations for people with disabilities are well covered in the regulations and are certainly necessary for Universal Design, they are not sufficient when planning and designing for the whole population. Accommodating the needs and wishes of everyone, e.g. children, the elderly, women and men, is also necessary for Universal Design (Norwegian State Council on Disability, 1997). If the gap between the regulations and the principles can be narrowed down and it becomes clearer what Universal Design actually needs in order to be implemented correctly, then access to the built environment can be improved for all users. The Technical Guidance Document Part M is looked at in

order to see how they comply with the 7 Principles of Universal Design that have been outlined previously. Examples of access to buildings that fully comply with the building regulations are shown below. However elements that prevent them from being Universally Designed are highlighted. Each example will be judged against the 7 principles.

Example One – Building Approach

The BreastCheck Clinic in Cork was designed by Cullen Payne Architects and was completed in 2007 (Walls Construction Limited, 2013)

Front entrance of Cork Breastcheck Clinic.

Access ramp to main entrance

The entrance to this building is fully compliable with the Technical Guidance Document Part M 2010. A ramped access route is provided as well as a stepped approach making the building fully accessible to all users. Both the steps and the ramp comply with the regulations. The steps riser and going heights and widths are in compliance, and the ramp complies with the minimum unobstructed width between handrails of 1200mm as well as the positioning of level landings at the top, bottom and at the change of direction (Department of Environment, Community and Local Govermant, 2010). However if this example is to be looked at in the context of the principles of

Universal Design, issues with the approach to the entrance occur. The ramp provided is not very well integrated into the design of the building and is separated from the steps. It goes against Principle One: Equitable Use and more specifically guideline 1b which states; "Avoid segregating or stigmatizing any users" North Carolina State University, 1997). This is exactly what the designers have done with the ramp in this example. Not only does a user that needs or wants to use the ramp have to take a completely different approach to the entrance, but it also takes them behind a solid brick wall. It is almost as if the designers are trying to hide the ramp as much as possible rather than make a feature out of it with another more attractable solution. It isn't right that a user, no matter what degree of mobility they have, is subjected to such segregation. This is an example of poor design with regards to Universal Design. It is also important to note that there is sufficient room to the front of the building to design a much better building approach than what was built.

The Cork Civic Offices were designed by ABK Architects and were completed in 2007 (Cork City Council, 2013).

Front view of Cork Civic Offices   *Approach to building entrance*

This building won the RIAI Best Accessible Building Award in 2008 and the approach to the entrance would have been one of the main reasons for its selection. This a good example of a fully inclusive design. The difference between this building approach and the previous one is that the ramp doesn't stigmatise any users. All people who use the building are treated equally and it is probably safe to say that the ramp is the most commonly used approach into the building. This is down to clever design. The approach abides by the minimum standards set out by Part M of the Technical Guidance Documents including the inclusion of steps where a ramp has a greater rise than 300mm (Department of Environment, Community and Local Govermant, 2010). It goes beyond providing the minimum requirements of the regulations and it is almost like the design integrates the steps in rather than the old norm of integrating an access ramp into the building approach.

Example Two – Entrance Doors

The Architecture Factory is the new home of the Department of Architecture in CIT. It was fully opened to classes in January 2013.

External view of the main entrance   *Internal view of the main entrance*

Again, like all of the examples been shown, this entrance complies with Part M of the Technical Guidance Documents. It has a lobby which is needed as the entrance opens directly into the open plan

architecture studio. The lobby complies with the minimum sizing requirements given in section 1.2.5 of Part M and also has the correct floor surface. (Department of Environment, Community and Local Govermant, 2010). The external doors of the lobby entrance are fitted with an electronic push to open feature that can be seen in the illustration above. While this does provide easy access to people who may be in a wheelchair, carrying objects, or are simply just too weak to open the door it can be an inconvenient system to others who wish to move through the doors at a quicker pace. But even apart from this, the major problem with this particular entrance is that the internal lobby doors are then standard push and pull doors. This means that the person gaining from the electronic door is immediately impeded once inside the lobby. This example comes against the Universal Design Principle Three: Simple and intuitive use, and Principle Six: Low Physical Effort. The push button mechanism makes the doors heavier and result it in opening slowly and can be quite frustrating for the users. There are cleverer options available to deal with situations like this. It is almost as if the electronic push button was fitted just to show that people with disabilities are recognised and hasn't been thought about otherwise.

The example shown above is a better example of a lobby entrance as it has two automatic sliding doors that won't break the stride of any

user no matter what their pace is. Simply complying with the building regulations is not good enough in order to achieve a Universal Design. Designs need to be fully thought through in order to create an environment that all people can use as easily as is possible.

Example 3 – Buildings Circulation

Main Corridor

The Cork Civic Offices were designed by ABK Architects and completed in 2007 (Cork City Council, 2013). The building this time however is noted for a major flaw. While the interior is spacious and has good signage, it has issues with glare and lack of visual contrast between floor and wall finishes. In the context of the Universal Design principles this doesn't fulfill the guidelines. Principle Two: Flexibility in Use, under guideline 2c states; "Facilitate the user's accuracy and precision" (North Carolina State University, 1997). In this case it is extremely difficult for someone with a vision impairment to distinguish between the walls and floor making the environment difficult to navigate. While Part M does refer to visual contrast in Section 1.6 it doesn't give any regulations that must be followed. This Plate ultimately means the building still complies with the building regulations. An example of a building with good visual

contrasts is the Cork Institute of Technology library. The use of Main Corridor clear different colours makes it easy to distinguish between different surfaces. Also the different colour carpeting allows users to easily distinguish between the walking route and the seating areas.

Conclusion

Implementation of Universal Design needs to come from the designers. They need to recognise that if they can go that bit further than the minimum requirements and develop designs that are all inclusive then everyone will gain with regards to the ease of access and the overall experience of the environment. There are numerous examples all around us such as the ones shown above, that when looked at closely can be used to compare the difference between the implementation of the Part M regulations and the Principles of Universal Design. It can be accepted that some examples will be hampered by many different scenarios such as the site size and topography. However there can still be ways of compromising that haven't been looked at because once it passes the requirements of the building regulations it is seen as sufficient. Many more examples have no such excuses and the poor design is simply down to the designer's lack of knowledge or ambition to achieve a Universal Design.

Conclusions and Recommendations

The research began by examining how Universal Design came into existence and how it has developed over time to become the philosophy it is seen as today. It was interesting to find that the event that triggered the whole idea of creating a more equal and inclusive world was World War Two. It was primarily pushed by the many American soldiers who were injured in the war and wanted an

equal standard of life regardless of their disabilities. This resulted in the changing and introduction of new legislations regarding people's rights and the idea of designing with the needs of people with disabilities in mind began to grow. Numerous worldwide and European conventions developed further legislation relevant to barrier free design and by the 1980s, the ever increasing concept of creating a world that included more people evolved into Universal Design. The seven principles of Universal Design were created and are still recognised today as the backbone of the philosophy. The study was then narrowed down to the development of Universal Design in the Irish context. Ireland was much later to start to make an impact on its accessibility issues with clear moves towards a more equal society for people with disabilities not coming till the 1990s. A number of different acts were amended and introduced and since then there has been a much more positive approach towards accessibility.

The next step of the research was to take a closer examination of certain aspects of Irish Legislation. The Disability Act 2005 was investigated as it is the most current piece of legislation regarding access and Universal Design in Ireland. It was found that Universal Design has been recognised and given a definition under the Act. This can be seen as positive steps taken by the Irish government but arguments were made that the definition is too broad and is merely an attempt to cover as much as possible. Another achievement under the Act by the government was the establishment of the Centre for Excellence in Universal Design. This centre was set up to research and promote Universal Design within Ireland and its main contribution towards developing the philosophy has been the publication of a set of best practice guidelines to which designers

can follow in order to create environments that are Universally Designed.

Part M 2010 of the Technical Guidance Documents was also examined at this point of the research. It was identified that Part M only provides minimum requirements and it is established that if designers just keep designing in line with these regulations that Universal Designs will never be achieved. Also, the legislation that is provided tends to be geared towards new builds rather than including existing buildings. Existing buildings need to be looked at closer in order to improve the overall building stock. The Disability Access Certificates that have been introduced as a means to enforce Part M was looked at too. The Research regarding this cert found that there is a widespread negative reaction towards it. It is seen by many people as another piece of red tape that needs to be overcome in order to design and build a new environment. It was highlighted that the enforcement that the cert was meant to bring has, in allot of cases, failed as there is little or no building control through inspections. This is due to an embargo on recruitment in the public sector, leading to a higher work load for officers and less inspections.

The focus then shifts the focus to the implementation of Universal Design to access in the built environment. An Extensive research into the 7 principles highlights how generalised and broad they are, and it is discussed how difficult it is to apply them to the real world where numerous different scenarios may inhibit their implementation. The "Building for Everyone" series of guidelines go beyond the minimum requirements of Part M building regulations and provides good guidance to which designers can follow when

designing a Universally Designed environment. In order for Universal Design to become the norm and be implemented into our buildings, it is guidelines like this that are required. Again however, the series is more suited to new builds rather than taking into account the problems that arise in existing buildings as well. The RIAI/OPW Awards have been awarding buildings that go beyond Part M and are seen to be worthy of recognition. This is a good incentive to designers to push on and achieve designs that can be accessible and usable to all users equally. Saying that, there still needs to be better building control surrounding access to the built environment.

The final part of the research undertaken was to directly compare the Universal Design Principles with Building Legislation. This was a useful exercise that highlights the differences between satisfying the minimum requirements and going that bit further to achieve a design that is all inclusive and more attractable to everyone, both aesthetically and practically. Examples are used to show these differences and both the corresponding legislation and the principles that are relevant are identified.

Universal Design is an extremely wide topic that takes in different fields including the built environment, products and services. Trying to relate the concept to just one of these, which is in this case the built environment, is quite difficult. While the establishment of the 7 principles in 1988 has to a certain extent provided a backbone to which the concept can be followed, they are very general and open to interpretation. The implementation of these principles may not always be possible due to the many different scenarios that an environment might have. It is much easier for designers to include

these into new builds, however, when it comes to the renovation of older buildings that may have conservation as well as access issues, the implementation of Universal Design often becomes less important. In these cases an 'as near as possible' solution may have to be accepted. There is no way that Universal Design can be achieved everywhere and it is near impossible to create designs in some cases that will suit everyone. The RIAI/OPW Awards category for Best Accessible Building is a good way of enticing designers to create buildings that go beyond the requirements of the building regulations. Incentives like this, along with better building control that has an improved set of guidelines to follow, are the critical ways of ensuring that Universal Design begins to play a bigger role in the built environment.

It is clear from the research undertaken that Universal Design regarding access in the built environment is an issue that requires careful consideration when designing and constructing buildings and environments. It is necessary that the requirements of all people using the building should be met. The Universal Design principles and legislation provide a certain amount of guidance, but more is needed in order to create environments that all can enjoy equally. Universal Design is good design. It takes into account more than just providing the required functions. It is always going to be difficult to achieve, but through better knowledge and understanding of the philosophy within the field and the general public, it can become an increasing part of everyday life.

The following interview was one of three pieces of Primary Research that were undertaken by the writer. Here Davan Swanton talks with Neil Murphy, Senior Built Environment Advisor, Centre of Excellence in Universal Design. Structured Interview Schedule

1. **Can you please define your role within the Centre?**

Obviously the title Senior Built Advisor is quite wide ranging. It involves the coming up with ideas and managing projects, such as research projects. We do allot of research and guidance work. The centre is only open since 2007 and I joined in 2008, so its early doors for us but we are still punching way above our own weight. There are only 5 of us in the centre. So ya what I do is I give advice, my advice would be to built environment professionals and members of the public. That's an area which is interesting because it makes me look into what we are doing and what regulations and part M and all that, and also the promotion of UD. So ya it's project managing, research, because where Universal Design is, is only through research and guidance so if we look at international best practice, and national best practice we can then come up with design and guidance documents and from there we hope to build standards. So that's essentially what I do, I give advice; I'm the supposed expert in the built environment. Project management of research and guidance. The promotion of Universal Design, so I do allot of seminars like you saw down in cork.

2. **Do you think the current legislation surrounding Access within the built environment is adequate in relation to part M (2010) of the Technical Guidance Documents?**

It has definitely progressed, and what was interesting was we did allot of work with the department of the environment. They

coordinated with us while we were doing 'the building for everyone'. Because the department of environment have to make sure that our booklets are within and beyond part M. So I think it's a definite improvement, and to be fair you have to have a minimum, and Part M is the minimum, whereas the building for everyone is beyond. So ya I think it is a huge step in the right direction.

3. *The Disability Act 2005 defines Universal Design as:*
3) the design and composition of an environment so that it may be accessed, understood and used
v. to the greatest possible extent,
vi. in the most independent and natural manner possible,
vii. in the widest possible range of situations, and
viii. without the need for adaptation, modification, assistive devices or specialised solutions, by any persons of any age or size or having any particular physical, sensory, mental health or intellectual ability or disability, and
4) means, in relation to electronic systems, any electronics-based process of creating products, services or systems so that they may be used by any person.
This was a major step forward in the development of Universal Design in Ireland. Do you think this adequately describes and caters for all Universal Design needs?

Ya I think it does because, allot of thought went into the wording of the Act and there is a major issue with regards to Universal Design because you have got design for all, inclusive design, accessibility for all, and the fact that the Irish government attached themselves to Universal Design and the wording that they used, you know where

they list all of the various human abilities or ranges, you're really covering everybody and that's the whole idea, that's why Universal Design is different to disability design, in that, once you design something that everyone can use, then someone with a disability should be able to use it as well. And the fact that it covers electronic systems and all that, ya I think it was very formal thinking.

3. And do you think it will evolve again from this?

Ya I would say so because at the moment we look at the 7 principles of Universal Design and then within the 7 principles I think there are something like 30 subsections. Some may not address the needs in Ireland so I think they are a great start and how look at it in the centre is that maybe they would be better reduced to 5 principles. So ya definitely, but I think good design should evolve and the infrastructure behind the principles of design should always be changing and more with the times.

4. The Disability Access Certificate was introduced in January 2010. Do you think it is successful? Do you think it is enough?

No. I don't. It should never have been called a 'Disability' Access Certificate in the first place. It should have been called Access Certificate. It's my own personal view that I think the department of the environment stepped away from it. In other words they brought out the legislation and then left it up to the local authorities to bring their own interpretation. And that's in my view nonsense. I think the fact that it focuses on disability puts in people's minds that access to a building should look at disability and that is not the case at all. It's too hard, it's too wide ranging and it is too expensive. And I also think that the local authorities should co-ordinate much better in terms of sometimes the building officers don't even know who the

planner is and the planner doesn't even know who the county architect is. So it's just difficult. We are a very small country and I think it leads to allot of confusion.

5. There is a lack of inspection by building control regarding the Disability Access Certificate and the enforcement of part M. What more could be done in your opinion?

Yes, absolutely. In Ireland while there are good building control officers they are only one or two per local authority and they may be the fire officer as well as the building control officer. I think building control should be almost on the same level as they have in the UK. I think by having this level of control it protects the client, the contractor and the architect. There is huge responsibility on the architect. Sometimes you are battling against the client and the contractor. They are trying to cut corners and you're saying no you can't do that because we don't have planning permission for it etc. No I think there is no real enforcement of part M in Ireland and again it is my own personal opinion that the government are stepping away from its duties. How can you expect people to self certify? It's complete nonsense in my opinion. You should have a building control officer with you every step of the way and they have to sign off on it.

6. Universal Design is a general concept and can be difficult to legislate in the built environment due to the many different scenarios of users for a space. Do you think it is possible to create legislation for Universal Design in the built environment without discriminating against some disabilities?

Yes absolutely, but to be honest about what you are saying to create legislation for Universal Design in the built environment without

discriminating against some disabilities, if you are designing using Universal Design then there shouldn't be any discrimination. But I know where you are coming from with your question, and yes that is our whole goal in the centre. If we can bring out standards then this is where legislation happens. We have to build standards on our work because only then will the government stand up, because what happens is industry will refer to a standard. For example a government will say in a tender that you must adhere to a certain standard. That is how this kind of stuff develops. So I think if you do create legislation for Universal Design you won't discriminate against any disabilities because the Act covers everything. And I think once a standard comes out like the ISO standards, the government can take or leave them.

7. The "Building for Everyone: A Universal Design Approach" series of booklets that have been produced here at the centre, provide best practice guidance on how to design, build and manage buildings. Do you think guidelines like these should become part of the building regulations and enforced?

Yes we do. As I said Part M is the minimum and while it has definitely improved from where it was, to be fair to the department of the environment they reference Universal Design and 'buildings for everyone'. That is our goal, to set a standard like building for everyone as legislation but it is a huge task. We have done allot more work as well as the 'building for everyone' series regarding standards. There is the Universal Design homes guidance for Ireland that we have just signed off of. We also have design guidance for people with dementia and their families. The whole idea is that they would be able to stay in their homes for as long as possible. We have done shared space research. This is regarding cars and people

sharing the same urban space. By building all this design information and researching international standards, regulations and best practice guidelines and by the end of the time we have built all these documents we are hoping then it is towards the next step of building standards and regulations which then becomes legislation. But as you can imagine this will take years.

8. Currently many designers are still designing buildings without thinking about satisfying Part M of the Technical Guidance Documents until after the initial design. How do you think this trend can be broken and that designers will start to think more openly about access and Universal Design?

That's a really really good question, because I have been guilty that myself. We would always put the part M loo as the last thing to do. I think where we are going about that is we are engaged as much as we can with the RIAI, the Irish landscape institute, engineers Ireland and the architectural societies. We get those people in to be part of our tender evaluations. So all the work we are involved in we have to go out and tender for that. So part of the tender process is that when you get in all the documents from the people tendering, we have to evaluate them, so I would invite along say someone from engineers Ireland who's involved in say house design. So it's only by us engaging with the built environment professionals that we are going to get them on board. Also my colleague James does allot of work in Universal Design in education. That is his speciality. He has been working with primary, secondary and third level design students. So what we are trying to do is capture the kids. Get kids in school thinking about Universal Design as just a normal part of life. So once you get the students and the designers, who are teaching in the design colleges and get them to buy into Universal Design, then

the graduates will arrive into practices and they will be saying to older designers that we should be designing through Universal Design.

9. From the work you carry out, what are the best examples of Universally Designed access to buildings you have come across in Ireland that may be useful to the research being undertaken for this dissertation?

I think one of the best ones is the Luas. Now I know you are saying access to buildings, but what is interesting about the Luas is that so much of what they did from the ICT to the products and services, the trams , the colours, the stops, everything is great. It is a massive step in the right direction. The Grand Canal Theatre is very good. It is a very easy building to find your way around. The Aviva Stadium is very good, Croke Park is good. One of the main things about these is the good management of the building. I mean you could design the most universally designed building in the world but if the staffs aren't trained to run the building effectively it becomes pointless. I think a bad example would be the Long room Hub in Trinity. It's a new   administration building and it is even for an able bodied person a nightmare to get around. I didn't feel good when I was in there it felt kind of clunky. The Convention centre has poor disability access apparently. I am sorry I can't be more helpful with this. It's a problem we have found. There are not many good examples of Universal Design in Ireland. And it's not the designers fault because they have been designing to part M but are getting more educated about Universal Design.

10.   Do you wish to forward any additional recommendations?

I think that architects and designers think of buildings as just the structure. But it's much more, I mean the products and services, the tables and chairs, they all make up a building. A building is the sum of many parts and there is no such thing as the perfect building. All of these have an influence just as much as the shape and design of the infrastructure on creating a Universal Design building.

Thank You.

"An investigation of how the Access and Circulation of primary school building can be improved with Universal Design & Fire Safety Technologies, with key emphasis on how this can aid blind and visually impaired children."

Tomás Maher

During the four years of me studying Architectural Technology it was very much so based around the technology of the building. With this project though, my focus was much more on the users of the building, in particular on visually impaired people and with major focus on primary schools. Through this I began to firstly research the history of designing for the visually impaired, which was in very recent times. Then I investigated the Legislation that is in place today in Ireland and made comparisons with several other countries. Thirdly I investigated the technologies that are available today to assist the blind and visually impaired in access, circulation and use of the buildings . Finally I investigate a primary school building as part of a case study for the project.

Introduction

This project was chosen for many reasons but perhaps the main area where the topic of designing for the visually impaired with emphasis on primary schools has come from is the human rights of the person. Every person should be entitled to access and circulate a building safely and with ease. But sadly this is not the case from visiting and personal experience of other schools, and these buildings for a visually impaired child would be very dangerous and would make the

experience far more daunting. It is from this that the topic came from.

This research in the particular area of access and circulation for visually impaired children in primary schools was undertaken because of children being amongst the most vulnerable in society, and with only one primary school in Ireland for visually impaired children and with the vast majority of visually impaired children attending mainstream schools, the need for research in the area of mainstream schools became evident. But it was from a meeting with Lean Kennedy from the Irish Guide dogs for the Blind that it first became evident that the specialist school in Dublin was not superlative in the area of ease to access and circulation of the building from a visit that she had made previously. This further focused the area of investigation on mainstream schools, and upon researching that specific area of designing for visually impaired children in a primary school it was found that there was a lack of guidelines regarding that specific area, this again led further to the need for research in this area.

Conclusion

This literature review examined several texts from the three main themes from the project. These are the history, legislation and also the technologies that are available. With each of these themes the documents or book was critically investigated and then the prime aim of the text is described and then its strong and weak points are highlighted. This can be very helpful throughout the remainder of the project as it can be referred back to where texts are brought up in the chapters.

Although this review of the literature on the study of Access and Circulation of buildings in relation to the Access and circulation of primary school for a person, who is blind or visually impaired, has shown that it can be very difficult to find literature that is perfectly suited for a project. But with the use of several documents, texts and books it is possible to create a vast pool of information that can be drawn upon during the project.

History

History of Access for Disabled & Fire Safety

If one key moment in time was to be chosen as moment that changed access and usability of buildings for the disabled, it would have to be the A117.1 American Standard Specification for Making Buildings and Facilities Accessible to, and Usable by, the Physically Disabled. This would be the model for the British codes of practice which were issued in 1967 and 1979 and also for Part M of the building regulations in the late 1980's. At the core of the development of the standard was Tim Nugent. Tim who is described by Goldsmith (1997) as "The *Idealist who changed the world*" was born in 1923. He grew up in Wisconsin, his father was partially deaf and blind and his sister was blind. In 1941 he volunteered for military service and it was there that he studied general engineering and obtained a diploma.

Then in 1947 he completed a BS degree at the University of Wisconsin in health education and physical education. Then in 1947 Tim moved to the University in Champaign Urbana where he worked on an experimental programme in rehabilitation education. At that time a lot of university administrators were sceptical because they saw handicapped students as involving extra costs and liabilities. In

1956 he was appointed professor of rehabilitation and it was at this time that the university authorised the remodeling of all the buildings. The 200 building needed to be made accessible so therefore design specifications were needed which Tim Nugent developed. This proved to be very important as this was the world's first ever access standard with regards to access for the disabled. Even though this standard was ground breaking at the time it was very inadequate in comparison with the standard that we have today. A good example of this is the bathroom guideline for a disabled person, which was just 915mm wide x 1500mm deep. This did not allow any space and for the door to be closed the wheelchair would need to be folded.
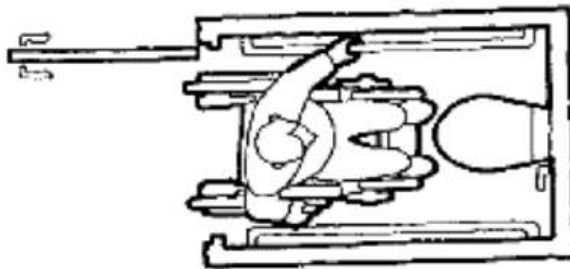
Disabled Bathroom Design from 1963

The next key moment was in the 1970's, disability rights activists lobbied Congress and marched on Washington to include civil rights language for people with disabilities into the 1972 Rehabilitation Act. In 1973, the Rehabilitation Act was then passed, and for the first time in history, civil rights of people with disabilities were protected by law. Then in 1975, the Education for All Handicapped Children Act was passed to guarantee equal access to public education for children with disabilities. The Education for All Handicapped Children Act was renamed in 1990 to the Individuals with Disabilities Education Act (IDEA), which further elaborated on the inclusion of children with disabilities into regular classes.

After decades of campaigning and lobbying, the Americans with Disabilities Act (ADA) was passed in 1990, and ensured the equal treatment and equal access of people with disabilities to employment opportunities and to public accommodations. The ADA intended to prohibit discrimination on the basis of disability in: employment, services rendered by state and local governments, places of public accommodation, transportation, and telecommunications services.

With regards to fire legislation and safety in Ireland most legislation was taken from UK and therefore when looking the history of fire legislation it is to the UK that is looked to. The first fire related legislation was the Fires Prevention Act 1774 which had required thicknesses for walls. Then after that there was a series of acts and regulations that led to the Acts and Regulations that we have today, these are outlined below.

• *The Factories Act (1937). This Act required that the factory owner have a 'plan of escape' in case of fire and brought in the first rudimentary fire certificates.*

• *Fire Services Act (1947) gave the Fire Brigade its first responsibilities for fire safety. This gave the fire brigades the power to inspect factories for fire safety.*

• *The Fire Precautions Act (1971) came into force in 1972, when hotels and boarding houses were the first class of premises to be designated. Under the Fire Precautions any premises where there was sleeping accommodation for more than 6 persons (staff or guests) or sleeping accommodation above the first floor required a fire certificate issued by the local fire authority.*

• *Building Act 1984 In England & Wales, the powers to make building regulations were consolidated and re-enacted in 1984. The*

current building regulation's 'Fire Safety' documents were last revised and issued in 2006.

All of these acts led to the Fire Regulations and Acts in Ireland today and the most recent fire regulation which is part B for Fire Safety was also completed in 2006 the same as the UK.

It is very clear that from looking at the history of access for the disabled that it has improved immensely over the last 50 years. There is a lot of credit for this going to Tim Nugent for all that he done in creating the world's first ever access standard with regards to access for the disabled. But even tough Tim Nugent was a maverick at the time he did have his flaws which are evident in his tough stance on having the disabled students do every things themselves, which is good for the students to get their independence but often times was very difficult on the students. Selwyn Goldsmith on the other hand took a much more microist path. It was Mr. Goldsmith's research that influenced the Universal Design field to be developed. When looking at the history of legislation in access for the disabled it is clear to see that it is in America that started the movement which then led to other countries following suit. This was also the case with the history of fire legislation in Ireland which would have taken almost all of the Legislation that the UK used and often re-written with parts referring to the British Standards. The next chapter will now investigate the legislation that is place today in Ireland .

Legislation

Authorities

The Authority for the disabled in Ireland is the National Disability Authority (NDA). The National Disability Authority is the

independent state body providing expert advice on disability policy and practice to the Minister, and promoting Universal Design in Ireland, NDA (2000).

NDA Logo

The NDA was established under the backing of the Department of Justice, Equality and Law Reform by the National Disability Authority Act 1999. The NDA has four main purposes which are set out below. NDA (2000).

1. Provide policy advice to Government and public bodies

2. Undertake, commission and collaborate in disability research and assist in the development of statistical information

3. Advise on standards and guidelines in services to people with disabilities

4. Develop standards, education and promote awareness of Universal Design

The last of its four main purposes of the NDA where it develop standards, education and promote awareness of Universal Design, is the one most linked with this project. One of the core aims of this project is to investigation into how universal design could be used in a primary school and more specifically how it can aid blind or visually impaired children. When the NDA created the Centre for Excellence in Universal Design it created a centre that is dedicated to the principles of universal access, enabling people in Ireland to participate in a society that takes account of human difference and to interact with their environment to the best of their ability. NDA (2000).

Technologies

Outside Areas

This section looks at the external aspect of buildings with the emphasis again on primary schools. When looking at the external environment of a school the external steps and stairs are a key element. When investigating external steps and stairs it is important that there edges are clearly defined. This is normally done through painting the leading edge of the step in a contrasting colour.


External stairs with painted leading edge

When there is a change in level there should also be a 600mm strip of tactile paving. Single steps, unequal step height and spiral stairs should also be avoided. Handrails should be provided on both sides of the stairs. They should extend beyond the first and last step to a minimum of 300mm, the handrail endings should turn inwards to the wall or downwards all the way to the ground, to avoid hazardous projections, like example below which is sticking out into the path of travel.

Poor Handrail design

Another key element in the outside areas of a school and all other buildings is the footpaths and pathways. Footpaths should be easily distinguished from roads and other areas, and should be wide enough to accommodate the amount of people using it. With the surface of the pavement it is important that it is an even surface, and to also provide tactical indicators or barriers to warn against hazards, such opening doors. At a crossing the pavement should be dished at 1:20 fall and also use tactile paving. Red tactile paving should be used where there is a pelican or zebra crossing and yellow tactile paving at all other crossings .
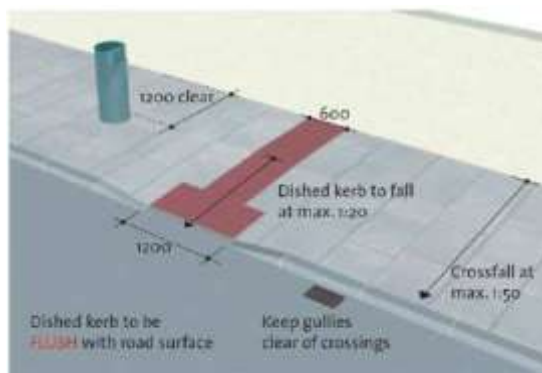
Tactile paving and dropped kerb design

Following on from the paving another important element of external environment and especially in schools is parking and setting down areas in schools. With parking it is important to ensure that there are adequate parking facilities for the expected number of cars, in a primary school this is normally for teachers and visitors to the school. There should also be a suitable supply of designated larger bays for people who need them which are of a closer proximity to the building. These spaces should be marked on the ground and on a wall or post. It is also very important that all light post or similar obstacles in the car park should be highlighted using a contrasting colour. But most of the cars that come to the school are just setting down to drop off and collect children so therefore it is very

important to have a well designed setting down area. The setting down point should be close to the building and to also be flush with the pavement but it is necessary to have tactile paving to separate the pavement from the setting down area.

The final element in making a school safe for the visually impaired outside is in the playground area. It is important that playground equipment is safe and that it is also well maintained and that it also has soft textured ground. There are three main types of surfaces used which are wet pour surfacing ,engineered wood fibre and tile finish, as shown in Kompan (2009). With the playground equipment it is also important that it stands out from the ground and can often be covered in a soft material.

Protective Covering around pole

Internal Horizontal Circulation and Teaching Area

This section of the chapter investigates the corridors and also the entrances into the building. Investigation of these areas of building is done through analyzing the flooring, lighting, doors and also signs. The flooring is investigated first.

Building for Everyone (2010), states that the flooring that is used in a building is vital in assisting building users in orientating themselves, navigating and moving comfortably around a building and identifying features and obstacles. The material used for the floor should be non-slip but also should have no shine off the finish. In a meeting with Léan Kennedy from the Irish Guide dogs for the Blind she advised that matt flooring is the best for minimising the shine off the floor and also indicated that the texture and colour of the floor could also assist in the circulation of the building. Colour can be used to indicate the path to be taken and to also differentiate between the wall and floor by changing the colour of the skirting. With the texture that can assist in the circulation of the building through the use of two materials like linoleum for the main pathways and carpet in other areas, this can be very helpful in large open spaces.

Colour used on floor, to aid circulation of building

When carpet is used it is should be a non deep pile carpet and not have any patterns which might be confused with the directional aid. The use of tactile strips is also very helpful inside of the building as can be used to indicate the top and bottom of steps and stairs.

Another element that Léan highlighted as being very important is the lighting in a building. The lighting should be consistent and even throughout the building and if possible should come from the roof so as to not shine directly at the person. Where lighting from the roof is not possible windows should be provided with blinds to prevent glare. Even though primary schools will not be operating during the hours of darkness the design of artificial lighting is also very important as is there maintenance. In areas that can be poorly lit such as internal corridors it is important that lights remain on continuously. It is also important to consider flexible lighting where a person can control his or hers own lighting, this includes having access to task lighting for difficult tasks. Glare can be a problem for the visually impaired especially when trying to complete task in a classroom. Therefore light filtering blind should also be provided. The roller blind softens and diffuses the light that will enter the room which in turn prevent glare. These blinds would not need to be used all of time just on sunny days.

Velux Light Filtering Blind. Different strengths are available

Leading on from lighting another key element in making corridors and entrances more user friendly for the visually impaired is doors. With doors it is vital that they provide a clear opening of 1000mm in

new builds and of 800mm in existing building. But from the visually impaired aspect it is also vital that any door that is all glass or predominately glass that it should incorporate permanent markings so that its presence is clearly apparent to people who are at a range of eye levels. To do this the markings should be at two levels, 850mm to 1000mm and 1400mm to 1600mm above floor level. The markings should contrast visually with the background surfaces viewed through the door in both directions and in all lighting conditions. Strong bold colours are normally used to achieve this.

Red colour contrast strips to highlight glass

Doors should also have colour contrast from the wall and handle. It is recommended that all doors where possible have vision panels in them so that people are aware if someone is walking behind door. Or so that it is possible to see if there are people in the room. Internal doors should have a clear width of 850mm. Where possible outward opening doors should be avoided, but if necessary a guard rail should be fitted in the hallway. But from a meeting with Victoria Elliott from the Irish Guide Dogs for the Blind and Anne Healy who is a visiting teacher for pupils with visual Impairments, where they stated that a guard rail in the hallway can be an obstacle as if a pupil is using a cane it can be hard to detect and stated that another option to this would be to use a door recess.

With doors the signs that are used on them are also critical aspect in aiding people in the use of the building. Clear easy to read signs should be used. The font used should be easy read and should have a strong colour contrast from the rest of the sign and also stand out from the wall or door that it's on. In order to avoid confusion the signage should be kept consistent throughout the building. The use of maps, audible or tactile information inside the entrance of a building can also be helpful.
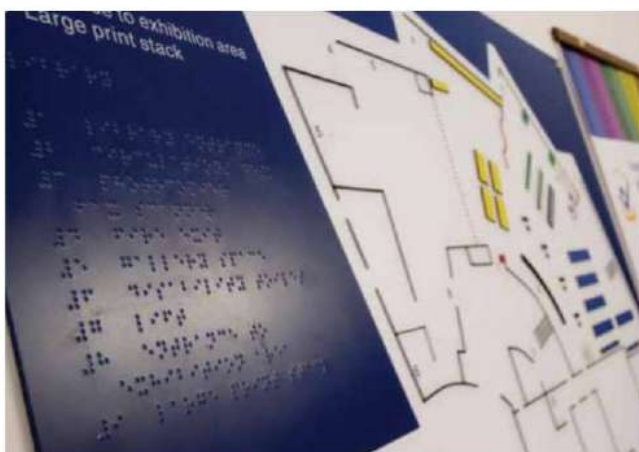
Braille sign with interactive map

In primary schools the signs used should be at the children's eye level. The same applies for notice boards where they should also be at eye level and the information found there should be easy to find and read.

Fire Safety and Vertical Circulation

This section of the chapter investigates the fire safety and the vertical circulation of schools. In the investigation of fire safety and vertical circulation, this section analyses lifts, stairs, emergency lighting and door systems again with particular focus on the visually impaired. In a multi-storey building a passenger lift is the most common method of travelling between storeys, especially for people

who cannot use stairs or prefer not to use them. In high rise building they are vital for all of the building users. But in the case of a fire lift should not be used unless it is an evacuation lift. With evacuation lifts the shaft and lobby of lift are protected from fire and can only be operated by an authorised person. With the use of an evacuation lift in a fire there still concerns and risks these can be that the fire is in the lift shaft, that there is smoke in the lift or that lift will bring you down to landing with fire or smoke in it. These instances can all be avoided with the uses of smoke and heat detectors that are linked with the lift that automatically cut off all the power going to the lift if set off. But it is because of these risks that other methods of evacuation should also be designed for.

Refuge areas are a requirement even when an evacuation lift is present. A refuge area is normally an enclosure such as a compartment, protected lobby, protected corridor or protected stairway or it can also be an area in the open air such as a flat roof, balcony, podium or similar place which is sufficiently protected from any fire risk and provided with its own means of escape. The refuge space chosen should reduce the width of the escape route.

When using lifts for everyday use it is important that the lifts are easy to locate and normally tend to be next to a flight of stairs. Clear easy to read signs indicating the location of the lift should be provided inside the main entrance. The lift itself should be of an appropriate size and the doors should have a clear opening width of at least 950mm and stay open for at least 8 seconds. Inside the lift the buttons should be easy read and be in consistent order reading from left to right, with braille on each button, with a visual and

audible system for signalling the level and the selected level. There should also be handrails on all sides except for the door .
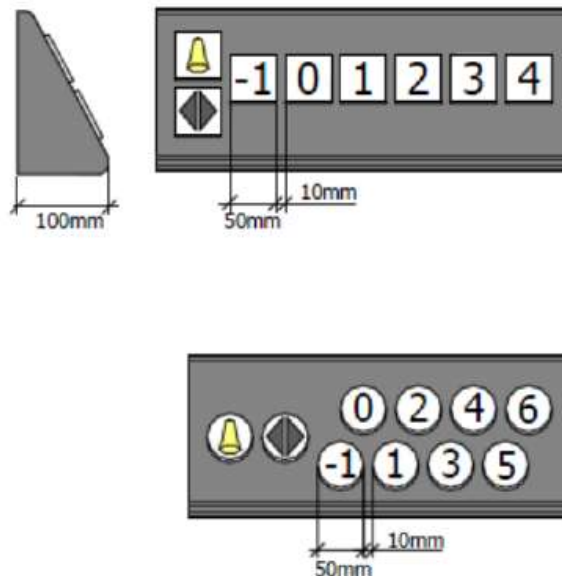
Button positioning and order in lift

In most buildings, in everyday use and in cases of fire when circulating or escaping vertically in a building the stairs is used the most by the visually impaired. It is therefore vital that it is designed correctly as the stairs is also perhaps one of the most difficult and dangerous areas in a building for the visually impaired. With stairs/steps being a hazard it is important when designing a new building that they be avoided where possible within levels. In the design of the stairs there are several guidelines to be followed. With the steps it is important that all step sizes are of a consistent height and that the going is 220 min ideally around 300mm and that the rise is 220mm max ideally a 180mm as shown in Part k of the technical guidance document (2005). All step risers should be solid. If the riser is open it can cause a visual confusion for the user. The total amount of steps in a flight of stair should not exceed 12 steps and the number of steps between storeys should also stay

consistent. Clear landings should be provided at the top and bottom of a flight where there should also be tactile strips provide to warn and indicated to visually impaired users of the location of the stairs. Another point related to internal stairs that Victoria and Anne indicated as being a problem area in buildings was the handrails. Handrails should be provide at both sides of the stairs and also as mentioned before in the external stairs the handrail endings should turn inwards to the wall or downwards all the way to the ground, to avoid hazardous projections. Attention should also be given to the colour of the handrail so that it contrasting to the colour of the wall. This contrast of the colour should be continued to be used on the leading edges of steps, which can double up as a non-slip nosing that is a contrasting colour. The lighting of the steps and landing surfaces should be 150 lux.

Emergency lighting is also a vital component of any building but it can also be combined with wayfinding systems that can aid a visually impaired person in finding their way to safety. Different eye problems lead to varying difficulties in using escape lighting. Very few people who are registered blind have no light perception as a visual impairment in a person can mean more than of visual acuity as the legal definition of a blind person is someone who stated in BD8 (1990) as "so blind as they cannot do any work for which eyesight is essential". The BRE advisory service (2005) indicates that there are three main methods of powered wayfinding systems. The first wayfinding system is the led system which has 140mcd led's every 100mm on a track that is placed on either side of wall and stairs at a low down level and 6 of 15mcd led's are placed in each stairs nosing.

LED Wayfinding System

The second system that is available is the electroluminescent system that uses continuous strips that are mounted low on the wall and surrounding emergency exit doors. The third and final system that is available is the miniature incandescent system with lamps spaced out at 100mm within a tube, in the same location as the previous system. With all of the systems above, they produce above 0.3lux with the exception of the 1 lux of the led's on the nosing. The exit sign should be provided above the door so as to not cause glare and is very helpful as it gives a visually impaired person something to walk towards. Due to the fact people with poor vision have difficulties seeing an understanding scenes it is important to keep the system used as simple an as consistent as possible. To achieve this, the lighting should be as even as possible so there are no large amount of darkness and no large amounts of light in one place. The fabric of the building is also important as it will provide enough contrast to differentiate between objects.

The doors that are used internally particularly in school buildings are also important. Building for Everyone (2010) indicates that the initial opening of a door such take 15N and the swing of the door

should take around 6N. The doors for a visually impaired person should contrast visually from the rest of the wall and the direction of the door openings should remain consistent. The handles of the door should contrast from the rest of the door and the use of knob handles should be avoided. There are a lot of doors in non-domestic buildings like schools that need to be self-close doors for fire resistance. But these doors as can be expected take more force than the 15N previously stated. In buildings fitted with automatic fire detection and an alarm system a door-closing devices can be linked to hold-open doors in the building by using an electromagnetic hold-open device. This enable doors to be held open in a fixed position thus allowing unobstructed or at least much easier and useable access for all building users. This is especially useful in primary schools as young children can have a limited amount of strength. When the power supply to these devices is interrupted by a smoke detection signal, manual release mechanism or power failure, the doors will then close. This makes electromagnetic hold-open devices very suitable for doors on circulation routes such as corridors, and for some lobby doors.

Conclusion

This chapter focused on three main sections. Section one focused on the external environment of the building, identifying several key areas such as stairs/steps, footpaths, parking and playground to be research. The research has shown that colour contrast is very important in steps, handrails, footpath from the road and also in the playground equipment to the floor. With the surfaces externally it was found smooth even and also soft surfaces in the playground are preferred. Tactile paving was also found be very useful tool in warning of steps, crossings and also setting down areas where they

are flush with the road. The second section then investigated horizontal circulation within the building. Again similar to the outside areas of the building the research found that colour contrast again is very important in the floor to wall, doors to wall and also in the signs to read make them easier to read. The research in this section also found that glare and too much shine can affect a visually impaired person's ability in circulating the building. To minimise this glare and shine a matt finish is used on surface, light filtering blind used on windows and even consistent light from the ceiling where possible is also applied. It was also found the direction of which the door open should be kept consistent and open inwards as much as possible. The third and final section then investigated fire safety and vertical circulation. Lifts, stairs emergency lighting and door systems were all researched in this section. It was found that a protected evacuation lifts could be used in the case of fire but it also had to be connected to certain fire and smoke detectors that power off the lift if it was in danger. The research also found that lifts should be easy to locate and be next to stairs. With the stairs colour contrast again was found to be very important with the handrails and leading edge of the steps. This also aided a person in an emergency exit it reflected off the lighting. The research also investigated wayfinding emergency systems that used tracks and tubes of lights to guide a person to an exit. This technology has proved to be very helpful in the cases of an emergency. Finally door systems were also researched and it found that a force of 15N was the recommend force in opening doors but it was found that emergency doors required a lot more force than that. To assist with this, buildings with automatic fire detection systems can be linked with hold on devices on doors that will release if there is a fire. The research has

shown that this can be very helpful in primary schools as children will often have a limited amount of strength. Where this chapter investigated the technologies and techniques that are available to assist the visually impaired to circulate a building and to escape the building in the case of a fire, the next then uses a case study of a primary school to investigate if these technologies and techniques are present or lacking in the building.

Case Study

Description of Building

This section of the chapter gives a description of the Gaelscoil Uí Ríordáin building in Ballincollig in Co. Cork, Ireland. The description firstly will give a brief account of the school's history and then secondly describe the building through investigating the location, size and photographs of the building. Gaelscoil Uí Ríordáin named after the poet, Seán Ó Ríordáin first opened in 1983 with 20 children. The school then grew steadily over the years to the point where the need for a new building was recognised over ten years ago as the classrooms were very cramped. A 1.2-hectare site in Carriganarra, was deemed suitable by the Office of Public Works and a deal was completed in 2009, with the planning permission granted in 2010, English, E (2012).

Today the school today has over 530 children attending the school and has 27 teachers and 5 special needs assistants. With the capacity for 750 pupils the school also has plenty room for growth. The principal of the school Gabriel Ó Cathasaigh remarked at the opening of the school that "We have a special location where the Irish language can blossom. There is a huge demand for Irish here,

and there is a huge amount of Irish to be heard in Ballincollig and this school will help in a big way".

The site is located on the Link road, Carriganarra, Bishopstown, Co. Cork. This is on the outskirts of Ballincollig where the traffic is less dense and also provides easier access and parking than its previous location.

Site Location

The building itself which cost €4.5m is a three storey building. It has 24 classrooms, a gymnasium and 2 basketball courts. The school also has a car park for visitors and teachers at the front of the buildings and a set down area at the side of the building for collecting and dropping off children.

Front of Building and Car park

Set Down Area at side of Building

Disabled Parking / Set Down Area at the front

Critical Evaluation

This section of the chapter is a critical evaluation of the building, which investigates the buildings compliance with the legislation regarding access for the visually impaired and also investigates the technologies used in the building which are used to assist and make the building more user friendly not alone for the visually impaired but for all pupils. This chapter also identifies areas that could be improved in the building and the external environment. The building itself complies very well with the regulations regarding access circulation and escape for the disabled.

Similar to the Technologies chapter previous to this chapter, the exterior of the building will be investigated first. Within the grounds of the school a well designed feature is that each of the crossings for children is also a speed bump which slows cars down as they are

approaching the crossing. This also creates a flat surface with no step for the children to walk across. But from the research in the previous chapter the crossings could be improved with the use of tactile pavings on either side of the crossing to warn visually impaired children of the upcoming danger. Since the crossings are all marked as zebra crossings, red tactile paving should be used. Tactile paving should also have been used for the divide between the disabled parking bays outside of the main entrance and the pavement, as it is a flat level surface that leads into the car park.

Level Crossing near entrance

Another method of aiding the visually impaired in the external environment that was highlighted in the previous chapter was colour contrast. This helps prevent visually impaired and also all of the other children in the school from getting injured from walking into objects. This is achieved by highlighting any objects that could prove to be dangerous, an example of how colour contrast was used in the school was on a light pole in the car park.

Pole in main car park

But there are a few locations in the external environment of the school where colour contrast could be used to make it safer. An example of this would be the protective railing that is outside of external doors to protect against the doors opening into the path of a person walking by outside. These however create an obstacle outside and here are a very similar colour to the concrete and wall, this could be improved if they were painted a more contrasting colour. The benches that are outside could also benefit from a better colour contrast, especially underneath the bench where it connects to the floor. In the previous chapter the playground area was also investigated and colour contrast was again highlighted as important area there. An example of how the colour contrast could be improved here is the basketball court where the poles could be painted a more contrasting colour. This could also be achieved by using a soft covering that is also colour contrasting with the ground and surrounding area.

Railings outside of doors. Note to the bar at bottom for cane users

Benches at rear of the Building

Basketball Pole

Inside the building colour contrast has been used very effectively to highlight certain aspects of the building which makes the circulation and use of the building much easier for both visually impaired children and also all of the other children. An example of how this colour contrast was used are the doors, where both the architrave and door contrast from the wall in all the doors. Colour contrast was also used in areas such as the lift, where paint is used around the lift button to highlight it. This technique was also used around light switches and was also used in bathrooms to highlight objects such as soap dispensers.

Door colour contrast, which also uses a vision panel

Lift button contrast, note also the use of braille

Light switch contrast from wall

Soap dispenser contrast. Handrail & Sink could contrast better from wall

The use of colour contrast is also used on the stairs. The contrast is used firstly to contrast the handrail from the walls. The handrail on the wall also has two handrails where one is at a lower level for children, but this was not possible on the opposite side as presented the danger of children climbing it and falling down the void in the middle of the stairs. The second area of colour contrast that was used on the stairs in the building was on the leading edge of the step which also was a non-slip texture. The buildings itself has two main stairs on either side of the building and also has an evacuation lift opposite the stairs on the left hand side of the building on each landing of the both stairs on the first and second floors there are clearly marked and easily identifiable refuge area. These are the correct size and also to not affect the width of the escape routes. There two different types of refuge areas used in the building, the first is an alcove design and the second is built into the landing of the stairs. At the bottom of both stairs there is also a handrail that prevents a visually impaired child from walking under the stairs and hitting their head. This also prevents all other children from doing the same.

Railing and Step colour contrast

Railing under stairs with tapping bar at bottom for cane users

Alcove Refuge Area - Note signs and alarm system

Landing Refuge Area

Along with colour contrast another item that is very consistent throughout the building is the use of matt colours which prevent glare. In the previous chapter it was shown that glare can affect visually impaired persons ability in circulating a building and that matt floors and wall finishes help prevent this. In the classrooms there are also small kitchen areas which have matt non-slip floor finishes. Another method that was investigated was the use of blinds as these also help prevent glare. The school have blinds installed in each classroom and depending on the orientation of the building they vary in the amount of light that they let in.

Matt walls and floors.

Matt non-slip floor, with low counter for children

Glare Blind

The previous chapter also indicated the importance of having doors opening from the same side and that they also open inwards where possible, nearly all the doors in the building comply with this. But this was not possible in the sports hall as the doors cannot open into the hall but with some clever design in the school meant that this was not a problem. An alcove was created to fix the problem, and the depth of the alcove inside the hall was used to create a storage space. The use of vision panels is also evident on nearly every door in the building Sport hall door alcove

Sports hall storage

Conclusion

It is very clear from the investigation of this school that it has a well thought out design which is easy to circulate and use. This well thought out design is very evident in sports hall entrance that combines the storage and door alcove so the doors do not open into the corridor or into the sports hall. It is also evident that the type and colour of materials used were also well thought out and chosen with universal design in mind. In the investigation of the building there were a couple of areas that were found that could be improved upon such colour contrast of railings and benches and basketball poles and also that tactile paving could have been used to warn of set-down areas and crossings. Inside the building was finished to a very high standard and few areas were picked out as weak areas. One area that was highlighted was just the support rails in the toilets that could have a better colour contrast with the wall. But overall the building is of a very high standard and has techniques that were investigated in the previous chapter throughout the building to create an all around much more usable and safer school

for not alone a visually impaired child but for all of the other children as well, which best sums up how universal design can make the building a better and easier to use building for everyone.

Conclusion

This Dissertation has investigated whether Access and Circulation of a primary school building can be improved with the Universal Design principals and techniques and also Fire Safety technologies and techniques, with key emphasis being placed on how these techniques and technologies can create a safer and easier to access and circulate school for blind or visually impaired children.

In this investigation the first aim was to research the history of access and circulation and fire safety. The second aim was to investigate the legislation that was available on both access for the disabled and also fire safety. Then technologies and techniques of both universal design and fire safety would both be investigated. Once the above research was undertaken a case study commenced on Gaelscoil Uí Ríordáin in Ballincollig, Co. Cork.

Summary of Findings

• The research has shown that the technical guidance documents for designing for the disabled that are in place in Ireland today could be improved by being easier to read and this research has also shown that they are lacking in the area of designing for people with sensory impairments. The research also shown that the technical guidance documents are of a lower standard in comparison with most of the other larger countries throughout the world.

• Throughout the project several areas were highlighted as being important in designing for the visually impaired, but none as much as so as colour contrast. Contrast in colours can aid a visually

impaired person both inside and outside the building and when combined with a matt finish it is something that could improve any building on a small budget.

• Along with colour contrast all of the other techniques, technologies and universal design principles that were researched create schools and buildings and buildings which are by far easier and safer to access and circulate.

• With fire safety it was found that door holders, linked to a fire detection system could be very helpful in a school due to children having a limited amount of strength. In the event of a fire it was found that a wayfinding system can be very helpful in guiding a visually impaired person towards an exit.

Conclusion of Findings

In conclusion and in response to the project title of how Access and Circulation of a primary school building can be improved with the Universal Design principals and techniques and also Fire Safety technologies and techniques it can be concluded that these techniques and technologies most certainly do improve the access, circulation and safety of the building. With the project the key emphasis was on how these techniques and technologies could aid visually impaired children and this was achieved but with Universal design it has shown that when you include the extremes of everyone in a building such as the visually impaired technologies in this project, then you produce a building that is better for everyone that uses it.

The research of history Access, Fire Legislation and Universal Design in chapter one provided an overview of the key moments and people in the history of these subjects. It was found that the history of both

access for the disabled and Universal Design are relevantly recent but the fire legislation was much older. It was concluded that there were key moment in the history of access for the disabled but that they could all be traced back to that first access standard for the disabled. This spread throughout the world, being improved through and still being improved today. The history of fire legislation in Ireland was in direct correlation with the British standards and can be concluded that the technical guidance documents today are in place today could include more provision in designing emergency lighting / wayfinding systems for the visually impaired. Further research of the legislation that is in place today in Ireland in chapter four led to the conclusion that the disability act can be difficult to enforce and that the Technical Guidance Document Part M is a very difficult to read and understand and is of lower standard in comparison with most of the other larger countries throughout the world such as America, UK, Denmark and Australia. Then after the research of the legislation was completed the technologies and techniques in assisting the visually impaired were investigated in chapter five.

This chapter concludes that colour contrast was found to be very important throughout the building and also externally. But colour contrast was just one of the main methods used, tactile paving, correct handrail and stairs design, consistent and even lighting, light filtering blinds and clearly legible signs also help create an environment that is safe and easy for everyone to access and circulate. This combined with wayfinding emergency systems that used tracks and tubes of lights to guide a person to an exit and with automatic fire detection systems that are linked with hold-on devices on doors that will release if there is a fire all combine to

make a much safer building for the visually impaired and all of the other occupants.

Then in the case study of the school it was concluded that the school was a very good example of good practices in designing for the visually impaired especially with the use of colour contrast and matt finish. There were a few areas that could be improved in the school but it provided proof that when a building is designed for the extremes of everyone, then you produce a building that is better for everyone that uses it.

Recommendations to the Industry

On the completion of this project there are few areas that the industry of Architecture, Construction and designing in general could improve upon that co and these are highlighted below.

1.   As stated previously in the project, the technical guidance documents that are in place in Ireland today on the area of designing for the disabled (Part M), could be improved by being easier to read and understand, and this research has also shown that it is also lacking in the area of designing for people with sensory impairments. The research also shown that the technical guidance documents are of a lower standard in comparison with most of the other larger countries throughout the world such as, America, UK, Canada or Australia.

2. Throughout the research it became very clear that the principles behind Universal design made the buildings and environment better for everybody to use. This shows that there should be a module/class of Universal Design in all Architecture, Construction

and in designing courses which would teach the principles of Universal Design to the future generations of designers.

Recommendations for further study

This research has also brought up a few areas which could be researched more, but due to time constraints and word count limit could not be research in this project. The areas which could be researched further are highlighted below.

1. The area of designing drop off areas for schools became evident when visiting the school in the case study during the time at which the school was finishing and a lot of cars were parked on the main roads leading to the school waiting for the children to come out. The drop off area designed by the school largely became ineffective, which led to the thought that it could be researched further for a better designed drop off area.

2. Another area which could be researched further is the area of evacuation procedures in a primary school and how the visually impaired are aided during an evacuation of the building.

Conclusion

This project has shown that techniques and technologies which were investigated can make a visually impaired persons or child's experience in school far more enjoyable and safer, and as the project has shown with universal design the building that is produced is safer and easier to access and circulate for all of the other users. On personal note I believe that this project has not alone influenced my academic career but has also influenced the rest of my life.

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A Critical Investigation into the Provision of Access and Use for Persons with Disabilities in Special Schools

Bernadette O'Mahony Dip. Arch. Tech.

Department of Architecture,
Cork Institute of Technology,

> *"Hold my hand and walk with me.*
> *We must break the back of social inequity;*
> *We must empower every individual with a disability*
> *To live with dignity in an inclusive society."*
>
> *(William E. Lightbourne)*

The issue of the provision of access and use for persons with disabilities in special schools is a relatively recent concept. The key time of change was post World War II when injuries were incurred by the returning soldiers from the war. These injuries resulted in them suffering a disability and, hence, it sparked the idea of the provision of various rights for such people. Such rights included building access and education and were initiated by the United Nations (UN) and its Universal Declaration of Human Rights (UDHR).

The 1960s decade spurred further change and awareness regarding persons with a disability and their rights, with particular reference to the Disability Rights Movement in the United States of America (USA). Moving forward to the modern day and within an Irish context, a number of regulations and legislation has been introduced to provide for people with disabilities. Legislation, Building Regulations and design guidelines regarding disability and education

have been introduced in order to facilitate persons of all abilities wishing to access and use these facilities.

It is necessary to undertake this research in order to assess the current provisions for persons with disabilities in special schools. Also, awareness and rights may be promoted further for these persons as a result of this research. The selection of the topic of investigating building access and use for persons with disabilities in special schools stems mainly from the right for disabled persons to gain access to, use their school and obtain an education, just as much as those in mainstream schools. Building access is prevalent in all areas of design and construction. The aim of all professionals is to solve the issue with due care to end users. The goal of designers is to adhere to the relevant legislation and building regulations and offer a practical aesthetic solution. It is the intention of the contractor to provide a quality and functional product.

It is a basic human right that all persons should be allowed accessibility and usability of a building and, where possible, independently and without any hindrance. Persons of all abilities should be catered for ranging from fully able bodied persons to ambulant disabled persons and leading onto the most extreme case of physical disability – a person using a wheelchair. In 2006, 42,021 children had a disability in Ireland, which accounted for 4.1% of the child population, according to the Department of Health and Children (2010). This emphasises the necessity to undertake the research to analyse the provisions in place for these people.

It is of vital importance to examine the current laws and regulations and if they are sufficient to meet the needs of all persons in special

schools, with particular reference to those with a disability. If not, then a way must be found to satisfy the needs of these persons in special schools and allow them to access and use these buildings freely and, where possible, independently.

The study of building access and use in special schools is of a global interest. Leading the way internationally in special school design and provision is the USA and the United Kingdom (UK). However for the purposes of this research, the area is based on the national context. There is a vast array of special schools located in Ireland. Our capital city, Dublin, is classified as a primate city and so has the most concentration of special schools located there. The focus of the research can be concentrated closer the South of the country with particular focus on Cork. Cork, being the largest county in Ireland and having the largest population in the province of Munster merits the investigation. The county can be compared to a microcosm as it represents what is happening from a national perspective.

The research has unearthed a vast amount of information in relation to access and use for persons with disabilities in special schools. Many improvements have been made in order to make special schools safer and more user friendly for all persons within the last seventy years. Legislation and design principles supply the backbone of information in relation to these provisions. But it is questionable if these guidelines alone allow accessibility and usability to special schools for disabled persons.

So what can be done to improve the concept of access and use in special schools? The examination of current legislation and what information it provides is essential. The design guidelines that are

produced for special schools in Ireland must be investigated. By affording this research, it is anticipated a more holistic approach to the provisions of access and use can be identified to accommodate the requirements of persons with disabilities in special schools.

The design and construction of special schools is essential in providing access and use in special schools for persons with disabilities for utilising, working in or visiting the school. It is important to examine all sources available in order to get a holistic view of the issue. The provisions of access and use affect the ability of a person to navigate and utilise the facilities in a special school. However, from an educational perspective, it may also affect learning capabilities and positive attitudes of children in relation to attending school. For their teachers and other staff in the building, it may restrict these people in providing education and other facilities for the children. Due care should be executed when designing and constructing special schools so persons of all abilities, particularly those with a disability, may access and use these buildings safely and, where possible, independently.

The Dissertation here discusses the various legislative demands for buildings to be made accessible to people with disabilities; as this has been outlined in the previous article, they have been omitted here. (Ed)

The Education For Persons With Special Educational Needs Act 2004 is an important piece of legislation. This Act had an influence in the introduction of the Disability Act 2005 regarding the provision of educational facilities for persons with a disability. Reference to how persons with disabilities may be educated is shown in this

document. However a major limitation is that the emphasis is made on the educational needs of children in standard schools rather than special schools. The Education Act 1998 explains the necessity of education for all persons regardless of their ability and, the provisions that should be made for those persons. The Act describes how a school should provide necessary facilities regarding access and use. This includes any additional equipment or any adaptations that may be required to benefit these persons. The Act was instrumental in its primary legislative successor in relation to special schools and education for persons with disabilities, the Education For Persons With Special Educational Needs Act 2004, regarding the provision of education in special schools and, access and use to these buildings. A drawback to the legislation is that special schools and their educational provisions are not referenced in this document.

Design principles for all buildings including special schools vary from nation to nation. These principles form a central theme as they furnish guidance to designers for a proposed building. As a result of adhering to these guidelines, they provide a basis for persons with a disability to access and use a particular building, circulate that building and utilise its facilities and where possible, do so independently.

The main supporting text for design principles for building access and use for persons with disabilities in special schools is the DES (2011) *Technical Guidance Document TGD-026 Planning & Design Guidelines. For Specialist Accommodation Provision for Pupils with Special Educational Needs in Primary Schools with 2 or more special classes & Post Primary Schools.* This provides clear specification on

the provisions for person with disabilities in specialist school accommodation. Provisions in the internal and external environments, building components and accommodation suites are all displayed in the document. Unfortunately, as stated in its name, the accommodation suite suggests it is applicable only as part of a mainstream school. Also, the document can be updated on an ongoing basis. This includes the modification of the brief to suit a particular project. That said, it is still an excellent template to use in the planning and construction of a special school.

A Critical Appraisal of Access and Use for Persons with Disabilities in The Holy Family School, Charleville, County Cork

The Holy Family School is a special school located in Charleville, Co. Cork. Its catchment area is the North Cork / South West Limerick region. The original school was established in 1973 under the Department of Education and Science. A new school was built in 2009. The school facilitates children from the ages of four to eighteen. The types of disabilities that are catered for in the school are Autism Spectrum Disorder (ASD), General / Moderate Learning Difficulties (GMLD) and Severe / Profound Learning Difficulties (SPLD), as stated by Ms. Donegan in response to question 3 in the Interview Schedule of Appendix II. The pupil / teacher ratio for children with a GMLD is 8:1 while children with a SPLD have a pupil / teacher ratio of 6:1. Other people who are employed and hence use the facilities in the school are Special Needs Assistants (SNAs), nurses, a secretary and a caretaker. Visitors to the school include parents and those who bring various deliveries as part of the everyday running of the school. All of these people need to be

facilitated as part of approach, access, circulation and sanitary issues.

The educational facility is part of an association called St. Joseph's Foundation. It was formed in 1968 as Charleville & District Association for the Handicapped. It was renamed St. Joseph's Foundation in 2004. It was established to provide education for children with learning disabilities as it was discovered that many of those children were not attending school at that time. Later, a pre school was also developed. In 1973, St. Joseph's Sheltered Workshop was established to assist adults with learning difficulties. The Foundation's motto is 'to care' and, its commitment of providing assistance to people with learning difficulties is manifested in its mission statement: *'To provide people with learning disabilities the opportunity to live the life of their choice to their fullest potential.'* [St. Joseph's Foundation (2012A)]

The Holy Family School is a single storey, triangular shaped building and is located on a gently sloped site. The walls of the school are constructed in masonry and faced in render, cedar cladding and composite panels. Windows and doors are thermally broken aluminium. Roof finishes are composite panels and have a number of rooflights for additional light.

Holy Family School

(Author: O'Mahony, 2012A)

Holy Family School

Rooms located in the school include general classrooms with quiet rooms and, WC / shower rooms located just off those classrooms, a general purpose hall, speech and therapy rooms, a library, a sensory room, a playroom, an arts and crafts room, a daily living skills room, a dining room, an apartment, a staff room, a pre vocational training room, a medical suite, offices, store rooms. A sensory garden is located externally in the central courtyard and contains a number of features such as a maze, drums, chimes and a bird table to provide entertainment for the children.

The Holy Family School was constructed in accordance with DOEHLG (2000) *Part M: Access for People with Disabilities Building Regulations 2000 TGD*. However, the DOEHLG (2010) *Part M: Access and Use. Building Regulations 2010 TGD* is the regulation that is currently in existence, as discussed in Chapter Five: Design Principles for Access and Use for Persons with Disabilities in Special Schools. The school has been investigated using DOEHLG (2000) as a base document, although reference is made to provisions stated in DOEHLG (2010) also. The design architect stated that the Part M applies the logic of legislative policies and these include elements in

the approach to the building, entrance, circulation, furniture and equipment, aids to communication, wayfinding, colours, patterns and textures.

Approach to the Holy Family School

The Holy Family School would be one that is not normally visited by the public. Staff and visitors generally travel to school by car. Also, on rare occasions pupils are brought by car. Pupils are generally transported by bus to the school. Pupils enter the school via the Junior and Senior entrances. As a result, set down areas have been provided in the areas outside those entrances. Kerbs have been laid flat and tactile paviors are also provided. Another set down area for supplies is located outside the Kitchen / Servery Room.

Junior Entrance Set Down Area

(Author: O'Mahony, 2012A)

Senior Entrance Set Down Area

(Author: O'Mahony, 2012A)

Set Down Area outside Kitchen / Servery Room

(Author: O'Mahony, 2012A)

No reference is made to set down areas in any legislation or in DOEHLG (2000). However, the set down areas are in accordance with the recommendations of IWA (2009) and the DES (2011) as the areas are marked clearly on the ground '*Set Down Area Only.'* This document was published after the construction of the school so it may be assumed these set down areas were provided at the request of the school or may have been recommended by the design team and / or DES. The set down areas function very well as they are on flat ground and near the entrances to the school and, sufficient space is provided to enter and exit the vehicle with ease.

Ample parking is provided within the school grounds. All parking provided is perpendicular parking and is situated on a tarmac finish. There are nine car parking spaces provided for persons with a disability. Four parking spaces are located across from the main entrance and five parking spaces are located across from the supplies set down area. The size of the parking spaces is 2400mm X 4800mm with at least one shared bay measuring 900mm to accommodate the opening of a car door. A parking space is located

for a bus that transports children with a disability is located across from the supplies set down area also.

Parking Spaces across from the Main Entrance

(Author: O'Mahony, 2012A)

Parking Spaces across from the Supplies Set Down Area

The parking spaces are determined by the recommendations provided in the NDA (2002). There are no references to parking spaces in any legislation or in DOEHLG (2000). The parking spaces outside the main entrance adhere to recommendations by IWA

(2009) as they are less than 50m from the main entrance, but, those across from the supplies set down area do not. The bus parking space is not required under DOEHLG (2000). No obstructions are around or over the parking spaces and are situated on flat ground. These requirements are in DOEHLG (2010) but not in DOEHLG (2000). However, practicality has prevailed as it is important to provide flat ground no obstructions to allow a person with a disability, particularly a wheelchair user, enter and exit a vehicle with ease.

Access Routes

A projection feature that opens onto the access route is a window outside the Parents' Room. However, this still complies with the design principles as it does not project more than 100mm onto the access route. Main access doors are all sliding doors and do not project onto access routes. Access routes are all level or gently sloped. Some access routes from fire escape doors in classrooms are ramped locally but still meet the regulations. There is no requirement for handrails as a result. Surface drainage does not appear to be a problem as there is no evidence of ponding anywhere along the access routes. Access routes are finished in concrete footpaths or concrete paviors and hence are durable, non slip and do not pose a tripping hazard. The access routes comply with the design principles and legislation. The routes perform the function that is required of them as a result.

A trip hazard is evident at the base of the canopy columns. These are flower pots that have been placed for decoration purposes and should be removed for safety purposes. Loose furniture or other items that may cause a trip hazard being placed on an access route

do not support legislation or design principles. The focus can be drawn to a person with an ambulant disability, who may fall and injure themselves on a hazard or obstruction like this.

Main Access / Entrance Route showing the Sliding Doors to the Entrance and Flowerpots Trip Hazard

(Author: O'Mahony, 2012A)

All landings outside entrances are level. A clear landing width of 3920mm X 8600mm is provided outside the main entrance. A clear landing width of 4090mm X 5980mm is provided outside the junior entrance. A clear landing width of 3580mm X 3980mm is provided outside the senior entrance. All dimensions exclude the canopy support columns. Thus all main entrances exceeded the minimum requirements of 1500mm X 1500mm, as stated in DOEHLG (2000) and; the minimum requirements of 1800mm X 1800mm in DOEHLG (2010). The landings are compliant with the legislation, particularly the Disability Act 2005. Not only do these landings support the legislation and design principles but they work very effectively also as there is ample landing space to cater for a person with a disability and the ground is flat with a non slip paved area.

Level Landing Located Outside Junior Entrance

(Author: O'Mahony, 2012A)

Level Landing Located Outside Senior Entrance

(Author: O'Mahony, 2012A)

It was the opinion of the staff, evidenced from the Questionnaire Schedule in Appendix IV that 89% thought that the facilities of approach, access, circulation, sanitary facilities and other facilities were excellent. This suggests that very little improvement could be made on these facilities and the design may be adopted for future use in another new school. However, this demonstrates that

staff are not aware of trip hazards such as flowerpots by the main entrance, as stated above.

The height of the threshold is flush with the finished floor level and hence does not pose a tripping hazard. Matwells are provided at all main entrances and, the surface is flush with the finished floor level. All floor surfaces are level and slip resistant. These provisions support the design principles for accessible entrances. Wheelchair users are able to navigate through the entrances freely and easily as well as persons using a walking aid or cane and, hence, all elements of the entrance are very well designed for persons with disabilities.

Threshold / Matwell Detail at Main Entrance

(Author: O'Mahony, 2012A)

Automated doors with sensors are provided at main, junior and senior entrances. Ms. Kelly, in question 4 of the Interview Schedule in Appendix I, states that it was easier for physically disabled students and staff to enter the building through automated entrance doors. She also refers to the separate junior and senior entrances being provided to lead the students to their own identifiable spaces

within the school. However, as there is a security issue when dealing with children with special needs, these doors and all other swing doors that open externally are security tagged so that a member of staff are only allowed to open them using a security opening fob. Doors remain open for long enough for a person to walk through them and do not close until the person is fully in or out of the building. In the event of fire all sliding security doors open automatically.

All entrance door widths exceed the minimum clear width of 800mm. A dimension of 860mm is present at the main entrance sliding doors. A dimension of 1590mm is present at the junior entrance sliding doors. A dimension of 1590mm is present at the senior entrance sliding doors. A leading edge dimension of at least 300mm is provided for all doors opening towards the person entering the building. This dimension is only applicable to the fire escape swing doors to classrooms. These would not be main doors to the building and, hence, would not be used as main entrance doors. The doors and their minimum dimensions are designed in accordance with DOEHLG (2000) to provide access to a person with the greatest disability – an electric wheelchair user. However, the provisions in the DOEHLG (2010) is also compliant. Legislation, with reference to the Disability Act 2005, is satisfied. Door dimensions work well as persons of all abilities have been catered for.

 Manifestations or glass markings on a door are important to signal to a visually impaired person of the door or glass panel ahead. Two manifestations to indicate the presence of the doors are provided on all glass doors and glazed panels leading from the corridors to the Sensory Garden. These are within the recommended guidelines as

two layers are provided at the following dimensions – 680mm – 730mm and 1400mmm – 1450mm from the finished floor level respectively. Thus, it is easier for a person with a visual impairment to identify the door or glazing ahead of them.

Manifestations on Glass Doors and Glazed Panels Leading from Corridors to Sensory Garden

(Author: O'Mahony, 2012A)

Two layers of manifestations are located on the inside set of doors and panels at the main, junior and senior entrance lobbies. The heights from the finished floor level to the manifestations are 800mm – 850mm and 1500mmm – 1550mm respectively. DOEHLG (2000) states that manifestations should be provided between 1.2m and 1.5m. These provisions do not adhere to the regulations and neither do the external doors of the lobby as no manifestations are present there. The external fire escape doors from the classrooms also do not comply with regulations regarding manifestations. As a result, it may difficult for a person with a visual impairment to identify the door or glazing ahead of them.

External Fire Escape Doors from Classrooms without Manifestations on the Glass Door
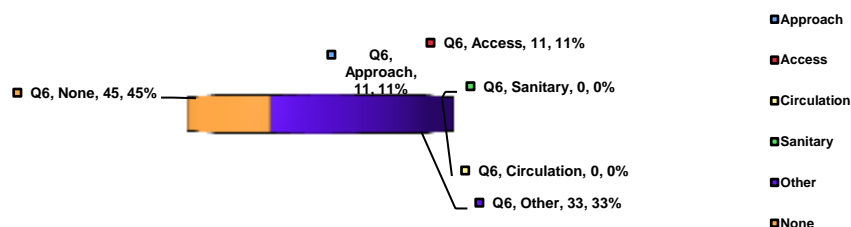

(Author: O'Mahony, 2012A)

Entrance Lobbies

The entrance lobbies present are accessible to persons of all abilities. Matwells are provided and, the surface is flush with the finished floor level. All floor surfaces in the lobbies are matwells and are level and, hence, are made of non slip materials. All elements support the legislation with particular focus on the Disability Act 2005.

It was believed by 45% of respondents in the Questionnaire Schedule of Appendix IV that no area in the school required more attention. 11% thought approach and 11% thought access needed to be addressed. 33% thought other facilities such as refreshment facilities and sockets, switches and controls required improvement. No teacher reported that circulation or sanitary facilities needed addressing. With regard to persons with a disability, it appeared that

just under half (45%) of the teachers thought the design principles were satisfied. It is clear from undertaking a measured survey that all entrance lobbies and external and internal doors that dimensions are to the satisfaction of the design principles.

Facilities in the School that Require more Attention

Q6, None, 45, 45%   Q6, Approach, 11, 11%   Q6, Access, 11, 11%   Q6, Sanitary, 0, 0%   Q6, Circulation, 0, 0%   Q6, Other, 33, 33%

Approach
Access
Circulation
Sanitary
Other
None

(Author: O'Mahony, 2012B)

Horizontal Features

The reception area is clearly identified upon entering through the main entrance of the building and has an unobstructed accessible route to it. No reference is made to the design or provision of reception areas in DOEHLG (2000). As a result, the design may have been requested by the school or may have been recommended by the design team. The reception desk works well as it is clearly identified upon entering the school and, visually contrasts with the surrounding floor and wall finishes.

Accessible manual swing doors are provided internally. A leading edge dimension of at least 300mm is provided for opening the door towards the person entering the building. On doors to various classrooms, specialist rooms, stores and canteens, door handles on

the door are located at 1020mm above finished floor level and hence are within the regulation of between 800mm and 1050mm. Doors to all rooms have a minimum clear width of 800mm. Doors to classrooms have one wide door and one narrow door within the ope. A clear width of 850mm is provided upon opening the large door while a clear width of 1180mm is provided when both doors are open. Two vision panels are provided in the doors. Handles on external doors are located at 1040mm above finished floor level and hence are within the regulation of between 800mm and 1050mm. The design of the doors work well as the location of the two vision panels permit vision of all persons, including ambulant disabled persons (walking, standing up) and wheelchair users (sitting down) to see if there is somebody on the other side of the door coming towards them.

Internal Doors to Classrooms

(Author: O'Mahony, 2012A)

Doors on corridors are double swing and are kept open constantly for ease of access around the school. These doors close automatically in the event of fire. Push plates are present on all

corridor doors. The width of the doors on the corridors is 1850mm clear and, allow two wheelchairs to pass each other freely. All doors, door furniture, vision panels, door swings and clear widths comply with DOEHLG (2000) and legislation, including the Disability Act 2005 and permit the visibility of all persons on the other side of the door (when closed), as outlined above. The doors also comply with DOEHLG (2010) and, this suggests foresight of design by the architects.

Corridor Doors Opened

(Author: O'Mahony, 2012A)

Corridor Doors Closed

(Author: O'Mahony, 2012A)

Doors do not contain sharp edges. Also, doors to small opening spaces open outwards to prevent a pupil locking himself / herself into it. The only example of this is the lobby between the two accessible WCs / shower rooms off the Arts Education and Crafts Room. The requirements of the DES (2011) are thus supported.

Corridor One measures 1985mm in width. Corridors Two, Three and Four measure 2000mm in width. The corridor leading from the Reception Foyer to Corridor One measures 2600mm. All widths exceed the minimum requirements. Radiators or columns do not project into the corridor. Radiators are vertical and are recessed into the walls so they not encroach on the corridor, and so do not obstruct or cause a trip hazard to those using them. Minimum widths (of 1200mm) are satisfied, as detailed in DOEHLG (2000). Also, the widths exceed the recommendations (1800mm) in DOEHLG (2010). The corridor widths work well as two wheelchair users or ambulant disabled persons may pass each other on the corridor freely.

Radiators Recessed into Corridor Walls

(Author: O'Mahony, 2012A)

Some doors open onto the corridors such as the DCC Room, LGP 2 and the Store. A clear width of 1100mm is provided between the

door at full swing and the opposite wall from the DCC Room and LGP 2. A measurement of 1030mm is provided between the door at full swing and the opposite wall from the Store. Hence, the doors are in compliance with DOEHLG (2000). All doors are 2100mm minimum from the finished floor level to the underside of the door frame. The minimum height of 2000mm is detailed in DOEHLG (2000). Therefore a person in a wheelchair or an ambulant disabled person may still pass on the corridor with these doors at full swing.

A number of internal lobbies are present in the building. The Waiting Area Lobby exceeds the recommended dimensions at 1290mm X 4850mm. The Lobby leading from the Reception Foyer to the two disabled WCs exceed the recommended dimensions at 2450mm X 3100mm. The lobby from Corridor One that leads to the Dining Room is under the recommended guidance at 1480mm X 1900mm. It was noted by one respondent in question 11 of the Questionnaire Schedule in Appendix IV that the access to the dining room *'could be improved.'* This emphasises that the lobby size does not adhere to the guidelines. The doors appear to be kept open to allow ease of access to wheelchair users but, should be closed after use due to fire risk.

Lobby Leading from Corridor One to Dining Room

(Author: O'Mahony, 2012A)

The Hall leading to the PVT Room exceeds the recommended dimensions at 1400mm X 4880mm. The Toilets Lobby in the Arts Education / and Crafts Room at 1300mm X 1800mm is within the recommended sizes, as no door swing encroaches on the lobby space. The Toilets Lobbies in the Senior Severe Rooms 1 and 2 exceed the recommended dimensions in at 1350mm X 2600mm. The Toilets Lobby between the Senior Moderate Room 3 and Senior ASD Room 4, Middle Severe 9 and Middle ASD 10, Junior ASD 7 and Junior Severe 8 and; Junior Moderate 5 and Junior Severe 6 all exceed the recommended dimensions at 1490mm X 5300mm. The lobby leading into the Male and Female Toilets is less than the recommended dimensions at 1180mm X 2000mm. However these toilets are not like to be used by a person with a disability, so ample spaced is provided for able bodied persons. All dimensions satisfy the minimum requirements as stated in DOEHLG (2000), with the exception of the lobby leading into the Male and Female Toilets. Also, the legislation is supported with particular focus on the Disability Act 2005.

Lobby Leading into Male and Female Toilets

(Author: O'Mahony, 2012A)

No lift or stairs is required as the school is a single storey building. No ramp is required as the school is a single storey building and has a uniform finished floor level throughout the building.

Sanitary Facilities in the Holy Family School

Sanitary facilities in the school building cater for pupils, staff, and visitors. All accessible doors to sanitary facilities open inwards. Floor finishes are level and non slip. All doors and finishes in the sanitary facilities meet the criteria set out in the legislation and the all details described in DOEHLG (2000) and, are perform their intended functions. Two accessible WCs are provided just off the Reception Foyer and serve visitors to the school and those using the General Purpose Hall. The size of these WCs are 1500mm X 2500mm. Locations and dimensions of the toilet, wash hand basin, grab rails and other facilities are all within the recommended guidelines. However, loose furniture items such as bins are in the space where it would be likely a wheelchair would park upon entering the WC. These should be removed or placed in another part of the room so they would not encroach on the wheelchair parking area or the person using the WC. Emergency cords are also provided in these WC facilities. The handle of the cords are at a height of 1100mm from the finished floor level but no reference to the provision of these are made in DOEHLG (2000). These facilities may be used by staff or visitors and so, the requirements by the DES (2011) is satisfied. It may be concluded that the WCs are wheelchair accessible and usable and so are in accordance with legislation and design principles. However, management is an obvious issue when dealing with the day to day running of the WCs.

Accessible WC just off the Reception Foyer

(Author: O'Mahony, 2012A)

Two en suite WCs / shower rooms are provided directly off each classroom. The two en suite WCs / shower rooms are shared between two rooms in the case of Senior Moderate Room 3 and Senior ASD Room 4, Middle Severe 9 and Middle ASD 10, Junior ASD 7 and Junior Severe 8 and; Junior Moderate 5 and Junior Severe 6. The size of these WCs / shower rooms is 2600mm X 2400mm. Two en suite WCs / shower rooms are provided within Senior Severe Room 1 and Senior Severe Room 1. One of these rooms is 2600mm X 2400mm while the other measures 2600mm X 3850mm.

Small toilets are provided in the WCs / shower rooms to serve the junior classrooms – Junior ASD 7 and Junior Severe 8 and; Junior Moderate 5 and Junior Severe 6. The height of the toilet seat from the ground is 340mm (the regulations state the measurement should be between 450mm and 460mm). The height of the wash hand basin from ground is 690mm (the regulations state the

measurement should be 800mm). The bathroom suites in the Middle and Senior classrooms have the regulatory sizes. Spatula type flush handles are provided on all toilets. Grab rails are placed in their appropriate locations and are compliant with regulations.

Shower facilities are not required in a classroom under DOEHLG (2000) but the dimensions of the rooms and the WC suite comply with the requirements. The design supports the legislation, with particular reference to the Disability Act 2005. The design of the junior bathroom suites do not comply with DOEHLG (2000) but it may have been important to provide smaller toilets for a small child to use. Discretion of the school and / or architect may have been appropriate in this instance. Loose furniture items such as a changing bench, storage units and bins are located in some WCs / shower rooms and cause obstruction to where it would be likely a wheelchair would park upon entering the WC. The IWA (2009) is supported as the distance from any part of the school to an accessible WC does not exceed 40m. This is mainly due to WC / shower rooms being provided off classrooms and WCs for visitors and users of the General Purpose Hall being located just off the main entrance foyer also.

Junior Accessible WC / Shower Room

(Author: O'Mahony, 2012A)

Loose Furniture Located in Accessible WC / Shower Room

(Author: O'Mahony, 2012A)

Interesting information was unearthed with regard to obstructions or potential obstructions in the school. 67% said they would be aware of any obstruction potentially impeding access and use of facilities for persons with a disability. Potential obstructions include items such as objects placed on the approach route to the school, limitations on door widths so a wheelchair may not navigate through the door, loose furniture or other items being left in circulation route and, loose furniture or other items being left in sanitary facilities. 78% of respondents reported that they never encountered such obstructions. However, it was noted upon visiting the school that some flowerpots placed in the approach route to the school posed a tripping hazard. The most significant infringements were seen in the WCs and WC / shower rooms of the school. These included a changing bench, storage units and bins placed in the WC / shower rooms off the classrooms, bins located in the visitable WCs off the main reception foyer and a free standing cabinet located in the area where a wheelchair would park would impede a person using the toilet in the bathroom of the PVT Room setting.

Toilets that contain WC cubicles are provided for male and female able bodied persons are provided. Three WC cubicles, two wash hand

basins and a shower are provided for females. Two WC cubicles, two urinals, two wash hand basins and a shower are provided for males. Doors of the cubicles open inwards and contain a turning space of at least 450mm. The WC cubicles and urinals are likely to be used by able bodied persons only. As a result there is no requirement for wheelchair or ambulant accessible facilities. Wheelchair accessible toilets are provided for wheelchair users and ambulant disabled persons.

Wash Hand Basins

(Author: O'Mahony, 2012A)

The male and female toilets meet the requirements set out in DOEHLG (2000), as it states that facilities should be provided for male and females. The legislation is also satisfied including the Disability Act 2005, as provisions are made for persons with disabilities, as stated in section 6.2.4.1 above. Two accessible WCs are provided just off the Reception Foyer and these facilitate staff and visitors to the school. Hence, the requirements of the DES (2011) are satisfied, as outlined previously.

A safe base is provided in each classroom and it contains a fitted unit to store belongings of the pupils. A sink is provided also within the unit. This was not a requirement of DOEHLG (2000) or DOEHLG (2010) and the school was constructed prior to the introduction DES

(2011). It can be deduced that these facilities exceed the regulations in place at that time.

Fitted Unit Containing Storage Units and Sink

(Author: O'Mahony, 2012A)

Other Facilities in the Holy Family School

A Sensory Garden is located in the central courtyard of the school and this acts as the main play facility for the pupils. Hard and soft landscaping is along with various activities for the children are provided. As recommended by the DES (2011), the Sensory Garden is fully wheelchair accessible. A wheelchair user or ambulant disabled person is able to utilise the facility and a minimum dimension of 900mm is provided for manoeuvring around the play area, as recommended by IWA (2009).

Sensory Garden

(Author: O'Mahony, 2012A)

Other play areas in the school are directly accessible to the junior and middle classrooms in the school. These courtyards are enclosed and secure as they are built with concrete clocks and faced in plaster. Hence, they are non climbable. This supports the recommendations by the DES (2011). Gates are also provided within the walls. Play areas are not located directly off the two Senior Severe classrooms. The Sensory Garden is directly accessible from the Senior Moderate and Senior ASD classrooms.

Play Area Directly Accessible from the Junior Severe / Junior ASD Classrooms

(Author: O'Mahony, 2012A)

A Staff Room containing kitchen facilities is provided for the staff. Visitors may use these facilities also. Adequate turning spaces for wheelchair access is provided within the kitchen area measuring 1860mm X 3200mm and thus exceeds the minimum required turning area of 1500mm X 1500mm as stated DOEHLG (2000). The dimension also exceeds the requirements (of 1500mm X 1800mm) by the DOEHLG (2010). The height of the worktop in the kitchen area is 850mm. Space under the worktop is not accessible by a wheelchair. Tables and chairs are provided in the room. There is no reference to the design principles of refreshment facilities in special schools according to DOEHLG (2000). Also no reference is made to any legislation. These facilities are provided primarily for staff.

However, the provision of refreshment facilities is essential for persons of all abilities in a special school. All persons except wheelchair users are thus catered for.

Staff Room Kitchen Area

(Author: O'Mahony, 2012A)

Staff Room Seating Area

(Author: O'Mahony, 2012A)

A Life Skills / Resource Room is provided in the building for children that contains kitchen units with a worktop and has other kitchen appliances also. (This is called the Woodwork Room on the drawings). Loose furniture, including tables and chairs, are provided in the room. An adequate turning space for wheelchair access is provided in the room and thus exceeds the minimum required turning area of 1500mm X 1500mm as stated DOEHLG (2000). The space under the worktop is not accessible by a wheelchair. Tables

and chairs are provided in the room. There is no reference to the design principles of refreshment facilities in special schools according to DOEHLG (2000). Also no reference is made to any legislation. All persons except wheelchair users are thus catered for.

Life Skills / Resource Room

A Pre Vocational Training (PVT) room is situated in the school. Within the PVT setting is a Hall that leads to the room itself, along with a Kitchen and Bathroom. Double doors are positioned just off the PVT room for fire escape purposes.

PVT Room

The PVT Room, Kitchen and Hall meet the criteria set out in the DOEHLG (2000) and legislation. The same is said for clear turning spaces, clear openings for doors and the location of sockets,

switches and controls. However, manifestations are not provided to the external door that leads to the Sensory Garden and, hence, does not adhere to the regulations or legislation. The door that leads from the Hall to the Bathroom does not open fully to allow a wheelchair user to enter the room as the shower area has guarding around the shower and so impedes the door swing. A free standing cabinet located in the area where a wheelchair would park would impede a person using the toilet in the bathroom.

Kitchen within PVT Setting

(Author: O'Mahony, 2012A)

Cabinet Impeding Access for Wheelchair User in the Bathroom

(Author: O'Mahony, 2012A)

Door Leading to Bathroom Unable to Open Fully due to Guarding Around Shower Area

As it is not possible to measure all switches, outlets and control in all rooms, only some dimensions have been taken from a typical classroom and the Staff Room. In the classrooms, low level socket outlets are placed 500mm from the finished floor level. Other sockets are placed 1000mm from the finished floor level for power to items such as the interactive whiteboard. Light switches are located 1000mm from the finished floor level. Controls such as telephone points are placed 1480mm from the finished floor level. In the Staff Room, socket outlets are placed 450mm from the finished floor level and light switches are located 1000mm from the finished floor level. Some sockets and controls are located over worktop level in the kitchen area and, they are placed at 150mm from the worktop level. High level sockets are located 1950mm and, data point controls are at 2020mm from finished floor level. Controls such as telephone points are placed 1450mm from the finished floor level. All sockets, outlets and controls are not less than 350mm from any corner of the rooms.

Low Level Socket, Light Switch and Telephone Point in Classroom

(Author: O'Mahony, 2012A)

Medium Level Socket next to Interactive Whiteboard in Classroom

(Author: O'Mahony, 2012A)

Low Level Socket, Light Switch and Telephone Point in Staff Room

(Author: O'Mahony, 2012A)

Sockets over Worktop and; High Level Sockets and Data Points in Staff Room

(Author: O'Mahony, 2012A)

Pull cords are placed in some disabled WCs only as they were not a requirement of DOEHLG (2000). They are a requirement under DOEHLG (2010). Sockets are not covered when not in use, hence, the recommendations of the DES (2011) are not provided. The Disability Act 2005 states that the design should be in accordance with '*Part M of the Building Regulations.'* According to the design principles of DOEHLG (2000), careful attention should be given to the location of switches, sockets and outlets. However no exact dimensions are provided. Hence, the locations of the various controls may have been at the discretion of the school or by the recommendation of the architect or contractor. It would be recommended to provide pull cords in all rooms to facilitate a person that may get into difficulty in a WC.

Conclusion

The Holy Family School is one of the finest examples of special schools in Ireland. The reason for this is primarily because it is a relatively new building, having been completed in 2009 under the design principles of DOEHLG (2000) and recent legislative

provisions. The building was designed by the Architects in consultation with the DES' *TGD-026 Planning & Design Guidelines for Special Accommodation Provision for Pupils with Special Educational Needs Primary Schools with 2 or more Special Classes & Post-Primary Schools* document and they also liaised with the DES to provide a very functional product. The shape and form of the building permits ease of access and use for persons of all abilities to utilise the school and its facilities.

The approach to the school is a flat approach and this it is important to note that this is the best and easiest way of permitting entry to the building by a person with a disability. The access to the school has been carefully planned to facilitate those with disabilities with large landings and clear door widths exceeding the design guidelines both externally and internally. The widths of the corridors provide ample space for navigating all around the school by all. Sanitary conveniences have been designed carefully but they should be monitored to avoid obstructions to persons with disabilities, especially wheelchair users. It was clear that mismanagement of the facilities was evident and hence, more care should be shown to them. Other facilities in the school all exceed the design guidelines and are to the legislative provisions.

The practical and topographical setting of the building encourages the use of the building as a blueprint for the development of future special schools. However, careful monitoring and management of the school and its facilities is imperative to allow free access and use for persons with a disability. This is particularly applicable to obstructions located in the approach to the school and, loose furniture located in areas such as the sanitary facilities.

Drawing from the contemporary development of building access and use in special schools, it can be deduced that it is only recently that measures have been taken to acknowledge the issue, namely with the provision of legislation and building regulations. However, these items are transient and so may change with every new piece of legislation or building regulation or make an amendment to those existing. The main concluding remarks of the research findings are outlined as follows:

- From an international context, the UDHR and ECHR were instrumental in the development of access and use in special schools. They influenced the incorporation of legislative policies and design principles nationally.

- Without the development of Building Regulations and bodies such as the NDA and NCSE, standards may not still be set for access and use for persons with disabilities in special schools. They may still be discriminated against and ignored without these provisions that are there to protect them.

- No legislation specifically aimed at the design of special schools currently exists. In order to obtain legislation that is associated with special school design, information needs to be retrieved from a number of legislative writings in relation to education, special education and disability. This gives an obscured view of the current provisions as much of it is open to interpretation.

- The Headmistress, in response to question 3 of the Interview Schedule in Appendix I states that classrooms were designed in consultation with The Department of Education and Skills' TGD *TGD-026 Planning & Design Guidelines for Special Accommodation Provision for Pupils with Special Educational Needs Primary*

Schools with 2 or more Special Classes & Post-Primary Schools provided *'good design guidelines'* for special schools.

- The Headmistress believes that qualified architects are competent to design special schools to suit end users without the need to impose legislation, as stated in question 5 of the Interview Schedule in Appendix I. This statement may be contentious as legislation and design principles set a standard of what should be achieved in the design of special schools.

- Neither the DES' TGD-026 (2011) nor the TGD-026 (2012) apply specifically to special school design for stand alone buildings. Resulting from this is that should a special school be constructed in the future, it suggests that the document would not be considered to be suitable for design reference. However, following a conversation with Ms. Kelly on 14 March 2011, she stated that it provided essential guidance on the design of special schools. She confirmed that she liaised with the DES when designing the Holy Family School and it would not have been possible without their input. The document provides a very informative and detailed template for special school design.

- As no design guidelines, other than TGD-026, are currently available for special schools, much of the design is left to the discretion of the architect. Because of this, the needs of all persons accessing and using special schools may not be catered for. Ms. Donegan recommends equipment such as ceiling hoists should be provided in each classroom, as stated in response to question 9 of the Interview Schedule in Appendix II. However, funding was a major concern and this was the primary reason why many items considered to be essential to cater for the children were not provided.

o **Upon visiting the school, it was discovered that the school was largely in compliance with the legislative provisions and design guidelines. It was noted, however, that many obstructions were located in and around the building. These included flowerpots on the approach to main entrance and, bins and cupboards impeding wheelchair access in wheelchair accessible WCs. 78% of respondents in question 9 of the Questionnaire Schedule in Appendix IV were not aware of any obstruction, although 67% felt they would be conscious of such items causing an obstruction. This suggests that staff training should be provided to promote awareness, although 56% did not believe this was necessary.**

Conclusion

"My truest disability has been my ability to overcome my physical disability."

(David A. Paterson)

By providing the highest standard of design and construction in special schools, it can be concluded that everybody has a part to play in providing access and use for persons with disabilities in these buildings. Persons with disabilities are one of the most vulnerable in society and by affording such measures, it will make it easier for these people to overcome their disability. It is clear from the research undertaken that building access and use in special schools is a contentious issue that requires careful consideration when designing and constructing these buildings. It is imperative that to the requirements of all persons utilising the building should be met. The design principles and legislation provide a certain amount of guidance in designing special schools but no specific documents are currently available. Upon completion of the construction of the

school, no management or training is required in the continued maintenance of the buildings and, it has been demonstrated in the research that management and training would be imperative in the continued provision of access

Heritage Protection and Disabled Access: A Critical Analysis of Cork City Courthouse

Gráinne Toomey, BSc candidate, Department of Architecture, Cork Institute of Technology

The aim of this study is to evaluate the blending of two issues within the built environment, Conservation and the Provision of Disabled Access. The report examines the junction of the two issues, with particular reference to Cork City Courthouse. This research has found that although efforts are gradually being made to address the issue of Disabled Access within the built heritage, there is a distinct lack of information providing acceptable solutions and examples of successful incorporation. Building regulations are becoming stricter and more extensive, which makes the provision of disabled access increasingly difficult. There is a need for the creation of specific guidelines on how to approach the blending of the two issues, to ensure that unnecessary destruction of our Built Heritage is avoided.

The topic of this report stems from a conflict between two issues within the built environment, Conservation and Disabled Access. As awareness of both issues grow, there is a definite need to examine the processes and legislations that govern both conservation and special needs provision and to examine the best ways to create a fair balance of the two. In short the issue can be described as the preservation of culture versus basic human rights. The protection of Ireland's built heritage is of great importance and the best way to do so is to keep the buildings in use, to avoid the risks of neglect, vandalism and general deterioration. However, current legislation and basic human rights relay that the buildings need to be accessible

to the disabled if they are to continue to be in use. The reasoning behind the report is to determine whether there is an immediacy to change the processes, legislation or policies that provide the framework for conservation and disabled access.

The Study area has been chosen by firstly looking at the issues within the report from a global perspective. There has been a growing consciousness of the requirement for special needs design, and an equal consciousness for the need to preserve buildings as part of the human identity, and give these buildings a role within global economy, making them dynamic entities. This array of concerns is continued into the European Level, which has a rich supply of cultural building types that are recognised for their importance in defining the character of different countries, and preserving history.

This, again, can be said at a National level, where both special needs design and conservation are two relatively new concepts in Ireland, and a growth of awareness and knowledge is changing the way conservation is being dealt with in buildings with and also , is providing better access for the disabled. At a local level, Cork has a rich Record of Protected Structures, and Inventory of Architectural Heritage. These recognise that buildings need to explore their dynamics and progress forward. This being the case, Cork as a study area can give an understanding of the issues at a broader scale.

The primary source for this report is a structured interview with the Senior Executive Architect for Cork City Council. His involvement in the refurbishment gives him unique information regarding the case study. In additionn, visits to the building were arranged but, as a result of the nature of the building, the ease of access was limited.

Cameras are prohibited in the building and an appointment was set up for an accompanied photographic survey. However, the time frame for the survey was approx. five minutes which reduced the detail and quality that could have been achieved if more time was given.

Historical Development of Conservation

The conservation of Historic buildings has been crucial in protecting the world's cultural history. It became more significant when historic buildings had to compete with new technologies and ideas that were emerging within modern architecture. In order to examine where conservation started, the historical development of conservation as an issue is analysed. The History of Conservation becomes an important theme within the research. John Ruskin and William Morris were the Seminal Authors for the theme of the historical development of conservation. *"The Seven Lamps of Architecture"* Ruskin (1984) was one of the first publications which examined the concepts of conservation principles and its importance to the world of architecture. Ruskin was a respected Architect whose ideas spread quickly and created a rise in the interest of the concept of conservation of buildings. William Morris , another respected architect of the time and a colleague of Ruskin, was involved in the writing of the *"Manifesto of the society for the protection of ancient buildings" (1877)* which calls for the formation of set principles and guidelines for conservation.

The supporting literature for the historical development of conservation are based on a number of principal charters. *"The Athens Charter"*(1931) drew up the first official conservation guidelines. It was adopted at the first International Congress of

Architects and Technicians of Historic Monuments. At the congress there were seven resolutions made. "*The Athens Charter*"(1931) states these seven resolutions, and proceeds to describe them in more detail. The second charter is the "*Venice Charter*"(1964) , a progression of the "*Athens Charter*"(1931), and has an enlarged scope. The third important charter is the "*Washington Charter*"(1987),which was adopted by the International Council on Monuments and Sites (ICOMOS). It defines the principles and objectives, and methods necessary for the conservation of historic towns and urban areas.

There are two principal sources forming the literary supports for conservation guidelines. The Department of the Environment's (DOE) "*Conservation Guidelines*"(1996) contains a series of sixteen booklets which firstly lists the Main conservation Principles, and secondly, gives details on the conservation of specific parts of a building and its surroundings. The Oireachtas is the principal author of all Irish based legislative documents. It forms the main literary support for the analysis of national regulations governing the conservation of historic buildings. The "*Planning and Development Act - Part iv*" (2000) clearly stipulates the guidelines to development authorities concerning development objectives concerning protected or historical buildings. The "*Planning and Development Act - Part iv*"(2000) is the primary legislation governing conservation principles. As the document is an official publication, it is aimed towards professionals within the building or planning sectors.
Publications forms by both the DOE and the Oireachtas fall under the category of Official Publications.
 "*The Conservation Guidelines*"(1996) DOE document was superseded by the Department of Arts, Heritage and the Gaeltacht's

publication of the "*Architectural Heritage Protection; Guidelines for Planning Authorities*" (2005)

The document's aim is to "*assist planners and others in understanding the guiding principles of conservation and restoration*". This document also gives guidance on the "*Planning and Development Act*"- part iv (2000)

These guidelines are very detailed in the methods of conservation. The document is aimed at working professionals in the architectural sector and falls under the category of published works. This document falls under the heading of Official Publications.

The author describes the development of Special Needs Provision, Universal Design and accessibility legislation in Ireland; as this topic is covered in Davan Swanton's paper we have taken this out for brevity. (eds)

Historical Foundations of Building Conservation and Special Needs Provision

The emergence of building conservation began in the middle of the nineteenth century, lead by two of the biggest names in architecture at the time; John Ruskin and William MorrisJohn Ruskin was the first to acknowledge Conservation as a principle of Architecture in this Book "*The Seven Lamps of Architecture*" (1849). The book states the seven principles or 'lamps' that define architecture and it is within the sixth chapter of the book "The lamp of Memory" that he focuses in on the importance of conservation. Ruskin believed that conservation should be thought about while designing for new builds, that buildings should be built with pride and with the idea that people will someday ask about the buildings history and importance. He then goes on to write about existing buildings that

have historical value, referring to them as *"the most precious of inheritances"*

William Morris was involved in the production of the '*Manifesto of the Society for the Protection of Historic Buildings' (1877)*. This Manifesto calls upon the people working on historic buildings to avoid restoration using modern methods as it destroys the character of the building and in place, resist tampering with the existing fabric and protect them with daily care. It states that new buildings should be built instead of altering and destroying historic ones to cater for a use that was not intended for them. While Ruskin and Morris were major contributors to the progression of conservation, many people wrote off these publications as a 'phase' or 'fad' in Architecture. It was a rebellion against mass production from 1880-1910 that pushed the idea of conservation. This rebellion was called the Arts and crafts Movement. After the boom of the industrial revolution, it called upon designers to return to traditional methods.

Conservation was now becoming more popular, and people began to recognise its importance. In 1931 the first conservation principles were drawn out in what is known and the "*Athens Charter for the restoration of Historic Monuments*" at the First International Congress of Architects and Technicians of Historic Monuments in Athens. It stated seven resolutions called the "*Carta del Restauro*" :
1. *"International organizations for Restoration on operational and advisory levels are to be established."*
2. *"Proposed Restoration projects are to be subjected to knowledgeable criticism to prevent mistakes which will cause loss of character and historical values to the structures."*

3. *"Problems or preservation of historic sites are to be solved by legislation at national level for all countries"*

4. *"Excavated sites which are not subject to immediate restoration should be reburied for protection"*

5. *"Modern techniques and materials may be used in restoration work"*

6. *"Historical sites are to be given strict custodial protection"*

7. *"Attention should be given to the protection of areas surrounding historic sites."* - *"The Athens Charter"* (1931)

Following the *"The Athens Charter"* (1931) came '*The Venice Charter*' (1964) which was the international charter for the conservation and restoration of monuments and sites. It was a progression of *the "The Athens charter"* (1931), it makes a thorough study of the seven principles or 'Resolutions' and enlarges its scope.

The last important charter that influenced the present conservation guidelines/principles is *"The Washington Charter for the conservation of Historic Towns and Urban Areas"* (1987). It, like *"The Venice Charter"* (1964), enlarges the scope of the conservation principles. It defines principles and objectives, and methods necessary for the conservation of historic towns and urban areas. *"The Washington Charter"* (1987) was adopted by The International Council on Monuments and Sites.(ICOMOS)

It must be said that Ireland were very late in adopting the conservation principles, and seeing conservation as an important measure in preserving our heritage and history. It was not until after Ireland joined the European Union in 1973 that the theory of conservation began to take hold. Under European direction, Ireland adopted rules and guidelines drawn up by GRANADA, and began to

make efforts to comply with the new European standards for Conservation, starting with the creation of the National Inventory of Architectural Heritage (NIAH) in 1990.

On a national level, historically Ireland was also very late in adopting a system for special needs provision in buildings. It was not until after its joining of the European Union that a serious effort was made to provide regulations concerning disabled access. The "*Building Control Act* "(1990) called for the creation of a set of standards for disabled access. Minimum requirements which can be seen in detail in chapter four. Although no specific act or movement relayed within these two historical backgrounds combine the issue of conservation with special needs, it can be said that the acts are vague and open to interpretation. For example:

" *§ 4155. Effective date of standards: Every building designed, constructed, or altered after the effective date of a standard issued under this chapter which is applicable to such building, shall be designed, constructed, or altered in accordance with such standard."*
- Architectural Barriers Act (1968)

This, under interpretation, is to include buildings which are listed or protected. It does not make any exemptions to listed properties therefore they should be included. Similar scenarios exist with the Irish Acts such as the *Building Control Act* (1990)

Legislative Framework for Conservation and Special Needs Design

The UNESCO (United Nations Educational, Scientific and Cultural Organisation) World Heritage Convention is where the international

legislative framework lies for building conservation. It came about at the UNESCO general conference in 1972. It concerns the protection of the world's cultural and natural heritage. Articles 4 – 7 of the convention relay methods of *National Protection and International Protection of the Cultural and Natural Heritage ,*which includes adopting policies to give heritage a *function in the life of a community,* which would increase awareness, to set up protection and conservation service, develop scientific studies for operating methods, and the development of training centres to encourage scientific research in the field. Articles 8 – 14 relates to the establishment of an *Intergovernmental committee for the protection of the world cultural and natural heritage,* which was names "The World Heritage Committee". It originally was made up of fifteen states parties to the convention. Each member state was called upon to submit an inventory of properties which are part of the cultural and natural heritage of that state. "*The inventory shall include documentation about the location of the property in question and its significance".* These inventories were brought together to make up the "*World Heritage List" ,* which the committee considered to have *outstanding universal value.* The *"World Heritage List"* is updated every two years. Articles 15-18 concerns the *Fund for the protection of the world cultural and natural heritage.* A fund was established titled the *"World Heritage Fund" ,* mostly formed by compulsory contributions from each member state, and voluntary contributions from persons interested in the field. The convention encouraged the state parties to establish national foundations for funding. Articles 19-24 discusses the Conditions and Arrangements for International Assistance. It defines procedures for the requests of funding and the

allocation of funding based mostly on the degree of urgency for protection. - UNESCO, 1972

National Legislative Framework for Conservation Principles

Nationally, it was in 1990 that Ireland fulfilled its obligations under the Granada Convention, with the establishment of the NIAH (National Inventory of Architectural Heritage). The NIAH established a central record of Ireland's architectural heritage. The NIAH became established on a statutory bases under the "*Architectural Heritage and Historic Monuments Act"* (1999). At a local level, the "*Planning and Development Act Part iv"* (2000) is where conservation legislation lies. Under section 51, each planning authority was to create a record of protected structures (RPS) . A RPS exists within every city and county councils development plan. Section 52 calls for the issuing of *guidelines to planning authorities concerning development objectives.* The act governs the planning authorities responsibilities concerning planning procedures, issuing of notices for works to be carried out, its power to acquire a protected structure etc. - "*Planning and Development Act Part iv"* (2000)

Ireland's guidelines for the protection of architectural heritage can be first seen in the "*Conservation Guidelines"* (1996) published by the Department of the Environment. It is a series of sixteen booklets containing principles and guidelines relating to different ways of repairing and conserving protected buildings. The Conservation Guidelines (1996) are superseded by the RIAI "*Guidelines for the Conservation of Buildings"* (2010) , which is a more developed and detailed set of guidelines, and has a separate appendix for the issue of Access. Appendix 3 – Building Regulations Part M of the RIAI

Guidelines strives to find a balance between protecting the character of a building while making it accessible to the disabled.

National Legislation for Disabled Access

At National level, there are a number of different Irish Acts that necessitate for specific legislation that governs disabled access. The Equal Status Act (2000) governs discrimination laws and states in Part I , Section 4 that :

"Discrimination includes a refusal or failure by the provider of a service to do all that is reasonable to accommodate the needs of a person with a disability by providing special treatment of facilities, if without such special treatment of facilities

"The requirements of Part M aim to ensure that:

(a)   Buildings other than dwellings are accessible and usable by people with disabilities and

(b)   Dwellings are visitable by people with disabilities "Department of the Environment (2010) Technical Guidance Document Part M. Dublin Stationary Office.

Part M (2000) was updated in 2010 to form the *"TGD- Part M Access and Use"* . This document specifies regulations to provide access to the built environment to all people not just the disabled, it is based on the theory of Universal Design.

Conservation Guidelines Pamphlet Series (1996)

The Conservation Guidelines (1996) are a series of sixteen booklets which aid the conservator to specific parts of a building. As well as defining :Conservation Principles these also cover a range of topics on materials, problems of moisture, fire safety and maintenance.

Each booklet begins by giving a brief history of the conservation material or area being described. It details the progression of the title to give the conservator a background knowledge, to be able to identify the type and age of different elements. This is very important in conservation, to be able to recognise the differences of eras and distinguish different types of craftsmanship. The first booklet defines the conservation principles in detail, while the second booklet lists the sources to which the conservator can look to, for the historical survey which will reveal original materials, ownership, works through time etc. Booklets three to sixteen then focus on individual parts of a building and how to deal with the conservation of that specific area of material.

Cork City Courthouse – The history

The construction of the original courthouse dates back to 1836 and was designed by George Richard Pain and his brother James. The original building was destroyed by a fire in 1891. A competition was instigated with the requirement of the preserving the portico and the façade on Washington Street which was all that remained of the original structure, and the winning scheme was designed by W.H Hill Architect, the construction of which was completed in 1895. The building remained largely untouched until a major refurbishment project which started in April of 2003.

In the early 1990's, the Government transferred responsibility for funding courthouses to the Department of Justice. The City Architect was called to a meeting on the 16th of February 1995 to discuss the buildings future. The concept was to integrate disabled and general access by introducing a new entrance at ground floor level while still allowing exit through the first floor doors under the portico. This

concept was forwarded to the Department of Justice in June 1995. The viability of the scheme depended on a number of key factors:

- The suitability of the existing courtrooms for modern use
- Whether the ground floor could be made fully usable
- Whether the building could be made accessible to all including disabled visitors , while improving security
- The feasibility of installing modern mechanical plant equipment to ensure the building is conformed to the highest environmental and technological standards

corkcity.ie

Design Strategy

The original 1895 courthouse was designed with an open courtyard at its centre. The courtyard was glazed over at roof level and natural light has been introduced deep into the heart of the building at all levels. This was done by introducing a fire rated glass floor at first floor level, which provided daylight to the staff offices at ground floor underneath.

Cork Courthouse Progress Photography   30 May 2003   Ref: 10   Kevin Dwyer

Finished Courtyard -
http://www.corkcity.ie/media/media,2533,en.jpg

Courtyard Const. Phase

The whole ground floor level was reduced significantly by 750mm, which greatly increased the floor to ceiling height, effectively adding an extra floor to the building as the original ground floor level had very low ceilings and was used only for storage and remand cells. The new ground floor houses the courts services offices, which freed up a large amount of space on the upper floors in which three new courtrooms, eight consultation rooms, a family law staff office and barristers/solicitors officers were added. The new ground floor now includes two new entrances on either side of the portico steps, which lead to a central foyer flanked by now reception and security facilities. Two principle service cores accommodate lifts and toilets at all three levels. The ground floor now holds spacious, well-lit and well ventilated offices and facilities for the court staff.

Fusion of disabled access

This section of the report focuses in on three main junctions of the building where disabled access was an issue during the refurbishment. The four junctures are as follows:

1. The main entrance at ground floor level
2. The vertical circulation through the building (lift incorporation)
3. Change in level at original main entrance lobby (first floor)
4. Change in level to family law offices (first floor)

Originally, there was no provision of access to disabled people to the courthouse.

"The new entrance issues were fundamental. The building that we had at our disposal had a big set of steps up to the main entrance doors. The practicalities of incorporating any kind of full accessibility

while keeping those steps in tact was really not feasible, and we considered that to be one step too far. The difficulty that we had was that visually the entrance of the building is very clearly at the top of the steps, and everything about the portico screams 'entrance' "
Senior Architect

The solution was to create two new entrances at either side of the main steps. On the left side, there is a stepped approach , and on the right, a ramped and stepped approach. The ramp was a fundamental addition as the new entrance door was approx. 450 mm below street level.

New entrance ramp – http://www.hkengineering.ie/?page_id=30

New entrance ramp – http://www.hkengineering.ie/?page_id=30

The stone used for the kerbing of the ramp is from a similar alate of colours to the existing building and existing pavement, but is visually clearly a new addition to the streetscape. The ramp itself is formed with a contrasting terracotta coloured paving slab. It is 8900m long and has a clear width of 1340mm. From a conservation Point of view, the ramp is an example of successful integration with its original surroundings. It is in keeping with the principle of not deterring from the original streetscape while complying with the buildings regulations for access at that time.

The ramp allows disabled access to the new entrance door at the side of the portico steps. There was an existing entrance to disused toilets at this location. The ope was widened and a new glass door was put in place.

New entrance - http://www.hkengineering.ie/?page_id=30

New entrance - http://www.hkengineeri ng.ie/?page_id=30

New Entrance Internal View

The glass doors were made secure by the installations of 'trellis' type security grilles manufactured from 316 grade stainless steel with a grit polished finish. The new entrance had to be clearly marked with signage as there was a need for the re-education of the users as they were so used to using the entrance at the top of the steps. The new main entrance door is a full glass panel door with stainless steel framing. The door swings in both directions and has a clear width of 1200mm.

It is clear that this door is a new addition to the building and is not an original feature. The treatment of the stone around the ope was done well, with the use of materials which are similar in colour and texture to the original materials. Through the main entrance door is an entrance lobby, which is ramped as the finished floor level is

lower than the external finished floor level. The lobby ramp is partially carpeted to avoid slipping.

The internal lobby doors are double leaf doors which are fully glazed and have very fine lined frames to minimise visual intrusion. These doors have a fire rating of 1 ½ hours, have self-closers and swing in both directions. The width of the lobby is 2600mm. The new main entrance at ground floor level , including the external ramp access, complies with the TGD Part M (2000) Access for people with Disabilities, which were the regulations in place at the time of the planning, design, and refurbishment of the courthouse.

 It is difficult to apply the conservation technologies to the ground floor as it did not exist originally, however, the use of materials was well planned, the colours and textures blend well with the rest of the building but it is evidently clear that it is not original. The analysis of the blending of conservation and disabled access is limited at this level, but it highlights the principle of compromise, as, if this change was not made, independent access for the disabled would have been impossible, and the lifespan of the building would have decreased. The creation of this new, usable ground floor created opportunities which allowed the creation of new courtrooms on the upper floor, larger office space for the courts staff and a security system which did not exist previously, as there is a new reception desk on the ground floor which allows the control of people entering and exiting the building.

Pre-refurbishment, the courthouse had no lift incorporation which made it impossible for wheelchair users to use the building. The incorporation of passenger lifts is a vital addition to the building. This was done by using two existing structural cores which originally

housed toilets , a boiler room, consulting rooms, a library and a barristers room

"When you are refurbishing old buildings you are looking for obvious areas that you can make use of without too much intervention and you don't want to be disturbing the building any more than you possibly can. Structurally, the two cores are like a couple of oversized lift shafts in a way, because they go right up the building structurally, that you can make good use of them for vertical services." – Senior Architect

The lift incorporation involved cutting through two floors in order to accommodate it. This was a major intervention of the old building, but was necessary to maintain the life of the building and to keep its use feasible . The lift is a machine room-less(MRL) lift which saves on space and is less invasive. The lift itself , and the lift lobbies at all levels, comply with TGD Part M (2000). The designers took advantage of the two existing cores in the centre of the building, which eliminated the need for allocating a lift in a more noticeable location which would have visually detracted from the interior features and fittings of the original building.

The change in level in the Main Lobby Areais approx. 605mm which was managed originally by a set of four risers stretching the length of the entrance hall.

"There was an issue with those steps that they were quite worn and the stone was quite worn and bowed , and we concluded that nothing short of total replacement of all that stonework would be needed in order to address that issue, and we thought again that that was one element of intervention that was just one step too far" – Senior Architect

The solution to the problem was to add a fully removable Cast Iron Ramp which had minimal intervention. It is a modern material which does not detract much from the interior set up. The ramp is approx. 7200mm in length and 1100mm wide and complies with TGD Part M(2000) . From a conservation perspective, this is an innovative way to comply with the regulations for access, without damaging the original features in any way. Using removable ramps is the most common way of resolving this problem, however, the use of ramps is not always feasible due to lack of space or obstructions to doors.

New Removable Ramp

There is another change in level on the first floor, a set of three risers to the west of the enclosed courtyard to the Family Law offices.

Post-Refurbishment

There was an immediate requirement for disabled access to this section of the building as the steps lead to the family law department and solicitors rooms. The original flooring and steps were restored in this area, and a stair lift arrangement placed to the left of the steps. This was the most practical solution which had reasonably minimal intervention and which did not disrupt the existing fabric of the building.

Conclusions

At the time of the refurbishment, the regulations for disabled access were met relatively easily, however all of the designs were completed in 2000, and the specs are in accordance with the Building Regulations Part M 1999, not the current 2010 version of the regulations. The most critical of junctures was most definitely the new entrance at ground floor level. This was the area to which the building and existing fabric was changed dramatically.

"In the City Architects, we've always tried to hold by the principles of the Venice Charter, and in summary, that requires you to treat any intervention in a historic building, in a very different way to the existing treatment, so we would use a different pallet of materials, you would use a modern approach, you would use modern detailing and modern materials" – Senior Architect

As a consequence, the ground floor is made completely from modern materials. There was no conservation of materials internally on the ground floor as most of the walls were un-plastered stone and the floors solid stone. These changes were necessary to ensure the survival of the building. It is clear that compromises were made on

the conservation side of the fusion of these issues, where if all the principles were adhered to, the building would remain inaccessible and eventually become obsolete and unusable. Minimal intervention solutions were made as much as possible to keep the integrity of the building.

Conclusions and Recommendations

It was clear during the research that, while internationally the development of conservation and disabled access began quite early, Ireland's response came much later. A clear turning point which drew Ireland's attention to the issues was the joining of the European Union (at the time it was the EEC – European Economic Community). The connection with the European Community allowed Ireland to adopt its sister countries philosophies on conservation and special needs provision. This spurred the creation of Government Acts to govern both issues, and the formation of legislation and policies to conform to these Acts.

Ireland's Conservation Guidelines, originally drafted in 1996 as a 16 booklet pamphlet series, have evolved over time as the importance of conservation grows within the building industry. The original guidelines had no mention of provision for disabled access and gave no insight into good practices for its incorporation. Through the years, and with the growing and changing legislation, the Conservation Guidelines have highlighted the incorporation of disabled access.

The 1997 Technical Guidance Document Part M - Access for the Disabled was the first draft of the building regulations which contained minimum requirements for disabled access. This was

updated in 2000 and again in 2010. The 2010 version however is entitled Access and Use, which has a shift in focus from disabled access to the concept of universal design, and access for all. The findings generated by the research into, and the analysis of Cork City Courthouse, show that it certainly complies with the TGD Part M (2000), which were the standards being used at the time of the refurbishment; however, under the new 2010 TGD Part M, some areas would not comply. Though this is true, the TGD Part M (2010) states in the Transitional Arrangements that " *this document applies to works, or buildings in which certain material changes of use take place, where the works commence or the change of use takes place on or after 1 January 2012.*"

It was clear from the structured interview with The Senior architect that if the refurbishment were to be designed to the present day's regulations, the process would have been a lot more difficult, as there are many more minimum requirements in the TGD Part M (2010) than in the TGD Part M (2000).

Ireland adopted the concepts of Conservation and Special Needs Design a lot later than many countries in the EU. As a result, Ireland as a Nation is still adapting and learning the best ways to practice conservation methods and also, the best ways to incorporate access without destroying the character of a building. Building Conservation can be considered as a specialist field within the building industry, and has to compete with ever evolving technologies, constant tightening of building regulations and the attempts to make the built environment as 'green' as possible.

 From reviewing the conservation guidelines and the TGD Part M, it is quite clear that each document is biased to its own cause.

Although the conservation guidelines have begun to address the issue of appropriate ways of providing disabled access, it must be said that there is a very limited amount of information available to the conserver. It is through examples of bad practice that good practice evolves in Ireland, which is disappointing to see. The progression of building regulations and their strictness has a knock on effect of limiting the effective blending of the issues. Although leniency to the regulations is allowed for historic buildings, and alternative methods may be used, it is extremely difficult by today's standards, to cater for everyone's needs without destroying the character of a building

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  Office
- *RIAI, 2010, "Guidelines for the Conservation of Buildings"[online]*
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  http://www.buildingsofireland.ie/SiteTools/Aboutus/

- *corkcity.ie:*
  http://www.corkcity.ie/services/architects/corkcityandcountyco urthousephaseii

- *hkengineering.ie : http://www.hkengineering.ie/?page_id=30*
  environ.ie

NOTE: For Copyright reasons some of the illustrations in this dissertation have been removed. For more information you might look at *www.corkcity.ie/services/architects/corkcityand* *countycourthousephase1external/*

A Design Studio Project for Year Two Students at the Cork Centre for Architectural Education.

Selected designs by Luke O'Keefe and Paul Higgison

Extract from the Introduction of the Design Brief outlining the task the students were set in this six-week project, which forms the major component of the semester's work:

"**Urban housing must address how people can live across a variety of scales – from the private domestic interior, to the public realm of the neighbourhood, to the city at large – and how, importantly, these realms connect and establish relationships with each other. In the context of Cork City Centre, you are asked for an intervention which will reconcile the needs of the community with those of the individual: how your scheme, through form, space and function, can improve the existing living environment. Accordingly, throughout the project you will be asked to respond and analyse housing projects (including your own) at micro and macro scales.**

"**You should also carefully consider the following concerns. How can the design of your individual units allow privacy yet connect to the external world and each other: issues of threshold and overlaps between public, semi-public and private spaces. You must address how units admit light (what kind of light?), relate to views/aspect/topography (all units must be dual aspect) and create private external open spaces. Concern must also be given to the materials and structure you use and how these in turn can not only**

shape how your design develops but also have an effect on a wider environment. Also of crucial importance is the design of units which are flexible / adaptable to accommodate different types of occupants with different working, living and leisure demands for the period of their lifetime. This relates to issues of accessibility for the elderly or disabled which must be addressed accordingly to the official guidelines discussed."

(Orla McKeever, Year Coordinator)
Access Exercise, February 2013

As a primer for the design project in which the Second Year Architecture students are engaged, visiting tutors from the School of Occupational Therapy at University College Cork run a short one-day exercise to allow students to experience their nearby built environment as people of different abilities might do.

Student Luke O'Keefe presented a board describing his own experience of using a motorized wheelchair to go shopping:

We were given the opportunity to go around Cork City in an electric wheelchair for a morning and record our experiences. We saw first hand the good and bad points of universally accessible design.

In shops accessing shelves was difficult due to their height. In TK Maxx store this was not a problem as the shelves were low enough.

In Argos store we were able to use a lower level table to order goods. This makes it easier and gives the wheelchair user more independence.

Lower ATMs were available for wheelchair users on Patrick Street. However, there was only one.

Not being able to access shops with steps was a big problem. I had previously thought this was not the case any more due to the regulations and was surprised to see this.

Record of Access Exercise, Cork City
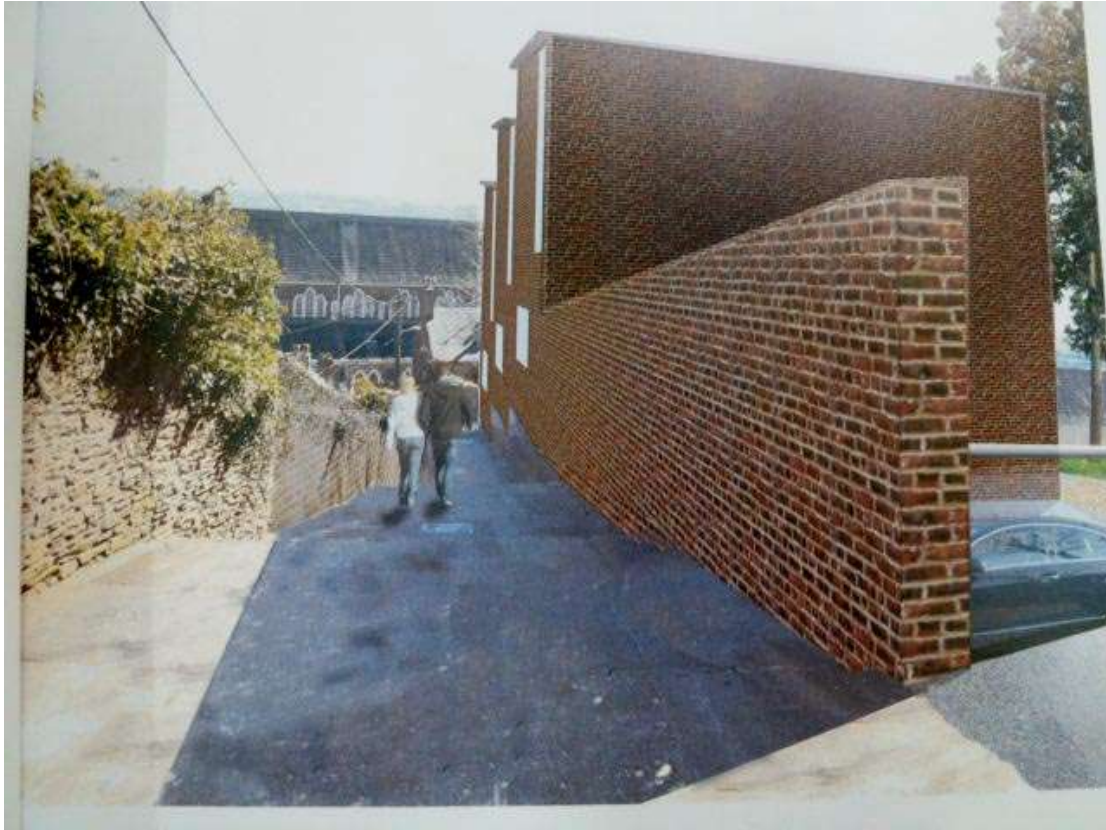
Luke O'Keeffe Year 2

The Housing Project

The sites for the housing are located on a south-facing slope to the northwest of the Cork City centre, with an existing pattern of mainly artisan's terrace housing from the late Nineteenth and early Twentieth Centuries. The site chosen by both students is located next to an older detached building that has been converted and

extended as a nursing home. They used this opportunity to explore how dwellings for different types of residents could produce a cohesive community, including how people of limited mobility might be catered for in the planning layout.

Luke went on to evolve a scheme that houses both medical staff from the nursing home and also independent living units, located at ground floor level for ease of access.

A- Single story terrace housing for semi independent elderly people.
B- Two story building, accomodating medical clinics on ground floor and three suite apartments on 1st floor for nurses and carers.
C- Access to underground resident's carpark.
D- Visiting medical staff and emergeny vehical carpark.
E- Day room.
F- Lift access to nursing home carpark.

SITE SECTION 1

Luke O'Keefe's scheme provides clinics on the lower levels, with staff accommodation above

Housing at Sunday's Well, Cork

Paul Higgison introduced his final design proposal:

"In response to the site and its surroundings buildings I decided to cater for families that have an elderly family member living with them. My idea was to utilise the nursing home located directly north of the site. By having a 3-storey home it would allow the third floor to walk out level with the nursing home car park. This makes the facilities of the nursing home available to the elderly resident while they still reserve the independence of living separately in their own home. This independence is something a lot of elderly people feel

they lose when moving to a nursing home. It would also ease the burden on the family as the elderly resident now has activities with people their own age at their doorstep. From this I created an independent living unit on the third floor specifically for the elderly resident. Usually with an elderly member living in a home sacrifices have to be made in the layout and the house is generally not designed to cater to their needs. The other alternative is the common "Granny Flat" which again sacrifices valuable space on a plot. My alternative caters for this specific arrangement. As the home will have elderly people in it I made precautions for them being less abled. I found the best option was to design completely wheelchair accessible floors to cater to their needs should such disabilities arise."

View of the model showing how the scheme optimizes the topography for access

Model of a three storey multi-generational dwelling units, with independent living space at the upper level, accessed by a bridge to the terrace of the Nursing Home

Can my immediate physical environment affect how I feel?

Cathy Dalton. PhD Candidate at CCAE

The instinctive answer to this question must be a resounding "yes". How many times have we said to ourselves "if I spend one moment longer…." or "I need a change of scenery?" What might at first glance seem to be throwaway remark is increasingly borne out by research in environmental and behavioural psychology, and the more recent discipline of Evidence-Based Design. Research outcomes from these disciplines are beginning to converge with other findings, in neuroscience and neurophysiology, as we discover more and more about how the human brain and body functions.

The physical characteristics of our daily environment have the capacity to profoundly affect all aspects of our functioning, from biological systems to cognitive ability. This has for long been understood on an intuitive basis by people in general, but utilised on a more conscious basis by architects, and other designers, who have greater impact on the shaping of human environments. Recent research in evidence-based design, coupled with advances in neurophysiology, confirm scientifically what have long been held as commonalities. It also illuminates an almost frightening potential to do enormous good, or alternatively, terrible harm, by virtue of how we choose to make our everyday surroundings.

While Universal or Inclusive Design has tended to focus on meeting functional need, good design should, of necessity also consciously

embrace psychosocial aspects. It must concern itself with its effect on how we feel. In the case of buildings where we spend much of out time, such as the home or workplace, architecture affects us over the longer term of weeks, months or years. Design matters, and can play a role in fostering or undermining wellbeing. Very often, in the built environment, the same design intervention will support both functional and psychosocial fit. One example is the provision of easy level access from a person's own room, in a residential setting, to a personal outdoor space: on a functional level, it makes a secure outdoor space accessible. In psychosocial terms, it can facilitates socialisation, by choice with neighbouring residents, access to nature and sunlight, and the personal space for relaxation and contemplation. The provision of such access therefore increases freedom of individual choice and supports a variety of behavioural situations.

As we age, we change physically, which in turn affects our relationship with our environment. This is due to the physical and sensory changes our bodies undergo as a part of normal ageing, but also as a consequence of the greater occurrence of "lifestyle" diseases, such as heart disease or arthritis, which are often chronic, and can be disabling. In addition, there are diseases of old age, among them, and most significantly, dementia. Aging, and age-related illness can affect mobility and sensory capacity, changing our ability to interact and interact with the environment, and to alter it to suit our needs on an ongoing basis. In a person with dementia, those deficits, arising from global cognitive impairment, become progressively greater over the course of the illness. Dementia is a progressive chronic disease which impairs cognitive functioning, including memory or reasoning, linguistic ability, mood, depth

perception, and motor control. The global population is rapidly aging, ages, with developed countries taking the lead, and the developing world fast catching up as living-standards improve and lifespans increase. The number and proportion of older people is increasing, and will continue to increase. As the likelihood of dementia is greater with every year a person lives, some experts predict that 50% of the "older old", that is, people over 85, will have dementia in years to come.

This begs the question of where and how elderly people with cognitive and perhaps also physical impairment will live, and who will care for them. Thoughtful design of the built environment can play a significant part in enabling a person with dementia to live independently as long as possible, but also to have quality-of-life in a supported residential setting.

Too much living-accommodation for elderly people across Europe and the US, in the form of nursing-homes or institutions, falls far short of standards that could be expected to provide any degree of support for the typical resident, and too often is so inappropriate that it is likely to exacerbate dementia through lack of ease of use. Stress is of huge significance in dementia, as a causal factor, a marker for onset, and on a day-to-day basis, as people with dementia have low environmental stress threshold.. In this last, design of the built environment has a role to play, both in reducing stressors by designing for ease-of-use, by creating in a familiar domestic-style setting, rather than institutions, and also be consciously aiming to promote well-being through enhancing both functional and psychosocial "fit" or congruence, in the built environment at every scale. It is not an overstatement say that a

psychosocial model of care cannot thrive in an institutional setting: the physical environment of case and the culture of care are inextricably interlinked. For example, different types of socialisation are not possible if different physical spaces are not provided; this affects psychosocial congruence. When a person has to share a room, or has a room so small that it only accommodates sleeping and eating, this profoundly affects how that person lives, and the everyday choices available to them. Culture plays a large part in informing design with regard to what constitutes appropriate fit, in a given context. In the US, architecture is now regarded as catalyst for the wholesale replacement of the exiting culture of elderly care.

Design of care environments has, to date, largely ignored the very person who should be at the centre of the design model: that is, the patient, and in the case of long-term residential care or supported housing, the resident. In the future, this person is likely to have, or go on to develop dementia, something that as a society, we have tended to shy away from, most probably because it represents a version of our future selves which many of us would rather not contemplate. New architectural models from various countries address these concerns.

The PhD thesis explores potential architectural solutions for the elderly user that incorporate new digital technologies and specifically, wireless sensor networks. In order to do so, it closely examines the relationship between the elderly user and the built environment, at different scales. These run from that of site location and configuration, down to the intimate level of interaction design. The person's interaction with her personal environment, on both a functional and psychosocial level, is supported by the integration of

wireless sensor networks. The nature of the solutions is dependent on context and locale, in the same that architectural solutions are in general are generated by context. Many of the proposals might be applied in other areas of architecture, and on that basis, the whole design philosophy can be regarded as an inclusive design approach. Overall, the proposal is for a responsive architecture that incorporates, for the first time, considerations of affective computing, where environmental response is continuously generated by sensing of the user's psychological status, or "affect". Person-centred design in architecture can learn much from successful interface design, where there is an absolute necessity for detailed consideration of the user and the precise nature of the intended interaction. To formulate a design brief, information with regard to person, context, and activity is critical. The model for use of ICT to facilitate environmental response therefore goes beyond mere functional considerations, to a point where "emotional design" is seen an integral part of a user-centred model, and functionality is reframed as usability.

The proposal is to use processed biosensing, which identifies and anticipates behavioural patterns, and stress overload in particular, to actuate changes in the built environment, which are intended to act as source of stress relief. Changes might include modifications to lighting levels, colour, and visual content, and can potentially be extended to multisensory intervention. This is part of a dual approach, which also uses contextualised sensing of the person to automatically actuate environmental controls, (for example for lighting, or thermal comfort) as and when needed, to maximise physical comfort without direct personal action. The same events can be used for temporal cuing, for example, the dimming of lights

at bedtime. The number of potential solutions in any scenario responsive architecture is limited only by the designer's imagination, framed always by considerations of context. Use of continuous sensing can also be used to track user response to a specific change in the environment. Any responsive architectural solution which literally places the individual user at the centre of environmental interaction, is immediately equipped to cater for a broader range of users. The inherent the possibility of ongoing adaptation, in response to changes in both user and context, maximises "future-proofing".

The huge anticipated in crease in numbers of elderly people, and specifically, the nature of dementia, poses one of the most serious design challenges to designers in the 21st century, be they architects or interaction designers. In ways, it can be liked end to designing for many users, reflecting the ongoing cognitive and physical changes in the person as the disease progresses. At the same time, the designer must never lose sight of the humanity and individual of the person who must be the true focus of her efforts.
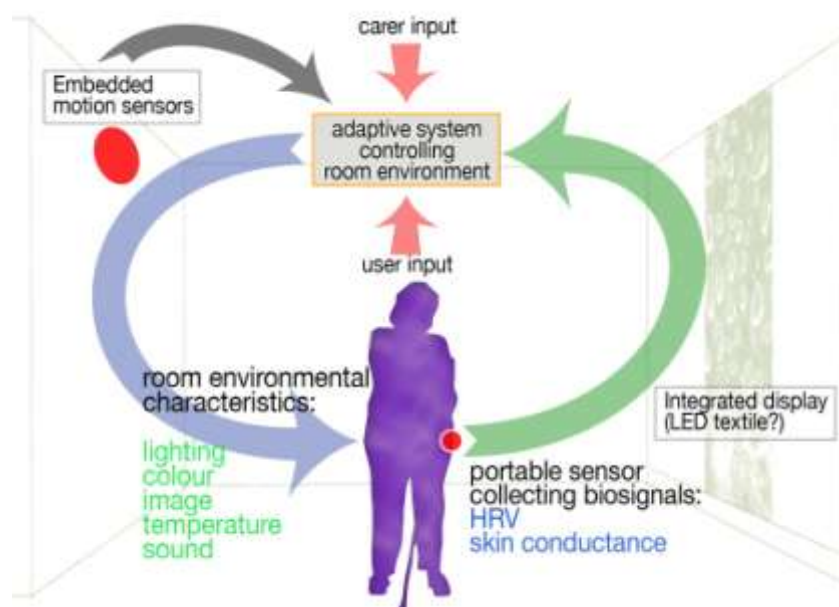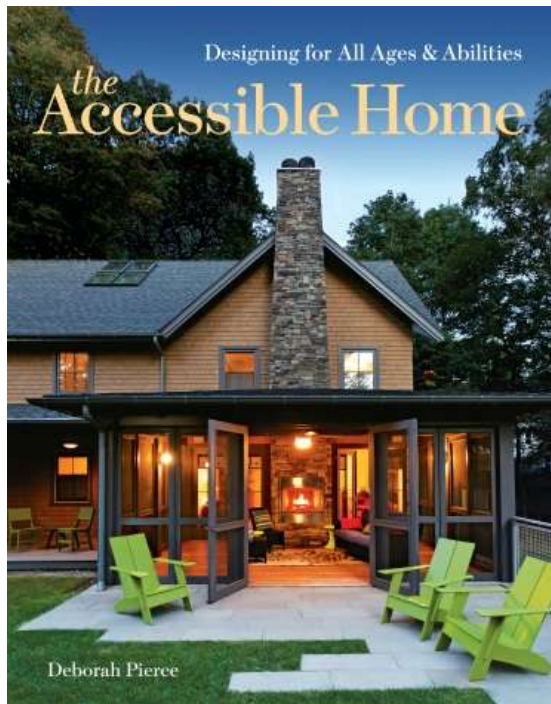
BOOK RECEIVED:

Press Contact:
Linda Stephen, IWPR Group
linda@iwprgroup.com
402-483-0747

The Accessible Home: Designing for All Ages & Abilities
New Book by Architect Deborah Pierce

Newton, Connecticut (October 23, 2012) – The Taunton Press is pleased to announce the publication of *The Accessible Home: Designing for all Ages and Abilities,* **by Deborah Pierce. Foreword by Michael Graves, FAIA.**

This first-of-a-kind home design book addresses the needs of families, couples, and visitors looking for an accessible home that is both beautiful and functional. The Accessible Home shows how ordinary people with extraordinary challenges can partner with architects, designers, and their own families to create homes that restore capabilities, independence and the grace of daily living.

The book is also a tool for the more than 80 million Baby Boomers to age in place in their current homes and lead a lifestyle with

independence, comfort, and safety for decades. A recent survey by AARP revealed that 84 percent of Boomers would like to stay in their current homes during retirement, but only 16 percent have taken any steps to adapt their homes accordingly.

Author Deborah Pierce is one of our nation's foremost experts on universal design. As an architect for the past three decades, she has been focusing on how a home serves the activities of daily living. As a result, the projects in this book convey the power of universal design – useable by everyone.

Michael Graves, FAIA, says, "Deborah Pierce tackles the small problems along with the large in her quest to make wonderful places where people with disabilities can live comfortably and safely."

Homeowners, architects, designers, remodelers and builders will find ideas, inspiration and courage to create homes that are unique to each household's requirements and at the same time, attractive to broad segments of the population. She shows us that "accessible" can be beautiful and functional, light and airy, low-maintenance, safe and comfortable, and that universal design today is a far cry from the grab-bars and ramps of yore.

The Accessible Home features 25 new and remodel projects and 225 photos from across North America to show readers how to create a home that serves its owners for years to come.

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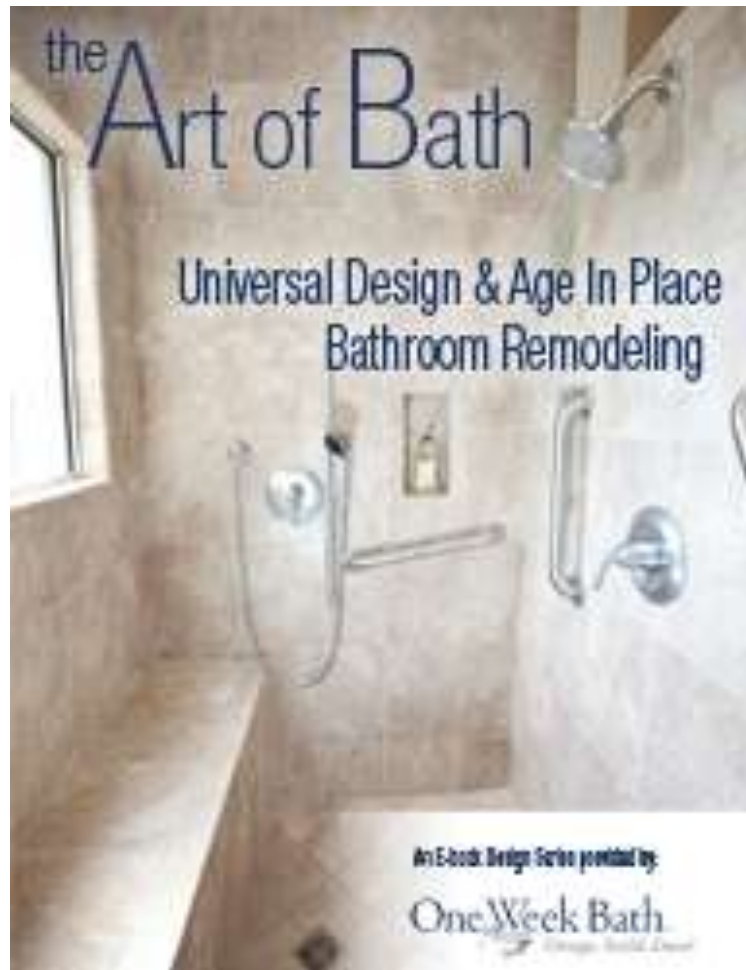
About the author: Deborah Pierce, AIA, is principal of Pierce Lamb Architects in Newton, Mass. and lectures across the country on the topics of architecture, accessibility and universal design.

2.

New E-Book on Universal Design Bathroom Remodeling Provides a Blueprint for Artful Style and Accessibility

APPEAL:

The Disability Experience:
State of the Arts, Scholarship and Research

A Call for Papers

Set aside the dates and submit an abstract! The Students for Disability Advocacy, a newly formed student group at the University of Pittsburgh whose mission is to advocate for students with disabilities, will be holding a conference October 31st and November 1st, 2013 at the University of Pittsburgh William Pitt Union entitled *The Disability Experience: State of the Arts in Research, Scholarship and the Arts*. The purpose of the conference is to highlight the arts, scholarship and research concerning the disability experience. The conference will focus on panel presentations by students with faculty respondents. A variety of submissions will be accepted from students with and without disabilities at the University of Pittsburgh and around the country. Panel presentations will draw from a variety of disciplines including: Assistive Technology across disability, Health & Wellness (disparities), Employment, Policy and Law, the Arts, Education, History, Philosophy, and English. A faculty-student round-table discussion is the final event of the conference with discourse concerning relationships between faculty and students with disabilities. Limited scholarships for travel may be available and food will be available free at the conference.

Purpose and objectives of the conference:

The aim of this first ever disability studies conference at the University of Pittsburgh is to bring together a wide spectrum of faculty, students, and other individuals – especially those from the University and its communities – whose interests capture the experience of disability and who wish to advance disability-related fields and further their integration into the curricula and in community life. The conference will:

- Invite students to present their field-specific disability-related work from across the curricula of science, the arts and the humanities to an interdisciplinary audience
- Promote discourse across disability-related fields in order to integrate disability studies into the curricula
- Provide networking opportunities by encouraging and enabling attendees to establish connections with individuals of varying fields
- Create dialogue between students and faculty about issues and experiences students with disabilities have and to identify mechanisms for resolution of problems.

Submissions:

Abstract submissions should be no more than 500 words and up to three keywords for the paper. Submissions must include 1) your name, contact information and discipline 2) title of your presentation and 3) the panel (e.g. Assistive Technology, Health & Wellness, Employment, Policy and Law, Education, History, Philosophy, or English and the Arts) in which you would like to be included. There will be three accepted abstracts for each panel. Papers will be shared with other panelists in mid-September and power points will be due two weeks before the conference. The authors will be asked to make a 15 minute presentation with 5 minutes for Q and A. If you want to display art or show a film, provide a description as well as space and other requirements.

Please submit abstracts by July 1st to Jonathan Duvall at sorc-disability@pitt.edu. Authors of accepted abstracts will be notified by August 15, 2013. Direct any questions or inquiries to Jonathan Duvall at sorc-disability@pitt.edu. Please feel free to share this announcement with anyone who might be interested in participating.

This conference is supported by University of Pittsburgh, Students for Disability Advocacy and other organizations.

NEWS:

1. Panel to ensure accessibility for people with disabilities

The Empowered Committee constituted by the vice chancellor to examine the curricula and structure of courses under the four-year undergraduate programme (FYUP) – to be introduced in Delhi University (DU) this year – to ensure they are accessible for people with disabilities has filed its report.

Sambhavana Organization, which had filed a PIL against the university had submitted its own suggestions on May 22. The final report will be tabled before DU's Academic Council which will meet on Monday, May 27.

The four-part list of suggestions covers assistive devices, suggestions on teaching mathematics and the sciences to students with vision disabilities and a batch of "broader suggestions." Sambhavana had argued that generally, "the areas of science and mathematics have been inaccessible to the students with vision disabilities," that many of them would not have studied either beyond Class VIII and, therefore, the introduction of compulsory maths and science foundation courses in FYUP will discourage these students from joining college.

The recommendations take into account facilities and methods of teaching employed in foreign universities such as Purdue University's VISIONS (Visually Impaired Students Initiative on Science) Lab. "The approach to solve specific academic problems encountered by visually-impaired students in these subjects, can be divided into two distinct halves: educational needs and technological needs," says the report.

It proceeds to list a number of tools that could be used – parchment paper, geometry kits with tactile markings, tactile net boards, Velcro boards and a variety of software, special books and three-dimensional models. The report also covers "adaptive science lab equipment" and goes into detail on the teaching of organic chemistry. But experts consulted by the committee say, those preparing the report have digressed from their brief. "What the report talks about is a hardcore science curriculum but the foundation course doesn't even involve a practical exam," says Anil

Aneja a member of the All India Confederation of the Blind (AICB) and also a teacher, "These are good suggestions but many of them are not relevant here. The foundation courses are more basic", he added.

Apart from regular use of teaching aids, for maths teaching, the report recommends flexibility in the number of problems and assignments given to these students and allowing these students to give class tests in Braille "with partial oral administration along with extra time."

There are suggestions related to lighting and difficulties faced during field work and directions to teachers such as "describe the contents of any visual material (table, graph, map) displayed on screen or boards" and "pace the presentation so that visually impaired students can keep with Braille or PC note-taking."

(Source: Times of India)

2.

Chch embraces 'Universal Design' symposium

Yesterday over 150 people from around the country gathered in Christchurch to listen, debate and discuss Universal Design, and the important role it should be playing in the rebuild of our city.

Summarising the day was a quote shared by Antony Gough from Jasmax architect Nick Moyes, who Gough has engaged to design The Terrace: "why would I design something which prevents part of society from using it?" A simple notion that has no argument.

For Gough and brother Tracey it was an effortless decision to include accessibility. Aiming to set benchmarks when it comes to the design the Gough brothers have openly stated that they "are not sparing anything on getting it right. We are building for longevity. We are investing in Christchurch."

It is of no surprise that Gough is a firm advocate for accessibility and "had in it mind" when working through the design of The Terrace. "It will be a world class space that can be used, accessed and shared by all." Sharing their desire that The Terrace become "the living

room of Christchurch," it is paramount to Gough that the end result is accessible and caters for all.

Due to the lay of the land slopping towards Hereford Street, careful consideration has been made to ensure that despite each of the buildings being constructed on a different ground level, they will all appear as though the same and feature accessible door fronts - "there will be no steps". Interconnecting pathways and bridges will act as ramps for those who need, but have been designed with a much lower gradient ensuring they will effortless blend into the design of the building, while easily ensuring Goughs' Grandmother, and many others are able to navigate their way around the space.

The day began with Richard C. Duncan MRP, Executive Director from the USA. As an expert in universal design across residential, public and transportation environments Duncan highlighted that universal design is not simply about ensuring those with either temporary or permanent disabilities have the ability to easily navigate our homes and cities - it is about creating communities which are easier for us all to navigate and use. A sliding door may allow an elderly woman to easily get in and out of her supermarket, but it works just as effectively for the young woman with a pram, the delivery boy, or the family with a trolley loaded with groceries.

The mind-set that universal design is linked with handicapped or specialised design is one that must change. "Universal Design is about adding permanent value to our homes and communities."

Following Duncan with a similar message was Kay Saville-Smith, Research Director with CRESA. With a background of research on benefit and funding policy for health, welfare, housing and disability, Saville-Smith drove the point home with what can only be described as powerful messages, and by asking us to do a big think rather than thinking big. She left the audience in total agreement that it shouldn't be so hard - what kind of society do we live in that thinks it is ok to have a father in a wheelchair, living in a home which doesn't allow him to access his children's rooms?

With the cost of modifying an existing home to accessible standards 80% more expensive than adapting a home built with features that

make it easy to change, Andrew Olsen of Lifetime Design was passionate, forth-right and informative in his presentation of the facts. With 216,000 kiwis injuring themselves in the home every year to due falls or slips now is the time to be future-proofing and ensuring we are building homes which have been designed with a lifetime in mind. Put simply, why wouldn't you?

Gough and international speaker Tim Stonor from Space Syntax took the morning's messages and illustrated the important, but simple ways, in which universal design can be integrated into the design of our communities. Clearly highlighting that universal design does not have to be ugly. It is about adding permanent value to our homes, buildings and communities.

For those in attendance universal design is a concept that is hard to escape. Confronted with the simple ways in which we can ensure our homes are accessible to all - there is no longer an excuse for universal design not to be the norm.

(source: Fuseworks Media)

3.

School board focuses on universal design for learning

BY STEPHANIE PETRELLESE

The Garden City Board of Education focused on Universal Design for Learning, which is a set of principles for curriculum development that provides all students with equal learning opportunities, at its June 4th work session.

Superintendent of Schools Dr. Robert Feirsen explained that the school district has made numerous advances in the way curriculum materials are adapted for students. By using UDL, the district continues to explore ways in which technology can help all students participate and better understand content.

"One of the things that I am excited about as an educator is that UDL is embedded into the new assessments," said Ruth Fuller, the district's special education assistive technology specialist. "I think

that will help open up more opportunities for students because in order for us to reach more students we have to be more flexible in terms of how we present information and how they can show what they know and how they're engaged."

Dr. Teresa Prendergast, assistant superintendent for curriculum and instruction, explained that every child and adult benefits from the new learning opportunities that technology offers. "The beauty of what we're seeing with the UDL is that it's not just for special education students, but it's also for general education students, all students, and you're looking at the different types of accommodations that are available for students to utilize to help access the curriculum."

After the UDL presentation, Dr. Prendergast announced that this summer teachers will be finalizing curriculum revisions for mathematics at the kindergarten through fifth grade levels to ensure alignment with the New York State Common Core Learning Standards. They will also be creating math videos for the school district's Web site. Parents and students will be able to watch videos for their child's grade level based on specific units of study which feature teachers demonstrating and re-teaching how to solve certain math problems.

At the regular Garden City Board of Education meeting (which is scheduled for June 11 at 8:15 p.m. in the Garden City Middle School cafeteria), the school board is expected to establish its annual list of classes at Garden City High School that have enrollments under 15 for the 2013-14 school year. The school board has the authority to cancel classes that do not have at least 15 students enrolled. They also have the option of offering the course every other year.

Dr. Fino Celano, assistant superintendent for personnel, announced the current list of courses that do not reach the minimum enrollment level: honors-level social science research; honors-level advanced programming; introduction to visual basic, which is a computer programming course; French 2R and 2H; college French; college German; music theory 1 and AP music theory.

Dr. Celano said that with the exception of the World Language courses, it is expected that the other courses will reach enrollment levels higher than 15 before the school year begins. In the past, the school board has continued world language courses that do not meet

enrollment levels to allow students to complete a sequence in a particular language.

In 2011, the school board decided to eliminate French from the list of language options made available to students entering the Middle School in September of that year. Students are now offered German, Italian, Latin or Spanish. Those students who had already begun the French sequence will be able to follow it through to completion.

Dr. Celano said the school board may want to consider offering music theory 1 and AP music theory every other year. Music theory 1 currently has an enrollment of nine for September and AP music theory has seven. The AP music course has mostly students who will be seniors, so Celano recommends that the course be offered in September.

In other news, school board trustee Tom Pinou reported that at the June 3rd meeting of the Eastern Property Owners' Association, members asked when the school district plans to do its next demographic study. Dr. Feirsen said that he will likely recommend a study be done next year because the demographer's projections for kindergarten differed significantly from actual enrollment numbers.

Dr. Jonathan T. Hughes, the demographer who did the school district's last study in 2010, told Dr. Feirsen that he and other demographers have been overestimating this year's kindergarten enrollment. The school district paid Hughes' firm, Columbia Educational Associates, $7,650 for the 2010 study.

"We don't know if it's a long-term trend or not," Dr. Feirsen said. "So, it's probably wise for us to do a demographic study sometime next year, earlier rather than later so we can have the information for our enrollment projections for the budget."

(Source: Garden City News)

Program & Events:

1.

2.

3.

HCI International 2013

21 - 26 July 2013, Mirage Hotel, Las Vegas, Nevada, USA

4.

AWARD CEREMONY

The Award Ceremony will be a dinner held in Sydney in September. All finalists will be notified and invited to attend the Award Ceremony. Winners will be announced on the night.

Minister for Disability Services, The Hon. Andrew Constance MP will present the Awards.

IMPORTANT DATES & INFORMATION

NOMINATIONS OPEN

Wednesday 10 April 2013

NOMINATIONS CLOSE

Friday 31 May 2013

COMPLETED NOMINATION FORMS

Email, fax or post to:
Ms Jacquelyn Johnson

Address: GPO Box 2687
Sydney NSW 2001
Fax: 02 9256 3123
Email: nswdiia@nds.org.au

NOMINATION ACKNOWLEDGEMENT

Nominations will be acknowledged within 10 days of receipt.
If you do not receive an acknowledgement please contact Ms Jacquelyn Johnson on the details listed below.

CONTACT FOR ENQUIRIES

Ms Jacquelyn Johnson
Sector Development Officer
National Disability Services

Phone: 02 9256 3161
Email: nswdiia@nds.org.au

5

products, news, business
2013 IDEA open for entries

28 November 2012 by Kate Jones
The 2013 International Design Excellence Awards is open for entries.

home / 2012 / november / 2013 IDEA open for entries

The Industrial Designers Society of America (IDSA) are calling for entries for their annual International Design Excellence Awards® (IDEA) competition for 2013.

6.

International Istanbul Initiative on Ageing 4-6 October 2013
The International Federation on Ageing and Turyak Seniors Council Association cordially invites you to **submit abstracts for oral**

presentations at the International Istanbul Initiative on Ageing. All abstracts will be reviewed by the Program Committee and assigned to the appropriate concurrent session for oral presentations. Abstracts from around the world are welcomed to share best practices to the regions of the Middle East, Northern Africa, Eastern Europe, and surrounding countries of Turkey. Abstracts must relate to one of the 13 sub-themes identified. Abstract submissions are entirely separate from full paper submissions, and will therefore *not* be eligible for financial prizes or publications. For more information about Full Papers visit www.ifa-fiv.org.

 Deadline: May 31, 2013 at 5pm EST
7.

8.

9.

10.

Fifth Universal Design Summit 2013 (UDS5)

For four previous conferences The R.L. Mace Universal Design Institute (UDI) staff has collaborated with The Starkloff Disability Institute (SDI) to provide a unique educational experience showcasing good examples of universal design that can be incorporated into housing and neighborhoods.

As North America's only conference focused on housing and communities usable by all, UDS5 continues a tradition of providing exceptional content on universal design in housing, sustainable design, community design, and affordability. UDS5 will offer learning opportunities through informal discussion, breakout, and plenary sessions. The conference will feature exhibits, design charrettes, workshops, and a tour of universally designed housing and neighborhoods.

Continuing Education Credits are available. See what people are saying about UDS4 and UDS5.

Universal Design Summit 5, May 6-8, 2013

Saint Louis University
Busch Conference / Student Center
20 North Grand Boulevard
St. Louis, Missouri 63103

11.

12.

The National Council on Independent Living (NCIL) will hold its annual conference on July 24 – 27, 2013 in Washington, DC.

13.

Applications can be submitted on-line until 10 September 2013 (midnight Brussels time) in English, French or German via http://ec.europa.eu/justice/access-city.

For more information, visit http://ec.europa.eu/justice/access-city

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15.

Nominations opened 20 May 2013 and will be accepted until 19 August 2013.

16.

17.

Hong Kong Young Design Talent Award 2013 - Call for Application HK$500,000 Award grant for supporting elites to undergo overseas work attachment

Organised by Hong Kong Design Centre (HKDC), "Hong Kong Young Design Talent Award" (HKYDTA) has started calling for application on 1 May. HKYDTA aims to support young design practitioners and design graduates to undergo overseas work attachment in renowned design companies for half to one year and contribute to Hong Kong's design and creative industries afterward. HKYDTA awardees may receive a grant of HK$500,000 including sponsorship of daily expenses and valuable chances of overseas work attachment in renowned design companies such as Muji(Japan), Ecco Design(United States) and 3XN(Denmark).

HKYDTA aims to cultivate up-and-coming design talents with sponsorship granted for them to undergo overseas work attachment. They will contribute to the development of Hong Kong's design and creative industries by returning to Hong Kong immediately upon completion of overseas work attachment and working for not less than 2 consecutive years for a Hong Kong business. Also, they will become the ambassadors of HKYDTA and share their overseas experience with the organisers or sponsors. Organised since 2005, more than 400 applications were received. More than 40 awardees were given grants to continue their professional pursuits overseas.

There are 4 grand awards in HKYDTA 2013: "CreateSmart Young Design Talent Award" will sponsor 2 design practitioners in maximum with a grant of HK$500,000 each. "CreateSmart Young Design Talent Special Award" will sponsor 2 design practitioners or design graduates in maximum with a grant of HK$250,000 each. "PolyU School of Design Young Design Talent Award" will sponsor a design graduate with a grant of HK$250,000. "HKDI Young Design Talent Award" will sponsor a design graduate with a grant of HK$250,000. Besides, HKYDT Special Mention Award is introduced to reward excellent applicants.

Candidates will be assessed by a panel of expert judges based on several criteria such as their possible future contributions to the development of design and innovation in Hong Kong, effectiveness of communication, quality of portfolio and plans for using the Award's grant. The deadline for online application of HKYDTA will be 31st July 2013 and deadline for submission of supporting document by post will be 15th August 2013. For more information of HKYDTA, please visit www.ydta.hk .

Overview of awardees' designated overseas design companies

Category	Company Name	Country
Apparel and Accessory Design	HENRIK VIBSKOV STUDIO	Denmark
Communication Design	Base Design	Belgium
Communication Design	Studio Dumbar	Belgium
Environmental Design	JDS Architects	Belgium
Environmental Design	Grant Associates	United Kingdom
Environmental Design	3XN	Denmark
Multi-disciplinary	ROSAN BOSCH	Denmark
Multi-disciplinary	ISKOS-BERLIN Design	Denmark
Multi-disciplinary	Fabrique	The Netherlands
Product and Industrial Design	Phoenix Design GmbH + Co KG	Germany
Product and Industrial Design	Nosigner	Japan
Product and Industrial Design	MUJI / Ryohin Keikaku Co Ltd	Japan
Product and Industrial Design	Takram Design	Japan
Product and Industrial Design	Tamawa Design Studio	Belgium
Product and Industrial Design	ECCO Design Inc	United States

* More design companies may be added to the list, please periodically visit http://www.ydta.hk/2013/pages/en/categories/worldwide.php to review the latest information.

Showcase of 2012 Awardees'works
"CreateSmart Young Design Talent Award": Au Yeung Wai-hon, Hamlet, Kwok Yum-tsung, Calvin

Work from Au Yeung Wai-hon, Hamlet

Work from Kwok Yum-tsung, Calvin

"CreateSmart Young Design Talent Special Award": Chan Wing-kei, Quai, Lau Wein-sie, Fiona

Work from Chan Wing-kei, Quai

Work from Lau Wein-sie, Fiona

"PolyU School of Design Young Design Talent Educational Award" (renamed as "PolyU School of Design Young Design Talent Award" this year)**:** Chow Ka-wa, Key

Work From Chow Ka-wa, Key

"HKDI Young Design Talent Educational Award" (renamed as " HKDI Young Design Talent Award" this year)**:** Lam Wai-keung, Sonic

Work From Lam Wai-keung, Sonic

About Hong Kong Young Design Talent Award (HKYDTA):
Hong Kong Young Design Talent Award (HKYDTA), organised by the Hong Kong Design Centre (HKDC), aims to support and cultivate up-and-coming designers with sponsorships granted for them to undergo overseas work attachment in renowned design companies to unleash their potential.
The awardees are entitled to undergo overseas work attachment for at least 6 to 9 months, which allows them to elevate their versatility and professional knowledge.
All awardees will contribute to the development of Hong Kong's design and creative industries by returning to Hong Kong after completion of their overseas work attachment. They will become ambassadors of HKYDTA to share their overseas experience.

About Hong Kong Design Centre:
Design for Society is the major undertaking of Hong Kong Design Centre (HKDC). HKDC is a non-profit organisation and a strategic partner of the HKSAR Government in developing Hong Kong as an international design hub in Asia. Since 2002, HKDC has been on a public mission to (i) champion strategic and wider use of design for creating business value and community benefits; (ii) promote and celebrate design excellence; and (iii) educate the professions and the community to be resourceful champions for sustained developments through design and innovation.

This press release was distributed by **DT Communications Asia Pacific** on behalf of **Hong Kong Design Centre**. For any enquiries, please contact:
DT Communications Asia Pacific
Karen Ng
18.

19.

UNITED NATIONS
enable

Development and human rights for all

| Our Work | Convention | News | Priority themes | Disability and the UN |

Sixth session of the Conference of States Parties to the Convention on the Rights of Persons with Disabilities, 17-19 July 2013

The Convention on the Rights of Persons with Disabilities was adopted by the General Assembly by its resolution 61/106 of 13 December 2006. It came into force on 3 May 2008 upon the 20th ratification. Article 40 of the Convention stipulates that "The States Parties shall meet regularly in a Conference of States Parties in order to consider any matter with regard to the implementation of the present Convention." Since 2008, five sessions of the Conference of States Parties have been held at United Nations Headquarters, New York.

Bureau

President (elect): Kenya
Vice-Presidents (elect): Bangladesh, Bulgaria, El Salvador, Israel.

Theme:

Ensuring adequate standard of living: empowerment and participation of persons with disabilities within the framework of the CRPD

Sub-themes:
1. Economic empowerment through inclusive social protection and poverty reduction strategies
2. Disability-inclusive development in national, regional and international processes
3. Community-based rehabilitation and habilitation for inclusive society.

Documents

(Details forthcoming)

Civil Society Participation

(updates forthcoming)

- **Civil Society Forum**: 16 July 2013
- Application for NGO Accreditation to the Conference of States Parties (Deadline: **31 May 2013**)
- Registration for NGOs wishing to attend the Conference of States Parties (Deadline: **8 July 2013**)
  - Information note for NGOs registration
- List of NGOs accredited to the Conference of States Parties
- NGOs in Consultative Status with the Economic and Social Council (ECOSOC)

20.

CALL FOR ENTRIES

POSTER DESIGN COMPETITION

You are invited to design poster for ICSID interdesign 2014 workshop Contest Theme:

Humanizing the Metropolis

Background

Under the theme Humanizing the Metropolis, the Interdesign workshop aims to design solutions to address critical service issues in the metropolis. The goal is to enable the city to become self-reliant on its resources, as well as increase its citizen's sense of pride.

"In the context of emerging economies, Mumbai presents numerous opportunities for a dialogue about infrastructure, housing, sanitation, mobility, education and health care to name but a few. It demonstrated the challenges of this densely populated city and a desire to work towards the betterment of its communities through an inclusive process. In selecting their proposal, we hope to help the city bring forward a substantial level of affordable solutions to address some of these critical issues."

The competition calls for poster that expresses the interdependence of citiy's services, its resources and the people.

Awards

First winner Rs. 100,000. (One lakh) with citation)
Second winner Rs.50,000. (Fifty Thousand with citation)

Grand Jury

The member of the Grand Jury panel comprise of leading designer, thinkers and communication experts. People who love Mumbai.

Participation Eligibility

Entry to the contest is open to all Professional designers, design students living in India
Participation is open to teams and individual submissions.
Submitted designs must be original and not currently in publications.
Submit the design with a brief write-up of around 150 words.

Specifications

Dimension of the final poster: 420mm X 600mm only in portrait format
Resolution: 300dpi
File type: JPEG or PDF

Colour mode; CMYK

Your Contact Information
Name, Postal Address, E-mail, Telephone no. Cell No

Last date of Submission of your entries
Friday June 21, 2013, 4pm.

If you have any queries, pl. do not hesitate to contact us:
Sudhakar Nadkarni
nadkarni36@yahoo.com
or Anand James Dev
anand.dev@welingkar.org
Send Entries to:
ICSID Interdesign 2014
Business design
weschool,Matunga,
Mumbai-400 019

21.

DESTINATIONS FOR ALL World Summit that is set to take place in Montréal from October 19 to 22, 2014.

22.

DESIGN FOR ALL
Game Changing in Business & Society

Knowledge of Design Week 2013

The 2013 Knowledge of Design Week will take place on July 2-6 in Hong Kong, with a theme of "Design for All: Game Changing in Business & Society."

Job Openings:

1.

We want 2 Senior Interaction Designers/Information Architects at Design For Use (Delhi)

When presented with a thorny problem, do you immediately grab pencil and paper to figure out the solution? Are you always considering ways that the real world can better organize and present information (e.g. restaurant menus, store signage, application forms) so you can accomplish your goals? If you answered an emphatic "yes" to these questions, we would love to talk to you.

Design For Use is a user experience consulting firm with offices in Austin, USA and Delhi, India. We are looking for talented Information Architects and Interaction Designers who are passionate about their craft and want to make the world a better place through design.

If you did the following after getting hired, we'd say you were kicking …

- 30 days: You will ride shotgun on current projects to learn about our process, deliverables and start fine-tuning or detailing existing flows and wireframes with some supervision of senior IAs.

- 3 months: You will take IA lead on one substantial project by translating requirements, personas, scenarios and heuristic evaluations into site maps, flows, wireframes and clickable prototypes. You will also plan and present your design solutions to clients for feedback.

- 6 months: You will provide input on deliverables during the user research phase of a project. You will work with our user research team to help plan and monitor usability testing of your proposed design directions.

- 1 year: You will do client and project management for an entire engagement, and help hire other stellar designers like yourself. You will always keep your informed on the latest trends and tools to keep improving the deliverables.

- 2 years: You will assume ownership of the Operations Manual for information architecture activities and deliverables. This task includes drafting process documents that can be used by other team members to complete the Design phase. In other words, you will help evolve the IA practice to greater heights. You will mentor also and supervise at least 2 other designers.

We hope your career path might look something like this

Senior Information Architect (now) >> Lead Information Architect (2 years) >> Chief Experience Designer (5 years) >> Director (10 years)

We think we have a great working environment

After all, we helped to create it. You will be surrounded by smart, creative professionals. The pace of our days is generally "steady on" but will be punctuated by some bursts of effort as projects and deadlines dictate. We maintain healthy work-life balance, and don't work crazy hours as a norm.

The work hours and schedule will largely be set by the candidate within the constraints of the deadlines. Working from home or any other convenient place part-time will be encouraged. However, you will be required to be somewhat flexible with your hours to coordinate with our team in Austin, USA.

And finally, this is our hiring process

Preliminary screening of the candidates will be done using the portfolio. A phone interview may be followed by an onsite interview at our Delhi office. Send your resumes and portfolios to:

CEO, Design For Use

+91 97161-46342

njain@designforuse.net

www.designforuse.net

2.

OpenText is leader in Enterprise Information Management. User Experience Design Team is looking out for full time Visual Designers with 3 to 9 years of experience.

Postion Responsibilities

- Work with interaction designers and R & D developments teams creating high fidelity designs.

- Creating visual design specifications & assets for development.

- Icon creation and producing them for various platforms, formats & sizes.

- Work independently, will minimal supervision.

Qualification

- Bachelor degree or 3 year college diploma equivalent in a Design related field is required.

- Proficiency with Adobe Creative Suite

- Good understanding of basic visual design principles

- Strong commitment in producing high quality work and solid attention to detail.

- It's a plus, if familiar with user centric design.

- Good Design Portfolio is must.

If you think, you fit into above requirements, pls send us your CV.

3.

Hiring for a Branding/ Design agency in South Bombay a Graphic Designer.

Graphic Designers: Branding.

Candidates who have branding experience in creating Brand packaging design may apply. Has to have an understanding of substrates/ inks/ adaptations. Experience: At least 3 years.

All positions are based out of Bombay and are full time. We are not looking for freelancers. Prefer candidates from Bombay. Salary will not be a constraint for the right candidate.

Please send in your CV and folio to dcosta.francis@gmail.com with salary and notice period details.

4.

Experience: 3 to 12 Years

Position: Individual Contributor role (hands on)

Requirement: You use and can explain "design thinking" to a rookie employee You can consume raw research inputs and convert them into screen interactions. Fast.   You have exceptional wireframing skills

You are capable of prototyping at different levels of fidelity, from paper to video You know your bread and butter deliverables : UI guidelines and specifications You are exceptionally articulate and can faciliate regular dicussions with development with your interaction design as the centrepiece   You understand visual design and can fill in for the visual designer occasionally.

   Excellent information structuring skills both written and verbal. Ability to quickly prototype at various levels from initial research and discussions.

If interested, please send across your updated resume along with your portfolio or portfolio link to me (ved_apr@yahoo.com or vedpal.singh@sap.com) to have a brief discussion about the same.

5.

GlobalLogic is looking for Visual Designer for its Noida location. Please find below the job description.

Job Requirement

3 - 5 years of industry experience in visual design of web and mobile UI

Excellent hands-on expertise on latest versions of Photoshop, Illustrator

Exemplary online portfolio displaying a defined process and solid deliverables

Expertise in Adobe Design Software (Photoshop, Illustrator, etc.) with on-going knowledge of current web technologies and capabilities

Degree in Web and/or Graphic design or equivalent, or comparable work experience

Excellent visualization skills

Excellent eye for detail in terms of form and color

Job Description

Work under minimal supervision.

Detail out visual concepts/layouts from a visual mock-up or a wire frame.

Assist in creating and interpreting standards, style guides, specification documents and applying them to detailed design.

Understand design issues concerning cross-platform applications (websites, applications, others).

Develop icons and other visual elements with attention to detail

An interest in learning and applying design and usability engineering know-how

Domain Expertise

Solid knowledge of visual design concepts in atleast one of the following:

Media, e-Commerce, Communications, Mobile, Consumer Electronics, Medical Devices, Enterprise, Other domains

Interested candidate can send in their resume and portfolio to sushil.dhyani@globallogic.com

6.

Tan-ta-Dan Design!

We are a strategic design collective. Our primary strength lies in creating visual narratives that allow your audience to experience your idea with clarity and connection. Our collective skills cover everything from Brand & Identity, Packaging, Web, Print and Retail design.

Look out for us: https://www.facebook.com/tddesigns.co.in

Location: Thane, Mumbai

Job Opportunity: Looking for a Communication Design Consultant with a minimum of 1-2 years of experience. We want you to be a thinker and a maker. You must be able to work on projects related to Branding, Packaging, Print, Web and Experience Design. We absolutely need someone who can produce great creative work themselves, as well as guide the creative work of others. You should be comfortable in participating in all parts of the design process and with creating deliverables at varying levels: from quickly communicating a concept's value proposition to creating final artworks.

All candidates must:

Have a strong portfolio and elevated sense of design, color and typography. Be passionate about their craft/area of specialization. Be good communicators; demonstrate a clear view point related to their design. Be self-directed toward excellent work outcomes. Bring cutting edge ideas to table.

Additional

Skills required: Illustrator, Photoshop and InDesign knowledge are a must. Mail your folios to: tanya@tddesigns.co.in

7

GlobalLogic is looking for Visual Designer for its Noida location. Please find below the job description.

Job Requirement

* 3 - 5 years of industry experience in visual design of web and mobile UI

* Excellent hands-on expertise on latest versions of Photoshop, Illustrator

* Exemplary online portfolio displaying a defined process and solid deliverables

* Expertise in Adobe Design Software (Photoshop, Illustrator, etc.) with on-going knowledge of current web technologies and capabilities

* Degree in Web and/or Graphic design or equivalent, or comparable work experience

* Excellent visualization skills

* **Excellent eye for detail in terms of form and color Job Description**

* **Work under minimal supervision.**

* **Detail out visual concepts/layouts from a visual mock-up or a wire frame.**

* **Assist in creating and interpreting standards, style guides, specification documents and applying them to detailed design.**

* **Understand design issues concerning cross-platform applications (websites, applications, others).**

* **Develop icons and other visual elements with attention to detail**

* **An interest in learning and applying design and usability engineering know-how**

Domain Expertise

Solid knowledge of visual design concepts in atleast one of the following:

Media, e-Commerce, Communications, Mobile, Consumer Electronics, Medical Devices, Enterprise, Other domains

Interested candidate can send in their resume and portfolio to sushil.dhyani@globallogic.com.

8.

In the expanding field of Design Pedagogy in India, we humbly offer a choice.

School of Design at Ambedkar University Delhi (AUD) has announced its first of a series of programs, a Masters in Social Design. It promises to deliver graduates with competencies in community centred design methodologies, equipped with multiple aesthetic vocabularies, informed of shifts in global and local economies and real life project experience of community based social studios. We believe that our model of design education would prepare students with requisite skills, critical perspectives and progressive values for purposeful entrepreneurship.

Dr Ambedakar's vision of social justice and equity has inspired our programming. We hope our graduates would usher in a new era in design activism and entrepreneurship where products, services, systems and networks that they would design would help transform our social conditions.

If this vision inspires you, join us at : http://aud.ac.in/ambedkar-portal/upload/Advertisements.pdf

9.

We are looking to bring on board immediately someone to take the lead on front end development; someone who can execute fast and aggressively to build web fronts for all of our applications.

Must be current with most modern nice and shiny tools and technologies including HTML, CSS, JQUERY, JavaScript, Backbone.JS.

He or she will work with our UX director from Romania and a team of 2 other UI developers to quickly build the web pages and prepare us for launch.

We are building applications on a Java/ Open Source based platform with heavy use of JSF.

Our team is small which include engineers from Via, Fareportal, Redbus and Amadeus. However, we are still struggling to build a culture that matches my expectations of building start ups in the Bay Area.

If you are a great developer, if you love consumer commerce and you can start immediately, I'd love to hear.

Please apply only if your expectations are reasonable and within reach for an early stage company such as ours.

Feel free to send me just a couple of bullet points about relevant skills, kind of references (people references) you may be able to provide and a link to your linkedin profile.

For free Registration: write to
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our endorsement of the products or services
by the Design for All Institute of India
News and Views:
Regarding new products or events or
seminars/conferences /workshops.
News@designforall.in
Feedback:
Readers are requested to express their views
about our newsletter to the Editor
Feedback@designforall.in

Dear Friends,
We need your feedback on our publication and
your support for popularizing the concept of our
social movement of Design For All/ Universal/
Barrier free/ Inclusive Design. It is our further
request kindly submit your latest articles,
research findings , news and events with us for
publication in our newsletter.
With regards
Dr. Sunil Bhatia
Design For All Institute of India
www.designforall.in
dr_subha@yahoo.com
Tel:91-11-27853470(R)

Forthcoming Events and Programs:
Editor@designforall.in

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Forthcoming Events and Programs:
Editor@designforall.in

Chief-Editor:

Dr .Sunil Kumar Bhatia Faculty Member,
13, Lodhi Institutional Area, Lodhi Road, New Delhi-110003(INDIA)

Editor:

Shri L.K. Das
Former Head Industrial Design Center, Indian Institute of Technology (Delhi), India

Associate Editor:
Shri. Amitav Bhowmick Industrial Designer Small Industries Service Institute. Ministry of Small scale, Government Of India, Delhi

Editorial Board:
Mr. M.L .Dhawan
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Special Correspondent:
Ms Nemisha Sharma ,Mumbai, India
Nemisha.17@hotmail.com

Address for Correspondence:

13, Lodhi Institutional Area,
Lodhi Road, New Delhi-110 003India.

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