User perceptions of library buildings: Architectural and design element preferences in the public library

The purpose of this study was to identify particular design features and architectural elements which users of public libraries enjoy and would like to see both in new and refurbished library buildings. This study was focused on Christchurch City Libraries and the wider Christchurch community. A case study framework and a qualitative methodology were employed to generate the depth of information required to provide an understanding of a very specific situation. Twelve semi-structured interviews were undertaken for this study. The research findings generated a number of themes: a preference for modern design; a predominant concern for functionality over design; an emotional response to some design elements; a strong desire for multi-use spaces; the need for flexibility in design elements; a heightened consciousness of building safety; incorporation of green technologies; connectivity with the outdoors; the desirability of light, airy and welcoming spaces; and the affect of design on patterns of usage. The findings also reinforce the importance of libraries to communities and the need to ensure design meets the needs of, and reflects the identities of, those communities. This informs public librarians, architects, designers and local bodies in the process of designing new library buildings or refurbishing existing ones, as to just what it is that their users want to see in that building, in a New Zealand context. As this research has taken place in a very specific context further research in other centres could prove valuable to see if findings are similar.

Keywords: *Canterbury earthquakes; architecture and design; public libraries.*

Introduction

The purpose of this study was to identify particular design features and architectural elements which users of public libraries enjoy and would like to see both in new and refurbished library buildings. This study focused on Christchurch City Libraries and the wider Christchurch community.

Existing research examines whether users prefer old, new or refurbished buildings (Black, 2011) or focuses more on library design 'how to guides' from a librarian's point of view (Dewe, 2006). To date there is very little research which provides precise detail on user preferences in public library buildings, for example whether users prefer expansive or more intimate spaces, use of natural light and windows, the inclusion of cafés or other non-book related spaces, provision of wireless, the importance of sustainable features etcetera. Much of the literature also mentions the growing importance of library as place or third place (Fisher, Saxton, Edwards, & Mai, 2007; Griffis, 2010) but does not make a connection between this trend and proactively eliciting user preferences in the design process for library facilities. Existing research is also dominated by literature from the United Kingdom and the United States with little available with a New Zealand context.

This research was designed to inform public librarians, architects, designers and local bodies in the process of designing new library buildings or refurbishing existing ones, as to just what it is that their users want to see in that building. This study will benefit LIS research by addressing a shortfall in existing research by providing an insight into user design preferences for public library buildings in a New Zealand context and enable librarians to connect the 'library as place' concept with the provision of buildings which users like and feel comfortable in. In addition because of the unique circumstances prevailing in the Canterbury region, how user perceptions have been affected by the earthquakes that have devastated the area, will provide data that has hitherto not been collected or studied.

Literature Review

The library as place

There is much research in the LIS literature regarding the importance of the library as 'Place' or as 'Third place' where:

> …people can be found when they are not at home or work (Fisher, Saxton, Edwards & Mai, 2007, p. 137).

These authors discuss the notion of 'place' at length as what is meant by the word 'place,' in turn affects our understanding of the roles of libraries in society. The authors use two frameworks for understanding 'place': Oldenberg's notion of third place and Cresswell's five component definition of place in a field study of the newly completed Seattle Public Library. By establishing that the library is important to the community as a social gathering place, the importance is established of the physical manifestation of what we call the library. A building that is important to the community should have community input into its design.

Furthermore it seems obvious that if this physical entity is to survive, let alone be successful in any guise, then it must meet the needs of its community. A case study of the Owen Sound Library in Ontario, Canada looks to discover if it is possible for historic library buildings designed in an earlier time to meet the needs of their present day community and compares the library space of today with when the building was first constructed in 1914 (Griffis, 2010). The findings conclude that although Carnegie library buildings are notoriously difficult and perceived to be inflexible this particular example has adapted successfully, with the inclusion of lifts, ramps and a large light-filled extension for example, and has become what the author describes as:

> A vibrant and flexible space within the community (Griffis, 2010, p. 185).

Griffis' article develops the concept of library as 'place' and establishes a link between the physical manifestation of the library and its users and how the latter can influence the development of the building over time.

If the library is important in its community how might this be reflected in its physical manifestation? The importance of the library to its community and how this might be reflected in its design is the subject of a Canadian study by May and Black (2010) which looks at three urban and three small town public libraries in Nova Scotia in an effort to discover how patrons use their libraries as spaces in the Twenty First Century and just what the role of the library is in the community. This information is very important in not only assessing the success or otherwise of the current building, but also informing future design, renovation, and service decisions. The study found that not only were the libraries important and highly valued in their communities but also that the buildings themselves reflected the community's individuality:

Many library leaders have advocated increasing the civic society role for public libraries. Under this new rubric, new designs and renovations often include meeting spaces and flexible layouts in order to accommodate local community interests in using the library as a public commons (May & Black, 2010, p. 6).

If we acknowledge then the importance of the library as place, how important is the physical design? Van Slyck (2007) charts the history of the public library movement and the correlation between their buildings and the advent of reading for pleasure. She feels that architecture plays a central role in shaping the user's experience of the library as place (Van Slyck, 2007, p. 221) and that by the early Twentieth Century librarians, especially children's librarians:

began to think systematically about using the qualities of place to affect the readers experience as well (Van Slyck, 2007, p. 221).

The library's physical entity then is pivotal in establishing a context for an individual's interaction with the library, its staff, resources and even other users. As Van Slyck herself so eloquently says

The three-dimensional qualities of a building's interior spaces, as well as the furnishings and fittings in those spaces, constitute a sort of stage set that encourages users to play certain sanctioned roles, while making others seem unthinkable (Van Slyck, 2007, p. 221).

Library design trends

By looking at trends in library architecture and design it is possible to discern the close relationship that exists, or should exist, between a building's users and its design. Because of the lack of research into public library design the literature search has been widened to include material pertaining to academic as well as public libraries. User influence in the implementation of library design cannot be overlooked—Ratcliffe believes for instance that:

The development of carrels, study, seminar and lecture rooms in libraries owe their origins largely to user influence (Ratcliffe, 1989, p. 23).

By seeking out user input as to design preferences at an early stage, the resulting data can be fed into the architect's design concepts and so help to inform the final structure. This consultation helps to build a sense of ownership among users and, although speaking about academic libraries, Foote, an architect, believes that:

If students are to use a space enthusiastically and well … they must feel this sense of ownership (Foote, 2004, p. 56).

The concept that the architecture of the building facilitates effective

usage of the space by users and that library buildings are no longer designed primarily as store houses of library resources and to house library staff (Bennett, 2007, p. 23) is one that is gaining momentum amongst architects and library administrators alike. The advent of the digital age has also meant a rethink in terms of what is required when planning library facilities (Hohmann, 2006, para. Abstract).

Loder's 2010 study of 'green' libraries also revealed that not only has energy conservation become important in designing (academic) libraries but that increasingly spaces are being designed for users rather than books. Often environmental issues and user-friendly design go hand in hand as his survey of ten libraries showed. These libraries were either applying for, or had been granted, Leadership in Energy and Environmental Design (LEED) accreditation. The results showed an emphasis on such features as natural light, comfortable areas, study rooms, wireless, snack bars and more electrical outlets for use with mobile devices. Loder further asserts that the modernist design philosophy of 'form follows function' has given way to more user centred design (Loder, 2010, p. 533). In modern libraries generally, issues of sustainability are becoming increasingly important.

Sustainability is altering typological assumptions as well as detailed architectural approaches, leading to libraries that offer greater user satisfaction and hence are better places to read, meet friends, or study (Edwards, 2011, p. 190).

Librarians and architects alike are starting to take into account the end users of the space (if not always actually consulting them about what their needs and wants might be). Hohmann reports that several high profile new builds - Dresden and Göttingen State and University library, the Seattle Public Library, and the Idea Stores in London have looked at such issues as user comfort in areas ranging from climate and acoustics, to the visual nature of the space even acknowledging that the use of different colours has a psychological effect on the user (Hohmann, 2006, para. Comfort).

Furthermore the fact that many library users spend lengthy periods of time at the library have prompted the development of so-called "soft services" such as cafés, shops and even day nurseries (Hohmann, 2006, para. The Library as a Working and Living Environment).

User input into library design

Both architects and library administrators acknowledge the importance of planning when undertaking a library construction project and a critical component of this planning process is the gathering of information or input from stakeholders particularly future users of the facility (Ratcliffe, 1989; Lin, Chen & Chang, 2010; Sens, 2009; Dewe, 2006; Twait, 2009).

Various libraries, both public and academic have conducted research to elicit information from users as to their preferences in a proposed library construction project—both new builds and renovations. A significant part of these research projects was devoted to architectural and design elements users wanted to see in their library. Two such studies carried out in conjunction with public library building projects were undertaken by Gee, 1989 and Nankivell, 2003. Gee discussed the market research undertaken to assess user needs in order to justify investment in a new library in Runcorn, Cheshire: Surveys, collection of demographic data on the population and flow counts taken at two proposed sites. The resulting data were passed to the design team and led directly to a greater emphasis being given to exhibitions and displays, provision of a coffee bar, and a performing arts space.

Public consultation was also undertaken as part of the planning process in the Library of Birmingham project (Nankivell, 2003) with the results to be fed directly into the architect's initial concept design and to inform the ongoing development of the project. Initial data showed that the public wanted a building that was: accessible; attractive and welcoming with good architecture - it was to be 'green', light, spacious and airy, have good décor and water features; there was to be provision of a wide range of facilities and spaces including performance areas, cafés, comfortable seating as well as computers and quiet study areas.

The strength of public opinion and feedback on design considerations is often most apparent when sustainability and 'green' building technologies are on the agenda. The Fayetteville Public Library's proposed Blair Library project sought public feedback via public meetings. As a result planners became aware of the strong community interest in environmental concerns - location, walkable cities, tree preservation etcetera. In direct response, the architects proposed registering the building for the LEED certification programme and sustainable technologies were incorporated into the building's design (Schaper, 2003, p. 63).

Black's research is broader in focus examining the attitudes of members of the public to the design of library buildings in Britain as a whole putting these into context with the opinions of librarians, planners and architects. The author mentions that although there has been much discussion regarding the physical form of the library and the library as place there has been little research into architectural style. Black's methodology was to employ the Mass Observation Archive (MOA) whereby a body of five hundred volunteers writes in response to 'directives' from researchers. In 2005 Black sought information on public library buildings. One hundred and eighty essay style contributions from anonymous contributors—(121 women and 59 men) provided the data. Analysis of the evidence put findings in four categories: those who expressed a preference for new, purpose-built buildings; those who retained a liking for old-style libraries; those who expressed a taste for the provision of up-to-date facilities and interior decoration in historic settings; and finally those who played down appearances as a factor but emphasized the importance of collections and services. (Black 2011).

Three examples from academic libraries at the University of Rochester (Gibbons & Foster, 2007), the University of Calgary (Powelson & Vaska, 2010) and Auraria Library in Denver Colorado (Brown-Sica, 2012) show how users informed renovation projects at these institutions.

An outdated library and an unexpected twenty five percent reduction in floor space provided the impetus for a complete renovation at the Health Sciences Library at the University of Calgary. An extremely tight time frame meant no time to conduct a lengthy consultation process. Staff undertook research to determine the wants and needs of their students in relation to the proposed new library space. A preliminary review of the literature gave good advice but staff wanted to ascertain if students at their library had any different or unique needs. A survey was conducted using SurveyMonkey. Of the170 participants 83.8% were students. The main findings were that students liked carrels but wanted them re-sited to a quieter, lighter location; more sockets for laptops; more technology; better furnishings and that as students used Google more than the library catalogue a significant proportion of the collection was moved to storage. Although this research is focused on users at an academic rather than a public library it demonstrates the relative ease with

which the consultation process can be undertaken even under extreme time pressure and that this makes a real difference to a successful renovation outcome.

A research project was undertaken at the University of Rochester from 2004–2006 to discover what students did during their day, how they approached their academic work and how they interacted with libraries and librarians within the context of everything else they did. The goal being to use this knowledge to improve the libraries' reference services, facilities and online presence to meet the needs of their students better (Gibbons & Foster, 2007). An ethnographic methodology was employed and data collection methods included: interviews; photo survey; mapping diary; dorm visit; design workshops for facilities and web pages; interviews; and in-library observations.

Staff found that students differed from each other in their approach to academic work and in their use of the libraries. Therefore libraries needed a variety of online and in-person services to cater to individual learning styles including the facilities that they provided. Results of the student design exercise showed that students wanted spaces that were flexible, comfortable—including comfortable furniture and the availability of food and drink, with the provision of technology and tools such as Smart Boards. This was refined into a ranked list of design elements that was used by the architects to begin the design process. Researchers are honest in their admission that, had they proceeded with the building project based on their assumptions of student needs, they would have ended up with a building that:

> …though aesthetically pleasing would not have been nearly so useful to students as the one they have helped us design (Gibbons & Foster, 2007, p. 29).

The Auraria Library, which serves the University of Colorado Denver, the Metropolitan State College of Denver and the Community College of Denver, embarked on a data gathering exercise using participatory action research prior to undertaking a project to establish a Learning Commons at the library. Information was gathered from a variety of sources including flip charts in the library, surveys, focus groups and direct observation.

The results were then analyzed by students in a campus architecture class. Because of the participation of students in this exercise both at a consultation and analysis level, the project to renovate the library developed strong support campus wide (Brown-Sica, 2012, p. 228). As well as informing any actual renovation the researchers hoped that the information gathered could also be used to gain support for the project in the first place. The results showed an overwhelming support for more electrical outlets to support the use of laptops and the charging of mobile devices, excellent wifi service, better furniture - especially chairs, problems with excess noise, updating of bathrooms, brighter colours etcetera. The library is now ready to move forward to the actual renovation phase taking the rich data they have gathered from users to better inform this process.

In chapter seven of his book on planning library buildings Dewe discusses various case studies of libraries making use of community consultation to inform the planning, design and construction of new libraries: Runcorn; Tower Hamlets; Norwich; Library of Birmingham and a brief mention of two projects in Australia. Of the community consultation process he says:

> A major feature of need assessment is community consultation, which is concerned not only with gathering information

but with allowing members of the community to influence the design and other aspects of the proposed building (Dewe, 2006, p.195).

Post project evaluations

The use of post-project evaluations (Bryant, 2009; Gee, 1989; Shill & Tonner, 2003 and 2004; Applegate, 2009; Stoffel, 2009) is a further method of utilizing user input to inform building design. They are primarily used as a means by which institutions can gauge the effectiveness of their renovations and whether this has translated into increased usage. Surveys were undertaken of library users and members of the Runcorn community to gauge the success of the new library at Runcorn in Cheshire (Gee, 1989). The results showed not only an increase in usage over the old library but also an increase in positive attitudes towards libraries. These evaluations could also be of use to other institutions contemplating a building project of their own as the research could be used to inform design decisions, to gauge the likely success of their own project and thereby justify investment in the library.

Research Design

The framework chosen for this research was a case study design as the Canterbury earthquakes have added a unique contextual layer to the research environment, which is very specific to this particular time and place and is hard to ignore. Christchurch had a unique architectural tradition but with many of the city's landmark buildings destroyed the future architectural direction of the city is topical and often controversial.

This study was undertaken in one specific community, Christchurch—a community whose perceptions and design preferences would almost certainly have been shaped, or affected in some measure, by this very particular series of events which warranted more intensive analysis of Christchurch public library design.

In order for the depth and breadth of information to be retrieved wide ranging, open questions were asked of the participants using a semi-structured interview model.

Interview questions were designed to gather information regarding the following objectives:

1. What architectural style do users most value and want to see in their public library buildings?
   (a) To what extent are sustainable or 'green' design features important to users in their public library buildings?
   (b) What functional design features do users value the most and want to see in their public library buildings?
   (c) How have the Christchurch earthquakes impacted on architectural and/or design features that users most value and want to see in a public library building?

In addition to the interviews a display of photographs of library architecture and design elements was employed to which any users of the library were able to add comments on post-it notes in a completely anonymous manner.

Thematic analysis using the Framework system, a matrix based method for ordering and synthesizing data (Bryman, 2008, p. 554), was used to interpret the findings of the research and address the research objectives/purpose.

An index of central themes and sub-themes emerged from these data sources, which were then displayed within a matrix for each participant, as suggested in Bryman (2008, p. 555).

Thematic analysis was also used for the anonymous comments but a separate matrix was used for this purpose.

Sample size

Twelve semi-structured interviews were undertaken for this study over three sites.

The small scale of this research project, the time scale involved, and the fact that it was undertaken by a sole researcher necessitated the use of a small sample. This meant that the sample might be less representative and less precise than would be the case if a larger sample were to be used. As Bryman notes findings can only be generalized to the population from which the sample was taken (2008, p.187). The very specific context of time and place with respect to the earthquakes further limits the generalisability in the Christchurch context.

Sample selection

Purposive, that is non-probability, sampling was used to select the sample (sites and people) so that both sites and participants are relevant to the research questions being posed (Bryman, 2008, p. 415).

1. The three libraries, part of the Christchurch City Libraries network, were chosen to give a range of buildings—two modern new-builds of differing size and style, and one renovation/older building.
2. Similarly participants were chosen using purposive sampling to ensure a good variety of ages, gender and ethnicity. All participants were limited to those who:
   (a) Were over eighteen years of age
   (b) Could speak fluent English
   (c) Were resident in the Christchurch area
3. A ten dollar mall voucher was given to participants at the completion of the interview as a thank you for their participation.
4. Any library user was able to add comments to the display of photographs. No inducements or rewards were offered for this participation, as the time involved was not as substantial as an interview.

Data collection procedures

Semi-structured, face-to-face interviews were undertaken with participants by the researcher and recorded. In addition to questions participants were also shown the same selection of photographs as on the display boards showing approximately forty images of library buildings from around the world—from the very traditional to the avant-garde to introduce participants to as wide a range of library architecture as possible. The researcher sought comments on what participants saw in the images and to comment on what they liked/disliked about the buildings shown. Once transcription was completed participants were sent a copy for their approval/comment.

The anonymous comments from the photographic display were collected and added to the interview data from that site ready for analysis.

Triangulation was achieved by the use of more than one source of evidence to help establish construct validity (Yin, 2009, p. 41). The structured interviews were augmented with documentation in the form of information from Christchurch City Libraries website, the Press, and The Christchurch central recovery Plan, as well as the anonymous comments from users on the photographic display of library architecture.

Ethics

The research received ethical approval from the School of Information Management Human Ethics Committee

Findings

Data analysis of the interview transcripts generated the following themes:

1. A strong preference for modern buildings and design which were regarded as being fit for purpose unlike heritage buildings, which were seen by some as attractive, but not offering the functionality required in a modern library.
2. A predominant concern for the functionality and practicality of a building over an appreciation of the architectural merits when considering what was important in a library building.
3. An emotional response to certain building design elements: light; size of spaces; colour; access to the outdoors; and the importance of a building's sense of welcome or 'inviting-ness'.
4. The desire for multi use spaces where users could undertake a variety of activities in a variety of environments and the importance of design in achieving this.
5. The need for flexibility in design elements.
6. A heightened level of consciousness around building safety engendered by the Canterbury earthquakes.
7. A perception that as we are in a rebuilding phase we might as well 'do it right' and look to the future with regard to incorporating green technologies whether because of a heightened sense of environmental responsibility, as a means of saving money, or a way to re-cycle demolition materials.
8. Importance of connectivity with the outdoors whether this be through direct access or a view through windows.
9. Desirability of light and airy spaces with natural lighting and windows offering views to the outside.

In addition, two further themes became apparent that whilst not being directly concerned with design preferences and aesthetics nevertheless show how important the library building and its design can be. Firstly confirmation of the social importance of libraries: libraries as place, as social hubs, and the educative value of libraries in a community. Finally the effect of design on patterns of usage within, and connected to, the library.

Preference for modern building design

Nearly all participants agreed that a modern design is to be preferred. For some this was a simple preference for the clean lines a modern building offers whilst for others the fact that a modern building is more 'fit for purpose'—capable of delivering all that we have come to expect in a modern library.

> I think a purpose built place would be far more preferable in my opinion like I said the heritage building would be great because of its history and all that but the practicality of it when it comes to the actual usage, purpose built would be better.

For some this sentiment was also allied to a heightened awareness of building safety as a result of the Canterbury earthquakes:

> I think we will have long term memories in that if you had built one now in Christchurch with the heritage facade but the modern interior the heritage facade could still make us feel that is an old building even though it may be structurally a new modern earthquake [proof] building at first glance and I think sometimes you think "oh golly will I go into that building.

Functionality over aesthetics

The functionality of a building's design seemed to afford a greater level of importance than purely aesthetic considerations for some of the study's participants. This was evident in a number of areas including access, the importance of technology, and furnishings. The importance of access to the building is reflected in this comment from one of the older participants speaking of an acquaintance who uses the Parklands Library:

> I've just been speaking to a gentleman out there who is not at all able to get about very much and he lives very handy to your Brighton Library But I said "you come all the way here" and he said "its easy to get into".

Parking was however an aspect of this issue which was seen as important by many not just those in the older age range:

> Car parking is a big one its got to be easy, its got to be free.

Links to public transport were also mentioned by a couple of respondents especially as a means of ensuring that everyone has access to the library, regardless of whether they have their own transport or not:

> Definitely public transport getting people to…. its often the aging population that want to come to the libraries because its been part of their life.

Practicality of design was also evident in areas such as furnishings where considerations such as toughness and the ability to be readily cleaned were seen as important.

An especially important concept pertaining to the more practical aspects affecting the library's functionality for its users is the importance of technology such as mobile phones, laptops or tablets and the library's ability to support their use. There was a very strong feeling amongst most participants of the need for libraries to provide wifi, sockets to enable users to charge mobile devices as well as the provision of areas/benches for those who wish to work on their own laptops. Interestingly many said it was important that libraries provided these services even though they themselves did not need them. It was felt that this was an especially important service for the young and for community visitors such as tourists or travelers.

> Actually that's true with the Akaroa library we spent a week there in the Christmas holidays and the girls go and use the wifi there just to connect up with Facebook so that was really important. I saw tourists come in and plug their laptops in and plug their phones in and access information so it actually made a connection that day about how important these places are for not just the community not just for me because I live there and I come here but people who might be traveling through because they are sort of central hubs where you can get some information and find information and get stuff you need and where else would you do that?

Emotional response to design

Some areas of design seemed to elicit an emotional response with participants describing 'feel good' or psychological responses to certain elements as opposed to a response predicated purely upon rational judgment. Areas particularly affected were the responses

to light, colours, size and 'feel' of spaces, connectivity with the outdoors, and the overall 'inviting-ness' of the space. A need for light spaces was seen as very important by almost everyone interviewed especially the psychological benefits such a space imparts:

> Absolutely having four years in London you know you go to the tube, go to work, come home it's dark. It's dark. Absolutely. Prior to that I had heard abut the lighting effect on mental health and mood thinking nothing much of it but yes I think people need … and in Christchurch people need some light.

Similarly a connection with the outdoors whether by direct access or via a window was seen as having a positive effect on the wellbeing of library users:

> Yes for me it's a sense of wellbeing. I just love to have either trees or grass or be able to see the sky. So it is really important.

And:

> Yes I think again it goes with that mental health of just being able to get away from every day life instead of looking out at a road or something like that even if you can just look out at something,.. there's just something about greenery that makes you feel a bit more relaxed.

The use of colour in any setting is very subjective and consensus is difficult to come by. Although a common preference for any one colour or palette of colours was not really forthcoming, many of those interviewed expressed the sentiment that colour use should reflect the use of the space again tying this in with the psychological effect colour can have on people by either reflecting or influencing mood. It was felt for example that children's space should be decorated with brighter colours and study or quiet spaces with 'quiet' pale or more neutral colours to reflect the use of the space.

> I am back with the funky library. But I think if you are designing a library with lots of spaces for lots of different things then you've got the opportunity to put different palettes in different places depending on what that part's used for.

Similarly it was felt by some that the design of spaces within the library as well as a building's overall sense of 'inviting-ness' affected the pleasure, or not, which users experienced when in the building.

> My perfect library would be an area where there would be quite intimate areas like alcoves and there were window seats—places where you could go depending on how you were feeling.

Multi-use spaces

The desirability of multi-use space in libraries allowing users to undertake a variety of different activities in a variety of environments was probably the strongest theme to come out of this study. Spaces which enable active/passive and quiet/noisy activities within the library; separate designated areas for children and in some cases teenagers; and buildings which house not only libraries but facilities such as cafés, meeting rooms, gallery spaces, council service centres, small film auditoriums, and even a medical centre were deemed to be highly desirable by study participants.

> But definitely the more the better it's a destination it's a place to meet it's a place for you to do things you know particularly

around kids and teenage kids, school holiday stuff all of those things. Stuff for oldies, arts and crafts a real multi use kind of a place.

For some participants the desire for multi use spaces was also tied into the effects of the earthquakes in that (a) there is now a shortage of meeting rooms as so many community centres have been destroyed and that (b) as we are in a rebuilding phase we might as well 'do it right' and include as many different facilities into a building complex to serve the community and to make good use of available land.

> I think with regards to what's happened in Christchurch re-build wise it would make sense to congregate some more facilities because I think space is at a premium

And:

> Because people are struggling now to find things like this [meeting rooms]

There seemed to be a general consensus that designated areas for children and teenagers were desirable features of modern library design as this demographic represented the future of tomorrow's libraries and as such needed to be cultivated and looked after. The exact format these spaces should take however was not quite so cut and dried. Opinions varied as to whether these spaces should be enclosed or separated in some way with some participants stating that they believed it was important not to enclose these children's and teen spaces as it helped with socialization—modeling appropriate behaviour.

> If everybody's in the one big place old bods like me who want a bit of quietness can find a space somewhere but for the community itself, library facilities and things, I think plonk the teenagers between the adults and the Internet area and they just probably calm down a little bit and they probably learn something.

For a couple of mothers with young children the desirability of a more enclosed space, possibly with features such as the slide in the image from Hjørring Public Library, was linked to a sense of relaxation in parents who did not have to worry that their noisy offspring were annoying or disturbing other library users.

> I suppose for me its really important that the mum or the dad can relax they can be there knowing that the kid's not going to pull something over or pull a whole lot of DVDs off you know somehow so that they are more whether it's the slide or whether it's the toys the books are there but the kids are occupied.

For a few participants the issue of noise in libraries was a source of major irritation and to this end they were desirous of more enclosed and therefore more soundproof areas for younger library patrons.

> I'd probably have it a bit more closed off. I'd have high wall dividers or something that went higher to block off some of that noise.

Flexibility of Design Elements

Answers to questions involving personal preferences for things such as colour and furniture elicited almost as many different answers as there were participants. As far as library furnishings were concerned possibly the only area of consensus was the need for a variety of

furniture to be provided - a direct correlation to the desire for multi use spaces as in many instances each of these different space and activities requires different types of furniture for example a mixture of practical, upright chairs and desks for study and computer use whilst also making provision for sofas and softer chairs in reading areas. Within this last category a couple of the older participants made a plea for chairs more suited to the elderly—higher, firmer and easier to get into and out of such as club chairs. It was also seen as desirable that when making provision for comfortable lounge seating that thought be given to allowing space for those who might want to spend time together in a social setting - for example family groups or groups of teenagers and those who might wish to be on their own.

> It's good to have individual chairs because it might be just you coming to the library on your own and it's nice to have big couches for whatever spaces they can fit into. I quite like the big huge couches that go into corners that quite a few people families or mums with kids can lounge on and read or talk.

Furthermore one of the participants, who had spent a considerable amount of time whilst a student at one of Christchurch's public libraries, found the moulded plastic chairs provided became quite uncomfortable after time and would have preferred something with a little more padding.

> Yes they were terribly uncomfortable to study in those plastic chairs and they made a heck of a noise on the floor when you moved so I wasn't a fan. I liked all the small couches and the tub chairs and things like that but definitely the tables and the chairs for studying weren't that great.

There was still another school of thought expressed by two participants that comfortable lounge type furnishings should not be placed in modern libraries as it encouraged 'lounging'!

Heightened consciousness of building safety

A heightened awareness of the safety, or otherwise, of buildings seems to be a predominant theme to come out of this study—its roots attributable to the after effects of the Canterbury earthquakes. Discussion about the earthquakes came into many of the discussions with interview participants however the two main areas of concern arose in answers to questions regarding the optimum height for buildings being constructed in Christchurch and the types of materials preferred in such projects. Most admitted that the safety of a building would not have entered their heads before the events of September 2010.

> Yes I wouldn't have given it a thought because it's safe. When you're talking about earthquakes unless its something you've read about but today being a reality thing it is a worry.

The number of floors seemed the predominate concern with the majority of participants expressing a preference for, if not single story buildings, than at least very low rise structures. It is interesting to note that of the four who expressed no concern in this area one was not present during any of the earthquakes, one felt safe only if they had been deemed so by an engineer and only one said they would be happy in a multi story building. Interestingly although some participants initially expressed the feeling that the earthquakes had not altered their views on the number of floors they later stated that they did not feel comfortable on the library's

second floor (Spreydon Library) and did not linger there for that reason.

> I really like the way that they have changed it around but I still find when Icome up here that I don't feel comfortable. I wouldn't come up here and read, I wouldn't come up here and bring a computer and work.

Other reasons for preferring a low rise construction were mobility, aesthetic preferences, and issues of safety with young children in multi story spaces. Even those who would prefer not to be in multi story buildings conceded that a large central library would almost certainly have to be more than one floor in order to accommodate all the resources in a feasible and fiscally expedient manner.

The issue of what materials to use in the construction of new library buildings was another for which there were almost as many answers as participants although glass, metal and timber in various combinations seemed to be the most favoured. However, the question of whether these decisions had been influenced by recent earthquakes was not quite as clear cut as that of the number of floors. The opinion was expressed that the Christchurch Art Gallery would be a good building upon which to model other public buildings as although made of glass it stood up exceedingly well to the earthquakes. The one participant who was not living in Christchurch at the time of the earthquakes stated that he would prefer glass as it meant his visibility in the event of another after shock would be that much better:

> With the improvements in every building material I still would prefer if you're thinking of the earthquake I would prefer the glass, I can see outside, I know what is going on if I'm running, it's to me, I can look around and see which end of the building whereas if it was a concrete building wall it would be pretty hard.

Green Technologies

In answer to questions regarding the use of so-called 'green' technologies both in construction and ongoing running of modern library buildings, most participants stated that it was not something they had given much thought to. On further questioning and after being given examples of the sorts of technologies which could be utilized—the use of solar panels, recycling of rain water to flush toilets, using timber from managed plantations, less concrete to minimise the carbon footprint, making use of the vast quantity of recycled building materials available in Christchurch at the moment etcetera, all participants were in favour of using more sustainable technologies to varying degrees.

The reasons for doing so were however mixed. There seemed to be a common thread of - we are rebuilding anyway so why not do it right and incorporate some of these systems.

> Very important. Very important because its the best way now that we are rebuilding Christchurch to chose even if more expensive from the beginning but is the best because we are building for the future so yes.

For some it was a question of being environmentally responsible whilst for others it was seen as a way for the council to save money by using what nature gives freely.

One participant also stated that it was part of the library's educative value in society to have these technologies available so that Christchurch people could see them in action possibly when

considering them for use in their own home or business.

The fact that there are such vast quantities of demolition material in the city at the moment, which could potentially be recycled in some way, also seemed to strike a chord with many.

> I think we need to recycle and reuse what we've got in the community especially post earthquake.

Connectivity with the Outdoors

The desirability of some kind of connectivity with the outdoors was another theme that came through strongly with most participants although opinions varied as to whether this was best achieved via access to an outdoor space or merely through the auspices of a window overlooking such a space. As one participant so aptly put it:

> I think for Christchurch or even New Zealand the outside is king.

As already stated a connection with the outdoors was also one of the themes associated with mental well-being.

Variations on what this outdoor space might look like or offer to library users was something, which resulted in a variety of responses from children's play areas to a community garden. However while some saw the establishment of play areas for example to be desirable others did not so there was not really a clear consensus apart from the fact that it should be a green space. Interestingly the question about what constituted a favourite space often elicited mention of either garden space—for Parklands participants; while for those from South (using Spreydon while this library was closed) they all mentioned the same place - couches by a large window overlooking the view to the Avon River.

> I like to see the outside…its good to have the floor to ceiling windows and see the water flowing and lovely to see the trees.

Desirability of Light and Airy Spaces

The words 'light' and 'airy' were probably the most often quoted by interview participants. Natural light seemed to be a highly desirable design feature and one which added to participants enjoyment of the space however, there was also recognition that especially in a larger library where this was not possible task lighting should be employed to enable good visibility for reading and other activities.

> Yes because I think if you look at those libraries the seating that is most commonly used at the time would be the ones closest to a window so they are looking for light. People who sit down to read would be looking for light and I think when I am a bit tired I will go to a seat in here that has the most light or with the light behind me coming on to the book so I think specific task lighting in certain places would be a draw card.

The association of natural lighting with windows and a sense of openness in the space also seemed to go together

> Yes my husband and I and the children would go to South you walk in there's space you can see where everything is without feeling cramped and crowded and there's lots of light.

One or two participants also made the valid point that light, whatever its source, was probably not advantageous in computer areas and needed to be carefully designed to avoid glare on screens

Social Importance of Libraries

Although not directly associated with user design preferences the confirmation of the social importance of libraries—libraries as place; as social hubs; and the educative value of libraries is nevertheless important as it reinforces the importance the community places on libraries and therefore the need to ensure building design meets the needs and desires of these communities.

> Yes I organize to meet people here and have a coffee and its really another modern meeting place, instead of the bar down the road you are in the library.

Alongside the view that today's libraries are more than just reservoirs of books and information but social spaces in and of themselves, is the desire to see more community consultation especially with regard to the space itself. This was felt to be particularly important when it comes to designing space for teens and children and that if done correctly this would in all likelihood mean a better usage of spaces by those who have helped in their design.

> Because you can invite them into the space then. If you just do things and you get it wrong there's no invitation to come in but if you give them a say and a voice they will come and use that space.

Another feature of the social importance attached to libraries is the educative function they provide to their communities which was mentioned by a couple of participants albeit in quite differing scenarios. The most obvious example of this is the part libraries play in engendering a love of books and thereby making a contribution to literacy.

> I suppose at school they get that but if mum or dad or whoever brings them into the library they get to know it don't they? … she wanted those wee books, probably lots of pictures in them. Well that's something you're starting isn't it?

Effect of Design on Patterns of Usage

The affect the design of a building has on the way the space is utilised was especially marked in the responses from participants at two of the sites—Parklands and Spreydon. For those at the Parklands site the onsite café was a significant feature in how they use the library with one participant stating that was what got him coming into, and subsequently using, the library in the first place.

> I never used to go to the libraries until I started playing golf around the corner of course, I'd come here and found it was so good to have a coffee and have a look through the library and take a couple of books home and read it and bring it back next week .

Whilst for others who already enjoyed visiting libraries the café meant they stayed longer and used the library as a place to meet friends and socialize.

> I think cafés are nice because they encourage people to meet and stay and you can browse and get books and meet friends and family or whatever.

The participants interviewed at the Spreydon site all used the South Library as well. In fact two of the three were only using Spreydon Library as South Library was closed while undergoing earthquake repairs. They all commented that they used the space at Spreydon quite differently - only coming in to pick up holds or for quick

browsing as they found the library to be cramped and not conducive to a more lengthy stay or to meet and socialize in the way they were used to doing at South.

> You know this is obviously a small library and there's not the space to stop and you just want to get your stuff and go.

There was also a comment about the second floor, which vibrates with passing heavy traffic, and safety concerns post quake as mentioned earlier.

Image displays

Analysis of the comments from the image displays was more difficult as the short comments were sometimes ambiguous and therefore of limited value and some of the themes identified in the interview transcripts were difficult to identify in an image for example green technologies, social importance of libraries etcetera.

By far the most commented upon images were those of children's areas. These colourful and innovative spaces seemed to strike a chord with many who participated in this part of the study and actual design preferences emerged for these spaces - namely that they should be colourful, innovative and fun spaces.

Overall themes which began to emerge here were similar to those identified in the interview transcripts for example a preference for modern design. However the very visual nature of this part of the research meant that more precise design preferences within this category began to emerge. For instance although many modern buildings were represented in the image displays those exhibiting any sort of curved features, for example the interior of the Stockholm Library, were favoured over those of a more brutalist modernism seen in some very angular and stark buildings such as one of the buildings at University of Chicago or the St Catherine's College Cambridge Library.

Some of the modern designs also seemed to polarize opinion with those who commented either loving or hating them for example the very colorful library at Peckham and the comments on the ultra modern Seattle Public Library showed just how subjective and highly individualistic opinions on colour can be.

> Multi colours make this library look lively & contemporary but could date?

And

> Utterly ghastly

Interestingly the images of heritage buildings seemed to get a more favourable response than in the interviews with particular favourites being the Suzzallo Library University of Washington and Cambridge University in England. The former receiving perhaps the ultimate accolade that it was like Hogwarts! The abundance of wood in these and also the Whistler and Willard Libraries seemed to be one of the reasons they were admired. An emotional response to design was evident in the fact that wood was deemed by some participants to engender a feeling of warmth and homeliness.

There were however still some comments stating that although these were beautiful spaces perhaps they were not really fit for purpose as modern public libraries.

Two images of older brick style buildings—a Carnegie building in the United States and a library in Stoke-on-Trent in the United Kingdom were thought by participants to be unsuitable for Christchurch because of the potential earthquake risk they posed.

A preference for light spaces was also evident both in images which clearly showed this aspect of design, for example the reading room at the University of Chicago which received favourable comments, and the Rødøvre Library in Denmark which was dark and did not.

Other Documentation

The use of other documentation was intended primarily as a method of triangulation in verifying the research findings. Christchurch City Libraries website contains archived records of community consultation undertaken at both the Parklands and Upper Riccarton sites.

When a new library was planned in the suburb of Parklands feedback was sought from the community. Much of this consultation concerned collections and services but some of the information gathered pertained to the building and its design. Some of that community feedback reinforces the findings of the interviews: the need for a separate area for children and that this area be fun with stimulating activities demonstrates a desire for mixed use spaces while the request for an outdoor area reflects the desire for connectivity with the outdoors. The concept of access in terms of transport links is also mentioned here in terms of ensuring the provision of secure bike racks for customer use.

Opinions on colour show the same level of subjectivity and contradiction with some of those submitting opinions asking for bright, colourful spaces whilst others asked specifically for nothing too bright, or soft and calming colours.

Community consultation when a mixed use library was planned for the Upper Riccarton area in conjunction with Riccarton High School is also to be found on the Christchurch City Libraries website. Some of the findings here include: flexibility of design elements in particular the need to provide suitable seating for senior citizens; the need for good levels of lighting; access was again mentioned but this time with particular emphasis on manoeuvring wheelchairs.

Items that resonated with interview and image research findings in the Christchurch central recovery plan include: parking, free wifi, socializing, green spaces, building heights, learning, and architectural design (Canterbury Earthquake Recovery Authority, 2012,p. 22).

The pages devoted to the proposed new central library speak of the importance of libraries to communities:

> Libraries are integral to developing strong communities, being places where cultural diversity is celebrated and communities are engaged, inspired and informed (Canterbury Earthquake Recovery Authority, 2012, p. 79).

A comment on this page taken from the 'Share an Idea' initiative shows the desire for outdoor spaces as well as the importance placed on children's areas and the desirability of mixed-use spaces:

> How about a central library for kids connected to the main library by a great café and play-reading area (Canterbury Earthquake Recovery Authority, 2012, p. 79).

Researching the 'Press' using Christchurch City Libraries news paper index shed little light on the essential questions posed by this research namely user preferences in library design. They did show however the importance placed on libraries both by the Christchurch City Council as a means of helping to ensure strong and well-working communities and by communities themselves as evinced by the strong feelings aroused by library closures since the earthquakes.

Discussion

Of the original research questions the overarching query was 'what architectural style users most valued and wanted to see in their public library buildings'. One of the strongest themes to come out of the research was the fact that virtually all participants favoured a modern design for their public library even if they also saw the architectural merits in heritage buildings: the aesthetics of clean lines; being fit for purpose; and a heightened awareness of safety post earthquake.

The importance of green technologies was not something which was quite so clear-cut. Many participants stated that this was not something they had previously thought of but there was agreement that these were useful things to consider especially as Christchurch is in the midst of a massive rebuild following recent events. Reasons for supporting such initiatives were varied with some participants avowing strong environmental consciences whilst for others cost and utilizing what nature provides freely was more important.

Functionality over design was another theme which came through in the research both in terms of access, parking, ensuring the durability of furnishings, as well as support for users' technology for instance wifi, benches for laptops, sockets for charging mobile devices etcetera - the latter has also been shown to be important to users in the literature albeit in academic libraries.

Possibly the most difficult question to answer is that of the effects the recent earthquakes have had on library users. There were certain ambiguities in some responses with participants initially saying they weren't concerned about going onto an upper level in a building but later admitting in the course of the conversation that actually they were still uneasy about this. Older participants seemed more anxious in this regard. There was a general heightening of awareness of safety concerns whether participants actually expressed fear or not - all bar one participant were still very aware of the dangers posed by buildings in the event of further aftershocks. The question of the number of floors seemed to be more of a concern than construction materials although interestingly in the image display two older brick buildings both attracted comments questioning their earthquake soundness. One went further stating "Not for Christchurch".

Context

It is important to look at the findings in the wider context of pre-existing research especially that identified as part of the literature review.

The importance study participants placed on their library was high and although not directly related to library architecture and design this notion of library as place has been pivotal in establishing the importance of libraries in communities. This together with study findings on the effects of design on patterns of usage show the necessity of ensuring that modern libraries are designed to suit the needs of those communities preferably by getting user input into the building at the design stage. The title of Twait's article If they build it, they will come (2009) really encapsulates the importance of this concept.

This study also reinforces other findings from the literature review namely: the desirability of mixed use spaces—with users spending more time in libraries there is a need to provide 'soft spaces' such as cafés, galleries etcetera (Gee, 1989, Nankivell, 2003, May & Black, 2010, Hohmann, 2006, Gibbons & Foster, 2007); the importance of light, space, and a welcoming atmosphere (Nankivell, 2003, Schaper, 2003, Powelson & Vaska, 2010); the emotional response to design in this instance colour, (Hohmann, 2006); architecture / design affecting usage (Van Slyck, 2007, Bennett, 2007); flexibility of design elements (Gibbons & Foster, 2007) and the importance of functional elements most notably to do with technology (Powelson & Vaska, 2010, Brown-Sica, 2012).

This research however shows some points of departure from Black's article in that he states that 'many' of the respondents favoured older buildings (2011, p. 38). Although some of the participants acknowledged a love of heritage buildings no one expressed the view that they would like to see libraries in Christchurch in these kinds of structures.

Conclusion

Christchurch has a long and distinguished architectural history with arguably some of the nation's premier architects calling Canterbury home. The architectural legacy of Mountfort, Warren, Beaven and others has been decimated with many of Christchurch's iconic buildings now demolished or facing an uncertain future.

This research has shown that participants do have opinions as to what they want in a public library: low-level; modern; light and airy spaces capable of supporting multiple activities in a range of spaces; a connection with the outdoors, with good access and a nod to sustainable design.

Now, in this phase of growth and the development of a new Christchurch it seems more important than ever that new buildings should continue the unique architectural tradition and produce buildings that future generations of Cantabrians will admire.

As has been clearly shown libraries are seen by the community as having great value, arguably now more than ever, and as such it is vital to ensure the physical manifestation of the library serves that community well and reflects its identity.

Too often architecture is seen as real estate and property, but it is a cultural product. All of these buildings that we have lost, they are our history and informed our identity and our understanding of what it is to be Christchurch (Gates, 2012, p. A.3).

Modern, light filled spaces with a connection to the outdoors and providing multi-use spaces to support a variety of activities—let us hope that some of the new libraries planned as part of the Christchurch rebuild will, with input from the people of Christchurch who have proven themselves such passionate advocates, form part of a new and exciting architectural history that is uniquely Cantabrian.

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