

A grounded theory of the architectonics of library spaces

by

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Submitted to the School of Information Management,
Victoria University of Wellington
in partial fulfilment of the requirements for the degree of
Master of Information Studies

February 2017

Abstract

Research problem: The library, as an architectural typology, is reportedly under threat. There is no question the library space needs to evolve to remain relevant in the twenty-first century. This project seeks to reveal patterns of library design and architectonic principles that will shape future spaces. In an age of distraction and rapid change it may not be enough to assume the traditional role of the library, as a 'temple of knowledge' built for books, to guarantee the future of libraries. This project proposes a philosophical examination of the relevance of library buildings in the twenty-first century.

Methodology: The grounded theory methodology employed enables a close reading of the determinants behind library design: how libraries influence architectonics and vice-versa. The term *architectonics* speaks to both architectural design and the importance of buildings as metaphorical representations of humanist principles. The project applies Emmanuel Kant's philosophical interpretation of architectonics as a 'system of knowledge'. The steps to generating grounded theory involves the categorisation of data, writing self-reflective memos, theoretical sampling, comparative analysis and theoretical sensitivity. The project also utilises naturalistic observations of three Auckland Public Libraries: Devonport, Rānui and Waiheke.

Findings: Each building typology is important and instructive by mapping and reflecting humanist behaviours and endeavours. As things change over time, small details add up to affect the overarching philosophical understanding of architectonics, in this case 'the library'. Fortunately, libraries do not have to confront the politicisation of technology directly but can maintain an evolutionary path, as a civic space, by using a new architectonic 'morality' that is universally inclusive: sustainability through intelligent design.

Implications: Library buildings can reach into the humanist needs of design – the moral, ethical, harmonious, sustainable, communal elements. Becoming a sustainable beacon for communities may be constrained by material resources and budgets and not every library will be able to engage with eco-friendly designs in their entirety. Future studies will need to engage with communities, stakeholders and library users to explore whether a sustainable typology for library buildings is a worthy and achievable objective.

Keywords: Architecture, libraries, philosophy, sustainability, architectonics.

Acknowledgements

I would like to acknowledge my beautiful, sweet daughter Maeve-Marie who has been a most pleasant distraction throughout this process – including the ‘testing’ of the children’s facilities at each library. I have to acknowledge the love and support of my wonderful wife, Andrea, who has been so patient and attentive throughout the MIS degree. I would like to thank my work colleagues at the Sylvia Ashton-Warner Library who have taken up the slack during the occasional study day and have given a great deal of support and advice throughout the degree. Also my former colleague and long-time friend Tom for his astute proof-reading and recommendations. Finally, I would like to thank my supervisor Professor Anne Goulding who was always on hand with great advice when called upon and quick in reply when emailed.

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1. Problem statement

1.1 Current landscape

It perhaps goes without saying that the library is a unique space. As a municipal space the library is a cornerstone building, like a town hall, fire station or school, and for a long time it has been considered an essential and unique public space offering an important democratised service. As part of the tertiary environment it is an essential resource for developing independent research. Recently, however, there has been a great deal of technological change compelling debates around the importance of library spaces when so much information and resources are available online. Invariably it is the cost of maintaining and running library buildings that prompts headlines such as this from the British Broadcasting Corporation (2016): *Libraries lose a quarter of staff as hundreds close*. Among the declining usage and borrowing figures there remain assertions and desires from many quarters to innovate library spaces, increase Wi-Fi and to increase volunteerism, over paid professional librarians, as positive steps toward community engagement (British Broadcasting Corporation, 2016). It would appear that libraries are experiencing the disruption of technology with greater veracity than ever before and hitherto giving momentum to what is perhaps a self-fulfilling prophecy: If you dismantle the service, the people *will* leave.

Closer to home there has been a media announcement of library cutbacks for Auckland Libraries from The New Zealand Herald (2016): *More than 50 jobs could go at Auckland libraries*. The accountancy aspect to these job cuts is more candidly stated by the reporter quoting a policy document: "Part of the reason for Fit for the Future is to make 'significant savings' as part of an organisation-wide efficiency drive." (Orsman, 2016, para. 6). A day after this article was published an opinion piece from Deborah Hill Cone (2016) entitled *Library cost-cuts cultural vandalism* also appeared in the New Zealand Herald. Cone gives seven strong arguments for the importance of libraries in response to the efficiency programme outlined by the Council. In the first of her seven statements she issues two noteworthy points: "Don't confuse the future of books or publishing with the future of public libraries. When you close post offices,

banks and clubs, libraries become our default meeting place and serve a vital role in social cohesion” (Cone, 2016, para. 10). There is no question the library is in a state of flux, much like information itself, and in order to remain relevant in the twenty-first century the library’s metaphorical presence as an architectural space is worthy of discussion.

1.2 Rationale for the project

In order to discuss the future of libraries as important and unique physical spaces this project focuses on the architectonics of library spaces using a grounded theory methodology. The term *architectonics* speaks to both architectural design and the importance of buildings as metaphorical constructs representing humanist philosophy. In Immanuel Kant’s (1961) *Critique of Pure Reason* he defines architectonics as unifying a system of knowledge:

Reason cannot permit our knowledge to remain in an unconnected and rhapsodistic state, but requires that the sum of our cognitions should constitute a system. It is thus alone that they can advance the ends of reason. By a system I mean the unity of various cognitions under one idea. (p. 653).

How does this affect the library’s metaphorical worth as an idea? This project discusses the changes to the traditional library space as it is impacted upon by the conception of the digital library, compelling new philosophical and sociological understandings of the ‘libraryness’ of library spaces. If a library only exists online, is it really a library? If a building has no books, should it still be called a library?

The project seeks to uncover and reveal patterns of library design and architectonic principles through the lens of Kant’s use of the term, which theorist Daniel Purdy (2011) asserts as a “last step in a long chain of critical reflection about empirical reality” (p. 107). Taking this philosophical approach helps to form an overarching analysis of various studies in order to address the importance of retaining libraries as unique spaces, whilst acknowledging the effects of technological, economic, and societal changes impacting upon their

building typology. It is important to note that this project seeks to reach through the nuances of individual studies to analyse and synthesise a theory that can be utilised for future research. Often the building of new libraries for particular communities means stakeholders become the prime focus of the study. It is the contention of this project that a grounded theory about the architectonics of library spaces will be a useful component when considering the confounding influences of building concepts and designs and stakeholder feedback.

Whilst stakeholders are important, they can create a 'wood for the trees' approach whereby the library building, as concept or metaphor, may not be fully acknowledged or realised when focusing on the location-specific elements of the design. The concern here is that the library building is not appreciated as a unique architectonic typology, as an essential concept with regard to humanist ideals, and will potentially give way to other sites, both physical and virtual, where people gather and disseminate information. The politics of 2016 has shown that unprincipled information, untethered from sources, can be mercurial and untrustworthy, but alarmingly influential. The importance of the library as a physical space for democratised information and collective knowledge is discussed in the literature review. However, in an age of distraction and rapid change it may not be enough to assume the traditional role of libraries as 'temples of knowledge' will remain and thus a new paradigm, drawn from grounded theory, is worthy of consideration.

1.3 Philosophical framework

Immanuel Kant (1724-1804) is a prominent philosopher from the Enlightenment period and is considered one of the most influential philosophers in history due to his systematic studies of epistemology, ethics and aesthetics (Bird & Duignan, 2016, para. 1). Kant's work on aesthetics, reason and specifically his use of the term architectonic in his treatise *The Critique of Pure Reason* helps to form a framework to think about libraries philosophically. In a persuasive dissection of Kant's work, specifically her chapter *Kant's Architectonic*, Jennifer Mensch (2013) iterates Kant's balancing of rationality and aesthetic pleasure through his critique of pure reason:

The object of knowledge had to be understood as the synthetic result of the intellectual and the sensual together, for, according to Kant, only this kind of transcendental imposition of form on matter could yield knowledge whose certainty was guaranteed (p. 126).

The phrase 'object of knowledge' could be applied to the library building and the 'transcendental imposition of form on matter' the histories and tropes of libraries as cathedral-like spaces 'whose certainty was guaranteed'.

The motivation for applying this philosophical framework to the evaluation of library architecture is to step back and critique the overarching impact of technology upon the humanist ideals of library spaces, potentially evolving them into predominantly *digital libraries* or perhaps eliminating their societal roles and presence altogether, and thus destabilising a certainty of information and knowledge. Daniel Purdy (2011) examines Kant's use of architectonics by discussing Vitruvian architectural principles: "Theory, as opposed to the practice of building, has two important roles in Vitruvius's treatise: to define the discipline's educational requirements and to explain the stylistic rules for designing buildings appropriate to their function" (p. 138). For this reason it is worth considering both the functional, worldly drivers behind architectural design, such as the ever-consistent push toward technology, and the philosophical ramifications of a building typology that serves, educates and inspires communities. A grounded theory methodology enables a close reading of some key determinants behind library design, of how the concept of 'libraryness' can influence architectonics and vice-versa, and how libraries might hold their ground as educative, influential and even transcendent spaces.

1.4 Definition of key terms

Architectonics (Architecture): Defined as an adjective: "[A]s relating to architecture; suited or serviceable for the construction of buildings" (Oxford University Press, 2016, para. 1). Defined by Curl & Wilson (2015), in plural form, as "the science of architecture or the systematic ordering of knowledge" (para. 3).

Architectonics (Philosophy): "Term associated with [Immanuel] Kant, denoting the systematic structure or architecture of our knowledge. All our knowledge belongs to a possible system, and a goal of philosophy is to uncover the nature of the system, including the place in it that is occupied by philosophical reflection itself" (Blackburn, 2014, p. 24).

Digital library: "The first major acknowledgment of the importance of digital libraries came in a 1994 announcement that \$24.4 million of US federal funds would be dispersed among six universities for 'digital library' research" (National Science Fund, 1994, cited in Besser, 2004, para. 17). "These six well-funded projects helped set in motion the popular definition of a 'digital library'" (Besser, 2004, para. 18). A digital library is commonly understood as a collection of digital objects that can include text, visual material, audio material, video material, stored in electronic media formats.

Grounded theory: "A method for constructing theory; the theory grows out of extensive direct observation and inductive methods in a *natural or *non-experimental setting. It very often involves the analysis of texts. Grounded theory is frequently a goal of *ethnographic research. The term is used loosely to mean any theory based on data and very specifically to mean methods based on the work of Barney Glaser and Anselm Strauss. Both the method and the conclusions reached by using it are labelled grounded theory – 'Grounded theory was used to produce this grounded theory'" (Vogt, 2005, p.136).

Libraryness: A phrase that appears to be coined by Greenhalgh, Worpole and Landry (1995) and often cited by others: First appears in *Libraries in a world of cultural change*: "'Libraryness' partly derives from the large-scale presence of books, which themselves historically evince a quasi-religious or spiritual aura. [...] This quality of 'libraryness' is historically rich and widely understood. It is one of the great institutional strengths of public library service, and has proved resilient and self-renewing. Yet the weight of this history may hinder the capacity of librarians to develop a fresh perspective on where libraries could be going in the future" (Greenhalgh, Worpole & Landry, 1995, pp. 51-52).

1.5 Limitations/delimitations

This research project focuses on the architectonics of libraries and critiques the changes and adaptability of these spaces. It is understood that most libraries are built after a consultative process, but this aspect of the design process will not be discussed in-depth, except when an article notes any significant issues raised that confounds the architectonics of a project. The examples of new libraries in New Zealand, aside from any discussed in the literature, are limited to the Auckland isthmus. The Devonport, Rānui and Waiheke libraries are included in naturalistic observations of their design and layout as part of the grounded research methodology.

While the project acknowledges the concept of the digital library space, the discussion is around the general technological drivers that are changing architectural design, such as personal device power points, furniture types and computer facilities. It is beyond the scope of this project to engage with all technological shifts, except to acknowledge the philosophical and sociological impacts that will influence architectonics. This project has sought to assess the architectonics of library spaces as objectively as possible but acknowledges that the relative subjectivity of any qualitative research methodology can colour reporting. The community demographics, librarian services and user interactions have been intentionally avoided or omitted in order to focus on the discussion points of what the architectonics of a library space are, or could be, in the twenty-first century.

2. Research design

2.1 Grounded theory

The grounded theory method, as a framework for research, allows for much of the project to be formed from an analysis of current literature. This analysis requires following theoretical threads within and across various literature in order to arrive at a single theory, or sometimes multiple theories, with which to address the developments of library architectonics in the twenty-first century. In

this case the main issue to be explored is the definition of what a library is, or might become, as the digital age progresses and disrupts print collections and limits the necessity of large spaces to house books. There is a further philosophical addendum to this research, based on Kant's metaphorical interpretation of architectonics, which seeks to compel it beyond knowable and quantifiable building projects into a humanistic understanding of how knowledge might be created, reorganised and shared across time and space:

The architectonic section of the *Critique of Pure Reason* characterizes the formation of knowledge, both in the epistemological sense of absorbing and analyzing perceptions and in the practical, biographical sense of learning over time, as the reorganization of raw data into a complex, abstract order (Purdy, 2011, p. 137).

2.2 Analysis and coding

The steps to generating a grounded theory involve the categorising of data; concurrent data collection; writing self-reflective memos; theoretical sampling; comparative analysis; theoretical sensitivity (researcher self-reflexivity from a philosophical standpoint); intermediate coding (developing categories); identifying a core category; advanced coding and theoretical integration (integrating architectonics within the analysis) to generate a theory or theories (Glaser & Strauss, 1967; Birks & Mills, 2011).

Areas of analysis:

- Current library architecture is moving away from the traditional role of the library as a building for books.
- Library architecture has a number of positive and negative design elements that persist over time.
- Library spaces have not yet radically changed, but many new designs reflect the position that libraries hold in the community as unique attractions.
- Libraries as public, democratic and community spaces still hold value and often do so by diversifying their appeal through design.

2.3 Naturalistic observations

The grounded theory method allows for observations in non-experimental settings and this approach sits alongside an analysis of the literature. This part of the project forms additional data to contribute to an understanding of the architectonics discussed in the literature. The three public libraries included for naturalistic observations were recently built or rebuilt: Waiheke Library | Waiheke Pātaka Kōrero completed in 2014 by Architects Pacific Environments, Rānui Library | Rānui Pātaka Kōrero completed in 2014 by Jasmex and Devonport Library | Te Pātaka Kōrero o Te Hau Kapua completed in 2015 by Athfield Architects Limited. The assessment of these spaces was guided by William W. Sannwald's (2016) *Checklist of library building design considerations* published by the American Library Association.

The sections in the book most relevant for the naturalistic observations:

2. Building Construction Alternatives
4. Sustainable Design
6. Interior Organization of Library Buildings
9. Interior Design and Finishes
10. Entrepreneurial and Collaborative Spaces
11. Materials Handling and Storage: Book Stacks and Shelving
12. Building Systems

3. Literature review

The research objective is to contemplate the library's architectural importance, traditionally built to house print material, by considering if a wholly digital library were to truly exist, would it still be a library? The customary understanding of a library is that it is a community space that houses books for the greater good, fosters human curiosity and progresses society through a democratisation of knowledge (Black, 2011a; Carroll & Reynolds, 2014; Dahlkild, 2008; Huvila, 2013). There are many stakeholders in libraries – in both public and academic examples – and many pressures pulling and pushing at the design, creation and maintenance of buildings and spaces (Brown-Sica, 2012; Fox, 2014; Khoo, Rozaklis, Hall & Kusunoki, 2016; Schlipf, 2011).

The intention of this literature review is to look past the uniquely confounding elements of individual research studies and draw out themes that speak to an overarching understanding of the library as a significant architectural trope. The purpose is to discuss points of reflection when investigating the data revealed through other's research. Guided by the literature, and naturalistic observations, the project reflects on how library architectonics can embrace, resist, or ignore the current and future culture shifts around technology.

3.1 Grand designs

A study put forward by Snunith Shoham and Israela Yablonka (2008) addresses the trend of monumental architecture when designing libraries in the late twentieth century and into the twenty-first century. Their objective was to uncover why monumental libraries were still being built in the new millennium despite new technologies reducing the need for larger spaces. The study challenges the significance of books in contemporary library buildings by disclosing an arbitrariness toward the function of the library, as a place to borrow material, and focusing on its form, as spectacle:

A monumental library is a very large library but it is more, it is a grand, impressive, meaningful monument with distinctive architecture that inspires wonder. [...] It is a monumental structure that just happens to house a library; the building is of interest regardless of its function (Shoham & Yablonka, 2008, p. 266).

Interestingly a case is made here for form over function when designing libraries and this is quite a radical idea when compared to purpose-built, Carnegie-era library designs. Generally it is argued that function should lead form, usually driven by economic restraint, stakeholder conservatism and other pragmatic concerns (Prizeman, 2013; Schlipf, 2011). Despite a limited sample size, the Shoham and Yablonka (2008) study offers some useful insights from various experts who introduce the notion of the library as an *attraction* to add value to its traditional function as a municipal building. Although the

library's role as a public service is acknowledged, it is the notion that a monumental library can act as a venue or destination, in and of itself, with or without books, that suggests an interesting shift in thinking about the space.

The sample group of the Shoham and Yablonka (2008) study reveals that sociologists and futurists tend to see libraries as unnecessary and somewhat redundant in the digital age, with architects and library professionals supportive of continuing to build and to innovate in library designs. This view that libraries are "as good as dead by futurologists" is also noted in an article by Helen Niegaard entitled *Library space and digital challenges* (2011, p. 174). However, the majority of all respondents in the Shoham and Yablonka (2008) article agreed that "the main motivations for construction are the needs for municipal or national pride and the desire to perpetuate or glorify a name, as well as serving an attraction" (p. 278). Here the notion of libraries as important cornerstone buildings that can glorify a name and foster civic pride speaks to the tradition that most communities still attach to library architectonics.

It is worth remembering that architectonics is more than just the design of the physical space, it is a way of thinking about people's relationships to society, place and themselves. To have a sense of well-being and connection to their community. The library, no matter how grand or how small, is an important component for social democracy in an increasingly technocratic world. As the Netherlands architectural curator Huib Haye van der Werf states: "In the case of the public library, the architecture of knowledge is also the architecture of society" (2010, p.19). To look over the history of the library is to see its evolution in context to the social mores of the times.

3.2 An historical context

While the Shoham and Yablonka (2008) study emphasises the resurgence of monumental architecture, it is worth noting that large libraries as a "manifestation of the temple of knowledge" go as far back as the Enlightenment of the seventeenth century (Dahlkild, 2011, p.13). Dahlkild's (2011) study offers

a literature review that traverses the history of library buildings in relation to their social and historical contexts and various developments over time. As it threads an historical analysis of library developments across a particular timeframe it illustrates the trend from large cathedral-like buildings to Carnegie sponsored municipal libraries, to smaller Scandinavian modernist designs, to the monumental post-modern architecture of today. It is worth noting that although Dahlkild's (2011) text does not reach as far back as ancient libraries, and tends to focus on the West, he does discuss a contemporary counterpart in the East: the extraordinarily large and vertiginous Bibliotheca Alexandrina in Egypt, designed by Norwegian architects Snøhetta, completed in 2002, on the same site as the Ancient Library of Alexandria.

The Dahlkild (2011) article begins with discussing the public ethos around municipal library design where he states, in reference to other research, the cues for what defines a modern, democratic library:

The article will investigate the physical as well as the social construction of the modern library space and of its identity; and of, what Greenhalgh, Landry and Worpole (1995) have termed, its 'Libraryness' (p.12).

Although any theory behind Dahlkild's analysis is not explicitly stated, his essay suggests a critical social history approach guided by a critique of aesthetics in architectural design. It is an analysis that supports the proposition that a library's identity is evinced through its aesthetics and that architectonics is both a physical and philosophical construct.

Most importantly, once he has traversed the library's built history, Dahlkild (2011) concludes with the significance of globalization, monumental futurism and "the library without walls" as three drivers for how 'libraryness' will develop in the future (pp. 38-40). This article illustrates that there are both circuitous and continuous elements in library design as past influences begin to manifest themselves in familiar ways, such as a return to large and imposing spaces. But it also timelines some significant societal changes throughout the

history of libraries, such as enlightenment thinking, industrialisation and social welfare services (Dahlkild, 2011).

Mary Carroll and Sue Reynolds (2014) also take a critical social history approach when looking at the development of public libraries in Australia:

Libraries have manifested themselves in relation to their perceived contemporary purpose: as a symbol of democracy and freedom; temple of learning and advocate of civilization and high culture; university of the common man; a place of collective memory; or as social and civic space (pp. 581-582).

These commonly understood library archetypes speak to a mix of tangible and esoteric influences on library design. Who is the 'common man'? What is a 'temple of learning'? Do we have a 'collective memory'? The listing of phrases illustrates the significant influence of stakeholders and patrons on the competing and complementary ideas and desires around designing library spaces.

In their concluding paragraph Carroll and Reynolds (2014) quote Michael Gorman's concept of a 'golden thread' as they discuss how libraries aspire to remain relevant by developing solutions for stakeholders across time and space:

In seeking these solutions through engagement and responsiveness to the communities in which they reside, today's public libraries are inextricably connected with the past through a 'golden thread of values and practices' (Gorman, 2003, cited in Carroll & Reynolds, 2014, p. 593).

This idea of the library as a stable archetype, with values and practices that persist over time, is an important point to consider when choosing to name any space a *library* – the word alone has significance.

Another historical analysis, this time looking at British public libraries from the middle of the nineteenth century through to the digital era, asserts a pithy reminder of why architectonics is purposeful and evocative for understanding

libraries as significant buildings: “In each of these periods, the public library building can be ‘read’ as readily as the books they contained” (Black & Pepper, 2012, p. 440). This is another overview of the history of library buildings and the authors follow a similar historical enquiry as they map the influences of culture on libraries, whilst simultaneously exploring how libraries were culture: “public libraries were not viewed simply as generators of material utility. They were also trumpeted as citadels of culture, emporiums of civilization” (Black & Pepper, 2012, p. 447).

Black and Pepper (2012) go on to note the libraries role as a site of appeasement during radical changes in society:

Whether material of cultural in their purpose, public libraries emerged at a time of great social tension and flux, and were created as institutions that could stabilize society and heal the wounds that early industrialization had inflicted (p.447).

If this was the case in the past then might it be argued that the current state of tension and flux from technology is reason to embrace libraries more than ever before? To recognise their value as a philosophical ideal that is essential for ‘stabilising society’ in times of uncertainty?

3.3 Renewal or reboot?

It is the cultural shift between the known role of the library as a place to browse and borrow books to the unknown role of the digital library as a place to connect and download that represents a state of flux for library spaces. In Sannwald’s (2016) checklist for library design there is a whole chapter entitled *Entrepreneurial and Collaborative Spaces* that suggests the American Library Association is seeking to encourage the designing of spaces that will engage with entrepreneurial projects. Whilst the advent of ‘makerspaces’ and ‘technology lending’ can be positive and equitable, the phrase ‘entrepreneurial’ embarks down a path of monetisation, commercialism and individualism that signifies a conflict with what most people would contend as the publicly mandated neutrality of library spaces.

Dahlkild (2011) discusses these types of contemporary variations of the library space in the United Kingdom called *Idea Stores*, built near shopping malls: "The desire to reposition the library in the twenty-first century has been highly visible in the emergence of the 'Idea Store' to replace the traditional brand of the 'library'" (p. 37). Whilst on the surface these types of libraries might be fulfilling a communities' needs for convenience, they architectonically map onto society the ideology of the citizen as consumer in a space that has, until now, largely eschewed the politics of commercialism.

The issue raised by these new types of spaces, built for urban environments, "is that they take on a privatized, consumerist image, conflicting with their fundamental 'public service' ethos" (Dahlkild, 2011, p. 37). This also suggests another type of 'library as attraction' development in terms of a neoliberal, consumerist model. A shift that seeks to place the library in a competitive, media-saturated context that could prove problematic by confounding the once non-commercial, egalitarian and civic philosophies behind libraries. However, this may in fact speak to a new form of democratic society that is willingly surrendering itself to a free market economy and political ideology of 'value added' progress and innovation.

Regardless of which side of the political spectrum one may sit on, it is clear that the library building is a contentious symbol if it is to become a place for invention (Talvé, 2011), a place for sustainability (Edwards, 2011), and a place for technological progress (Niegaard, 2011) whilst still remaining a socially responsive public service (Dahlkild, 2011). This is not to say a library cannot comfortably be all these things at once, but the research suggests that the library space may be in the sights of many stakeholders for ideological renewal as much as social redevelopment.

3.4 The devil is in the details

While Dahlkild (2011) and others review some details of library design in various contexts, it is not the same as looking closely at case studies that address a

particular design project. Unfortunately, there are not many academic articles that do this with respect to architectural design and they tend to focus on user inputs or reactions to library projects rather than carry out a deeper analysis of the aesthetics and philosophies behind design. Black (2011b) notes, in respect to the United Kingdom, that “no public studies have addressed the fundamental issue of architectural taste, either directly or in a ‘scientific’ fashion” (p. 31).

While the end users of libraries do need to be included when analysing the overarching impact of library architectonics they are more often than not unhelpful and offer contradictory opinions about library aesthetics (Black, 2011b; Fox, 2014). Indeed, most aesthetic commentary around library spaces and unique designs or revolutionary concepts tend to take place on blogs and websites, as well as in architectural, design and library magazines (e.g. www.bdcnetwork.com/blog; www.americanlibrariesmagazine.org; www.dezeen.com/tag/libraries).

A study by Kasthuri Anandasivam and Choy Fatt Cheong (2008) looks at user responses to the design of the new Art, Design and Media Library at Nanyang Technological University. The methodology takes the form of a simple questionnaire for staff and students, with follow-up face-to-face interviews with the teaching staff only. The introduction aligns this study with digital library developments: “Libraries are inevitably becoming both physical and virtual spaces due to the convergence of the traditional and the online environments” (Anandasivam & Cheong, 2008, p. 650). And although there are marked differences between public and tertiary library spaces, many of the same architectonic issues tend to occur. For the benefit of developing a grounded theory from the data available both types of library spaces are discussed.

The studies looking at academic libraries iterate three common design elements requested or required by students: technology spaces for group work, comfortable furniture and good Wi-Fi facilities for personal devices (Anandasivam & Cheong, 2008; Bennett, 2011; Brown-Sica, 2012). Decent Wi-Fi

and good furniture design are also frequently discussed in public library literature (Black & Pepper, 2012; Carroll & Reynolds, 2014; Fox, 2014). However, there tends to be more emphasis on the public buildings ecological credentials, aesthetics, relationship to green spaces and their placement near other amenities (Edwards, 2011; Fox, 2014; Khoo et al., 2016). It is worth noting that academic libraries have a distinctive audience, whereas public libraries need to attract a wider community and are often mandated to be more environmentally mindful.

In the case of Anandasivam and Cheong's (2008) study, the library staff were the only stakeholders to have had input into the design process, based on what they believed to be good library architectonics. Some of the negative responses from students included criticism of the "distracting views" across the atrium, the use of a raw cement finish as "too harsh" and the large, fixed-to-the-floor group desks as "too large, dark and distractive" (pp. 656-659). Unfortunately these critiques fit much of what Fred Schlipf (2011) describes as persistent dysfunctional design in which the "problems lie in the details" and are too often repeated by librarians and architects when other stakeholders are not consulted or overall design concept not thought through (p. 227). It should be noted that the interviewers were also library staff, so any face-to-face feedback may not have been entirely candid. This study is indicative of good intentions but illustrates a flawed *improvement* approach to design where negative user experiences were later used to tweak the details. Unfortunately these details can be substantial: a vertiginous atrium, concrete flooring and fixed benches will be difficult to remedy.

3.5 User behaviours

A study by Susan Montgomery (2013) surveyed user responses before and after the renovation of a library space with an emphasis on learning behaviours: "The goal of these spaces is to enhance user learning and encourage social learning" (p. 70). The methodology was an ethnographic survey including observations, student focus groups, and a 14-question survey "asking users about their learning behaviors in the planned renovated space" (Montgomery, 2013, p. 71).

The sample group was large, at 240 respondents, and the results tabulated with an appendix of the questions.

This is an example of a useful study for mining data to be able to analyse the connections between the user groups, researcher expectations and broader architectural considerations. It also illustrates the important connections between behaviour and space in communal areas and as Buchanan (2012) notes from her analysis of classical architectonic models: "an awareness of architectural elements which support desired outcomes can be valuable" (p. 56). Furthermore, from her study of communal spaces, Buchanan (2012) discusses the architectural influences on user behaviour, such as open spaces and group furnishings, which facilitate "knowledge exchange" amongst students (p. 58).

An interesting response from students in Montgomery's (2013) study was their desire to 'see and be seen' studying in the library. The library environment was deemed a "valuable stimulus in their learning behavior" (Montgomery, 2013, p. 72). A desire for comfortable furniture and Wi-Fi was also present in the data, as mentioned in other studies, and also the need for quiet spaces, as discussed in studies by Brown-Sica (2012) and Huvila (2013), which also looked at social spaces. What was interesting and unexpected, however, were the students in Montgomery's (2013) sample group who chose to study alone in the social learning environment rather than go to the quiet areas. This behaviour was not anticipated based on the data from other research.

This shows that library spaces can and should be varied and adaptable, but it also shows that users will utilise them in unpredictable ways. Black and Pepper (2012) generalises this unpredictability in terms of the library typology as one that provokes rebellion: "The very existence of a myriad of library rules and procedures has often acted as a direct invitation to some to break them or negotiate their way through or around them" (p. 444).

3.6 Finding harmony

A common theme in many of the articles reveal that library buildings remain relevant as communal spaces where users go to congregate and socialise (Anandasivam & Cheong, 2008; Brown-Sica, 2012; Buchanan, 2012). In Margaret Brown-Sica's (2012) Participatory Action Research (PAR) project she involves multiple stakeholders and students "using information to learn' throughout the design and planning process" for an evolving methodological approach (p. 218).

Brown-Sica (2012) provides a great deal of detail to her methodology to explain the recommendations given by students and one interesting example was their preference for traditional furniture over modular furniture and for quiet spaces over communal. This runs contrary to other studies that describe a desire for modular furniture (Anandasivam & Cheong, 2008; Latimer, 2010) and a preference for noisy, social spaces over quiet ones (Latimer, 2010; Shoham & Yablonka, 2008). While the responses may have been nuanced to Brown-Sica's project, it further highlights the significance of user unpredictability and that library spaces must be prepared to respond to different behaviours and desires.

In Brown-Sica's (2012) study about the library's environment, technology and services she notes that these questions "provided ample opportunities to pursue the larger question of 'What is a library?'" (pp. 218-219). Her conclusion states, in terms of pragmatic design principles, that "[e]vidence-based planning fortified by strong relationships with master planners" is crucial for both "renovation and reinvention" (Brown-Sica, 2012, p. 229). This suggests that the evolutionary or revolutionary design ideas discussed by Edwards (2011), Shoham and Yablonka (2008), Talvé (2011) and others, are tempered by the functional considerations of each building project. Stakeholders will always have significant influence on pragmatic processes and outcomes, if not on the philosophical and conceptual debates that librarians and architects might engage with.

The literature shows the variety of studies, projects and essays to be drawn together to form a grounded theory about library architectonics in the twenty-first century. The library as an architectural monument is one facet that illustrates its resilience as a building typology, but this approach suggests a somewhat cynical development of municipal library spaces into large-scale aesthetic attractions for tourists, as designed by notable architects (Shoham & Yablonka, 2008; Latimer, 2011). Another approach is creating information hubs driven by consumerism and convenience (Black, 2011b; Dahlkild, 2011). These approaches expose the tensions between library spaces as public assets versus their potential as competitive, commercial enterprises.

Throughout the articles the nuances of layout and design often reveal common and compelling discussion points: provisions for technology, access to Wi-Fi, furnishings and specialised spaces all come to the fore in both public and educational library spaces. It is also evident that user-focused studies allow a greater understanding of how library spaces might be redefined by users in the future (Brown-Sica, 2012; Montgomery, 2013). However, each study, on its own, is unable to reveal or address the bigger picture of what 'libraryness' is or how it can evolve to remain relevant in the twenty-first century. This will be explored using an analysis of the coded language of these articles alongside naturalistic observations of three public library spaces in Auckland, New Zealand.

4. Analysis and findings

This section will take the form of a 'storyline' using many of the same subtitles as the literature review. The storyline approach has come under critical debate between the two original authors of grounded theory, Glaser and Strauss, in which the former questioned its veracity and the later asserted its positive sociological roots (Birks & Mills, 2011). Whilst Glaser and Strauss play down its importance in later reprints of their seminal text, Strauss and Corbin (1990) assert that a *storyline* can play an important role in terms of the "the conceptualization of the story... the core category" (p. 116, cited in Birks & Mills, 2011, p. 118). Birks & Mills (2011) go on to state: "As a tool for integration,

storyline aids in constructing and formulating the final theory. As a mechanism for presenting findings, it enables the researcher to bring to life a theory that may otherwise be dry and unpalatable" (p. 118).

4.1 Grand designs

While monumental libraries might prove popular as cornerstone buildings for large cities and influential architects, they may not operate to the fullest desires of the local community. The sense of scale of some recent designs, such as the Bibliotheca Alexandrina by Snøhetta in Egypt and the Library of Birmingham by Mecanoo in the United Kingdom, may not in fact be the best way to reinvigorate 'libraryness'. For example, the Library of Birmingham is arguably a stunning architectural landmark, but if it cannot afford to stay open for longer than six hours on weekends it may lose the crucial local support needed to sustain it (Brown, 2015).

All large buildings get attention and perhaps it could be argued that *any* large library building getting attention will serve the purpose of restoring the importance of *all* libraries. However, the 'grand' in grand designs is conceptually more interesting than mere size, as iterated in Talvé's (2011) study when she paraphrases Kevin McCloud: "Kevin McCloud, the host of TV show Grand Designs, once specified the three things he looks for in a building – a big idea; how it responds to people and place; and some kind of uplift" (p. 499). The 'big idea' that Talvé (2011) proposes in her study is to consider libraries as sites of invention and that this might be the innovative 'uplift' that libraries have to offer society in the twenty-first century.

4.1.1 Observations: Devonport, Rānui and Waiheke Library

None of the three public libraries observed for this project are of a grand scale described in some of the literature, but each library still offers an aesthetic 'uplift' through their architectonic features. Waiheke Library has the largest entrance canopy and achieves a sense of overall scale and spectacle upon entering the open-plan, two-storey space. There is no second level. This sense of

scale, carried from exterior to interior, is augmented by the use of continuous vertical and angled support beams made out of lightly polished, unfinished whole tree trunks. In fact it is this award-winning use of sustainable wood, from the undulating exterior cladding carrying into the interior, which makes the Waiheke Library speak to a 'big idea' in respect to nature and the environment (NZ Wood, 2017). Furthermore, the whole library is considered an artwork made up of different commissioned artists' works, all of which are integrated into the building and its surrounds (Auckland Council, 2017).

Consistently, throughout the literature, there is reference to the importance of wood as a tactile, organic aesthetic that has been, and continues to be, significant in library designs (Binks, 2014; Black, 2011a; Edwards, 2011; Mehtonen, 2011). Epistemologically, the library reflects societies understanding of itself through architectural metaphor and this is how libraries will remain relevant in the future, by engendering a purposiveness through aesthetic design: "Thus, Kant concludes that, in architecture, utility, or in his own terminology "objective purposiveness," is always essential, but that the presentation of aesthetic ideas is also always some part of its beauty" (Guyer, 2011, p. 17). Architects Pacific Environments (2017) illustrate this combination of beauty and function when describing the use of the tree trunks:

The design draws on the imagery of books arranged under a canopy of pohutakawa trees as for its sculptural form, a concept that is strengthened by simple low maintenance, low energy sustainable design initiatives to provide a high quality user environment of enduring value (para. 2).

The Devonport Library also uses a significant amount of wood in its design, both exterior and interior, but does more in the way of using colour and tonal changes in the often vertical slats and large panels to demarcate particular spaces. In fact Devonport Library was runner-up to Waiheke Library for the same Timber Design Awards in 2015 (NZ Wood, 2017). The non-fiction space upstairs has more sombre, dark wood panelling and slats for its dividing walls, as well as on the sky-walk that overlooks the dark wall above the fireplace. The

downstairs area, however, is mostly warm, honey-coloured cladding and light plywood and this is particularly striking in the curved display wall by the main entrance, deliberately designed to create a “‘retail’ approach to the planning and display of the collection” (Athfield Architects Limited, 2017, para. 5).

Interestingly, both Waiheke and Devonport Library make use of whitewashed tongue and groove walls: in the former this wall runs the length of the right-hand side where the teen reading room, computer desks, council documents, toilets and, finally, a reading/study/utility room are housed. In the latter, it is used for the interior of the bookable functions room which overlooks the harbour, with hidden kitchen utilities and a projector screen in the ceiling. In both examples a maritime aesthetic is evoked, which speaks to the coastal locations of these libraries. Athfield Architects Limited (2017) engaged with the old Devonport Library footprint, which they were constrained to, by designing “a ‘verandah’ that addresses the street, park and sea” (para. 2). Both Waiheke and Devonport Library have portal windows that also speaks to a nautical aesthetic.

Rānui Library is quite different and is made of textured concrete and pre-rusted steel sheeting that relates to its urbane location on a busy main road in West Auckland. Despite the potential heaviness of such materials it too seeks to evoke an organicism of form through the branch-like patterns laser-cut into the exterior galvanised steel. There are also earth-like striations in the grey-toned blockwork that anchors the building to its location. This visual evocation of nature is carried into the interior through root-like murals on either side of the fireplace, in the library’s main atrium, and a lava-like half-circle rug on the floor.

Waiheke and Devonport both benefit from green spaces around them, but Rānui has to make this connection allegorically through artworks and design details commissioned from the artist Nic Moon:

I am interested in human ecology... how we survive as a species within the ecosystems of our environment. My work is often site responsive, incorporating my own observations with the human

stories and environmental history of a place (Whitespace, 2017, para. 1).

There is also a small walled garden to the right-hand side of the main space of Rānui Library and native trees planted on the main road on the other side. Even in an urban site as this, provision is made for green space.

Perhaps the most noteworthy 'big idea' at Rānui Library is the prominence it gives to children and families. While Devonport places the children's area in a small low-roofed space across from the main entrance, and Waiheke places it at the far end in a nook-like space, Rānui offers up its largest, open-plan space to its community of young, ethnically diverse, working-class families: "The replacement library is four times larger than its predecessor, designed to serve a growing community with a high proportion of young people and low income families" (Jasmax, 2017, para. 5).

Although each library is described as sustainable by their respective architectural firms: using natural light and ventilation, energy-efficient glazing, ethically sourced timber and environmentally conscious construction materials it is only Waiheke Library that boasts a determined effort to be an eco-friendly building that reuses roof water and has photovoltaic panels for power (Architects Pacific Environments, 2017; Athfield Architects Limited, 2017; Jasmax, 2017). Waiheke Library displays these credentials on an LCD television within the main space and it is this type of architectonic role-modelling that is considered increasingly important for libraries: "Since libraries, like schools, have the ability to change attitudes through architectural design, architects and their clients need to ensure that sustainable design is visible particularly in the main public spaces of library buildings" (Edwards, 2011, p. 193).

Having an overarching architectonic 'ideal type' for library designs, such as a declarative and educational sustainability model, may sometimes have to give way to practicalities. For example, Rānui Library is largely built with prefabricated concrete slabs, but the reason for choosing durability over softer,

more eco-friendly materials, such as wood, is noted by the construction company Naylor Love Construction (2017): “The team overcame the challenges posed by the small site, located on a busy West Auckland intersection, and the high water table, to deliver a superb new community facility” (para. 3). The balance of form and function will always be an issue with any building and in this case a high water table, and precipitous micro-climate, compelled the decision to build in concrete.

4.1.2 Data

The data from the articles points to a consistent theme of sustainability as a position for libraries to take. Terms and phrases such as ‘Eco role-modelling’; ‘Natural light’; ‘Natural ventilation’; ‘Sustainable’; ‘Natural textiles’; ‘Grass roofs’; ‘Wider ecology’; ‘Connectivity to outdoors’ all point to a connection to, and consciousness of, the environment (See Appendix 1 - Coding). The use of wood and organic materials, and an emphasis on sustainability, speaks to a new ethos for libraries to engage with: a typology that role-models environmentalism and connectivity with nature alongside our connectivity with technology.

4.2 An historical context

Perhaps the simplest example of an ‘ideal type’ in library architectonics is the Carnegie library. But it should also be acknowledged that Scandinavian interiors (light wood, low-slung ceilings and modular spaces) and the International Style (steel, glass, concrete and open-plan) have also permeated across library designs (Black, 2011a, Black & Pepper, 2012; Dahlkild, 2011). The problem with era-defining libraries is their lack of responsiveness to change and in many cases they are best retained as museum-pieces, carefully and expensively retrofitted or, dishearteningly, demolished and replaced (Prizeman, 2013; Schlipf, 2014).

Although Carnegie libraries may reflect the best intentions of their philanthropist namesake, as democratised spaces for knowledge, they tend to be historically constrained by their roles as book repositories and may also reflect colonial pasts that alienate some communities. When considering libraries as

sites of invention, collaboration and diversity one cannot help but assess historic libraries as too often 'unfit for purpose'. This is not to say they cannot be retained, but invariably the balance of sympathetic renovation, budgetary constraints and historical baggage must be weighed against changing community values, cultural diversity and a desire to shift away from the traditional aesthetics of library design.

4.2.1 Observations: Devonport, Rānui and Waiheke Library

In an age of cultural diversity, social media, and calamitous change, the library is a place that still allows "individuals the luxury of being alone in the company of others, to think and to dream" (Talvé, 2011, p. 501). This is certainly the atmosphere of each of the three spaces observed, which mostly retain conventional displays of books in their open-plan spaces. Interestingly, at Waiheke Library, these main stacks were static, with only the children's area having stacks on wheels. This is in contrast to the majority of the book stacks at the Devonport and Rānui Libraries, which tended to be on wheels for easy manoeuvrability across their respective spaces on different levels.

This notion of libraries as highly flexible spaces is not entirely new and the introduction of cafés and specialised service areas have been around in various forms since the mid-twentieth century (Black, 2011a). None of the libraries observed had cafés within them, nor galleries nor museums, but nonetheless they are located in busy areas with these types of amenities on hand. In the case of Waiheke Library there is an existing theatre, with adjoining gallery and restaurant, which have been visually tied to the new library's design through the same wood detailing for the canopy and amphitheatre-style landscaping.

Each of the three libraries maintain a balance between the amount of seating for personal devices, computer terminals, socialising and collaboration, alongside what users would readily acknowledge as the traditional presence of book stacks. All three libraries also make a point of using modern shelving systems that enable books on the top to lie flat, facing outwards to catch the

eye. This notion of taking marketing cues from the commercial sector is most evident at the Devonport Library with the curved wooden book display by the entrance, visible from the outside, along with two low, wheeled tables with books arranged on them as if for sale.

Furthermore, there is a white stone bench next to the service desk of the Devonport Library with tablets, fixed by cords, which look very similar to an Apple Store display. It is a matter of conjecture amongst the literature that libraries are happily moving away from their "Victorian paternalism" (Prizeman, 2013, p. 239) or "shared norms and assumptions of how a library should work" (Huvila, 2012, p. 715) toward a liberated space marked by uncertainty (Bennett, 2007), invention (Talvé, 2011) and commodification (Van Acker, 2010).

4.2.2 Data

Interestingly the data across the literature does not highlight books as an important asset for library spaces. There is some mention of their presence by incorporating new means of display, also noted in the observations, but one can conclude that the book collection has fallen far down the list of priorities for contemporary libraries, with a greater emphasis now placed on databases, Wi-Fi connectivity and personal devices. However, there are still words and phrases across the literature that continue the historic relevancy of libraries as important public spaces with social obligations to their communities: 'Civic space'; 'Social spaces'; 'Common space'; 'Third place'; 'Civic infrastructure'; 'E-citizen'; 'Cultural symbol'; 'Democratic' (See Appendix 1 - Coding).

4.3 Renewal or reboot?

In many instances libraries cannot be renewed effectively so they seek to reinvent themselves as new typologies altogether, such *Idea Stores*, *Discovery Centres* or *Do Spaces*. Perhaps virtual spaces, and indeed virtual reality, will become the new vaunted and contested spaces of the future. But in this respect libraries should be wary of engaging too soon in developing technology trends and instead show greater philosophical thought around what a 'library without

walls' might truly mean for society. So far a wholly bookless library is too new a concept to demonstrate how technological format shifts, such as virtual reality, will influence the 'libraryness' of such spaces.

The site-specific locations of the *Idea Stores* in the UK iterate a kiosk aesthetic and a convenience store atmosphere that reflects the busy shopping centres they inhabit. Although they have the tag-line 'Library, Learning, Information', they seem to eschew the calmer rhythms of a traditional library environment and embrace the transience of our already hectic lifestyles (Dahlkild, 2011; Black, 2011b). Another example of a truly genre-breaking space is the technology-driven (privately funded) *Do Space* in Omaha, Nebraska, which has no print collection at all, but instead makes available, free to the public, multiple floors of high-tech equipment (<http://www.dospace.org/>). Although this space still calls itself a 'community technology library', to state its availability as a public asset, the use of 'Do' as a noun speaks to the current social and political climate of compelled productivity, which does not always sit comfortably with the idea of the library as a sanctuary (Carr, 2015; Niegaard, 2011; Shoham & Yablonka, 2008).

4.3.1 Observations: Devonport, Rānui and Waiheke Library

In each case the observed libraries have been built new, not retrofitted, which has enabled them to engage with many of the recommended design concepts from Sannwald's (2016) *Checklist of library building design considerations*. Devonport Library is the most compelling example of redesign over reboot in that it was decided that the original library be demolished, with a new building placed on the same site. It benefits greatly from the surrounding park and mature trees, as well as its views out to the harbour. Rānui Library, however, was built on a large new site when the old building was deemed too small for the growing needs of the community. Waiheke Library was also built on a new location and given a much larger footprint.

For each library the opportunity was taken to create a responsive and sympathetic design through consultation with their respective communities and stakeholders (Architects Pacific Environments, 2017; Athfield Architects Limited, 2017; Jasmax, 2017). It was also an opportunity to build into the designs numerous power points and effective Wi-Fi zones as well as take new approaches to layout and materials. Each of these three libraries do appear to be future-proofed with their flexibility of form and provisions for technology, but these changes are subtle in an environment where “both librarians and library users share a set of norms of what a library is and how it works, and conform to a set of compatible practices that make the soft system work in practice” (Huvila, 2012, p. 731). Although Waiheke Library has a 3D printer next to the service desk and there are tablets next to the service points of the Devonport Library, all three library examples have not wholly shifted toward a technological typology as one might expect: the book still largely dominates the spaces.

What seems most unique at the Waiheke Library are the rear and side ranch-slider entrances, unmonitored and without security gates, trusting users to come and go as they please. Both Devonport and Rānui Library also have outdoor spaces, but these are relatively walled-in compared to Waiheke. This spirit of trust toward communal borrowing reflects the typology of the ‘free space’ that libraries occupy. Kant describes a *moral law*, or systemic unity, that *legislates* architectonics (Mensch, 2013; Damisch, 2016). Edwards (2011) elucidates this notion when he states that “it is important that the original library spirit is not lost in the pursuit of new media and new library audiences” (p. 212). There is a subtle but important difference between *borrowing* physical material and *taking* electronic data and libraries have a role to play in symbolising the morals and ethics around information gathering.

4.3.2 Data

A common theme running across the literature that seems to over-lap with the concept of the library as a third place, as a civic and democratic space outside of home and work, is the notion of the library as a non-commercial, free, contemplative ‘sanctuary’. A great deal of the language reiterates the library’s

historic presence as a monastic or spiritual space, built around the book as the fount of knowledge. This seems to persist in spite of what might be considered the influence of 'secular' technology (See Appendix 1 - Coding): 'Symbolic refuge'; 'Secularised temple'; 'Library ambience'; 'Warm and welcoming'; 'Cultural sanctuary'; 'Holistic'; 'Unique place' are some words and phrases that capture the essence of libraries as sites of trust and fairness when sharing information.

4.4 The devil is in the details

Each building typology is important and instructive when mapping and reflecting humanist behaviours and endeavours. As things change over time small details add up to affect the overarching philosophical understanding of architectonics. In the case of the library the transition from printed matter to electronic formats has been subtle and despite the development of digital libraries, the physical collection remains. Traditionally the book shelving would run the perimeter of the space and the stacks fan out from a panoptical centre, with window placements, furniture, fixtures and service points dictated by the print collection (Black, 2011a; Dahlkild, 2011). Today the library space is designed with communities of users in mind and specifically the online user, as seating and layouts move away from an emphasis on books toward a sense of self-service and discovery (Bennett, 2007; Meunier & Eigenbrodt, 2014; Talvé, 2011).

However, in the book *The Architecture of knowledge: The Library of the future* contributing architects Dijkstra & Hilgefort (2010) assert that "[t]he library of the Future *must* be an idea on how to help the book survive the onslaught of the new media" and they suggest a radical approach by liberating the book from the Dewey Decimal system, and thus book stacks, by utilising RFID systems to enable randomised book locations (p. 67). This conception of a new library interior places even more importance on furniture and interior layout to develop a challenging space in which books are stacked, boxed and scattered. Here the book is still considered important, but it is no longer used to dictate a restrictive architectonic system, it is 'set free', much like electronic information.

4.4.1 Observations: Devonport, Rānui and Waiheke Library

Curiously, all the libraries engage with some of what Fred Schlipf (2011) would describe as the “endless repetition of the same two or three dozen dysfunctional design ideas” (p, 227). For example, there are hard surfaces throughout each library that bounces the sound around and both Devonport and Rānui Library have atrium spaces next to their noisy entrances, which funnels sound upwards. There are also balcony and mezzanine spaces in both Devonport and Rānui that appear private, but carry sound and conversation around the building. Waiheke, on the other hand, has only one upstairs section for the public and it is in the children’s area: a curved flight of stairs to a Juliette balcony overlooking the space. Schlipf’s (2011) curmudgeonly article makes for entertaining reading when discussing the folly of library spaces, but he tends to focus too much on requiring the library to be a quiet, contemplative space over its role as a social space. Balance is provided at all three libraries in the form of closable and bookable quiet spaces.

In many respects the three examples do not represent radical change and retain the hallmarks of tradition, with uniform rows of book stacks, but they do have a sense of adaptability while retaining the architectural coding of libraries as cloistered environments. It is predominantly the books that symbolically recalls this historic, quasi-religious significance of the library as a contemplative space, but now the book has given some way to the architectonic cues of blended domestic and commercial decor. Although the atriums of Devonport and Rānui Libraries, with built-in gas fire places and comfortable couches, might be too noisy for Schlipf (2011) they point to a commercial hotel foyer archetype that suggests a transient domesticity for their community of users: they are reassuringly familiar in their placement and design.

Perhaps it is the details of contemporary interior design that gives users a sense of wellbeing – a combination of subdued and colourful furnishings with artworks and design features not attainable in their own homes. Each library has a sense of giving over the space to their communities through the placement of nooks and crannies and non-monitored spaces. Devonport Library has a second

fireplace upstairs in a low-ceilinged, cosy space with four unique armchairs encircling it. There is also the portal window that can act as a chaise lounge in the teen space, echoed by a small circular alcove at the floor level of the children's area. At Rānui Library there is a nook under the stairs with colourful puzzle squabs, hidden from view. Waiheke Library has a large, multi-coloured alcove seat recessed into the wall in the children's area, not to mention the Juliette balcony and spiral stairs overlooking it. Each library has bursts of colour – green lamps, pink chairs, dazzling striped squabs – set against muted greys and moss greens, along with warm woods and deep blacks. The only risk, in some respects, is each space appears to work with a template or prototype from an interior designer's handbook. There is room for even more adventurous design.

4.4.2 Data

The greatest common theme across the literature is furniture and fixtures (in relation to Wi-Fi and technology). Of course, this about having comfortable and aesthetically pleasing environments in which to access the information online, but it confirms that library architectonics is becoming more concerned with interior design, to enhance user experiences, than the traditional display of physical collections (See Appendix 1 - Coding): 'Furnishings'; 'Open-plan'; 'Refurbishment'; 'Interior design'; 'Interior decoration'; 'Designer furniture'; 'Nooks and crannies'; 'Flexible'.

5. Discussion

There may be a generational discomfort about losing the conventional understanding of the library space as a 'temple of knowledge', as symbolised through the printed book, but these sentiments are fraught when society is inevitably changing. Kant's insertion of architectonics into his treatise *The Critique of Pure Reason* supposes such transformations:

The idea of the architectonic has both the fluidity of human activity and the law-giving function of moral authority. It is both legislative, in the sense that it defines the human purpose of knowledge, and can

be transformative as knowledge accumulates and rearticulates (Purdy, 2011, p. 143).

Books as an architectonic frame of reference will change as libraries become spaces in which to learn about and engage with electronic information. The most important concept to retain and rearticulate, however, is the 'big idea' of the library space as having a *moral authority* for society to reflect upon.

The notions of invention and collaboration filter through much of the research and sometimes there is an uncomfortable tableaux of commercialism and entrepreneurship influencing public services, driving a different type of 'moral authority'. It is not only the architectural interior layout of new buildings that speaks to this, with hotel-like foyers and large artworks, but also the paradigm shifts in services around maker-spaces and the ubiquitous Wi-Fi that is shaping library architectonics (Khoo, Rozaklis, Hall, & Kusunoki, 2016; Latimer, 2011; Talvé, 2011). Alongside these redefining elements of library architectonics sits other humanist desires: to build ecologically and sympathetically to natural surroundings (Binks, Braithwaite, Hogarth, Logan, & Wilson, 2014; Edwards, 2011; Townsend, 2014).

Conceptually moving from print to digital, real to virtual, are the most recent developments in human knowledge acquisition but it is the collectivism of this knowledge that is fundamentally humanist and which forms part of the 'golden thread' that libraries must engage with. Kant (1961) asserts the organicism and universality of knowledge through architectonics:

Hence, not only is each system articulated in accordance with an idea, but once they are one and all organically united in a system of human knowledge, as members of one whole, and so as admitting of an architectonic of all human knowledge (A835/B863).

At the moment most libraries are in a transition phase as the aesthetic coding of books still articulates user behaviour in terms of quiet reflectiveness and a faith shared knowledge through borrowing.

Huvila (2013) speaks to the need to take care when libraries move away from print collections, to ensure that some type of 'frame of reference' is retained:

From a systemic perspective, the principal strength of libraries is in the internally (within the institution) and externally (by its users) shared understanding of the essential boundaries of the small world. [...] At the same time, however, the systemic perspective underlines the necessity of evolutionary change and an active maintenance of a common frame of reference (p. 731).

It is important for library spaces to advance a new 'frame of reference' to reiterate their overarching value to society: to articulate the building, not mercurial technology, as the best replacement to the symbolic role of the book.

There are metacognitive and philosophical concerns taking shape due to the growing use of personal devices – the true influence of which is yet to be fully realised. There are some articles beginning to debate the difference between reading print material versus electronic (Ackerman & Goldsmith, 2011; Mangen, Walgermo & Brønnick, 2013; Tveit & Mangen, 2014) and also reasons for some people to choose electronic over printed: such as reluctant, young, male readers (Tveit & Mangen, 2014). More broadly, however, there is concern over increasing technocratic influences on democratic societies with new spaces born from a desire to be progressive and to encourage technological, entrepreneurial innovation over social cohesion (Bickerton & Accetti, 2015; Trohler, 2013). Fortunately, the library space does not have to confront the politicisation of technology head-on, but can instead choose to maintain its evolutionary path as a civic space, with an architectonic 'moral authority' that is universally inclusive.

6. Conclusion

The significance of buildings should never be underestimated: "Architecture rivalled philosophy from the start by presenting itself as the overarching discipline that integrates other disciplines" (Purdy, 2011, p. 137). Using the term 'architectonics' throughout this project, representing both architectural design

and a philosophical concept, acknowledges the importance of thinking about buildings as metaphors and how much they influence and reflect society. Essentially it is about reaching into the humanist aspects of design – the moral, ethical, sustainable, communal and harmonious – when negotiating economic and technological volatilities. In order to withstand the contested grounds of politics and power libraries need to remain resolute in their openness to ideas, while also instilling in their communities a new architectonic ‘frame of reference’ or ‘moral authority’ to help bind and stabilise society.

6.1 A grounded theory

The majority of the data suggests interior design is the new trope for libraries to engage with but this alone is an unsatisfactory way to describe such vital spaces and should be considered part of a new ‘libraryness’. The importance of monumental architecture is also mentioned in a number of studies, but this too seems only part of the material equation. Karen Latimer (2011) predicts fewer iconic buildings in years to come. As the observations have shown, it is more about the details, of sustainable innovations and quality craftsmanship, than sheer scale. The proposed grounded theory, as drawn from the data and observations, to be used to develop a new library archetype in the twenty-first century is for libraries to embrace sustainability as the architectonic equivalent to the ‘temple of knowledge’ euphemism.

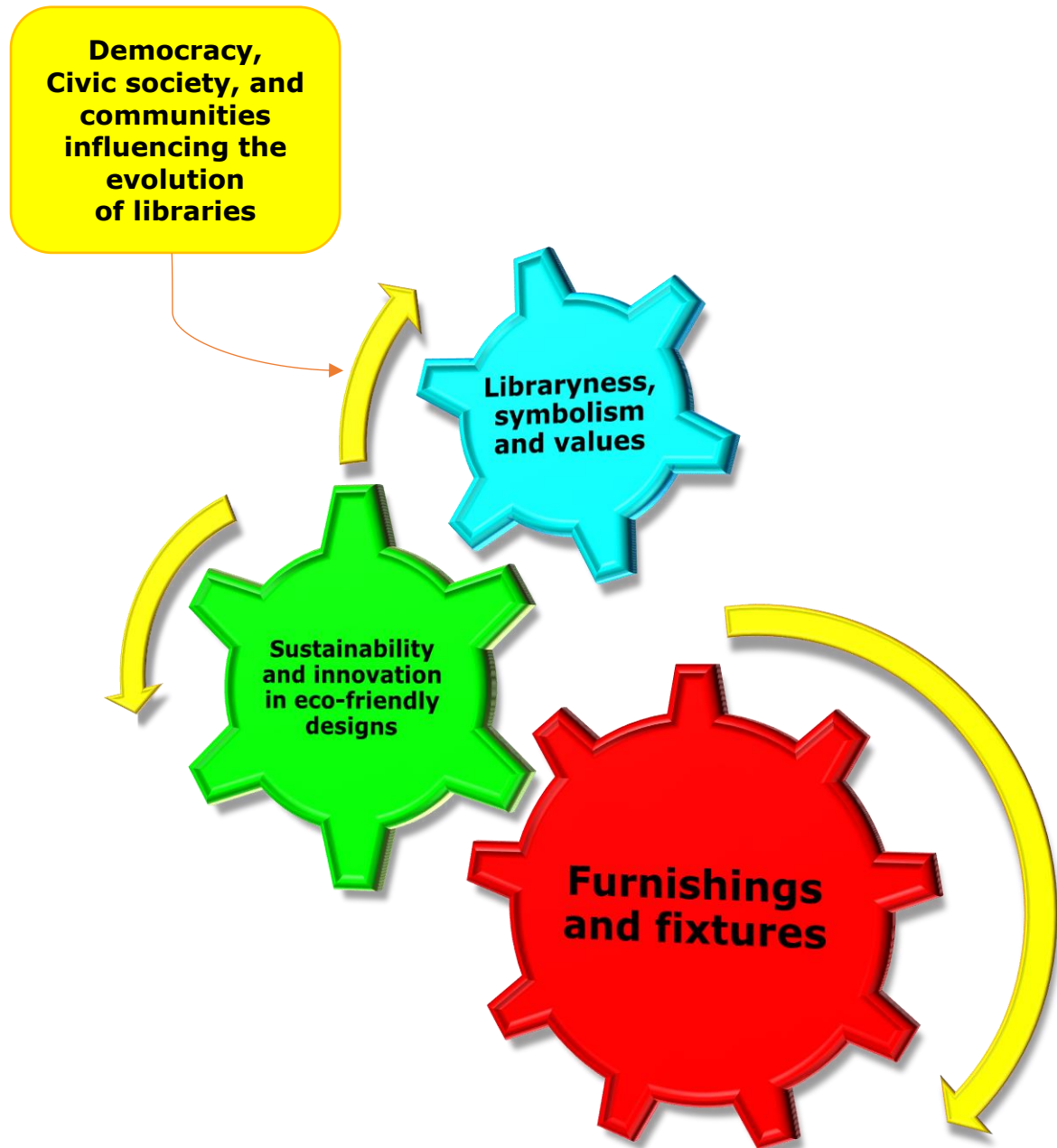
Timber, natural fibres, solar panelling and organic design should come to the fore to become the new overarching ethos of ‘libraryness’ to aspire to. Libraries should continue to evolve slowly, as evidenced by their critical history, and should retain the book as an aesthetic cue for as long as possible, if not in perpetuity, but the whole conceptual design of libraries, from within and without, should rest with a connection to the environment. This is already happening, but architectural designs can go further to engage with this theory – building around and for the natural environment in place of building around and for the printed book.

6.2 Implications

Becoming a sustainable beacon for communities will have cost implications and not every library will be able to engage with eco-friendly designs in their entirety. Future studies will need to engage with communities, stakeholders and library users to assess if a sustainable typology for library buildings is a worthy objective. There may be implications for staff and services with respect to the technological innovations that will work with an ecological 'libraryness' and how best to bring this knowledge and changes about in the library environment. Philosophically, there is an evolution of thought from Kant's *Critique of Pure Reason* to the more contemporaneous ideas, such as a *Critical Realism* viewpoint espoused by Roy Bhaskar (2015) which attends to the inter-relationships of individuals, society and the material world (Naturalism) and this could guide future studies. The thesis that libraries are critical building typologies, to be built to embody sustainability, is presented here from a philosophical standpoint, grounded in data gathered from a number of current articles. Future studies about architectonics warrant the collection of primary data from stakeholders. Library spaces have value in giving a context to technology and this should continue to be explored.

Appendix 1 - Coding

Coding – Graphic representation from data (see pages 42 - 47)



Bennett (2007)

Uncertainty

Value**Collaborative**

Services

Learning behaviours

Group study**Furnishings**

Hours

Marketing

Information consumer

Natural light**Learning spaces****Non-proprietary**

Collections shrinking

Technology liberates

Budgetary constraints

Binks (2014)**Sustainability****Refurbishment**

Education

Community**awareness**

Principles

Comfort**Role-modelling****Holistic****Natural light****Wood****Gardens****Learning spaces****Black (2011a)**

Optimism

Welfare State

Renewal

Better tomorrow

Functionalism

Repetition/symmetry

Egalitarianism**Open-plan****Moveable**

Specialised

Community

Innovative design

Warm

Furnishings

Details

Variety

Naturalistic**Wood**

Character

Form and function**Adaptable**

Social justice

Equality

Social symbolism**Social architecture**

Experience

Black (2011b)**Third place**

Carnegie-era

Cyber-society

Flagship building

Re-design**Libraryness****Open-plan****Democratic****Environment**

Virtual library

Social capital

Experience

Citizen-consumer**E-citizens****Civic****Furnishings**

Hybrid library

Formal

Safe

Playfulness

Communal**Sanctuary****Wood****Black & Pepper (2012)**

Sociocultural

Human behaviour

Material culture

Reflects society**Civic place****Welfare state**

Progress

Social control

Bureaucratic

Resources

Independent learning

Rebellion

Third place

Negotiation

Shared

Comfort**Solace**

Social engineering

Civic pride

Competition

Meritocracy

Utilitarian

Moral

Universality

Idealism

Commercial

Democratic

Compartmentalised

Network

Clean lines

Uncluttered

Furnishings**Well-lit****Open-plan****Modular****Community**

Marketing

Pluralistic

Interactive

Refurbishment**Sustainable**

Social forms

Metaphor

Eclecticism

Unpredictable

Monumental

Brown-Sica (2012)**Diversity**

Strategic plan

Learning commons

Stakeholders

Reinvented library

Practical

Egalitarian

Solutions

Engage your mind**Enrich your future**

Brown-Sica (2012)

Continued

Master planners

Charrette

Divergent learning

Specialty spaces

Collaboration

Communicative spaces

Flourishing

Wider ecology

Innovative

Furniture

Media

Experience

Colours

Audio-video

Group study

Learning and research

Buchanan (2012)

Learning commons

Openness

Collaborative

Sharing

Inclusive

Structure

Utility

Beauty

Democratic

Form and function

Recreational

Public knowledge

Consumer

Experience

Group work

Individual

Social interaction

User-centred

Knowledge exchange

Invention

Gathering place

Panoptic

Freedom

Carnegie-era

Central stairs

Characteristics

Truth-seeking

Flexible

Marketplace

Furnishings

Location

Functional

Natural surrounds

Cultural

Unique

Carr (2015)

Serendipity

Discovery

Information

architecture

User perception

Functionality

Repurpose space

Social spaces

Digital environments

Medium is the

message

Spiritual dimension

Creativity

Symbolic antithesis

Nostalgia

Filter bubble

Symbolic refuge

Inspirational

Carroll & Reynolds (2014)

Virtual and physical

Community learning

Creative

Recreational

Democracy

Civilisation

Collective memory

Symbolic space

Civic infrastructure

Standardised

Social enterprise

Egalitarian

Educational

Lifelong learning

Third place

Reader friendly

layout

Book shop

Collaborative

Trusted relationships

Knowledge economy

Anandasivam & Cheong (2008)

Physical and virtual space

Aesthetics

Seating

Diverse community

Library as a place

Innovative services

Contemplation

Ambience and

character

Creativity and

innovation

Interior design

Good physical

design

Quiet and dark

Noisy and light

Yin and Yang

Textured cement

Concrete columns

Industrial and raw

Metal benches

Good view

Flexible seating

Audio visual

Conceptual foundation

Grass roofs

Interesting vistas

Dahlkild (2011)

Enlightenment

Democracy

Open society

Beautiful and

admirable

Practical design

Librarness

Expensive

decoration

Grand Library

design

Access to knowledge

Education

Temple of

knowledge

Dahlkild (2011) Continued

Amphitheatre
Classical architecture
Innovation
Façade
Study over experience
Tastefully, tactfully, thriftily
Open access
Fan-shaped arrangement
Carnegie-era
Symbolic
Secularised temple
Furnishings
Functional
Cosy and homely
Cultural centre
Global village
Split level
Wooden ceiling
Garden setting
Unpretentious and modest
Sycamore wood panels
Down to earth
Minimalism
Flexible and modular
Colours
Natural light
Mezzanine
Library without walls
Architectural experience
Experience economy
Civil society
Third place
Environmental and ecological
World famous architects
Living room
Iconic
Sponsored space
Energy, light, water
Urban renewal

Edwards (2011)

Energy efficiency
Comfort and climate
Sustainability
Natural materials
Social harmony
Contact with nature
Metanarrative
Environmental
technologies
Altering typology
Role-modelling
Naturally ventilated
Biodiversity
Efficient glazing
Place of distinction
Atrium
Space as metaphor
Sunlight filter
Attractive and tree-lined
Social provision
Landscape design
Green roofs
Silent and noisy areas
Group work
Wood and natural fibres
Colour and decorative glass
Timber walls for acoustics
Comfort and wellbeing
Recycled materials
Flexible and adaptable
Book stacks
Climate change
Cultural, civic and environmental
Urban rebirth

Fox (2014)

Natural light
Café
Sustainable features
Wi-Fi
Comfortable
Third place
Civic society
Physical entity

Green Libraries

Interior decoration
More technology
Quiet carrels
Better furnishings
Electrical outlets
Brighter colours
Social hubs
Functionality over form
Connectivity to outdoors
Views
Multi-use spaces
Building safety
Sustainable timber
Role-modelling
Wood for warmth
Colour subjective
Modern design
Heritage buildings

Huvila (2012)

Holistic
Soft information system
Social order
Information seeking
Structuration
Tangible, physical space
Set of norms
Societal understanding
Practices and structures
Library system

Khoo, Rozaklis, Hall, & Kusunoki (2016)

Learning centred
Collaborative
Information commons
Supportive environment
Configurable spaces
Good public spaces
Open plan

**Khoo, Rozaklis,
Hall, & Kusunoki
(2016)**

Continued

Furniture

Study carrels

Common space

Social norms

Learning oriented
space

Book centred space

Busy group spaces

Solo study spaces

Preferences and
perceptions

User centred
architectonics

Latimer (2010)

Good design

Fixtures and fittings

Stylish furniture

**Warm and
welcoming**

Maximum daylight

Artworks

Sustainability

Single and group

study

Latimer (2011)

Fittings and fixtures

Gateway to knowledge

Natural lighting

Self-renewing library

Pure geometry and
intellectualism

**Welcoming and
spacious**

Flexibility

Symbolic value

Wi-Fi

Hybrid library

Cultural symbol

User focussed

Big society

Landmark building

Grass roof

Refurbishment

Media centre

Colour

**Ecologically
advanced**

Monochrome

Comfortable

furniture

Formal and informal

Nooks and crannies

Third place

Learning café

Building as marketing

tool

Wow factor

Reception spaces

Collaborative

Atrium

Art

Vital building type

May (2011)

Library as place

Behaviour mapping

Social-capital

Third place

Large bookstores

Community

demographics

Unique place

Spatial perception and
behaviour

Experience of space

Mehtonen (2011)

Aesthetic, social

and cultural

Finnish libraries

Standardisation

Classical architecture

Modern design

**Flowers, plants and
works of art**

Prestige

Local resources

Ambience

Designer furniture

Architectural

expression

Total design

Split level floor

**Indirect natural
light**

Civic culture

Organic

architecture

**Wood, red brick and
ceramic tiles**

Order, control and
efficiency

**Functionality and
flexibility**

Democratic

Modular library

Low ceiling

Individualisation

Symbolic

Volumes, forms and
shapes

Cultural landmark

Controversial design

**Multi-layered public
space**

Architectural

uniqueness

**Meunier &
Eigenbrodt
(2014)**

Cultures of learning

Recreation

Flexibility

Open plan

User-friendly

Diversified places

Celebrity architects

**Library as "people's
palace"**

Stakeholders

Library as destination

Knowledge hubs

Cafés

Bespoke facilities

Intellectual freedom

Democratic

Non commercial

Societal space

Quiet versus noisy

Urban development

Focal point

Group work areas

Meunier & Eigenbrodt (2014)
Continued
 discussion
Collaborative
 Diversity
 Face to face

Moorman (2011)
Citizens
 Book capacity
Seating
Public space
Cultural space
 Aesthetics
Landscaping
Lighting
 Shading
Expansion space
Inclusive
 Architectural monument
 Attractive and economical

Niegaard (2011)
Holistic library
 Self-service facilities
Knowledge society
Citizens
Cultural centres
Meeting place
Democratic society
 Open resource
Sanctuary
 Inspiration
 Experience
Cultural attraction
 Collections to access
 The new library
 Books and reading
Library as sculpture
 Cultural café
 Multi-media
 Interactive
 Vibrant space
 Lively entrance
 Lifelong learning
Iconic

Citizen services
 Wi-Fi
Shopping centre
Thematic design
 Generation of ideas
Library ambience

Prizeman (2013)
Functional ornamentation
 Victorian paternalism
 Carnegie-era
Social hierarchy
 Aesthetic popularism
 Architectural experimentation
 Mezzanine
Refurbishment
 Open stacks
Domestic aesthetic
Furniture dictates usage
 Stacks like supermarket isles
Library as venue
 Design methodology
Natural light
Function over form
Changing demographic

Schlipf (2011)
Safe and secure spaces
Comfortable
Flexible
Well lit
 Sky lights bad
 Atriums noisy
 Designer staircases impractical
Courtyards
 Indoor water features bad
Non-acoustic ceiling
Glass needs shading

Schlipf (2014)
 Architectural characteristics
 Carnegie-era
Historic woodwork
Natural light
Retrofitting
Functional needs
Heating and ventilation
Refurbishment expensive
Flexibility
 Post-modernist
Sympathetic design
Views outside

Shoham & Yablonka (2008)
 Distinctive architecture
Monumental
Library as attraction
Architecture expresses culture
 Authority and mastery
 Virtual library
Public funding
 Accessibility
Egalitarian
Cultural sanctuary
Meeting place
Cultural heritage
 Prestige
 Information explosion
 Expression of power
Functional need
 Library as economic resource
Cultural shopping mall
 Strong institution
Social interaction
 Tourist attraction
 Political interests
Symbolic

Talvé (2011)**Vibrant and welcoming**

Architecture influences behaviour

Place of invention

Create knowledge
Structuring concepts

Library as place

Colour palette
Facilitate learning

Social interaction

Cost-benefit
People's perceptions

Public lounge room**Civic life****Environmental construction****Demographic change****Eco role-modelling**

Public art works

Authentic information**Natural textiles****Flexible furnishings****Views of gardens****Mutual spaces****Transitional spaces**

Relationships
Creativity

Collaboration

Reinvention

Van Acker (2010)**Universal library****Information essence of library**

Information space
Documentation
Specialist libraries

Cultivated citizenry

Institutional influence
Information
untethered
Versatile cognition
Free access

Democratic

Productivity

Spatial design

Appendix 2 - Naturalistic observations

Devonport Library

Exterior:

- Most striking feature is the vertical, red cedar cladding all around the building, set against the mature tree park just behind the library.
- Asymmetrical design, large windows, large canopy across street frontage of the building, carrying around to the left-hand side. The right-hand side of the building has a curved 'prow' (with no canopy) facing the harbour.
- The far side of the building, overlooking the park, has a mix of window sizes and types, including a portal window.
- There are two main entrances: One central one that enters into a low-slung ceiling space and another one on the far left that enters into the main open-plan space. This space has the largest, full-height windows looking into it. The library enables two types of experiences for the entry points: low and cosy, large and spacious.

Interior/entrance:

- The low-slung ceiling is the underside of a sky-walk above. The ceiling is warm, honey-coloured panelling with perforations. There are open, full-height spaces to the left and right.
- To the left is a bookstore-like display of staff picks made out of light-coloured plywood. This display curves leftwards around the base of a stairwell into the main space and is visible through the picture windows.
- The children's area is straight ahead and the low ceiling is made up of a series of light, wavy wood sections intersected by white slats.
- To the right is a foyer/atrium area that, like the main space, is full-height and has couches around the built-in gas fireplace. Beyond this space is a lower-ceilinged white space that forms the sea-facing 'prow' of the building.
- The carpet is tweed-like, black and white and grey mixed geometric forms.

Services:

- There is no clear signage, but to the left and beyond the staff picks display there are two service points that sit within the main library space. Work rooms are behind, with windows, and different wooden wall features (dark and light wood slats and panelling) are above and to the left.
- The service points are computer terminals on white marble/stone benches facing sideways (not out) so assistance is carried out side-by-side.

Right-hand side:

- There is a Judy Millar artwork curtain that can be drawn across to block off this entire wing and is visible through the windows after hours once at full extension. In its closed position it is across from the fireplace, between the toilets and the elevator covering a wood-panelled wall.
- The atrium space looks up to the sky-walk with dark wood slats as extended balustrades giving a subtle sense of enclosure whilst letting in light from above. There is a glass balustrade for the second floor walkway above the lifts, artwork and toilets below.
- The main wall is black with a built-in gas fireplace and a recessed strip of two shelves. Barry Brickell orange, ceramic tiles run the length of these recessed shelves.
- The other artwork in this space is a large glass sculpture or 'chandelier' by Te Rongo Kirkwood.
- There are a two grey couches and three armchairs – light blue, dark blue, yellow – along with an ochre-coloured vinyl ottoman.

Farthest right-hand space:

- With a slightly lower roof, curved 'prow' and whitewashed walls, this feels like a completely new space. Can be closed off as a bookable space with recessed and locked amenities behind doors that carry the same vertical tongue and groove whitewash as the walls.
- There is a projector on the ceiling and a screen can drop down from a cavity within the ceiling.
- The windows are large to let in natural light and the desks are a light wood, medium size with hard black/grey chairs. There are some casual chairs on the perimeter (light and dark green).
- There is an alcove with squabs at the main curved corner looking out to the harbour. The room has a nautical feel.

Left-hand side:

- The main space is full-height of the building with a curved open staircase to the second floor that overlooks this space. Dark and light wood predominate.
- The fiction book stacks are all on wheels and lined up in uniform rows. Black with the top shelves angled to allow book covers to face out.
- The windows are full-height, divided by light wood beams with a continuous strip of seating along their bottom to the second main entrance.
- 60's style seating in green with light wood tables are dotted along the length of the street facing windows.
- Copper-coloured light shades are on seven lights grouped over by this second, full-glass entrance-way.

- Around the corner from this main space, through an open area where a dividing wall finishes and out of view, is a four-tiered amphitheatre space that looks out onto the small outdoor courtyard with ranch-slider access.
- Youth and teen literature is in a series of wall-mounted book shelves that carry up the tiered seating area. These are light, plywood.
- Main feature is a large portal window with a recessed seat and squab. On the opposite wall, where the steps go up to the next level, is a salon-hang of artworks from the old library. This wall is made up of large panels of light-coloured plywood.
- Squab seating is made out of brightly coloured striped material.

Upstairs:

- Low white ceiling with sunken lights. Feels much more like an office space. Two very small, bookable meeting/study rooms on the left at the top of the stairs (windows in these rooms overlook the amphitheatre space).
- Outside these rooms are computer terminals.
- This level contains non-fiction books, government and council documents and a row of magazine and journals shelved against the wall. The stacks on this level are black and similar to downstairs with display shelves at the top, but are static.
- A built-in desk with power points at desk level runs the length of the windows looking out to the park (this is the back of the library).
- At the furthest end, before the sky-walk, is a second fireplace with dark wood cabinets on each side (with art, ceramics and old books in them) and four unique armchairs (all in use). This is a very domestic, cosy space with a feature wall pattern and artwork over the fireplace.
- The non-fiction collection continues on the wide sky-walk that overlooks the downstairs atrium and the main space.
- To the left is the elevator and a glass-case reading room with some texts and a single white desk.
- Straight ahead and to the right, next to the curved staircase, is a unique double chair and a standard chair with small circular (light wood) tables for each. On the wall is a series of light plywood shelves with outward facing non-fiction books.

Children's space:

- Low-roof space with windows looking out to the park. Below the windows are a mix of shelving with books (light wood) and seating alcoves. One alcove is a plywood circle for children to sit in. Squabs are bright strips.
- The wavy cut plywood beams in the ceiling carry down to the floor as support beams and the white (and sometimes patterned) intersecting slats also run down the wall to look like shelves, but finish above the bookshelves.

- Black stacks in this space are lower than elsewhere and moveable, many are angled and moved as needed.
- There is a low white table and wooden stools, with grey bean bags and red, elephant-shaped stools, plus some red arm chairs.

Colours:

- Grey and black patterned (tweed) carpet throughout.
- Various tones of wood – black, dark, honey-coloured – but most prominent is light plywood (natural wood grain) throughout.
- Ochre-coloured ottomans, yellow, red, blue, pink, grey, green chairs of various types.
- Multi-coloured striped squabs throughout.
- Green table lamps upstairs.

Unique:

Glass sculpture in main atrium and the Judy Millar artwork/curtain; Barry Brickell artwork above fireplace; the amount and variation of wood colours and textures throughout, including the light-strike on wood struts and beams along the ceiling; copper lights; mature trees to the left and behind the site.

Rānui Library

Exterior:

- Situated on a busy intersection, main road. Corner site enables full view of two sides.
- Main feature is rusted metal sheets at top half of the building giving a bright contrast with the sky; creates a subtly angled roofline. The corner sections of these sheets are pierced/cut into organic, branch-like patterns allowing dappled light into the windows behind; this softens the bulk of the top-half of the building.
- The bottom half (and behind these floating sheets) is the supporting walls made of textured concrete with different aggregates to create two-tone, grey strata. Between the large supporting walls are large windows, full-height for natural light.
- On the main street side mature natives are planted amongst a decking, seating area.

Interior/entrance:

- There is a threshold space. To the left is a Wi-Fi/reading space behind glass. The main entrance is straight ahead, with services slightly to the right and a two-storey high foyer type space with a fireplace and artwork.
- The ceiling is low at the entrance because there is a sky-walk above.
- Library open-plan.

Services:

- No clear signage but an obvious service desk with many staff wearing leis and name tags.

Right-hand side:

- Two self-issue machines.
- Steps go up to a mezzanine space, with light wood handrail. Below the steps is a small nook, with jigsaw shaped, coloured vinyl mats filling the small floor space.
- Small vertical window looks into office space.
- Four computers dotted around this area.
- This main space is two-storey high with full-length windows. Automated windows and natural ventilation. The exterior rusted metal sheets help shield from direct sunlight and the carved tree-like shapes dissipate the sunlight.
- Long hanging lights and two large modern fans in the ceiling (off). The wind through the windows sent the hanging lights swinging into the window making a loud noise.
- There is a large concrete wall that carries inside the same exterior wall with dark and light grey aggregate strata blocks. The carpet throughout the library is moss-green geometric patterns.

Children's space:

- This main space on the right is the children's and young person's space with literature on moveable, black stacks. There is an outdoor area with native plantings and a pear tree. This outdoor space is fully fenced in.
- Small children's hard furniture and (abstract shapes) seating dotted around; Red/white; Orange/white; Red/orange; orange; yellow.
- TV in the corner on a purple stand.

Left-hand side:

- To the side of the main service desk is the full-height space of the main foyer-like space with a large white-walled protruding fireplace: On this

wall is five carved spade artworks. Either side of this fireplace are earth-toned abstract root-like graphics that echo the branch-like exterior cladding. The half-circle mat in front of the fireplace has a lava- and flame-like design to add a splash of colour.

- The chairs are a dark purple/plum colour and sofas are grey, with red ottomans. Tones not too bright.
- To the right of the fireplace there is a recessed bench with cushions; to the left this recess continues into a three-tiered 'amphitheatre' seating area next to a split-level area with stacks and computer desks.
- This second space is still within the open, full-height space of the main atrium/foyer area but is demarcated by the steps up into it where the windows overlook the main street. These windows are not full-height, but single storey and the rest of the wall above is white. The area contains young adult, teen literature on moveable stacks, along with magazines along the furthestmost wall continuing along from the fireplace (which is grey concrete).

Far left-hand side:

- A second entrance to the Wi-Fi/Reading space that carries around the outer perimeter of the building, finishing at the main entrance. Has a forest-green feature wall. There are tiered steps/seating in this space.
- A second set of steps (with glass balustrades) to the next level and also the grey block-work elevator shaft with wood Tukutuku panels running up the full height on one side and to the lowered roof on the other side.

Second level:

- At the top of the steps, to the right, is the fiction collection. The shelving is static, but not fixed to the floor, so can be rearranged if necessary.
- There are computers and reading tables, plus soft furnishings.
- Before crossing the sky-walk, with glass balustrades, there is a bookable reading room space with tables and whiteboards that can be closed off.
- The sky-walk looks down over the teen space, fireplace, service area and children's space.
- Across the skywalk are more computers and the non-fiction collection on more static, beige and black stacks.
- Toward the far-end of this area, next to the stairs that lead down to the children's space, there are tables and soft furnishings conducive to sitting and reading the non-fiction material.
- Two large modern fans.

Colours:

Moss-green carpet; Red, orange and yellow, green, blue, grey, purple furniture. Overall tone muted and earthy with aggregated grey blocks for texture, plain grey blocks, beige and brown wall mural. Some wood trim that is light, honey-coloured. Bright colours of furnishings dotted throughout.

Exterior cladding visible through glass and is rusty-red, but greatest impact is the filtering of light through the cut tree-forms.

Artwork integrated into building design:

Artists Nic Moon was commissioned to integrate art throughout the building so that it works in context rather than as an addition. The artwork is ecologically minded: <http://www.jasmax.com/work/Rānui-pataka-korero-Rānui-library/>

Nic Moon: <http://www.whitespace.co.nz/artists/nic-moon.aspx>

"I am interested in human ecology . . . how we survive as a species within the ecosystems of our environment. My work is often site responsive, incorporating my own observations with the human stories and environmental history of a place." Nic Moon

Unique features:

Solid corner presence and use of heavy materials is intentional. Integration of artwork and ecological aesthetic also important. Completely natural ventilation, no air-conditioning (hence cooling properties of concrete in relation to open windows and trapping of heat in winter when windows closed). Children's area given most prominent and largest space. A number of library staff identifiable by wearing of leis – connecting with Pasifika community.

Waiheke Library**Furniture:**

<http://www.instinctfurniture.co.nz/2014/10/waiheke-library-project/>

Artwork integrated: Building as artwork: Maoritanga

<http://www.aucklandcouncil.govt.nz/EN/planspoliciesprojects/CouncilProjects/Pages/waihekelibraryproject.aspx#highlights>

Exterior:

- Large windows and high windows (natural light)

- Lots of vertical, finished honey-coloured wood panels, cut to create undulating patterns
- The high stud ceiling carries out over the entrance as a vaulted canopy for a sense of scale and drama.
- Large, natural trunks (one straight, one angled) are used as load-bearing beams externally and internally.
- Text on the main exterior wall - carved in wood and etched on glass: "Lots of rain, lots of sun, lots of wind, lots of day, lots of night" – by resident Kazu Nakagawa.
- I was informed the whole building is an artwork (there was no artwork on the walls).

Interior/entrance:

- Maori kites at the entrance above the first display.
- The raw wood poles from outside are carried through internally, as is the vertical, undulating wood panelling (poles meet pressed leaf shapes in ceiling). The stud is about two-storey's high creating a predominantly singular, large space.
- Aside from large picture windows on the left side and back of building, there are smaller, open windows at the ceiling for air flow.
- Services are to the left and unique (smaller) spaces run down the right.

Services:

- Very sleek, modern self-service (three terminals) near lending desk.
- Obvious lending service area despite no signage.
- A 3D printer (maker space) set up next to the lending services area.

Right-hand side of the library:

- First recessed space has computers, desks, chairs and teen-interest magazines and books. No signage, but suggests a younger audience.
- Next to this is a fully enclosed small, glass cubicle space with a desk (and computer?) and civic-related material. No signage, but material is obviously council-related documents once in the space.
- These spaces are followed by a wall with discreet set of doors, one of which is to the public toilets (with symbolic signage) and the others appear locked/staff only... this wall has vertical 'tongue and groove' painted white and it hints at a nautical, seaside cottage. There is intermittent natural wood as per the rest of the space.
- The final space mirrors the first, but with no computers, and large study desks and the main magazine, periodical collection. It can be closed off with a glass ranch slider. There is also a basin with hot (boiled) and cold water available to the public.

Children's space at back:

- At the back of the library is the children's space on the left-hand side. The right-hand side is a ranch-slider exit/entrance with a large sofa looking out at the view.
- The children's space is not closed off but there is a recessed reading nook and a circular staircase leading up to a Juliette balcony looking into the children's space. Most of the books are on the outer walls with one moveable stack on wheels. There is a unique circular window to the outside.

Left-hand side of the library:

- Soft furnishings with moveable recharge stations (<http://www.instinctfurniture.co.nz/product/hitch-recharge-station/>)
- Ranch sliders open out to an amphitheatre-type space with seating and a canopy cover

Colours:

Grey; grey-blue (ceiling); light, natural wood; white (walls, tables, hard chairs). Carpet is grey/beige with some blue.

Squabs: bright red and orange, blue, beige.

Soft furnishings (main furniture): Turquoise, orange, blue, grey, coloured stripes, red.

Children's area: doughnut squabs (vinyl) and nook with large built-in chair: red, grey, yellow.

Orange acetate and natural, raw wood on Juliette balcony.

Unique features:

Five large industrial (aeroplane-like) silver fans highly polished; speckled stone slabs for flooring; undulating ceiling in soft grey-blue; eco-building credentials publicly displayed with LCD TV showing energy savings; Building as a total artwork is an important theme. Portal window.

Appendix 3 - Memos

Memo 1

The library is a humanist architectural space – is it the presence of the book? Is it the atmosphere? Is it the history? The library originates from monastic spaces but is now a secular, inclusive space.

Fostering abstract thinking – doing so as a space (more can be done here – libraries can be more radical... may need to be. Re: Lebbeus Woods' theories and concepts to challenge human complacency).

Presence of books may carry cultural/colonial baggage. What of oral traditions? A library without books, but full of audio/video a new kind of library – see thesis by Gray (2011).

Carnegie libraries willed themselves onto the landscape and the colonised cultures. New buildings can do more than that – architecture as metaphor is crucial.

Memo 2

Grand designs does not mean scale but there has to be a 'big idea' for each library (across libraries) and that means idiosyncratic spaces; challenging spaces. Get the space right, then think about what to do in the space to reflect its idiosyncrasies.

Cannot talk too much about beauty and aesthetics. Black's (2011b) study shows that opinions vary too much with regard to aesthetics (hence use architectonics). Even those who claim to have no opinion on style soon begin to say what they don't like.

This is why this project has wanted to avoid the issue of tapping into what people want by taking an overview of the literature and the spaces themselves.

Next project would be on the services and the interactions between librarians and the clients/communities/patrons. This has to form part of the debate as these elements require physical spaces unless libraries were to take a call-centre approach for the digital library and everything is handled remotely.

Memo 3

Innovation keeps coming up, but what people expect libraries to be (core users) may be flummoxed by innovations that don't fit the 'Libraryness' paradigm. What innovations? Usually tech-related, such as screens, labs, e-resources.

Trying to look at the paradigm shift from an architectural/philosophical perspective (architectonics) so that the architecture maps onto the body the innovative changes and not all of these are electronic – Devonport has an indoor amphitheatre space; Waiheke has an outdoor one... tells the user that it is a place for oral communication and community presence: That is architecture subtly influencing behaviour.

Innovation can be reinvention of the old in new contexts: oral traditions in the 21st century.

Memo 4

Serendipity in the stacks (Carr, 2015) is a phenomenon of searching the physical collection. Different to 'click-bait' of the web, Web-surfing. Anonymity of browsing books that one does not end up borrowing, but also the 'happy accidents' of coming across other titles.

Comfort of space and furnishings and user-oriented design (to please) creates a non-challenging environment. But don't need to go back to the panoptic shelving layout with librarian at the middle.

Books invoke a sense of knowledge and authority. Hush of a library does the same. Are we risking giving this away?

Libraries must hold fast to books, even if use is declining. Things come back around. Vinyl records outsell downloads in UK (2016) and Kodak is bringing back Ektachrome transparency film for analogue cameras for 2017 (and considering bringing back Kodachrome). Cyclical and new generation has nostalgia for the past.

Carr (2015) warns against sentimentality and resisting change (or holding onto the traditional perception of the library and book stacks and serendipity). Not sure I wholly agree. Everyone favours progress and technology, but to what end?

Memo 5

Libraries don't need to adapt to remain relevant. They are relevant because they adapt.

Libraries as organic spaces (See *Kant's Organicism* by J. Mensch) and the presence of wood is an aesthetic cue that is prevalent in literature. Metal and concrete less appealing. Too much heavy wood (re: traditional oak and built-in shelving not preferred either as too monastic/cloistered and church-like and so alienating for a number of people).

Pavilions are egalitarian spaces – also speaks to different 'blocks' or units (of habitation or otherwise) and this is valuable for libraries to respond to diversity and openness and inclusion... inclusion a new way of saying 'open'? See *Noah's ark: Essays on architecture* chapter 'Ledoux with Kant' p. 127

How far to discuss the library in terms of pure geometry? See p. 125 for an explication of *tabula rasa* – the 'first experience' or 'blank slate' approach to architecture through simple, universal forms. The 'spiritual self' (Kant) projects meaning onto the space.

Quote: "Yet architectonic thought, even if it aspires to autonomy, does not operate in the register of speculative reason. Its aim is not knowledge in itself; it has a task to accomplish, a work to realize, a world to construct" (Williams, 2016, p. 126). Pages 126-128 has some important points to make including Rousseau's *The social contract* and Kant's pure practical reason as it relates *moral law*.

Reject the façade (p. 126).

May look at Anthony Vidler's *The Architectural Uncanny* and his discussion of the cyber influence on architecture but must remain grounded to the discussions of articles already read and not get too 'heady' with architectural theory.

Memo 6

If books were the quasi-religious (aura) that defined *libraryness* in the past then nature, natural surfaces, natural light, ecology and eco-friendly buildings connected to green spaces will be the *libraryness* of the future.

Wood *and* the trees!!!

The digital space is not the epistemological realm for libraries to self-renew and re-conceptualise. This space is too unstable and will overwhelm the library as a site (even when virtual) that is credible.

Therefore the physical library must accompany the digital library and should never be untethered, but the physical space cannot become the physical manifestation of the virtual (i.e. entertainment, click-bait, 'alternative facts', social media).

Libraries will not be able to pull up the electronic world and must not be pulled down by it.

Mainstream media collapse, uncertainty (and demise?) should act as a warning. The library as an anchor for trustworthy information and facilitating sound, democratic knowledge – important for society – should be unaltered by faddism and neoliberal bean-counters.

Memo 7

A library building is still important to have even if there is a digital version.

What's in a name?

The library is a crucial trope and needs to be retained but if books disappear altogether (and little chance that will happen – even for nostalgic, sentimental or novelty value reasons some books will remain).

The issue is the space having significance – a place to gather, but what makes it appealing? Kant's organicism. We are creatures who need to be in the world.

Natural materials age better than inorganic materials. Steel tube, aluminium, Formica, with flat roof designs have aged poorly (International Style fails), see Black (2011a).

Memo 8

Is a digital library still a library? Of course it is... you are using the all-important name 'library' – the baggage is good baggage. Libraryness carries on.

Do Space? Is this really a library? Is it too different? Is it a green building? Is this the new question to ask? A green building is 'in tune' with nature.

Do Space sounds like work. Libraries should be relaxed (personal opinion).

Organic architecture and sustainably sourced materials, inside and out. An overt connection to nature, the environment and ecology is what is needed to ground the library, justify its existence in relation to technology. To compliment technology? Tame it? Oppose it? Contextualise it against (organic) humanism?

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