

Exhibition Design: Bridging the Knowledge Gap

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ABSTRACT This article considers the changing role of exhibition design and its contribution to interpretation in the increasingly audience-centred museum environment. By examining the case of the Museum of New Zealand/Te Papa Tongarewa, this article considers the designers' creative role in framing the problem and connecting with the needs and desires of potential users to reshape both the institution of the museum and visitors' experience. This article concludes with a preliminary map of the key interpretive design considerations of concepts, contexts and narratives as a guide to the exhibition design process in contemporary museums, and for those who seek to bridge

the gap between expert knowledge and public audiences.

This creative interdisciplinary role for design in bridging the gap between growing expert knowledge and satisfying an increasing desire for democratic participation in its dissemination can be seen as an important cultural role for design and one worthy of further critical consideration.

KEYWORDS: exhibition design, interpretation, user-centred design, museums, narrative

Introduction



The 1851 Industrial Exhibition is a conventional starting point for a design history that locates the origin of design with the culmination of the Industrial Revolution and the emergence of mass consumption. This display of the efflorescence of industrial production and imperial expansion was spectacular, ephemeral and popular, and parallels have been drawn to today's shopping mall. Paxton's inflation of the humble glasshouse to a triumphant Crystal Palace and subversion of the natural with the artificial changed the way people viewed commodities, and initiated a vital international forum for the nationalist exhibition of industrial and cultural production. However, Greenhalgh (1988) has also suggested that it was a defining moment in terms of design criticism, and the critical assessment of British design was that it lagged behind its European counterparts.¹ The resultant reorganization of design education in terms of the South Kensington system sought to bridge the gap between art, craft and industry. Central to this approach was the development of a teaching collection for critical study, and its physical legacy can be found in the Victoria & Albert Museum today. However, a less tangible result of these isolated collections was a preoccupation with the form of artefacts at the expense of interpretation of cultural context – an issue that has troubled both the fields of design and museology and their respective practitioners.

Given this relationship between museums and design history and education, it is surprising how little attention has been devoted to exhibition design. This can, in part, be attributed to the professionalization of design throughout the twentieth century which, alongside the positive definition and promotion of quality standards, has also seen the segmentation and differentiation of the design field. As the professions of industrial and graphic design sought to distance themselves from their architectural parent and establish their identity through professional organizations, they correspondingly relinquished their architectonic role. Exhibition design, by contrast, has been a catholic occupation, drawing on versatile innovators from a range of traditional trades and media, artists, graphic, industrial

and interior designers as well as architects. The diversity of skills and their relevance to individual exhibitions combined with the complex requirements of preservation and conservation have also meant exhibition designers are accustomed to working in project-oriented multi-disciplinary teams. In addition, their relationship with content experts in the form of curators has tended to be more collegial and collaborative than simply client-oriented as is the case with trade shows. If the exhibition designers are employed within a particular museum they are also more likely to have intimate knowledge of their audience. All aspects of a particular exhibition communication problem are ultimately addressed in terms of a physical gallery space, and it is this common ground of curator, designer and audience that demands a coordinated approach to planning, process and public exhibition.

Changes in the field of museology² have also provided greater opportunities and responsibilities for exhibition designers. The demand for the democratization of institutionalized knowledge in response to charges of elitism has required a more sophisticated approach to communication design that promotes a variety of audience interactions³ and seeks to integrate intelligent information design with specific cultural references at both the exhibition and institutional level.⁴ The increasing technological complexity and cost of exhibitions has led to the growing participation of designers in the exhibition planning process. Lastly, political calls for increased visitor numbers to justify public expenditure have required that greater attention be given to the requirements of current and prospective audiences. All these factors make exhibition design both a dynamic field of design practice and a site worthy of further inquiry.

It is revealing that one of the most insightful articles about exhibition design was written not by a designer but a librarian. For this librarian, whose job it was to collect, systematize and make knowledge public, implicitly recognized the importance of design in both the organization and communication of exhibitions, and, most importantly, encouraging receptiveness to new ideas. Jim Traue's (2000) article in *Design Issues*, 'Seducing the Eye: Exhibition Design in France and Italy', is written from the perspective of an experienced head of a national research library, but ably demonstrates Herbert Simon's dictum that 'Everyone designs who devises courses of action aimed at changing existing situations into preferred ones' (1996). He perceptively recognized the ability of exhibitions to democratize the rare and precious holdings of New Zealand's Alexander Turnbull Library which he was responsible for safeguarding. Having identified a wicked problem in the exhibition of books (where the intellectual content is concealed within the covers and there is little recourse to what Greenblatt (1991) terms 'wonder'⁵), his articulate essay is carefully framed as a pilgrimage. This narrative strategy is calculated to seduce the reader into accompanying the author to the heart of the problem of a 'minds-on' exhibition, and to explore exhibition

design principles applied by international museums and provincial boutique stores alike. Traue understood the designer's mantra that an exhibition is not a book with a singular linear narrative, but, more importantly, that any exhibition still requires an engaged audience who are willing to make sense of the patterns established by the authors, be they curator, designers or store owners. Their common goal is to entice people to explore and share in their discoveries – to provide a cognitive map but not to predetermine the route.

Design + Museums

Although museum exhibitions have evolved considerably over the last century, the value of design to the exhibition process has, until recently, received little acknowledgement. Yves Mayrand describes exhibition design as a relatively young profession (2002) in his chapter on 'The Role of the Exhibition Designer' in *The Manual of Museum Exhibitions*. While his contribution signals that the designer has now secured a place in the museum exhibition process, the significance of design practice and theory has remained largely unexamined in both the museological and design literature.⁶ In response to this lack of critical analysis, this article considers the changing role of exhibition designers and design's contribution to interpretation and the entire exhibition process⁷ in the increasingly audience-centred museum environment.

Museums have historically been regarded solely as institutions of knowledge and storehouses for the preservation of cultural heritage.⁸ Collection objects and the availability of display space have traditionally determined the exhibition layout, while design has been limited to serving the needs of the collection curator and content expert. However, over the latter half of the twentieth century, the museum's role as the exclusive keeper of knowledge has been challenged in favour of a more audience-centred approach to exhibiting. Passive custodial preservation of objects in museums has given way to more active engagement with the peoples and living cultures of which these objects are a part. New museum theory is explicit about the museum's role in 'decolonizing, giving those represented control of their own cultural heritage' (Marstine, 2005). This is reflected in the International Council of Museums' (ICOM) evolving definition of a museum. In 1961 ICOM described a museum as 'any permanent institution which conserves and displays, for the purpose of study, education and enjoyment, collections of objects of cultural and scientific significance' (International Council of Museums (ICOM), 2009). By 1974 this definition was broadened to include a greater acknowledgement of the museum's role in society and its duty to communicate with its audience:

A museum is a non-profit making, permanent institution *in the service of society and its development, and open to the public, which acquires, conserves, researches, communicates, and*

exhibits, for the purpose of study, education and enjoyment, material evidence of man and his environment.⁹ (International Council of Museums (ICOM), 2009) [authors' italics].

With minor additions in 2007, this definition still stands today.

The institution of the museum has thus become increasingly open to diverse interpretations of knowledge and more involved in sharing these with a variety of public audiences. As Lisa Roberts explains in *From Knowledge to Narrative* (1997), there is less focus on the object and more emphasis on communicating meaningful information to visitors: 'Once a seemingly straightforward matter of displaying collections, exhibition can now be viewed as an eminently interpretive endeavour: not just the information exhibits present is subject to multiple interpretations, but the very act of presentation is fundamentally interpretive.' An exhibition curator is still responsible for the collection and research of the exhibition's content, but increasingly draws on the interpretive abilities of communication designers to ensure that the exhibition audience can access, interact with, and form their own interpretations of the exhibition's message. While developments in museum theory, policy and curatorial practice have been subject to much critical analysis, correspondingly little attention has been given to the significance of design, not simply in terms of communication but as part of the wider creative research process necessary to produce challenging new museum exhibitions.

Greater community awareness and involvement has also replaced the traditional absolute reliance on institutional scholarship and there is an accompanying 'trend towards acknowledging that exhibitions are particular interpretations rather than universal truths' (Wallace, 1995). Where once the curator was the sole keeper of expert knowledge, the contemporary exhibition process has become a collaborative effort involving curators, designers, educators, technicians and, increasingly, the audience themselves. Exhibition design practice has responded enthusiastically to this opportunity and has grown throughout the 20th century. The evolution of the design discipline from a focus on objects and symbols to more complex orders of interactions and systems (Buchanan, 2001, 2005) has made it eminently suitable for the complex communication problems faced by contemporary museums. In practice, the designer's role has evolved from technical servant of the museum's curatorial intentions to active participation in all stages of the contemporary exhibition process – from concept to construction.

Concept to Concrete in Aotearoa New Zealand

This paradigm shift is perhaps best exemplified by the design of the Museum of New Zealand/Te Papa Tongarewa, where architects and exhibition designers were instrumental in reshaping the concept of New Zealand's national museum. In 'Te Papa: Reinventing the Museum', William Tramosch (1998) outlines the specific local need

for a new building to replace the inadequate National Museum which was built in 1936 and the changing attitudes to, and understandings of museums in the subsequent half-century. Just as New Zealand embarked on a radical economic restructuring from a protected social welfare state to a deregulated market economy in the mid-1980s, a new national museum was proposed that would explore national identity in a forum that owed more to the competing spectacle of international industrial exhibitions and shopping malls than the taxonomic compartmentalization of the traditional museum (Kirshenblatt-Gimblett, 2002).¹⁰ In *Destination Culture: Tourism, Museums and Heritage*, Kirshenblatt-Gimblett argued, 'Having a past, a history, a "folklore" of your own, and institutions to bolster these claims, is fundamental to the politics of culture: the possession of a national folklore, particularly as legitimated by a national museum and troupe, is cited as a mark of being civilized.' In New Zealand, Tramposch explained, 'the process of listening and responding to national trends, to bicultural needs, and to a larger international museum community' (1998) shaped a remarkable process that began by identifying the problem of why museum attendances were declining.

After researching international best practice in museums and related industries, a Project Development Board was established in 1988 (see Figure 1). After consultation with Boston museum planning firm E. Verner Johnson & Associates, the Board initiated two parallel but independent design processes, involving an international architectural competition and the appointment of Ralph Appelbaum Associates¹¹ to develop an Exhibitions Concept Plan (ECP). The architectural competition was premised on the selection not of a design, but of an architect and design team who possessed the conceptual ability to 'express the bicultural nature of the country, recognising the mana¹² and significance of each of the two mainstreams of tradition and cultural heritage and providing the means for each to contribute effectively to a statement of the nation's identity' (Anon., 1989). Of the 37 entrants in the first stage, only 5 of a possible 10 progressed through to the second round in 1990. They were provided with a more substantial two-volume brief made up of general information on the site and its context (Volume One) and a 156-page volume of technical studies (Volume Two). Volume One again stressed 'the integration of Maori belief with the natural environment and its spiritual significance' (Museum of New Zealand Project Office (MoNZPO), 1990) as a key architectural challenge. While acknowledging biculturalism as a founding principle of New Zealand, the expectation was plainly stated that '[t]he Museum of New Zealand must satisfy the expectations of *all* New Zealanders that it will in a recognisable way reflect our cultures – our collective memory and future' (Museum of New Zealand Project Office (MoNZPO), 1990). According to one of the assessors, those involving significant international practitioners struggled with addressing this complex local cultural context (Hunt, 1998).

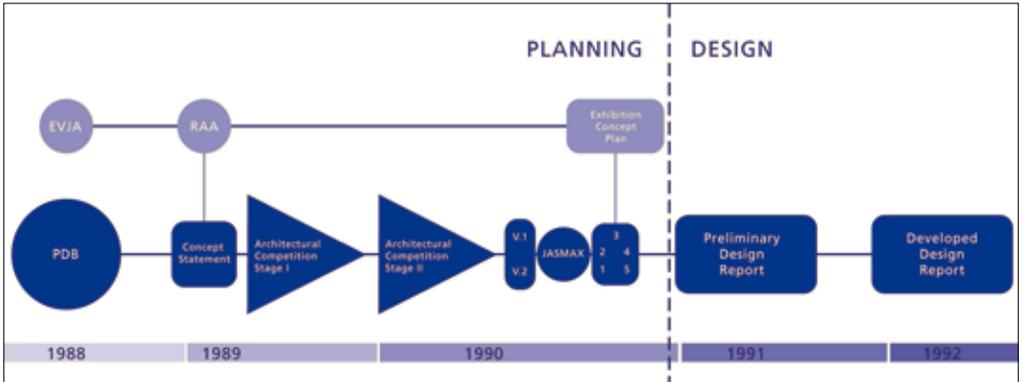


Figure 1

The architecture and exhibition planning, competition and design process of the new Museum of New Zealand, Te Papa.

New Zealand architectural firm JASMAX's¹³ design was selected as the winning concept. Judge John Hunt identified three distinguishing features of JASMAX's design: 1. The Great Verandah or Papa Watea, a space of mediation and encounter that separated and connected the two parts of the museum; 2. The decision to give architectural precedence to the tripartite institutional framework over the fourfold curatorial division (see Figure 2); and 3. The assertive relationship to the harbour and sea established by the siting of the marae¹⁴ on a promontory (Hunt, 1998, p. 16). This was an intelligent, and ultimately winning response to the complex brief which, given the independent development of an exhibition plan, provided a flexible matrix for the inevitable re-design with the availability of more clearly

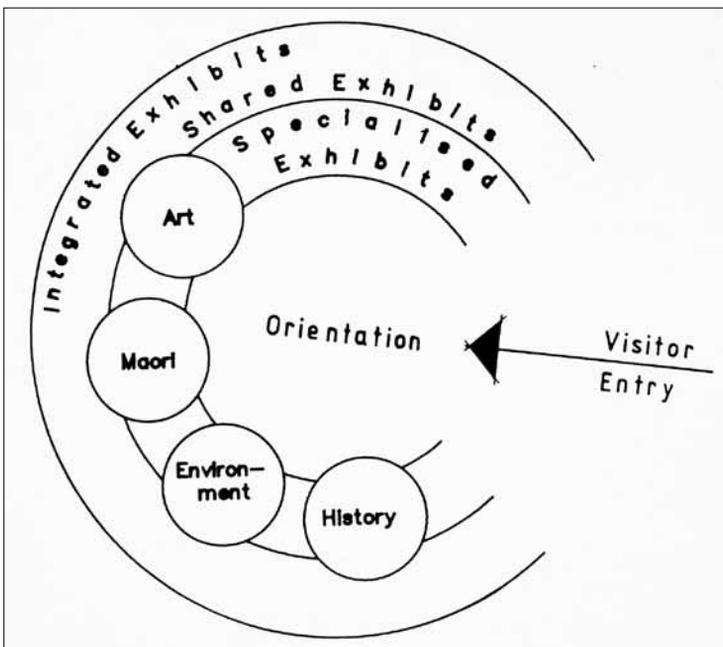


Figure 2

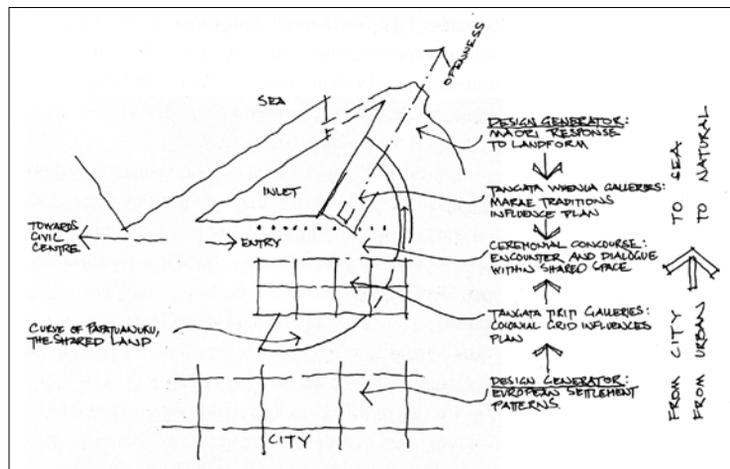
The four curatorial departments of Art, Maori, Environment, and History as set out in Te Papa's architectural competition documentation (*Architect Selection Competition: Stage 2 Documents and Volume 1 General Information and Instructions*; 01.1990 MU000477/001/0002, Museum of New Zealand Te Papa Tongarewa).

defined internal exhibition parameters. Given the critical uncertainty of a separately developed ECP, it is the second feature of JASMAX's design that proved significant in terms of how JASMAX framed the problem of a new bicultural national museum that responded to changes within museology.¹⁵ In *How Designers Think*, Bryan Lawson (2006) provides a useful model of design problems that explains how JASMAX reconciled the tensions of biculturalism, multiculturalism and museological function within the brief.

Lawson (2006) discusses design problems in terms of 'constraints', by which he means 'issues which must be taken into account when forming the solution'. He identifies key generators of internal constraints as designers, clients, users, and legislators, and explains the importance of identifying key constraints in framing the design problem. He also makes an important distinction between 'radical' and 'practical' constraints, where '[t]he radical constraints are those that deal with the primary purpose of the object or system being designed'. In terms of their winning design for Te Papa (Figure 3), JASMAX adopted the institutional tripartite division encompassing Tangata Whenua (those belonging to the land by right of first discovery), Tangata Tiriti (those belonging to the land by right of treaty) and Papatuanuku (the common land) as the radical constraint, thereby embedding biculturalism in the design. This involved relegating the fourfold curatorial division to a practical constraint, in the knowledge it would be addressed by the ECP.¹⁶ It can also be regarded as a strongly user-centred design that does not give pre-eminence to the collection and preservation functions of the museum at the expense of balanced bicultural representation and visitor experience.

The ECP was approved three months after the appointment of JASMAX and, according to Appelbaum, '[t]he result is a dynamic, living institution. It will reach out to its audience ... and encourage

Figure 3
New Zealand architectural firm JASMAX's winning concept plan that substituted a tripartite cultural model (diagram by Jasmx Design Director Pete Bossley; Bossley, 1998a, p. 19).



people to use museums in new and more varied ways than in the traditional museums of the past' (quoted in Anon., 1990). More pragmatically, it resolved the translation of the four curatorial collections into dedicated, shared (two departments) and integrated exhibition spaces oriented around a central core or *ihonui* (Figure 4). While this acknowledged the integrity of individual collections and their differing curatorial requirements, it signalled a clear intention to ensure exhibition experiences were holistic and not overly determined by functional institutional compartments. Dialogue between the curatorial departments was supported by the zones and areas of adjacency, particularly between Maori and History to enable the presentation of a bicultural Aotearoa New Zealand history. It also provided a significant challenge to the architects, who had physically separated the Tangata Whenua and Tangata Tiritiri exhibition spaces, providing a symbolic entry concourse and meeting place (Papa Watea) as an architectural expression in their competition proposal. JASMAX developed their design concept over the next two years to accommodate the ECP and a strict Value Management Audit imposed by the Government. The symbolic architectural gesture of an outdoor meeting place was internalized into a wedge space that 'cleaved' the building, both separating and drawing together the two cultures. In place of the Papa Watea was a bisecting wall symbolizing the concept of Papatuanuku and the nearby earthquake fault line (Figure 5), which aligned with the initiating tripartite primary

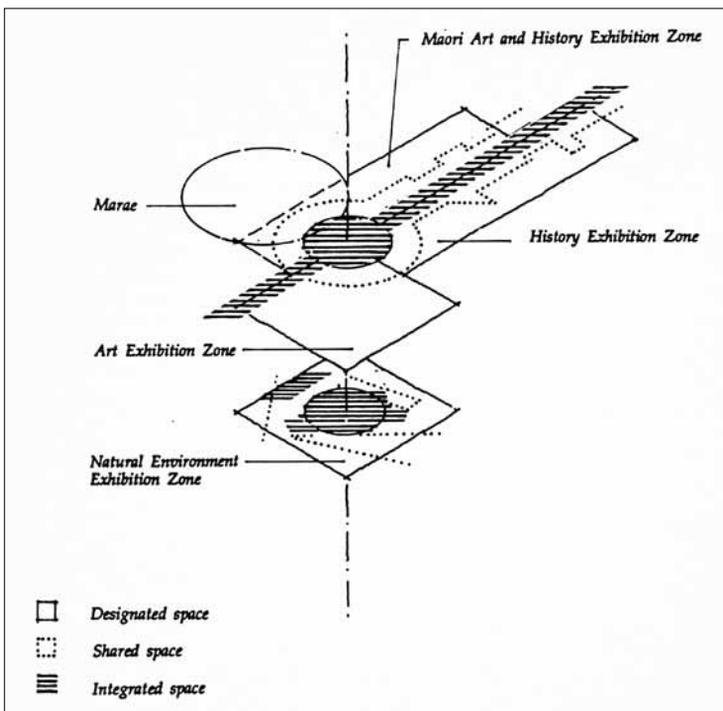
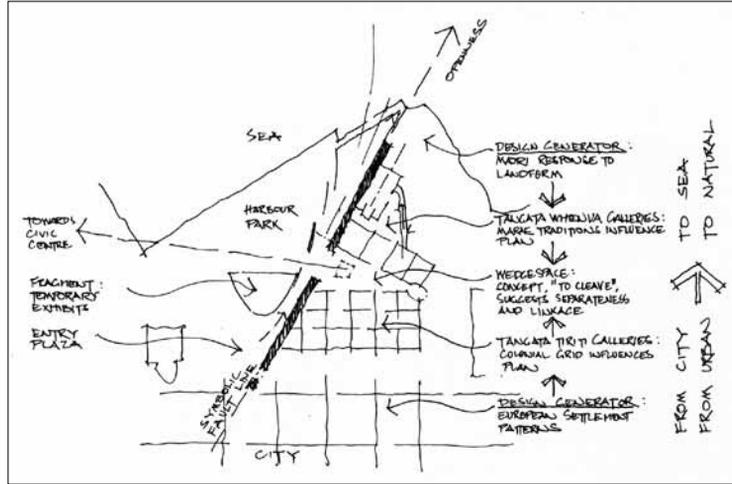


Figure 4

The Exhibitions Concept Plan (ECP) accommodated the four curatorial departments by means of dedicated, shared (two departments) and integrated exhibition spaces oriented around a central core or *ihonui* (Exhibitions Conceptual Plan; circa 1990–1992; MU000361/002/0003, Museum of New Zealand Te Papa Tongarewa; reproduced in Gorbey, 1998, p. 21).

Figure 5

With the introduction of the ECP, JASMAX re-designed its architectural concept plan by the incorporation of a new wedge space that 'cleaved' the building and a bisecting wall (diagram by Jasmx Design Director Pete Bossley; Bossley, 1998b, p. 23).



generator. The additional design generator of the 'wedge' enabled the architects to resolve the internal and external constraints, which, while it may have come at the expense of the symbolic status of the building, provided a more radical platform for the museum's engagement with culture and national identity and the visitors who continue to shape it.

The role of designers in the design of Te Papa, both externally through architecture and internally through a culturally situated exhibition concept, reshaped both the institution of the museum and visitors' experience within it. By careful and considered framing of the problem¹⁷ that took account of critical and theoretical developments in museology,¹⁸ the design provided for a greater level of audience engagement, and took account of professional developments within the field of museology without being bound by conventional practices. The results in its first year of operation exceeded all expectations: 2 million visitors (from a population of 3.5 million), three times the numbers predicted. Criticism that the architecture was not sufficiently iconic for a national museum and that the display of art was compromised by its integration with the other functions of the museum was valid,¹⁹ but we would argue does not acknowledge the design innovations in the Aotearoa New Zealand context that went some way towards addressing the central issue of the relationship between museums and their diverse audiences. Te Papa successfully addressed charges of institutional irrelevance and the problem of declining visitor numbers and in so doing redefined what a museum could be. While the degree to which it achieved its bicultural mandate has been the subject of intense debate, the designers' explicit engagement with the specific local context indicates a reflective design process that balanced international best practice with local knowledge and understanding. It also demonstrated the value of designers' creative involvement in

framing the problem and connecting with the needs and desires of potential users.

Professionalism + Audience:

The key question is whether we're building a functional, cost effective museum whose form arises out of complex briefed requirements, or whether the critical museological and public functions have to be compromised so they fit into a preconceived exotic architectural shell. Invariably the latter approach results in a deficient museum, and a disappointing public experience. (Graeme Shadwell, Te Papa Project Director, quoted in Anon., 1992)

The example of Te Papa demonstrates the key role of design in concept development and the determination of culturally situated contextual settings for dynamic exhibition interpretation. This has been made possible both by changes in the orientation of design processes and the professionalization of exhibition design itself. The choice of Ralph Appelbaum Associates to develop the Exhibitions Concept Plan demonstrates the significance attached to the communicative function of exhibitions, which, as Graeme Shadwell suggested above, entailed a willingness to sacrifice powerful architectural symbolism for an integrated working environment that would be capable of adapting to the changing needs of its users. Or as Appelbaum himself put it: 'We have powerful stories to tell about who we are and our physical world ... I want people to talk about issues and values, things you don't get a chance to talk about when you've been in fantasy-based leisure, such as a theme park or movie' (quoted in Gladstone, 1997). Appelbaum's commitment to people-focused and narrative-driven museum exhibition design aligned with the increasingly audience-centred, interpretive approach to museum exhibitions that began to emerge in the mid-1970s. In this new collaborative environment, Appelbaum suggests that museums have become more multi-faceted and multi-dimensional, places 'where radical ideas can ferment alongside more traditional ones' (1999). Museums still collect, preserve and research cultural heritage but increasingly place more emphasis on the translation, interpretation and presentation of their collections and other intangible information into diverse exhibition experiences.

The involvement of designers such as Appelbaum in reframing the communication problem faced by museums both bridged the perennial gap between preservation and access and redistributed the load born by curators who had increasingly complex responsibilities for their growing collections. An integrated interdisciplinary approach to design that facilitates engagement with critical museological discourse has contributed to exhibitions that respond to critical institutional constraints of collections and conservation and

are conceived broadly in terms of purpose, presentation and people. Exhibition design encompasses the traditional fields of graphic, industrial and architectural design, and the more integrated fields of interaction and organization design.²⁰ Interaction design is particularly significant to exhibition design in the way that it integrates visual communication and the design of material objects. It also highlights the importance of information design as ‘we recognise that all human activities are dependent on well-communicated information’ (Buchanan, 2005). Rather than being specialists, exhibition designers must be proficient in a variety of design skills and able to apply them appropriately in a given context. Design not only provides a method of presentation, but offers a means of translating exhibition information and organizing exhibition development that allows for audience interaction. When applied in this way, design provides a holistic vision that binds the exhibition process together, providing the ‘intelligence, the thought or idea . . . that organises all levels of production’ (Buchanan, 1989), from concept to construction, and forming the communicative link between the content and its audience. This creative intellectual role for design in bridging the gap between growing expert knowledge and satisfying an increasing desire for democratic participation in its dissemination can be seen as an important cultural role for design that extends well beyond the walls of the museum.

Bridging the Gap

Influenced by the increasing commercial imperatives and audience expectations experienced in most developed societies, museum exhibitions have evolved into more than just static object displays. While the curator’s responsibility to the exhibition content and choice of collection objects remains an integral part of the exhibition process, the increased interpretive function of museums has resulted in a more designerly approach to the presentation of exhibition content. Assisted by the emergent discipline of design, exhibitions have matured into diverse experiential narratives, formulated and designed to attract and engage the audience’s attention. A successful exhibition concept comes from a deep understanding of the exhibition subject and the ability to convey this information in an interesting and appropriate manner. The curator’s position as content gatherer and custodian provides them with such knowledge, and the exhibition designer works with the curator to interpret the exhibition content and translate it into a dynamic and engaging exhibition experience. Their responsibilities meet at the point of display. According to Appelbaum, this requires the designer to ‘immerse themselves in the curator’s knowledge of the subject and then, with the curator test the ideas, develop narrative frameworks and ultimately select colours and graphics and surfaces and materials’ (1999). In doing so the exhibition designer can actively participate in all stages of the exhibition process and, although the curator

and designer have separate responsibilities, it is their collaboration, alongside other museum professionals, that is instrumental in the development of successful exhibition programmes.²¹

In his book *Designing Exhibitions*, Giles Velarde suggests that the designer's position between the academic source of information and the visitor is of immense value to the exhibition planning process. He argues that the 'primary interpretive role, as with language interpreters, should be performed by someone who is fluent in both technical and exhibition languages' (2001). While the curator retains an expert knowledge of the exhibition content, the exhibition designer's main concern is the relationship between this content and its audience. This includes the clear and coherent communication of the exhibition information and an awareness of how it will be received and interpreted by the exhibition audience (Figure 6). The interpretive role of the exhibition designer is responsible for bridging the knowledge gap between the curatorial information and the exhibition audience, providing the vision, the technical skills and the communicative understanding to attract and engage visitors in the exhibition experience. This article concludes with a preliminary outline of interpretive exhibition design within museums as a means of encouraging productive dialogue between designers and curators to

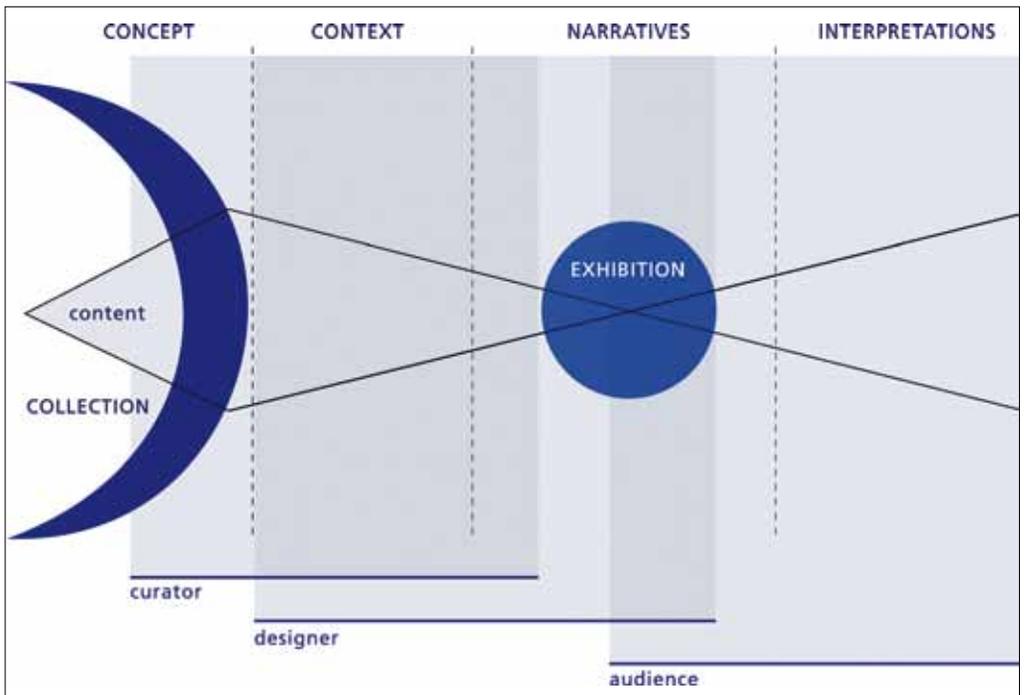


Figure 6

A model of the exhibition design process, mapping interpretive design considerations and respective roles and responsibilities.

achieve creative, audience-centred exhibitions that have conceptual integrity.

Interpretive Design Considerations

Three fundamental constituents of exhibition design have persevered throughout the history of the museum: gallery space, collection content and audience. These basic elements have evolved in alignment with the museum's increasing interpretive function and the emergence of a more integrated design discipline. Although space and content continue to guide exhibition development, audience considerations have become increasingly influential in contemporary exhibition development (Miles *et al*, 1988), as they have in the discipline of design in terms of user- or human-centred design. There has been an increased emphasis on the collaborative development of strong exhibition concepts, contextual setting and meaningful narratives, formulated to accommodate a variety of diverse audience groups and connect visitors with the exhibition information. This is where the interpretative role and communication skills of the designer have become indispensable in the development of engaging exhibition programmes. The exhibition designer is directly responsible for the audience's engagement and explores the fundamental constituents of space, content and audience in combination with the interpretive considerations of concept, context and narrative to create increasingly dynamic and meaningful exhibition experiences for all audience groups.

Concepts

While historically, the exhibition display began with a collection of objects, contemporary exhibition development begins with the development of a strong conceptual plan. This is the 'early stage in which the idea and general layout are articulated as well as how the design will meet the programme goals' (Lord and Lord, 2002). Ralph Appelbaum Associates' (RAA) architectonic role in Te Papa's redevelopment demonstrates the value of a guiding design strategy where the design of an initial concept plan shaped the museum's redevelopment. RAA's interpretive design expertise enabled the museum's Concept Development Team to devise and document a strong conceptual direction, which would reflect the nation's cultural diversity and accommodate future cultural developments within its architectural space. The resulting Exhibitions Concept Plan addressed the cultural complexities of the nation and provided design solutions for communicating Aotearoa New Zealand's bicultural identity, while also allowing for increasing multicultural diversity. In terms of individual exhibitions, there is considerable scope for designers to engage with curators in concept development to ensure a good fit between collection artefacts and available gallery space and alignment with contextual and narrative development for specifically identified and general audiences.

Contexts

To communicate complex information effectively, conceptually driven exhibitions must also provide strong contextual settings. In *The Design of Educational Exhibits*, Miles *et al* (1988) explains that:

Even under ideal circumstances, the fact remains that objects, by themselves, can communicate little beyond their own existence. The lesson for the exhibit designer must be that unless he wishes to restrict himself to an elite audience of scholars who already know the background information, he must present his objects in a coherent and informative context.

Through collaboration, the curator and designer can determine the most dynamic interpretive context that bridges the gap between expert and general knowledge, to enable the audience to apply the concepts to the exhibition objects and establish meaningful relationships between them and their own experience. From the individual exhibition designer's perspective, one of the key constituents of this interpretive context is the gallery space, which imposes specific practical constraints and shapes issues of scale, orientation and movement. A sound understanding of the limits and opportunities of a particular space can help match the context to the curator's concept. A big concept in a small space runs the risk of being confusing and impenetrable, just as the opposite situation could undermine the subtlety, and reduce the impact of a small-scale exhibition.

Narratives

By arranging objects and information in communicative contextual settings the exhibition designer provides a framework for the collection artefacts that will assist the visitor in learning about them, and by extending this framework along a comprehensible storyline the designer lends continuity to the whole exhibition (Dean, 1996). A coherent exhibition narrative will therefore provide the audience with the necessary structure to formulate meaning:

Human memory is best served by the exhibit that is built around a strong and easily understood narrative. We think in terms of stories, and while random facts ... may be remembered, it is generally true that isolated and poorly understood facts are soon forgotten unless they can be related to other facts with the help of some broad and unifying ideas. (Miles *et al*, 1988)

The application of a narrative structure to an exhibition design allows the audience to make sense of the objects on display, in relation to one another and their surrounding contexts. A strong narrative enables the visitor to discover the exhibition's complete meaning, rather than viewing it as a series of separate entities.

Narrative structure does not need to be explicit or complex. In fact, a subtle narrative tends to be more successful, allowing audiences access to the exhibition message without distracting them with excess information. As Mayrand explains, '[t]he exhibition designer's job is to reveal – not conceal – the content, to enhance and not to overwhelm it, to create a stage for its performance' (2002).

In the same way as a stage performance, a designed narrative provides the audience with a set of visual clues with which to uncover a reward. However, unlike traditional theatre, an exhibition allows the audience to physically move through its narrative space. The audience then is an active participant in the exhibition narrative. The design does not directly tell the audience a story, but implies that one exists, encouraging each individual visitor to interpret the exhibition concept and develop their own understandings. It is important that the designer recognizes that no two visitors will engage in the narrative in the same way. As Roberts explains, each visitor 'will come away with an individually unique experience and interpretation because every visitor is engaged in constructing a narrative about what he or she sees' (1997). The beauty of an implicit narrative structure is its ability to reach a wide audience.

However, just as museums have moved away from a universal master narrative, individual exhibitions often employ a weave of narrative subplots, particularly if there is more than one entry to a gallery and therefore circulation patterns within it. These enable the audience to access discrete aspects of the entire exhibition according to their personal interest and prior knowledge. Depending on their significance, these can be utilized as nodes to assist the audience to make connections between objects and the larger ideas of the exhibition. The strategic placement of key artefacts, interpretive panels, graphic and three-dimensional elements, within the sight-lines of entrance-ways and probable circulation routes all act as fingerposts for the audience's journey. This active participation encourages both immersion in the context and interaction with the story, rather than passive looking.

Conclusion

[O]ur work is inspired by the process of explaining something to ourselves that we don't understand at first. We put ourselves in the visitor's shoes and use our own learning experience as a kind of map for others to follow . . . Out of this experience we can construct a narrative that's not merely comprehensible but engaging and inspiring. (Appelbaum, 1999)

Considerable attention has been devoted in the last decade to the architectural reinvention of museums from elite cultural repositories to active communicators and contributors to the cultural lives of cities and nations. However, focus on the striking architectural

forms of Frank Gehry's Bilbao Guggenheim or the adaptive re-use of industrial obsolescence at London's Tate Modern or Sydney's Powerhouse obscure an interior history of innovation and holistic, collaborative design processes in the field of exhibition design. Te Papa changed the way many people understand and experience museums in Aotearoa New Zealand, and nowhere was this better reflected than in the considerable debate it occasioned in the popular press. It also received considerable critical attention in museological literature. However, by examining Te Papa in terms of the design problems it addressed, we would argue it offers a useful model for interpretive exhibition design in contemporary museums. By involving designers in a dialogue with the museum community and treating exhibitions as communication problem spaces, there can be a clearer articulation of the key issues to be addressed and their relationship to specific national and broader international audiences.

The evolution of exhibition designers from display artists of the curator's treasures to product and interior designers and, with the development of electronic media, to interaction designers and information architects has mirrored and even anticipated changes in the nature of design itself. The attentiveness of museums to cultural and scientific change as evidenced in their collections and identified by their curators has provided a fertile studio for design innovation that is worthy of further historical and critical attention within design and museological literature and education. The increased participation of exhibition designers in conceptual development, framing the context of exhibitions and developing evocative narratives that accommodate, and occasionally exceed the diverse expectations of their growing audiences is a valuable example of culturally and environmentally responsive design. Contrary to some stereotypes, designers, alongside the many other museum workers, have actively responded to the challenges and opportunities posed by the demand for interdisciplinary public knowledge and community participation. Our preliminary map of interpretive exhibition design considerations is offered as a guide to the exhibition design process in contemporary museums, and for those who seek to bridge the gap between expert knowledge and public audiences. In an information-saturated world, there is a growing need for articulate communicators to help us understand our past, integrate new knowledge and inspire new ways of seeing our future, and we would argue that the field of exhibition design is one place they can reliably be found.

Notes

1. 'For this reason 1851 is often used as a starting point for the history of design. Perhaps it would be more appropriate to regard it as a starting point for the history of design criticism' (Greenhalgh, 1988).
2. See Peter Vergo's (1989) groundbreaking book *The New Museology* and Janet Marstine's *New Museum Theory and Practice: An Introduction* (2005).

3. The accompanying dissolution of rigid boundaries between natural history, social history, and science and technology centres has also resulted in cross-fertilization of exhibition practices.
4. See museum examples in Wurman and Bradford (1996) – Carbone Smolan Associates, pp. 142–147; Ralph Appelbaum, pp. 150–161; Donovan Green, pp. 162–167.
5. ‘By *wonder* I mean the power of the displayed object to stop the viewer in his or her tracks, to convey an arresting sense of uniqueness, to evoke an exalted attention’ (Greenblatt, 1991).
6. Notable exceptions are Dean (1994) and Belcher (1993).
7. The material for this article has been adapted from Lake-Hammond (2006).
8. For a more nuanced Foucaultian analysis, see Bennett (1995, 2004). See also Hooper-Greenhill (1992) and Witcomb (2003).
9. For a more detailed timeline of ICOM’s evolving museum definition see International Council of Museums (ICOM) (2009).
10. Te Papa has been the site of intense critical scrutiny for its embrace of the principles of the new museology and its commitment to a founding principle of biculturalism. See Healy and Witcomb (2006).
11. See *Ralph Appelbaum Associates* [internet]. Available at: <http://www.raany.com> [accessed 28 February 2009]. See also *Newseum* [internet]. Available at: http://www.newseum.org/press_info/press_materials/architect/about.aspx?item=raa&style=a [accessed 28 February 2009].
12. Mana is commonly used in New Zealand to refer to authority and prestige and can be attributed to individuals, collectives and inanimate objects.
13. See JASMAX’s web portfolio of Te Papa. Available at: http://www.jasmax.com/#/Portfolio/Te_Papa_Tongarewa_Museum_of_New_Zealand [accessed 28 February 2009]. See also French (1998); the special February 1998 issue of *Architecture New Zealand*, *The Designing of Te Papa: Architecture New Zealand Examines Te Papa’s Concepts Design Structure*; Simeral (1991) and Gaylene Preston’s remarkable 1999 fly-on-the-wall documentary *Getting to Our Place* [film], New Zealand On Air.
14. The marae is a Maori communal meeting place that, at Te Papa, was conceived by kaihautu Cliff Whiting as a ‘marae for all people’ (French, 1998). See also ‘The Marae’. *Museum of New Zealand | Te Papa Tongarewa*. [internet]. Available at: <http://www.tepapa.govt.nz/WhatsOn/exhibitions/Pages/TheMarae.aspx> [accessed 28 February 2009].
15. The first and third were strong symbolic architectural responses to the bicultural demands of the brief, but the Papa Watea could not be accommodated in the design phase that included the final ECP.

16. Figure 3 also shows the bicultural design generators of Maori response to the landform and European settlement patterns. See Darke (1978).
17. According to Lawson ““framing” ... involves selectively viewing the design situation in a particular way for a period or phase of activity. This selective focus enables the design to handle the massive complexity and the inevitable contradictions in design by giving structure and direction to thinking while simultaneously temporarily suspending some issues’ (2006).
18. Kylie Message (2006) argues that ‘the discourses of the new museum-of access, democracy, the recognition of cultural diversity-might break with the museum’s traditional project of civic reform and succeed in offering an alternative and effective framework of cultural production and engagement’ (p. 202). By extension, the notion of the open museum gives those represented control and access to their own cultural heritage.
19. Art representation has since been addressed with the expansion and redevelopment of the art galleries.
20. It also aligned with the development of a design discipline ‘concerned with the conception and planning of all instances of the artificial or human-made world: signs and images, physical objects, activities and services, and systems and environments’ (Buchanan and Margolin, 1995, xiii), what Buchanan has elsewhere termed the four orders of design (2001, 2005).
21. See ‘Design Dialogues’ section in Waite and Rasmussen (2006).

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