

VISITOR FACILITIES IN VICTORIAN NATIONAL PARKS: AN INVESTIGATION OF USER PERCEPTION AND DESIGN GUIDELINES

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ABSTRACT

National Parks in Victoria are managed for the conservation of natural ecosystems and public recreation. Part of this management includes the provision of facilities for visitor convenience and comfort. Victorian guidelines for the design of facilities state that buildings should be 'harmonious' with the environment, however these guidelines lack definition and do not show an understanding of how visitors perceive facilities.

A social survey undertaken demonstrates the visitors' perception of facilities and examines the question: *'What do visitors perceive as 'harmonious' in terms of a building's appearance with the surrounding landscape?'* The survey found that not all existing buildings are perceived to be harmonious despite being built under the guidelines.

Recommendations are given to assist managers and designers interpret the guidelines concerning the appearance of facilities in Victorian National Parks. It is proposed that buildings should appear to be an integral part of the site and relate to the immediate surroundings. Various techniques of how to achieve this are given in relation to a sense of place, building materials, colours, scale, form, texture, roof design, views and landscaping.

INTRODUCTION

The aim of the research was to investigate how visitors to two National Parks in Victoria, Australia, perceive the appearance of visitor facilities within the landscape.

Visitors to the National Parks were surveyed to ascertain their impressions of the various harmonious features of the buildings they were encountering. The buildings chosen for this survey are: Wilsons Promontory Visitor Centre (opened 1982), Grampians Visitor Centre (1988), Grampians Brambuk Aboriginal Cultural Centre (1989) and Wilsons Promontory Family Cabins (1996). These buildings were chosen as they represent varied approaches to design and the environment, different

management styles and historically having been built with recourse to "old" and more recent guidelines.

Results from the interviews are described for each building their design elements summarised and recommendations for the design of facilities in Victorian National Parks made.

BACKGROUND

National Parks are a Category II park under the IUCN (International Union for the Conservation of Nature and Natural Resources) guidelines defined as,

*Natural Area of Land and/or sea,
designated to;*

(a) protect the ecological integrity of one or more ecosystems for present and future generations,

(b) exclude exploitation or occupation inimical to the purpose of designation of the area,

(c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

(IUCN 1994, p. 19)

Various studies have demonstrated that people visit national parks to experience the natural environment, get away from urban areas and undertake activities associated with nature (Clay, Hingston & Aslin, 1988; Windmill 1986; Ramsey, 1995). National Parks and all protected areas have been gaining popularity throughout the world as tourist destinations and places for weekend escapes. Over the past decade visitation rates in Victorian parks have increased by almost forty percent.

The term Visitor Facilities, as used throughout this paper, is defined as: a building or complex of buildings, which are designed specifically for the use of visitor activities. A visitor facility excludes made paths, signage, viewing platforms and picnic facilities such as tables. Visitor facilities aim to manage and minimise impacts, provide convenience and give comfort.

During 1999 there was a great deal of disquiet in Victoria as it was believed that national parks were under threat from recreational impacts and that the provision of 'comfort' recreational facilities is in breach of conservation ideals. Recreation and visitor facilities can impact on a national park on many different levels. Wescott (1998) identifies three categories of impacts caused by recreation,

1. Biological and Physical Impacts, which can result in direct reductions in the environmental quality of a park such as effects on soil, hydrology and landscape.
2. Social Impacts, which relate to the enjoyment of a recreation/education activity, such as crowding, conflicts with other users and aesthetics.
3. Economic Impacts including the money spent by visitors en route to and at parks.

A negative social and physical impact of providing visitor facilities is the visual obtrusion of the facility on the landscape which is believed to reduce the enjoyment of a visitor's park experience.

Guidelines generally do not cover the appearance of a building in a National Park and assume that the architect has the ability to design facilities which are sensitive to the site. This can be a problem if the

designer does not appreciate the adverse impacts a facility may have on the aesthetics of a region and/or the visitor's experience of the park.

Victorian Guidelines state that,

Facilities should complement or be in harmony with the natural environment; i.e. their design should reflect the character of the area in which they are located; generally they should be inconspicuous and have little impact on the surrounding environment; Victorian timbers and/or local materials (rock, mud-brick) should be used where practicable. (National Parks Service - Victoria 1995, p. n/a)

The use of the word 'harmony' in this passage acknowledges some of the impacts facilities have. The guidelines further describe a number of criteria, which are suggested to contribute to harmonious design. The only direct reference to visual impact is to make the building 'inconspicuous'. Other sections of the guidelines give slightly more emphasis to the potential visual impact facilities have on landscape and visitor experience, yet provide little guidance in demonstrating how to prevent such impacts occurring. Specific guidelines for buildings are not outlined.

Other National Park guidelines and literature on eco-tourism give reference to the design of visitor facilities. These include guidelines produced by The United States National Park Service (1999) which have a similar focus to the Victorian guidelines about 'harmony' whilst also introducing ideas such as providing views from buildings and using landscaping and topography to aid in the achievement of a 'natural look'.

The North Coast Environment Council, NSW, (1998, p.31) believes that construction of tourist developments (other than picnic tables, toilets, emergency shelter or environmental education), in national parks should be prohibited, as '...they fundamentally compromise the specific objectives of the land units, i.e. the protections and preservation of native flora and fauna...' Their guidelines aim more specifically at regions outside national parks and recognise the way in which tourism can impact upon it. They go further than other guidelines and recommend ways to ensure buildings minimise their impact visually on the landscape, including notes on: scale and density, height and profile, and building materials.

As one of the main aims of national parks is to provide for the public's experiences, and visitor facilities are provided to manage this, it seems appropriate to have facilities which are perceived as being harmonious by the visitors themselves.

RESEARCH METHOD

'What do visitors to Victorian National Parks perceive as 'harmonious' in terms of a building's appearance within the surrounding natural landscape?'

The survey undertaken was a visitor attitude survey via formal interviews which took place within two national parks near the nominated buildings. The surveys were carried out in October 1999 over weekends Friday and Monday inclusive. The sample was selected on a 'next-to-pass' basis, a total of 80 participants were interviewed - 40 in each park. An average response rate of 65% for both parks was achieved.

The two parks, Wilsons Promontory National Park and Grampians National Park, were chosen to be the sample parks for the survey as they meet the following criteria. They;

- are amongst Victoria's most popular parks and have high visitation rates
- are classified as Category II parks under the IUCN guidelines for protected areas
- offer a range of outdoor and recreational activities, visitor services and facilities
- both have visitor centres and suitable buildings
- both have community support and involvement

The survey aimed to find out; which buildings were seen to blend well with their surroundings; what the attitudes toward building elements such as size, material and colour were and whether any particular design and/or building elements were preferred. The research did not aim to explore the operational impact of building on the environment.

Survey questions included: *What do you think about the overall 'look' of the building in relation to the surrounding environment?*

Do you think the Size/Colour/Material/Design is obtrusive or Harmonious with the surrounding environment? (Four separate questions)

The rating scales for these questions were based on the Semantic Differential Technique which is derived from the belief that attitude can be evaluated on a bipolar rating scale. A five-interval scale was utilised so that respondents could quickly grasp each scale used and that the decision between intervals was not too difficult. Each interval was given a label to further define the category visitors were selecting. Ratings for the first question were: *Excellent, Good, Fair, Poor, Very Poor* and *No Opinion*; for the second question: *Very Harmonious, Slightly Harmonious, Neither Obtrusive nor Harmonious, Slightly Obtrusive, Very Obtrusive* and *No Opinion*. Visitors were given a card with rating scales on

them and asked to choose the appropriate number for their response. Visitors were also given photo cards of the buildings which they were analysing so that they could see three angles of the building simultaneously. Results for these questions were reported as percentages and frequencies, respectively, and their mean, median and standard deviation or mode calculated.

Two following open questions were aimed at letting visitors give reasons for their choices of ratings. *Is there any thing that you particularly 'like'/'dislike' about the building?* (Two separate questions) This question brought out detailed information which helped to assess inconsistencies in the data.

The main limitation of the survey was the short sample period, occurring at only one month of the year and consisting of mainly weekend visitors. Another limitation was the small size of the sample area, although it is believed that the majority of visitors to the parks visit these areas, it does not include visitors to the park who may have avoided the area or did not visit it for other reasons.

THE BUILDINGS AND HOW THEY WERE PERCEIVED

Wilsons Promontory Visitor Centre



Figure 1: Wilsons Promontory - Visitor Centre

The Wilsons Promontory Visitor Centre is situated adjacent to the main road entering Tidal River, opposite a day visitor car park. It provides information displays, audio visuals, access to ranger staff, accommodation reception, education services, and a shop for maps and guidebooks.

This building was perceived as blending reasonably well with the environment. On the pre-coded attitude scale, its 'Overall Look' with the surrounding environment received a rating of *Good* - mean and median scores. The building's individual elements, Size, Materials, Colour and Design, were all rated as *Slightly Harmonious* (also derived from mean and median scores).

Generally visitors appreciated the information made available to them and did not consider the building to be obtrusive. Visitors accepted the building as a

plain simple structure which facilitated their needs. This building received the smallest percentage of visitors who had particular dislikes about the building, these were:

- the building's "blandness"
- the lack of local materials utilised
- the large, corrugated roof

It was appreciated for the:

- timber cladding, and
- green coloured roof

Grampians Visitor Centre



Figure 2: Grampians - Visitor Centre 'Rear Entry'

The Grampians Visitor Centre is situated outside Halls Gap, the park's service town, and is located next to the main road, sharing a car park with Brambuk. It serves the same function as the one at Wilsons Promontory.

This building was similarly rated to the other visitor centre, 'Overall Look' was rated as *Good* in relation to the surrounding environment. It's Size, Colour, Materials and Design all rated '*Slightly Harmonious*' (mean and median scores).

Dislikes included the following aspects:

- the 'ordinary', European design
- the roof colour and material

Visitors did like:

- the information made available to them, and its circular display
- the 'low' height
- the use of timber
- the surrounding plantings

Grampians - Brambuk Living Aboriginal Cultural Centre

The design brief for Brambuk originally stipulated that,

...the building should be constructed from natural materials and have a rounded, natural or organic form rather than a rectangular or conventional appearance. (Lochert 1997, p.12)



Figure 3: Grampians - Brambuk Living Aboriginal Cultural Centre, 'Entry'

This two-storey building designed by Gregory Burgess, was commissioned by five Koorie communities from South West Victoria. It offers visitors displays of aboriginal history, provides cultural talks, rock art tours, a café and gift shop, exhibitions, school programmes and aboriginal group activities. It is more than a museum of past culture, it is a centre for the aboriginal community to unite.

Brambuk was the most successfully rated building in terms of 'Overall Look' – *Good to Excellent* - and 'Building Elements' – *Slightly Harmonious to Very Harmonious*.

Visitors particularly liked:

- the use of natural materials
- the shape, form and flow of the building
- its unique and imaginative design
- views out into the landscape from the building
- the landscaping
- its representation of and derivation from Koorie culture

Some people lowered their rating of the building because they thought it was too large, and disliked the overtly expansive red corrugated steel roof.

Wilsons Promontory - Family Cabins



Figure 4: Wilsons Promontory - Family Cabins

The Family Cabins were designed by Ken Latona, also the architect of the Cradle Mountain Walkers Cabins and Friendly Beaches Lodge, (Tasmania). Promoted as 'Eco-cabins' the family cabins are raised above the ground to minimise the

'footprint's' impact on the land. They utilise solar energy to provide hot water. Two out of the seventeen cabins were fitted with rainwater collection tanks, photovoltaic panels and composting toilets, and were initially prototypes, however, these facilities have not yet been extended to the other cabins during the five years they have been in operation. *The Age* commented:

*Latona's projects are built on the premise that architecture should have minimal impact on its environmental surrounds in both a visual and ecological sense...
...Latona describes his architecture as "sheds that maintain a connection with the place". (Crawford 1999, pp. 6-7)*

The family cabins however, were rated the worst in terms of 'Overall Look' with the surrounding environment with *Fair* mean and median scores. Size, Colour, Materials and Design rated *Neither Obtrusive nor Harmonious* to *Slightly Obtrusive* with the surrounding environment.

The cabins received the highest percentage of respondents who had particular concerns such as:

- straight lines and 'boxy' design
- the roof's – shape, size, height, colour, reflective nature, material, obtrusive feature from any vantage point
- the cabin's length
- too many, too close together
- no water collection, no shading for balconies, not all solar powered.

However the majority of visitors would like to stay in the cabins due to the internal layout and facilities they offered. The use of solar heated water rated highly.

BUILDING ELEMENTS

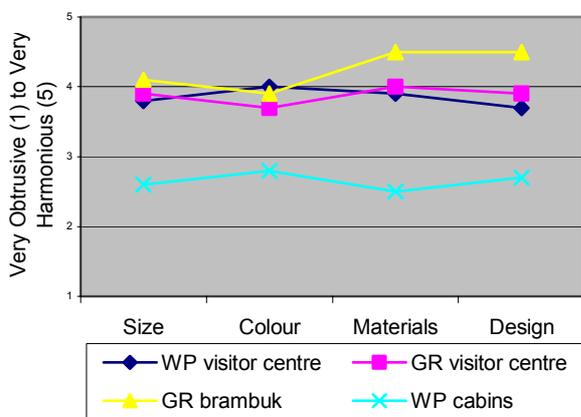


Figure 5: Graph showing how the 'Building Elements' for each building were perceived with the surrounding environment (derived from mean scores)

The graph demonstrates Brambuku's success and the cabins' relative failure when visitors analysed individual building elements. (1= Very Obtrusive, 2= Slightly Obtrusive, 3= Neither Obtrusive nor Harmonious, 4= Slightly Harmonious, 5= Very Harmonious)

Size was generally seen as a reflection of how visible the buildings were when approached and the amount of vegetation concealing the buildings. The more a building seemed to 'hide' within the vegetation, the more harmonious it appeared. The two Grampians buildings are landscaped allowing them to 'hide'. The Wilsons Promontory visitor centre is situated at the base of a vegetated sand dune which allows the building to nestle into it; however, not all vegetation surrounding the cabins at Wilsons Promontory (at the time the survey was carried out) had matured. This may have exaggerated the impact of the roof's size; however, it must be noted that the environment surrounding the cabins is coastal scrub, and even when mature the vegetation may not be able to compete with the 'harsh' design of the buildings. These factors are believed to have contributed to the poor rating of the relatively large cabins size. Landscaping was often noticed by visitors and commented on when asked if they liked anything in particular about a building.

Generally colours which related directly to a material's natural colour were seen to be the most harmonious (such as raw timber/mud brick). A material's natural colour appeared to blend well with natural surroundings. The ratings for colour were greatly influenced by a buildings' roof colour. Brambuk overall was rated harmonious for colour - i.e. mud bricks, grey stained timber and stone - despite some visitors' concern for the red roofing. The Wilsons Promontory Visitor Centre was rated above the Grampians Visitor Centre, i.e. a green roof and natural timber walls were rated over the zincalume roof and the cream painted weather boards.



Figure 6: Wilsons Promontory Visitor Centre natural colourings rated well



Figure 7: The large, red corrugated roof of Brambuk was a concern to some visitors

Natural materials such as stone, timber and mud brick were perceived as the most suitable; presumably because of their natural textures as seen in Figures 8 and 9. The more processed materials such as ‘eco-ply’ (plywood) and corrugated steel were disliked. Zincalume roofing did not rate well due to the high reflectivity of the material, Figure 10.



Figure 8 & 9: Stone and timber as used in Brambuk were rated very well



Figure 10: Zincalume roofing and *ecoply* used in the Cabins were rated poorly

In terms of design Brambuk’s natural ‘organic’ forms, which reflect the surrounding topography, were rated the most harmonious. Rated second were the visitor centres which have linear designs, broken down by changes in façade, depth of façade elements, and shadows from overhangs. The design rated most poorly (the cabins) have very linear, flat façades which have few variations to create depth or shadows; a design controlled by the selection of planar materials. The shape of the roof mimics the surrounding mountains, however the scale, distance and orientation of forms abstracts the concept beyond any readable relationship for viewers.

RECOMMENDATIONS

The poorest rated building (the cabins) were the most recently built facility and were guided by the most comprehensive guidelines. This suggests there may be poor understanding by the management body (which supervises design and construction) of how visitors see the visual impact that a facility has on the landscape. This also demonstrates that the guidelines are not producing buildings which are perceived by visitors as being visually harmonious to the environment.

Due to the variations in ‘landscape character’ throughout national parks in Victoria, it would be inappropriate to specify a single building type for all parks. In providing guidelines there should be scope for interpretation, guided by an understanding of how buildings are perceived by its users. The following recommendations based upon visitors’ perceptions and ecotourism principles may reduce the negative impacts caused by buildings on visitors’ experiences, and contribute to harmonious design in Victorian National Parks.

Sense of Place/Design Concept

Buildings should not create their own sense of place, rather draw from the site in which they are located and become part of it. Buildings which appear to grow out of the site, not be additional to it will be more harmonious. This can be achieved by a building’s siting; relating all building and landscape design elements to the immediate surroundings and working in a complementary scale; and by continuing natural prospects and refuges into the constructed building form.

Materials

Natural materials in as close to their natural state as possible, should be used in preference to man-made or overtly processed materials. Preferably they should be found locally, enabling them to relate to the immediate characteristics of the site. The use of a variety of materials will aid a building's ability to blend with the natural environment due to differences in texture, form and colour.



Figure 11: Mud brick and timber window frames used in Brambuk

Colour

A material's natural colours should remain or be referred to in its finish. Additional colours can be derived from the immediate surroundings and be displayed in the building's colours at the same level. For example, wall colour should relate to surrounding vegetation, roof colour should relate to adjacent tree canopy colourings or surrounding topography framing the roof. Seasonal changes in vegetation must also be noted. Reflective materials should not be used in large quantities (such as for the roof or walls) and if used, done so with caution so as not to detract from the surroundings.

Scale

The scale of topological features, geologic formations and vegetation types provide a wonderful kaleidoscope of forms in which national park designs are needed. The architect will be challenged on the small scale by low sand dunes, littoral scrubs and plains of delicate wildflowers to sites in the proximity of imposing mountains, escapements and old eucalypt rainforest. Building designs should take account of the scale of detail seen in the immediate and distant topography, geological formations, and vegetation type and density. Buildings should be built beneath the canopy of surrounding trees and blend with them.

Form

The forms of buildings will be more harmonious if derived from the natural elements and processes of a site; by taking into consideration and being influenced by, rainfall, solar and wind orientation, surrounding vegetation, topography, drainage, wildlife patterns and views to and from the building. Buildings should not stand out from the surrounding elements, but blend with the flows of the site. This may be done by examining forms of similar scale and understanding the processes which have moulded the object into its current form. For example, tee-tree growing on the edge of a sand dune which has been subject to considerable prevailing winds may curve into an arch in order to stabilise. If buildings can be derived from these conditions they will then relate directly to the site and be viewed accordingly; rather than being perceived as an externally placed element which could have been built anywhere.



Figures 12 & 13: The cabin's end elevation (12) is derived from the shape of surrounding mountains, however, the extruded form (13) has no relationship to the site.

Texture

The texture of materials and forms should relate to the detail in the immediate surroundings. There should not be any large flat elements (such as the roof in Figure 13) which command attention or look out of place amongst the detail of nature. Use of natural materials will create texture, however shadows and depth of façade elements can also aid in adding texture to a building. The use of more than one material in each façade or view will also aid a building's overall textural feel.

Roof Design

The roof is a particularly important element which can impact dramatically on a site. Its size, height, material and colour are all major concerns as these aspects can influence how the building will be viewed by an approaching visitor. Thus surrounding vegetation and the concealment it offers should influence its design. It should not protrude from its immediate surroundings by being too tall, or disturb views of the landscape from nearby vantage points by contrasting in colour to its immediate surroundings.

The visitor centre at Tower Hill, Figure 14, was mentioned by one interviewee as a building which blended harmoniously with its surrounds. This is largely due to the material, colour, form and texture of the roof.



Figure 14: The visitor centre at Tower Hill State Game Reserve (Vic)

Views

Connection from the interior of a building to its immediate environs is likely to enhance visitors' enjoyment. Views to the outside could relate to the characteristics of the site (for example, a window to frame the view of a mountain range, rock outcrop or a particular tree). Connection to the land can also occur through acknowledgement of other senses, achieved through the design of elements which express natural forces of the environment, such as roof drainage and wind catching devices and aromas from vegetation.



Figure 15: Brambuk's design incorporates water spouts which direct the roof's run-off into stone pools beneath them. When it rains the sound of the water falling into the pools is heard along with the rain falling on the roof.

Landscaping/vegetation

Landscaping around the building to restore natural vegetation or to provide a 'buffer' between the building and surrounding areas is an effective way in which to make a building inconspicuous. Landscaping will also contribute to the sense of entry, and acknowledge the surrounding environment. If the building is accessed from a car park, landscaping should contribute positively to the visitors' experience of the building. Only vegetation native to the immediate site should be utilised for such landscaping. Access to the building should be derived through careful planning and circulation patterns, preventing the building from standing out and becoming a feature. If possible the building should not be visible from any surrounding tracks, lookouts or roads which do not directly facilitate the building.

CONCLUSION

This survey demonstrates that visitors to Victorian National Parks have a genuine concern about the design of visitor facilities and their relationship with the surrounding environment.

Visitors visit national parks to experience the beauty of the natural environment, therefore buildings should relate to the site and its natural conditions in a way that does not detract from the unique qualities which create its sense of place. Based on this research, context can be considered the most critical factor in the design of a national park building. Costonis in his *Law and Aesthetics* believes that 'buildings which are regarded as outstanding

architecture in isolation may be offensive in particular settings' (Costonis 1982, p.408). This highlights the importance of having detailed guidelines that help designers understand how visitors perceive facilities and what aspects will aid a building's harmony within its habitat.

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