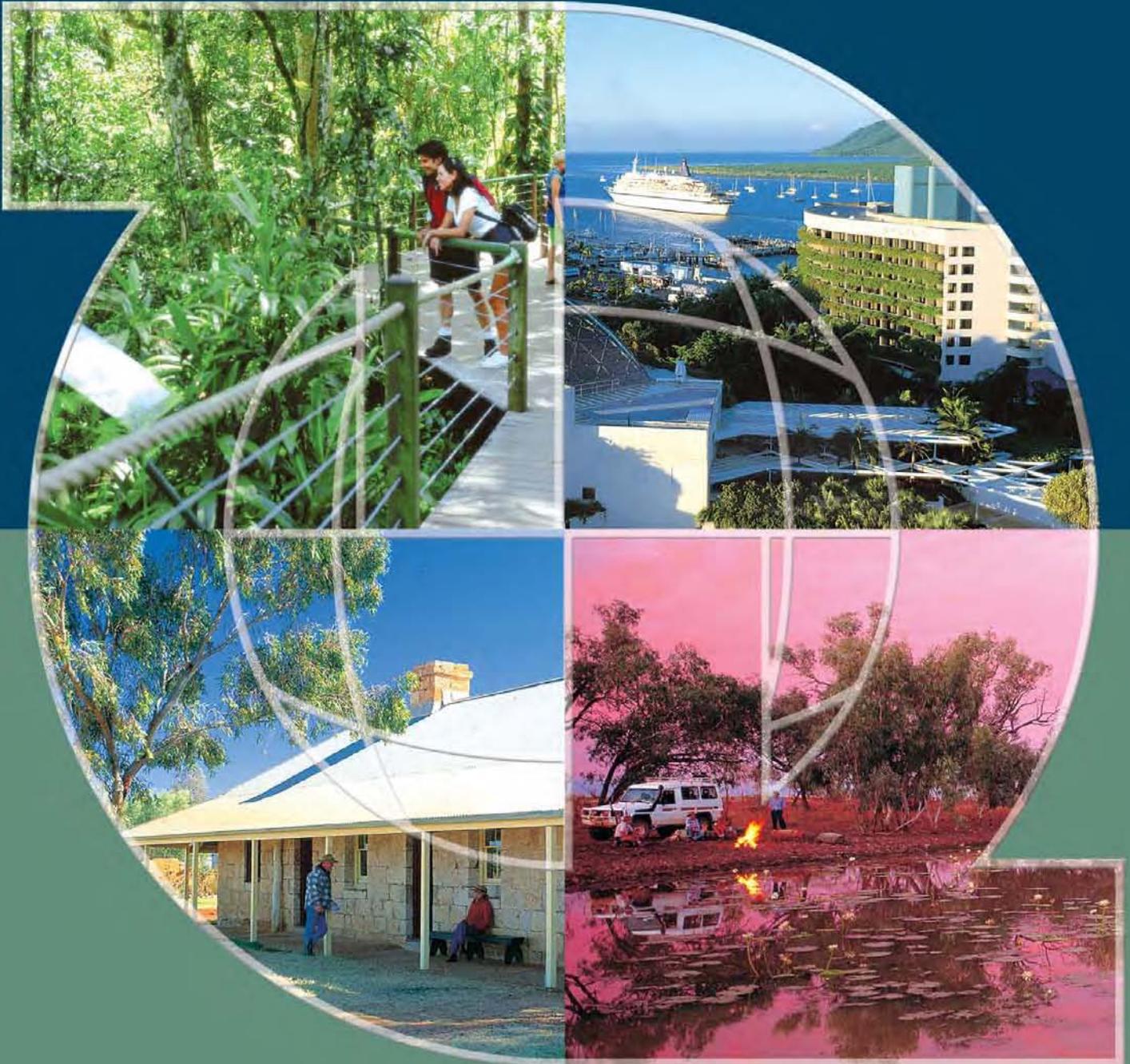


# BEST PRACTICE MODEL FOR LOW-IMPACT NATURE-BASED SUSTAINABLE TOURISM FACILITIES IN REMOTE AREAS



*By David Beyer, Martin Anda, Bernhard Elber, Grant Revell and Fred Spring*

SUSTAINABLE  
TOURISM



CRC

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## **National Library of Australia Cataloguing in Publication Data**

Best practice model for low-impact nature-based sustainable tourism facilities in remote areas.

Bibliography.  
ISBN 1 920704 23 X.

1. Ecotourism - Australia - Evaluation. I. Beyer, David. II. Cooperative Research Centre for Sustainable Tourism.

338.479194

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## **Abstract**

In the wake of a major tourism development proposal being refused for the Coral Coast region of Western Australia there is again a focus on developing strategies for more sustainable facilities that support 'low-impact nature-based tourism'. The Environmental Technology Centre at Murdoch University, together with the Faculty of Architecture, Landscape & Visual Arts at The University of Western Australia, completed a study for the Sustainable Tourism Cooperative Research Centre (STCRC) to develop the Best Practice Model for Sustainable Tourism Facilities in Remote Areas. There are currently numerous environmentally sustainable guidelines, accreditation schemes and assessment systems in operation throughout the world and in Australia. The majority of these relate to the niche eco-tourism market and include the Draft International Ecotourism Standard and NEAP (Nature and Ecotourism Accreditation Program). There is also a clear and generally accepted industry understanding of what constitutes the principles and standards of sustainable tourism. Yet there is industry concern about the difficulty and cost of compliance and gaining accreditation to be considered as sustainable. This project developed a holistic and independently verifiable 'best practice' assessment system that is both user friendly for operators and also sets an aspirational and creative cross-cultural bar across the full range of sustainability criteria for low-impact, nature-based facilities. The project involved visits to a number of low-impact facilities throughout Australia with the intention of assessing the implementation of guiding principles and to apply the assessment criteria to such facilities. The challenges that face implementation of such a model include economic viability for industry, acceptance by Local Government Authorities, and the appropriate mechanisms to assess and license such developments in nature conservation reserves by State Government agencies.

## **Acknowledgements**

The Sustainable Tourism Cooperative Research Centre, an Australian Government initiative, funded this research.

### **Western Australian Tourism Commission (WATC)**

Mr Steve Crawford A/Director Sustainable Industry Sector Development Unit  
Ms Claire Savage Nature-Based product Coordinator

### **Department of Conservation & Land Management (DCALM)**

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### **Kimberley Wilderness Adventures (KWA)**

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### **East Kimberley Tours (EKT)**

Paul Wainwright Proprietor,  
Bob Parsons Operations Manager

### **Discover the Kimberley Tours (DTK)**

Graeme McArthur Proprietor

Further acknowledgements and thanks are extended to the Industry Liaison Group and Tourism Industry operators that supported this project.

## Summary

This project was undertaken to determine the specific criteria for low-impact sustainable tourism in remote areas, and then apply this criteria to two locations in Western Australia. A multidisciplinary team with expertise in sustainable planning and design, environmental technologies, sustainability assessment and indigenous consultation collaborated to design and develop the criteria for the project outcomes.

This report documents all the main components of this project which include:

1. Review current best practice facilities design criteria in Australia;
2. Review local and global guidelines, accreditation criteria and assessment tools;
3. Observe and report on the application of eco-tourism and low-impact tourism at selected low-impact eco-tourism facilities in two locations in Australia;
4. Develop an integrated model for architectural and technological features that is inclusive of indigenous perspectives.
5. Produce design palettes that include the core elements of low impact nature-based tourism for selected sites in Western Australia.

The review of existing literature shows that there is a clear consistency in what constitutes sustainable tourism and more specifically, the key elements of low-impact nature-based sustainable tourism facilities. These elements encompass specific broad aspects of sustainable design, interpretation leading to education, return to the environment, involving the local community and high quality hospitality and services.

Various models and guidelines for sustainable tourism facilities highlight that, above all, the development, at whatever scale must be informed by the natural and cultural environment in which it is to be situated. A sustainable tourism facility, in terms of design, is therefore location and site specific. These site-specific considerations are inextricably linked to creating an authentic sense of place, in both their destination and product.

Issues relevant to remote regions in Australian relate to minimal access to services, particularly in terms of outside emergency assistance, attracting suitable staff and cost of employment, food supplies and construction and maintenance.

The role of local indigenous people in the development and operation of tourism facilities is clearly established in the principles of sustainable tourism. The engagement of indigenous cultural interests in the development process must be genuine and transparent and embrace the knowledge that cultural tourism as a commercial use of land can only be done by indigenous people. The importance of sustaining partnerships with the local indigenous population is critical to the successful development and operation of tourism facilities, especially in remote areas. All the key principles and actions of sustainable tourism seek the inclusion of indigenous people and local communities. It would follow therefore that sustainable facilities, both at the planning and development stages would use the local knowledge of the area.

A core element of this project was to develop a sustainable design and assessment model for tourism operators that could be considered best practice as well as being easy to understand and apply. Currently there are numerous guidelines for environmentally sustainable development, and accreditation schemes and assessment systems in operation throughout the world and in Australia. Also there is a clear and generally accepted industry understanding of what constitutes the principles and standards of sustainable tourism. As yet there is no identified design model for low-impact nature-based tourism facilities in remote areas.

The development of this design and assessment model was strongly informed by consultation, observation and assessment at two existing facilities that were considered best practice examples. These case studies involved visiting these facilities, and included discussions with facilities owners, managers and designers, as well as local indigenous people to get their perspective.

The understanding and knowledge gained was used to further develop the model and inform the design of proposed facilities in two remote area locations in WA, one in the East Kimberley region at Purnululu National Park, and the other in the SW region near the town of Nannup. In both cases, the proposed locations were visited and discussions were held with local people. In the East Kimberley, extensive discussions were undertaken with Kija and Djaru people, traditional owners of the land and beneficiaries of living area leases within the Purnululu National Park.

The Park, and traditional owners living areas do have sites (which have been selected by the TO's) that could meet all the key elements of low-impact nature-based sustainable tourism for both cultural and accommodation facilities. The Traditional Owners from both groups have indicated their strong interest and willingness in establishing tourist related ventures. These include cultural facilities and activities and accommodation facilities within their own living areas.

The design and assessment model will assist tourism operators to develop best practice facilities in remote areas. As such the model provides design guidelines for the facilities and their infrastructure as well as a framework for environmentally sustainable technologies for energy, water and waste management systems.

## **Chapter 1**

# **Introduction**

## **Overview**

This report reviews current practice in sustainable tourism facilities within the Sustainable, Nature-Based and Low-Impact tourism sector of the tourism industry. It is in effect a scoping study of current accepted definitions and guidelines for best practice facilities, and also a review of selected remote area facilities both globally and within Australia. It precedes the development of a 'best practice model' later in the project.

This project developed a holistic 'best practice' model that is simple and informative for operators as well as a design palette that includes the core elements of low-impact nature-based tourism for selected sites. It also addressed indigenous cultural protocols to assist industry operators but also to promote greater indigenous participation in the industry.

The scope or parameters of this project was limited to low-impact nature-based tourism facilities in remote regions. It is therefore anticipated that there will be an adaptive process from many of the currently accepted definitions, and principles and practices of sustainable tourism as well as sustainable design and construction to create a stand-alone design model for remote regions. Included in this will be an explicit consideration of natural and indigenous cultural heritage.

The project was undertaken by a collaborative team from the Environmental Technology Centre (ETC) and Remote Area Developments Group (RADG) at Murdoch University and the Faculty of Architecture, Landscape and Visual Arts (ALVA) at UWA in collaboration with indigenous consultant Fred Spring of Relspre Pty Ltd.

## **Project Description**

This project developed a holistic and independently verifiable 'best practice' assessment model that is user friendly for operators and also set an aspirational bar across the full range of sustainability criteria for low-impact facilities.

The key components of the project were to:

1. Review current best practice facilities design criteria in Australia;
2. Review local and global guidelines, accreditation criteria and assessment tools;
3. The project will visit selected 'best-practice facilities in two locations in Australia with the intention of experiencing the application of nature-based, low-impact tourism by industry operators and also indigenous perspectives;
4. Develop an integrated assessment model for architectural and technological features that is also inclusive of indigenous perspectives.
5. Produce design palettes that include the core elements of low-impact nature-based tourism for selected sites in Western Australia.

## **Current Industry Status (State of Play)**

Tourism that aims to be sustainable has gained an increasing profile within the greater tourism sector since the World Summit on Sustainable Development (the Rio summit) in 1992, although aspects of sustainable tourism have been in existence prior to this seminal event. The International Ecotourism Society (TIES) is a non-profit organisation established in 1990. In 1994, the first ever international forum on eco-lodge design and development was held at Maho Bay Camps in the U.S. Virgin Islands. Following this, in 1995, a seminar was held in Costa Rica to define a set of international standards for eco-lodge development (TIES 2003). The United Nations Environment Programme (UNEP) has links to sustainable tourism and has published papers in collaboration with TIES that define the principles, practices and policies of sustainable, low-impact, nature-based and ecotourism (UNEP 2000; Epler Wood 2002). The World Tourism Organisation has issued a Global Code of Ethics for Tourism and is also active in promoting sustainable tourism (WTO 2003).

As a direct result of the Rio summit, the World Travel and Tourism Council (WTTC) established Green Globe as its environmental program. Green Globe now has considerable profile across the industry and has been responsible for a heightening awareness of environmental and sustainable principles (GG21 2003). Green Globe has regional representations, including Green Globe Asia Pacific, which has access to the research and development capacities of Sustainable Tourism Cooperative Research Centre (STCRC) (STCRC 2003; GG Asia Pacific 2003). Green Globe is marketing a number of certification programmes globally for use by industry (GG21 2003). The *draft* International Ecotourism Standard for Certification (IES) (see below) forms the basis of the Green Globe 21 Ecotourism Program. In addition to the IES, there are the:

1. GG21 Standard for Travel and Tourism;
2. GG21 Sector Benchmarking Indicators for Ecotourism;
3. GG21 Sector Benchmarking Indicators for Trailer Parks.

The Pacific Asia Travel Association (PATA) is committed to a sustainable tourism future. It has a Memorandum of Understanding with Green Globe 21 (GG21), the main purpose of which is for the integration of Green Globes certification programme. PATA has a 'Code for Sustainable Tourism' and a 'Code for Sustaining Indigenous Cultures' (PATA 2003).

Australia is one of a few countries can be considered at the forefront of sustainable tourism industry development. This is evidenced through the efforts of Ecotourism Australia (formerly known as the Ecotourism Association of Australia) and the STCRC, a federally funded research body (EA & STCRC 2002; STCRC 2003). These two organisations have a close working relationship and in partnership with Green Globe 21 have recently released the draft International Ecotourism Standard for Certification (ARIA 2003; GG Asia Pacific 2003).

Ecotourism Australia (EA) was formed in 1991 as an incorporated non-profit organisation, and is the peak national body for the ecotourism industry, although its influence is principally in Queensland (pers comm. C Savage). The Association's vision is 'to be leaders in assisting ecotourism and other committed tourism operations to become environmentally sustainable, economically viable, and socially and culturally responsible' (EA 2003). EA has developed 'The Nature and Ecotourism Accreditation Program (NEAP)' is its flagship program (EA 2000), which is managed internationally by Green Globe, which in turn has strong links with STCRC. NEAP is now being exported to the rest of the world as the *draft* International Ecotourism Standard (IES). The EcoGuide Program is a voluntary, industry driven and run certification program for nature and ecotour guides. EA also managed Australia's program for the International Year of Ecotourism 2002 (EA & AHC 2002).

The Western Australian Tourism Commission (WATC), similar to many other state governments within Australia, is committed to sustainable tourism in all its forms. It has a Nature-Based Tourism Strategy for Western Australia, which sets out the Vision, Principles and Strategies to guide future tourism development (NBTA 1997). It has also published 'Designing Tourism *Naturally*' (Crawford 2000), which is a review of world's best practice in Wilderness Lodges and Safari Camps. This publication is reviewed extensively below.

## **Sustainable Tourism, Nature-Based Tourism and Ecotourism: definitions and principles**

This section will give an overview of what constitutes 'sustainable tourism', 'nature-based tourism' and 'ecotourism'. The aim is to establish a guiding framework that can be used to determine sustainable tourism facilities.

There are numerous academic publications that discuss the evolution of sustainable tourism and clarify the distinction of the components and sub-components within the sustainable tourism sector (Diamantis & Ladkin 1999; Weaver, Faulkner & Lawton 1999; UNEP 2000; Epler Wood 2002). Of specific concern to this report is how the definitions and guiding principles can inform the requirements for developing sustainable low-impact facilities in remote regions, and if there are any relevant distinctions between the various sub-components of sustainable tourism, principally nature-based, low-impact and ecotourism, that may influence these facilities.

The rapid evolution of sustainable tourism has often challenged the ability to find a definition that goes beyond a generic concept of sustainable development. Indeed, the concept and application of sustainability to all forms of tourism has arisen directly from the broader debates of Ecologically Sustainable Development (ESD) (Diamantis & Ladkin 1999; Weaver, Faulkner & Lawton 1999). The World Tourism Organisation defines Sustainable Tourism as:

'Sustainable tourism development meets the needs of the present tourists and host regions while protecting and enhancing the opportunity for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled, while maintaining cultural integrity, essential ecological processes, and biological diversity and life support systems'. (WTO 2003)

Within the broad framework of Sustainable Tourism is the more commonly used term and concept of Ecotourism. The Quebec Declaration on Ecotourism states that ecotourism 'embraces the principles of sustainable tourism... and the following principles which distinguish it from the wider concept of sustainable tourism':

1. Contributes actively to the conservation of natural and cultural heritage,
2. Includes local and indigenous communities in its planning, development and operation, contributing to their well-being,

3. Interprets the natural and cultural heritage of the destination to visitor,
4. Lends itself better to independent travellers, as well as to organised tours for small size groups. (UNEP 2002)

Ecotourism is deemed to be a sub-component of sustainable tourism and is a ‘sustainable version of nature-based tourism in the market place.’ (Epler Wood 2002). The distinction between nature tourism or nature-based tourism and ecotourism is clearly stated by Ecotourism Australia, as shown in Table 1. The WATC prefers to focus on Responsible Nature-based tourism, (more than on Ecotourism), which is ‘a form of tourism in which the main motivation is the observation and appreciation of nature’ and distinguishes Ecotourism as a ‘mirco’ niche (pers comm. Crawford 2003, Savage 2003).

**Table 1: Ecotourism Australia’s definitions of nature tourism and ecotourism**

<p>Nature Tourism is defined as:  <i>Ecologically Sustainable Tourism with the primary focus on experiencing nature’s areas.</i></p> <p>Ecotourism is defined as:  <i>Ecologically Sustainable Tourism with the primary focus on experiencing nature’s areas which fosters environmental and cultural understanding, appreciation and conservation. (EA 2000)</i></p>
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This definition is clearly aligned with The International Ecotourism Society’s (TIES) definition of ecotourism, first adopted by its founding board of directors in 1991, which states that ‘Ecotourism is responsible travel to natural areas that conserves the environment and sustains the well being of local people’. (TIES 2003)

The Statement on the United Nations International Year of Ecotourism which has been adopted by the Boards of Directors and Advisors of the International Ecotourism Society (TIES), January 6, 2001 believe, as is implicit in TIES’ definition, that ecotourism includes key characteristics as shown in Table 2.

**Table 2: TIES key characteristics of ecotourism**

<ul style="list-style-type: none"> <li>• Minimising the negative impacts on nature and culture that can damage a destination.</li> <li>• Educating the traveller on the importance of conservation.</li> <li>• Stressing the importance of responsible business that works in cooperation with local authorities and people to meet local needs and deliver conservation benefits.</li> <li>• Directing revenues to the conservation and management of natural and protected areas and biological diversity.</li> <li>• Emphasising the need for both regional tourism zoning and visitor management plans designed for either regions or natural areas that are slated to become eco-destinations.</li> <li>• Emphasising use of environmental and social base-line studies, as well as long-term monitoring programs, to assess and minimise impacts.</li> <li>• Maximising economic benefit for the host country, local business and communities, particularly peoples living in and adjacent to natural and protected areas.</li> <li>• Supporting the economic empowerment of communities through training and hiring local people, paying fair wages and benefits, buying supplies locally, and supporting local ownership or joint ventures with outside business or NGO partners of tourist facilities and concessions.</li> <li>• Ensuring that tourism development does not exceed the social and environmental limits of acceptable change as determined by researchers in cooperation with local residents.</li> <li>• Relying on infrastructure that has been developed in harmony with the environment: minimising use of fossil fuels, conserving local plant and wildlife, and blending with the natural and cultural environment. (TIES 2001)</li> </ul>
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Congruent with TIES, Ecotourism Australia believes that ‘a more definitive definition of ecotourism is the expansion of the definition into a core set of principles with specific performance indicators (EA & STCR 2002), as explained in Table 3.

**Table 3: Ecotourism Australia's eight core, principles of ecotourism**

<p><b>1. Natural Area Focus</b> Focus on giving visitors the opportunity to personally and directly experience nature</p> <p><b>2. Interpretation</b> Provide opportunities to experience nature in ways that lead to greater understanding, appreciation and enjoyment</p> <p><b>3. Environmental Sustainability Practice</b> Represent best practice for environmentally sustainable tourism</p> <p><b>4. Contribution to Conservation</b> Positively contributes directly to the conservation of natural areas</p> <p><b>5. Benefiting Local Communities</b> Provides constructive ongoing contributions to the local community</p> <p><b>6. Cultural Respect</b> Be sensitive to, interpret and involve the culture/s existing in the area</p> <p><b>7. Customer Satisfaction</b> Consistently meets consumer expectations</p> <p><b>8. Responsible Marketing</b> Be marketed and promoted honestly and accurately so that realistic expectations are formed. (EA &amp; STCRC 2002)</p>
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These eight principles form the guiding criteria within the Nature and Ecotourism Accreditation Program (NEAP) and the *Draft* International Ecotourism Standard (IES) (2003).

The Nature-Based Tourism Strategy for WA (1997), which was prepared by the WATC and DCALM under the Nature-Based Tourism Advisory Committee, has the following Guiding Principles:

- Conservation of the Natural Environment
- Involving and Benefiting the Local Community
- Improving Knowledge
- Providing Quality products and Services
- Efficient and Effective Industry (NBTAC 1997)

These principles are developed further into clear explanations of how they can be applied.

The WATC brings these various aspects, especially the field of Ecotourism into focus by stating that 'to have any long lasting effects we need to focus the debate towards making the whole industry sustainable, NOT just one minor sector' (pers comm. Crawford 2003)

## **Project Parameters**

This project reviews and makes recommendations within **specific parameters** of sustainable tourism. These are specifically to:

- Identify the key ESD design and technological characteristics that constitute best practice in remote area facilities in Australia;
- Develop a user friendly guideline and assessment system that can define and rate low-impact nature-based tourism development in remote regions, and
- Develop a design palette that includes the core elements of low-impact nature-based tourism for selected sites.

It is imperative to clearly define and **determine the parameters** of this project in order to develop specific and meaningful outcomes. The title of the project gives a defining framework for this work and each operative component of the title can be considered in the following parts:

1. Best Practice
2. Sustainable Tourism
3. Low-Impact Facilities
4. Remote Regions

**Best Practice:** is a common usage term that has two broad meanings:

'A new development that has exceeded the previous accepted best:'

'Any development that adequately fulfils the accepted assessment or accreditation criteria across all headings and sub-headings of an assessment regimen'

This distinction is clearly stated in the *draft* international ecotourism standard, refer Table 4

**Table 4: TIES certification criteria and levels**

*'Ecotourism certification wants to differentiate product that has gone well beyond compliance, it does not want to codify 'just enough is good enough.'*

This difficulty has been dealt with in a number of ways:

1. Deliberately including some process-based components (i.e. a hybrid performance-process system) such as the environmental management approach (i.e. effectively an environmental management system) that allows for the variability in threshold performance levels between countries but demand at least a commitment to improving standards;
2. Developing a certification program with two levels that recognises different ways of obtaining best practice;
3. BENCHMARKING indicators are country specific: baseline and best practice levels for these indicators are analysed according to that countries environmental performance data, or if this is not available, a country with similar technology and infrastructure, and
4. Providing specific rules for micro-businesses. (EA & STCRC 2002, p5)

**Sustainable Tourism:** as stated above, is defined by the principles of Ecological Sustainable Development (ESD), and includes as a sub-component the terms of Nature or Nature-based Tourism and Ecotourism. Despite these distinct components, all are implicitly linked in that: *'Ecotourism encompasses a spectrum of nature-based activities that foster visitor appreciation and understanding of natural and cultural heritage and are managed to be ecologically, economically and socially sustainable'* (TQ 2002, p11). Even so, Ecotourism is seen to be a small niche market that sits within the broader field of Nature tourism, which is in turn a component part of sustainable tourism.

**Facilities:** is a key operative word that gives clear definition to the parameters of this project. Facilities, in the context of this work, refer specifically to accommodation and their essential supporting services (i.e. energy, water, food and waste production). In terms of accommodation facilities, there are key terms that are directly related to ESD and give clear definition for this work. These are:

- Low-impact tourism accommodation;
- Ecolodge

Both these refer to a style and category of development that recognise and meets the philosophy and principles of ESD and Ecotourism (Crawford 2000, p1).

**Remote Regions:** for the purposes of this report refers to the relative distance or isolation from urban centres such as townsites, and services such as medical services and telecommunications. Included in this are basic infrastructure such as grid supplied electricity, potable water supplies, and waste and effluent disposal.

These criteria are based on the Accessibility/Remoteness Index of Australia (ARIA), see Table 5.

**Table 5: Delimitation of remoteness areas**

The delimitation criteria for Remote Areas, based on the Accessibility/Remoteness Index of Australia (ARIA), The measure of remoteness of a point is based on the physical road distance to the nearest Urban Centre (ASGC 1996) in each of five size classes. The ARIA index is based solely on physical geography. It does not attempt to incorporate road conditions, travel time or the broader issue of accessibility, which is influenced by many factors such as the socio-economic status or mobility of the population.

For more information on how ARIA is defined see the Information Papers ABS Views on Remoteness, 2001 (Cat. no. 1244.0) and Outcomes of ABS Views on Remoteness consultation, Australia (Cat. no. 1244.0.00.001)

(ARIA 2003).

The issues associated with remoteness have an important influence; the viability of a successful accommodation facility (pers comm. Savage 2003).

## **Conclusion**

This section has created a broad framework for this project by highlighting relevant definitions within the sustainable tourism sector and by defining the projects parameters. Conclusions relevant to remote area sustainable tourism facilities are that ESD principles and practices guide sustainable tourism in general and that the core principles of Ecotourism as developed by both TIES and EA are directly relevant to sustainable tourism accommodation facilities. The next section will be a more specific review of current best practice guidelines for sustainable tourism accommodation facilities and their relevance to remote areas.

## *Chapter 2*

# **Sustainable Tourism Facilities**

## **Introduction**

This section forms the critical body of the work. It will combine the essential criteria of sustainable building and construction with the definitions and principles of sustainable and ecotourism, as well as critical aspects of indigenous criteria to find a defining set of criteria for developing low-impact facilities in remote areas.

## **Key Elements of Sustainable Tourism Facilities**

An early text on developing guidelines was produced by the U.S. National Parks Service and Maho Bay Camps in 1991. Conducted as a workshop at Maho Bay Campground on the island of St John in the U.S. Virgin Islands, the brief was to develop prototypes of sustainable campgrounds within fragile natural properties (Johnson 1991). The workgroup, which comprised broad stakeholder input, determined that their goal is to: 'create guidelines for building dwellings that minimally impacts the environment while helping to develop conservation-orientated values in the guest' (Johnson 1991, p2) (see Table 8)

There are some recent texts that have given clear guidance on the requirements for sustainable tourism facilities. 'Designing Tourism *Naturally*' was a study of world best practice in wilderness lodges and tented safari camps undertaken by the WATC in 1999/2000. The taskforce's principle interest was 'the transferability of this knowledge-base to the Australian environment and in particular existing proposals within WA' (Crawford 2000, p8). The taskforce drew on a broad range of principles to develop a unique approach in assessing the critical factors in successful low-impact facilities. These include the following elements:

- Nature-Based Tourism Strategy Principles
- Principles of Tourism Product Excellence
- '5 A's' of Tourism Destination Development
- Ecological Sustainable Tourism Characteristics (Crawford 2000, p17)

The resulting 'Product Assessment Criteria' determined that facilities and their management must encompass specific broad aspects, which are:

- Sustainable Design;
- Interpretation leading to education;
- Return to the environment;
- Involving the local community;
- High quality hospitality and services (Crawford 2000, p18-20).
- 'In effect these dimensions were the best practice benchmarks that were used to inform the study', all of which are embedded within the key principles of ecotourism (Crawford 2000, p20)

Full results of this study that relate to facilities for WA are given in the report (Crawford 2000, p87-88). These are summarised in Table 6.

**Table 6: Summary of key findings of 'Designing Tourism Naturally'**

- Semi-permanent camps and eco-tents are functional and viable tourist facilities;
- There is an international market that is prepared to pay premium prices in such facilities;
- This market also expects quality experiences and services in natural settings. Viable operations offer high standards of hospitality, especially food and beverage;
- Authenticity is a major factor in creating a strong sense of place. Authenticity is found in openness, fresh air, local materials, form and colour, ethnic influences in shape, fittings, artefacts and public art;
- Organic, adaptable design is preferred rather than a pre-planned architectural formula;
- Site locations maximise the view shed, and minimise the intrusion of support facilities;
- Facilities should not detract from the main feature of the location;
- Facilities should capture the importance of place in the design
- Facilities are consistent with being located in protected areas if they comply with stringent criteria;
- No set standard exists, though there is evidence of 'greening' of tourism;
- The trend is for smaller scale development (20-30 cabins), although larger scale facilities are successful;
- Small scale facilities are often owner-operated;
- Integration and inclusion of local communities and indigenous peoples is a feature of these facilities;
- Tourism, and facilities play a role in conservation and community development;
- Green marketing theme can be important. There is a market sector that is attracted to sustainable facilities, but this is not always the prime motivator;
- Facilities are located on both leased and freehold land, with a preference for freehold.

The study concluded that a 'Model of Best Practice Tourist Facilities' that represents the core tourism product would include:

- **Sustainable Design:**
  - Must be evident;
  - Design for the environment;
  - Create strong sense of place based on the site itself;
  - Underlying basics of sustainable design starts with: Good design, Choice of materials, Building form, landscape and factors that result in customer satisfaction;
- **Interpretation leading to education:**
  - Heightened consumer awareness, appreciation, and understanding of environmental processes;
  - The more personal interpretation leads to a better experience;
- **Return to the environment and involving the local community:**
  - Businesses that exist because of the natural and cultural environment must maintain, enhance and put something back;
  - There is a direct relationship between environmental stewardship and underlying profit;
- **High quality hospitality and services:**
  - Within the framework of the above, serve to provide customers with a high degree of quality in their food, beverage and other hospitality services;
  - These services need not be expensive, but appropriate to the setting. (Crawford 2000, p88)

The report makes special note that 'the place-making characteristics of the setting underpin everything else. Environmental setting is the single, most important factor, and contributes to overall attractiveness and relates directly to consumer satisfaction' (Crawford 2000, p88). The issue of the significance of the ecolodge or eco-facilities in the context of the natural environmental setting is given a clear context in that 'the most important thing of an ecolodge is that it is not the most important thing' (Ceballos-Lascurain quoted in Adams 1999, p5). Ceballos-Lascurain clarifies this by stating that 'it does not mean that the physical or operational characteristics of the Ecolodge project are allowed to be mediocre', rather that 'the Ecolodge should be geared towards offering a wide spectrum of interesting and imaginative ecotourism activities and services' (Ceballos-Lascurain 1999, p6).

A recent publication, ‘International Ecodge Guidelines’ (Mehta, Baez & O’Loughton 2002) also give specific definition to what could be considered a best practice model, as shown in Table 7.

**Table 7: Ecodge guidelines**

<p>An ecodge should include the following:</p> <ul style="list-style-type: none"> <li>• It conserves the surrounding environment, both natural and cultural;</li> <li>• It has minimal impact on the natural surrounding during construction;</li> <li>• It fits into its specific physical and cultural contexts through careful attention to form, landscaping and colour, as well as the use of localised architecture;</li> <li>• It uses alternative, sustainable means of water acquisition and reduces water consumption;</li> <li>• It provides careful handling and disposal of solid waste and sewerage;</li> <li>• It meets energy needs through passive design and combines these with their modern counterparts for greater sustainability;</li> <li>• It endeavours to work together with the local community;</li> <li>• It offers interpretive programmes to educate both its employees and tourists about the surrounding natural and cultural environments;</li> <li>• It contributes to sustainable local development through research programs. (Mehta, Baez &amp; O’Loughton 2002)</li> </ul>
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The issues of local community involvement and education are highlighted as ‘posing a special challenge to an ecodge owner or manager because they are mostly located in remote regions and therefore have minimal access to outside assistance’ (Epler Wood 2002, p29). The issue of minimal access to services is relevant in remote regions in Australian, particularly in terms of outside emergency assistance, attracting suitable staff and cost of employment, food supplies and construction and maintenance. The Maho Bay Guidelines also give special mention to the issues of education and interpretation in stating that ‘the dwelling units must teach the relationship between guest consumption and available regional resources’. This principle is given specific application in that guests at Maho Bay Camps ‘can monitor water and energy consumption and take corrective action if pre-set allocations are being exceeded’ (Johnson 1991, p2). The overview of the key aspects in developing eco-facilities that need to be considered is given in Table 8.

**Table 8: Maho Bay design guidelines**

<b>Must be:</b>	<b>Energy</b>
Affordable,	Renewable Power
Vernacular and site specific	Ventilation and Cooling
<b>Must consider:</b>	<b>Heating</b>
Location	Water Supply and Collection
Size	Fixtures
Interior Design	Waste
Materials	Composting Toilets
Walkways	Food Waste
Construction	Water Waste
Orientation	Back-up systems
Roof	Additional Site uses
Storage Space	Food production areas
Climate	Workshop
Natural Disasters	Nature Centre
Atmosphere	Research and Development
Landscape	(Johnson 1991)
Restoration	

Many of the aspects and elements of Ecotourism guidelines have been considered in various development proposal recommendations in areas such as the NW Cape region and the Kimberley region in Western Australia (Adams 1999; Ceballos-Lascurian 1999; DEP & DPI 1999; CALM 2002). There are also publications that outline the benefits of 'green tourism' facilities and give strategies and actions for achieving better practice (Basche 1998; Talacko & Andrews 1998).

Additional research that is being funded by the STCRC relates to the broader aspects of facilities infrastructure development and assessment. This project is titled 'Designing Tourism Infrastructure: Steps to Sustainable Design' and is being undertaken as a collaborative effort through the University of Queensland and the University of NSW (Hyde & Law 2002). The project is comprised of three parts:

1. Sustainable Design: steps to integrate sustainability into the design of buildings.
2. Design Of Sustainable Tourism Infrastructure: a brief outline of the state of play in the tourism industry and proposals to move forward with a new standard for assessing the design of tourism infrastructure through Green Globe Asia Pacific. Research to date has developed a design phase assessment tool to assist with the ramping up of the industry in this area.
3. Project Case Studies: provides abstracts of three pilot case study projects, which have been used to trial and develop this approach.

This 'Steps to Sustainable Design' project has some obvious similarities to this project but is considered to have a much broader scope and not a specific remote area brief. Even so, the two projects can be considered complimentary and may therefore be able to exchange information where applicable.

## **Industry Concerns**

The International Year of Ecotourism was conducted throughout 2002. Ecotourism Australia held an Ecotourism Australia-Wide Online Conference in August 2002 from which they produced a paper for the 2002 Ecotourism Australia International Conference, held in Cairns during October, 2002. The outcomes from this on-line conference are outlined in Table 9 (Australia wide 2002).

**Table 9: Key issues identified in the EA 2002 conference**

- |   |
|---|
| <ul style="list-style-type: none"><li>• Coordination among operators and in regions produces results and helps raise product and regional profile.</li><li>• The desire to develop sustainable practices is strong, although people still want practical guidance.</li><li>• More information could be made accessible about the support that is available for operators and regions.</li><li>• The respect for authenticity and heritage values was highlighted as critical for developing quality tourism products.</li><li>• Community support and involvement is a key factor that encourages the sustainability of operations.</li><li>• Demand for sustainable tourism will be stimulated by more consumer awareness.</li><li>• Responsible marketing is necessary to inform visitors and create realistic expectations. (EA &amp; AHC 2002, p12)</li></ul> |
|---|

Each of these key issues is given detailed explanation within the document. The aspects that are considered relevant to facilities and facilities development, and model assessment systems are listed below.

- Accreditation programs are important, but they can be complex and there are concerns about the value they add.
- There needs to be more emphasis on the socio-cultural aspects of sustainability.
- We still need to think more about how we can more effectively monitor sustainability.
- Some operators find it hard as new players developing small-scale businesses in areas where there are older, established industries. They can be very much on their own.
- Indigenous communities have particular needs for support – Indigenous communities need access to examples of how others have got involved in tourism. Different support is required recognising the very different contexts in communities across Australia.
- How to ensure and maintain authenticity in a product is concern, particularly in Indigenous tourism.
- Ecotourism and heritage tourism must recognise and incorporate local community knowledge.
- Get local people involved in planning, advising and participating – this is a wise investment.
- There needs to be greater emphasis on educating consumers so they can more effectively discriminate between what is on offer.
- There is a need for more responsible marketing to improve visitor awareness – this will help reduce unrealistic expectations. (Australia wide 2002)

## **Indigenous Involvement**

The role of local indigenous people in the development and operating of tourism facilities is clearly established in the principles of sustainable tourism. The engagement of indigenous cultural interests in the development process must be genuine and transparent and embrace the knowledge that cultural tourism as a commercial use of land can only be done by indigenous people. As stated above, the importance of sustaining partnerships with the local indigenous population is critical to the successful development and operation of tourism facilities, especially in remote areas. The Cairns Charter on Partnerships for Ecotourism, which builds on the principles of the Quebec Declaration, provides a clear statement on the importance of local indigenous partnerships that can be applied to the broader aspects of sustainable tourism. It recognises that

'successful partnerships form the foundation upon which ecotourism can and has taken root in the world with noted positive results. Where effective partnerships have been absent, problems have often resulted in the planning and implementation of ecotourism projects' (EA 2003) .

Further to this principle of partnerships, the 'Indigenous Ownership and Joint Management of Conservation Land in WA' (consultation paper July 2003) has a cultural brief for criteria that contains core values that engender a *cross-cultural participatory design process* that embraces indigenous cultural interests in the site and surrounding country and aims to ensure cultural security, sensitivity and integrity in a process of partnership. These criteria are listed under the following headings:

- A culture-friendly project development process
- Identify Land Tenure and Native Title Claimants
- Engagement with the Aboriginal Community
- Project Development Process
- Integrating Aboriginal Culture in the Development Environment
- The Physical Environment and Cultural Perceptions (CALM 2003)

## **Conclusion**

This review of existing literature shows that there is a clear consistency in what constitutes the key elements of low-impact sustainable tourism facilities. The various models and guidelines outlined highlight that, above all, the development, at whatever scale, must be informed by the natural and cultural environment in which it is to be situated. A sustainable tourism facility, in terms of design, is therefore location and site specific. These site-specific considerations are inextricably linked to creating an authentic sense of place, in both their destination and product. The other aspects of environmental sustainability that require consideration, such as energy, water and materials efficiency, although critical, can be considered universal. Even so, they do require site-specific consideration and evaluation.

The literature review also shows a clear requirement that the critical issues of authenticity and sense of place in the facilities that compliments but does not dominate the destination can to a large extent be informed by, and developed with, the inclusion of indigenous and local people. All the key principles and actions of sustainable tourism seek the inclusion of indigenous people and local communities. It would follow therefore that sustainable facilities, both at the planning and development stages would use the local knowledge of the area.

This literature review has shown:

- That there is sufficient information that can inform the requirements for the purposes of this study; but
- That this information, whilst pertaining to sustainable tourism facilities, does not address the specific requirement for remote sites.

This therefore validates that the industry can gain from the development and future assessment of a best practice model for remote area facilities in Australia.

**Chapter 3**

**Assessment Tools**

By reviewing currently accepted sustainability assessment tools such as NABERS and SpeAR, as well as accreditation systems specifically designed for Nature-Based Tourism such as NEAP and IES, it is possible to discern key elements and indicators that are considered relevant to a new model of low-impact nature-based facilities in remote areas. The tools summarised in Table 10 will be reviewed for this project.

**Table 10: Assessment tools**

<b>Assessment or Rating Tool</b>	<b>Focus</b>	<b>Relative to NEAP</b>	<b>Relevance to this Project</b>
NEAP	National Nature-Based Tourism Accreditation	Current national 'best practice' assessment method	Very comprehensive; Too unwieldy & complex for Remote Area ecotourism
IES	International Standard for Ecotourism, not an accreditation system per se	Evolved from NEAP key headings; Assessment via Green Globe	Still in draft form; Indicators for an internationally accepted method of accreditation
Green Globe 21 Standard for T&T	Travel & Tourism	Stand-alone compliance system; <b>Big picture</b>	Does not specifically address remote area facilities
GG 21 Sector Benchmarking Standards Ecotourism	Ecotourism	Stand-alone compliance system; Specific to ecotourism operators	Does not specifically address remote area facilities
GG 21 Sector Benchmarking Standards for Trailer Parks	Caravan Parks	Stand-alone compliance system specific to caravan park infrastructure and management	Is a standard at the appropriate scale
NABERS (Draft 2001)	Broad environmental assessment of building stock	No focus on Nature tourism; No remote area focus	National method for assessing environmental performance of existing build stock
BRE EcoHomes	International assessment of building stock	No focus on nature Tourism; No remote area focus	International method for assessing sustainable housing and small projects
SPeAR	Larger projects, ie for industry where resource consumption is high.	No focus on nature Tourism; No remote area focus	'Natural Resources' from the 'Environment' category allows for specific analysis of resource use.
Designing Tourism <i>Naturally</i>	Transfer of international knowledge base for Ecolodges to national level	Substantial focus on provision of high quality hospitality services as well	Assessment criteria for tented safari style accommodation; Use of 'best practice' benchmarks for assessment
Maho Bay Design Guidelines	Guidelines for the design of Maho Bay	Many guidelines similar to sub-headings found in NEAP; Sustainable nature-based tourism	Encourages transparency in ecotourism and high levels of interpretation for consumers
International Ecolodge Guidelines	Ecolodge style nature tourism, often in remote areas	International set of guidelines for ecolodge based nature tourism	Ecolodge specific; Understanding of issues faced in remote areas

Daft NABERS (National Australian Built Environmental Rating System) (Vale, Vale & Fay 2001)

NABERS is being developed as a 'best-practice' method for rating the environmental impact of buildings. 'NABERS is not intended to be a building design tool; it is a building rating tool' (Vale, Vale & Fay 2001). It assesses buildings under eight headings:

1. Land (Nature of Site, site area, site area per user, beneficial plants and impermeable paving areas);
2. Materials (Cost of building, materials types, building age, re-fit frequency);
3. Energy (Efficiency, emissions, renewable electricity, generation of excess energy);
4. Water (Consumption from public supply, on-site water supply);
5. Interior (Nature of fit-out, natural light access, indoor air quality);
6. Resources (Building area per person, hours of use of building);
7. Transport (Distance to shops and urban centres, carparking, public transport, cycling facilities);
8. Waste (On site recycling, local collection, wastewater re-use, sewage treatment)

The headings and indicators developed by within NABERS could form a solid basis for assessing the environmental aspects of remote area ecotourism facilities.

### **BRE EcoHomes**

BRE EcoHomes is a proprietary Sustainability assessment for homes, created by the Building Research Establishment (BRE), authors of the Building Research Establishment Environmental Assessment Model (BREEAM). BREEAM was initially developed as a tool for assessing much larger commercial projects, such as office space (BRE 2001). To address the specifics of smaller scale construction BRE have created a version which focuses on the sustainability aspects of housing (BRE 2002). Its key headings are as follows:

1. Energy
  - Energy consumption (CO<sub>2</sub> Production), lighting, renewable energy systems, central heating and air-conditioning
  - Building Envelope Performance
  - Provision of drying space
  - Eco-labelled goods (white goods and low wattage lighting)
2. Transport
  - Public transport, cycle facilities
  - Distance to local amenities
  - Provision of home office
3. Pollution
  - CFC emission, Ozone Depletion Potential of materials, NO<sub>x</sub> emissions
4. Materials
  - Renewable products, timber usage and timber procurement
  - Interior finishes
  - Recyclable materials
5. Water
  - Water consumption
6. Land Use and Ecological Value
  - Ecological value of site, minimisation of change in ecological value
  - Building footprint
7. Health and Wellbeing
  - Daylighting, sound insulation, private space

Its major drawback is that the assessment criteria is quite complex and requires vast documented evidence for accreditation. Self-accreditation is also not available. While worksheets can be used to estimate the accredited value, a trained assessor must certify the building prior to any rating being given. While BRE EcoHomes is a successful tool and is used extensively throughout the UK, its complexity and prescriptive nature would make it difficult to use as an assessment tool for remote area ecotourism facilities. Even so the issues raised under the headings of energy, land-use and ecological value are useful indicators.

## **SPeAR by Arup**

The Sustainable Project Appraisal Routine is a sustainability analysis system designed by the Arup engineering firm. Modelled on UK and UN guidelines, it has been prepared as a best-practice sustainability tool. It is a universal design tool enabling companies and organisations to assess their sustainability over a period of time (Arup 2003). Arup is more complex than some tools in that it takes on a 'triple bottom line' approach to sustainability, as well as a fourth section devoted to Natural Resources. The SPeAR key headings are as follows:

1. Environment
  - Air Quality
  - Land Use
  - Water
  - Ecology
  - Buildings
  - Transport
2. Societal
  - Inclusion
  - Amenity
  - Access
  - Form and Space
3. Economic
  - Viability
  - Competitive effects
  - Employment/skills base
  - Social Benefits/Costs
  - Transport
4. Natural Resources
  - Minerals
  - Water
  - Energy
  - Land Utilisation
  - Reuse

The subdivision of 'Natural Resources' from the 'Environment' allows for more specific analysis of resource use. This focus on Natural Resources has been constructed due to the focus of the SPeAR program on larger projects, especially those of manufacturing and industry where resource consumption is high. Currently, SPeAR is at the fore of sustainability assessment tools in that it focuses on all aspects of the 'triple bottom' line in the creation of sustainable facilities. It can be adapted for small and large projects and can be used for reporting against statutory and industry codes. Unfortunately, its wide ranging scope makes it an unwieldy tool for assessing remote area ecotourism facilities. However, the method and indicators which have been developed for SPeAR are quite beneficial and can be used to help inform criteria for remote area tourism facilities.

## *Chapter 4*

### **Case Studies: Site Visits**

Site visits to the Voyages Longitude 131 resort at Yulara and Paperbark Camp at Jervis Bay, NSW took place in March/ April 2003. In both cases, the proprietors/operators were very supportive of this research and provided assistance in the form of accommodation and tours of their facilities. Additionally, independent meetings with appropriate indigenous personnel at both sites were held to gain an understanding of their own involvement and consultation in the development of these facilities as well as the interpretive activities they currently provide to tourists.

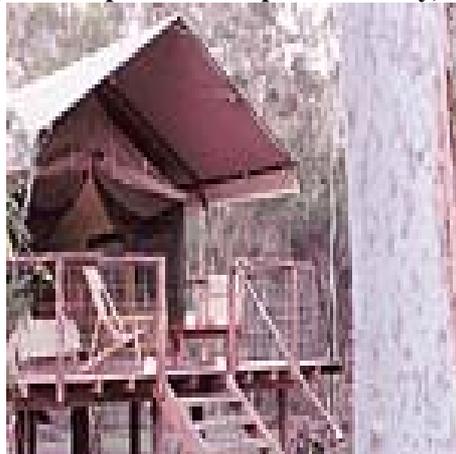
Following these site visits, WA Case Studies at Purnululu in the East Kimberley and St Johns Brook in the Southern Forests were conducted to assist in the development of the remote area facilities best practice model and design palette. This included consultation with local Kija and Djaru traditional owners in the Purnululu area.

### **Overview of Case Studies: Existing Facilities**

This project visited selected existing facilities in Australia that are deemed to be best practice examples of sustainable or ecotourism facilities. These are:

- Paperbark Camp
- Longitude 131 Voyages Hotels and Resorts.

**Figure 1: Paperbark Camp at Jervis Bay, NSW**



### **Paperbark Camp**

Paperbark Camp is situated at Jervis Bay, 200km south of Sydney (Paperbark 2003). The owners state that Paperbark Camp is Australia's first luxury tented camp, and is eco-tourism at its best, being a low-impact, niche-market venture that adheres to the principles of ecologically sustainable tourism. The objectives of Paperbark camp are:

1. To promote the natural environment;
2. To sustain the local ecology;
3. Successfully operate a low key, niche, eco-tourism facility;
4. To provide local and regional benefits.

Paperbark has been designed with reference to the safari style eco-lodge model, and comprises tents clustered around a central communal lodge called the 'Gunyah' which provides all other amenities such as restaurant, library area and coffee bar. An eclectic mix of materials allows the Gunyah to blend well with its surroundings, especially along the ground plane where the bush-pole piles create a small forest of their own. Raised above the 1 in 100 year flood line, the Gunyah provides an open air communal space amongst the tree tops that is the focus of all activities on the site. Accommodation consists of 10 Safari tents (of equal standard) with private verandas and indoor/outdoor ensuite attached. They have private en suite facilities, comfortable queen or twin beds, pure wool doonas, insect screens, solar powered lighting and furnished with locally handcrafted bush furniture. Tariffs are; double \$216 per person per night and single \$260 per person per night, which include three course dinners, gourmet breakfast and use of facilities such as canoes and bikes. The original

landscape was carefully cleared by hand, so that delicate ecosystems, natural flora and birdlife have been preserved. No major earthworks or clearing were done. All toilet waste and wastewater is pumped off the site to protect the pristine Currumbene Creek, which now forms part of the Jervis Bay Marine Park. Paperbark Camp has been awarded the ECOtourism Australia NEAP Ecotourism Accreditation.

### **Longitude 131**

Longitude 131 is Voyages Resorts newest ecotourism development at Yulara, Central Australia (Voyages 2003a, 2003b). The resort, which caters for a 30 guests, is set on an isolated sand dune close to the border of Uluru - Kata Tjuta National Park. Longitude 131 has been specifically developed to appeal to the high-yield end of the 'soft-adventure' tourism spectrum. Longitude 131, which opened in early June 2002, has been voted the 'Best New Wilderness Hotel' in the world by The Sunday Times in Britain, and now Best New Australian Product by US trade partners. The aim in developing this resort was to set a new benchmark for eco-tourism around the world. Longitude 131 is one of the first resort developments approved under the Environmental Protection and Biodiversity Conservation Act (1999) and is the first camp of this kind in Australia.

**Figure 2: Longitude 131 at Yulara, Central Australia**



Longitude 131 has been designed with reference to the eco-lodge model, and comprises some 15 'tents' around a communal lodge. Each tent is essentially a 1-bedroom apartment with attached ensuite and coffee making facilities. All other amenities such as meals area, library, swimming pool and bar are located in the communal area known as the 'Dune house'. The architecture of Longitude 131 stands apart from its striking setting. While similarities can be drawn from the sail structures prevalent at the Yulara resort, the aim of Longitude 131 was not to mimic the existing resort in any way. Instead, form has been derived from a combination of several factors. These include the creation of a low-impact facility, extensive use of passive solar design, use of lightweight materials with easy construction, as well as the wish to give clients a facility that provides security against the harsh elements of Australia's Red Centre while expressing the openness often associated with the Safari or Explorer experience. Unashamedly Euro-centric in its fit-out, Longitude 131 caters for wealthy tourists predominantly of international origin. Each room is named after one of 15 explorers, Australian icons or local heroes, all of whom feature in portrait form on the walls of the library. Overall, the feeling created is one of raw, unadulterated nature tempered by the luxuries of modern living, all packaged neatly in a modern interpretation of Safari style living.

Longitude 131 re-opened on July 1, 2004 following a freak bushfire in October 2003 that destroyed twelve of the fifteen luxury tents after this project site visit. The camp site underwent renovations and re-opened with 'major new product enhancements' (Voyages 2004). Although it is claimed that 'Longitude 131 has followed world best environmental controls for re-construction work, including the use and transport of prefabricated structures together with light weight machinery that minimised impacts on the delicate ecology that is in a vital stage of regeneration', it does not appear that any additional sustainability features have been included.

### **Site Visits**

This project had the intent of designing a best practice model to inform the development and design of sustainable tourism facilities in remote regions. Specific to this are two areas within Western Australia:

1. Purnululu;
2. Southern Forests.

## **Purnululu**

Purnululu, commonly known as the Bungle-Bungle Ranges, is situated in the East Kimberley. Purnululu, has long been recognised as a place of unique character, and as such has recently been awarded world heritage listing for its environmental significance (with cultural listing pending determination) and is considered to be one of the key tourist destinations for the Kimberley region. The park is managed by the Department of Conservation and Land Management (CALM). It is also an area of native title claim to the Kija and Djuru traditional owner groups, some of which are beneficiaries of living lease areas with the Purnululu National Park. This area is remote in terms of distance and location to services and towns, road conditions and travel time. There are a number of tourist travel and accommodation companies that offer a variety of services to the area. These include:

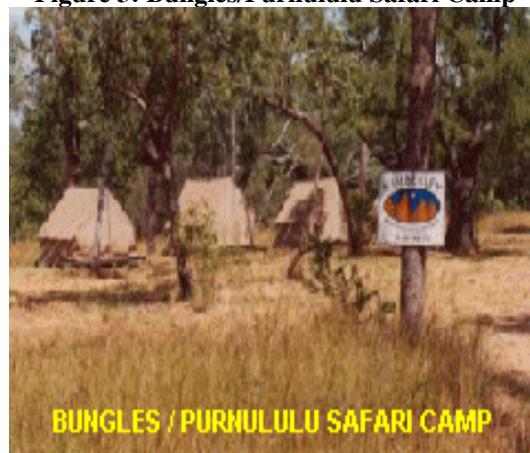
1. Fly-in, fly-out day tours;
2. Fly-drive tours, with accommodation at a number of semi-permanent facilities within the park;
3. Overland tour companies and self drive options. Accommodation is at a camp ground with limited facilities, including water and shared pit toilet.

The Park currently has three semi-permanent E-class operated facilities licensed by CALM, situated at Belburn Creek. CALM operates two sites for self-drive and self-catered T-class tour operators and private visitors at Kurrajong and Walardi camp. The three semi-permanent accommodation facilities are of particular interest to this research. The facilities are all adjacent to each other, located on the Belburn creek, and all can be considered simple, low-impact and under developed. The Belburn Creek location was determined by CALM, with the three operators directed to choose their own site from a choice of three. This location has no clear view or orientation to the Bungle-Bungle massif, nor does it have a view shed or any particular outstanding attributes. All three facilities shared many similarities such as:

1. Simple tented safari type accommodation
2. Shared shower facilities for all guests
3. Long-drop toilets
4. Light weight kitchen/dining facilities
5. Energy, either generated by photovoltaic cell, generator, or both
6. Water disposal to leach drains, with some grey water recycling
7. Landscaping is minimal, with some lawn areas, designated walk paths and sitting areas with fire pits
8. Per person nightly tariff, including breakfast and dinner ranged between \$100 - \$130

These camp facilities showed that low-impact nature-based facilities and their required infrastructure, technologies and logistic of supply can be achieved in remote areas. In terms of overall environmental technologies and low-impact design, the facilities would rate quite well. . The ‘buildings’ were simple and light with small footprints, and are appropriate to the location. Each demonstrated innovation and creativity in design and use of infrastructure. Often it was the camp proprietors who used their own skills or expertise to create or resolve infrastructure issues, as well as manufacturing and installing the infrastructure. Overall impact of these facilities on the environment could be considered negligible.

**Figure 3: Bungles/Purnululu Safari Camp**



All four living area beneficiaries (two from each language group) seem to have a strong interest in re-occupying their land on a more permanent basis, for living, as well as establishing a variety of tourist related

activities, including cultural (and visitors) centres, cultural and environmental interpretation, tours (walking, horse riding, vehicles) and accommodation facilities. Specific interests of each beneficiary include:

1. Paul Butters (Kija) to occupy the Date Palm/Fowl-house living area region at the northern end of the Park and actually outside the PNP and in the Conservation Park in the Osmond Range (thus named after the early Afghan traders who used it as their camel base and kept chickens).
2. Shirley Drill (Kija) to occupy the Kaware living area region, situated in the central western section of the Park.
3. Bonnie Edwards (Djaru) to occupy the Piccaninny/ living area region, situated in the central southern section of the Park. Mindi Mindi Aboriginal Corporation with her sister Tamba, Vincent and other members.
4. (Djaru) to occupy the Blue hole living area region, situated on the Ord River at the south western section of the Park. Bonnie seeks to run cultural tours here.

Most consultation was held with Paul Butters and Bonnie Edwards and included visits to their respective living areas and investigation of their preferred site for future buildings.

1. Paul expressed particular interest in occupying and living on his Date Palm living area land, with the intention of setting up 'low-key' tourist facilities and conducting guided (walking) tours and cultural interpretation at Fowlhouse.
2. Bonnie expressed interest in occupying and living on her living area land, with the intention of setting up a cultural centre and (high-tariff) tourist facilities with a view-shed over the domes and Cathedral gorge.

### **The Southern Forest Region**

The Southern Forest region of WA traverses Denmark, Walpole, and Pemberton to Nannup. This area has high tourism potential due to the uniqueness of its forests, which include Jarrah, Karri, Marri, Blackbutt and Tingle species. The economic viability of the area is undergoing re-adjustment following the banning of all old growth timber logging in WA in 2001. Consequently, sustainable tourism is seen as offering a sound and innovative economic base for the region. Currently there are a variety of tourist accommodation facilities in the area, including bed and breakfast, resorts and hotels, and caravan and camping. None of these facilities are considered as being sustainable, but some may well exhibit some sustainability characteristics. Current thoughts by CALM and WATC are to develop an ecolodge in the Jarrah forest of St John's Brook Conservation Reserve near Nannup. This concept presents an excellent pre-design opportunity for the project to develop a conceptual design brief for the site that corresponds to the project's developing best practice model.

## Chapter 5

### Project Overview and Implications

This section combines relevant conclusions from the literature review, STCRC meetings, case studies and site visits, with the potential for application in Southern Forests region and Purnululu National Park. By integrating the information and aims of all these sources, this project determined a holistic framework for remote area sustainable tourism facilities.

### Project Meetings Overview

Project meetings were conducted with STCRC staff primarily to clarify and refine the outcomes of this project, whereby it would be most beneficial to the future of sustainable tourism. Three meetings were conducted, all within the coverage of the STCRC program. As a result it was determined that the outcomes of this project *would include* the identification of appropriate environmental and sustainable technologies for application in remote regions. Specifically, these are to determine the technological (engineering) issues that face remote area facilities (and operators), and determine the key technological issues (and their priorities) associated with aspects of facilities infrastructure

The creating of a 'best practice model' will focus on appropriate environmental technologies and infrastructure design for remote area application and how they can be integrated into facilities infrastructure. Some key areas of technology application may include:

1. energy; (photovoltaics, wind, co-generation)
2. water
3. waste; solid, liquid, food, materials
4. appliances; refrigeration, ablutions, heating and cooling
5. access and transport
6. construction materials
7. communications

This technology focus beneficially adds to the specific nature of place and authenticity being informed by local cultural and environmental heritage. The blending of the personal and the technological will help inform a sustainable tourism model.

### Case Study and Site Visit Overview

Longitude 131 provided a high quality experience in an authentic natural setting. In many respects, view shed was the driving force and this is evident through the entire site selection, site planning, design and orientation of the facility. Environmental protection of the site was rigorously maintained during the construction process, which help maintain the authenticity of the site.

The facility is entirely serviced from the nearby existing Yulara townsite, including the piping of all water and waste. Longitude 131 has been promoted as low-impact facility, but this can be contested in that all services for the facility are created or treated by an infrastructure already in place to service a much larger resort which has a much greater impact. If Longitude 131 were to attempt to provide the same quality of service and setting without the back up of this existing infrastructure, it would be doubtful if they could do it in a sustainable manner as the resort is extremely energy intensive due to design decisions driven mainly by the need to justify the extremely high tariff. The resort management decided to develop Longitude 131 on the theme of European Explorers and Settlers. It seems the rationale for this was to appeal to its core European clientele. Whilst exposure to the local indigenous people can be experienced within the Uluru Park and tours to local communities, the resort itself has no reference to or acknowledgement of the indigenous people. Other than passive exposure to European Explorers and Settlers, there is no reference to any ecological or cultural education within the resort.

The Longitude 131 case study highlighted many of the issues inherent to remote area operation in sensitive sites. Without the extensive infrastructure supplied from the nearby Yulara resort, the most pressing issues for Longitude 131 would be supply of essential services such as food and other luxury amenities, power generation and water/waste treatment. Locating these services in the area would have been extremely difficult due to its physical isolation and proximity to both the Natural Park and protected fauna sites.

Although it is claimed that re-construction work after the freak bushfire in October 2003 'has followed world best environmental controls' it does not appear that any additional sustainability features have been included.

Paperbark Camp provided a more rudimentary level of service than Longitude 131, however, it did seem to achieve a much better balance between tariff and sustainable practices. Similar to Longitude 131, it relied on existing infrastructure for its power, water and waste treatment. The use of low embodied energy materials and a lack of electrical appliances makes paperbark quite a good performer, however, it is considered that more could have been done in terms of water usage reduction and reducing waste generation. Considering the budget, the camp performs well and is able to provide a unique experience in an idyllic bush setting. The owners/operators are working with some local indigenous people to organise cultural and environmental activities on the site, although these are in early development stages, and there is currently not much market interest. There is no explicit reference to any ecological or cultural education within the camp, although the camp/safari tents are operated on simple, low-impact principles.

Paperbark Camp highlighted the ability to provide basic accommodation (battery power, canvas tented accommodation) with minor servicing at a modest tariff. This approach obviously lends itself to remote area application as it puts a much lower resource load on the facility as a whole. The central area for guests was also good to take points from as it was of modest size given guest numbers and was quite well designed for its climate. However, energy and water provision (along with waste removal) are points that both of these facilities managed to use existing infrastructure to cover. The most important lesson to be learnt from this is that in remote areas where such services are not available this will be of paramount importance and will have major ramifications in terms of siting, site planning, design and occupation.

The two case studies gave valuable information to help assess and determine outcomes that can be applied to Purnululu and Southern Forests regions. Most focus was applied to the Purnululu National Park, but many of the observations can be applied to Southern Forests. Specific recommendations are presented in the 'design palette'.

Purnululu will undoubtedly grow as a tourist destination. The environmental fragility of the 'icon' dome formations and the cultural significance are paramount attractions to the Park and will also define visitor numbers. Purnululu Park Council and CALM policy and management to protect both of these are critical to achieving both the Traditional Owner and commercial tourist operator's (CTO) long term success. The increase in visitor numbers indicates that additional environmental and cultural activities and tourist accommodation facilities can be viable. Congruent with this conclusion, the traditional owners have indicated their strong interest and willingness in establishing cultural facilities and activities and accommodation facilities with their own living areas, and both traditional owners and some current CTO's expressed interest in establishing some form of JV together. Both traditional owners and CTO's acknowledged the value of introducing top-end facilities into the Park and indicated their desire to develop such facilities. The current facilities are overall rated as low-impact in terms of infrastructure, supply and operation, however many of the key principles of sustainable tourism were not evident at these facilities. There was no involvement of the local community, nor explicit interpretation leading to education. Although many important and essential aspects of 'sustainable design' was evident, other aspects such as 'sense of place based on the site' and 'quality view-shed' were not, although this was not a choice afforded to the operators.

The Park, and traditional owners living areas do have sites (which have been selected by the traditional owners) that could meet all the key elements of low-impact nature-based sustainable tourism for both cultural and accommodation facilities. It is therefore considered possible to develop a new, environmentally sound and innovative type of higher tariff accommodation facility.

## **Indigenous Criteria for Remote Tourism Facilities**

Indigenous design criteria was developed in this project by involvement in the project team of indigenous specialist Fred Spring (Relspre Pty Ltd) and subsequent consultation with indigenous stakeholders in the case studies. These criteria can guide the 'developer' in establishing a successful partnership with local indigenous cultural interests in a remote tourism facility development in a process that ensures cultural integrity and respect and understanding of the colonisation of 'Aboriginal Australia'. The engagement of indigenous cultural interests in the development process must be genuine and transparent and embrace the knowledge that cultural tourism is the only commercial use of land that can only be done by indigenous people. Wherever possible the 'developer' should be formed from the local and or regional Indigenous community, in whole or in part.

The *Cairns Charter on Partnerships in Ecotourism* ([www.ecotourism.org.au](http://www.ecotourism.org.au)) is the recommended reference on sustaining the operation of partnerships. The principle for the development of the Cairns Charter is based on the recognition that 'successful partnerships form the foundation upon which ecotourism can and has taken root in the world with noted positive results. Where effective partnerships have been absent, problems have often resulted in the planning and implementation of ecotourism projects'. A second recommended reference is the 'Indigenous Ownership and Joint Management of Conservation Land in WA' (consultation paper July 2003, WA Government).

The following cultural brief criteria contain core values and engender a *cross-cultural participatory design process* that embraces indigenous cultural interests in the site and surrounding country and aims to ensure cultural security, sensitivity and integrity in a process of partnership.

1. *A culture-friendly project development process*

- Respective of the local indigenous cultural interests.
- Encourage equitable participation by indigenous cultural interests.
- A comfortable and meaningful environ – physical, emotional, social, cultural, spiritual.
- A methodology that embraces indigenous cultural interests and protocols.
- An integration of indigenous land management strategies within conservation regimes to service the tourism enterprise.
- A Project Plan that includes a cultural engagement strategy, employment strategy and risk management.
- A cross cultural participatory design strategy.
- Engage indigenous cultural interests and planners as partners to advance design outcomes.
- The use of design criteria developed in the cultural brief development workshops.
- Sensitivity towards the past history and use of the site.

2. *Identify Land Tenure and Native Title Claimants*

- Understand protocols for development if proposed facility is on ALT estate refer DIA (WA).
- Understand protocols for development if proposed facility is on CALM estate refer CALM (WA).
- Identify the Traditional Owners and the Native Title Working Group (these may be several and separate groups).
- If necessary conduct an ethnographic survey to identify relationships and planning issues.

3. *Engagement with the Indigenous Community*

- Formal contact with the appropriate Native Title Working Group (refer NNNTT or appropriate Aboriginal Land Council) to inform them about the project and potential involvement in the project. There may be indigenous people who are 'outside' the recognised Native Title process who may have traditional ties to the land and may maintain cultural practice on the land. It is important to cultivate relationships with all indigenous cultural interests in the site.
- Ensure documented histories and collected stories about the site and surrounding land are in the finished development fabric.
- Support the conduct of ritual and ceremony throughout the progress of the project.
- Assess genuine indigenous ownership including the option for equity partnership as a real outcome of the project.

4. *Project Development Process*

- Develop a Project Plan that determines the future relationship between the project and the indigenous cultural interests, including involvement of indigenous professions in the process.
- The Project Plan would include an Engagement Strategy that outlines the cross cultural design process with the indigenous cultural interests.
- The Project Plan would include a Risk Management Plan as part of the quality assurance system.
- The project development process is a cross-cultural design process that is participatory and collaborative.
- Engage with an indigenous design team in the design collaborative process.
- Recruit indigenous people to be involved in the development process as consultants for the design and implementation stages.
- Develop linkages between the project and other indigenous cultural bodies that might benefit from the remote tourism facilities.
- The development of employment and training plans and opportunities, both during the design/construction of the project and the ongoing activities including the development of authentic and genuine cultural tourism opportunities.

5. *Integrating Indigenous Culture in the Development Environment*

- Incorporate Cultural representations and interpretations into the development – internal/external spaces and structures, landscape, building form and finish.
- Involve local indigenous and non- indigenous artists from the beginning of the project.

*6. The Physical Environment and Cultural Perceptions*

- Recognise the importance of indigenous relationships to the land and environment when considering the Design Landscape.
- The project is an opportunity for interpretation of indigenous views that can be translated in functional design, shared space and activity and relates to a wide range of functions related to tourism and cultural richness.
- A sustainability policy for the project to ensure the sustainability of the environment by respecting the people and land.

**Design Assessment Model and Palette**

The design and assessment model and the ‘design palettes’ (see appendices) provide the framework of a best practice model. This framework is inclusive of the key elements of sustainable tourism identified throughout the various inputs within this report. These include a draft schematic design of facilities at both Purnululu National Park and the Southern Forests (St Johns Brook Conservation Park) that integrates the design and technological requirements with the socio-environmental aspects of local cultural and ecological values.

The design palettes are supported by the ‘best practice model’ which has been prepared as an Excel spreadsheet tool which accompanies this report.

## *Chapter 6*

### **Conclusion**

This study found that ESD principles and practices generally guide remote area sustainable tourism facilities and that the core principles of Ecotourism as developed by both TIES and EA are directly relevant to sustainable tourism accommodation facilities.

The various models and guidelines reviewed highlight that, above all, the development, at whatever scale, must be informed by the natural and cultural environment in which it is to be situated. A sustainable tourism facility, in terms of design, is therefore location and site specific and this project has developed an integrated model that allows inclusion of these factors. These site-specific considerations are inextricably linked to creating an authentic sense of place, in both their destination and product. The other aspects of environmental sustainability that require consideration, such as energy, water and materials efficiency, although critical, can be considered universal but still require some site-specific consideration and evaluation.

The literature review also found a clear requirement that the critical issues of authenticity and sense of place in the facilities that compliments but does not dominate the destination can to a large extent be informed by, and developed with, the inclusion of indigenous and local people. All the key principles and actions of sustainable tourism seek the inclusion of indigenous people and local communities. It would follow therefore that sustainable facilities, both at the planning and development stages would use the local knowledge of the area. An indigenous design criteria was developed for remote tourism facilities.

The Longitude 131 case study highlighted many of the issues inherent to remote area operation in sensitive sites. Without the extensive infrastructure supplied from the nearby Yulara resort, the most pressing issues for Longitude 131 would be supply of essential services such as food and other luxury amenities. Locating power generation and water/waste treatment services in the area would have been extremely difficult due to its physical isolation and proximity to both the Natural Park and protected fauna sites. Accordingly no sustainability features were included for services and it does not appear that this has been achieved in re-construction following a freak bushfire in October 2003 that destroyed much of the facility.

The Paperbark Camp case study highlighted the ability to provide basic accommodation (battery power, canvas tented accommodation) with minor servicing at a modest tariff. This approach obviously lends itself to remote area application as it puts a much lower resource load on the facility as a whole. The central area for guests was of modest size and well designed for its climate. However, for energy and water provision (along with waste removal) the facility again used existing infrastructure. In remote areas where such services are not available their siting, design and occupation will have major ramifications.

These two case studies gave valuable information to help assess and determine outcomes that can be applied to Purnululu and Southern Forests regions. The focus of this study was on the Purnululu National Park, but many of the observations can be applied to Southern Forests. Specific recommendations are presented in the 'design palettes', appendices to this report.

At Purnululu both traditional owners and CTO's acknowledged the value of introducing top-end facilities into the Park and indicated their desire to develop such facilities. The current facilities are overall rated as low-impact in terms of infrastructure, supply and operation, however many of the key principles of sustainable tourism were not evident at these facilities. There was no involvement of the local community, nor explicit interpretation leading to education. Although some important and essential aspects of 'sustainable design' were evident, other aspects such as 'sense of place based on the site' and 'quality view-shed' were not, although this was not a choice afforded to the operators. The Park, and traditional owners living areas do have sites (which have been selected by the traditional owners) that could meet all the key elements of low-impact nature-based sustainable tourism for both cultural and accommodation facilities. It is therefore considered possible to develop a new, environmentally sound and innovative type of higher tariff accommodation facility at Purnululu.

The design and assessment model and the 'design palettes' developed in this project (see appendices) provide the framework of a best practice model. This framework includes a draft schematic design of facilities at both Purnululu National Park and the Southern Forests (St Johns Brook Conservation Park) that integrates the design and technological requirements with the socio-environmental aspects of local cultural and ecological values. The 'design palettes' are supported by the 'best practice model' which has been prepared as an Excel spreadsheet tool and accompanies this report.

# APPENDIX A: Best Practice Model

Best Practice Model for Low-impact Nature Based Tourism Facilities in Remote Regions



## Sustainability Assessment Model

Project Name:

Project Documentation:

Project Details	Enter Data
Building location	<input type="text"/>
Operators	<input type="text"/>
Facility type	<input type="checkbox"/> Visitor Centre <input type="checkbox"/> Accommodation unit only <input type="checkbox"/> Serviced Accommodation <input type="checkbox"/> Other (please specify)
	<input type="text"/>
Estimated Average Occupancy:	Guests <input type="text"/>
	Full Time Employees <input type="text"/>
Completion date	<input type="text"/>

Statutory Requirements	Enter Data
Local Government Area	<input type="text"/>
Land Tenure (tick applicable)	<input type="checkbox"/> Freehold <input type="checkbox"/> Crown
Owner / Lessee Details	<input type="text"/>
Regulatory Requirements for Development (tick applicable)	<input type="checkbox"/> Ethnographic study <input type="checkbox"/> Aboriginal Cultural Materials Committee <input type="checkbox"/> Aboriginal Land Trust <input type="checkbox"/> Environmental Impact Statement <input type="checkbox"/> Social Impact Statement
Details	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

Cultural Issues	Enter Data
Traditional Owner / Representatives	<input type="text"/>
Language Group	<input type="text"/>
Aboriginal Body Corporate Representative Body (if applicable)	<input type="text"/>
Proposed Traditional Owner Participation Level In Development	<input type="checkbox"/> None <input type="checkbox"/> T.O Employment Opportunities <input type="checkbox"/> T.O Management Opportunities <input type="checkbox"/> Joint Venture <input type="checkbox"/> Traditional Owner Owned and Operated
Details	<input type="text"/> <input type="text"/> <input type="text"/>
Native Title Representative Body	<input type="text"/>
Native Title Claim Status (tick applicable)	<input type="checkbox"/> No Claim Intended <input type="checkbox"/> Claim Registered <input type="checkbox"/> Connection Document Prepared <input type="checkbox"/> In Mediation <input type="checkbox"/> Lodged in Federal Court <input type="checkbox"/> Determination Made
Details of Claim / Determination	<input type="text"/> <input type="text"/> <input type="text"/>

Facility Information	Enter Data
Facility Status	<input type="checkbox"/> Existing <input type="checkbox"/> Renovation <input type="checkbox"/> New
Accommodation type (tick applicable)	<input type="checkbox"/> Safari-Camp <input type="checkbox"/> Hotel <input type="checkbox"/> Resort
Accommodation status (tick applicable)	<input type="checkbox"/> Temporary <input type="checkbox"/> Semi-Permanent <input type="checkbox"/> Permanent
Dates of Operation	<input type="text"/>

Site and Climate Details																									
<b>Site Development Information</b>																									
Site information showing following: (tick when completed)	<table border="1"> <tr><td>Cadastral information</td><td><input type="checkbox"/></td></tr> <tr><td>Topographical information</td><td><input type="checkbox"/></td></tr> <tr><td>Biodiversity (endangered, rare, significant or special)</td><td><input type="checkbox"/></td></tr> <tr><td>  Existing Vegetation</td><td><input type="checkbox"/></td></tr> <tr><td>  Existing Fauna Sites</td><td><input type="checkbox"/></td></tr> <tr><td>  Existing Water Bodies</td><td><input type="checkbox"/></td></tr> <tr><td>  Existing Drainage areas</td><td><input type="checkbox"/></td></tr> <tr><td>View shed</td><td><input type="checkbox"/></td></tr> <tr><td>Existing Buildings</td><td><input type="checkbox"/></td></tr> <tr><td>Location of Services</td><td><input type="checkbox"/></td></tr> <tr><td>Pedestrian Access</td><td><input type="checkbox"/></td></tr> <tr><td>Vehicular Access</td><td><input type="checkbox"/></td></tr> </table>	Cadastral information	<input type="checkbox"/>	Topographical information	<input type="checkbox"/>	Biodiversity (endangered, rare, significant or special)	<input type="checkbox"/>	Existing Vegetation	<input type="checkbox"/>	Existing Fauna Sites	<input type="checkbox"/>	Existing Water Bodies	<input type="checkbox"/>	Existing Drainage areas	<input type="checkbox"/>	View shed	<input type="checkbox"/>	Existing Buildings	<input type="checkbox"/>	Location of Services	<input type="checkbox"/>	Pedestrian Access	<input type="checkbox"/>	Vehicular Access	<input type="checkbox"/>
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<b>Annual Rainfall</b>	<input type="text"/>																								

# Project Assessment

Mandatory fields / Management Issues	
Environmental Factor	
Social Factor	
Economic Factor	
<b>1. Pre-planning Stage</b>	
Indicator/s	
Statement of Intents of Project	Environmental <input type="checkbox"/>
	Social <input type="checkbox"/>
	Economic <input type="checkbox"/>
Undertaking to develop a Sustainability Brief	<input type="checkbox"/>
Undertaking to develop a Cultural Brief	<input type="checkbox"/>
Undertaking to develop an effective Environmental Management System	<input type="checkbox"/>
Commitment to an interdisciplinary and co-ordinated approach between designers, engineers and consultants	<input type="checkbox"/>
Commitment to a co-ordinated approach between government bodies, operators, indigenous and local community	<input type="checkbox"/>
Site selection and location	
Maximise View Shed to increase the experiential value of development	<input type="checkbox"/>
Assessment of ecological value of site	Environmental Impact Statement <input type="checkbox"/>
	Flora Fauna Protection Statement <input type="checkbox"/>
Transport and supply logistics	<input type="checkbox"/>
Protection of main access road - speed limits and regular maintenance	<input type="checkbox"/>
Retention of all existing features, zero degradation policy	<input type="checkbox"/>
Infrastructure Provision requirements	<input type="checkbox"/>
Community Impact Assessment	<input type="checkbox"/>
Cultural mapping studies, both local and indigenous	<input type="checkbox"/>
Investigate Utilisation of existing buildings, facilities, infrastructure, etc.	<input type="checkbox"/>
Research locally produced consumables and resources	<input type="checkbox"/>
Feasibility Study	<input type="checkbox"/>

2. Design Stage	
Indicator/s	
<i>Develop and implement Sustainability Brief</i>	<input type="checkbox"/>
<i>Develop and implement Cultural Brief</i>	<input type="checkbox"/>
<i>Develop an effective Environmental Management System</i>	<input type="checkbox"/>
<i>Integrated design approach between architects, engineers and all consultants</i>	<input type="checkbox"/>
<i>Consideration of all relevant policies regarding land use, tenure, aboriginal involvement, Health regulations and licensing conditions</i>	<input type="checkbox"/>
<i>Use of energy audits, benchmarks, targets and/or performance modelling for performance testing (tick applicable)</i>	<input type="checkbox"/> Energy Audits <input type="checkbox"/> Benchmarks <input type="checkbox"/> Targets <input type="checkbox"/> Performance Modelling
<i>Form and Space</i>	<input type="checkbox"/> Site setting <input type="checkbox"/> Responds to surroundings <input type="checkbox"/> Quality internal environments
<i>Protection and enhancement of natural ecological features</i>	<input type="checkbox"/> Habitat Corridors <input type="checkbox"/> Watering Holes <input type="checkbox"/> Feeding Grounds
<i>Formulation and implementation of Minimal Impact Codes of Conduct for all resources and materials</i>	<input type="checkbox"/> Water Supply <input type="checkbox"/> Energy Supply <input type="checkbox"/> Materials Supply <input type="checkbox"/> View shed preservation <input type="checkbox"/> Ecology Preservation <input type="checkbox"/> Flora Fauna Preservation
<i>Appropriateness of site planning with regard to constraints and opportunities offered by the natural and built environment</i>	<input type="checkbox"/> Microclimate (eg sun, wind, humidity, etc) <input type="checkbox"/> Natural elements (both + & - effect) <input type="checkbox"/> Man-made elements (both + & - effect) <input type="checkbox"/> Biodiversity <input type="checkbox"/> Heating Degree Days <input type="checkbox"/> Cooling Degree Days <input type="checkbox"/> Prevailing Winds
<i>Appropriate carrying capacity of camp - No. of guests commensurate with environmental and economic feasibility of camp</i>	No of guests required to be economically feasible <input type="text"/> No of guests environmentally feasible <input type="text"/> No of guests accommodated <input type="text"/>
<i>Low Impact Facility</i>	<input type="checkbox"/> Water supply and Conservation <input type="checkbox"/> Energy Supply and Conservation <input type="checkbox"/> Food Supply and Conservation <input type="checkbox"/> Waste minimisation, reuse and recycling <input type="checkbox"/> Materials supply and conservation <input type="checkbox"/> Noise pollution control
<i>Passive Solar Design Measures to minimise energy use for heating, cooling, lighting and ventilation</i>	<input type="checkbox"/> Appropriate planning for solar orientation <input type="checkbox"/> Appropriate zoning for thermal control <input type="checkbox"/> Inclusion of natural day-lighting plus sunlight glare control <input type="checkbox"/> Appropriate use of insulation <input type="checkbox"/> Appropriate use of thermal mass

Specification and usage of building systems and methods which reduce energy consumption during occupancy	Renewable energy sources <input type="checkbox"/>
	Low-impact energy sources <input type="checkbox"/>
	Low Voltage Lighting <input type="checkbox"/>
	Timed Lighting <input type="checkbox"/>
	Eco-labelled Goods <input type="checkbox"/>
	Design for minimal use of equipment and appliances <input type="checkbox"/>
	Energy Demand Management Strategies <input type="checkbox"/>
Selection of green materials and processes for low environmental and health impacts	Solid Waste Treatment Process <input type="checkbox"/>
	Liquid Waste Treatment Process <input type="checkbox"/>
	Interior Air Quality <input type="checkbox"/>
	Toxic Offgassing / Leaching <input type="checkbox"/>
Facilitation of pedestrian and non-motorised transport - minimise vehicular movement into campsite	Pedestrian Access <input type="checkbox"/>
	Vehicular Access <input type="checkbox"/>
Transportation Logistics - environmental impact	Access and Egress Impact <input type="checkbox"/>
	Supply Transportation <input type="checkbox"/>
	Waste Transportation <input type="checkbox"/>
Design measures to integrate cultural contextual parameters	Use of Cultural Brief <input type="checkbox"/>
	Form and Space considerations <input type="checkbox"/>
	Foster understanding of Sustainability <input type="checkbox"/>
Interpretation and educational facilities to enhance the "user's" understanding of and integration with:	Natural Environment <input type="checkbox"/>
	Cultural Environment <input type="checkbox"/>
	Foster understanding of Sustainability <input type="checkbox"/>
Community Consultation	Local Community <input type="checkbox"/>
	Regional Community <input type="checkbox"/>
	Indigenous Community <input type="checkbox"/>
Response, support and/or recognition of local social context	Local community Support <input type="checkbox"/>
	Open Days <input type="checkbox"/>
	Educational Days <input type="checkbox"/>
Appropriate level of resource consumption (cost efficiency)	<input type="checkbox"/>
Use of local materials	<input type="checkbox"/>
Use of local trades and specialisations if available	<input type="checkbox"/>
Transportation Logistics - economic impact	<input type="checkbox"/>
Specification of building systems and methods which reduce the energy consumption and waste during construction	<input type="checkbox"/>

3. Construction Stage	
Indicator/s	
Implementation of Construction Environmental Management Plan	<input type="checkbox"/>
Implementation of Minimal Impact Codes	<input type="checkbox"/>
Construction Process Management in place for environmentally responsible construction technique and schedule	<input type="checkbox"/>
Construction Waste Management Plan in place for responsible waste management and waste reduction	Control materials-inventory to limit over-ordering and related wastage <input type="checkbox"/>
	Building waste depot and site-specific code of conduct for sub-contractors <input type="checkbox"/>
	Maximising re-use and recycling of materials, components and Construction assemblies <input type="checkbox"/>
Construction Impact Management Plan implemented along with Minimal Impact Codes	<input type="checkbox"/>
Quality Based Selection of tender candidates. Contractor's experience (environmental management) to be considered as a key performance indicator	<input type="checkbox"/>
Selection of foundation systems that minimise cut and fill	<input type="checkbox"/>
Considerations regarding toxicity, off-gassing and air quality	<input type="checkbox"/>
Employment and skills base creation	<input type="checkbox"/>
Local labour used where possible	<input type="checkbox"/>
Local labour used where possible	<input type="checkbox"/>
Local construction techniques and specialities used where possible	<input type="checkbox"/>

4. Occupancy Stage	
Indicator/s	
A Sustainable Operation and Maintenance Plan statement for post construction project assessment, operational control and environmental, social and cultural improvement	<input type="checkbox"/>
Continuing implementation and development of Environmental Management System	<input type="checkbox"/>
Proximity of staff to facility	<input type="checkbox"/>
Staff responsibility, knowledge and awareness of environmental steps taken to improve sustainability	<input type="checkbox"/>
Ongoing facility contribution to nature conservation	<input type="checkbox"/>
Minimal impact plans revision	<input type="checkbox"/>
Waste management revision	<input type="checkbox"/>
Use of low impact facility consumables (detergents, cleaning solutions etc)	<input type="checkbox"/>
Strategies for minimisation and recycling of operational waste, eg paper, glass, Compostables	<input type="checkbox"/>
<b>Reporting, focussing on the following:</b>	<input type="checkbox"/> Annual facility water consumption per guest (kL) <input type="checkbox"/> Annual potable water consumption per guest (kL) <input type="checkbox"/> Annual water volume recycled per guest (kL) <input type="checkbox"/> Annual volume of liquid waste per guest to sewer (kL) <input type="checkbox"/> Annual use of non-biodegradable chemicals per guest (L) <input type="checkbox"/> Annual volume of solid waste per guest (m3) <input type="checkbox"/> Annual volume of solid waste to land fill per guest (m3) <input type="checkbox"/> Annual Volume of solid waste recycled per guest (m3) <input type="checkbox"/> Annual total operational energy consumption per guest (kWh) <input type="checkbox"/> Annual total energy consumption per guest provided from renewable energy sources (kWh) <input type="checkbox"/> Annual total energy non-renewable fuel use per guest Unleaded Petrol (L) <input type="checkbox"/> Diesel (L) <input type="checkbox"/> Gas (kJ) <input type="checkbox"/> <input type="checkbox"/> Energy Demand Management Strategies <input type="checkbox"/> Measures taken for harvesting, use, re-use or recycle for on-site resources <input type="checkbox"/> Measures taken for harvesting, use, re-use or recycle for off-site resources
Use of local staff where possible, especially indigenous members of community	<input type="checkbox"/>
Ongoing education of staff in respect to social, cultural and environmental practices of facility	<input type="checkbox"/>
Review of interpretative material for accurate and current content	<input type="checkbox"/>
Provision of local benefits and ongoing community education and consultation	<input type="checkbox"/>
Cultural and Social commitments with an emphasis on indigenous involvement	<input type="checkbox"/>
Community awareness initiatives, fact sheets, web site, integration in local initiatives	<input type="checkbox"/>
Ongoing increase in employment and skills base creation	
Visitor Risk Management	
Provision of local benefits through the use of:	Locally based tour operators, Employment of local knowledge, Purchase of provisions and services

# CRC Sustainable Tourism Project #62004

## Best Practice Model for Low-impact Nature Based Tourism Facilities in Remote Regions

### Design Report 01 - Purnululu National Park

Team members: Martin Anda, David Beyer, Bernhard Elber, Grant Revell, Fred Spring



#### Introduction

This panel presents a hypothetical project carried out from pre-planning to occupancy and accordingly is written in the past tense. Several site specific concepts were identified with representatives of two traditional owners groups at Purnululu National Park. The consultation process included discussions with other stakeholders (ADM, CALM and WATC). The concepts included a semi-permanent tented safari camp at a higher tariff than currently exists, a cultural centre, and a guided backpacker camping tour. Each of these could be developed at identified sites at Purnululu. The site specific concept represented in this panel is for the semi-permanent tented safari camp. Further work will be necessary to communicate the other concepts. Sustainable technology options are presented in the second panel Design Report 02 - Great Southern Forests.

#### Pre-planning Stage

Following investigation of all relevant statutory requirements, the developers aimed to create a cross-cultural participatory design process that embraced Aboriginal cultural interests in the site and surrounding country and aimed to ensure cultural security, sensitivity and integrity in a process of partnership.

The developers undertook to develop an effective Environmental Management Plan, in conjunction with a Sustainability Brief and a Cultural Brief. The Cultural Brief contained core values to ensure that cultural needs were met. These included:

- A "culture-friendly" project development process
- Identification of all Land Tenure and Native Title Claimants
- Engagement with the Aboriginal Community
- Project Development Process that addresses Indigenous involvement in project
- Integration of Aboriginal Culture in the Development Environment
- The Physical Environment and Cultural Perceptions

Site selection was undertaken in conjunction with Traditional Owners and took into account factors such as:

- Viewshed (from and to the proposed facilities)
- Access and Egress
- Ecological Value
- Cultural Value
- Economic Value

#### Design Stage

In the design stage the Environmental Management Plan was developed and implemented, along with the Sustainability and Cultural Brief. Minimal Impact Codes were developed for use during the construction phase. An integrated design approach between all consultants and the use of water and energy audits, along with thermal performance modelling ensured a low-impact facility resulted. Aesthetic cues were taken from the surrounding bee-hive forms of the Bungle Bungle range, in keeping with the desires of the Traditional Owners.

Key considerations in the design process included:

- Appropriate carrying capacity of camp
- Maintenance and enhancement of natural ecological features
- Climate sensitive design, renewable energy and low energy appliances
- Specification of building systems and methods which reduce wastage and promote sustainable construction
- Integration of interpretative facilities
- Community consultation
- Minimisation of water usage and waste in operation
- Maximising resource recovery

#### Construction Stage

Construction of the camp was undertaken in accordance with the Environmental Management Plan, along with the implementation of Minimal Impact Codes. The contractor was selected based on a quality based assessment and their environmental management record.

Key considerations during the construction process were:

- Compliance with the Environmental Management Plan
- Implementation of Minimal Impact Codes
- Waste Reduction
- Use of local labour
- Employment and skills base creation

#### Occupancy Stage

The operators have developed a Sustainability Maintenance Policy which states methods and actions for maintaining sustainability. It covers areas of operational control, benchmarks for assessment and methods for environmental, social, cultural and economic improvement.

Key considerations during the occupancy stage are:

- Resource management (water, energy, waste)
- Sustainability reporting
- Use of local staff, guides and local knowledge
- Provision of local benefits
- Annual revision of sustainability maintenance policy
- Accreditation by a recognised accreditation scheme



#### Prefabricated construction

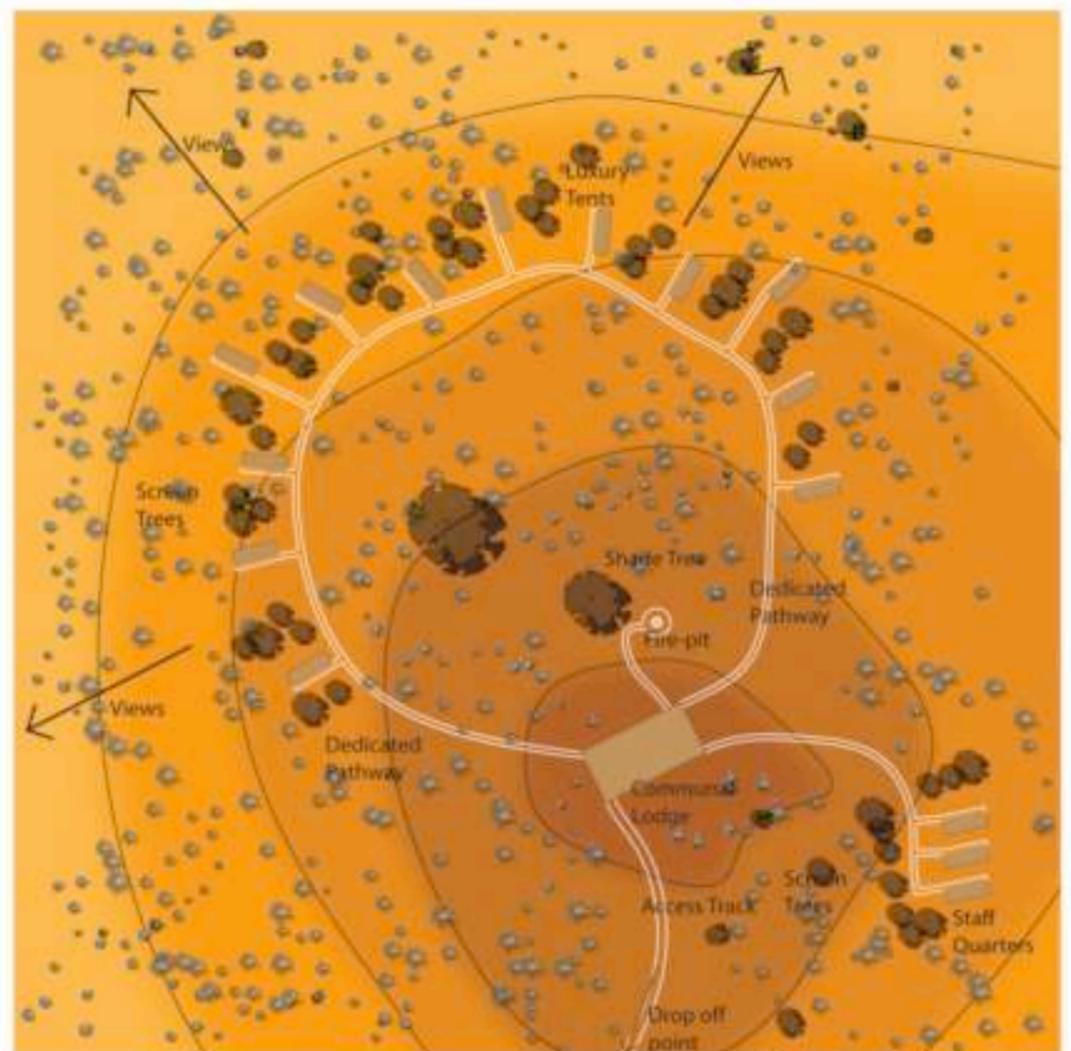
The base platform may be fitted with various tents and cabins dependent upon site specific design criteria. A dual skin tented structure reminiscent of the local bee-hive formations was chosen for the Purnululu Site



**Viewshed** - view from inside luxury tent  
Viewshed has been maximised through careful siting to maximise experiential and educational value of facility



**Site Layout** - View from communal Lodge  
The communal lodge provides all services and amenity for guests. It is situated upon the highest point of the site and is accessible by foot or electric buggy only



#### Site Plan

Site planning has been done with Traditional Owner consultation and has maximised the use of the site to create a Low-impact Nature Based Tourism Facility



# CRC Sustainable Tourism Project #62004

## Best Practice Model for Low-impact Nature Based Tourism Facilities in Remote Regions

### Design Report 02 - Great Southern Forests

Team members: Martin Anda, David Beyer, Bernhard Elber, Grant Revell, Fred Spring



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environmental technology centre



#### Facility Procurement

As per the Purnululu development in Design Report 01, the developers aimed to procure a Low-impact facility that paid close attention to social, economic and environmental factors surrounding the development. The developers undertook to create an effective Environmental Management Plan, in conjunction with Sustainability and Cultural Briefs. Site selection was undertaken in conjunction with Traditional Owners.

During the Design Stage the Environmental Management Plan was developed and implemented, along with the Sustainability and Cultural Briefs. Minimal Impact Codes were developed for use during Construction phase. It was decided that a cabin such as the "Australian Outback Lodges" Alpine Lodge would be suitable for the region. The Alpine Lodge has been designed for colder climates with extra insulation and operable louvres for natural ventilation.

Construction of the camp was undertaken in accordance with the Environmental Management Plan, along with the implementation of Minimal Impact Codes. The contractor was selected based on a quality-based assessment and their environmental management record.

Following occupancy, the operators have developed a Sustainability Maintenance Policy, which states methods and actions for maintaining sustainability. They report yearly and focus on areas such as:

- Annual facility water consumption per guest (kL)
- Annual potable water consumption per guest (kL)
- Annual water volume recycled per guest (kL)
- Annual volume of liquid waste per guest to sewer (kL)
- Annual use of non-biodegradable chemicals per guest (L)
- Annual volume of solid waste per guest (m3)
- Annual volume of solid waste to land fill per guest (m3)
- Annual Volume of solid waste recycled per guest (m3)
- Annual total operational energy consumption per guest (kWh)
- Annual total energy consumption per guest provided from renewable energy sources (kWh)
- Annual total energy non-renewable fuel use per guest (L)
- Energy Demand Management Strategies
- Measures taken for harvesting, use, re-use or recycle for on-site resources
- Measures taken for harvesting, use, re-use or recycle for off-site resources

#### Technologies

##### Energy

The lakeside communal lodge is north facing. Photovoltaics on the roof structure provide power for the whole camp. Cabins are appliance free and only have a small fan and reading lights. Low wattage lighting is used on the dedicated path to guide guests at night. A bio-diesel back-up generator is located on-site. Its use is limited to daylight hours, and only in high energy demand situations.

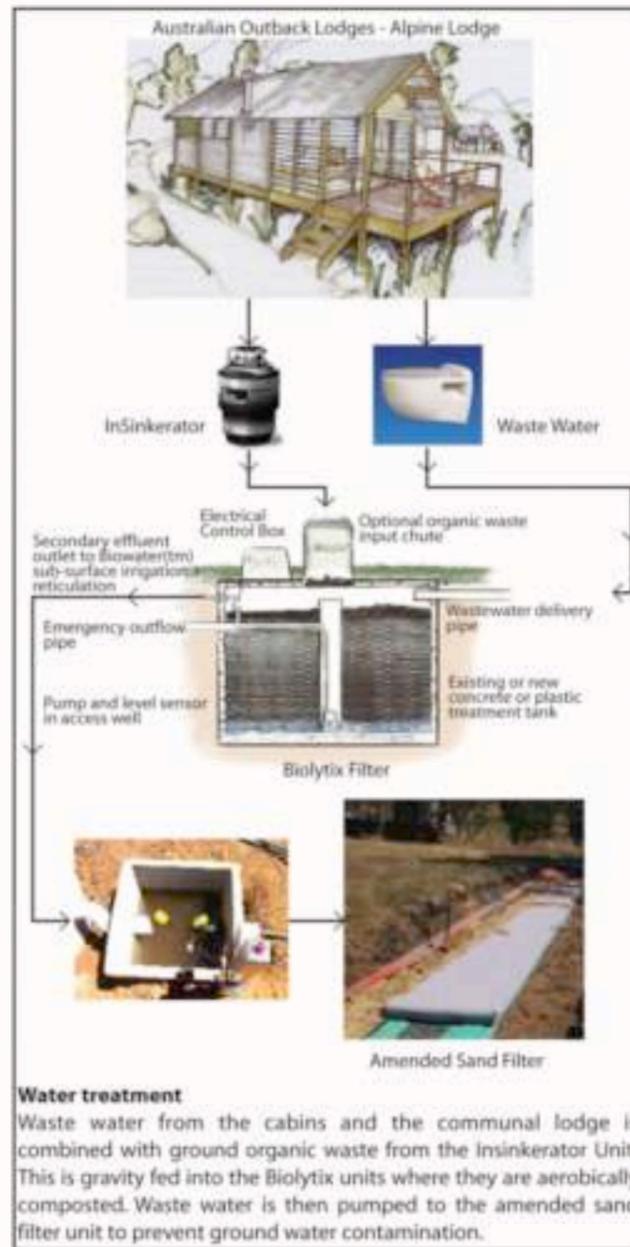
##### Water

Water is taken from the local ground water supply and treated using a solar flow desalination unit. Potable water is then stored in tanks, which have formed part of the architecture of the communal lodge. Rainwater is also collected and stored on-site. Waste water from the cabins and communal lodge is treated by an innovative effluent treatment system such as the Biolytix or BioMax system. This secondary treated effluent is then pumped to an amended sand filter, such as the Enviro Safe unit, prior to discharge back to ground water. This ensures protection of the local water body and water-table.

##### Waste

All putrescible waste is ground using an "InSinkerator" unit and then fed into the Biolytix system for treatment. This ensures a ready supply of compostable waste to ensure the system continues to operate at peak efficiency and zero organic waste to landfill. All solid waste is sorted in the recycling area attached to the Communal Lodge for periodic collection.

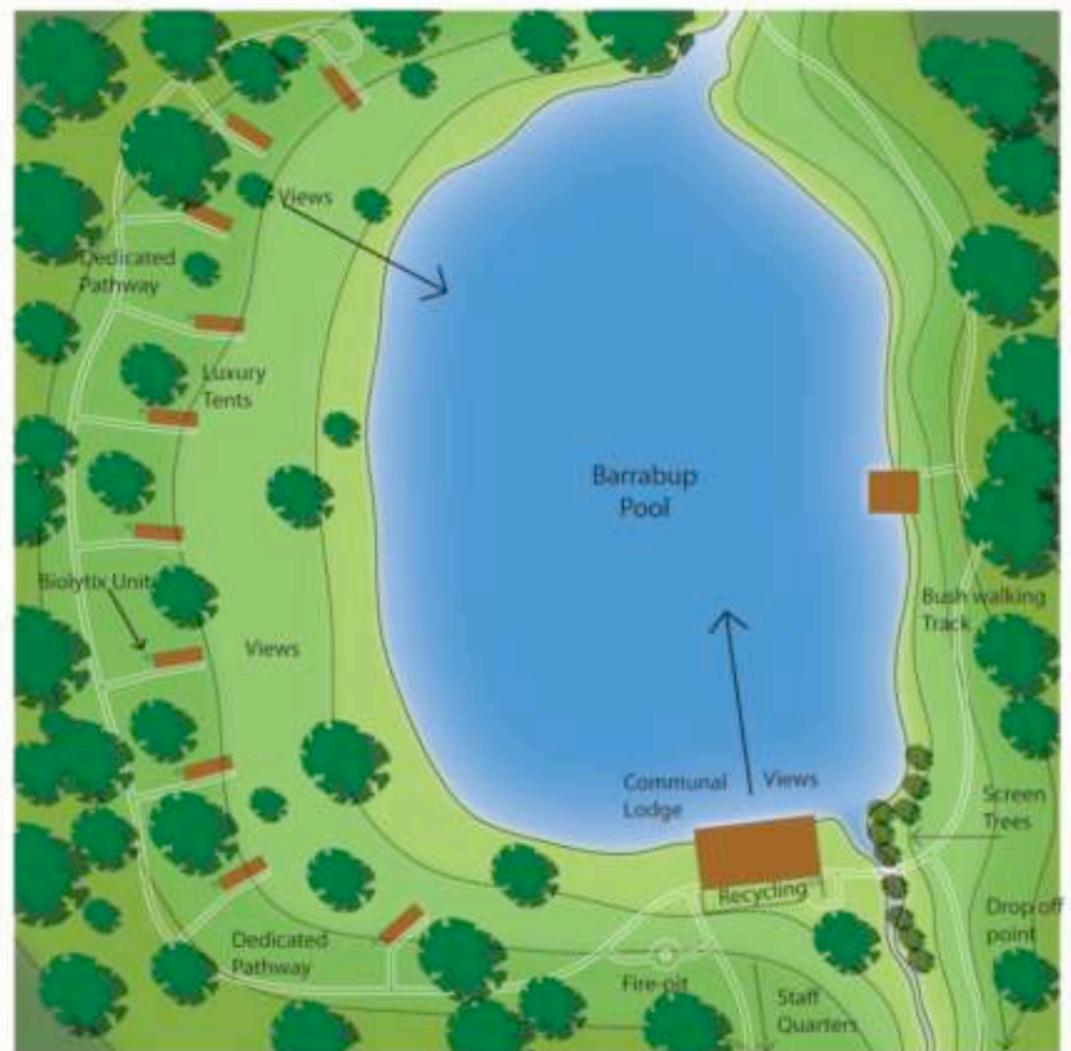
Images of luxury tents are provided courtesy of Australian Outback Lodges. [www.aussielodges.com](http://www.aussielodges.com)



**Viewshed** - View from inside Australian Outback Lodges luxury tent overlooking Barrabup Pool. Viewshed has been maximised through careful siting to maximise experiential and educational value of facility

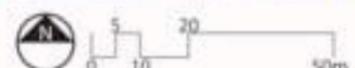


**Site Layout** - View from communal lodge over viewing platform and jetty. The communal lodge generates all power and is the receipt point for all solid waste to be sorted for collection.



#### Site Plan

Site planning has been done with Traditional Owner consultation and has been designed to maximise viewshed while maintaining guest privacy and experiential quality. Special attention has been paid to all social, economic and environmental factors during the procurement process to ensure the creation of a Low-impact Nature Based Tourism Facility.



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