



## siting & design guidelines for Structures on the Victorian Coast



### The Victorian Coastal Strategy - Vision for the Coast.

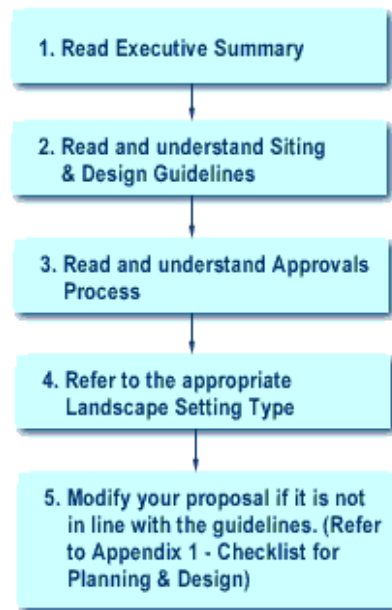
*"The coast of Victoria will be a pleasure to experience by both present and future generations, respected by all and recognised as one of the nation's icons."*

### How to use these Siting & Design Guidelines?

What is your interest?

- Individual or developer
- Responsible Authority
- Committee of Management
- Coastal Action Group

In all instances where new activities and uses are proposed, discuss and review your proposal with relevant authorities, and follow this procedure:



Siting and Design Guidelines for the Victorian Coast, May 1988

By Tract Consultants Pty Ltd. and Chris Dance Land Design Pty. Ltd.

For the Victorian Coastal Council.

**The Siting and Design Guidelines** can also be viewed at <http://www.vcc.vic.gov.au>

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# Contents

|  |    |  |    |
|--|----|--|----|
| <b>Foreword</b>  | 3  | 3.2 Cultural and Aesthetic Guidelines  | 25 |
| <b>Executive Summary</b>   | 4  | 3.2.1 Introduction   | 25 |
| <b>1.0 Introduction</b>  | 7  | 3.2.2 Form   | 27 |
| 1.1 The Victorian Coast - A Special Landscape Resource   | 7  | <u>3.2.3 Line</u>  | 28 |
| 1.2 The Challenge  | 8  | 3.2.4 Colour   | 29 |
| <b>2.0 Guiding Principles for Coastal Development</b>  | 9  | 3.2.5 Views (including scenic lookouts, road views, path and open space views) | 31 |
| 2.1 General Principles for Coastal and Marine Management and Design  | 9  | 3.2.6 Visual Co-ordination   | 32 |
| 2.1.1 Sustain  | 9  | 3.2.7 Viewshed Protection  | 32 |
| 2.1.2 Protect  | 9  | 3.2.8 Signs and Utility Services   | 33 |
| 2.1.3 Direct   | 9  | 3.2.9 Landscape Conservation and Development                                   | 35 |
| 2.1.4 Develop  | 9  | 3.2.10 Heritage and Historic Structures and Sites                              | 36 |
| 2.2 General Description of Siting and Design Guidelines  | 10 | 3.3 Ecological Guidelines  | 37 |
| <b>3.0 Siting and Design Guidelines</b>  | 11 | 3.3.1 Introduction   | 37 |
| 3.0.1 Introduction   | 11 | 3.3.2 Land Drainage  | 38 |
| 3.1 Functional Guidelines  | 11 | 3.3.3 Vegetation   | 38 |
| 3.1.1 Introduction   | 11 | 3.3.4 Soil   | 39 |
| 3.1.2 Appropriateness of Development   | 11 | 3.3.5 Coastal Waters   | 40 |
| 3.1.3 Grouping of Structures   | 12 | 3.3.6 Ecological Sustainability and the Recognition of Environmental Processes | 41 |
| 3.1.4 Coastal Settlements  | 13 | 3.3.7 Recognition and Protection of Marine Biological Values                   | 41 |
| 3.1.5 Urban Infill   | 13 | <b>4.0 Siting and Design Approvals Process</b>                                 | 42 |
| 3.1.6 Setback from Shoreline   | 14 | 4.1 Use of Guidelines  | 42 |
| 3.1.7 Utility Services   | 14 | 4.2 Approvals for use and development on Coastal Crown Land                    | 42 |
| 3.1.8 Vehicular Traffic Implications   | 15 | 4.3 Project Development Process  | 42 |
| 3.1.9 Pedestrian Accessibility and Open Space Links  | 16 | <b>Appendices</b>  | 46 |
| 3.1.10 Materials   | 17 | Appendix 1 - Checklist for Planning and Design                                 | 46 |
| 3.1.11 Maintenance - Design Implications   | 18 | Appendix 2 - Contacts  | 49 |
| 3.1.12 Structural Design   | 19 | <b>References</b>  | 51 |
| 3.1.13 Energy Considerations   | 21 |  |    |
| 3.1.14 Drains, Bridges, Boardwalk and Similar Structures   | 22 |  |    |
| 3.1.15 Marine Structures, Aquaculture, Breakwaters/Harbours, Buoys/Pens and Beach Protection Structures, including Groynes | 23 |  |    |
| 3.1.16 Pipeline and Cable Shore Crossing   | 24 |  |    |

Victoria's coastline contains outstanding landscapes of great natural beauty and cultural significance - from wetlands, beaches, dunes, inlets and lagoons to rocky headlands, caves, forests, rolling farmlands, cultural sites, historic towns and the built form of coastal settlements.

The vast majority of Victorians live close to the coast, and in addition to supporting commercial and industrial infrastructure, the coast is one of our leading recreation and tourism destinations - of immense importance to our economy and social fabric.

The *Victorian Coastal Strategy* (1997) establishes a vision for the management of the Victorian coast. It provides the framework to ensure that the coast of Victoria will be a pleasure to experience by both present and future generations, respected by all and recognised as one of the nation's icons.

By recognising that the coast is an important ecological, as well as a vibrant tourism, economic and community asset, the Coastal Strategy achieves a balance between conservation and development and provides a range of opportunities for coastal users and visitors while ensuring the long term conservation and protection of the coast's important values and features.

There will continue to be increasing pressure for more development on the coast. This will include the further spread of coastal settlements and demand for improved recreation and tourism facilities. The challenge is to encourage sympathetic development, in appropriate locations, which complements the surrounding landscape and results in excellence in design and improved facilities. Protecting and enhancing our coastal landscape is of critical importance to our well being as a community and relies partly on understanding of our landscape resources and its sensitivity to change.

The Coastal Strategy has identified a number of measures which will assist to protect and enhance Victoria's coastal landscape. These measures include:

- Providing direction for the location and scale of use and development on the coast by identifying coastal settlements and activity nodes and protecting the scenic landscape through the development of coastal planning overlay provisions in planning schemes to protect the essential character of coastal settlements and the integrity of the undisturbed areas between settlements.
- The development of siting and design guidelines to improve the design outcomes for buildings, facilities and structures in foreshore and coastal areas.
- The development of integrated planning and approval processes for the use and development of coastal Crown and private land.

The *Siting and Design Guidelines for Structures on the Victorian Coast* and the *Landscape Settings Types for the Victorian Coast* have been developed to assist the Victorian Coastal Council, coastal managers, Local Government and other stakeholders to implement the Victorian Coastal Strategy by ensuring sympathetic development which complements the surrounding landscape and results in excellence in design and more generally by raising awareness of the importance of achieving sensitive design and development along the Victorian coast.



Diane James  
Chairman  
Victorian Coastal Council

The primary purpose of the Siting and Design Guidelines is to define those issues which should be considered in the siting, design and construction of new structures and the improvement of existing structures in coastal areas. This document is not intended to be used as a manual for designing and siting in the coastal areas, rather the focus is to raise awareness of more sensitive design and development. It is intended that the guidelines will be used in conjunction with appropriate professional advice and information available from consultation with the relevant authorities.

This document is divided into five sections which provide a comprehensive guide for those designing developments along Victoria's coastline:

1. INTRODUCTION
2. GUIDING PRINCIPLES FOR COASTAL DEVELOPMENT
3. SITING AND DESIGN GUIDELINES
4. THE APPROVALS PROCESS
5. SUPPLEMENTARY INFORMATION (such as checklist for planning and design, information required in permit applications, contracts, etc.).

The related Landscape Setting Types document has evolved from an understanding of the current landscape qualities of the coastline and potential threats and opportunities for the use and development of this most sensitive and highly valued resource. The document describes thirty-four landscape setting types, beginning at Nelson on the west coast and running to the New South Wales border on the east coast. Within these landscape setting types special characteristics and considerations for protection and development are defined that need to be respected when contemplating siting and design matters.

The Victorian Coastal Strategy sets out the principles for planning and development in coastal and marine areas. The Siting and Design Guidelines detailed in section 3 assist in applying the Victorian Coastal Strategy principles. They are presented in these categories, summarised as follows:

### **Functional Guidelines**

**These deal with utilitarian aspects of development and seek to ensure the efficient use of the limited resources of the coast.**

**Functional Guidelines Continued**

- Where possible, developments and structures should be concentrated within a particular location and not spread out.
- Generally, structures should be located as far as practicable away from the shoreline.
- Development should be sited close to and accessible to existing supplies of water and electricity or gas, stormwater drains and sewers if required, where practicable. Alternative non-standard environmentally friendly utility techniques should be encouraged in suitable locations.
- All sewage should be discharged to adjacent sewers or provision made for disposal by an approved method.
- Developments should not place undue strains on vehicular traffic and parking provisions in the locality.
- Structures should not unnecessarily impede public access to and along the shoreline except where this is the intended primary role of the structure.
- Developments should provide planned and controlled pedestrian access to the shoreline.
- Alternative modes of transport such as bicycling and rollerblading should be given access to the foreshore whilst not conflicting with pedestrian flows.
- All materials and finishes should be durable in the coastal environment.
- Structures should be designed to minimise maintenance, particularly having regard to the harsh nature of coastal areas.
- Structures should be designed to satisfy the engineering constraints of the special wind and soil conditions of the coastal environment.
- In major new development on coastal public

- Buildings should be sited and designed to ensure optimal thermal performance and to utilise natural light.
- Structures, such as bridges, drains and boardwalks, should be designed to be incorporated into the coastal landscape.
- Generally, bridges should be simple and functional in their design.
- Drains should be designed to meet engineering requirements and to ensure that Cultural and Aesthetic Guidelines are met.
- Boardwalk structures are predominantly intended to protect vegetation and micro-environments.
- Coastal structures need to recognise the natural processes and features with which they are interacting and be in keeping with the landscape setting.
- Foreshore disruption when locating pipeline and cable shore crossings should be minimised.
- New and redeveloped structures should respond to their context and be of an appropriate scale and form.

### **Cultural and Aesthetic Guidelines**

*These deal with cultural issues and the appearance of structures but include other facilities such as carparks and the way they relate physically and visually to their surroundings.*

- The form of structures should maintain and enhance the coastal landscape character of the area as expressed in the dominant forms of the surrounding environment.
- The siting and design of development should maintain and enhance the coastal landscape character of the area as expressed in the dominant line or linear relationships found in the surrounding environment.
- The design of structures should maintain and enhance the coastal landscape character of the area as expressed in the dominant colours found in the surrounding environment.
- Structures on coastal public land should not impair existing views to the water and should enrich views to and from the Coast.
- Key views should be maintained and protected from inappropriate development that may reduce or impinge on the setting

land, views of attractive natural features (such as dunes, the surf, coastal bluffs, outcroppings and estuaries) from the nearest public thoroughfare should be protected and public viewing areas provided.

- Key views should be maintained and protected from inappropriate development that may reduce or impinge on the setting.
- In major new development on coastal public land, views of attractive natural features (such as dunes, the surf, coastal bluffs, outcroppings and estuaries) from the nearest public thoroughfare should be protected and public viewing areas provided.
- Development (including buildings, fences, paved areas, signs, landscaping) on coastal public land shall not be allowed to significantly block views of the shoreline from key public viewing points such as roads that terminate at the coast, roadside turnoffs, recreation areas and beaches.
- The design of structures, outdoor furniture, signs and utilities within a locality should be visually coordinated.
- If development occurs on major landscape features such as headlands and ridges, it should be visually screened.
- Signs should be clear and informative but generally unobtrusive.
- Utility services should be unobtrusive and, wherever possible, underground.
- Landscape design should maintain and enhance the coastal landscape character of the area as expressed by existing landforms, vegetation and materials.
- Landscape development (predominantly through vegetation and grading) should be utilised to visually integrate development with the site.
- Landscape development should be utilised to screen inappropriate existing structures.
- Landscape development should be utilised to direct views and maintain amenity.
- Heritage and Historic structures should be considered on their merits using the appropriate design and planning procedures such as those in the ICOMOS Burra Charter.

## **Ecological Guidelines**

*These deal with the impact of development on coastal ecosystems.*

- Siting, design and construction of any structure should result in minimal change to the natural drainage patterns of the area.
- Siting, design and construction of any structure should result in minimal change to the quality of run-off water.
- Natural vegetation should be disturbed as little as possible.
- Natural vegetation should be encouraged and extensive planting of indigenous species should occur around developments in urban, suburban and rural areas.
- Siting, design and construction of any structure should result in minimal disruption to soils.
- Permanent structures should not be located on or adjacent to foredunes, unstable or mobile soils.
- Siting, design and construction of any structure should minimise changes to the natural patterns of movement and supply of marine sediments.
- All siting and design should be based on ecologically sustainable principles and recognise the significance of environmental processes such as greenhouse effect and ozone depletion.
- Protection and improvement of marine biological values is critical in coastal environments.

Each guideline, where appropriate, is accompanied by sketches and/or photographs as well as some discussion of any special requirements which should be fulfilled to achieve the objectives of the guideline.

The siting and design guidelines also include a checklist that applicants and authorities need to consider as a basic component to any actions that are contemplated along the coastline. The checklist identifies many issues such as development feasibility, site selection, site analysis, site planning, design of structures and site design.

Also included in this document is a list of matters that the applicant should include in their proposal ranging from justification of the proposal, location plan, site features plan, conclusions of any analysis investigations and the specific of the proposal. Finally, to assist the applicant and anyone concerned with the coastal environment, a list of possible contacts and reference materials are provided.



# 1 Introduction



The coastline is one of Victoria's greatest natural assets. Paradoxically, it is also a most fragile resource that is in high demand for a large range of uses. The management challenge for such a popular yet vulnerable landscape is to adopt policies that will encourage compatible development and will enable maximum protection and enhancement of its natural qualities. These siting and design guidelines have been formulated to assist in achieving better quality developments in the coastal environment.

The intention of these guidelines is to *increase our awareness of this landscape* and to improve design standards and excellence for the whole of the coastline.

The document is also intended to be used by the widest cross section of the population including Regional Coastal Boards, Committees of Management, Authorities, local Councils, citizens, developers and anyone with an interest in our wonderful coast.

The guidelines are not intended to duplicate information or planning requirements detailed elsewhere. For example, engineering standards for structures are covered in detail in other documents and the relevant standards must be satisfied for a planning permit to be granted. As such, there is no need for this topic to be covered by the guidelines.

## **1.1 The Victorian Coast - A Special Landscape Resource**

*The whole of the Victorian coastline is of outstanding scenic value and displays great beauty and variety. It is an environment which offers great diversity: from remote and wild places on the outer coast to the protected beaches in urban areas in the top part of Port Phillip Bay.*

*Both natural and cultural elements contribute to the distinct visual quality of the coastal landscape.*

## 1.2 The Challenge

There is increasing pressure for more development on the coast including the spread of settlements and demand for improved recreation and tourist facilities. It is estimated that there are about 92 million individual visits to the coast with each person visiting an average of 20 times per year.

It is estimated that 80% of Victoria's population live along the coast and in addition to supporting commercial and industrial infrastructure, the coast is one of our leading recreation and tourism destinations and is of immense importance to our economy and social fabric. Victorians visit the coast to escape from the pressure of every day life, to enjoy the scenery and the freedom of the great open space.

Victorians highly value the spectacular coastal scenery and spend vast amounts of time enjoying the landscape by driving, walking, fishing, sailing, surfing, riding and playing on its sandy beaches and want to see it protected and enhanced.

Visitors to coastal areas contribute approximately \$930 million to the State's economy, with nature-based tourism on Port Phillip Bay worth \$40 million/year alone.

The ongoing pressure to accommodate many different uses, residential, commercial, industrial and recreational within this environmentally and visually sensitive area has resulted in the degradation of various parts of the coast. More specifically, the major problems which now exist are:

- Unattractive and shabby buildings resulting from poor quality design and lack of maintenance.
- Buildings visually incompatible with their natural or built surroundings.
- Loss or spoiling of views to the water by buildings, signs and utilities such as electricity poles.

- Outdoor furniture (lights, seats, bins etc) poorly designed and sited in relation to the dominant materials, colours and form of the locality.
- Poorly designed and landscaped camping grounds out of harmony with the local landscape.
- Destruction of natural landscapes by the removal of native vegetation resulting from poorly located structures.
- The siting of roads, carparks, buildings and other development on unstable shorelines requiring protection from coastal erosion by sea walls etc which may lead to reduced size of adjacent beaches.
- Soil erosion caused by the removal of vegetation, increased runoff concentration of stormwater and increased foot traffic in unstable soil areas.
- Pollution of beaches and bay waters by sewage and stormwater.
- The failure in some areas to relate the activities and the natural characteristics of the foreshore to the adjoining hinterland, especially with respect to pedestrian access, roads and parking areas.
- Loss of valuable coastal recreation land to uses such as car parks, organised sports facilities (football, cricket, tennis, bowls etc) or clubhouses, which are not dependent on or essential to the coastal area.
- Incompatible uses abutting coastal areas.

The challenge is to ensure that development which occurs on the coast complements the surrounding landscape and results in excellence in design and improved facilities and environment.



## 2 Guiding Principles for Coastal Development

### 2.1 General Principles for Coastal and Marine Management and Design

General principles have been embraced by the Victorian Coastal Council to guide the direction of the Victorian Coastal Strategy in adopting this Strategy, public authorities, agencies and bodies with respect these principles, which underpin best practice for coastal planning and management.

The following section is taken from the Victorian Coastal Strategy and is reiterated to underpin these Siting and design Guidelines.

#### 2.1.1 Sustain

- Future generations will be considered equitably with current users.
- The coast and marine environment is recognised as a long term public asset which should not be compromised by inappropriate short term decisions or developments.
- Natural dynamic processes and systems which shape the coastline must be respected, with beneficial uses encouraged and adverse activities avoided or minimised.
- The use and management of the coast will be designed to work with nature rather than against nature to minimise impacts which occur downstream or off-site, and reduce long term management costs.
- Risk and irreversible decisions will be dealt with cautiously.
- Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The rights of Indigenous people will be respected and observed.

#### 2.1.2 Protect

- The coastal landscape will be protected; especially features of ecological, geological and geomorphological, cultural and historic significance.
- Parts of the coast will remain largely inaccessible to protect and retain areas with a sense of remoteness and exploration.

- Aboriginal communities will be involved in the protection and management of Aboriginal sites and the use and development of their history and culture.

#### 2.1.3 Direct

- There will be no net loss of the public land estate along the coast.
- Community use of foreshore land, buildings and other assets will be managed to return the greatest public benefit.
- Public access to coastal Crown land will be maintained except where the interests of security, safety or protection of coastal resources predominate.
- Planning and management of land and sea will be integrated.
- Local management, community involvement and voluntary participation will be maintained as essential elements of coastal and marine management, conservation and decision making.
- Accountability for outcomes will be identified.
- Resources will be targeted to minimise duplication and waste.

#### 2.1.4 Develop

- Commercial, recreation and tourism developments on the coast will be encouraged in suitable locations.
- User pays and polluter pays principles - in kind or money - will be pursued to equitably spread the cost of long term coastal use and management.
- Revenue generated from coastal Crown land will be directed to coastal management and development of appropriate infrastructure.
- Market rent and appropriate rates and taxes will be charged for all commercial use of coastal Crown land to discourage the use of coastal Crown land as a cheap alternative to private land.
- Complementary activities and multiple-use of suitable sites will be encouraged to avoid developing coastal land which is relatively undisturbed.
- New buildings and foreshore infrastructure will be set back in line with vulnerability assessments.

## 2.2 General Description of Siting and Design Guidelines

In using these guidelines, it is important to recognise certain qualifications such as:

- There will always be the potential for an exception to emerge to a guideline which is general by its nature.
- In using the guidelines it is important to respect the integrity of the relevant Landscape Setting Type and the above Guiding Principles.
- There may arise situations where guidelines may be in conflict with each other. For example, a historic structure may be inappropriately sited, resulting in key views being blocked or natural coastal processes being adversely affected. Resolution will require a site specific assessment.

These guidelines should be used in conjunction with information gained from discussions with the Municipal Council of the area and other authorities listed in Appendix 2. The Council should be consulted prior to commencing design to determine specific requirements relating to the site.

The guidelines are not exhaustive in their coverage and are intended as a basis for minimum standards of development. Professional design staff or consultants should take part in the design of all significant structures presented for development permits.

In some cases, trade-offs between the requirements of guidelines will be necessary, eg, the choice of materials will be influenced by durability (functional) and appearance (aesthetic). Such trade-offs should only occur where the implications of the final decision are known and accepted by those affected, eg. the use of corrugated iron for visual reasons in an area where this material predominates is acceptable if those using the building accept the responsibility for maintaining and replacing it as it deteriorates in the coastal environment. The applicant for a development permit should consult with the local Municipal Council and/or the NRE regional office to seek its advice on how best to resolve such trade-offs and to determine the likely consequences.

### **Note:**

If there is an overriding need for greenfield development and one that can be sustained on rigorous environmental planning grounds then only areas of low level impacts should be selected. These can be defined as areas where impacts on the ecology and aesthetics of the area, the coastal character, and other qualities would be minimal.

# 3 Siting and Design Guidelines

siting & design guidelines for structures on the Victorian Coast MAY 1998

## 3.0.1 Introduction

The Siting and Design guidelines are split into three basic categories in response to the nature of the issues. These are derived from the General Principles for Coastal and Marine Management and Design, which have been established by the Victorian Coastal Council as a basis for coastal management and decision-making.

The three categories are:

- **Functional Guidelines:**  
a structure should be sited and designed to fulfil its purpose with sustainable use of resources.
- **Cultural/Aesthetic Guidelines:**  
a structure should be sited and designed to culturally respect its setting and visually complement the surrounding coastal landscape.
- **Ecological Guidelines:**  
a structure should not cause undesirable changes to terrestrial and marine ecosystems in the locality.

The guidelines are intended to cover all development taking place in the coastal viewshed, both on private land and public Crown land. Some forms of land use covered in the guidelines will be exclusively on private land, some only on Crown land and some possibly on both. Regardless of title, developments located in the coastal viewshed should have regard to these guidelines.

## 3.1 Functional Guidelines

### GOAL

*That structures are sited and designed to fulfil their purpose with sustainable use of resources*

### 3.1.1 Introduction

The Functional Guidelines deal with all utilitarian aspects of a development and seek to ensure the efficient use of the limited resources of the coast. They provide direction on planning issues (traffic implications and appropriateness of the development to the site and area), issues affected by the siting of structures (pedestrian accessibility to the shoreline and the design of outdoor spaces) and the detailed design of structures to suit the particular environmental conditions of the coast (choice of material, structural design, energy considerations and the provision of utility services).

Of prime concern in the siting and design of structures on the coast is the general instability of these areas. Sandy shorelines often fluctuate and threaten to undermine any structures located on beaches, and many coastal areas are subject to long term erosion and recession of the shoreline. Permanent structures should generally not be erected close to shorelines where they will be threatened by marine erosion.

### 3.1.2 Appropriateness of Development

*The coastline is a precious and finite environment and its limited land resources need to be used sparingly and wisely.*

The heavy demands made on the coast and, in particular, the exceptional value of this resource for public recreation requires that uses of the land and water be preferentially allocated to those requiring a coastal site. These include primarily water based recreation activities and industries such as fishing and port activities, as well as uses associated with conservation and habitat. Only those structures associated with these activities, or directly related to marine works such as erosion protection and navigation, or which contribute significantly to public enjoyment and appreciation of the coast, should be located on the coast.

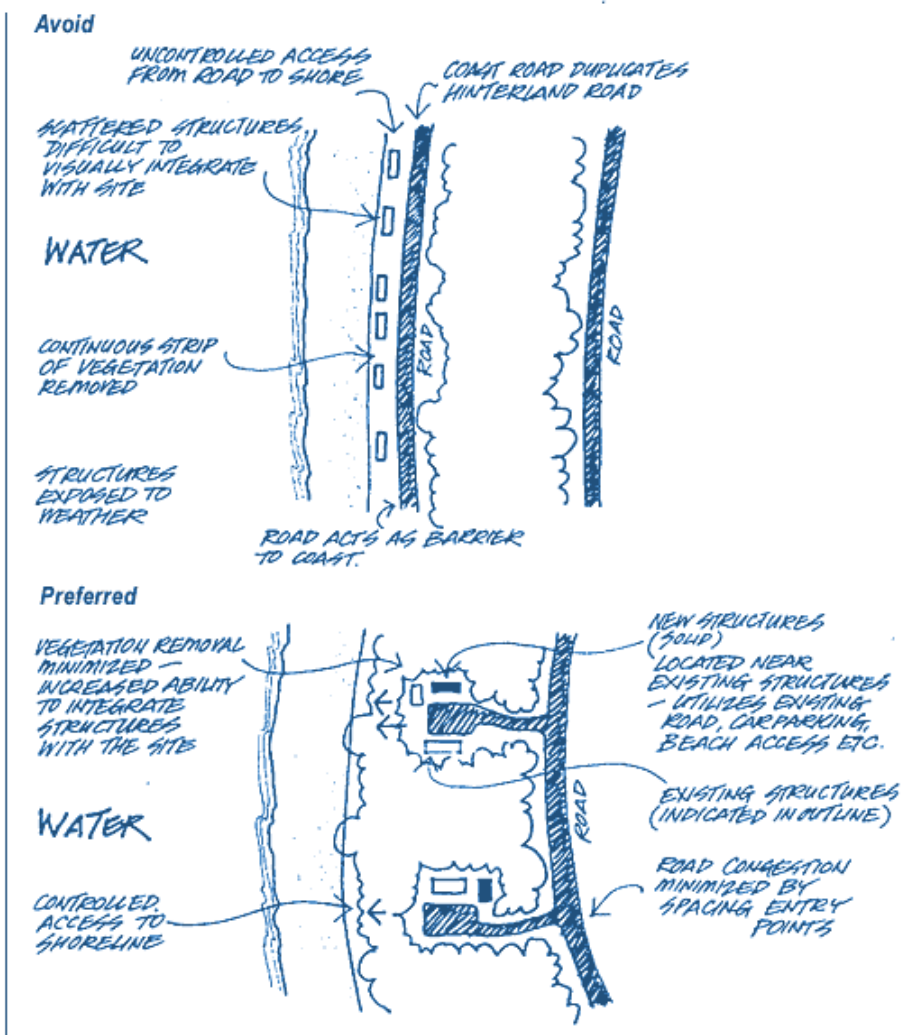
Examples of developments for which a coastal siting is appropriate are:

- Boat launching facilities.
- Boat moorings, marinas and jetties.
- Water-play structures.
- Toilets and kiosks associated with water based recreation activities.
- Surf Lifesaving Clubs in appropriate locations.
- Restaurants, in certain urban areas.

Examples of structures which at present are common but for which a coastal siting is not essential are:

- Non water based sporting facilities (eg. bowling greens, football grounds, etc.).
- Residential development in non-urban coastal environments.
- Camping facilities.
- Community halls.
- Non-maritime industrial plant and storage.
- Airports.

## Grouping of Structures



It should be noted that there are a range of support uses that are appropriate in many cases. These are generally to underpin the primary uses described above:

- Cafes and restaurants in many locations.
- Toilet and changing facilities.
- Car parking.
- Infrastructure sites and corridors.
- Children's play facilities.
- Bar-B-Q and picnic areas.
- Some retail facilities (convenience stores); marine fuelling facilities; specialist stores.

The use of temporary structures for short-term activities will be encouraged where appropriate. Temporary structures may be removed from the foreshore when not in use, thus allowing other activities to take place and the removal of structures which are often unsightly when not in use. Such structures include boat storage, caravan parks and temporary car parks to cater for

increased demand in summer peaks. Care should be taken to avoid serious permanent environmental effects such as habitat loss, soil compaction and erosion, reduction in water quality, etc.

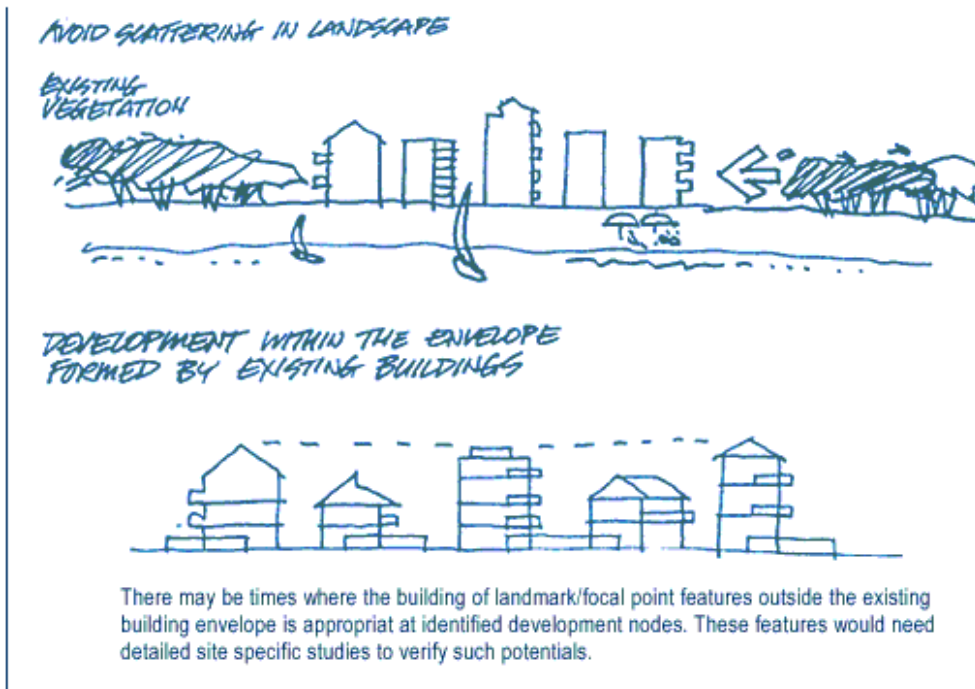
### 3.1.3 Grouping of Structures

Where possible, development and structures should be concentrated at particular locations. A multiple-use approach should be adopted, to help avoid overshadowing or blocking of views.

For example, using a drain structure as a base for a jetty

- Where possible, avoid overshadowing of the coastline during high use periods from September to April. This is particularly relevant in the towns or urban developments along the coast.

## Infill



- The concentration of facilities are to meet the requirements of a number of guidelines, including
  - > Minimising impact on vehicular traffic in adjacent areas.
  - > Controlling access to the shoreline.
  - > Reducing wind, salt and sand impact on structures.
  - > Reducing the impact of structures on landscape character.
  - > Maximising foreshore areas freely accessible to public recreation.
  - > Improving appearance of signs and utilities.
  - > Minimising disturbance to natural vegetation.

The Victorian Coastal Strategy and Coastal Action Plans will assist in identifying areas along the coast where development should be concentrated.

### 3.1.4 Coastal Settlements

*A coastal settlement should have visually hard edges to give the settlement a sense of entry and exit.*

Urban design and townscape planning can be a useful tool to establish a sense of entry and exit from coastal townships.

Coastal settlements should use physical links such as pathways and signage, and visual links such as coastal views and landscape design to promote connectivity between the water, foreshore and the hinterland.

### 3.1.5 Urban Infill

New development in existing settlements should respond to their context and be of an appropriate scale and form.

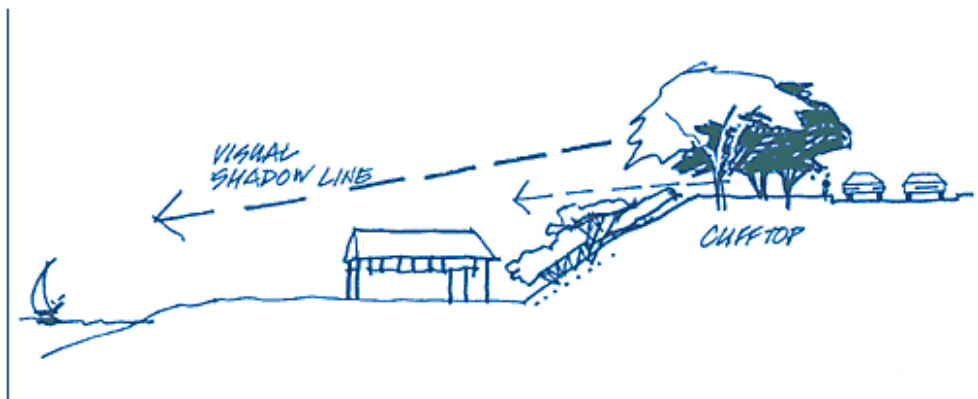
Development may be located near or in certain cases over the water provided free public access is assured along the foreshore/water edge interface.

Development should not cause any detrimental effects to the natural coastal processes.

For new development, preference should be given to historically and locally used materials, unless proven otherwise.

Negative impacts such as continuous overshadowing of foreshore areas need to be avoided.

### Setback from Shoreline



#### 3.1.6 Setback from Shoreline

*Structures should be located as far back as practicable from the shoreline*

Where a structure does not require a location on the water's edge, it should be set back to reduce the threat posed by coastal recession and wave attack.

The setting of structures back from the shoreline facilitates the achievement of several guidelines in all categories.

These include:

- Facilitating the connection to hinterland service systems.
- Reducing wind, salt and sand impact on structures.
- Reducing impact on unstable soils.
- Reducing interference with the flow of littoral sediments.
- Pedestrian accessibility.
- Overshadowing.

#### 3.1.7 Utility Services

*(a) Development should be sited close and accessible to existing supplies of water and electricity or gas, if required, and to stormwater drains and sewers, where practicable.*

- Utility Service providers should be consulted prior to the design of the proposed development.
- The siting of structures close to required services reduces the need to run new service lines with consequent destruction of vegetation, unnecessary expense and visual degradation.

*(b) As a more sustainable, preferred alternative, innovative environmentally friendly techniques should be encouraged (such as composting toilets, solar power, etc.)*

*(c) All sewage should be discharged to adjacent sewers or provision made for disposal by an approved method.*



### Vehicular Traffic Implications



#### 3.1.8 Vehicular Traffic Implications

Developments should not place undue strains on vehicular traffic in the locality.

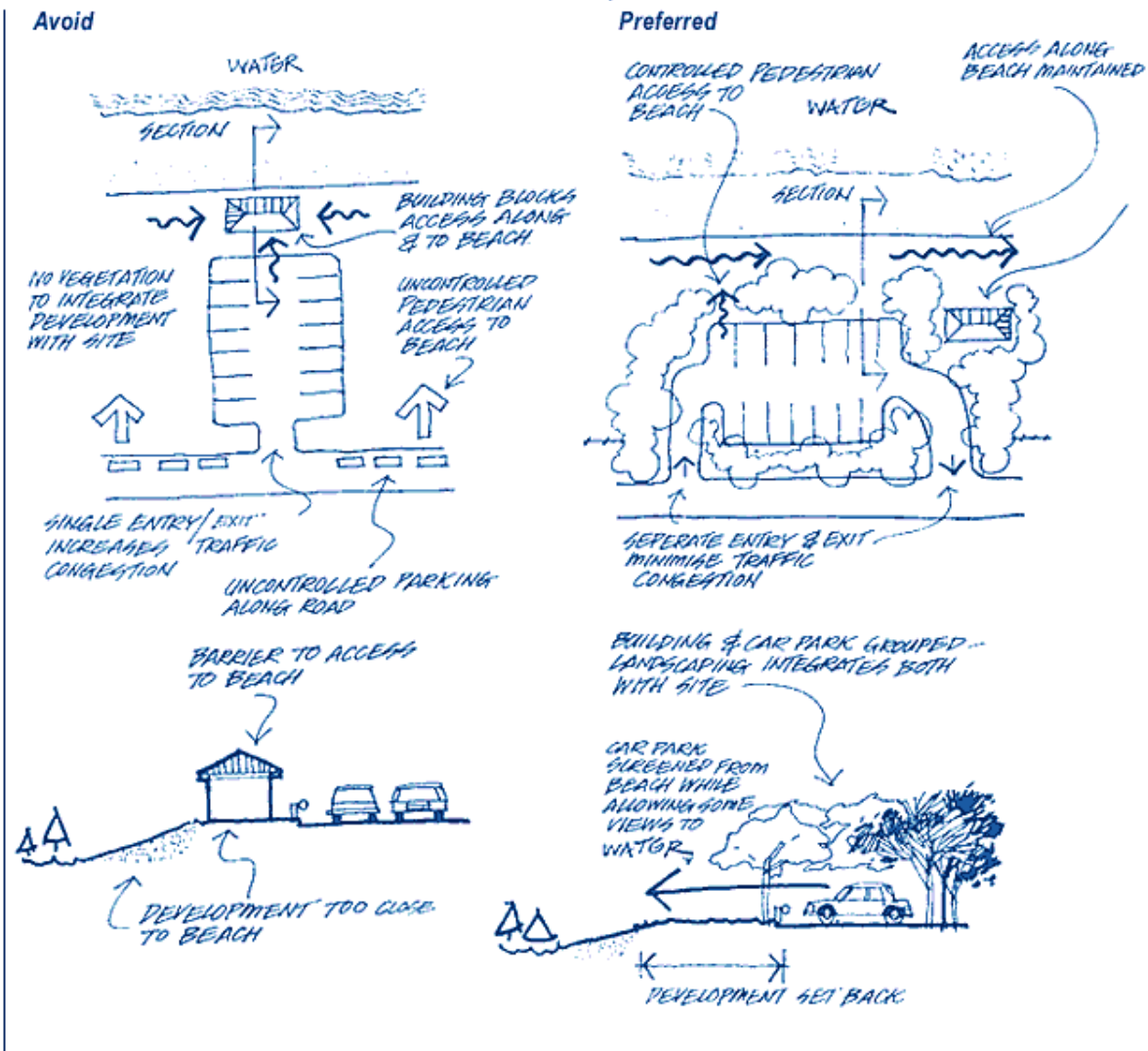
Local planning authorities should be consulted to determine traffic planning for the area and avoid duplication of car parking facilities or traffic congestion in the adjacent areas.

Development should be located to utilise existing roads and car parks.

For any major new development projects, strategies catering for increases in traffic and car parking demand must be provided as part of the project. Alternatives to new permanent car parks on the foreshore should be explored.

Car parks and roads should be minimised in sensitive coastal environments.

## Pedestrian Accessibility and Open Space Links



### 3.1.9 Pedestrian Accessibility and Open Space Links

(a) Structures should not impede public access to and along the shoreline except where access control is their primary function.

(b) Developments should provide planned and controlled pedestrian access to the shoreline in appropriate locations.

(c) Alternative modes of transport such as bicycling and rollerblading should be given access to the foreshore whilst not conflicting with pedestrian flows.

- Where possible, single access points to the shoreline should serve groups of structures or car parks.

- Paths and other development should be located to direct people away from environmentally sensitive areas.
- The number of access points and the type of access will vary with intensity of use, topography and soil type of the area. For example, in dune and cliff areas access should be limited to specific locations where adequate provisions, including fencing and path surfacing, can be made to minimise erosion.
- Where possible, suitable access to the shoreline should be provided for disabled persons.
- Locate pedestrian pathways and roads so as to minimise impact on the viewshed and work with the existing topographic conditions.
- Link hinterland open space with coastal parks to provide maximum connection of areas.

### 3.1.10 Materials

*All materials and finishes should be durable in the coastal environment.*

- The durability of materials in the coastal environment is determined particularly by their resistance to wind, salt spray and sand blasting. Deposition of salt on structures, in particular, increases the rate of deterioration of a wide range of materials by facilitating the corrosion of metals, and by retaining moisture which accelerates the breaking down of materials such as timber.
- Conditions around the bays and inlets, while being more severe than those inland, are not as harsh as in other coastal areas where salt spray is carried inland from ocean surf. Most common building materials are suitable for use, although increased maintenance is necessary.

Materials commonly used are:

#### > Timber

Durability varies with species and finish. Generally the more dense the timber, the greater its durability. Examples of the most durable timbers which are suitable for structures in the water are Red Gum, Jarrah and Tallowwood. For ecological sustainability reasons the use of plantation-grown and recycled timbers is recommended.

The durability of timbers is generally improved by treatment with preservative followed by surface coating. Painting usually gives longer lasting protection than treatment with stains or varnishes. Treatment of timber with preservatives under pressure is particularly effective and CCA treated radiata pine is a durable, commonly available material.

#### > Aluminium

This material has a high durability rating which is increased by anodising. A roof pitch greater than 5 degrees should be used to ensure self-washing. Aluminium window frames are suitable but require regular washing to reduce corrosion.

#### > Galvanised Steel

Particularly susceptible to salt attack and should be painted regularly to prevent rapid corrosion. Increased durability is achieved by using pre-coated products. A roof slope greater than 10 degrees is recommended to achieve self-washing. Regular maintenance, particularly washing, will also improve the performance of this material in coastal areas. The robustness and ease of handling of steel are considerations in the design of public structures, however, allowance should be made for replacement at appropriate intervals.

#### > Compressed Cement Sheeting

Durable in the marine environment, however the thinner sheets are susceptible to impact damage in public areas and may discolour and become brittle with age.

> Terracotta Unglazed tiles are more resistant to salt attack than glazed, with those tiles fired at high temperatures being the most durable.

#### > Concrete

Durable, providing there is adequate cover to all reinforcement to prevent corrosion (in accordance with relevant Codes of Standards Association of Australia). Concrete tiles are durable although fungal growths may cause a change in colour.

#### > Glass

The use of glass on the coast needs special consideration to avoid glare and reflection. As a material it has a most logical use in the coastal environment, but extreme care is needed to ensure that the glass recedes into the landscape, particularly where the sun could be reflected (eastern, northern and western orientations)

#### > Environmental materials

Ecologically friendly materials such as low embodied energy materials, recycled/recyclable materials and earth construction should be given preference and used wherever appropriate.

Clay bricks, natural stonework and plastic products are all durable and require no special treatment.

- Most building materials benefit from the application of a protective surface treatment, such as paint. Where the finish is applied to protect a material which is prone to corrosion, such as galvanised steel, regular repainting is necessary to ensure a complete cover is maintained. Similarly with timber, any breakdown in the paint surface will result in salt accumulation with a resultant build-up of moisture and deterioration of the material.
- In all cases the aesthetic qualities of the materials should be considered in conjunction with their durability. Where visual requirements predominate and less durable materials are used, these should be finished and located in such a way as to maximise their durability. The need for future regular maintenance should be considered before surface treatment, such as paint, is applied to durable materials, such as concrete or brick.



### 3.1.11 Maintenance - Design Implications

*Structures should be designed to minimise maintenance, particularly having regard to the special nature of coastal areas.*

Part of the coastal attraction is the appreciation of the harsh conditions on natural and cultural elements eg. sandblasting effects of wind on glass, erosion, rust, the impact of Toredos on wharf structures. These effects have strong implications for maintenance.

- Coastal structures are generally subjected to harsh conditions, particularly from wave attack, winds, sand movement and the corrosive effects of salt. The coast is a popular recreation area and structures also suffer heavy usage by the public. Vandalism is also a problem, particularly as the majority of buildings are unoccupied for considerable periods.
- Roof pitches should be sufficient to allow self washing and undersides of roofs shielded from salt-laden winds, thus reducing salt build-up.
- Robust fittings and surface finishes which are capable of withstanding high usage and are resistant to damage by vandals should be used.
- Adequate security lighting should be utilised to deter vandals whilst also having regard to the impact of such lighting on adjacent residential areas.
- Vegetation should be used to screen structures from salt laden winds.
- Landscape works should utilise vegetation which is resistant to coastal exposure. Landscape design should be appropriate to the level of maintenance envisaged. For example, in low maintenance areas, native plants in mulched soil with crushed rock paths may be more appropriate than a formal arrangement of plants with lawn areas.
- Structures should be located away from unstable shorelines to obviate demands for erosion protection works in the future. Where it is necessary to locate structures, such as observation towers for lifesaving services, close to unstable shorelines, they should be designed particularly for these unstable conditions. Portable or demountable structures, that can be moved when erosion threatens, are preferred

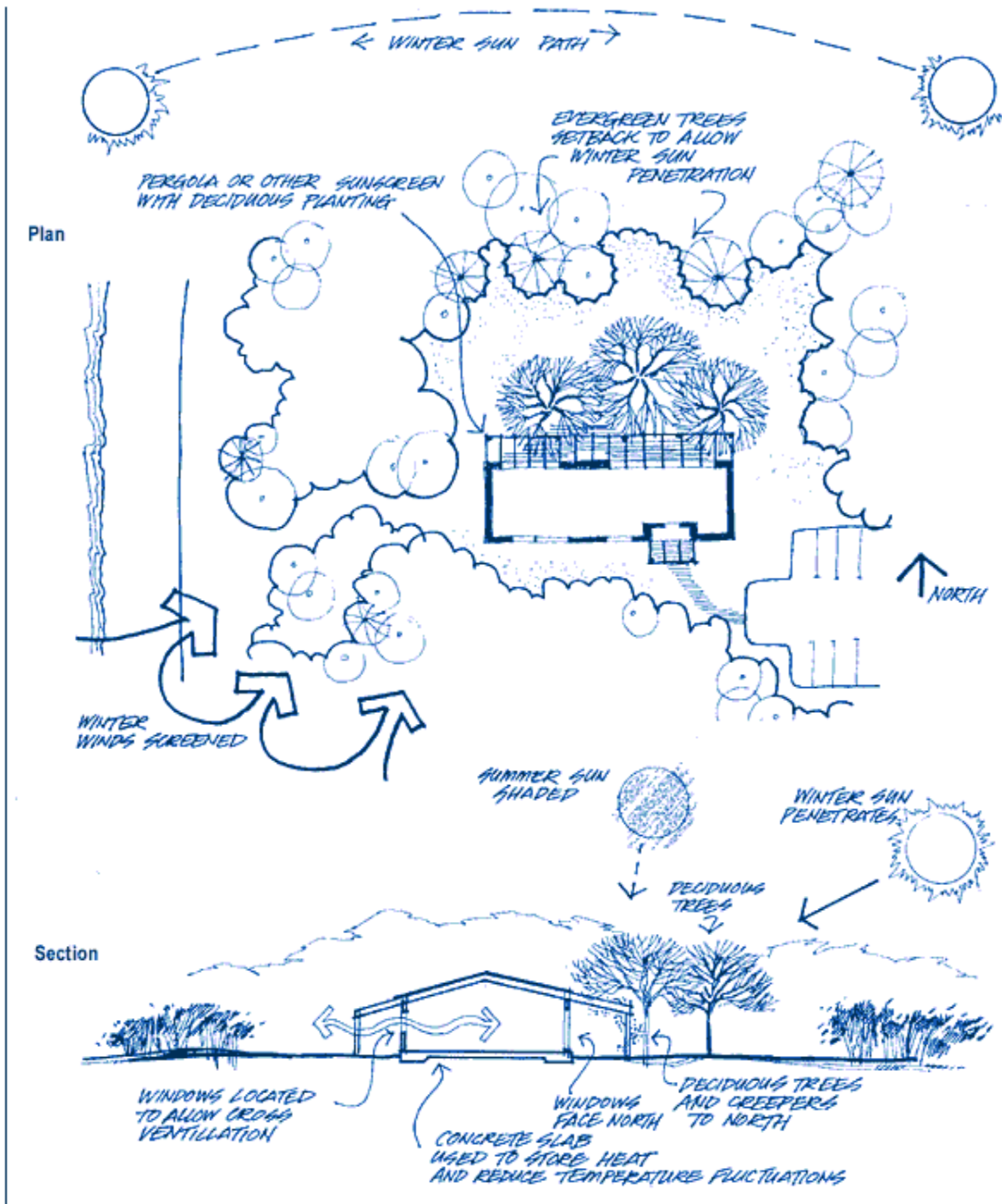
### 3.1.12 Structural Design

*Structures should be designed to satisfy the engineering constraints of the special wind and soil conditions of the coastal environment.*

Wind force on buildings is a function of windspeed, local topography, surface features of the surrounding terrain, building form and building height. Structures in coastal areas being located adjacent to a flat expanse of water which offers little resistance to wind speed, are exposed to greater wind forces than inland areas. Buildings on cliff tops and bluffs are exposed to even greater forces due to their height above the surrounding terrain.

- Wind forces may be reduced by:
  - > setting structures back as far as possible from the shoreline;
  - > siting structures away from elevated exposed sites;
  - > grouping buildings;
  - > locating vegetation on the windward side of buildings;
  - > localised earth mounds in strategic locations.
- All buildings should incorporate a system of connections, such as galvanised steel straps or framing anchors, which:
  - > adequately anchor the roof and walls to the footings to withstand vertical uplift forces;
  - > adequately cross-brace the building to withstand horizontal uplift forces;
  - > assure continuity of anchoring and bracing throughout the structure.
- Design wind forces should be calculated in accordance with appropriate Australian Standards.
- The design of footings should take account of the soil type and its depth and bearing capacity.
- While standard building practices can be employed to overcome the problems associated with these soil types, particular attention should be given to the effect of the chosen structural system on the surrounding environment. In some areas the choice of the structural system has a significant impact on the extent of erosion and vegetation removal by the structure.
- New permanent structures should not be built on mobile uncompacted sands.
- For general information concerning soils and footings consult the appropriate authorities listed under Contacts at the back of this document.

# Energy Considerations



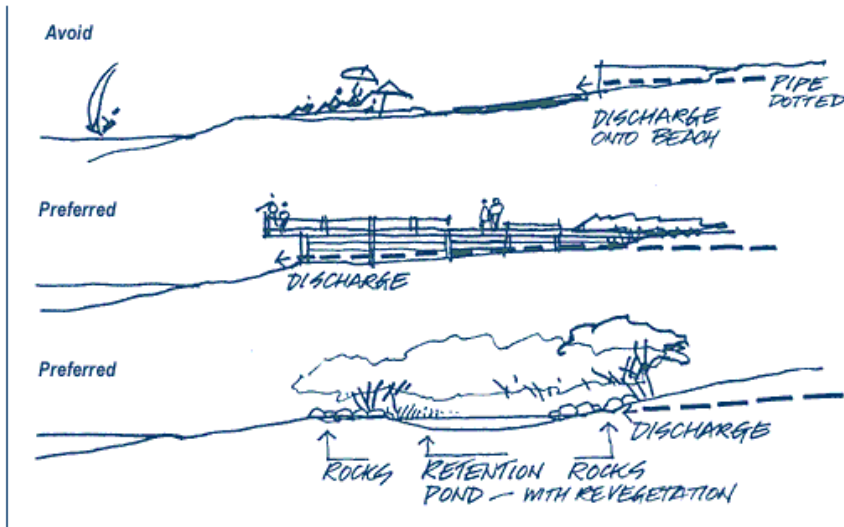


### 3.1.13 Energy Considerations

*Buildings should be sited and designed to ensure optimal thermal performance and to utilise natural light.*

- Buildings, where internal comfort is an important requirement, should be designed to:
  - > maximise winter sun penetration into the building by careful orientation, siting and use of north facing windows, whilst minimising the penetration of summer sun with appropriate shading devices and minimal east and west facing windows;
  - > minimise undesirable heat loss and gain with appropriate insulation of the walls, floors and ceilings;
  - > facilitate cross ventilation by the appropriate location of openable windows and doors;
  - > make use of the thermal capacity and performance of building materials to reduce internal temperature fluctuations.
- Vegetation should be used to shelter the building from summer sun and prevailing winter winds, whilst allowing the penetration of winter sun. This may be achieved through clever planting design for solar control.
- Where views to the coast are to the east, west or south, windows should be located to both take advantage of the view and allow winter sun penetration. All such windows facing the view should be adequately protected to prevent undesirable heat loss and gain.
- In buildings where hot water is required, consideration should be given to the installation of a solar hot water heater.
- Ensure that adequate natural light is provided within buildings.
- Help reduce wind impact. The Victorian coast is an ideal region for using wind generators; these should be encouraged in order to help reduce our use of fossil fuels and to generate power. Visual and wind buffers are needed in places such as commercial, industrial and dry storage areas. Dense, fast growing material should be planted, possibly together with longer living, slower growing trees.

### Stormwater Discharge



#### 3.1.14 Drains, Bridges, Boardwalks and Similar Structures

*Generally, these structures should be designed to be incorporated into the coastal landscape and should not stand alone as foreign objects.*

These elements, which occur along the coast, need to be designed in a way that embodies them into the coastal landscape and utilises them both visually and functionally. For example, bridges can be aesthetically pleasing elements; they can be used to support vehicle, pedestrian and faunal movements, they can carry engineering utilities and can serve as important viewing points. Such a multiple function approach is most desirable in the precious coastal environment.

##### *Bridges*

*Generally, bridges should be simple and functional*

In particular, the following should be addressed in the design process:

- Minimise visual blocking by and from the structure, including the views for road-users.
- The structure should complement its context. For example, make use of a light-weight and tensile wooden footbridge in a natural setting.
- Respect materials and forms of the local area. For example, use local stone, where suitable.

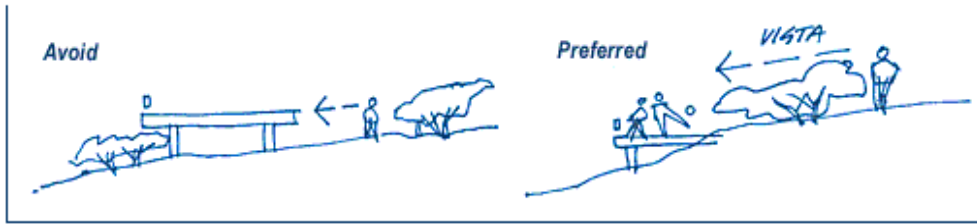
##### *Drains*

Drains should be designed to meet engineering requirements, while satisfying all other guidelines.

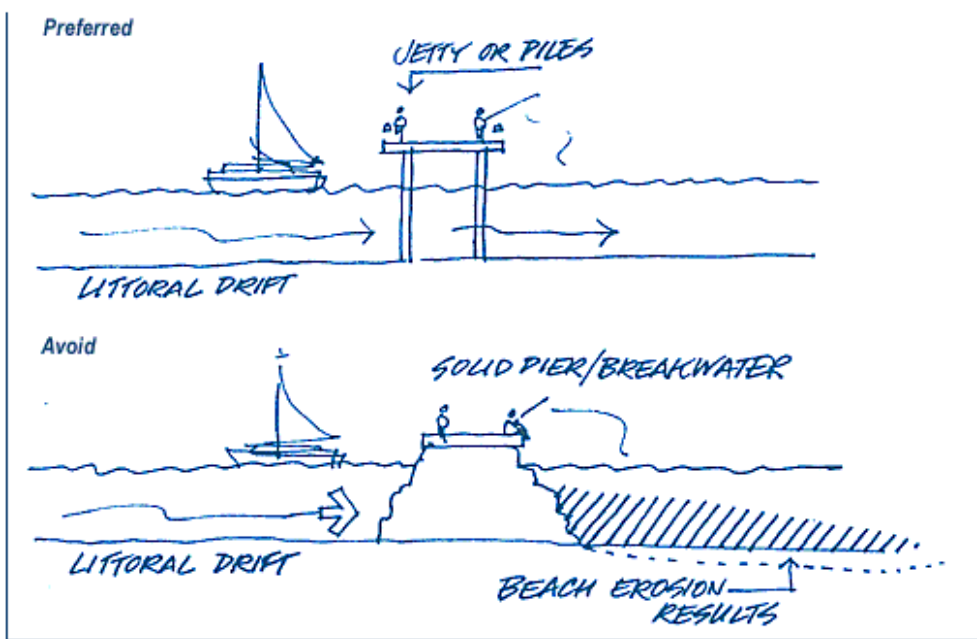
The following issues need to be addressed:

- Avoid disturbance to natural systems, especially geomorphological processes (Refer to Ecological Guidelines).
- Avoid visual and ecological disturbance to the landscape by choosing less sensitive locations for these elements and by integrating with other uses and ensuring environmentally responsible discharge of water.
- Avoid interfering with pedestrian access to and along the foreshore.

## Boardwalk Structures



## Coastal Structures



### Boardwalks and Elevated Step Structures

These structures should predominantly be designed to protect vulnerable ground surface vegetation and micro-environments.

- Boardwalks in natural areas should:
  - > Stay low where possible.
  - > Be constructed from materials and colours that blend with surrounding landscape so that the visual impact is low.
- Boardwalks in urban areas should:
  - > Stay low where possible.
  - > Use materials consistent with the urban environment which may be informed by local architecture and culture and in turn may require therefore bright colours, formal shapes or art-inspired experiences.

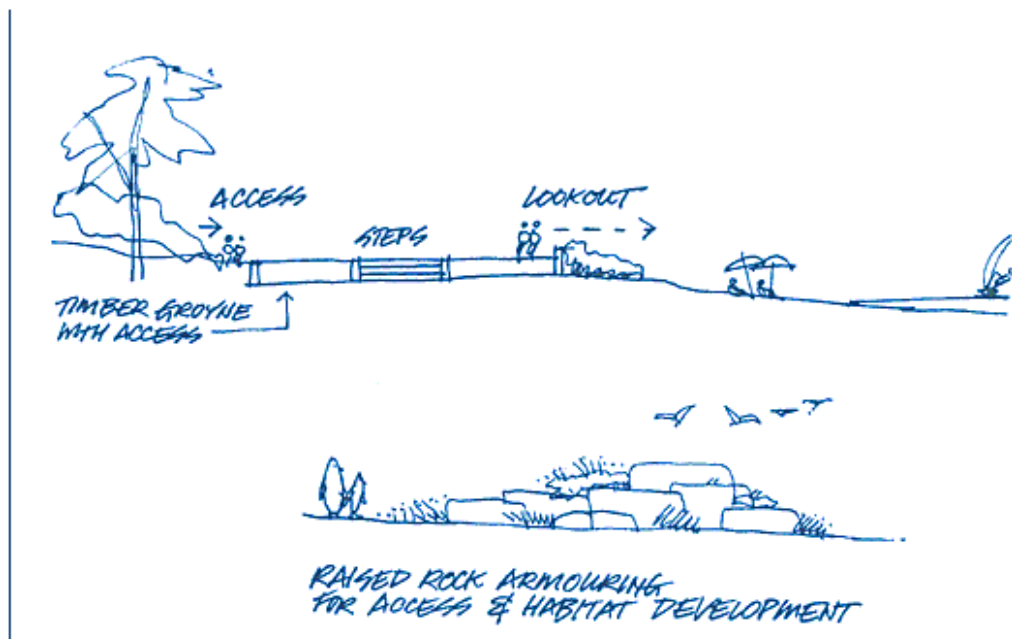
### 3.1.15 Marine Structures, Aquaculture, Breakwaters/Harbours, Buoys/Pens, and Beach Protection Structures, including Groynes

Such coastal structures need to recognise the natural processes and features with which they are interacting and be in keeping with the landscape setting.

Being in or close to the water, these structures are usually visually prominent elements that therefore need to be attractive. It is desirable that the structures express or be in keeping with local geography and heritage.

- Refer to the above recommended process and emphasise the following:
  - > Understand marine hydrology and coastal geomorphology.
  - > Analyse other natural systems.
  - > Take all of the above and determine an economic and sustainable solution.

## Groyne Treatments



### Other Considerations

In designing these facilities recognise the following likely impacts:

- The element should be attractive to the eye, and should not block views.
- Facilities of this kind are often used by fauna in a variety of ways, usually not anticipated by the designs. For example, seals and birds using buoys, piers, breakwaters etc.

In most cases this is a charming addition to the primary function and should be encouraged. An example of this approach is set out as follows:

- Groynes normally form barriers along a beach. Where there is forethought they could become viewing areas, promontories and have inbuilt access steps.

The above example highlights the need to plan for elements of this kind in a way that enables and enhances access to and along the coastline.

### 3.1.16 Pipeline and Cable Shore Crossing

*Foreshore disruption by pipelines and cable shore crossings should be minimised.*

In placing such structures in the landscape the following need to be addressed:

- The need to minimise negative visual impacts. These elements should be buried and should be placed away from the waters edge.
- The need to minimise disruption to the natural systems (vegetation, soils, etc.).
- The need to avoid interference with public access to and along the foreshore.

If any parts of the structure are to occur above ground, they need to be integrated into the local landscape design for the project, eg. incorporate into a walkway, lookout, groyne, jetty etc.



Unobtrusive, low, well constructed pine log vehicle barrier.



Visually obtrusive pine log vehicle barrier installed too high and with rough detailing

### 3.2 Cultural and Aesthetic Guidelines

#### GOAL

*That structures are sited and designed to culturally respect their setting and visually complement the surrounding coastal landscape.*

#### 3.2.1 Introduction

The Cultural and Aesthetic Guidelines deal with cultural issues and with the appearance of structures, but include other facilities and factors such as car parks and the way they relate visually to their surroundings or the value people place on a setting or past events. These Guidelines also show how they impact on less tangible, and perhaps more important, matters of coastal landscape character and aesthetics.

The siting and design of structures should generally be sympathetic to the character of the surrounding landscape, particularly with respect to the degree of naturalness of this landscape and its coastal related character.

Landscape character is determined by both natural and cultural features. The natural features of a landscape include the vegetation, geology, landform, soils and the presence of water bodies. The cultural features include land uses, the character and arrangement of existing structures, and the extent to which the natural features of the landscape have been altered.

Landscape character is also affected by climate - the driving rain squalls of the south west for example, the impact of far off ocean storms in the form of booming surf pounding up and over boulders and rock shelves.

Then there are the intangibles which must be recognised in land planning - the important Aboriginal heritage going back perhaps 100,000 years and the important European maritime heritage of the coast, both of which are largely invisible.

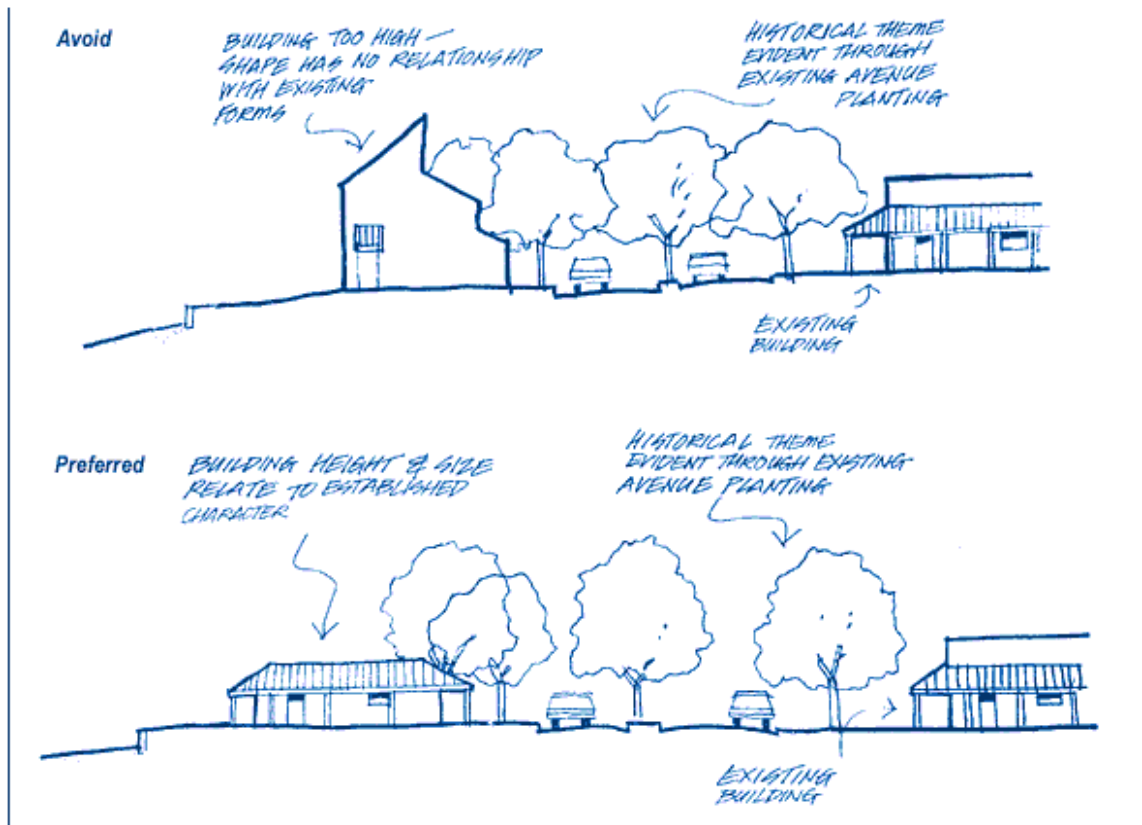
The latter is perhaps less obvious because much of that heritage derives from navigation in the days of sail with ships running aground, colliding, crew desertions, heroic rescues and the like with little evidence of all this remaining above sea level.

Aboriginal heritage must have an important focus - some important sites of occupation marked by shell deposits (middens) with some implements and ash remains are often covered and only revealed by shifting sands and other erosive process or by excavation. As well, there are places that are important symbolically and these are more difficult to define. Notwithstanding, it is important to understand the significance to Aboriginal culture of any particular coastal area prior to making changes to the landscape.

In coastal areas the maintenance and the enhancement of the distinctive features which contribute to the landscape character of the area is of prime importance. These features include:

- The presence of water
- Landforms such as beaches, bluffs, cliffs and estuaries and the views across the water afforded by them.
- The presence of sand in beach and dune formations.

## Form - Predominantly Modified



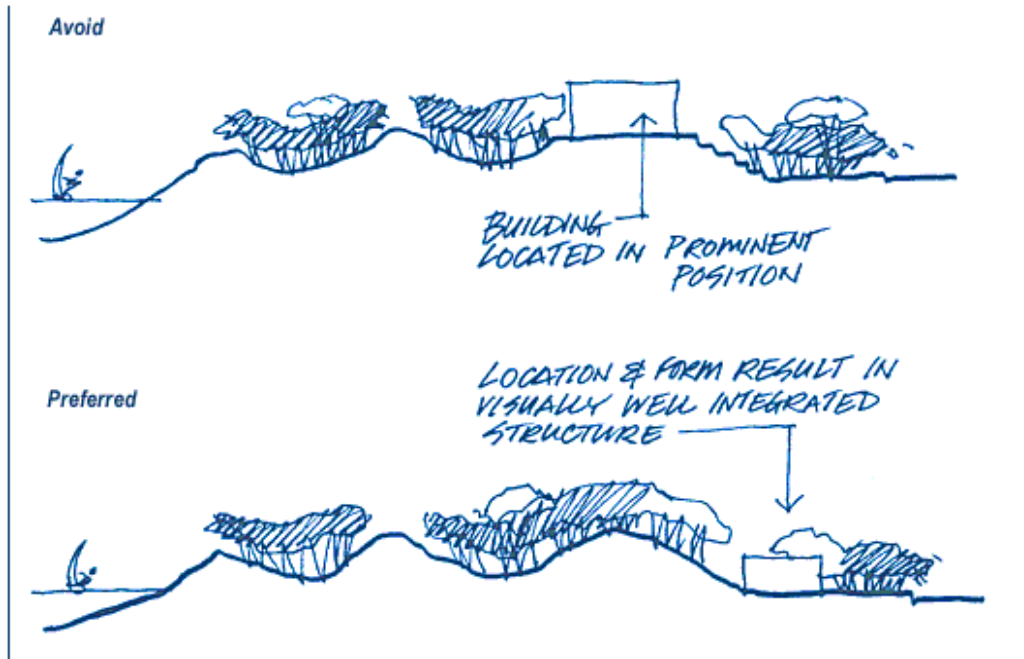
- Distinctive vegetation which is tolerant of coastal conditions.
- Land uses associated with shipping, commercial fishing, and recreation activities such as swimming and sailing.
- Cultural influences of an historical nature including Aboriginal and European maritime heritage, associated with early settlements near port facilities.
- Existing buildings of all types which, in certain locations, often dominate the area. Many are of a character related to their coastal location or association with maritime activities.

Landscape character is also informed by the composition of textures, forms, lines and colours of both the cultural and natural features of the landscape.

To visually integrate a structure into the surrounding landscape and minimise visual conflicts, the elements of the structure should generally match or be sympathetic with the dominant elements of the surrounding landscape. A wall or groyne on a rocky cliffed coastline, for example, will appear as part of the natural landscape if constructed to match the colour, forms and textures of the adjacent cliffs. The character of a flat rural coastline is dominated by the major linear elements of the landscape, the shoreline and often the vegetation line behind the beach. Structures which break across these lines will be visually intrusive or sensationally effective.



### Form - Predominantly Natural

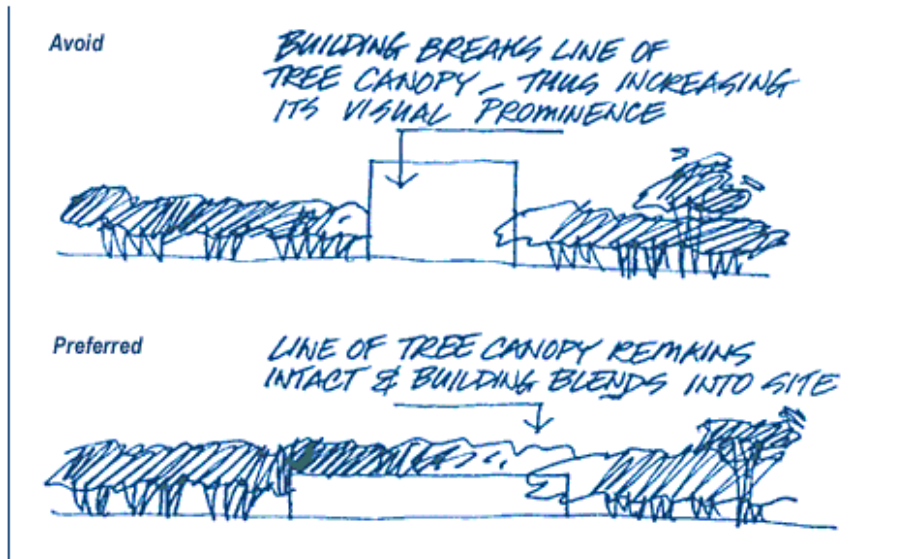


#### 3.2.2 Form

*The form of structure should maintain and enhance the established coastal landscape character of the area as expressed in the dominant forms of the surrounding environment.*

- The form of a structure or a group of structures is determined by their shape and size (ie. width and height).
- In predominantly culturally modified areas:
  - > the form of surrounding structures, where they contribute to the landscape character, should be used as a basis for the design of new developments;
  - > where surrounding structures make no contribution to the coastal landscape character of the area, new forms of a coastal or traditional character may be introduced.
  - > innovative proposals which complement the landscape character and the existing form of surrounding structures will be considered on their merits.
- In predominantly natural areas:
  - > the form of buildings should relate to the landform and vegetation masses of the local landscape.
  - > in flat areas with low vegetation, low single storey developments are most easily integrated with the surroundings;
  - > in sloping treed locations, split level buildings with roof lines which follow the slope are most appropriate;
  - > in undulating country, either of the above forms are suitable depending on the location of the development.

## Line - Predominantly Natural

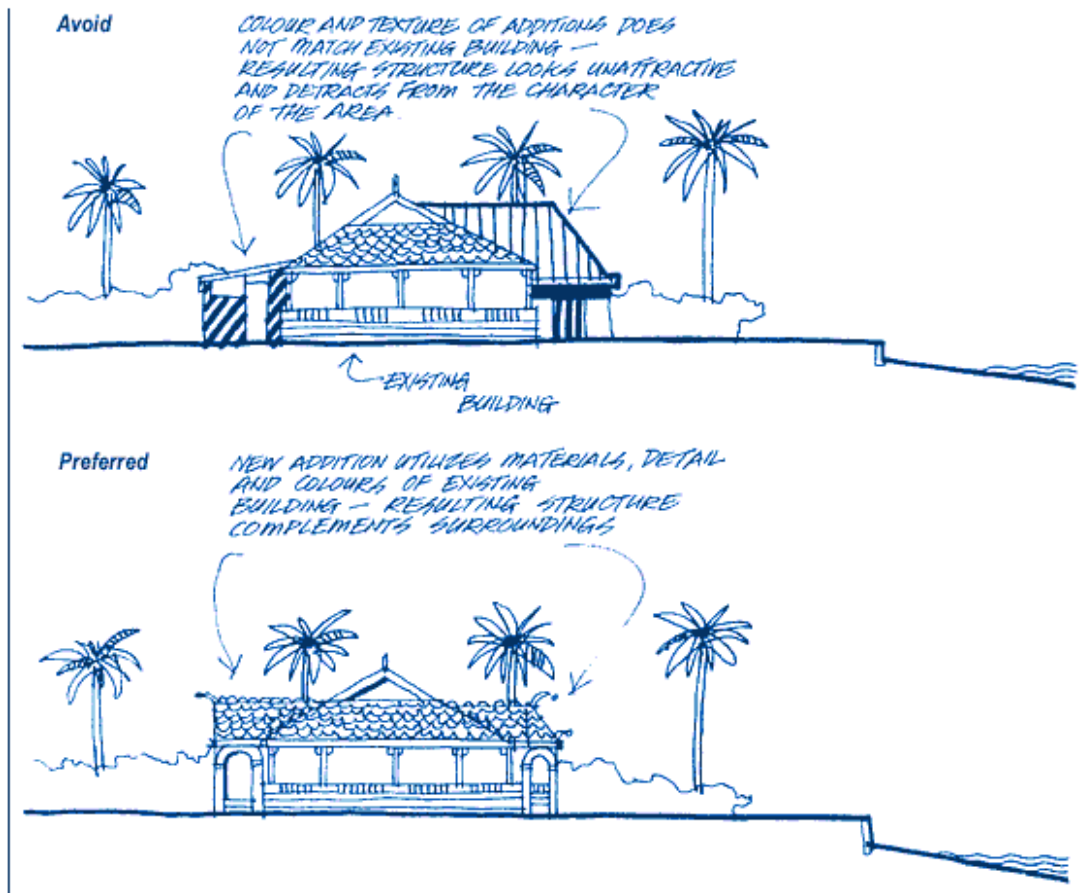


### 3.2.3 Line

*The siting and design of development should maintain and enhance the coastal landscape character of the area as expressed in the dominant line or linear relationships found in the surrounding environment.*

- In predominantly culturally modified areas:
  - > the height line of existing development should be maintained;
  - > avenues of trees, both in formal public gardens and streets, should be maintained unbroken.
- In predominantly natural areas:
  - > ridgelines should remain unbroken by roads or structures;
  - > boundaries between vegetation types, e.g. the edge of a tea-tree scrub, should remain intact;
  - > the canopy of vegetated areas should not be broken;
  - > wherever possible, the shoreline or water's edge should be maintained as a continuous line, unbroken by structures. New jetties, water play features, buildings or similar structures on the shoreline should be located in visually unobtrusive sites at the ends of stretches of beach, in bays, under cliffs or other positions where not disrupting major linear landscape elements.
- The skyline as viewed from the water should be considered to ensure undesirable intrusions do not occur.

### Colour and Texture - Predominantly Modified



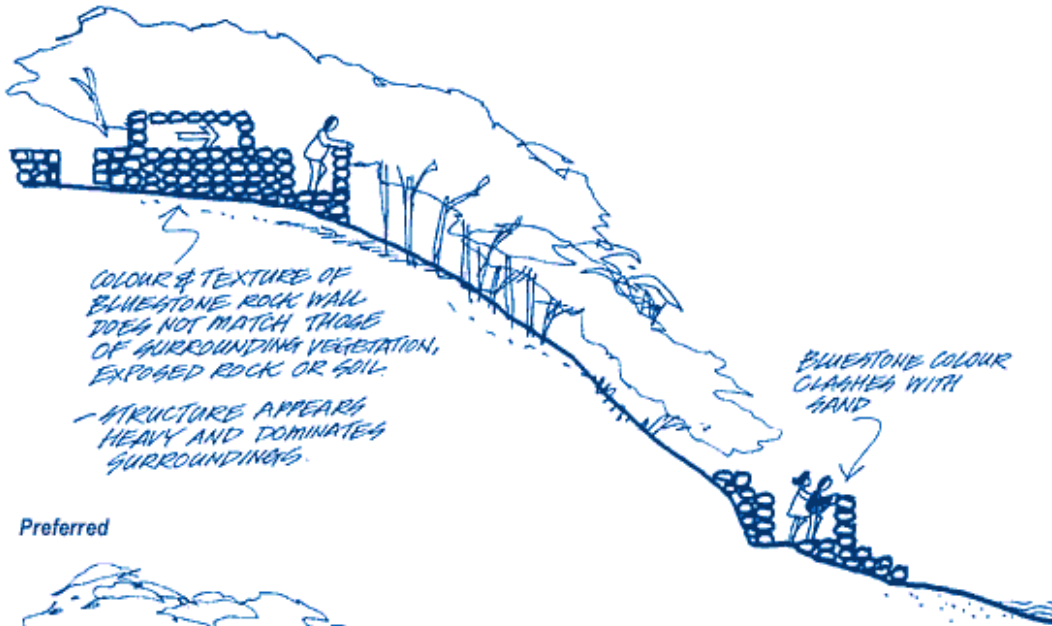
#### 3.2.4 Colour and Texture

*The design of structures should maintain and enhance the coastal landscape character of the area as expressed in the dominant colours and textures found in the surrounding environment.*

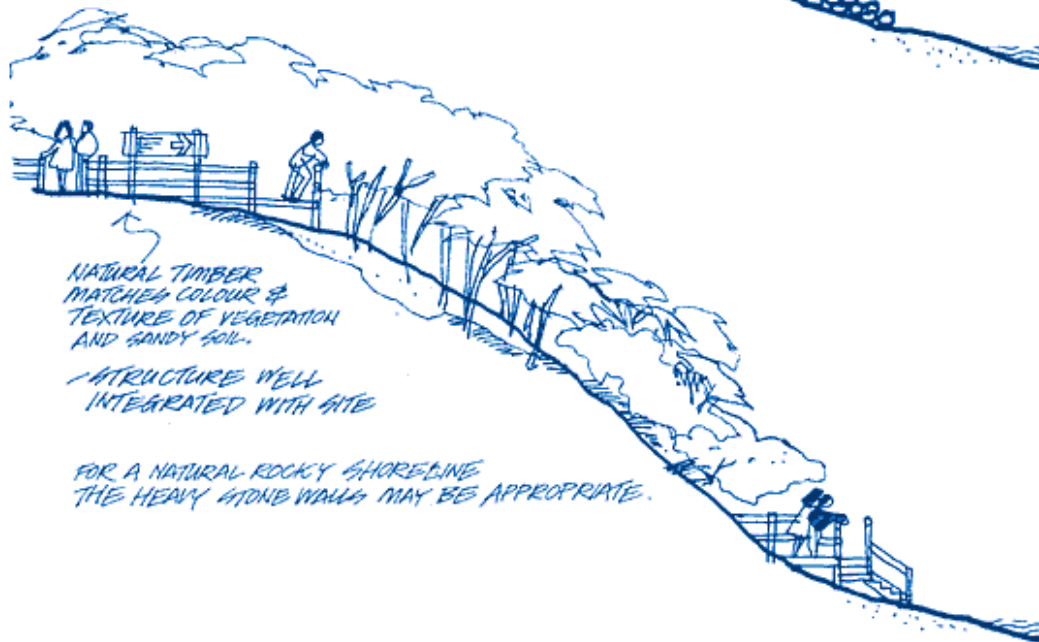
- In predominantly culturally modified areas:
  - > where the colours and textures used in surrounding development complement or contribute to the landscape character of the area, these should be used as a basis for selection in new development;
  - > where there is a significant historical aspect to the existing character, colours and textures of the appropriate period should be used;
  - > bold colours and textures, not found in the surrounding area, might be used where they contribute to the overall effect of the development.
- In predominantly natural areas:
  - > colours and textures should relate to those of surrounding vegetation, soil and rocks where extensive outcropping occurs;
  - > where possible, materials which occur naturally in the surrounding landscape should be used and their surfaces left unpainted.

Colour and Texture - Predominantly Natural (Coastal Sand Dunes)

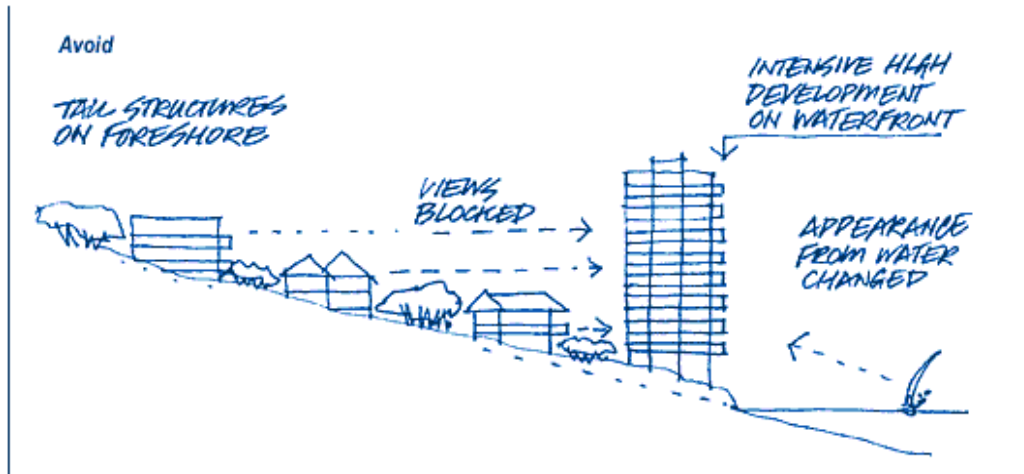
Avoid



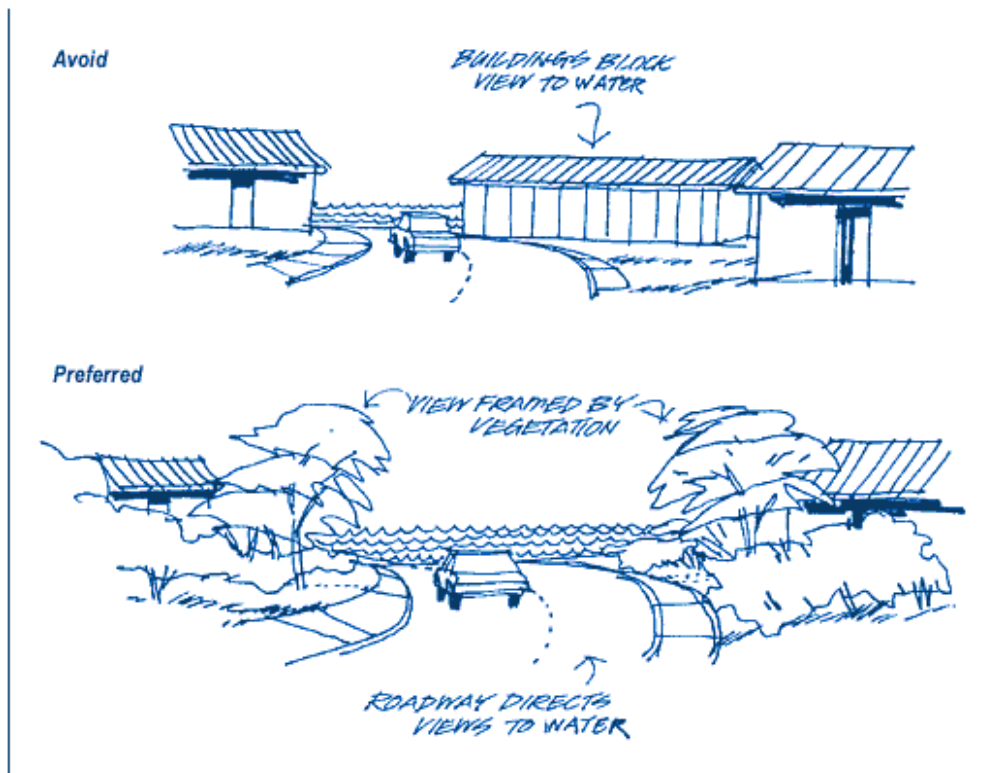
Preferred



## Views



## Views - Siting and Structures



### 3.2.5 Views - including scenic lookouts, road views, path and open space views

(a) Structures should not impair existing views to the water or along the coast and should enrich views to and from the coast.

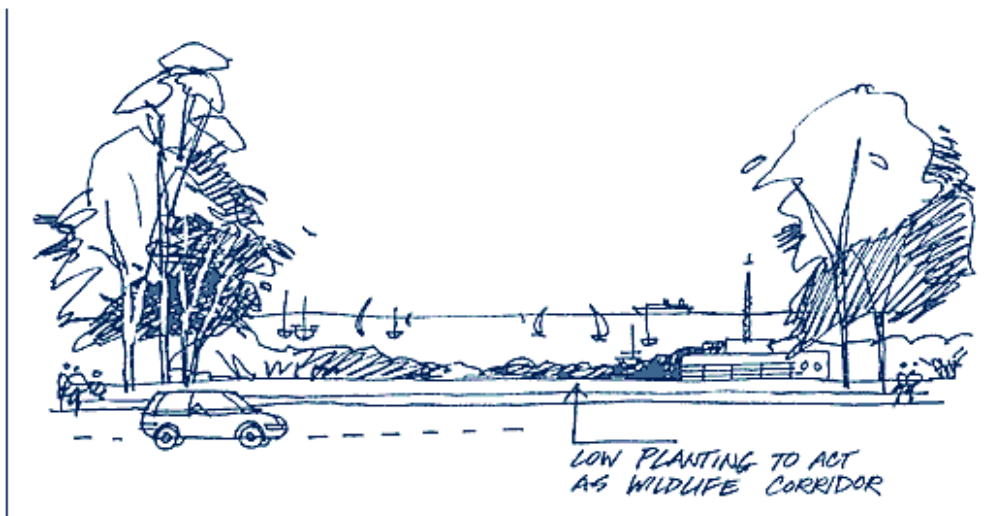
Particular attention should be paid to the maintenance of panoramic views from cliff tops and other elevated locations and the impact of

structures in these prominent locations. Important also are the views from roads and public spaces.

(b) Key views should be maintained and controlled from inappropriate development that may reduce or impinge on the setting.

- Identify those views of value and the controlling attributes.

### Framed Vista



- Identify actions that are inappropriate within the viewshed. For example, in an open and predominantly natural viewshed, development or modification to the current character should be avoided.
- The siting of structures in key viewsheds should take into account all other guidelines.
- Particular attention should be paid to the maintenance of panoramic views from cliff tops and other elevated locations and the impact of structures in these prominent locations. Important also are the views from roads and public spaces.

#### *(c) Views of Natural Features from Roads.*

In major new development, views of attractive natural features (such as dunes, the surf, coastal bluffs, outcroppings and estuaries) from the nearest public thoroughfare should be protected and public viewing areas provided.

#### *(d) Protection of Coastal Views.*

Development (including buildings, fences, paved areas, signs, landscaping) should not be allowed to significantly block views of the shoreline from key public viewing points such as roads that terminate at the coast, roadside turnoffs, recreation areas and beaches.

### 3.2.6 Visual Co-ordination

*The design of structures, outdoor furniture, signs and utilities in a locality should be visually coordinated.*

These structures may be designed on a common theme or utilise common forms or materials which complement the surrounding landscape character or existing structures nearby.

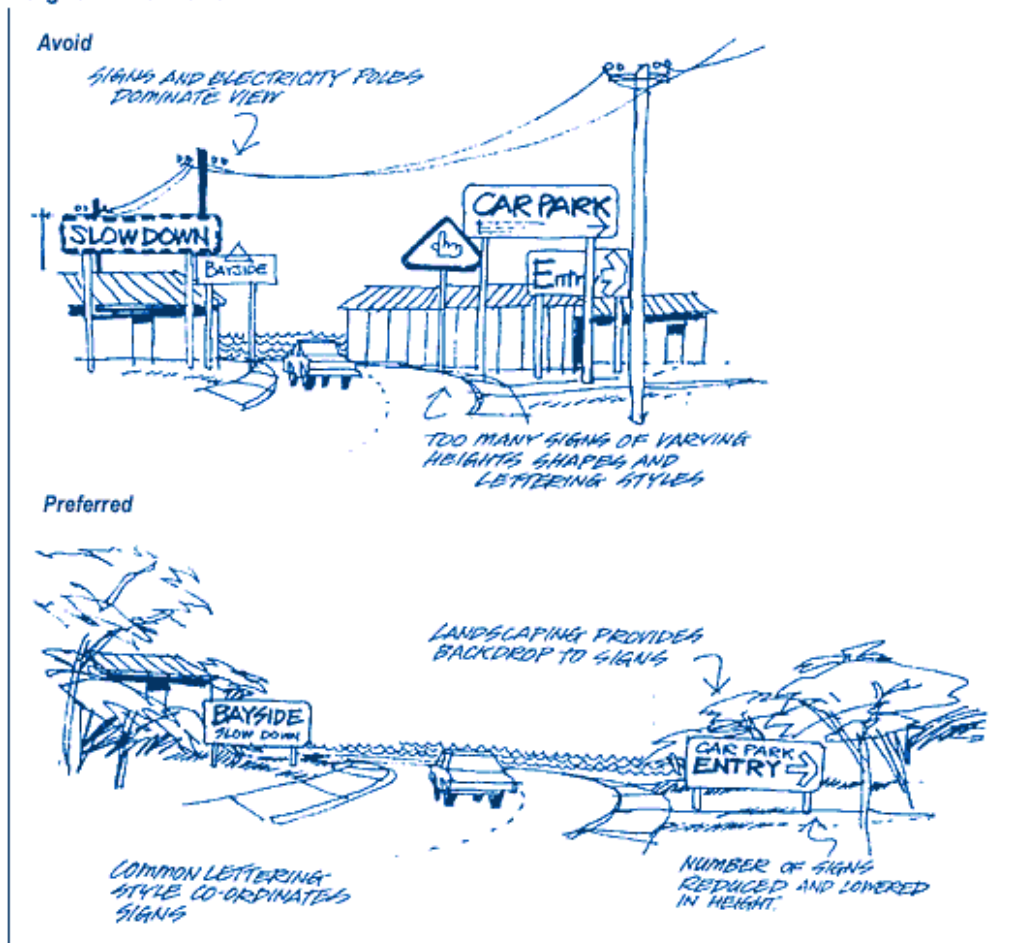
### 3.2.7 Viewshed Protection

*If development occurs on major landscape features, such as ridges, cliffs and headlands, it should be visually screened.*

- Private roads on headlands should be visually screened and driveways connecting to the main coastal road minimised in number.
- The transitions between headlands and related stream valleys should be left in a natural state, with bridges over valleys minimised in number, combined and located at the narrowest crossing points as far inland as physically feasible and environmentally acceptable.
- Buildings on cliff edges and hilltops should be visually unobtrusive when viewed from the valley floors below or public access such as roads and paths.
- Coastal valleys with recreational and natural value should not be used for unsightly sanitary landfill sites.



## Signs and Utilities



### 3.2.8 Signs and Utility Services

(a) Signs should be clear and informative but unobtrusive

- Signs should be grouped or concentrated at particular locations, where most visible with least impact on the landscape. Signs should be located and designed in detail to minimise impacts on views. Common structures should be used, where possible.
- Signs should occur on a landward side of roads, so as not to interrupt views.
- Signs should not be higher than the roofline of adjacent buildings or vegetation, or be moving, or consist of flashing lights. These restrictions may not be appropriate for temporary signs or signs in designated development zones or areas of intensive urban development.

- There is a need to strive for consistency of signage on a local and regional basis. Signs should announce a common geographic region or form, reinforcing the qualities of the coastal environment, rather than municipal boundaries, for example.
- Signs and associated structures should be designed to avoid injury to pedestrians and especially joggers and cyclists. This has clear implications for the height and location of signs and sharpness of their materials.

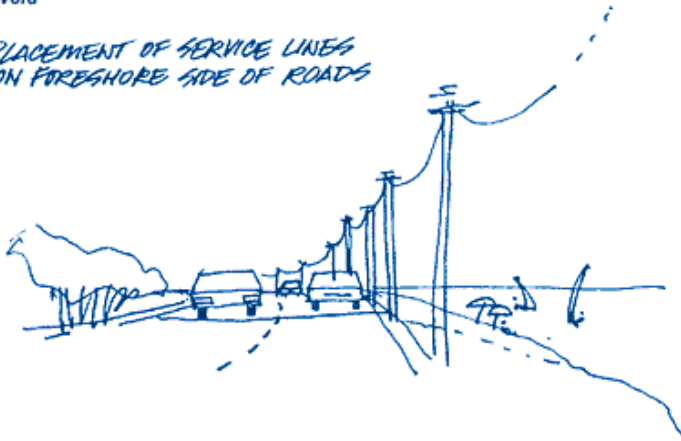
(b) Utility services should be unobtrusive and, wherever possible, underground.



## Utility Services

Avoid

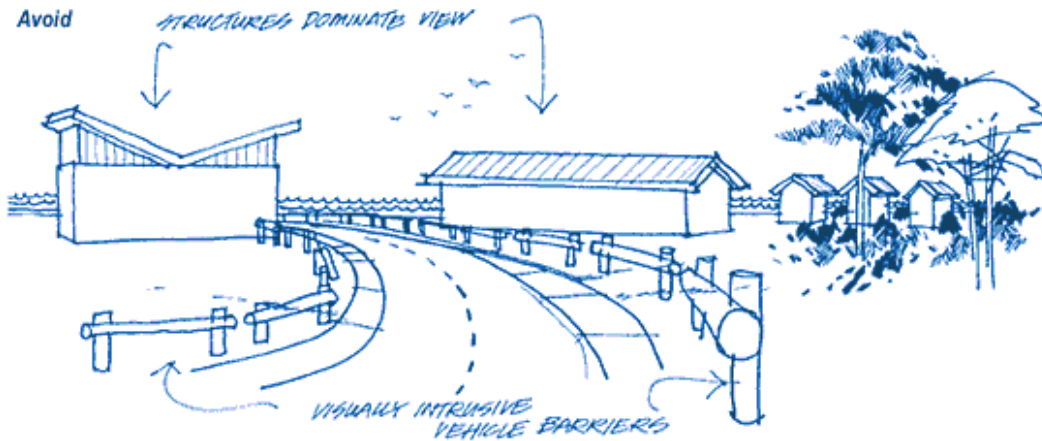
PLACEMENT OF SERVICE LINES  
ON FORESHORE SIDE OF ROADS



## Integrating Structures - Landscaping to Integrate Structures with the Site

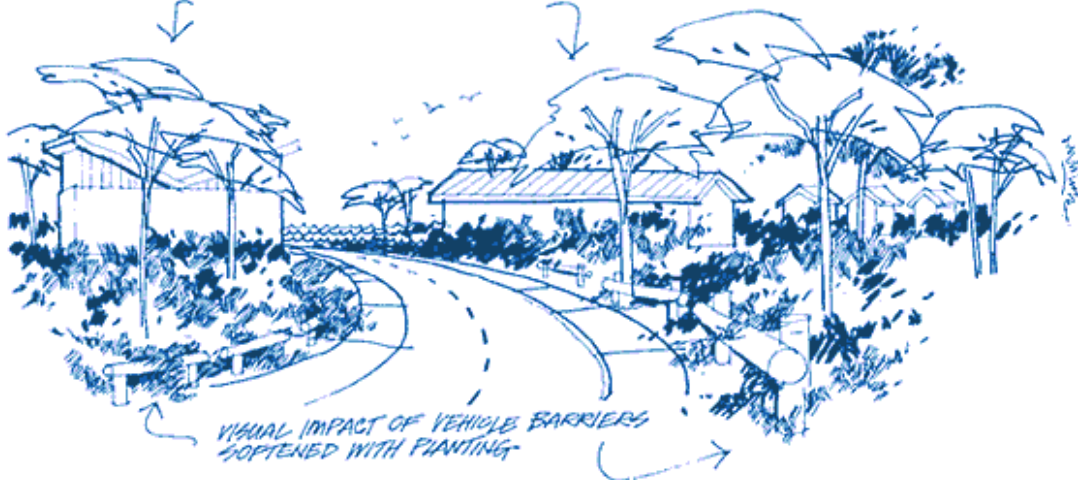
Avoid

STRUCTURES DOMINATE VIEW



Preferred

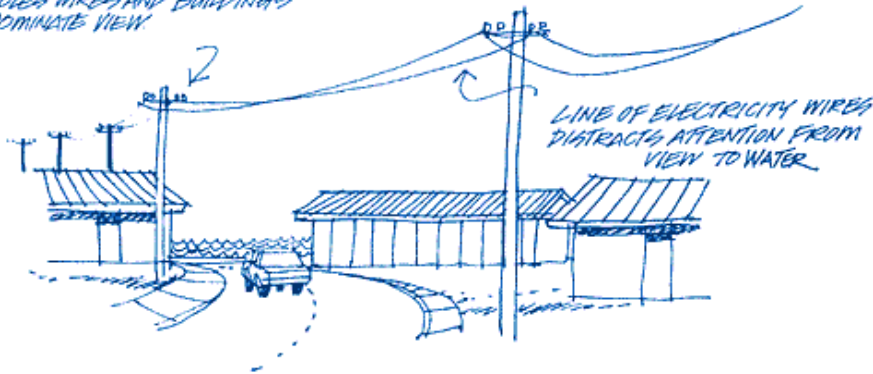
PLANTING OF TREE SPECIES  
COMMON IN THE AREA INTEGRATES  
STRUCTURES WITH SURROUNDINGS



## Screening of Undesirable Structures

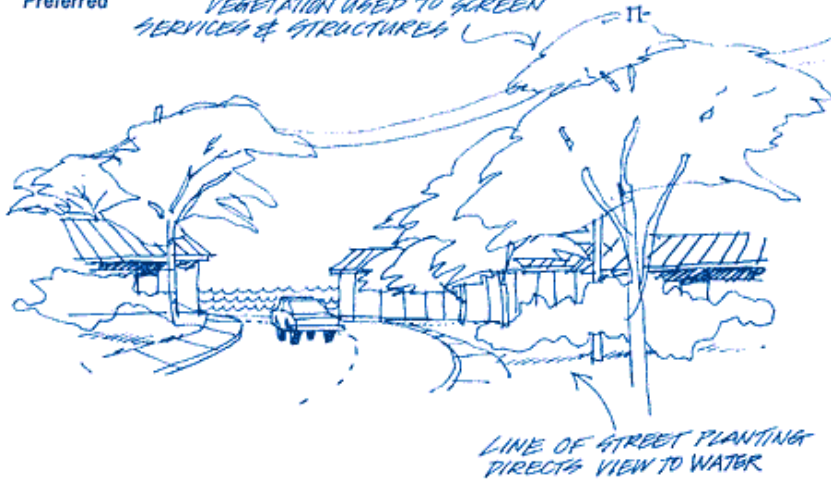
### Avoid

POLES WIRES AND BUILDINGS  
DOMINATE VIEW



### Preferred

VEGETATION USED TO SCREEN  
SERVICES & STRUCTURES



### 3.2.9 Landscape Conservation and Development

(a) *Landscape design should maintain and enhance the coastal landscape character of the area, as expressed in existing landforms, vegetation and materials.*

- Landscape design should cover all site works associated with buildings including grading and earth shaping, surface treatment, retaining walls and the selection and location of trees, shrubs, ground covers and vines.
- In predominantly culturally modified areas:
  - > where there is an historical influence evident through avenue planting or the formal layout of public parks, new development might relate to and continue these themes;
  - > although it is generally preferable to use indigenous species, existing exotic street tree

and foreshore planting may also be considered as a basis for plant selection in adjacent areas where a cultural precedent has been established;

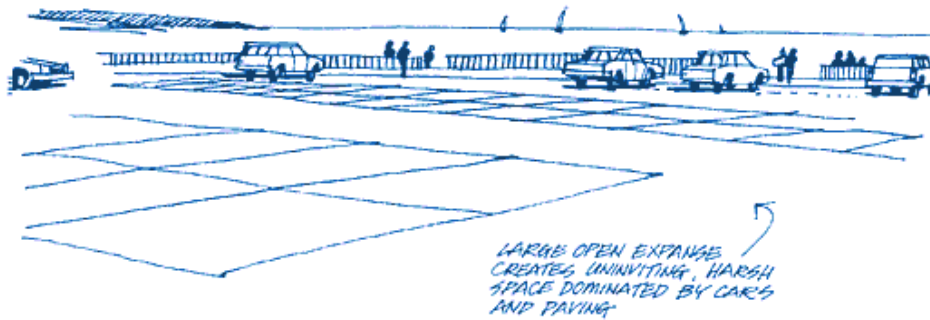
> where layout and materials used in the surrounding landscape contribute to the coastal landscape character of the area, materials of similar colour and texture should be used in the new development;

> a landscape design concept which contrasts with the surrounding landscape treatment may be used where it contributes to the overall effect of a development which seeks to re-establish the coastal landscape character of the location.

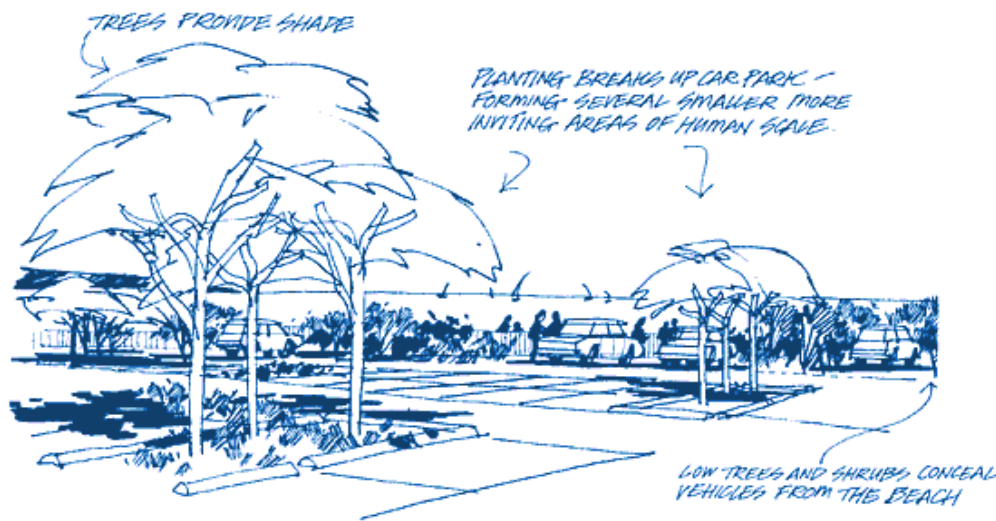
- In a predominantly natural area:
  - > natural regeneration should be encouraged where possible;
  - > indigenous plant species should be planted;

## Landscaping to Improve Amenity

### Avoid



### Preferred



- > layout and grading of the site should relate to those in the surrounding landforms;
- > the colour and texture of materials should relate to those in the surrounding landscape.

- During the landscape design process, reference should be made to relevant Municipal and state agency policies.

*(b) Landscape development (predominantly through vegetation and grading) should be utilised to visually integrate development with the site.*

- In areas of high bushfire hazard trees should be suitably set back from buildings (Refer Country Fire Authority and Municipal Council for relevant bushfire avoidance, protection guidelines).

*(c) Landscape development should be utilised to screen inappropriate existing structures.*

*(d) Landscape development should be utilised to direct views and improve amenity.*

### 3.2.10 Heritage and Historic Structure and Sites

*Heritage and historic structures and sites should be considered on their merits using the appropriate design and planning procedures such as those in the ICOMOS Burra Charter.*

- In areas of high heritage and historic significance where renovation or new development is planned it should also be in keeping with the ICOMOS Burra Charter or other such relevant documents.



Urban development which has required protective walling and later beach restoration

### 3.3 Ecological Guidelines

#### GOAL

*That structures do not cause undesirable changes to terrestrial and marine ecosystems*

#### 3.3.1 Introduction

Whilst the Guidelines are intended to primarily address site planning and visual landscape matters, ecological impacts need to be considered.

The Ecological Guidelines are designed, therefore, to deal with the impact of development on coastal ecosystems. The assessment of ecological impact is particularly important in coastal areas where the stability of natural systems is often fragile and the restoration of disturbed systems difficult.

Generally, the elements and processes within ecosystems are inter-related and the disturbance of one process or the partial destruction of one element may affect the whole system.

The major impacts of development on coastal areas are:

- (a) Soil erosion resulting from the removal of vegetation and changes to drainage patterns. The erosion of unstable exposed sand dunes by wind, after removal of vegetation, is a particular problem.
- (b) Loss of animal habitat resulting from the removal of vegetation, farming, urban activity, draining and filling of wetlands and estuaries and water pollution.
- (c) Depletion of beach systems and siltation caused by interruption of marine sediment supplies and the movement of marine sediment by walls, groynes and breakwaters and changes in natural drainage patterns.

- (d) Deterioration of the quality of the water caused by the discharge of sewage fertilisers and toxic chemicals and changes to water circulation patterns.

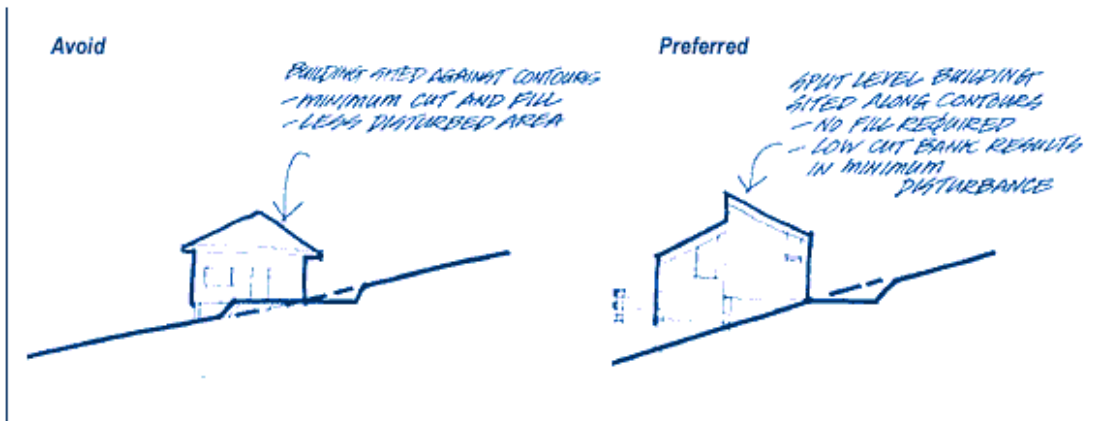
These impacts are primarily due to alterations to land drainage patterns, vegetation, soils and direct changes to sea water quality and circulation. It is also important to anticipate the impacts of change, even on remote marine ecosystems.

The geomorphology of the area is an important consideration in understanding the suitability of sites.

In all cases every effort should be made to preserve natural systems. This is desirable not only to maintain the quality of natural ecosystems, but also to avoid expensive protection and reconstruction works such as those associated with dune erosion, beach erosion and siltation. Changes to estuaries and wetland systems by reclamation or drainage works can have significant impacts on fish breeding in these areas, which is of great consequence for the fishing industry.

In some circumstances, it is necessary that structures do interfere with natural coastal systems, either where natural processes threaten existing developments, or where it is necessary to control the natural system and, in some instances, completely change it in areas of intensive development, such as ports. Where erosion threatens major roads or urban areas, it may be necessary to erect protective structures such as sea walls or groynes. In these instances, however, it is important that other alternatives, which may be less disruptive of natural systems in the long term, are considered. For example, sand pumping or moving threatened developments inland may obviate the need for construction of protective walls.

## Building Siting - to Minimise Soil Disturbance



### 3.3.2 Land Drainage

(a) *Siting, design and construction of any structure should result in minimal change to the natural drainage patterns of the area*

- Retain drainage ways and their associated vegetation in their natural state. In particular, water flow in streams, creeks and natural drainage swales should not be altered by changing the channel shape and surface (e.g. by constructing a concrete culvert) or by damming.
- In developed areas, approved stormwater drainage disposal systems may be required to improve natural drainage.
- The drainage pattern of an area is affected by changes to the stormwater run-off volume and rate. To reduce run-off, impervious surfaces should be limited to the minimum possible and the development planned to utilise permeable surfaces wherever feasible. Where possible, run-off should be detained, e.g. in catch basins, to achieve a flow rate simulating the predevelopment state.
- Confine construction to the minimum area possible and provide temporary water catchment until the stormwater drainage system is installed.
- Where connection to the local stormwater is not possible, run-off should be diverted and dispersed (e.g. by using soakage pits).

- Do not fill or build over seasonally wet areas.

(b) *Siting, design and construction of any structure should result in minimal deterioration in the quality of run-off water.*

- To minimise the deterioration of run-off water quality:
  - > control soil erosion both during construction and in the finished development;
  - > minimise contamination (from manure and fertilisers) of drainage-ways in rural areas;
  - > eliminate discharge of toxic wastes into drainage-ways.

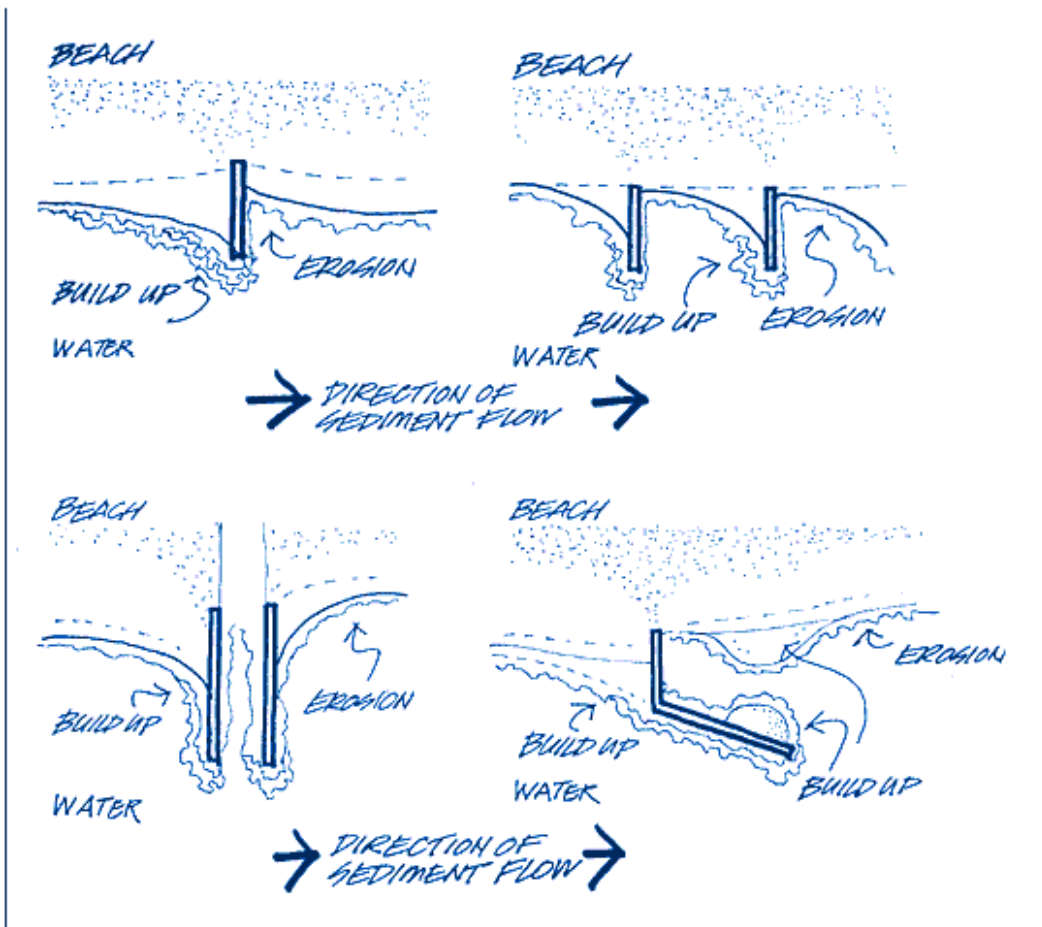
### 3.3.3 Vegetation

(a) *Natural vegetation should be disturbed as little as possible.*

- Structures should be sited and designed to have minimal impact on existing vegetation.
- Where possible, disturbance to natural vegetation should be reduced by grouping structures and providing common access points.
- Vegetation should be protected during construction to minimise unnecessary loss.



### Effect of Structures on Sediment Flow



(b) Natural regeneration should be encouraged and extensive planting of indigenous species should occur around development in urban, suburban and rural areas.

- Where replanting of indigenous species is undertaken, the natural hierarchy of trees, shrubs and ground covers should be restored.
- Topsoil should be stockpiled and re-used on-site to facilitate regeneration. Re-use should take place as soon as possible, to ensure germination of the maximum possible number of seeds.

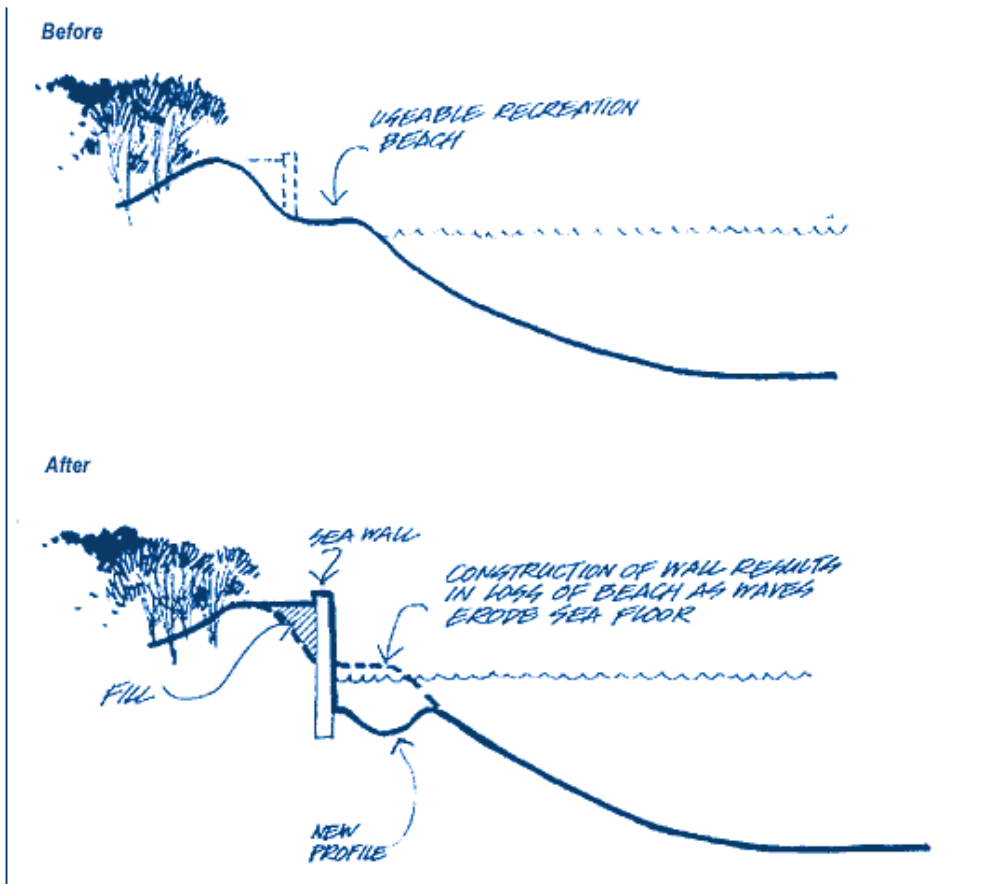
### 3.3.4 Soil

(a) Siting, design and construction of any structure should result in minimal disturbance to soils.

Construction works involving excavation and cut and fill on slopes can cause considerable problems with soil erosion in unstable sandy coastal soils.

- Buildings should not be located on steep slopes.
- Structures should be designed to minimise cut and fill. Where possible, on sloping sites, buildings should utilise footings which allow the natural slope to be maintained, e.g. pole structures.
- Topsoil should be stockpiled and used on-site.

## Effect of Seawall Construction



(b) Permanent structures should not be located on or adjacent to foredunes, unstable or mobile soils.

- Where structures are necessary, the following strategies should be adopted:
  - > minimise increases in water run-off rate and volume and in particular avoid the concentration of run-off into one location;
  - > site structures to minimise wind funnelling and consequent wind erosion;
  - > stabilise all ground surfaces which are exposed to erosive forces during and after construction;
    - > permanently stabilise all slopes greater than 1:4 with protective coverings, such as mulch under fabric, or retaining walls. Where slopes are mulched, soil binding ground cover plants should be established;
    - > minimise vegetation removal, particularly on slopes and in loose wind blown soils, e.g. sand dunes.

### 3.3.5 Coastal Waters

(a) Siting, design and construction of any structure should minimise changes to the natural patterns of movement and supply of marine sediments.

The beaches at a number of locations along the coast have been depleted by a number of factors, including coastal recession and as a result of walls, breakwaters and groynes interrupting the flow of sand to the beach.

Marine structures such as walls have also accentuated erosive pressures on the coastline in some locations, resulting in increased erosion and loss of beaches.



- Wherever possible, the natural erosion of coastlines should be allowed to take place without interference by walls, groynes or similar structures. Such erosion supplies sediment to form beaches in the area and further down the coast, where these are maintained by the littoral drift of sediment. Sediment is also supplied by streams flowing into the bay and this supply similarly should not be restricted by works and structures in the streams or catchments.
- Structures in the water may impede the transport of marine sediments along the shoreline and thus reduce the supply of sand to beaches. These should be designed to keep to a minimum the effect on littoral sediment movement, and strategies such as sand pumping should be considered to overcome unavoidable interference with natural patterns of erosion and accretion.
- In some instances, it is necessary to control erosion where it threatens developments, such as buildings or roadways, on the coast. The construction of protective structures, such as walls, may be necessary in these instances. The construction of breakwaters for sheltered boat moorings, piers, jetties and structures associated with navigation is often necessary, even though those structures may affect natural patterns of coastal erosion and accretion.
- Where it becomes necessary to control erosion, alternative techniques such as beach renourishment, should be considered. Where possible, structures or other development on sites threatened by coastal erosion should be relocated to obviate the need for protection works.

### **3.3.6 Ecological Sustainability and the Recognition of Environmental Processes**

*All siting and design should be based on ecologically sustainable principles and recognise the significance of environmental processes such as the greenhouse effect and ozone depletion.*

- The use of solar and innovative environmentally friendly techniques, such as composting toilets, roof water, recycled materials, etc., should be encouraged.
- Avoid siting and designing structures/facilities that may be subject to adverse effects from the ocean rising due to the influence of the Greenhouse Effect.
- The depletion of the ozone layer may cause a re-evaluation of how people use and interact with the coast. Siting and design of structures should be mindful to provide maximum solar protection to the coast user.

### **3.3.7 Recognition and Protection of Marine Biological Values**

*Protection and improvement of marine biological values is critical in coastal environments, and these should be recognised in any proposed actions along the coast*

These values can be conserved and improved in a variety of ways, for example:

- Creation of breakwaters in appropriate locations which can serve as fish and bird habitat areas.
- Creation of wetland and stormwater systems to enhance vegetation and, therefore, habitat areas.

#### 4.1 Use of Guidelines

A wide variety of new development proposals or modifications to existing uses and activities require planning permission to be granted before the use or activity can commence.

The *Planning and Environment Act 1987* establishes procedures for the submission, consideration and decision-making on all development proposals. It should be noted that in specific locations or instances a variety of other legislation and controls may also apply to the use and development of coastal land.

The purpose of these guidelines is to assist the Victorian Coastal Council, Municipal Councils, coastal managers and other stakeholders to implement the *Victorian Coastal Strategy*, and achieve excellence and sustainability in the development and management of coastal land.

These guidelines are designed to apply in the planning and construction of structures and facilities on coastal Crown land and to provide guidance for siting and design more generally in the coastal hinterland.

The guidelines in their current form will be reviewed after an initial period and consideration will be given as to their more formal incorporation into planning schemes at that time.

#### 4.2 Approvals for use and development on Coastal Crown Land

If your proposal involves the use and development of coastal Crown land you will require a consent under the *Coastal Management Act 1995* from the regional office of Department of Natural Resources and Environment. In addition, depending on the nature of the proposal, you may also need a planning permit from the local Municipal Council. If a planning permit is required, the Municipal Council cannot grant a planning permit without prior consent to the proposal from the Department of Natural Resources and Environment. If a Municipal Council receives a planning permit application that does not include the consent, it will refer the planning permit application to the Department of Natural Resources and Environment as an application for a consent under the *Coastal Management Act*.

In the case of proposals for use and development of coastal Crown land, you should first discuss the proposal with your local regional office of the Department of Natural Resources and Environment. Contact details for regional offices can be found in Appendix 2. If you are not sure whether the site of the proposal is on coastal Crown land, you can contact either the local Municipal Council or the regional office of the Department of Natural Resources and Environment for advice.

#### 4.3 Project Development Process

It is important that the proponents for any particular use or development confirm with the Municipal Council what planning or other permission is likely to be required in each case. The planning process relies on the applicant providing an adequate level of detail and information concerning any proposal to ensure all relevant issues can be addressed.

Permission may be required for only specific parts of a proposal. For example in a given zone or location the planning controls may allow a particular use to be as of right, but require permission to be sought for the buildings and works necessary to establish the use.

The Municipal Council or responsible authority for an application must consider the environmental consequences of the application and may also consider social or economic issues related to the proposal.

In this section the five principal steps in the siting, design and development of new projects are summarised. These are outlined in the following tables and can be read as a sequential methodology to achieve well resolved development in coastal areas.

The steps are:

- Step 1: Initial proposal assessment
- Step 2: Information required in permit submissions
- Step 3: Preparation of an application
- Step 4: Consideration of an application
- Step 5: Development implementation

## Step 1: Initial Proposal Assessment

The preliminary tasks to be undertaken for a new proposal require the applicant to contact the relevant Municipal Council or authorities. The following table outlines the preliminary checking process in this step.

**Table: Step 1**

| Action  | Applicant   | Municipal Council/Authority  |
|---|---|--|
| 1.1 Confirm if a permit or approval is needed     | Go to Municipal Council, Committee of Management, landowner or other relevant Authorities (including NRE).<br>Check zone, overlay or other planning scheme requirements.<br>Check for controls or requirements under other legislation. | Advise applicant to check with relevant authorities.<br>Make available relevant documents including: <ul style="list-style-type: none"> <li>• Victorian Coastal Strategy</li> <li>• Coastal Action Plans</li> <li>• Relevant Guidelines</li> </ul> |
| 1.2 No planning permit required [refer to Step 3] | Seek written confirmation no planning permit is necessary.<br>Check if building or other permits are required.  | Request details of proposed project.<br>Assess and advise on the need for various permissions.   |
| 1.3 Permit required                               | Proceed to Step 2   | Proceed to Step 2  |

## Step 2: Information Required for a Comprehensive Permit Application

When preparing an application for a particular use or development it is essential that adequate plans and details are provided to enable the proposal to be properly assessed on its merits.

Appendix 1 sets out a checklist of issues to be considered by all parties involved in the preparation or consideration of the siting and design process. Key issues to be addressed include; site selection, site analysis, site planning, design of structures, site design and development feasibility.

Each development should be considered on its merits. The details required for an application should be established by early discussions with the relevant Municipal Council and will vary according to the size and impact of the proposed development. It should include the following:

### (i) Justification of the structure

- Discussion of the need and purpose
- Discussion of design options
- Environmental impacts of the development and approaches to resolve conflicts
- Details of proposed management including hours of operation, potential user numbers etc. as relevant to the proposal
- Discussion and assessment of any relevant state, regional and local policy or Ministerial Direction

### (ii) Location Plan - site location and context

#### (iii) Site Features Plan showing as appropriate:

- contours
- vegetation
- site visibility from adjacent public viewing points
- existing land uses
- circulation and access
- existing structural features
- existing easements

**(iv) Conclusions of the site analysis, highlighting issues such as:**

- sensitive landscape areas
- areas appropriate for development
- capacity of the site to visually absorb development
- other development constraints, implications on phasing and timing

**(v) Development Proposals**

Plans, elevations, sections and perspectives (as appropriate) should provide a clear impression of the intended development. Details should include:

- site works
- vehicular and pedestrian access, including car and bicycle parking
- landscape works, planting including paving, walls, seating, lighting and other fixtures
- service and waste disposal provisions

- outline specifications of building finishes and materials
- construction time
- maintenance program particularly for landscape works

Drawings may be accompanied by an explanatory report or details.

**(vi) Administration**

- correctly complete application form
- enclose correct fee
- provide adequate contract details

**Step 3: Preparation of an Application**

For both the proponent and the Municipal Council there are a number of important issues to be addressed during the preparation of a planning permit application.

**Table: Step 3**

| Action                              | Applicant  | Municipal Council/Authority  |
|-------------------------------------|--|--|
| 3.1 Initial application preparation | Confirm the land owner is aware of or consents to the application (including the Crown).   | Emphasise need to consider appropriate design and location.  |
| 3.2 Undertake site analysis         | <p>Compile existing conditions map (include features survey or geomorphological information as necessary).</p> <p>Examine the site context, characteristics and sensitivities.</p> <p>Address landscape setting types and other guideline sections.</p> <p>How will the development impact on the site and area?</p> | <p>Assist and encourage applicants to prepare appropriate plans and information.</p> <p>Advise applicants to refer to relevant sections of these guidelines.</p> |
| 3.3 Preliminary Design              | Develop an appropriate design based solution that respects and enhances the coastal environment.   | Support design excellence and encourage use of qualified design professionals with skill in coastal environments.  |
| 3.4 Prepare Planning Application    | Write an assessment of how the application responds to planning, policy, guideline and authority requirements.   | To facilitate speedy determination, assist applicants to ensure adequate information is included with development and land use applications.                     |

#### Step 4: Consideration of an Application

When the application is properly prepared it should be submitted to the Municipal Council with the appropriate fee. The process and timelines for the consideration of applications are clearly established by the *Planning and Environment Act 1987*.

An overview of major stages in the decision making process for coastal siting and design proposals is shown below.

*Note:* Subject to appeal provisions any party to the application may lodge an appeal against the determination or failure to determine.

#### Step 5: Development Implementation

Step 5: Development Implementation Once all necessary approvals are in place the proposal can commence. The key responsibilities of proponents and Municipal Councils are set out below.

**Table: Step 4**

| Action                   | Applicant  | Municipal Council/Authority  |
|--------------------------|--|--|
| 4.1 Lodge Application    | <ul style="list-style-type: none"> <li>include appropriate fee</li> <li>arrange for notification (if required by authority)</li> </ul> | <ul style="list-style-type: none"> <li>Municipal Council to register and advise of further information if required</li> <li>Determine level of notification required (if any).</li> <li>Refer proposal to relevant referral authorities.</li> </ul>  |
| 4.2 Consider Application | <ul style="list-style-type: none"> <li>provide further information if required</li> </ul>  | <ul style="list-style-type: none"> <li>Municipal Council reviews the proposal against planning provisions, policies and relevant guidelines and submissions.</li> <li>Decides to permit or refuse the proposal based on assessment of the merits of the project.</li> <li>Issue a permit, refusal or notification of decisions.</li> </ul> |

**Table: Step 5**

| Action                | Applicant  | Municipal Council/Authority   |
|-----------------------|--|---|
| Commence construction | <p>Confirm that all necessary permission has been granted. (This may include other building or license approvals).</p> <p>Comply with planning permit requirements eg.</p> <ul style="list-style-type: none"> <li>protect vegetation</li> <li>manage soil disturbance and silt runoff</li> <li>minimise impact on amenity and environment</li> <li>protection of the area's visual characteristics.</li> </ul> | <p>Ensure permit conditions are compiled with.</p> <p>Monitor construction and development.</p> |

## Appendix 1 - Checklist for Planning and Design

The following checklist, written as a series of questions, is designed to ensure that all relevant issues are adequately considered throughout the siting and design process.

The checklist should be used not only in conjunction with the guidelines, but also with information gained from discussions with the relevant local authority, NRE regional office and advice from professional consultants.

Ideally, a positive response should be possible to all questions; where the response is negative, the Municipal Council should be consulted and more consideration given to the issue involved.

### a) Development Feasibility

- Is the proposed use dependent upon a coastal siting?
- Is a new structure necessary?
- Can an existing structure be utilised?
- Can a temporary structure be utilised?
- Has the Council and local management authority been consulted?

### b) Site Selection

- Is the development in accordance with the approved plans or policies for the area?
- Can the proposed use be accommodated with minimal disturbance to the soils, drainage, vegetation and marine environment of the area?
- Are the required services available to the site, or are renewable energy alternatives available?
- Can the traffic generated by the proposed use be accommodated by the adjacent roads?

### c) Site Analysis

- Have the Municipal Council and all other relevant authorities been consulted to identify their requirements regarding permits, specific regulations, easements, etc.
- Have the slopes of the site and ridgelines been identified?
- Is the topography type, (i.e. cliff, flat or undulating), known?
- Have all drainage patterns of the site been identified, (e.g. location of natural drainage swales and seasonally wet areas)?
- Are the soil types and their physical characteristics, as relating to footing design and plant growth, known?
- Have erosion prone areas been identified?
- Have local wind conditions, temperature ranges, rainfall and humidity been analysed?
- Have all stands of existing native vegetation, including their type and condition, been identified?
- Has the adjacent marine environment been analysed to identify important marine habitats, water quality and dynamic shoreline processes, (e.g. sediment movement, high and low tide marks and the effect of wave action, particularly during storms)?
- Have all desirable and undesirable views, both into and from the site, been identified?
- Have all desirable and undesirable visual elements in the vicinity been identified?
- Does the area surrounding the site exhibit a distinctive landscape character; if so, what are the natural and cultural elements which contribute to this character?
- Are existing land uses in the surrounding area known?
- Has the desirable degree of pedestrian access to the shoreline been identified?
- Have desirable access points to the site been identified?
- Have sites, or structures of scientific, cultural (Aboriginal and European) historical and architectural importance likely to be affected by the proposal been identified?

#### **d) Site Planning**

- Is the development set back as far as possible from the shoreline?
- Are structures grouped and/or located near existing groups of structures?
- Is the development sited on a suitable slope to minimise cut and fill and expensive footing design?
- Is the development sited to minimise disruption to surface and sub-surface drainage patterns?
- In particular, is the development sited to avoid drainage ways, seasonally wet areas and flood prone lands?
- Does the development minimise changes to the quality of run-off water which flows to the ocean?
- Is the development sited to avoid unstable, erosion prone soils?
- Is the development sited to minimise the disruption of natural erosive and marine sediment flow processes?
- Is the development sited to minimise wind and salt spray impact?
- Is the development sited to minimise disturbance to existing vegetation?
- Does the development minimise negative impacts on the water quality of the coast?
- Are important marine habitats protected?
- Is the development sited to allow minimum disruption to the major lines in the landscape?
- Is the development sited to protect and enhance desirable views?
- Is the development sited and planned to minimise congestion on adjacent roads?
- Does the development minimise interruption to pedestrian movement along the foreshore?
- Does the development allow controlled access to the shoreline?
- Is the development sited clear of all service easements and statutory setbacks?

#### **e) Design of Structures**

- Have the proposed uses of the building and the functional requirements been clearly identified?
- Does the structure allow for future changing needs and expansion?
- Are areas which may require heating served by north facing windows?
- Where appropriate, have the dominant forms in the surrounding landscape been used as a basis for design?
- Have existing major lines in the landscape been maintained?
- Have the dominant colours in the surrounding landscape been used as a basis for design?
- Have the dominant textures in the surrounding landscape been used as a basis for external detailing and material selection?
- Does the design minimise salt build-up; in particular, are roof slopes sufficient to allow self-washing?
- Where required, are fittings and finishes robust enough to withstand high usage?
- Where required, are fittings and finishes vandal resistant?
- Are materials and finishes durable in the coastal environment and have the most ecologically suitable technologies been used?
- Are windows located and protected to allow winter sun penetration while excluding summer sun?
- Are the walls and roof appropriately insulated to minimise undesirable heat loss and gain?
- Are openings located to allow cross-ventilation?
- Are the physical properties of building materials utilised to manage heat loss and gain?
- Is the structure designed to withstand the higher more constant wind forces of the coastal area?



- Are the footings appropriate for the soil type, depth and bearing capacity?
- Are the footings the least disruptive to site drainage and soil stability? ¥ Does the siting and design satisfy the requirements of the relevant authorities and result in the minimum installation costs for the following services, where appropriate? > stormwater > sewage > electricity > gas > telephone > garbage collection
- Are structures associated with services, including radio, television and other signal aerial structures located to minimise their visual prominence?
- Is the structure designed to minimise interference with natural erosive and marine sediment flow processes?

#### **f) Site Design**

- Does the landscape design maintain and enhance the existing coastal character of the area?
- Have appropriate plant species been selected?
- Do the landscape works effectively visually integrate the development into the site?
- Do the landscape works allow winter sun penetration while providing shade in the summer?
- Do the landscape works used screen prevailing winter winds?
- Do the landscape works screen utilities and undesirable structures and views?
- Are site utilities grouped?
- Are site utilities located to ensure their efficient use?

## Appendix 2 - Victorian Coastal Council Contacts

### 1. Victorian Coastal Council Secretariat

Level 2, 8 Nicholson Street  
East Melbourne Vic 3002  
Telephone: (+61) 03 9637 9456.

### 2. Regional Coastal Boards

- Western Coast Regional Coastal Board  
C/- NRE  
78 Henna Street  
Warrnambool 3280  
Telephone 03 5561 9924
- Central Coastal Board  
Level 24, Rialto South  
525 Collins St  
Melbourne 3000  
Telephone 03 9614 8188
- Gippsland Coastal Board  
3/107 Nicholson St  
Bairnsdale 3875  
Telephone 03 5153 0451

### 3. Coast Action

Department of Sustainability and Environment  
Level 2, 8 Nicholson Street  
(PO Box 41)  
East Melbourne 3002  
Telephone 03 9637 9776.

#### Coast Action Co-ordinators

|             |                                 |
|-------------|---------------------------------|
| Warrnambool | Telephone 03 5561 9950          |
| Lorne       | Telephone 03 5289 1618          |
| Geelong     | Telephone 03 5226 4669          |
| Melbourne   | Telephone 03 9296 4525<br>/4532 |
| Yarram      | Telephone 03 5182 5155          |
| Bairnsdale  | Telephone 03 5152 0439          |

### 4. Regional Coastal Offices of the Department of Natural Resources and Environment

- **Portland**  
8-12 Julia Street  
Telephone 03 5523 3232
- **Warrnambool**  
78 Henna Street  
Telephone 03 5561 9900
- **Colac**  
83 Gellibrand Street  
Telephone 03 5233 5533
- **Geelong**  
State Government Offices  
Cnr Fenwick and Lt Malop Streets  
Telephone 03 5226 4667
- **Melbourne**  
30 Prospect  
Street Box Hill 3128  
Telephone 03 9296 4400
- **Yarram**  
310 Commercial Road  
Telephone 03 5182 5155
- **Bairnsdale**  
7 Service Street  
Telephone 03 5152 0400
- **Orbost**  
171 Nicholson Street  
Telephone 03 5161 1222
- **Traralgon**  
71 Hotham Street  
Telephone 03 5172 2111

### 5. Aboriginal Affairs Victoria

115 Victoria Prde, Fitzroy 3065  
Telephone 03 9412 7498

### 6. Tourism Victoria

55 Swanston Street,  
Melbourne 3000  
Telephone 03 9653 9777

## **7. Department of Infrastructure**

- Nauru House  
80 Collins Street, Melbourne 3000  
Telephone 03 9655 6444
- South Western Region  
63 McKillop Street, Geelong 3220  
Telephone 03 5225 2521
- Gippsland Region  
11 Hazelwood Road, Morwell 5840  
Telephone 03 5132 1666

## **8. Parks Victoria**

378 Cotham Road, Kew 3101  
Telephone 03 9816 7000

## **9. Local Committee of Management**

Responsible for management of Coastal Crown Reserves under the Crown Land (Reserves) Act 1978. Contact the local Regional Office of the Department of Natural Resources and Environment for contact details.

## **10. Environment Protection Authority**

477 Collins Street, Melbourne 3000  
Telephone 03 9628 5622

## **11. Municipal Association of Victoria**

11 Milton Pde, Malvern 3144  
Telephone 03 9823 5555

## **12. National Trust of Australia (Victoria)**

Tasma Terrace, 4 Parliament Place, East Melbourne 3002  
Telephone 03 9654 4711

## **13. Country Fire Authority or Local Fire Brigade**

8 Lakeside Drive, Burwood East 3151  
(Headquarters, Private Box 701, Mt. Waverley 3149)  
Telephone 03 9262 8444

## **14. Energy Information Centre**

115 Victoria Pde, Fitzroy 3065  
Telephone 03 9412 6886

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