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Home > Streets & Parks > Park Design > / Developing a Park

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## Design issues

Good management of the design process is critical to ensure a high quality public space. The following section highlights some key design issues to consider:

### Environment

Consider the wider environment to determine what is appropriate for the area. For example, what plants grow well there and what facilities are already provided in the vicinity.

### Scale

The overall scale of the space is important to get right. Think about large scale places where people will mix and meet each other, as well as smaller, more intimate spaces for contemplation and relaxation. Consider the size of materials, and be aware of the potential to overcrowd spaces.

### Enclosure

How the space is defined and divided is a practical issue that will affect site security. It will also affect how a site feels to be in. Consider the different ways spaces can be defined, e.g. by changing the ground level and using vertical elements such as trees or fences to create barriers and enclosures.

### Circulation

The way people will access and move through the space will help determine its layout. Paths should enable people to reach their destination in a logical, easy and efficient manner. Most people will want to take the most direct route, but land contour and the different uses of open space should be considered.

### Materials

The project is likely to consist of hard and soft materials, and may include buildings or structures. Materials should be attractive to the eye with good use of shape, colour, texture and form. The soft landscape is made up of natural elements, such as plant materials, grassed areas and the soil itself. The hard landscape is made up of elements added to the soft landscape, such as paving, gravel, walkways, irrigation systems, retaining walls, sculptures, street amenities, fountains, and other mechanical features. When choosing materials consider ease of

maintenance (including the cost of repair), local context and character, overall design objectives, functionality, and cost.

## **Topography and levels**

Sites have a unique form which may be natural, man-made or a combination of both. This is known as the topography and is shown on the site plan as contour lines. The contour lines connect points of the same ground level and are used to measure slopes and drainage. Few sites are completely flat and changes in ground level across the site can be used to create a variety of experiences from high viewpoints to sunken, enclosed sheltered areas. Changes in level can be dealt with informally and blend in with surroundings, or made into a feature.

## **Drainage**

Sustainable drainage, also known as low impact design or water sensitive design, offers numerous environmental and cost benefits. To prevent water from pooling in unwanted areas, consider how it will run off from the site's surface or subsurface. This could be through drains, swales or surface run off.

## **Infrastructure**

Sites may have existing public infrastructure located within them, or they may be plans for new infrastructure to be installed. Consider the location and use of infrastructure in the design of the park. The design should minimize any impact on the use and functioning of the site, while maintaining access to infrastructure for maintenance.

## **Lighting**

Consider lighting along paths or near structures that are used in the dark. Well-lit spaces can deter anti-social behavior and can artfully highlight selected features throughout the space, such as trees or buildings. However, lighting may lead people into unsafe areas and its costs can be high, so its use and placement should be carefully considered. Lighting should only be used if the park is well-used at night for appropriate activities or is a well-travelled thoroughfare connecting popular destinations. Otherwise, lighting may give the impression that the park is safe when it may not be.

## **Safety**

Plan open spaces with crime prevention in mind. Avoid creating places where people can lurk, hide or become entrapped; avoid long stretches of path with no alternative escape routes and ensure planting does not block sight lines.

## **Resourcefulness**

The design and construction practices specified in the project should aim to ensure the park environment and any built elements within it are durable, robust and cost efficient in terms of maintenance and future replacement. The project should help to protect natural resources and

improve the built environment so that ecosystems, people and communities can thrive within them.

## Design process

Once the design team has been appointed, the project team's responsibility is to support the design process, give feedback to the design team when needed and ensure timely decision-making. It is important that there is a key contact in the project team to liaise with the design team, and to take on the following key responsibilities:

- ensure the design team has all the necessary information to develop the design
- act as the first point of contact for the project team, ensuring decisions made by the project team, steering team or the governing body are communicated to the design team
- take overall responsibility for budget management, including responsibility for feeding back information to the project sponsor and/or the project sponsor's representative
- ensure the design is agreed and signed off at key stages by the project sponsor and the governing body

## Detailed design

The magnitude of design input for each design stage will depend on the complexity and scale of the project. Other works that have been implemented on the site and the way in which the project will be delivered will also affect the scope of the various design stages.

### Pre-Design

During this phase, a clearly defined project plan, which will serve as a roadmap for the delivery of the entire project, is developed. The project plan should summarise:

- the project's vision and goals
- any design opportunities and constraints
- information gathered from comparable case studies
- the findings of preliminary site investigations and surveys,
- the project's regulatory framework
- key stakeholder groups
- issues that may influence the budget or delivery of the project

Initial stakeholder engagement with the local community, user groups, mana whenua and Local Boards should be completed to further refine the project plan. Key questions to be addressed during this phase may include:

- What are you trying to accomplish with this project, what is the shared vision for the completed project?
- How will this facility be used and how can design support that use now and in the future?
- What is your budget? Have you considered all of the costs involved?
- What other technical specialists, for example an ecologist, are required to produce a feasible, robust and enduring design solution?
- What steps need to be taken to gain the necessary planning and compliance approvals for the project?

## Concept Design

This phase expands the understanding of the site conditions and establishes a conceptual approach for the project.

A simple conceptual approach usually leads to a better outcome, so the conceptual approach should involve one or two driving ideas. These will guide the layout of the space, the look and scale of the various elements, the relationship between the different elements and the materials to be used.

The design team should communicate the conceptual approach and design intent to the project sponsor, providing the following documentation:

- Site analysis - a topographic survey, a survey of existing and planned structures and infrastructure, a survey of legal boundaries, an ecological survey (including significant ecological areas scheduled under the Unitary Plan) and any heritage elements and social patterns, such as pedestrian movement and recreational use
- Site plans - general arrangement plans, preliminary building plans, sections and elevations

This phase will require input from the project team, who may bring in representatives from other areas of Council to discuss particular aspects of the concept design. Local Boards and external stakeholders should also be engaged in the concept design phase to test the design against the project vision and gain initial feedback on the conceptual approach.

## Developed Design

During the developed design phase, the design team refines the spatial relationships, forms, size and overall appearance of the site. This is done through further development of site plans, sections, elevations, construction details and the layout of facilities and planting. Preliminary specifications or samples, which identify major building materials and establish quality standards, are introduced during this phase.

During the developed design phase, individual technical experts prepare the necessary documentation to define the scope of the site's landscape and built elements. Site design is enriched with input from engineers and specialists such as ecologists, artists or lighting designers.

By the end of this phase the scope of the project is fully defined and cost estimates are prepared. Developed design generally provides sufficient information for the project sponsor to clearly understand the aesthetics, construction costs, operating costs, functionality of the space and the proposed features and facilities within it.

As with the concept design phase, this phase will require input from the project team, who may also bring in other representatives from other areas of Council to discuss particular aspects of the developed design. Local Boards and external stakeholders should also be engaged in the

concept design phase to test the design against the project vision and offer feedback on the conceptual approach.

## Planning Approval and Building Consent

Once the project sponsor and the governing body have approved the developed design, the design will need landowner approval, building and/or resource consent from council, and potentially an authority from the Heritage New Zealand Pouhere Taonga, before building work can begin. A number of consents are often required in the development of open spaces. Ensure that the measures that need to be taken to ensure the necessary consents and compliance for the project is granted are clearly planned at the pre-design phase. These measures can include reviewing legacy documents such as management plans, seeking heritage advice, engage external planning advice where appropriate and having a pre-application meeting with council planners.

Typical consent and compliance measures which may be required include:

- building consent and resource consent pre-application meetings
- application for resource consent for land use
- permits for coastal work, discharge consents, works over underground services, road closures and winter works application to change or cancel resource consent condition(s)
- application for building consent
- application for certificate of compliance
- Heritage New Zealand Pouhere Taonga archaeological authority

## Detailed Design

Detailed design is the phase most commonly used to obtain a contractor for the construction of the works. This phase also provides a level of documentation that clearly defines the design, specification and scheduling of all works and materials necessary to complete the project.

The detailed design will include:

- proposed materials, techniques and standards of workmanship
- proposals made by other consultants, specialist contractors or suppliers
- quotations and other information in relation to specialist work
- an estimated overall cost
- programme
- any necessary applications for detailed planning permission
- site management plans
- detailed general arrangement plans
- plans setting out coordinates
- planting plans
- earthworks plans
- services plans
- elevations
- written specifications to establish the quality levels of materials and systems required for the project

## **Tender Documentation**

Once the detailed design is complete and approved by the project sponsor and the governing body, the next step is for the design team to produce tender documents. Tender documents include everything the contractor will need to estimate the cost and build the project.

General information in the tender set includes: conditions of tendering and conditions of contract. Particular information in the tender set includes: written specifications, construction drawings and a pricing schedule.

The project team will need to decide, to what extent the contractor that builds the project is required to maintain it. Landscape contracts typically include one - two year's maintenance but to ensure good establishment of the site, a maintenance period of up to three years may be preferable. This decision may depend on who will be responsible for maintenance in the long-term, and how it is to be funded.