Draft Urban Design Guidelines for Tall Buildings

CITY OF CAPE TOWN

DIRECTORATE: STRATEGY & PLANNING

DEPARTMENT OF SPATIAL PLANNING & URBAN DESIGN

URBAN DESIGN BRANCH

FOR PUBLIC PARTICIPATION

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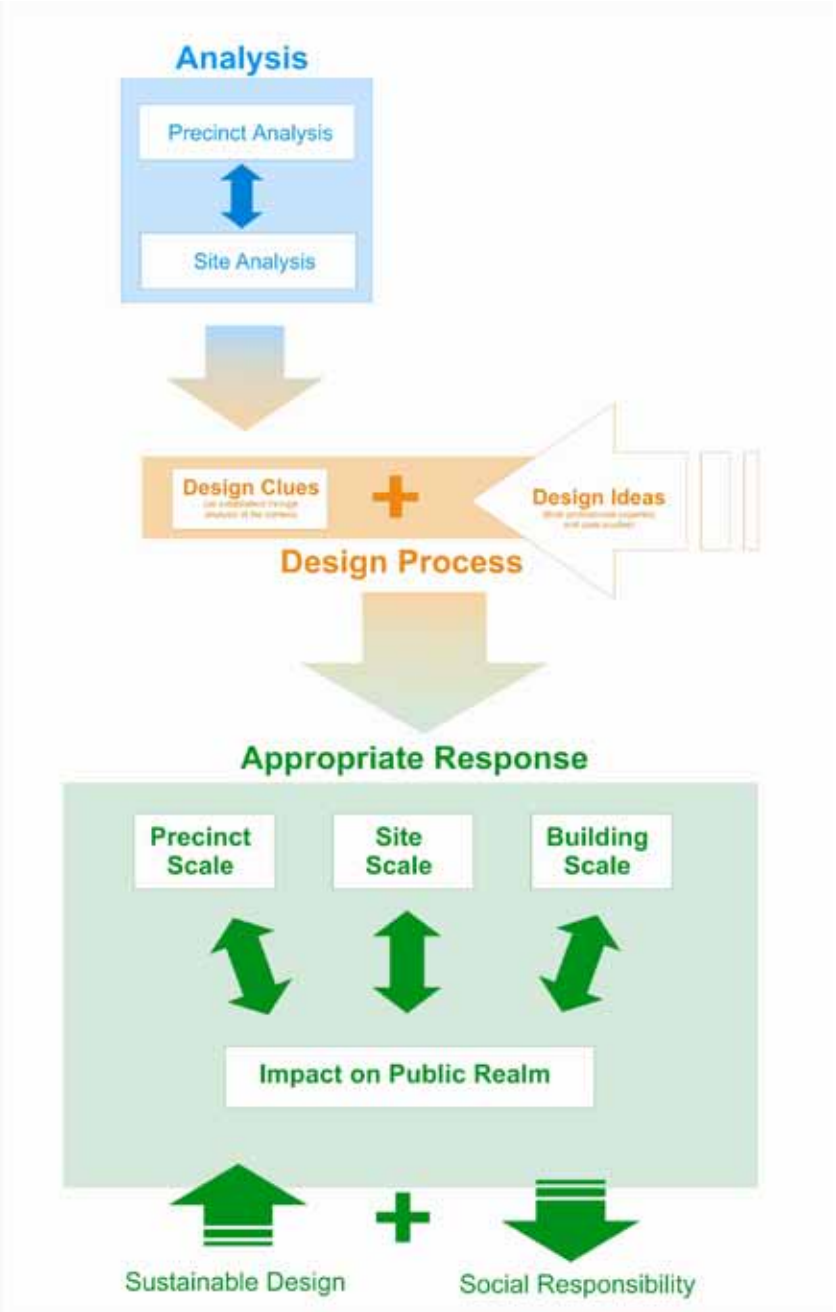

Analysis
Precinct Analysis
Site Analysis
Design Clues
Design Ideas
Design Process
Appropriate Response
Precinct Scale
Site Scale
Building Scale
Impact on Public Realm
Sustainable Design
Social Responsibility

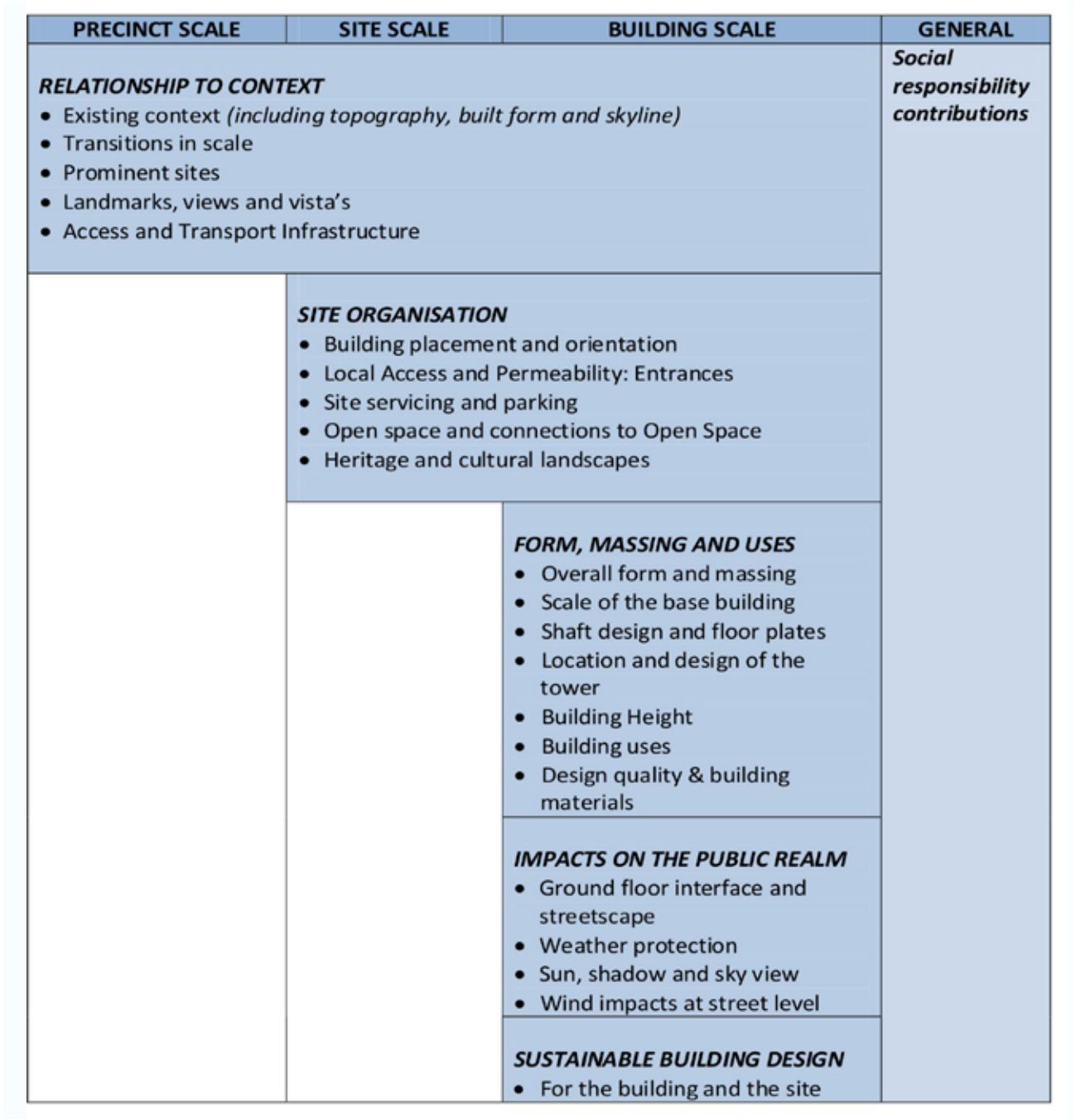
The Draft Design Guidelines for Tall Buildings should be read together with the Draft Tall Building Policy.

This additional information document will give guidance on how to design tall buildings correctly. It sets out in detail the basic design principles expected by the City of Cape Town, while also promoting sound design practice and will be expanded on over the next few years.

The Draft Design Guidelines for Tall Buildings looks at the design and consequent impact of tall buildings within:

- The broader context
- The immediate surroundings
- The site and the building itself

Taken together, these documents will promote an integrated and holistic understanding of the potential impacts of a tall building in relation to its place and purpose in the greater and smaller context of urban development.



1. Response at the Scale of the Precinct

The following issues must be considered in this section: existing context, transitions in scale as well as prominent sites, views and vista's.

a) Relationship to the wider, existing context

Objectives:

To ensure that tall buildings are planned, designed and phased in a holistic and integrated manner so as to mitigate negative impacts to its immediate environment and ensure an appropriate fit within its broader context.

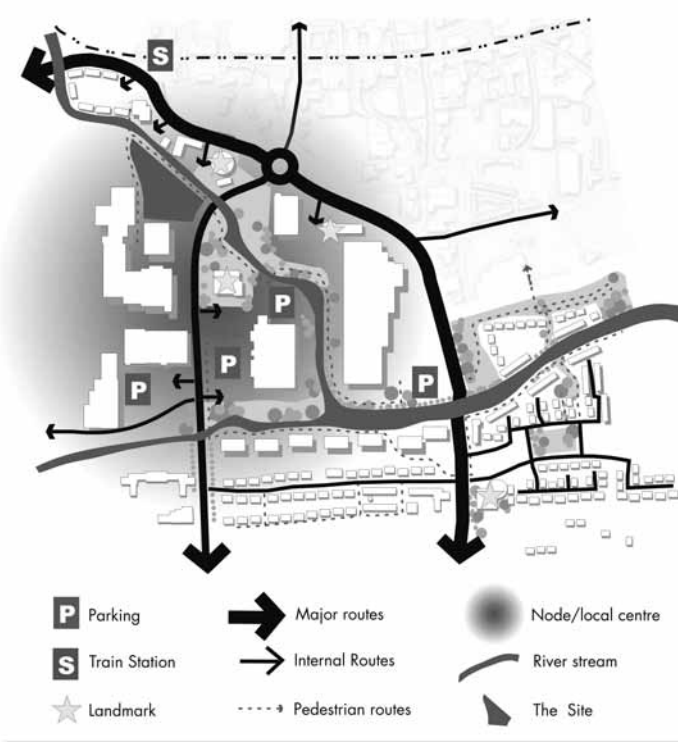
Guidelines:

Due to their size and scale, the impacts of tall buildings and their operations on their surrounds are larger than those of conventionally sized buildings. Therefore a broader understanding of how the tall building development will potentially relate to and impact on its surrounds is required as well as ensuring that all measures to promote sensitive integration are maximised.

The following issues should be expanded on alongside the various plans:

- circulation and servicing of the proposed tall building in relation to existing transport infrastructure of the precinct;
- contribution to permeability and legibility of the site and wider precinct;
- relation to and requirements of existing bulk infra structure and utilities of the precinct;
- relationship of the tall building (top) within the skyline of the precinct;
- size of proposed development parcels/block & street widths in relation to the existing context (precinct grain);
- location of existing buildings of height within the precinct;
- key access points and gateways into the precinct;
- general ground floor land use throughout the precinct; and
- relationship to existing parks and open spaces within the precinct and immediate surroundings.

Show the site within its wider existing context



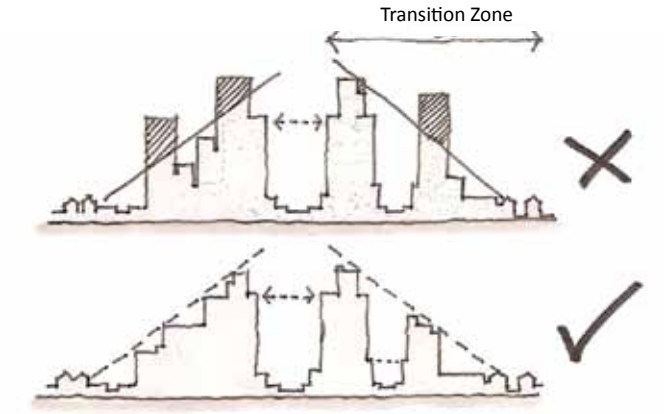
1. Response at the Scale of the Precinct

The following issues must be considered in this section: existing context, transitions in scale as well as prominent sites, views and vista's.

b) Transitions in scale

Objectives:

To ensure that tall buildings are massed to fit harmoniously into its existing / planned context by limiting its impacts on neighbouring streets, parks, open spaces and buildings; and by creating appropriate transitions in scale to the surrounding existing and/or planned buildings.



Guidelines:

Transition in scale between tall buildings and the existing environment should be considered at the scale of the block but even more so at the scale of the precinct. Stark contrasts in scale are to be avoided even though the tall buildings are within a precinct that will be continuously evolving. On sites adjacent to lower scaled buildings on the block or across the street, the following must be considered and expanded upon:

- ensure that the proposed building's base are appropriately scaled and designed to match existing buildings in the street;
- complement and enhance the overall form of the precinct by scaling proposed tall buildings to sit in harmony with immediate/adjacent buildings or respecting other height levels in the design of the new tall building development;
- locate and set the tall building's shaft back in such a manner that it limits its visual impact on the street, open space and neighbouring properties that are lower in scale;
- provide appropriate setbacks of tall buildings from existing buildings to give sufficient space so as to created/achieve an appropriate transition; and
- when considering a tall building on a site between two land uses or areas of different heights or built form, consideration must be given to:
  - *providing appropriate horizontal separation between tall building(s) and the lower scaled area*
  - *the final appropriate height should be determined by having sufficient vertical space to allow for a balanced stepping down of the tall building towards the lower scaled buildings.*

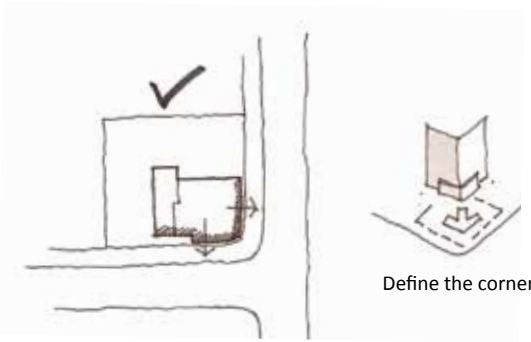
1. Response at the Scale of the Precinct

The following issues must be considered in this section: existing context, transitions in scale as well as prominent sites, views and vista's.

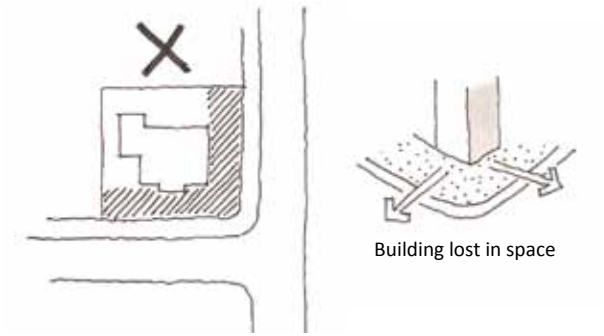
c) Prominent sites

Objectives:

To provide specific design guidance for the design of tall buildings on prominent sites which are highly visible and to ensure that the prominence of the site is appropriately acknowledged in design and locational terms.



Define the corner

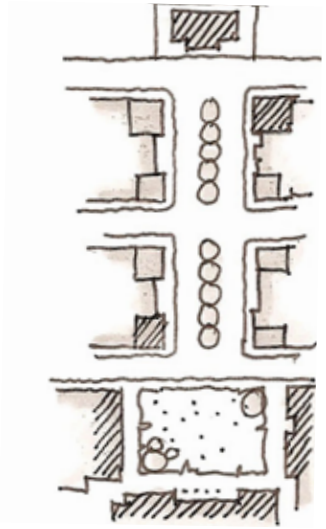


Building lost in space

Guidelines:

Prominent sites are defined by their strategic location and relationship to adjoining public streets and open spaces and consequently by their strong visual impact on the surrounding area.

Prominent sites can be understood to include those that terminate on a street, are on street corners or that frame the edge of a major park or public space. Sites adjacent to bridges and underpasses or on sites where changes in land uses or scale occur are also considered as prominent sites.



Focal point sites

Corner sites

Sites that frame open spaces

Tall buildings on prominent sites will be designed and organised to:

- enhance the prominent site and integrate with the precinct context. (Prominent sites do not require tall buildings to make them special, nor should they be a reason for a tall building or increase in height);
- complement and enhance, not compromise strategic views and important vistas in the city;
- provide an appropriate design that acknowledges the land shape and architectural context of the prominent site area. On corner sites, the base building should be located along both adjacent street frontages and give prominence to the corner. If located at a site that ends on a street corridor or adjacent to a significant street or public open space, the development should acknowledge the prominence of the site;
- provide a high level of architectural treatment to all frontages that are visible and prominent;
- ensure that frontages contribute to the public and pedestrian environment with zero setbacks at the ground floor; and
- tall buildings should not be located on sites where they create negative visual impact on sensitive historic environments.

1. Response at the Scale of the Precinct

The following issues must be considered in this section: existing context, transitions in scale as well as prominent sites, views and vista's.

d) Landmarks, views and vistas

Objectives:

To ensure the retention and enhancement of key strategic views to/from key landmark features and buildings through the sensitive siting of tall buildings.

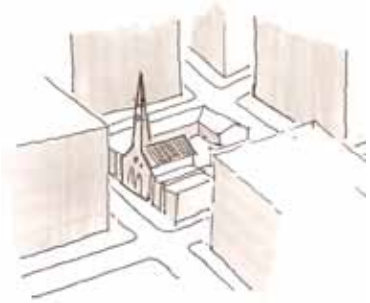
Guidelines:

The critical views and vista's identified in the character analysis must be protected and require a specific response in design terms which in some instances will negate the possibility for a tall building. Therefore tall buildings should not be located on sites where they create negative visual impact on sensitive historic environments.

In order to complement and enhance, not compromise strategic views and important vista's in the city, tall buildings will be designed and organised to:

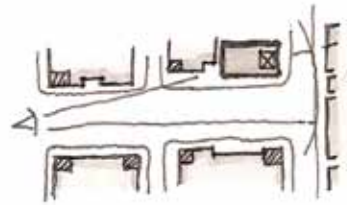
- contribute towards the development of a 'views framework' for Cape Town;
- protect and enhance the visual experience of the precinct and wider city;
- preserve the setting of landmark, listed buildings and conservation areas within the precinct; and
- utilise areas of existing tall buildings to develop clusters within the defined precinct.

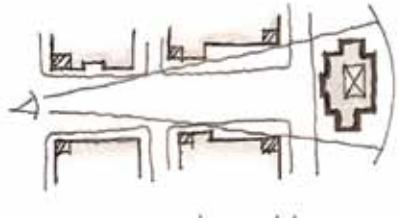
The improvement of or removal of existing poor quality tall buildings will be favorable received.

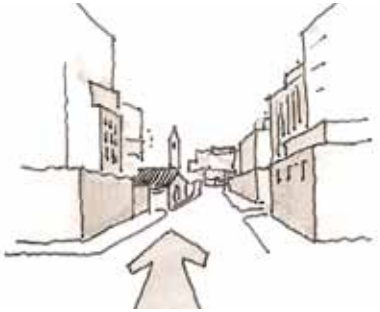


Respect landmark and historic buildings within a development block by not challenging the height or importance of the landmark.

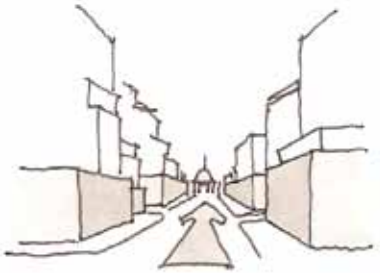
Frame the landmark with taller buildings while respecting view corridors along streets.







View cones and view corridors along the street



View cones and view corridors to the end of the street

1. Response at the Scale of the Precinct

The following issues must be considered in this section: existing context, transitions in scale as well as prominent sites, views and vista's.

e) Access, Transport and other Infrastructure

Objectives:

To ensure a sustainable response to capacity constraints, public transport strategies, the quality of links between transport nodes and the site, and the feasibility of making improvements where appropriate within the wider precinct.

Guidelines:

Transport is important in relation to tall buildings because of the intensity of use, as well as density, that they represent. Tall buildings should be designed and organised so as to offer:

- easy access for all kinds of people to activities within and outside of the locality, with a particular emphasis on non-motorised transport and less-mobile people;
- a reduction in the likelihood of road accidents and reducing the fear of assault and street crime within the precinct;
- to contribute to a sense of community in that it offers street frontages and public spaces where people can meet and thus foster local social networks, improving their quality of life and sense of local community; and
- to contribute to the reduction or at least limitation of transport-related levels of local air-pollution and globally damaging greenhouse emissions.

This could be addressed by developing a travel plan, for the tall building development within its precinct, that will show elements such as care share schemes, support for public transport and campaigning for better pedestrian and cycling provision.

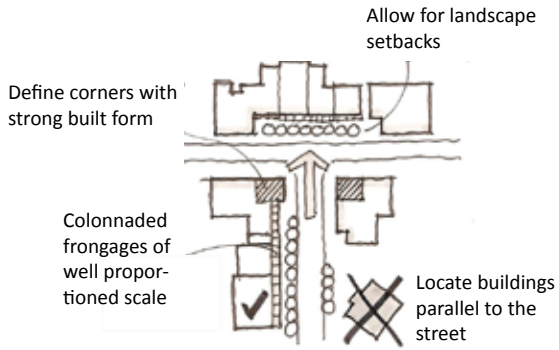
2. Response at the scale of the Site

The following issues must be considered in this section: Building Placement and Orientation, Tall Building Entrances, Site Servicing and Parking, Open Space, Heritage Buildings/ Cultural Landscape.

a) Building placement and orientation

Objectives:

To ensure the making of a positive street interface through the appropriate location and orientation of the base buildings of tall buildings (refer to *'scale of building: the base building*). **All base buildings of tall buildings should reinforce and directly address the street as well as, where possible, align with existing building frontages.**



Locate buildings parallel to the street and provide public streetscape improvements

Guidelines:

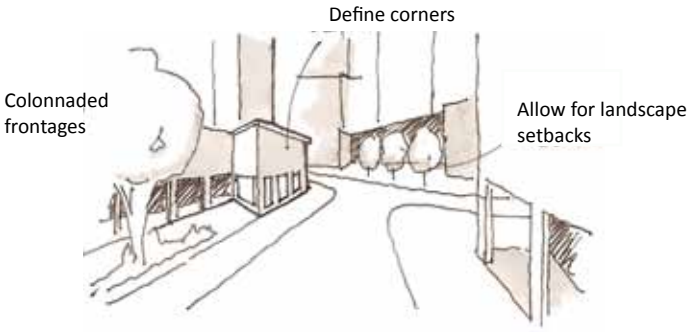
New tall building developments must be positioned and organised on the site so as to integrate appropriately with the existing context.

The base of the tall building will frame and support the adjacent street context, parks and open spaces in general by being placed parallel to the street and aligning with neighbouring buildings to create a continuous building façade. The base building must reinforce the street experience and address the street through its placement; introverted design techniques are therefore not acceptable for tall buildings.

In order to achieve this, siting of the base building should adhere to the following and all tall building application should show how it responded to the site in terms of:

- locating the main façade of the base building parallel to the street and front property line;
- where setbacks of the adjacent buildings are the same, aligning the front façade of the base building to be consistent with adjacent building facades;
- colonnaded edges, of a human scale, should be incorporated and also align with adjacent buildings;
- where the setbacks of existing buildings on either side of the new development have differing setbacks from the street, the difference should be resolved through the design of the new base building with a particular focus on adding to the making of a hospitable public environment;
- on corner sites, respect the appropriate alignment and building setbacks of both streets and necessary transition to both edges; and
- where a consistent building setback pattern does not exist on a block:
  - locate the base building parallel and adjacent to the street,
  - setback new development on streets with additional sidewalk space to allow for the incorporation of tree planting and other public amenities,
  - on larger sites, provide additional open space along street frontages in the form of landscaped setbacks, plaza, forecourts or gardens. These areas should be accessible to the general public.

The tall building's shaft may be orientated differently to the base building, when demonstrated that the proposed orientation minimises shadow impacts, loss of light, sky-views or improves wind conditions and or sustainable design features, but this will only be seen as desirable in unique circumstances where the grain of the block allows for this.



2. Response at the scale of the Site

The following issues must be considered in this section: Building Placement and Orientation, Tall Building Entrances, Site Servicing and Parking, Open Space, Heritage Buildings/ Cultural Landscape.

b) Local access and permeability: Entrances

Objectives:

To ensure that all tall building developments have direct, visible and public entrances at street level in order to promote the making of safe, vibrant public streets and sidewalks.

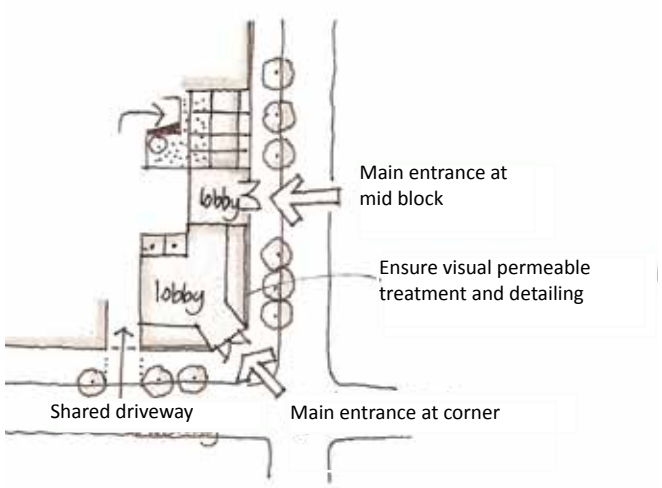
To support this, the ground floor uses should contribute to active, public use, be visually permeable and have views into and where possible, direct access to adjacent streets, parks and open spaces.

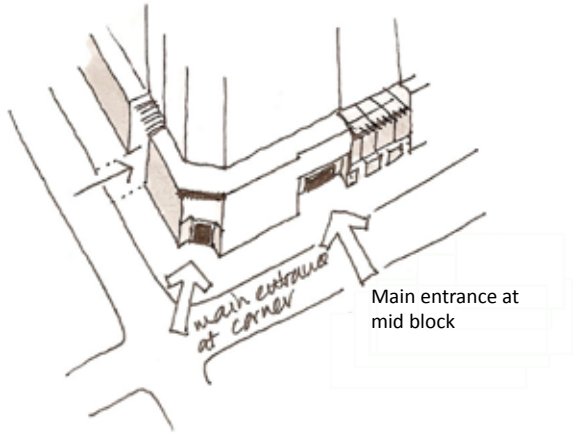
Guidelines:

The location and design of the primary entrance of the tall building development must reinforce the street experience and be prioritised for pedestrian not vehicular access. Introverted entrances, which are not visible or easily acceptable from the public sidewalk, including entrances behind parking areas, from long driveways or recessed interior malls, take away from the street and are inappropriate as entrances to tall buildings. Typically, the most vibrant and interesting streets have a fine grain of entrances along the street edge.

When designing tall building entrances in the site context, the following should be taken into account:

- locate main entrances to buildings at grade and on the main public street frontage;
- if setback from the public sidewalk, clear sight lines must be incorporated;
- use a high level of architecture and where appropriate landscape treatment to emphasise the main entrance;
- organise vehicular drop-offs at the side and rear of development sites;
- incorporate a fine grain of entrances along the edge of public streets to support the safe and active use of the public sidewalk;
- ensure visually permeable treatment and detailing of facades at the ground floor level - continuous blank facades are not acceptable;
- porte-cocheres are not considered as primary entrances as they are predominantly designed for vehicular access and negatively impact surrounding pedestrian movement and streetscapes; and
- main exit points from internalised parking garages are also not appropriate along key pedestrian routes.





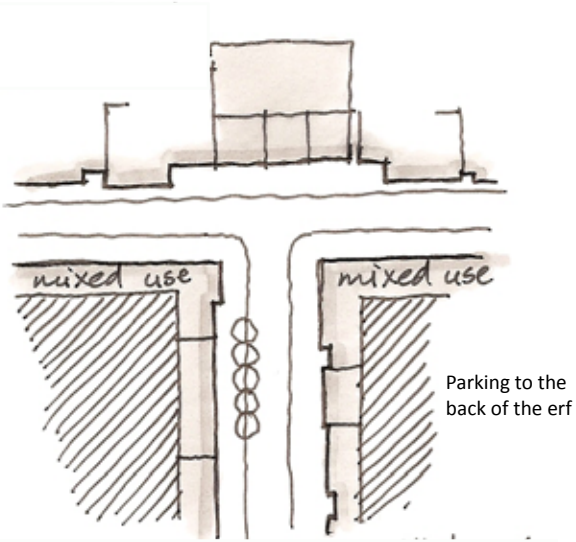
2. Response at the scale of the Site

The following issues must be considered in this section: Building Placement and Orientation, Tall Building Entrances, Site Servicing and Parking, Open Space, Heritage Buildings/ Cultural Landscape.

c) Site servicing and parking

Objectives:

To ensure that all tall buildings locate and organise vehicular parking, service areas and utilities in such a manner so as to minimise their impact on adjacent properties and the quality and functioning of the public realm.



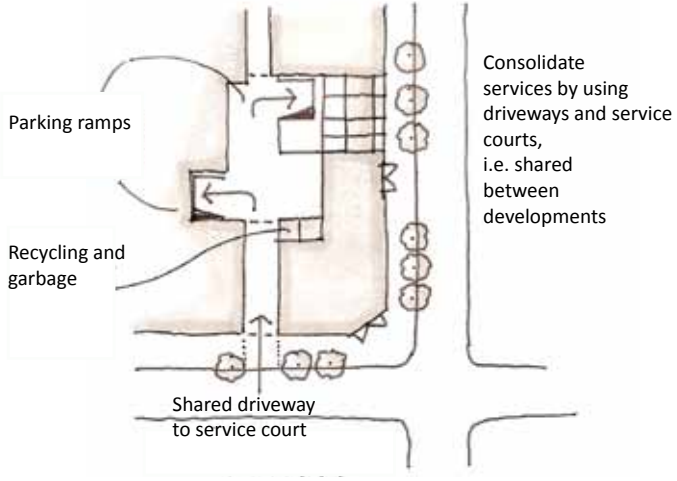
Wrapping of parking will lead to a more active street frontage

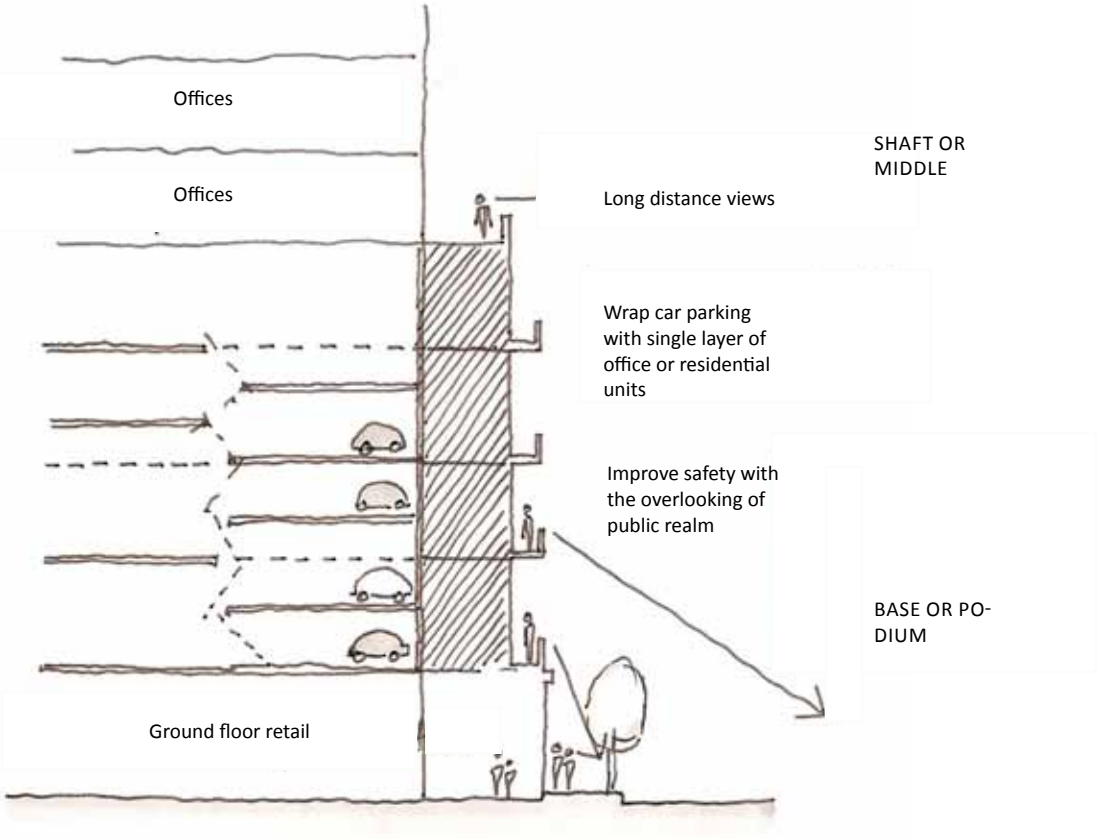
Guidelines:

The provision and manner in which vehicular parking is provided should favour the pedestrian and the making of a high quality public environment. All buildings and developments must be designed and programmed to accommodate 'front of house' and 'back of house' functions and activities.

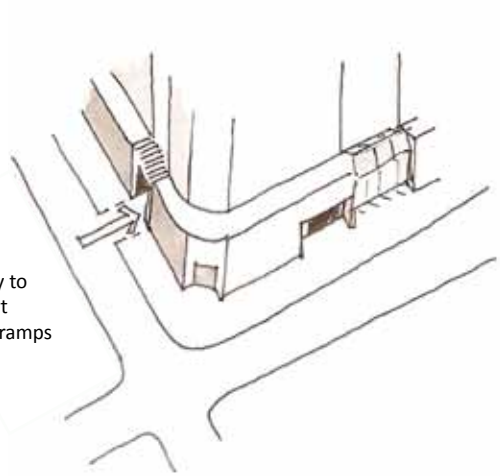
Tall building developments must organise site access and servicing to:

- screen, to the maximum extent, possible "back of house" uses from public view and limit their location within primary pedestrian areas. "Back of house" activities includes the following; refuse storage and collection, loading areas, ramps to internal parking, vents, meters and transformers;
- encourage shared service areas and integrate service and utility functions within the building and within the site where possible;
- consolidate and minimise the width of driveways, curbs cutting across public sidewalks, vehicular entrance and exits points into the building;
- vehicular access should not be limited across public spaces or pedestrian malls;
- organise vehicular drop-off areas into the side and rear of the development site. Porte-cochères should not be located on the primary entrance;
- provide underground parking where possible or above ground parking from the 2nd floor of the building. No parking can be provided within 5m of the outer edges of the building at the ground floor and first floor of the building. i.e. usable building space should edge the first two floors of the building;
- the design of basement parking must integrate with landscape proposals at grade and make provision for areas where tree planting can occur. This relates to having sufficient load capacity and soil depth to sustain mature trees. Options that facilitate tree planting directly into natural ground are preferred;
- above ground parking structures should be designed to integrate with the building and be able to be converted into habitable floor space at a later stage;
- eliminate surface parking between the front face of a building and the public street or sidewalk;
- lease agreements for parking should encourage flexible and 24 hour usage;
- provision for motorbike parking, as well as onsite bicycle storage and change rooms are encouraged;
- maximum percentage/ratio of parking is proposed to support public transport and separate guideline if near IRT station or other stations/TOD.





Design parking structure such that it can be converted to other uses in fulness of time (minimum floor to ceiling heights of 2.4 to 2.7m)



Service entry to serv ice court and parking ramps

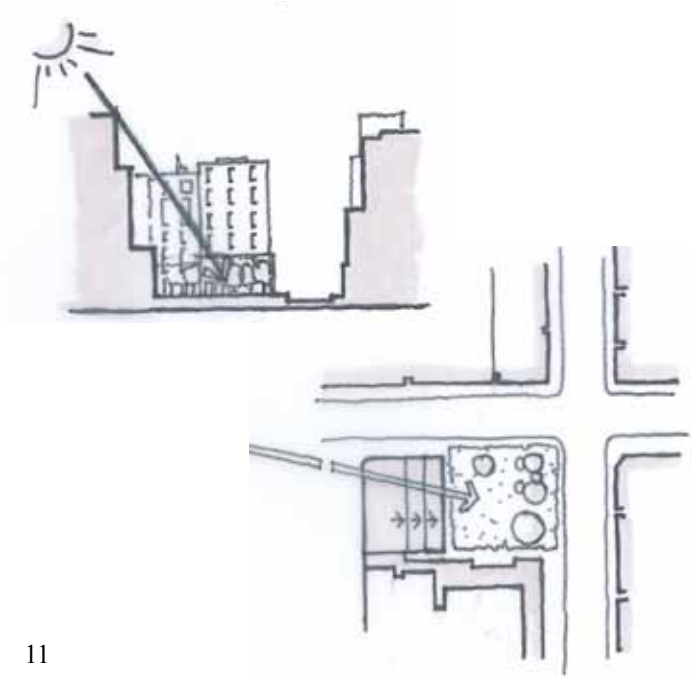
2. Response at the scale of the Site

The following issues must be considered in this section: Building Placement and Orientation, Tall Building Entrances, Site Servicing and Parking, Open Space, Heritage Buildings/ Cultural Landscape.

d) Open space and connections to open space

Objectives:

To ensure the provision of high quality, accessible and safe open spaces on tall building sites for the benefit of its occupants and surrounding neighbours as well as to promote the upgrade and maintenance of the immediate public environment surrounding the development for the enjoyment of the general public.



Guidelines:

New tall building development should facilitate the provision of new open space within its development in a manner that extends, enhances and complements the existing system of public streets, plaza's and parks. The form of open space provision can vary depending on the building programme, site and planning expectations for the development, but a prioritisation of and commitment to improving and enhancing the public realm for the general public is necessary to assist with mitigating some of the negative impacts associated with tall building development.

Furnishing, landscaping, lighting, public art and connections to public streets and open spaces needs to be considered when locating and designing new open space. In larger developments of which a tall building is a component, pedestrian access to the various buildings should be prioritised at street level. This should be explained in a public realm/open space plan for the site.

The typologies of open space to be explored and incorporated in the development, where possible, are as follows:

- **forecourt** - an open, publically accessible transition space between the public sidewalk and the main entrance of the building;
- **plaza** - an animated gathering space for general public usage, with landscape features flanking a public street;
- **courtyard** - a landscaped open space located in the centre of a single or consolidated block with no direct street frontage;
- **urban garden** - a landscaped open space, usually of intimate scale, located and orientated to provide maximum sunlight during midday;
- **colonnade/ walkway** - an exterior pedestrian way at street level providing access through the block; but
- **overhead bridges and underground passageways** - these are less favourable due to the negative impact it could have on the vitality of the at grade public realm due to its segregation characteristics.

In all of the typologies listed above, opportunities for facilitating and fostering public life and activity should be explored in the making and design of these spaces. It is critical that sufficient open space for residents and users of the tall building is provided, particularly in dense urban areas where open space is limited.

The following internal spaces are encouraged:

- the provision of communal roof/terrace gardens is encouraged to optimise on a space that could potentially be under-utilised; and
- the provision of balconies should also be prioritised in the building design, particularly within the base building, to encourage connections to the street and the potential for passive surveillance.

2. Response at the scale of the Site

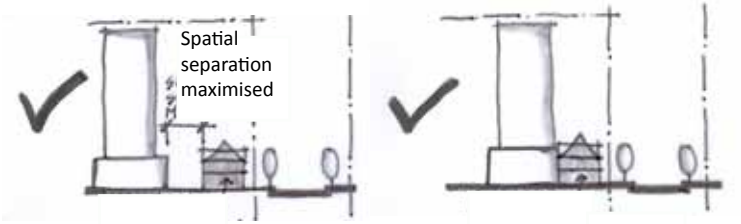
The following issues must be considered in this section: Building Placement and Orientation, Tall Building Entrances, Site Servicing and Parking, Open Space, Heritage Buildings/ Cultural Landscape.

e) Heritage and cultural landscapes

Objectives:

To ensure that the heritage of the city and its cultural landscapes are protected and that all new tall building developments are sensitively integrated in a manner that preserves their setting, character and integrity.

Specific measures to protect views and vistas of Table Mountain and other mountain ranges such as Kogelberg and Helderberg, the icon of our city, at particular predetermined points must also be ensured.

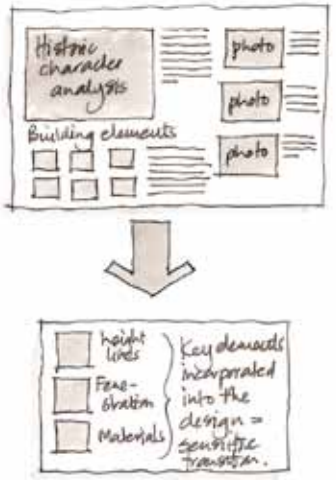


Guidelines:

As a principle, it is accepted that the historic legacy of the city can and must co-exist with new development and the nature of all new tall building development should strive for the long term protection, integration and re-use of heritage and cultural resources. The designation of Tall Building areas has consciously tried to protect areas with conservation status by not including these areas within its boundaries. However the history and historical fabric that occurs within Tall Building areas must also still be protected, conserved and sensitively incorporated into the new development in a manner that preserves their setting, character and integrity.

New development that is either within, adjacent to or impacts on the setting of a heritage building, site or cultural landscape resource should adopt the following principles:

- new tall buildings will not visually impede the setting of listed heritage buildings and cultural landscapes or block important views into areas with heritage conservation status (including amongst other mountain ranges Table Mountain, which is listed as a World Heritage site and one of the New Seven Natural Wonders);
- where heritage buildings are low-scaled, the base building of the tall building will respect the unique urban grain and scale, visual relationships, topography and materials of the surrounding historic fabric; and
- where a tall building proposes to integrate with an existing conservation building, the following should be adhered to:
  - The design of the new building should respect the autonomy of the heritage building by using sensitive transitions and junctions between itself and the heritage building;
  - Maintain the function/ working character of the heritage building by avoiding facadism, which can be understood as the reduction of the heritage building to its original exterior wall/s and parts of the roof structure.



An understanding of the character and context can be expressed in a **character analysis study**, identifying the key historical elements that the new development adapts in its sensitive transition.

3. Response at the scale of the Building

The following issues must be considered in this section: Overall Form, Scale of the Base Building, Massing (Floor Plates), Tower Location, Height, Design and materials as well as Uses.

a) Overall Form and Massing

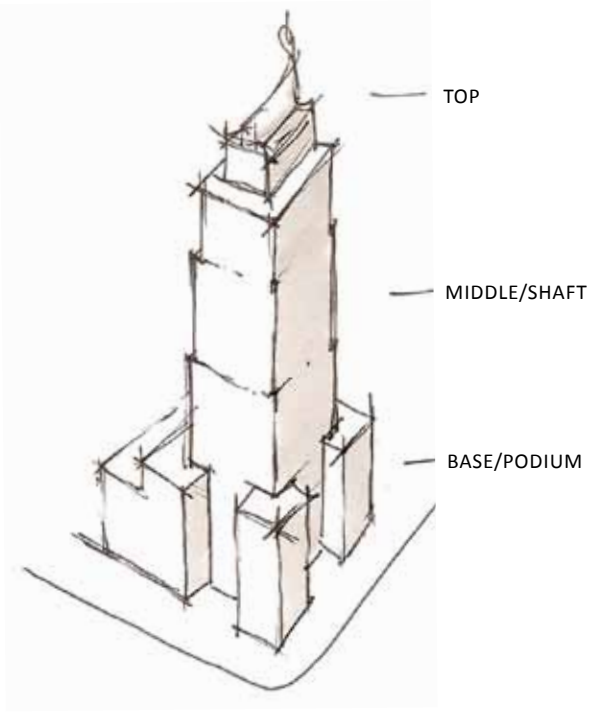
Objectives:

To ensure that all parts of a tall buildings are appropriately scaled and designed to relate simultaneously to a range of differing performance needs that include the pedestrian, the street and its broader surrounds.

Guidelines:

In respect to tall buildings' effect on the environment and its visual perception, all tall buildings should be composed of three distinct sections, i.e. podium/base, middle/shaft and top element. This classical viewpoint was outlined by L Sullivan in 1896 and has influenced the design of buildings ever since.

The vertical categorisation of tall buildings into these three distinct elements must be made in order to recognise, as well as provide solutions to the various impacts and design considerations that need to be taken in the planning and design process for tall buildings. These should be carefully integrated into a single whole.



The integration of these three elements into a single whole should be prioritised to:

- avoid free standing towers without bases;
- avoid big boxy, rectangular forms and or ziggurat dominant massing of new tall buildings;
- where appropriate, break up the building mass to vertically express and celebrate traditional erven's form or create the impression of a series of independent buildings that have been consolidated;
- step back the building mass above the base to achieve an appropriate scale at street level;
- design the uppermost floors to achieve a distinctive profile; and
- integrate mechanical rooftop (air conditioning/lift shafts) functions into the total design.

The final overall height of the building will ultimately depend on the scale and dimensions of the site and its surrounds as well as by the character of broader context.

- **PODIUM/BASE BUILDING:**

The base is the part that is seen and experienced from the street. This interface is of high importance since it establishes a relationship with the pedestrians at the street level is a crucial determinant of the building's contextual quality and has a significant impact on the scale and definition of the street.

The **base building** will be required to:

- give definition and support at an appropriate scale to adjacent streets and surrounding open spaces;
- contribute to human scale and comfort;
- promote active frontages to relate the building with its users and those passing by;
- integrate with adjacent buildings; and
- minimise the impact of parking and service uses.

- **MIDDLE/SHAFT BUILDING:**

The shaft constitutes the principle element of a tall building in that it extends upwards from the base, alters air movement patterns and ultimately determines the scale perception of the building (considered as imposing or accommodating).

The **middle/shaft** building will be required to:

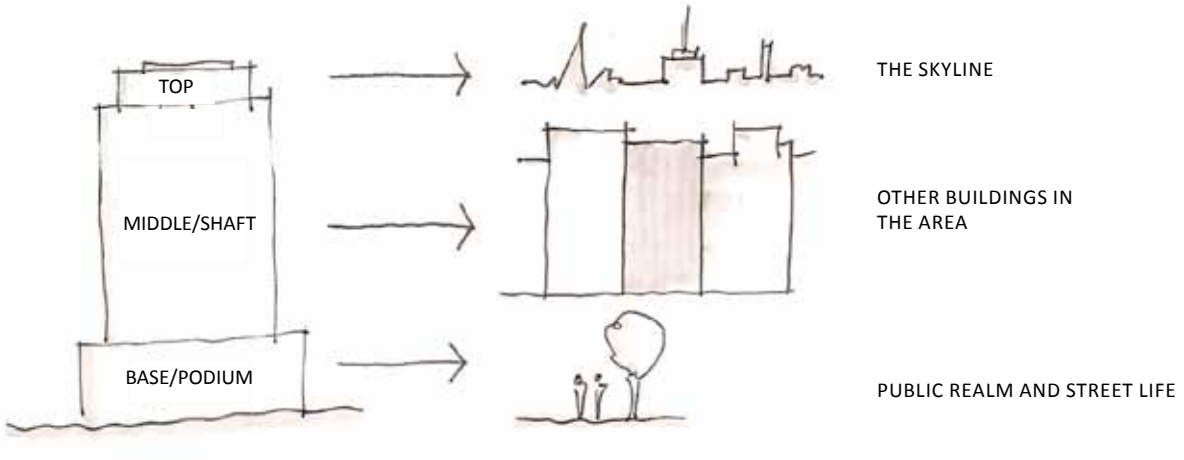
- the design of the floor plate size and shape which will be required to have appropriate dimensions for the site and context, and
- being sensitively orientated on the site and in relationship to the base building in order to minimise loss of views, shadow and wind.

- **TOP ELEMENT:**

The top significantly impacts the city's skyline and is usually an aesthetic expression, seen from afar and is the junction between the building and the sky. The design of the top will therefore also be a critical design criterion when assessed.

The **top element** of the building will be required to:

- contributes to the exiting character of the skyline, and
- must integrate roof top mechanical systems into the design.



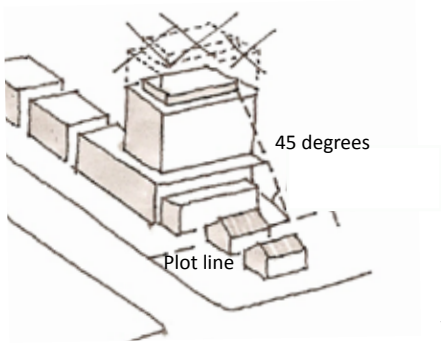
3. Response at the scale of the Building

The following issues must be considered in this section: Overall Form, Scale of the Base Building, Massing (Floor Plates), Tower Location, Height, Design and materials as well as Uses.

b) Scale of the base building (in relation to the public realm)

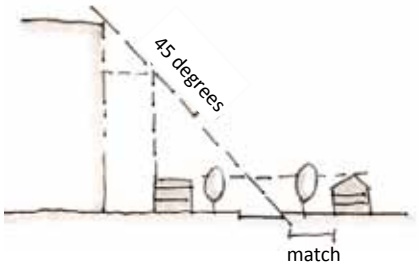
Objectives:

The base building should be scaled so as to provide definition and support to existing adjacent streets, parks and open spaces in order to promote contextual integration, 'good fit' and pedestrian comfort.



Use a 45 degrees angular plain from closest property to determine the preferred limit of the height of a tall building.

This will result in an appropriate transition from the lower scale buildings on the on the block.

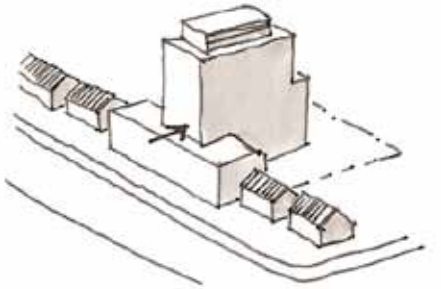


Guidelines:

In all tall building developments it is important that the base building recognise and integrate with the prevailing and planned context, building massing and the characteristics of the street. The scale of the base building should be determined from a review of existing or proposed street conditions and must be considered within the zoning envelope (where appropriate).

The following applies in determining the base building's massing, height and setback:

- the building massing should include a base building equal to the existing adjacent historical building con text and street proportion;
- in the absence of an historical/adjacent building con text, the massing of the base building will be three storeys with the ground floor being of an extended height so as to accommodate a variety of uses, while the next two floors could be of normal height;
- in a context with very wide streets, an elegance ratio of 1:4 between the base building and overall height should be used (1m of base height to 4m in overall height). A generally used design principle to deter mine the maximum height of the base building is to use a 45 degree angular plane which is taken from the curb of the opposite side of the street;
- on a corner site, the base building will be massed as to respect the prevailing height of the base building and setback on both streets, but the higher height limit will govern in order to give the building a degree of prominence;
- the appropriate scale of the setback from the base building is first of all governed by the zoning regulations;
- in design terms, the appropriate scale of the setback of the shaft from the base building is determined by the relationship of the scale of the taller building to the base: the taller the building in relationship to the base, the larger the setback to reduce the negative impact of the taller element on street proportion and context. The minimum step back of the taller building parts from the street edge of the base building will be 5 meters; and
- refer to later sections in the policy, i.e. *Impacts to the Public Realm*, which provide more detail on the appro-priate design of the base building with specific reference to *Ground floor Interface, Streetscapes and Weather protection*.



Design the base building so that it relates to the proportions of existing heights of surrounding context.

3. Response at the scale of the Building

The following issues must be considered in this section: Overall Form, Scale of the Base Building, Massing (Floor Plates), Tower Location, Height, Design and materials as well as Uses.

c) Shaft design and Floor plates (in relation to other buildings)

Objectives:

To ensure that all new development will be massed to fit harmoniously into its existing and or planned context, and will limit its impacts and any resulting shadowing and uncomfortable wind conditions on surrounding streets, open spaces, parks and properties.

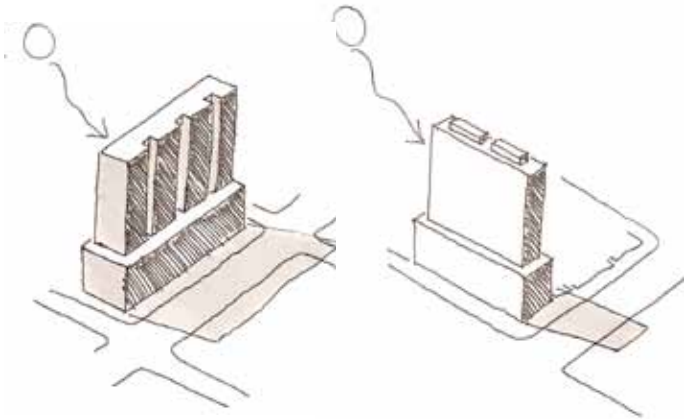
Guidelines:

The size and articulation of the floor plates in the shaft of the tall building is fundamental to its overall 3D massing and the achievement of a slender, elegant and well proportioned building, because it will greatly influence its visual and physical impact on adjacent areas. The use of properly located small floor plates is encouraged since they result in slender buildings which cast smaller shadows, reduce loss of sky views at street level and permit better views between buildings and through the site. In general the design, shape and size of floor plates for tall buildings must promote the making of slender towers and avoid rectangular slab-like massing. In relation to the size and massing of tall buildings, the following is promoted:

- the location and height of the middle or shaft building will be determined with a view too minimise the overshadowing of adjacent streets, open spaces and build ings;
- the location and height of the shaft building will also be determined with a view to minimise loss of sky views and important vista's;
- small floor plates are encouraged since they have the least impact on shadowing, winds and views;
- elongated floor plates cast bigger shadows and should be located with a north-south orientation on the base building to mitigate shadows;
- buildings that are orientated in an east–west direction will cast the largest shadows. The shaft or middle section should be located on the north-side of a block so the shadows will fall within the block rather than on the adjacent street;
- articulate the large floor plates to break down the mass of the building and to create "street interest', and where appropriate to vertically emulate the historical erf pattern of the block and to enhance skyline profile;
- articulate the large floor plates to break down the mass of the building and to create "street interest', and where appropriate to vertically emulate the historical erf pattern of the block and to enhance skyline profile;
- if the new building is significantly taller than the local context, acknowledgement of such heights within the new building will contribute to the street language; and
- articulate the uppermost floors of tall buildings to achieve a distinctive skyline profile.

Due consideration must also be given to ensuring that sufficient space is provided between towers. This will allow for appropriate light penetration and privacy for new and existing buildings. It will also ensure appropriate sky views and sunlight onto the adjacent streets, parks, open spaces and properties. Light and privacy are two separate but related issues that are influenced by the orientation, site characteristics, heights and distances between buildings.

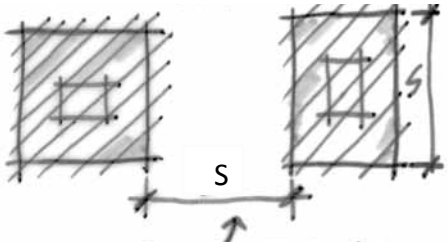
Avoid casting big shadows by orientating the base and/or building to mitigate shadows.



Guidance to achieve light, view and privacy, beyond that of the required building standards, in terms of the internal space between two tall buildings on an urban block relate to the following:

- the minimum internal/back spacing on one urban block, between the shafts of two tall buildings will equal the width of the widest tower (measured perpendicularly to the building face), but it will be no less than 25m;
- the taller the building, the greater the facing distance should be (to the back) between the buildings, in order to achieve appropriate light and privacy;
- on compact urban sites, where a tall building is proposed, the shaft of the building must be located a minimum of 12.5m away from the property line; and
- the taller the building, the greater the distance to the property line and neighbouring buildings on a site should be in order to achieve appropriate light and privacy.

S = Widest Dimensions



Spatial Separation

d) Location and design of tower (in relation to the skyline)

Objectives:

To promote an aesthetically pleasing skyline.

Guidelines:

Tall buildings are encouraged to have decorative elements at the top of the building to achieve a point tower form.

3. Response at the scale of the Building

The following issues must be considered in this section: Overall Form, Scale of the Base Building, Massing (Floor Plates), Tower Location, Height, Design and materials as well as Uses.

e) Building Height

Objectives:

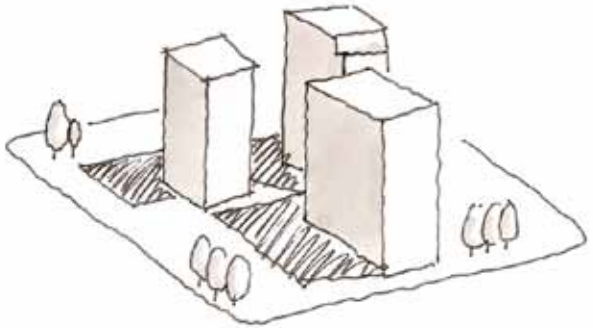
To support a legible, two and three dimensional structure to the location of higher order nodes within the wider city; to promote the making of an aesthetically pleasing skyline form while protecting important views and vista's and to ensure adequate access to sky view for the proposed and future use of the area.

Guidelines:

The final height of a tall building will have significant impacts to the character of the local context as well as contribute to the creation of a memorable skyline.

(The impacts in relation to overshadowing and wind as a consequence of height is discussed in a later section: *Impacts to the Public Realm: Sun, Shadow and Sky View.*)
To support the phased development of a legible skyline form and to mitigate impacts to important views, the following should be considered:

- final determinations of appropriate height for a tall building should support the making of a bell curve shaped skyline profile (thin at the top, bulkier at the bottom);
- the clustering of towers within a tall building precinct is favoured and encouraged to create a legible, aesthetically pleasing and memorable skyline form and to support higher order activities which will contribute to the sustainable use of resource in key, identified areas;
- stand alone/isolated towers will not generally be supported, but if part of a larger programme, the location and approval of individual towers must in the short term contribute to the making of a legible skyline form and not lead to a random, ad-hoc pattern of towers. This is based on the understanding that the approach to achieving greater height in Cape Town will be through an incremental and progressive increase of height;
- dramatic variations and fluxuations in height across an urban node are not supported. Greatest height should be concentrated at the centre of a defined tall buildings precinct, defining the node, while not negatively impacting on any important views, vista or sky views;
- final height must be contextually appropriate and in formed by the height of surrounding buildings, the scale of local streets and the size of the block; and
- decorative elements at the top of a tall building can significantly increase the overall height of the total building. Therefore, it is necessary for the final height to be calculated from the highest point of the building and not from the parapet height as per standard zoning regulations. This will ensure the making of a legible skyline form in the assessment process.



Avoid free-standing boxes in a park of parking with little spatial relationship to the surrounding built form.

3. Response at the scale of the Building

The following issues must be considered in this section: Overall Form, Scale of the Base Building, Massing (Floor Plates), Tower Location, Height, Design and materials as well as Uses.

f) Building Uses

Objectives:

To promote diversity and choice through the provision of a broad range of mix of uses within a building that encourage long-term sustainability and viability of the development, to facilitate 24/7 activity in and around the development and to ensure that the development also serves the general needs of surrounding building occupants and the general public.

Guidelines:

This is an issue that is important for all buildings within activity nodes throughout the city, but due to their vertical projection and prominence, it is specifically important to incorporate mixed uses in tall buildings. Due to the physical and visual impacts associated with tall buildings, it is unacceptable for it to function in an introverted and exclusionary manner.

Buildings that are unoccupied for certain times of the day and night negatively impact on the character and safety of the public environment. In order to ensure that parts of building are continuously occupied, it is critical that a wide range of uses are provided within the development. Therefore the generation of the building's programme and its associated economic feasibility requirements must be influenced by the need for the building to actively participate and contribute to the character, quality and functioning of the area in which it is located. To achieve this, parts of the building should be continuously occupied and service related uses should be provided that also cater for the occupants of the building.

The following must be observed:

- a residential component must be included within the overall development programme that satisfies a range of affordability needs and lifestyle choices (not just single bachelor units or high-end apartments);
- the ground floor is to have substantial commercial/ retail/ service components that facilitate an active relationship with the street. Businesses that require more private interfaces like banks should not be located directly on a street edge. Ideally they should be located on upper levels of the building. Car dealerships and show rooms are not supported within tall buildings due to their particular requirements that do not contribute to vibrant, pedestrian street life;
- parking should be provided underground where possible or above ground from the 2nd floor of the building. No parking can be provided within 5m of the outer edges of the building for the ground floor and first floor of the building, i.e. active, usable building space should edge the first two floors of the building;
- the provision of above ground parking space must be able to be converted to habitable floor space at a later stage; and
- the top floor or upper storeys of the building should be designed and programmed to facilitate public access so that the surrounding views can be enjoyed by all. This could be achieved with the following uses: restaurant, public roof garden or public viewing plat form.

3. Response at the scale of the Building

The following issues must be considered in this section: Overall Form, Scale of the Base Building, Massing (Floor Plates), Tower Location, Height, Design and materials as well as Uses.

g) Design Quality and Building Materials

Objectives:

To promote architectural excellence, technical innovation and long term sustainable performance.

Guidelines:

Due to their size and prominence in the urban environment, it is critical that tall buildings are designed and specified to the highest standards possible. The huge costs associated with the development of a tall building will also require it to have a longer life cycle than conventional developments. This further emphasise the need for the use of high quality building materials and the application of appropriate design languages that promote timelessness.

The following should be considered in the design process:

- the proposed tall building should give reference to an appropriate existing design language in order to facilitate contextual fit, sense of place and legibility;
- the design of the base, shaft and top of the building should be balanced to create an elegant and well proportioned silhouette;
- the building design should be an example of design innovation/ inspiration and quality while limiting fashion like architectural styles that are likely to date in a short period of time;
- a colour pattern should be developed for the tall building which will manage the visual perception of the height of the building, i.e. darker colour to the bottom with lighter colours to the top which will create the effect of floating form. This also relates to coarseness of building materials, with coarser use towards the bottom and lighter use towards the top. Colour bands picking up that of adjacent buildings will make the tall building fit into its context better; and
- the specification of materials must limit reflectivity and the possibility of day-time glare.

4. Impact on the Public Realm

The following issues must be considered in this section: Ground floor Interface & the Streetscape, Weather protection; Sun, Shadow and Sky View, Wind Impacts at Street level.

a) Ground floor interface and the streetscape

Objectives:

To ensure that all new developments, and specifically tall buildings, promote safe, comfortable, attractive and interesting pedestrians environments at ground floor level. It also aims to create attractive transitions from the private to public realm while promoting high quality landscaped public or semi-public open spaces within the development site.

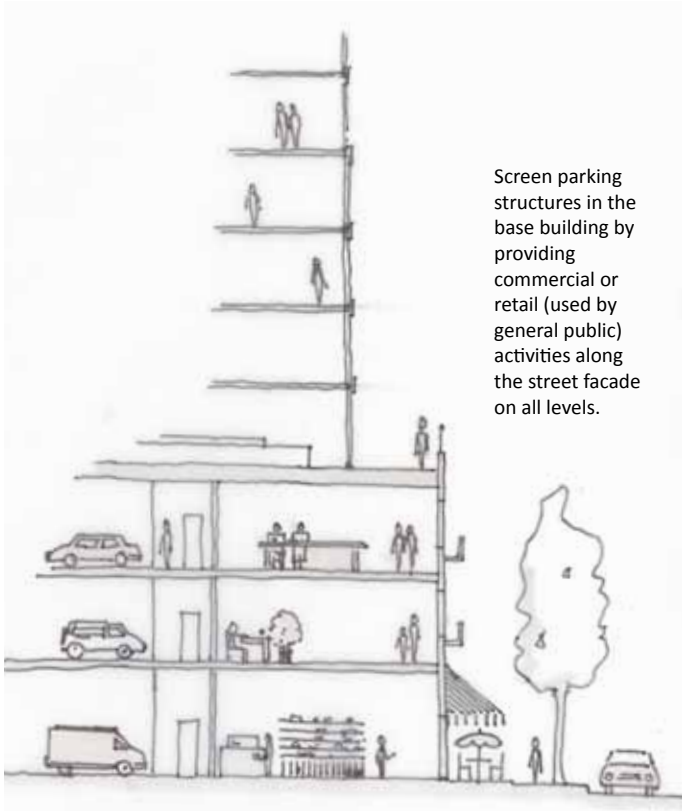
Guidelines:

The space between the building façade and the public sidewalk is an integral part of the image and character of the street and is dependent on positive interaction between ground floor uses and the public sidewalk.

New tall buildings must integrate with and enhance their surrounding context as well as ensure that high quality streetscapes are achieved between the street and the building.

The design of Tall building developments will therefore:

- contribute positively to the streetscape by providing active frontages, legible entrances and views to the street for security. Minimise non-active frontages to less than 20% of ground floor façade;
- attention should be given to the various characters and use of these spaces (length of time spent as indicator) so as to not clutter movement corridors or ill define waiting/resting points; (diagram)
- incorporate co-ordinated landscape improvements to adjacent streets and open spaces including street trees, lighting and other street furniture;
- provide new, high quality streetscapes on each building frontage, as per City standards and requirements and reference to relevant guidelines where applicable;
- on streets with setbacks that are characterised by primarily hard landscaping features, tall building developments should encourage retail, commercial and/or public-orientated uses at-grade. Appropriate setbacks between the base building edge and public sidewalk will be provided to facilitate outdoor activity.



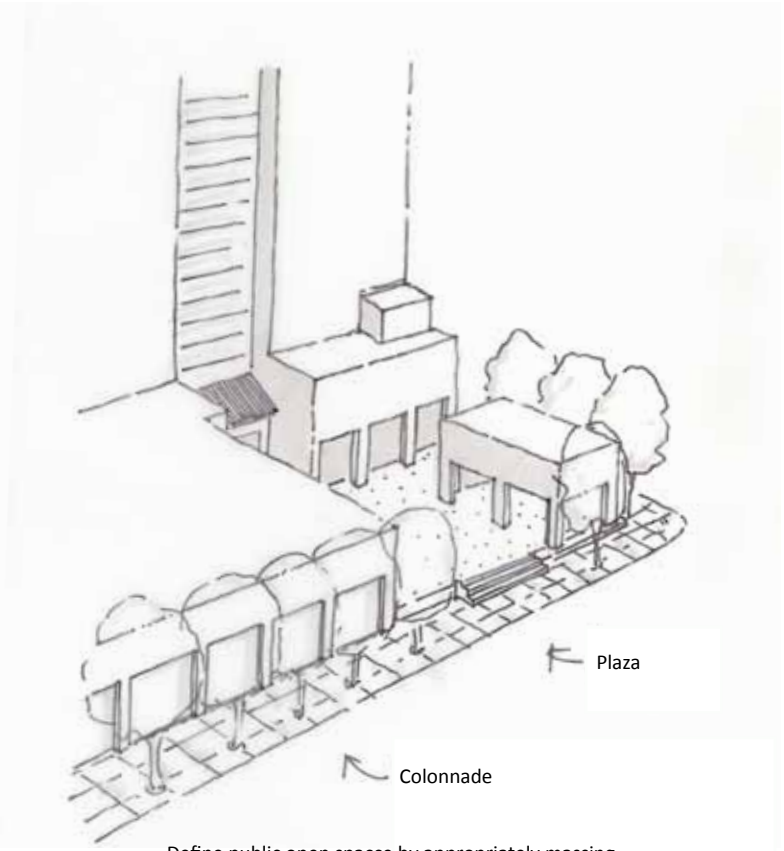
Screen parking structures in the base building by providing commercial or retail (used by general public) activities along the street facade on all levels.

Impacts on the Public realm are influenced by, amongst others, the use within the ground floor, the depth of the pedestrian area, the location of parking and landscaping.

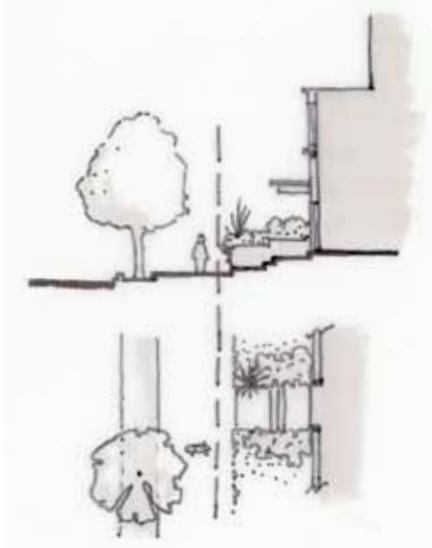
The design of the space will therefore be an extension of the material, levels and character of the public streetscape.

Where appropriate, tree planting, street furniture, pedestrian, lighting and public art must be introduced;

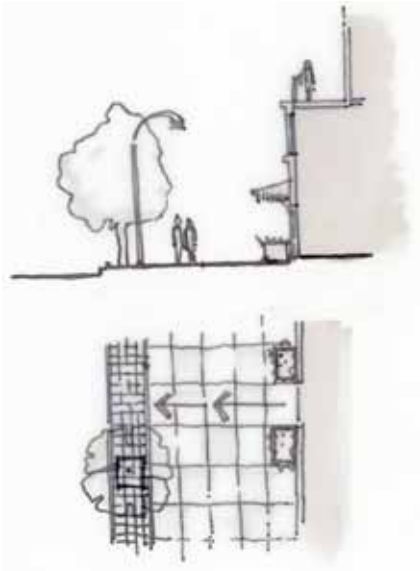
- on streets with setbacks characterised with soft landscaping features and where ground floor uses require more privacy from the adjacent sidewalk (i.e. residential), additional landscaping and amenity will be provided between the building face and the public sidewalk. The landscape treatment may include change of grade (up to 1m,) tree planting, water features, visually permeable fencing and railings, low walls and public art;
- attention should be given to linking the tall building's open spaces with exiting or proposed pedestrian routes so as to contribute to the legible continuation of the accessibility of the wider context; and
- service yard and parking space entrances should be carefully located and designed so as to not restrict or limit pedestrian safety, movement and interaction.



Define public open spacce by appropriately massing and orientating the base building



Introduce soft surface landscape for privacy adjacent to residential users.



Extend hard surface character along commercial frontages and where appropriate, provide canopies, awnings, planters, art, lighting and street furniture.

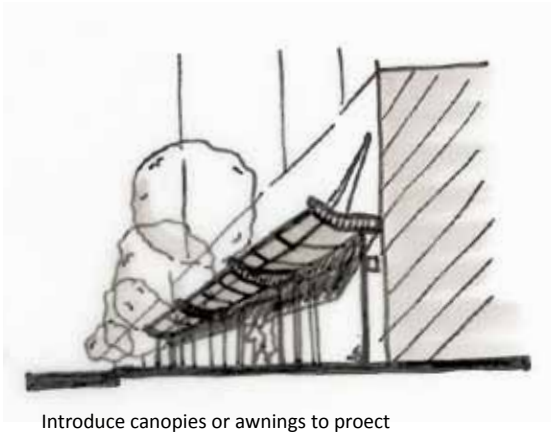
4. Impact on the Public Realm

The following issues must be considered in this section: Ground floor Interface & the Streetscape, Weather protection; Sun, Shadow and Sky View, Wind Impacts at Street level.

b) Weather protection

Objectives:

To ensure that all new tall building developments provide at-grade protection to pedestrians from the elements, through the provision of appropriately scaled covered walkways, colonnades, canopies and/or awnings, on all edges of the building.



Introduce canopies or awnings to proect entrances and or provide continuous weather protection along the base building.

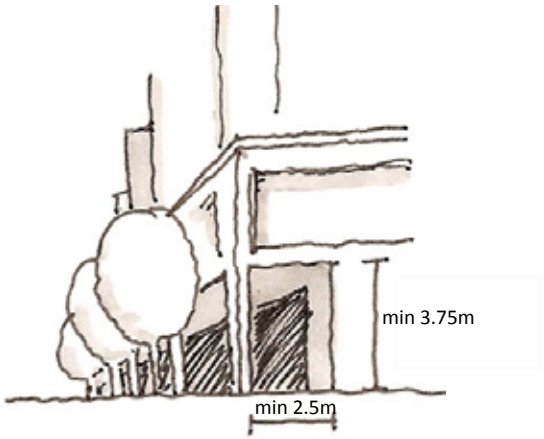
Guidelines:

The provision of continuous covered walkways on the street level of tall buildings is required to ensure improved comfort for pedestrians as well as promote the continued use of public streets and open spaces throughout all seasons of the year. While primarily provided to assist in the environmental comfort of pedestrians, weather protection elements also play an important role in framing and shaping our visual urban experience. They assist with enclosing the street and defining its edge. They change and redefine building proportions at the street level, articulate entrances, animate the base building and enhance the character of the neighbourhood.

To be effective, weather protection should be well integrated into the building design, and while needing to have reference to the overall base building scale, must be primarily proportioned at a human scale.

New tall building developments will:

- provide continuous pedestrian weather protection along the base of tall buildings located on or at streets with retail or commercial uses at-grade, avenues and streets within defined CBD's and/or adjacent to public transport exchanges;
- co-ordinate pedestrian weather protection with adjacent street frontages to ensure shelter is continuous and the designs are compatible in scale;
- ensure coverage is provided to the primary entrances of tall buildings;
- proportion columns for colonnades to maintain clear views of the ground floor uses behind and to allow easy pedestrian flow and visibility from the street; and
- integrate lighting, signage and street numbering into canopy or arcade design for legibility and easy maintenance. Where space and lighting levels permit, planting will be encouraged as well.



Colonnaded frontages

4. Impact on the Public Realm

The following issues must be considered in this section: Ground floor Interface & the Streetscape, Weather protection; Sun, Shadow and Sky View, Wind Impacts at Street level.

c) Sun, shadow and sky view

Objectives:

To ensure all new tall building developments will be massed to fit harmoniously into its existing and/or planned context, while adequately limiting the impacts of overshadowing on the utilisation of neighbouring streets, parks, open spaces and properties.

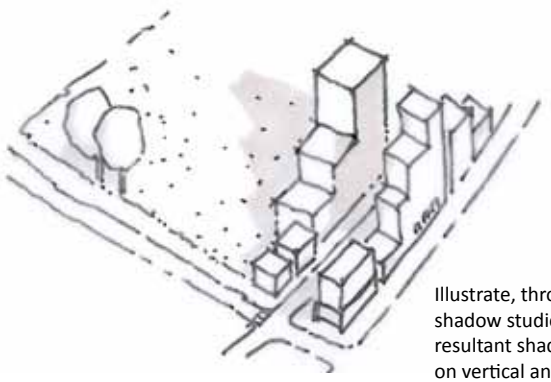
Also to ensure that new developments are massed to help define the edges of streets, parks and open spaces at good proportion. All tall buildings will also be located and its associated height controlled so as to ensure adequate access to sky view from the street level.

Guidelines:

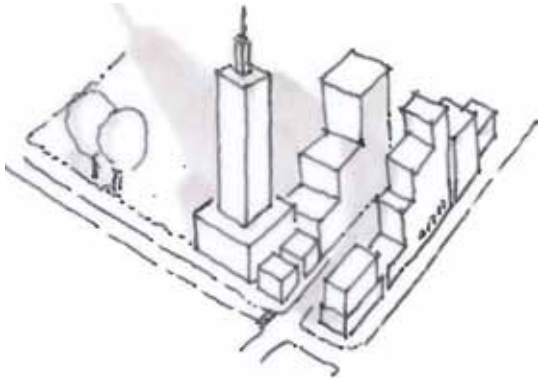
Tall buildings can adversely affect the environmental quality of surrounding areas through loss of sky view and by the overshadowing of adjacent public and private open spaces. Sky view is the measurable amount of sky seen from a street, park or open space above and in between the building mass. Sky view is important as it directly impacts on the character of streets and open space around a building. Adequate sky view improves the usability and quality of open spaces and the buildings that face them, even though it may not be a source of direct sunlight. Access to direct sunlight is another measurable quality of space and improves the usability of the space and the quality of rooms in buildings that face that space. Tall buildings need to consider how their massing will affect both direct access to sunlight and sky view when designing the building.

Alternative massing options for individual sites and blocks should always be prepared and analysed to evaluate the impact on sunlight and sky view in adjacent streets, parks, buildings and spaces. This will include:

- placing the appropriate amount of building mass in the base building. The appropriate amount of mass should be determined in relation to the existing and planned context for the site;
- an analysis of existing or proposed street width in relation to the proposed middle/shaft to top building height to determine final and appropriate overall tall building height and form. Again, a range of options should be explored;
- designing small floor plates that allow for more sun light penetration and sky view. Evaluations need to be made between the impacts of taller thin buildings and lower thick buildings; and
- placing the taller part of a tall building's shaft away from the street and or affected open spaces. This reduces the amount of shadow cast and increases the sky view. Balance this with the need to maintain adequate spacing between buildings on a block for light, view and privacy.



Illustrate, through oblique shadow studies, the resultant shadow patterns on vertical and horisontal surfaces.



4. Impact on the Public Realm

The following issues must be considered in this section: Ground floor Interface & the Streetscape, Weather protection; Sun, Shadow and Sky View, Wind Impacts at Street level.

d) Wind impacts at street level

Objectives:

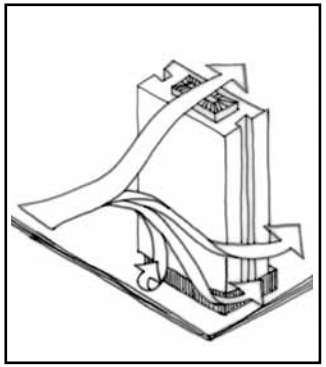
New tall building developments will be massed to fit harmoniously into its existing and/or planned context, and will limit its impacts on neighbouring streets, parks, open spaces and properties by adequately limiting uncomfortable wind conditions in order to ensure and preserve their utility.

Guidelines:

The position, mass and height of buildings that surround a proposed development site for a tall building are key factors that affect local wind patterns and comfort levels at street level. Down drafts off buildings and or accelerated winds through tunnelling of wind between buildings are common hazards of tall buildings. These can be mitigated through good design, sensitive sitting, appropriate scale of the base building and setting back the shaft building from the street edge. The use of architectural devises such as screens, horizontal baffles, terraces and overhangs also assist with reducing wind velocities at street level and improving conditions for pedestrians and cyclists.

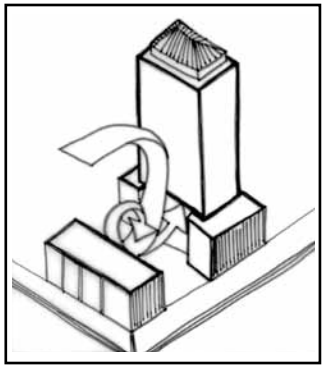
In the design process, the following must be considered to ensure that wind speeds do not exceed safety levels for extended and unacceptable periods:

- tall and wide building facades that are orientated towards the prevailing wind direction are to be avoided as these assist with increasing wind speeds;
- low wind pressure areas are created immediately downwind of buildings. Therefore if a low building is placed upwind from a tall building, downward flow of wind is increased causing accelerated winds near the windward corners of the tall building; and
- the “wind canyon effect,” is created when wind is funnelled between two buildings causing intensity of wind acceleration. This effect is influenced by inappropriate height, spacing and orientation of buildings.

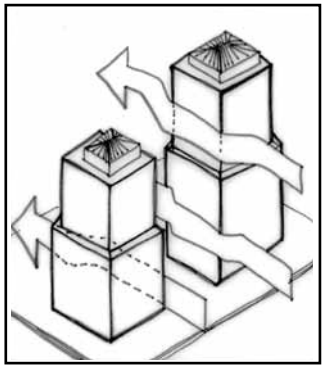


PROBLEM:
When wind meets a building, wind flows down the face of the building. This causes accelerated wind speeds near the windward corners.

= Tall and wide facades that face the prevailing wind are often undesirable.



PROBLEM:
A low building upwind from a tall building increases the downward flow of wind. This causes the wind to accelerate near the windward corners of the tall building.



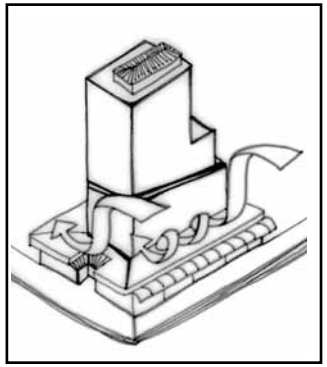
PROBLEM:
Accelerated winds (a wind canyon effect) is caused when wind is funneled between two buildings.

= The height, spacing and orientation of the buildings in a specific area affects the intensity of the wind acceleration.

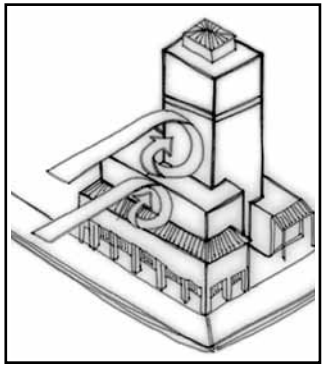
The following design measures can be used to mitigate wind impacts at street level:

- colonnaded base buildings can be used on windward facades to control downward wind flows;
- base building roof areas that are inaccessible to pedestrians can be used to mitigate downward wind flows and improve conditions at-grade;
- landscape base building roof areas further reduce wind speeds at-grade;
- the use of horizontal canopies on the windward face of base buildings is beneficial although sloped canopies only partially deflect downward wind conditions;
- parapet walls can increase the effectiveness of canopies;
- base buildings that are set back from the street edge can be used to reduce undesirable downward wind flows; and
- the required base building step-back needed to reduce wind velocities, is dependent on the height of surrounding buildings.

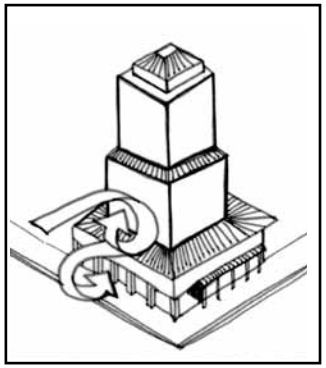
It must be highlighted that measures taken to ensure safe and comfortable pedestrian environments cannot include restricting pedestrian access on certain streets around a tall building precinct. All streets around a tall building, even if currently not used by pedestrians, must be accessible and functional for pedestrians and cyclists to ensure a permeable city.



CANOPIES:
Use horisonal canopies on the windward face of base buildings.

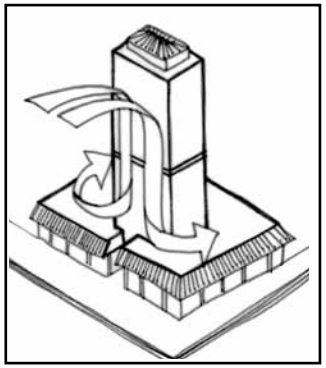


STEPPED BASE BUILDINGS:
Use a step-back in base buildings to reduce the undesirable downward wind flows. Note that the height of surrounding buildings have an affect on the newly proposed building so a wider wind study is needed to define this.



COLONNADES:
Use colonnaded base to control downward wind flows on windward facades.

Colonnades provide pedestrians with a choice of enjoying the calm on windy days or a nice breeze on hot days.



ROOF AREAS OF BASE BUILDINGS:
Use the roof areas of base buildings to mitigate against downward wind flows and improve conditions at grade for pedestrians. Landscaping the roof of base buildings can further contribute to reducing wind speeds at grade.

5. Sustainable Design

Objectives:

To ensure that all new tall building developments reduce its potential impact on the environment, support the local and international green agenda towards a more sustainable future and are leaders of its type in the field.

Guidelines:

Due to the high visibility of tall buildings and or developments it is expected that these buildings act as leading examples in the sustainability field and pioneer new approaches to sustainable design, construction practices as well as promoting sustainable lifestyles for it future users.

The green star rating tool should be used to assess the sustainable performance of the proposed tall building. A 5 star rating (60-74 points: Excellence) is encouraged. For larger developments, of which a tall building will be a component, sustainable principles and approaches for the whole settlement should also be adopted.

The overall, on-going energy consumption and natural resource requirements of a building will be dramatically impacted by the design decisions made at the project's initial or site planning stage.

Key factors that should typically be considered in the sustainable design of tall buildings include:

- Green Building Standards
- Building orientation
- Natural ventilation
- Heat control & mitigation
- Water use, reduction & waste water technology
- Stormwater management
- Waste management
- Green roofs
- Sustainable material usage
- Renewable energy
- Daylight harvesting
- Alternative transportation
- New open space creation
- Sustainable landscape design

6. Social responsibility contributions

Objectives:

To ensure that the approval of departures for the development of the tall buildings directly and explicitly benefits the general public and to act as the mechanism required to realise the urban regeneration outcomes underpinning the ntentions for this policy conception.

Guidelines:

In order to ensure that all tall building developments (which generally result in corporate statements) contribute and respond to the interests of the general public and to mitigate some of the negative impacts that are inevitable as a consequence of a tall building's construction, it is critical that a social responsibility component is included as a development objective of the project. These contributions should align with key City objectives, be to the "public good," and be of a physical nature that directly gives back to the environment and broader community in which it had or will have an impact.

It must also be emphasised that recommendations for departure approvals are not an automatic right. Applications will be assessed in relation to the manner and scale of support for key City objectives such as:

- Assessing the opportunity for providing a component of affordable/social housing within the development. (on-site provision is preferable to ensure social integration and reparation for the injustices associated with apartheid);
- provision of social/community facilities and amenities within the development and/or contributions to the development and maintenance of such facilities in impoverished areas of the city;
- the development of new public space and/or improvements to and maintenance of the public environment in the general vicinity of the development and/or in impoverished areas of the city;
- support of and contributions to the development of public transport systems in the City; and
- support to small and emerging economic activity (e.g. reduced rental in prime locations).