DESIGN GUIDANCE TO ACHIEVE ACTIVE FRONTAGES AND PROVIDE FOR SERVICES

This Design Guidance follows in depth investigations into issues related to the provision of services to buildings and the need for active frontages to streets and other public places. The Northern Territory Urban Design Advisory Panel (UDAP) has been fully briefed on issues relating to these matters by the Department of Lands and Planning and representatives of the various service authorities including Darwin City Council, Fire and Rescue Services and the Power and Water Authority. Following workshops to discuss these matters UDAP has been able to finalise an agreed position with all authorities.

THE NEED FOR ACTIVE FRONTAGE

The Public Realm in the Northern Territory towns is a key resource which determines the quality of its cities and towns. The Public Realm includes all public streets, parks, and squares. As cities and towns evolve, more demands are made of the Public Realm and the relationship between it and adjacent buildings becomes more critical to achieve high amenity, community safety and visual interest. To maximise these qualities it is important that buildings have an "*active frontage*" to the Public Realm.

Streets and the Public Realm will be further enhanced by the planting of street trees. Services should be planned to allow for the planting of street trees.

What is "*Active Frontage*"?

Making building edges "*active*" to the street adds interest life and vitality to the Public Realm. This means:

- Frequent doors and windows with few blank walls;
- Narrow frontage buildings giving vertical rhythm to the street scene;
- Articulation of facades with projections such as bays and porches providing a welcoming feeling, and on occasion;
- Lively internal uses visible from the outside, or spilling onto the street.

Figure 1 – Examples of "non-active" frontages

Figure 2 – Examples of good "active frontage"

BACKGROUND

As part of the building heights amendment to the NT Planning Scheme a section on urban design requirements was added to supplement the building heights at or near ground level along the pedestrian footpaths.

One of these requirements was that all developments are to have at least 75% of their building frontage to be active where practical. The requirement of 75% evolved from discussions within the Urban Design Advisory Panel.

Over a period of time several Development Applications have been submitted and generally buildings with frontages less than 30 metres were unable to meet the requirement of 75% active street frontage. The primary impediment is the requirement on building facades and along site frontages for services. The services that prevented the achievement of active street frontage were:

- Electrical Sub Stations
- Meter Rooms
- Water Meters
- Sprinkler and Fire Booster Rooms
- Waste collection
- Egress and Access Driveways
- Bus Stops

In order to fully understand the impact service authority requirements were having on the ability to achieve activation of the street frontages to buildings, the Development Consent Authority (DCA) requested that the Department of Lands and Planning – (Strategic Planning) undertake a study. This study formed the background to workshops conducted by UDAP with service authorities and the Department of Lands and Planning.

BACKGROUND TECHNICAL INFORMATION

From the study conducted by the Department of Lands and Planning, the following technical requirements were obtained from the various service authorities:

Electrical Services

A. Main Objectives

- Good Access and Egress to equipment;
- Safety.

B. General Requirements

- Do not want package electrical substations in CBD;
- Could be unstable when open to the elements;
- Needs an enclosure of approximately 4m x 4m x 3m.

C. Size of Equipment (Electrical Transformers)

- Standard Size 2m x 2m x 2.5m high. Weigh up to 2.4 tones. Needs to be earthed;
- Smaller types are used in other states.

D. Sub Station Room Size

- Standard room size around 4m x 4m x 3m;
- Requires two means of egress, one at least directly accessible to the outside;
- Needs plenty of circulated ventilation (natural and mechanical);
- Access by crane and truck (use of monorail) with 24 hours access;
- All weather protection;
- If two or more transformers are needed, then a room slightly larger than a standard room is preferred.

E. Other Locations

- First Floor generally acceptable locations but needs to be a dry system and it generates more heat and needs a higher ceiling.

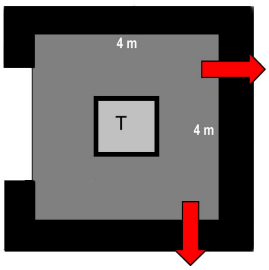
F. Associated Metering (Customer Main Switch)

- A room 4m x 4m (depending on layout), preferably behind the substation;
- Needed for circuit breakers and meters. Note - meters are able to be read remotely.

G. Management Issues

- To introduce new design changes into the organisation. A lengthy process is required which could take up to a year;
- Also new backup equipment might be needed;
- A process is should be formalised to confirm that developers and their agents have spoken to service authorities before DCA approval is given;
- Maintenance of a/c equipment is essential.

Electrical Transformer



Electrical Transformer Room

Fire Services

A. Booster Pump Enclosures

- Need pressure boost from fire appliances because water pressure is weak;
- Controlled by AS 2419 Hydrant Standard;
- "H" system needs 2 m wide x 1 m deep enclosure with direct access from the street.

B. Fire Control Rooms and Panels

- Needed if building is over 50 metres in height (approx 10 sq metres in area);
- Must be accessible from the street and the lift lobby as well as being fire rated;
- Panels required if building is over 25 metres and needs to be within direct sight of control room;
- Tanks and pumps can be in the basement.

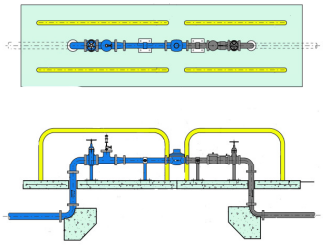
"H" Fire + Sprinkler Booster

Fire Alarm Panels

Water Services

A. Water Meters Generally

- Expectation that there is a standard water meter arrangement to service all building developments;
- Sometimes consists of both fire and domestic meters;
- Vary in size from DN 20 to DN 225;
- 4 Options available for orientation and location;
- Requires access for maintenance and reading of meters.



"Water Pipe Metering

Bus Drop Offs

A. Bus Drop Offs - Assumptions

- That not all residential developments need a bus drop off (either on street or off street);
- Large serviced apartments and hotels generally do need a bus drop off (either on street or off street);

- Preferred locations for bus drop off are side streets or rear lanes if practical then the main street frontage (either on street or off street);
- Sites in non-retail environments and with minimal street frontage should consider an on-street bus drop off and a car parking contribution in lieu of the lost car spaces in the street.

Garbage Services

B. Garbage Bin Pick Up

- Darwin City Council prefers that garbage is picked up on site and that garbage vehicles enter and egress the site in a forward direction. Options for garbage pickup are being studied by the DCC. An urban design preference is for kerb-side garbage pickup, however this is not yet DCC policy;
- In order to meet the requirement for onsite pick-up, developments are required to provide a large cross-over and sometimes porte-cocheres that disrupt footpaths and significantly restrict active street frontages. This is an undesirable outcome in any urban context in the Northern Territory, including in Darwin.

DISCUSSIONS WITH SERVICE AUTHORITIES

During the August 2011 meeting of UDAP, representatives from relevant service authorities were asked to discuss and present their requirements in the light of an overall desire to maximise "*active frontage*" to streets.

Representatives of Darwin City Council, Fire and Rescue Services, Power Water and the Department of Lands and Planning were present at these discussions.

An agreed position was arrived at where all service authorities were able to state their positions and agree on a way forward. It was clear that there were no rules or legislation that demand that fire booster assemblies (apart from the connection points), water meter assemblies, electrical sub-stations or refuse collection be on a street frontage. The agreed position for all service authorities is as follows:

Fire and Rescue Services

- Boosters need to be accessible from the street for connection to fire appliances in emergencies;
- No street furniture or trees should be located directly in front of the booster connectors;
- Boosters should be a minimum 10m from electrical transformers;
- Booster connections are the only items of equipment needing access from the street;
- Booster assembly equipment can be located behind a wall or even in a basement;
- The FIP (Fire Indicator Panel) should be located in building foyers, a maximum 4m from the front door and preferably within sight of the booster connections;
- Booster connections can be turned vertical to reduce impact on active frontage.

Garbage Collection

- Darwin City Council is examining options for garbage pickup including trucks collecting garbage without having to enter a site, i.e. kerbside pickup. This is not yet DCC policy;
- Where on-site collection occurs this should be fully contained within the development and vehicles should enter the same access points as other vehicles;

Bus Drop-off and Pick-up

- It was agreed that porte-cocheres can be a significant disruption to footpath continuity and active frontage. For this reason on-street drop-off was preferred. This might require modification to kerbs and on-street parking outside short stay accommodation venues. Reduction of on-street parking in commercial areas is however undesirable. Developers are encouraged to approach the DCC and other councils early in the design process to address these issues.

Electrical Services

- While electrical substations are large, their location is relatively flexible;
- Sub-stations require as much natural ventilation as possible therefore location above ground floor is optimal. Basement locations require significant mechanical cooling;
- Maintenance and removal of transformers and high voltage switchgear are the key determining factors of location.

Water Services

- Water metres can be located in basements or deeper within a site, i.e. back from a building's facade;
- Access should be provided to water metres, and this should meet PowerWater standards;
- Water pipes should preferably not be built into building structure.

Access and Egress

- Access to basement parking is preferred from rear lanes, where they exist;
- Fire escape exit doors must discharge to the street, either from upper floors or basements.

From these discussions it has become clear that the only services which have to be located on building facades or along the site frontage are the fire appliance booster connection pipes, fire escape doors, and vehicle access. All other services are able to be positioned in other ways.

It is however important that those services which require access from the service authorities have appropriate access routes planned into the building.

Design Guidance - the following service requirements should be met:

Fire services

Small buildings Provide access to FIP (Fire Indicator Panel) and boosters from the street. FIP should be in a foyer and a maximum 4m from the front door.

Bigger buildings (Applies to buildings taller than 50m in height);

Must have a fire control room. This must not be on the ground floor facade of the building;

Direct and fire-rated access to sprinkler tanks, sprinkler valves and fire control rooms must be provided although this does not have to be directly off the street;

Booster connections should be turned vertical to reduce impact on frontage;

Booster assemblies can be located elsewhere in the building;

All other fire and rescue equipment may be in basements or elsewhere in the building.

Electrical services

Electrical Sub-stations should preferably be located above ground floor level to maximise passive cooling;

Where there is a parking access ramp or entry, electrical substations should be located above these to facilitate removal by vehicles;

Where electrical sub-stations are located in a basement, sub-stations must be air-conditioned and access provided for maintenance, replacement, and personnel escape. Where practical a lift should be provided for replacement of deficient sub-stations.

Water services

Access to water metres must be provided.

Water metres may be located anywhere in the building but not on the building facade or frontage.

Water pipes are preferably not to be built into buildings but surface-mounted for access.

Space requirements and access specified by PowerWater are to be adhered to.

Garbage collection

While it is understood that the DCC are still examining options, UDAP recommends that garbage should be collected from the kerb, or;

If garbage collection is on site, it needs to be fully contained within the development and utilise the same access as other vehicles and with all collection screened from view.

Bus drop off

Porte-cocheres should not be permitted, except in circumstances where large apartment complexes and/or serviced apartments or hotels are able to incorporate a porte-cochere with minimal impact on the public realm. This needs to be demonstrated. In all other circumstances, drop-off is to be at the kerb or in a dedicated drop-off bay.