

4.6 Site Servicing Strategy

4.6.1 Water Sensitive Urban Design

Objectives

- To reduce and minimise water use in the day to day operations of Cardinal Freeman Village.
- To comply and where possible, exceed, statutory requirements for water use on the site.
- To protect waterways from pollution and hydraulic erosion.

Strategies

- Employ low maintenance, hardy, indigenous species where appropriate to the visual and physical environment.
- Utilise rainwater reticulation for landscape irrigation.
- Retain existing features where possible, recycle or re-use materials.
- Promote the use of sub-soil drip irrigation systems with automated timers and rainwater/soil moisture sensor control override.
- Use grading of internal roads to allow controlled run-off into landscape areas.
- Maximise areas of porous paving in non-vehicular traffic areas.
- Implement measures such as gross pollutant traps, sediment traps, trash screens and pit litter bins for management of water quality for stormwater discharging from the site.
- Use sediment and erosion control measures specific to each planning application.
- Select WELS rated tapware and sanitary ware.
- Provide OSD with filtration within the site.

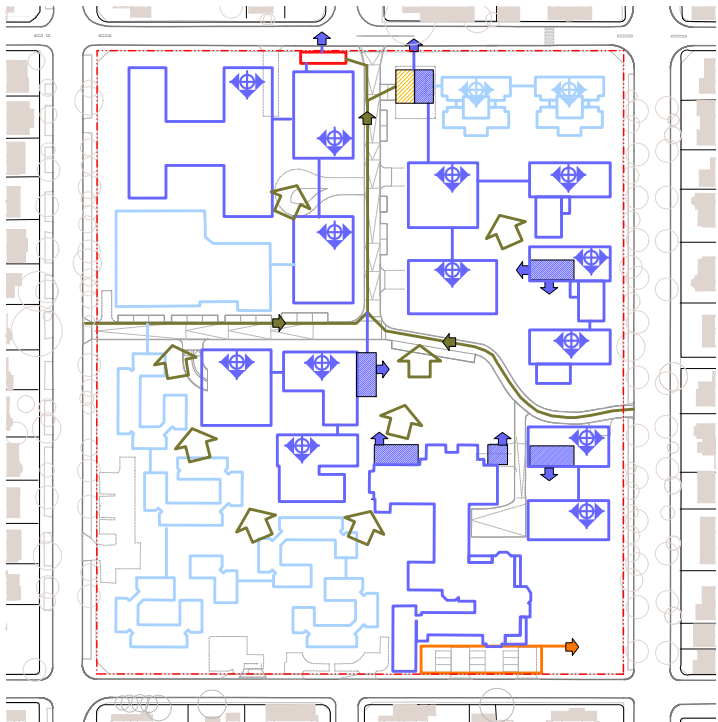


Figure 4.6.2 Hydraulics Strategy

- Nutrient filtration zone
- ➡ Surface water from carpark - connection to existing lines
- ➡ Surface water line to filtration
- ➡ Surface water run-off
- OSD
- Rainwater tank
- ➡ Roof water for re-use on landscape
- ➡ Rainwater reticulated for toilet flushing
- Roof gutters
- ➡ Existing rainwater reticulated for toilet flushing to be retained
- Existing roof gutters to be retained

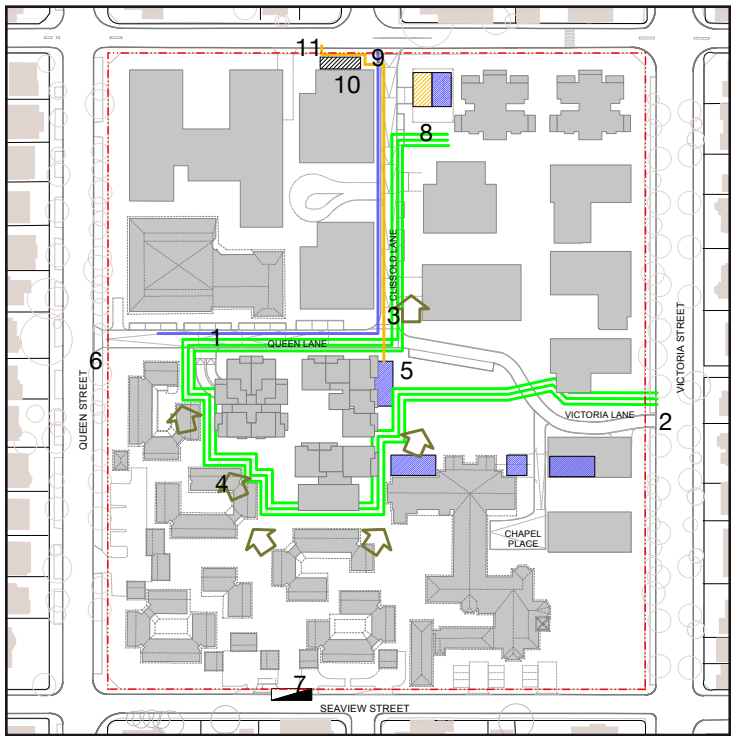


Figure 4.6.1 Water Sensitive Urban Design Strategy

- Nutrient filtration zone
- Rainwater tank
- On site detention
- Sewer main connection and water meter to existing S-W Precinct
- ➡ Surface run-off
- Hydrant Line
- Sewer
- Existing street drainage

- 1 Existing street drainage upgrades to accommodate revised road alignment.
- 2 New water, gas and fire hydrant services extended from Victoria Street along re-aligned Victoria Lane.
- 3 Village Green Precinct to connect to existing sewer and stormwater infrastructure in re-aligned Clissold Lane.
- 4 Upstream flows to be deflected around the Village Green Precinct to reflect existing condition flows to continue down Clissold Lane to Clissold Street to reflect existing condition.
- 5 Approximate location for OSD and rainwater harvesting tanks and plant.
- 6 Approximate location for rainwater harvesting.
- 7 Approximate location of sewer main connection and water meter serving the S-W Precinct.
- 8 Water, gas, and hydrant service extends from terminated points.
- 9 New stormwater line provided down re-aligned Clissold Lane for OSD in Village Green Precinct and connection to Council infrastructure in Clissold Street in accordance with existing condition.
- 10 Approximate location for OSD and rainwater harvesting outlet extends to existing connection in Clissold Street.
- 11 New Care Precinct connection to existing Sewer main.
- 12 Existing gas and water meter connection is retained if Care Precinct is separated from remainder of site.

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4.6.4 Communications Strategy

Objectives

- To comply and where possible, exceed, statutory requirements for energy use on the site.
- To provide efficient on-site communications services.
- To provision for centrally managed security and access control systems.
- To introduce a robust but flexible telecommunications systems throughout the Village which integrates voice, data and nurse call services
- To introduce a site wide fire detection system throughout the Village.

Strategies

- Rationalising the distribution of telecommunication services throughout the site to improve efficiencies and increase the flexibility to adopt new technology into the future.
- Establishing “services corridors” so as to rationalise distribution and minimise limitations on the site.
- Make use of current yet proven technology and procedures throughout the Village so as to ensure flexibility into the future and optimal performance.

4.6.3 Electrical Services Strategy

Objectives

- To reduce and minimise energy use in the day to day operations of Cardinal Freeman Village.
- To rationalise the power supplies throughout the site such as to improve the integrity, minimise recurrent costs and improve safety.
- To comply and where possible, exceed, statutory requirements for energy use on the site.
- To provide efficient on-site electrical services.

Strategies

- Organise the electrical services in management quadrants consistent with the architectural site organisation such as to facilitate the staged redevelopment and to optimise cabling distribution.
- Use a demand reduction system through the investigation of renewable energy options. Such initiatives to include bulk power factor correction, potential use of solar technology, use of energy efficient light sources and intelligent control systems.
- Install only energy efficient appliances.
- Use ‘standby mode’ on medical equipment.
- Install energy efficient lighting throughout the site and implement intelligent control systems.
- Lighting and access strategy that responds to the core CPTED considerations.
- Establishing “services corridors” so as to rationalise distribution and minimise limitations on the site.
- Make use of current yet proven technology and procedures throughout the Village so as to ensure flexibility into the future and optimal performance.

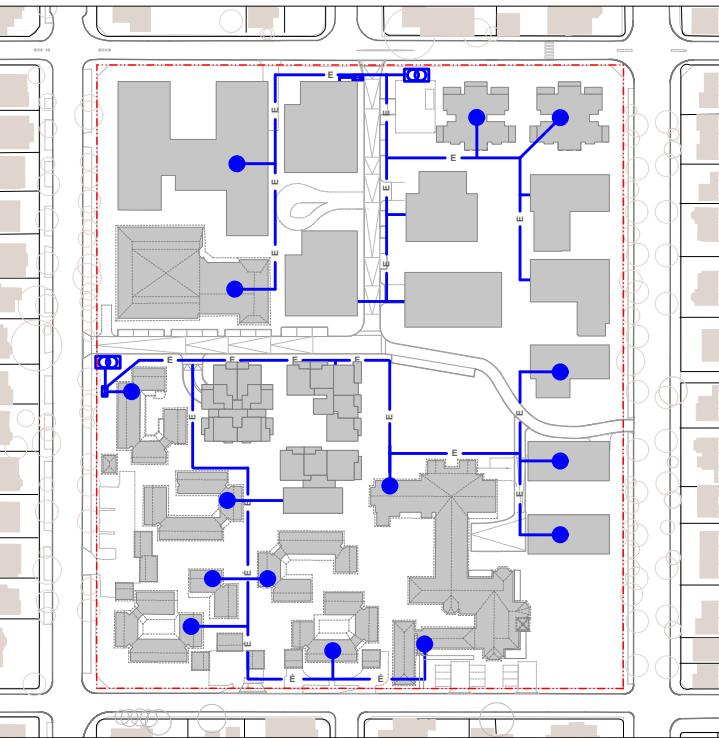


Figure 4.6.3 Electrical Strategy

- E— Underground Electrical services
- Kiosk substation
- New main switchboard

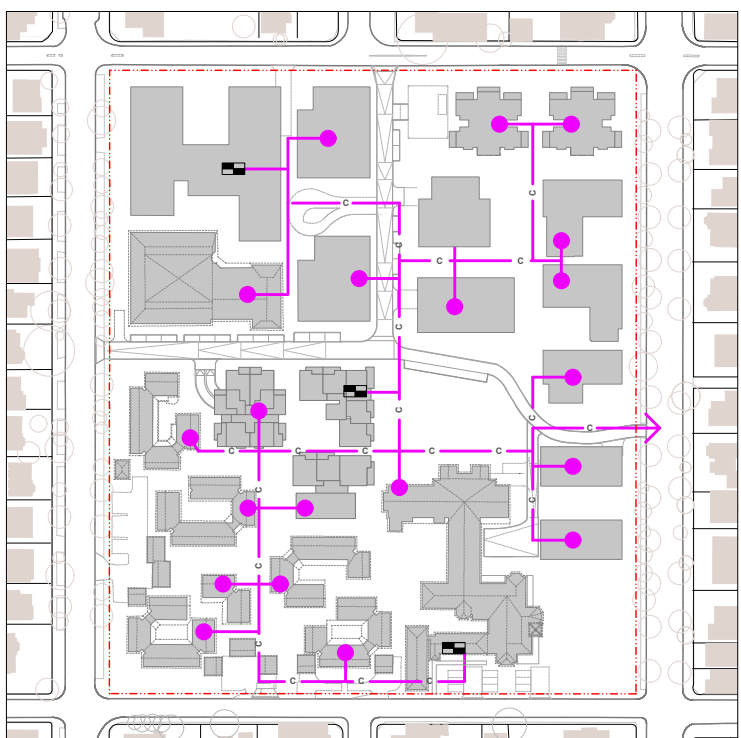


Figure 4.6.4 Communications Strategy

- Underground Communications services
- Major building distributor

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4.6.6 Waste Management Strategy

Objectives

- To reduce and minimise the generation of waste in the day-to-day operations of CFV.
- To comply and where possible, exceed, statutory requirements for waste minimisation on the site.
- To provide opportunities for re-cycling and re-use of compost on site.

Strategies

- Organise waste management services into management quadrants consistent with the architectural site organisation.
- Locate waste collection points that are easily accessed by residents.
- Provide landscape opportunities for items such as worm farms to promote the on-site recycling of organic material.
- Provide residents with user information to maximise uptake levels and correct use of waste management systems.
- Provide signage and colour coding for waste and recycling.
- Two-stage approach for waste storage and collection:
 - localised bin enclosures located conveniently for residents
 - main storage areas close to the street and collection point
- Maintenance staff to manage waste to ensure cleanliness and capacity at localised storage areas is maintained.

Refer to Section 5.7.9 for Control requirements

4.6.5 Access Strategy

Objectives

- To provide convenient, comfortable and safe pedestrian access within Cardinal Freeman Village.
- To encourage pedestrian movement through the site and opportunities for socialising.
- To provide a rational and legible network connecting residents to community facilities, outdoor recreation spaces, bus stops, services such as post boxes and bins, and to each other.
- To maximise the number of openings to the street to allow public access through the site, and to the major community open spaces.
- To encourage public access to keep the village lively, and provide an additional level of surveillance for safety.

Strategies

- Upgrade existing footpaths to be consistent with proposed path network.
- Provide lighting and rest points at strategic locations along the route.
- Establish clear sight-lines with the proposed network.
- Provide through-site pedestrian links.
- Improve pedestrian priority within the site.
- Increase comfort by providing broad paths for aged and disabled users.
- Integrate access for disabled into the main path of travel, minimising the reliance on 1:14 gradient ramps and convoluted switchbacks.
- Most paths are at a gradient of about 1:20 or flatter, making where possible a generous and comfortable path. The occasional ramp and switchback is utilised to make this system work.
- Provide an accessible entrance at ground floor level of all buildings.
- Provide resting areas at pathway intersections to promote social gathering.
- Pathway widths at nodes sufficient to allow 2 gofers/ scooters to pass comfortable.

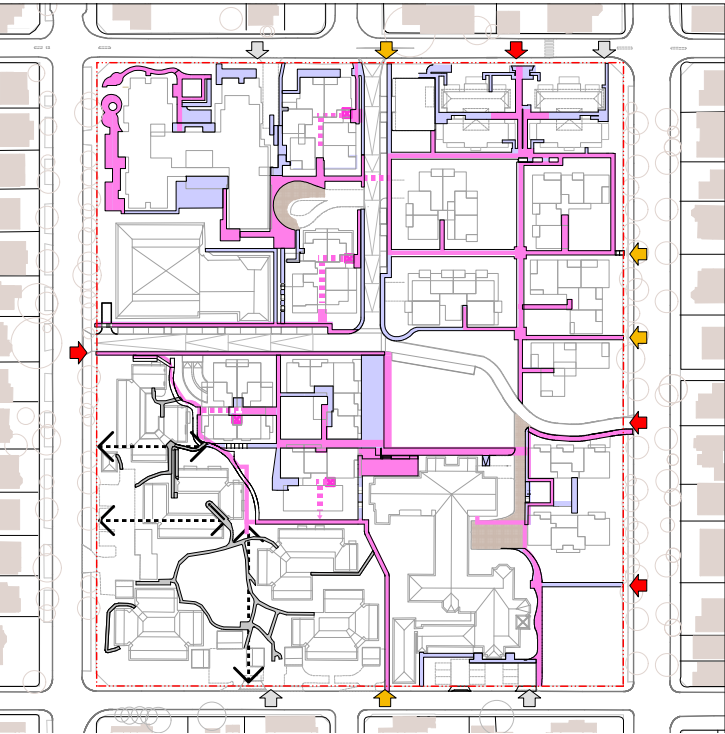


Figure 4.6.5 Access Strategy

- Existing pedestrian path to be retained
- New or re-aligned pedestrian path
- Accessible path
- Lift within building provides accessible access between floor levels and adjacent ground levels
- Accessible route within building linking levels
- Shared vehicle/pedestrian zone - pedestrian focussed
- New pedestrian access points
- Existing main pedestrian access points
- Existing pedestrian access points
- Possible future links for the South West Precinct

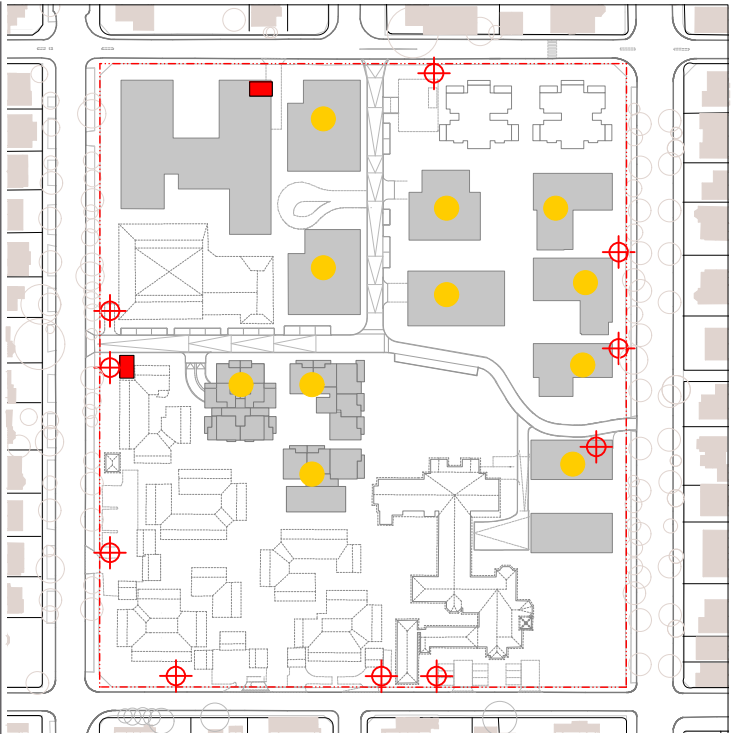


Figure 4.6.6 Site Servicing Strategy

- Residential waste collection (240L)
- Commercial waste collection (MRV)
- Intermediate bin store



Figure 4.6.7a
PV Panels
(Image: frogandprincess_wordpress_com)



Figure 4.6.7b
Rainwater tanks
(Image: ozoutdoor.com.au)

4.6.7 Environmentally Sustainable Design Strategy

Objectives

- Achieve holistic environmental performance criteria for:
 - management of Cardinal Freeman Village
 - indoor environmental quality
 - energy conservation
 - transport
 - water conservation
 - materials
 - emissions
- To comply and where possible, exceed, statutory requirements for environmental performance.

Strategies

Management

- Environmental Management Plan during construction and operation
- Waste Management Plan during construction and operation
- Minimise natural resource consumption, waste, pollution and toxicity during construction and operation.

Indoor Environmental Quality

- Preserve amenity such as air quality, daylighting and thermal comfort
- Use efficient air-conditioning and ventilation
- Maximise external views
- Minimise volatile organic compound emissions.

Energy Conservation

- Reduce greenhouse gas emissions through efficient building services and facades
- Provide solar boosted hot water
- Provide variable speed drives and CO control for car park ventilation
- Monitor energy use
- Consider on-site renewables.

Transport

- Provide access to good public transport links
- Provide a transport and travel guide for residents
- Provide cyclist facilities for staff
- Provide a regular daily bus service to the Ashfield town centre.

Water Conservation

- Preserve natural waterways
- minimise demand for potable water used for non-potable purposes.
- Provide ozone water purification (to be confirmed)
- Install high efficiency water fittings
- Provide rainwater tanks and systems for landscape irrigation and toilet flushing

Materials

- Reduce impacts on the internal and external environments by choosing environmentally responsible materials
- Use low embodied energy and high recycled content
- Minimise volatile organic compounds
- Provide dedicated waste recycling areas

Emissions

- 100% of all refrigerants will have an ozone depletion potential of zero
- Filter all stormwater run-off

(from ESD Report May 2009 prepared by Cundall)

4.6.8 Acoustic Strategy

Objectives

- To reduce and minimise the generation of excessive noise during construction of the proposed project.
- To reduce and minimise the generation of excessive noise in the day-to-day operations of CFV.
- To comply and where possible, exceed, statutory requirements for acoustic comfort by residents of CFV.
- To comply and where possible, exceed, statutory requirements for acoustic comfort for neighbours of CFV.

Strategies

- Prepare ‘Construction Noise and Vibration Management Plan’.
- Construct all buildings such that sound attenuation is achieved between occupancies both vertically and between public corridors.
- Arrange internal layout of rooms such that functional compatibility is achieved between rooms and between ILUs.
- Locate all lifts such that service rooms or corridors provide a barrier to sound and vibration transmission into ILUs.
- Arrange buildings on site such that functional compatibility is maximised between buildings and within internal planning.
- Provide acoustic separation consistent with foreseeable activity.
- Design for impact sound isolation of wet areas where they adjoin living areas.
- Acoustically separate hydraulics pipes where they serve or pass through more than one occupancy.
- Selection of finishes to maximise sound attenuation between and within occupancies.

