3. provides for a transitional zone from light industrial to residential uses without adversely affecting the amenity, health or safety of surrounding residents,
4. provides for community facilities,
5. provides additional recreational opportunities,
6. creates employment opportunities,
7. is a development which promotes the economic and efficient provision of public services and amenities,

In order to reduce and minimise the visual impact of the proposed development, the proposed buildings have been staggered and varied in height. This has helped to reduce the bulk of the proposed buildings and also aids in creating views and vistas through the development both for the public and the residents of the proposed developments. Further measures include the provision of generous setbacks and the incorporation of mature landscaping. The building heights have been varied and a smaller building footprint has been created in order to allow good pedestrian and visual permeability into the site.

The height analysis undertaken by Marcheses (see below) demonstrates the relationship with existing buildings in long section (Canterbury Road to Jarrett Street) and cross section (Elizabeth street to Vicliff Road) (See **Appendix 9**).

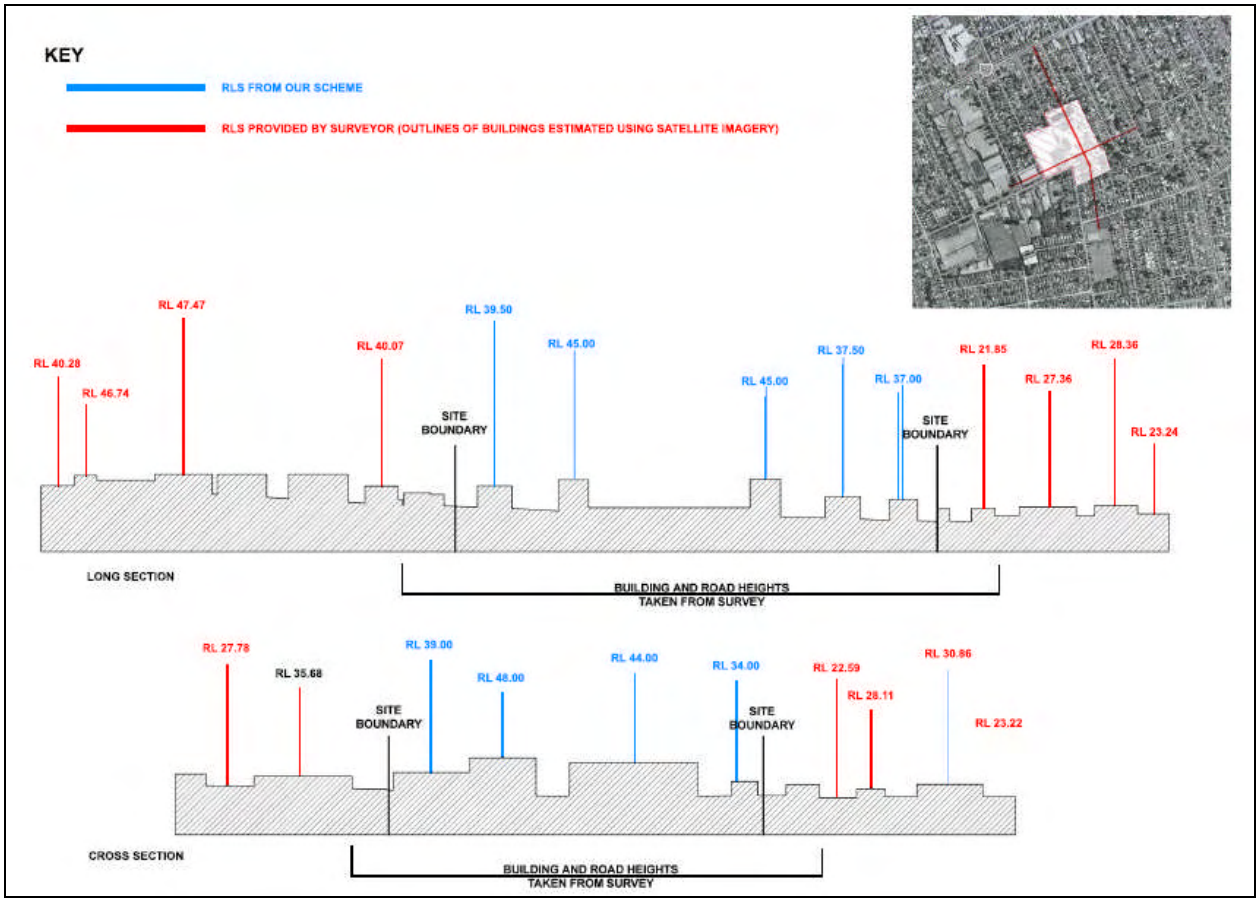

Figure 14: Height Analysis Source: Marchese See Appendix 9 reproduced here

When viewed from long distances, the buildings will not be apparent or distinguishable. It is also noted that the building heights are mitigated by the visual aesthetics. Notwithstanding the visual consideration, the impact on amenity to adjoining existing developments as a result of potential overshadowing is also to be considered.

The shadow diagrams prepared by Marchese (See **Appendix 11**) demonstrate the following:-

1. No adverse overshadowing will occur to neighbouring residential properties as a result of the generous setbacks and positioning of buildings;
2. Adjoining properties will receive more than 3 hours of sunlight between the hours of 9am and 3pm for the mid winter period.
3. The effect of the overshadowing that will occur during the winter months will be compensated by the provision of additional public open space on the site.

- ***View analysis***

As part of this Concept Plan application, the proponent undertook a view line analysis from existing residential areas and important vistas (See **Appendix 10**). This analysis concluded that the impact of the proposal was minimal from major view lines.

The developments capacity to be visually absorbed into the existing locality without changing the character, in a way that is unacceptable, ensures visual fit. The proposal produces a development of a character consistent with other Council strategies for example the Campsie precinct (LEP 148) which allows for higher densities and heights.

Images have been created in order to demonstrate the visual impact of the proposal when viewed from certain locations. These include:

1. View from Alfred Street looking North
2. View from Harp Street looking north-east
3. View from Troy Street looking southeast

The view analysis demonstrates that the proposed buildings sit comfortably within the existing environment. Existing vegetation will largely screen the new building massing whilst, the Landscape Concept Plan indicates the mature trees that will be retained during the construction and operation of the site. This will ensure that the views to and from the site are not detrimentally compromised.

Figure 15 below demonstrates that the proposed new building envelops will not protrude above the natural ridge line when viewed from Canterbury Road as a result of the natural topography. Accordingly, the proposed building massing screened by existing and new vegetation, is absorbed into the existing character, ensuring visual fit.

Figure 15: View Analysis Source Marchese

6.3 Environmental and Residential Amenity

6.3.1 Overshadowing

An assessment of the level of overshadowing on the adjacent properties at 9am, 12pm and 3pm, during the winter and summer months was carried out (see **Appendix 11**).

The site contains an existing vacant manufacturing facility, where buildings are a maximum of four storeys in height. The proposed project provides for various building heights with a maximum building height of 7 storeys located within the centre of the subject site. The shadow diagrams prepared by Marchese demonstrate the following:-

1. No adverse overshadowing will occur to neighbouring residential properties as a result of the generous setbacks and positioning of buildings;
2. Adjoining properties will receive more than 3 hours of sunlight between the hours of 9am and 3pm for the mid winter period.
3. The effect of the overshadowing that will occur during the winter months will be compensated by the provision of additional public open space on the site;

Given the present overshadowing caused by the existing buildings, there is no significant increase in overshadowing (refer to **Appendix 11**).

6.3.2 Acoustic and Visual Privacy

- *Acoustic*

An Environmental Noise assessment has been prepared by Acoustic Logic and is attached at **Appendix 17.** This report provides the results of Environmental Noise Study for the proposed project located at 60 Charlotte Street, Clemton Park. Noise at the site has been measured and noise goals have been set in accordance with the requirements of Canterbury council and relevant statutory/regulatory authorities.

Determination of noise assessment criteria based on the EPA's Industrial Noise Policy and ECRTN have been determined based on both unmanned and manned noise monitoring conducted at the proposed development.

The **table 13** below provides a summary of the assessment criteria applicable to the proposed development based on the data within the noise report.

Table 13: Noise assessment criteria

Location	Daytime Noise Objective dB(A) Leq	Evening Noise Objective dB(A) Leq	Night Time Noise Objective dB(A) Leq	Night Time Sleep Disturbance for Intermittent Activities dB(A) L1 (1 Min) (Background + 15 dB(A))
1	54	45	40	77
2	52	45	40	60
3	53	45	40	74
4	50	45	40	65

The criteria for the various monitoring locations have been considered to the applicable receiver groupings in **Table 14** below. As a number of locations were identified as containing noise associated with mechanical plant the following table presents noise level criterion for areas surrounding the proposed development. In all cases, if a discrepancy in attended and unattended noise levels were obtained at two nearby locations within a residential grouping the more conservative noise level criterion has been adopted.

Table 14 – Noise Objectives for Residential Receivers near Proposed Development

Location	Daytime Noise Objective dB(A) Leq	Evening Noise Objective dB(A) Leq	Night time Noise Objective dB(A) Leq	Noise Objective for Intermittent Activities dB(A) L1 (1 Min) (Background + 15 dB(A))
Charlotte Street	54	45	40	77
Troy Lane	52	45	40	60
Harp Street	53	45	40	74
Viking Street	50	45	40	65

Noise level criteria are to be applied to commercial traffic levels generated from vehicle movements on the site only, as presented by the Industrial Noise Policy. Noise levels generated from the movement of vehicles entering and exiting the site on ramps are generally required to comply with levels presented in the presented tables for surrounding receivers.

The noise report states that *"For land use developments with the potential to create additional traffic on local roads the development should comply with the requirements detailed in the EPA ECRTN"*.

- ***Visual***

The perimeter arrangement of built form optimises the visual privacy by maximising the building separation as well as generating a different orientation for the balconies of each building. This is most evident for the residents fronting the proposed pubic park where the predominant separation is more than 90 meters. The general street separation of buildings is 24 meters resulting in an optimal separation between balconies and habitable rooms in the varied stages of the concept plan.

To provide privacy for ground floor apartments fronting the park and streetscape appropriate screened wall height of 1.8m is proposed along these courtyard frontages.

In addition to these measures the general recessing of the balcony spaces within the façade restricts site lines and further mitigates adverse effects of visual privacy.

In conclusion, the development has been designed using careful orientation, siting, setbacks and landscaping treatment to ensure minimal loss of privacy between the proposed buildings themselves and indeed the adjacent residential buildings.

6.3.3 Wind impacts

A Wind Impact Study was undertaken by Windtech and is attached at **Appendix 18**. The effect of wind activity within and around the proposal was examined for the three predominant wind directions for Sydney; north-east, south and west. The analysis of the wind effects relating to the proposal was carried out in the context of the local wind climate, building morphology and land topography. No wind tunnel tests have been undertaken for the subject development. As such, the wind report addresses only the general wind effects and any localised effects that are identifiable by visual inspection.

For each of the three predominant wind directions, the interaction between the wind and the building morphology in the area was considered. Wind conditions are assessed for the various outdoor spaces within and around the site, including the neighbouring properties. Important features taken into account include the distances between the proposed building forms, their overall heights and bulk as well as the landform.

The results of the wind study indicate that the site is generally well shielded from the prevailing winds by the surrounding buildings and the proposed tree layout. The Windtech report recommends as follows:-

"It is recommended that the final landscaping plan of the proposed Master Plan include a tree planting scheme similar to that indicated in the current architectural drawings and highlighted in Figure 4. Note that for trees to be effective in enhancing adverse wind conditions, they should be of a densely foliating variety. If short duration activities (e.g. café seating) is proposed within the site, additional ameliorative treatments may be required. If balconies are to be included at certain corners of the upper levels in the final development, then the use of impermeable balustrades at those locations is recommended to ensure that wind conditions at these areas will be acceptable for their intended use".

With the effect of the recommended minimum planting, it is not expected that the proposed Concept Plan will have any adverse effects to the wind conditions in the local surrounding streets, pedestrian footpaths or neighbouring properties.

6.3.4 Crime prevention

CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts. Research into criminal behaviour shows that the decision to offend or not to offend is more influenced by cues to the perceived risk of being caught than by cues to reward or ease of entry. Consistent with this research, CPTED based strategies emphasise enhancing the perceived risk of detection and apprehension.

Consistent with the widespread implementation of defensible space guidelines in the 1970s, most implementations of CPTED as of 2004 are based solely upon the theory that the proper design and effective use of the built environment can reduce crime, reduce the fear of crime, and improve the quality of life. Built environment implementations of CPTED seek to dissuade offenders from committing crimes by manipulating the built environment in which those crimes proceed from or occur. The four most common built environment strategies are:

- natural surveillance;
- natural access control;
- territorial reinforcement; and
- special management.

Natural surveillance and access control strategies limit the opportunity for crime. Territorial reinforcement promotes social control through a variety of measures. The following table demonstrates the proposed projects key design responses (also see **Appendix 19** for DCP 29- CPTED assessment):

Table 15: CPTED design response

CPTED PRINCIPLE	DESIGN RESPONSE
Surveillance	The proposed development incorporates mixed use zoning concepts to improve upon passive surveillance of the area and fundamental design rules to decrease the number of spaces where loitering may become a problem. Passive Surveillance is improved as residential dwellings are positioned above shops and retail space improving safety of the area particularly at night. Development also surrounds a park improving the feeling of enclosure yet safety and subsequent surveillance of the park. Appropriate design has resulted in the provision of sight lines. Sight lines throughout the development, but more so in residential corridors between corners, lift doors and entrances need to be created to minimise hiding opportunities. This can be achieved through the provision of mirrors and dual frontage/doors addressing both sides for lifts, removal of unnecessary walls/obstructions, clear glazing of lift lobbies and car park portals, as well as maximising sight lines from inside front door of units to corridors.
Access Control	The majority of proposed Car Parking on site is situated under building footprints and thus are secure private bays. Access to these Parking spaces is limited to customers during the day or tenants at night. The use of security shutters/swipe card access to residential car parking levels, lifts that service residential levels, and accessibility to the residential levels is to be implemented and maintained. The use of this technology is necessary to ensure effective use of physical and symbolic barriers to attract, channel or restrict the movement of people to minimise opportunities to commit crime. Access to all dwellings and shops are also controlled through appropriate locking systems and passive surveillance; from the street and adjacent
Territorial Reinforcement	The design of the proposal will need to incorporate aspects to define and distinguish areas strictly for private residential use/access from the areas utilised for public and semi-public purposes. Landscaping and built form helps separate areas and gives unique characteristics to parks and open spaces. Vegetation improves the aesthetics of an area while providing shade during warmer months. Vegetation may inhibit the success of an area through poor maintenance. Pruning and species selection is crucial to improving safety and creating spaces within an area. In addition built form encourages different uses at ground level and may create sight lines or views which strengthen the dynamics of the area.
Space Management	The creation of a well-kept and attractive space will help to attract more people, and thus reduce the likelihood of crime occurring through increased passive surveillance. The use of quality design combined with the implementation of an appropriate management, upkeep and cleaning strategies will reinforce perceptions of safety.

6.4 Traffic & Car Parking

6.4.1 Existing Environment

A Transport and Accessibility Study was prepared by Traffix (**Appendix 20**). This report assessed the current environment is relation to traffic and access and the impact of the proposed development on traffic levels and consequently presented solutions to ensure minimal impact by the proposal.

The report identifies that the site is currently has primary road frontages to Harp Street and Charlotte Street, while secondary accesses are also available at the southern end of Troy Street and Wade Street. These frontages have all been used historically for vehicular access to the site and continue to be used as significant site accesses. However, due to the sensitivity of Troy Street and Wade Street, which are both local roads, no access is proposed to either of these streets under the proposed development concept. This therefore results in a worst case scenario in that traffic impacts on Charlotte Street and Harp Street will be assessed at maximum levels. It would however be open to Council to permit limited access to these streets (perhaps for light vehicles associated with a small part of the development) but this would only be at Canterbury Council's discretion and is not relied upon.

Access will therefore only be available via Harp Street and Charlotte Street. Harp Street in turn provides access to Kingsgrove Road to the west of the site, while Charlotte Street provides the main access to Canterbury Road.

Traffix advises that the site is served by a local bus service, with direct services provided to the Sydney CBD, Rockdale, Bondi Junction, Bankstown, Drummoyne and Five Dock. In terms of rail access, the report identifies that the Campsie Railway station is located about 1.6km to the north of the subject site.

6.4.2 Potential Impacts

- ***Internal roads and access***

Traffix confirms that "*The road system has been developed to ensure safe and convenient access to all parts of the site, based on the required Design Vehicle. The largest commercial vehicle is an articulated truck in the case of Lot 1, with a 12.5m rigid truck for other service areas. This is similarly a matter for assessment during later Project Application/s and compliance with relevant standards is proposed*".

The internal service areas and parking areas have been located to minimise through traffic for patrons, residents, visitors and service operators, while pedestrians pathways in the site have been provided along the main routes.

Figure 16: Pedestrian Movement Source Marchese reproduced here

- ***Traffic Generation***

It is usual practice to adopt trip rates published by the Roads and Traffic Authority for individual land use components, as set out in the document entitled "Guide to Traffic Generating Developments". Traffix state that "*while this is appropriate for some land uses, it is not appropriate for the proposed trade centre bulky goods component. In this regard, this use is a relatively new concept which has unique attributes that do not reflect any of the land use categories in the Guideline. In these circumstances the Guideline recommends that comparisons be made with similar developments*".

The Traffic report anticipates that the total weekday AM peak period will generate 658 veh/hr (Lots 1-5), which is similar to the traffic generation of the existing use during peak periods. The Saturday AM peak period will general a total of 1,056 veh/hr.

The report asserts that "*It can be seen from table 4 that the development will result in moderate traffic volumes during the AM peak period, with peak demands occurring on a Thursday evening or Saturday morning. These trips are also very similar to those established in the 2006 traffic report and the Preliminary Environmental Assessment and have been previously accepted in principle*".

It is considered that the impacts on Charlotte Street and Harp Street are a direct consequence of the intensification of this underutilised site and that the previous use of the site, which generated some 480 veh/hr during peak periods, would have had similar impacts, particularly during the AM peak period. The provision of efficient site accesses, via

the permeable public road system that is proposed, will also mitigate against any adverse local traffic impacts.

Traffic volume increases will be more noticeable on Saturdays and Sundays due principally to the bulky goods uses. However, these will below the current traffic levels that occur on weekdays, with the most notable impacts occurring at the proposed site accesses. However, these operate efficiently, so that queuing effects will be moderate.

Traffic volume impacts on Troy Street relate only to Lot 3 which incorporates 58 residential units and the child care centre. These will generate minimal traffic activity, which will have a significantly lower impact than the historic and current industrial uses on the site that rely on this route.

- ***Intersection Capacity***

In can be seen that predicted flows on a weekday AM Peak would be similar to those that have historically occurred. Flows during the weekday PM peak and on weekends would be higher, although the latter occur at a time when 'background' traffic volumes on the road system are lower than on a weekday peak period. The critical period for assessment is therefore the weekday PM peak period, although Saturday morning conditions have also been assessed.

The intersection assessment results are based upon the following improvements:

- At the intersection of Charlotte Street and Canterbury Road, a split phase has been introduced for northbound traffic in Charlotte Street;
- At the intersection of Kingsgrove Road and Harp Street, a split phase has been introduced for westbound traffic in Harp Street;
- At the intersection of New Harp and New Alfred Street, a four-way priority-controlled intersection is proposed; and
- At the intersection of Charlotte Street with New Troy Street, a passing bay is proposed to provide a safe right turn entry into the site and to overcome on street queuing effects.

The traffic report concluded that: *"Based on the above improvements, traffic conditions remain relatively unchanged overall, with only moderate increases in delays at all intersections examined and with no change in levels of service other that at the intersection of Canterbury Road and Charlotte Street which changes from level of service B to level of service A during both peaks, which is acceptable"*.

- ***Parking***

The development includes the provision of 1,507 car parking spaces, including visitors spaces.

Traffix advises that parking provision is based on the RTA Guide to Traffic Generating Developments 2002 requirements. *"The allocations provide satisfactory parking for each lot which will ensure that each stage of development (lot combinations) is self-sufficient, so that on-street parking demands will not occur."*

The breakdown of the spaces to be provided are set out in **Table 13** below:

Table 16 Summary of Parking spaces

Lot	Use	Yield	Spaces Required	Spaces Proposed
1	Bulky goods	18,011m² GLFA	432	432
	Gym	1,253m²	93	60
	Specialty Retail	1,250m²	42	62
	Commercial	5,884m² GFLA	149	147
Sub total			**714**	**701**
2	Residential	180 units	252	252
	Shops	2,751m²	92	55
	Supermarket	2,585m²	92	90
	Medical Centre	3,719m²	149	90
Sub total			**585**	**487**
3	Residential	58 units	85	85
	Child Care	636m² 75 places	8	8
Sub total			**93**	**93**
4	Residential	64 units	90	96
Sub total			**90**	**96**
5	High Care	92 beds	40	40
	Independent Living Units	84 units	90	90
Sub total			**130**	**130**
TOTAL			**1614**	**1507**

Source: Traffic Appendix 20

Traffix concluded that: *"The proposed parking provision is about 7% below Council's requirements (even with the reduced rates with sharing), which is considered an appropriate outcome for the development, which responds to the Director General's requirements to minimise parking provision. This is achieved even though this is limited in scope due to the cardependent nature of several uses on the site".*

6.4.3 Improve public transport accessibility

The site benefits from good access to bus services. Existing bus stops are located on Canterbury Road and Bexley Road within a reasonable walking distance of the site. The proposal allows for the location of a new bus stop to service the future uses, notably the accessibility of the aged person's development to public transport within Harp Street.

Having regard to "accessibility", the proposed project has the opportunity of introducing new roads which will be dedicated to Council as part of the VPA.

6.5 Construction Management

A construction management plan has been prepared which is attached at **Appendix 36** which addresses dust control; air quality management and surface water management

A detailed assessment of any likely construction impacts will be undertaken prior to the commencement of any works on site. Stage 1 of construction will involve Lots 1 & 3 followed by Lot 2, Lot 5 and Lot 4. It is intended that the Lot stages overlap.

The roads and services construction and handover to Council would be staged with progressive CC's as each of the developments on the subdivided allotments were commenced. As such Hyder and the Surveyor provided a plan which defines the staging of construction of the internal roads and services (to be approved as part of the project application) with development commencement on each of the Torrens title allotments. Namely, project approval is sought for Lot 1 (bulky goods - permissible development) and Lot 3 (residential flat) with future project approval for the residual land. With the commencement of construction of Lot 1 and Lot 3 the proponent proposes to complete "Stage 1 Construction" of the road and services infrastructure to be progressively constructed on the residual land to be dedicated to Council.

The Draft Statement of Commitments identifies the necessary commitments for managing construction related impacts see **Appendix 38**.

6.6 Erosion and sediment control

A Soil erosion and sediment control plan has been prepared by Hyder in accordance with Specifications S1 and S2 of Canterbury Council's Stormwater Management Manual is attached at **Appendix 14.**

In addition a construction management plan has been prepared which is attached at **Appendix 36** which addresses dust control; air quality management and surface water management

6.7 Ecologically Sustainable Development (ESD)

An ESD Framework Report has been prepared by Cundall (see **Appendix 21**) in support of the project. This report identifies the ESD initiatives for the site. The following minimum regulatory requirements apply to this project:

- BCA Section J for Energy Efficiency;
- Building and Sustainability Index (BASIX) for all residential development and seniors living (ILU's), stipulating minimum performance in energy, water and thermal comfort.

An integrated approach to environmentally sustainability design (ESD) involves a broad range environmental indicators, beyond the minimum requirements. The proposed development has been evaluated in response to the following:

- **Energy & Emissions**: Reducing greenhouse gas emissions through energy efficiency of building services and building façades;
- **Indoor Environmental Quality (IEQ):** Preservation of amenity including internal air quality, light and comfort;
- **Water management**: Conserving water and preserving natural waterways;
- **Materials selection** to reduce impacts on the internal and external environments;

- **Impacts of Construction & Operation**: Minimise natural resource consumption, waste, pollution and toxicity during the construction and operation of the facility;
- **Transport, Emissions & Ecology.**

Some of the strategies proposed to address the aforementioned issues include:

- Building form and fabric carefully considered to balance solar heat gains, daylight, glare and views to outside. Passive design strategies include external shading, insulation for walls and ceilings, and high-performance glazing where necessary;
- Energy efficiency in building systems and services, including:
- A highly efficient lighting design and control strategy will reduce artificial lighting energy consumption and allow maximum advantage to be taken of daylight;
- Residential units have no AC, and individual ducting of laundries and toilets. Hallways and lobbies will be partially naturally ventilated. Car park ventilation will be fitted with CO monitoring and VSD control;
- Solar hot water panels will supply domestic hot water demands and pool heating.
- Water-efficient fittings and native/drought-resistant landscape reduce potable water demands, while rainwater is harvested for use in landscape irrigation and car washing. WSUD principles will be applied to assist in stormwater management;
- Materials will be selected to maximise recycled content, minimise indoor pollutant emissions and avoid ecologically sensitive products.

6.8 Contributions

Canterbury Council S94 contributions plan states that Contributions for major development are to be negotiated between Council and the applicant on a case-by-case basis, and will generally supersede the provisions otherwise contained within this Plan.

> *"Major developments are large scale developments that have the potential to generate significant or specialised demands. Due to major development occurring infrequently and having diverse impacts, "standard" treatment of these proposals under the provisions of this Plan is inappropriate"*

(Source Canterbury S94 Plan p18).

In lieu of S94 contributions a separate draft planning agreement (PA), has been prepared by Maddocks pursuant to **Section 93F** of the Act and is included in **Appendix 16**.

6.9 Contamination

The site has already undergone significant consideration in relation to contamination. The site has previously been declared a "contaminated site", however, pursuant to Notice no. 220003 (Area Number 3374) dated 3 March 2005, the site is no longer so declared and *"does not pose an unacceptable risk to human health for the current or proposed use"*.

One inherent characteristic of the site is that previous investigations have identified contamination of the site through the previous operation of the former Sunbeam factory. Remediation of the site has been undertaken in line with the requirements of the NSW EPA, and included identification and remediation of contaminants that had migrated off site to the north of Troy Lane, and remediation of soil and groundwater elsewhere on the site.

A RAP for the site has been prepared by URS (attached at **Appendix 22**) which covers site investigations, remediation of the site, the methods to be used and the clean up criteria appropriate for a range of uses including commercial, industrial and residential. DECC have approved the RAP for the site. In addition, the RAP has been reviewed by the independent auditor and was considered acceptable.

The remediation of the site has been undertaken but not completed and the proponent intend on undertaking this outstanding work as part of its development of the site. The remediation completed to date has demonstrated that the site "can be made suitable for the purposes proposed".

The letter from AAP Corporation Pty Ltd (See **Appendix 22**) concludes as follows:-

> *"Department of Environment and Climate Change have approved the RAP for the site prepared by URS which covers site investigations, remediation of the site, the methods to be used and the clean up criteria appropriate for a range of uses including commercial, industrial and residential. This covers the current and future uses of the site.*
>
> *The attached RAP prepared for the site remediation is satisfactory for the proposed use of the site, including the existing residential areas off-site. The RAP identifies the clean up actions and criteria that remediated the offsite residential properties to the level and satisfaction of the EPA and the independent auditor. Copies of the RAP and Site Audit Statements (GN111-1 and GN 111-2b) have been appended".*

6.10 Heritage

PWA prepared a Cultural Heritage Statement of the subject site a copy of which is attached at **Appendix 25.**

The assessment concluded that there ought to be a recording of the facts. It is considered that the buildings can be demolished and that there be "*(a) an archival recording of the site prepared prior to demolition; and (b) a commemorative plaque and interpretative display be erected at an appropriate location where it will receive maximum exposure, informing employees and visitors of the above facts of the history of the site".*

- **Aboriginal Heritage**

Canterbury Council has confirmed that the site has no known Aboriginal Cultural Heritage value. In addition, there is no evidence remaining of any significance or of use of the site because of the heavy modification of the site and use of the site for a number of years for light industrial purposes.

6.11 Stormwater

6.11.1 Existing environment

The site has a general fall from its northern corner southward to the Cup & Saucer Creek stormwater channel. There are street stormwater drainage systems that approach the site from Wade Street, Troy Street and the lane that links Charlotte Street with Troy Street. These street drainage systems combine within the northern end of the site and convey flows via a stormwater conduit which extends southward under the existing warehouse building, through the southern car park and discharges into the Cup & Saucer Creek stormwater channel.

The Sydney Water Study (1992) indicates that the Cup & Saucer Creek channel has approximately 2 year ARI capacity in the vicinity of the site, and channel flows would enter the southern end of the site in larger events.

The Sydney Water Study provides design recurrence interval flood levels along the channel for a range of events (from the 1 year ARI to probable maximum flood). The reported 100 year ARI flood levels along Cup & Saucer Creek vary from approximately 22.4mAHD at the upstream of Alfred Street to approximately 20.6mAHD at the eastern (downstream) site boundary. However, it is noted that error limits of +/-1.0m are indicated for the 100 year water levels. The basis for this seems to be the lack of rare flood event information. As such, it is considered that the reported 'middle' flood level estimates should be appropriate for redevelopment purposes.

A Report on Stormwater and Flood Management has been prepared by Hyder (**Appendix 23**). The report states that: *"In the existing condition, based on the interpolated 100 year flood levels, Alfred St. is subject to inundation. Water depths in the street will vary from approximately 0.5m at the intersection with Harp St. to 1.1m at the bridge over the channel"*.

6.11.2 Potential Impacts

The results from the stormwater modelling indicates that the 100 year ARI flows arriving at the northern part of the site (corner of Troy St. and Troy La), will exceed the pipe system capacity and will spill over the kerb entering the site overland.

Hyder's reports states that: *"The maximum flow crossing the site though the Sydney Water conduits is approximately 4.1 m3/s in the 100 year ARI. This flow combined with the downstream catchments and the eastern external catchment will add to a peak flow from the site at the south eastern corner of the site of approximately 6.7 m3/s in the 100 year ARI"*.

6.11.3 Conclusion and Mitigation Measures

Redevelopment of the site compatible with stormwater and flooding conditions is considered achievable, and should be based on the NSW Floodplain Development Manual (2005) and Canterbury City Council guidelines.

The in ground drainage system is designed to cater for the 10 year ARI storm event. An overland flow system is provided for run-off in excess of the capacity of the pipe system. Where possible, the overland flow was kept to a velocity versus depth (VxD) ratio of 0.4 (refer to discussion in results section 3.2.5).The pipe system along New Alfred Street and New Harp Street are designed to cater for the 100 year ARI storm to avoid overland flows entering Alfred Street downstream of the site. This will replicate the existing condition.

Key stormwater management and design requirements indicated by Hyder for redevelopment of the site include:

- on-site detention in accordance with Council guidelines;
- the within site 'minor' piped drainage system is to have a minimum 10 year ARI capacity with 'major' overland flow paths provided with minimum 100 year ARI capacity;
- stormwater pollution control devices to manage site runoff quality;
- limiting 100 year ARI ponding depths to 150mm in carpark/driveway areas;
- total OSD tank volume of 5650 m3 at RL 25.0 m AHD. The invert level of the tank is set to be no lower than RL 22.5 m AHD.

Hyder's report at **Appendix 23** concludes that: *"The in ground drainage system is designed to cater for the 10 year ARI storm event. An overland flow system is provided for run-off in excess of the capacity of the pipe system. The pipe system along New Alfred Street and New Harp Street are designed to cater for the 100 year ARI storm to avoid overland flows entering Alfred Street downstream of the site. This will replicate the existing condition."*

"The 100 year ARI flows from the proposed development were compared to the existing situation showing significant reduction in all durations".

6.12 Flooding

6.12.1 Existing environment

Hyder advised that according to the Sydney Water report, the 100 year ARI flood levels along the creek extends through the site varying from approximately 22.4m AHD at the upstream of the Alfred St. bridge to approximately 20.6m AHD at the eastern (downstream) side of the site.

The provided levels were interpolated to approximate the flood extent indicated in Figure 2 of Hyder's report at **Appendix 23**. *"Based on the interpolated 100 year flood levels it is noted that Alfred St. is subject to inundation. Water depths in the street will vary from approximately 0.5m at the intersection with Harp St. to 1.1m at the Alfred St. bridge over the channel".*

The approximate 100 year ARI flood extent within the site (due to Cup & Saucer Creek channel flows only) is outlined in **Figure 2** of Hyders report at **Appendix 23** and generally affects Lot 1; Lot 2 and Lot 5.

6.12.2 Potential Impacts

The CPSO and the S149 Certificate does not define the subject site as being flood affected. Notwithstanding, a merit assessment has been undertaken by Hyder.

The NSW Floodplain Development Manual (FDM) was prepared by the Department of Infrastructure Planning and Natural Resources in 2005 with the primary objective *'to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods'*.

The reported 100 year ARI flood levels along Cup & Saucer Creek vary from approximately 22.4mAHD at the upstream of Alfred Street to approximately 20.6mAHD at the eastern (downstream) site boundary.

Hyder's report at **Appendix 23** states:

> *"New Alfred St. and New Harp St. connect to the existing roads at the intersection of Alfred and Harp St which as stated previously is inundated to a depth of approximately 0.5m in the 100 year ARI as a result of Cup & Saucer Creek flood conditions"*.
>
> *"The 100 year ARI Cup & Saucer Creek flood depths in this area are up to approximately 1.2m deep which will need to be taken into account in the detailed design of future development in this portion of the site"*. (lot 5)

6.12.3 Conclusion and Mitigation Measures

The stormwater modelling (discussed in section 3.2 of the Hyder report at **Appendix 23**) indicates that there is no increase in flows from the site discharging into the Cup and Saucer channel. Hyder used the DRAINS model for 100 year ARI flows. The results are summarised in **Figure 5** of Hyder's report at **Appendix 23** and indicating that the system along New Alfred St. and New Harp Street will safely convey flows complying with Council guidelines for the major (overland flow) street system.

With respect to storage volume in order to meet the requirement of the Sydney Water Feasibility Letter (26/09/2008) which states that "*reasonable care should be taken to ensure that local flooding storage is not unreasonably diminished*" Hyder proposed:

> *"The New Harp Street is to be a fill formation within the current 100 year flood extent. The 100 year flooding storage volume (based on the Sydney Water 100 year ARI flood levels) is approximately 5400m3. Reshaping of the within site areas subject to this flooding provides a storage volume of approximately 6500 m3 (refer accompanying civil drawings) and is considered to comply with the Sydney Water flood storage requirement"*.

Minimum floor levels have been set by Hyder at RL23m. This allows for a freeboard of 0.5mm above the 1 in 100 year ARI flood level for all residential development. In relation to the extent of the flood hazard, the report by Hyder concludes that:

"there is no increase in stormwater flows off the site and the local flooding storage is not diminished and that further investigations in the form of a Flood Study and Floodplain Risk Management Strategy will be necessary prior to issue of Construction Certificate for Lot 5 immediately adjacent to the Sydney Water stormwater channel".

The impact of the proposal including the cumulative effect on flooding has also been assessed. The report by Hyder concludes:

"Redevelopment of the site compatible with flooding conditions is considered achievable, noting the issues described above, and should be based on the NSW Floodplain Development Manual (2005) and Canterbury City Council guidelines."

Hyder nominated engineering and design specifications/solutions consistent with relevant government policies including the Floodway Manual. The management strategies proposed by Hyder include the following:

- *"habitable floor levels are to be a minimum of 0.5m above the Council's 'Standard Flood Level' (typically 100 year ARI flood levels);*
- *ensuring that the development does not increase the potential flood hazard or flood damage to other properties or adversely affect them in any way during times of flooding. This may require further investigation of the lot immediately adjacent to the stormwater channel as outlined in the Sydney Water Feasibility Letter;*
- *development of a Flood Emergency and Evacuation Plan based on the final configuration of the proposed construction in the affected areas. A sample Plan is included as in Appendix F of the Stormwater and Flood Management Report prepared by Hyder".*

6.13 Utilities

The Infrastructure/Utilities Provisions Report, prepared by Hyder (**Appendix 14 & 24**) provided an overview and analysis of the existing service infrastructure on the site, an overview of the proposed service system and recommendations relating to the systems proposed for implementation.

Based on the responses from the utility providers; Sewer, Water, Gas, Electrical and Telecommunications supply can be made available to the site subject to the noted conditions, including extensions of the of existing networks as discussed in the body of the Utilities report. Detailed design by accredited designers of the extensions and reticulation within the site will be required prior to construction.

Proposed services will be generally provided in the road network to service the proposed Clemton Park Village. An indicative layout is provided on civil drawings (See **Appendix 14**). This will be further developed as part of the next stage of design.

6.13.1 Sewer

The site forms part of the South Western Suburbs Ocean Outfall System (SWSOOS). Sewer Infrastructure in the area consists of:

- 225mm diameter SGW sewer main running north/south from Troy Street to Alfred Street. This main currently crosses through the proposed development parallel to the existing Sydney Water 'minor' Channel. Refer attached SKC002 in Appendix A. It is planned to realign this main with the proposed New Alfred Street. (*The relocation of this main will form part of a detailed design and will be subject to separate approvals*);
- 525mm diameter concrete sewer carrier running west/east along the southern extent of the development. This main is within an easement that runs parallel to the existing Sydney Water 'main' channel. Refer attached SKC002 in Appendix A of the Utilities report.

Preliminary investigations have revealed that the DN525 sewer (SO 46580) adjoining the southern boundary of the site, the DN225 sewer located along the eastern boundary of the site and the DN225 SGW sewer located within the site and close to an existing stormwater channel are all available for connection. *"As a guide only and again, based on the limited information provided with this application, either of the DN225 sewers have capacity to cater for only up to 60% of the proposed development's sewer discharge"*.

Hyder has prepared proposed services plans which allows for new sewer lines within the subject site. Once approval is given a section 73 application is made through an accredited Sydney Water service coordinator who will provide detailed design and construction documentation for Sydney Water's approval.

6.13.2 Water

The site is located within the Southern Suburbs water supply system. Water Infrastructure in the area consists of:

- 100mm diameter Cast Iron Cement Lined (CICL) main running along the eastern side of Wade Street. Refer attached SKC003 in Appendix A of the Utilities report;
- 100mm diameter CICL main running along the eastern side of Troy Street. Refer attached SKC003 in Appendix A of the Utilities report;
- 150mm diameter private main running along the eastern side of Troy Street. Refer attached SKC003 in Appendix A of the Utilities report.
- 150mm diameter CICL main running along the eastern side of Charlotte Street. Refer attached SKC003 in Appendix A of the Utilities report;
- 100mm diameter CICL main running along Alfred Street. Refer attached SKC003 in Appendix A of the Utilities report;
- 450mm and 2 x 150mm CICL mains running along Canterbury Road. Refer attached SKC003 in Appendix A of the Utilities report

A feasibility application has been submitted to Sydney Water and is assigned the case number 112942. The formal response received on 26 September 2008 identifies the below conditions:

- *"Based on the limited information provided with this application, it has been found that the existing Wiley Park Elevated Water Supply System has insufficient capacity to cater for this development.*

- *The Developer will therefore need to construct a DN150 water main between the DN150 main in Troy Street and the DN100 main in Alfred Street. In addition, DN100 watermains will need to be constructed in New Troy, New Wade and New Harp Streets".*

Hyder has prepared proposed services plans which allows for new water lines within the subject site. Once approval is given a section 73 application will be made through an accredited Sydney Water service coordinator who will provide detailed design and construction documentation for Sydney Water's approval.

6.13.2 Electricity

Hyder has estimated a load of 7MVa based on a the Floor Area provided by Parkview Sydney Developments.

Electrical infrastructure in the area consists of:

- Underground cables located in Charlotte Street, Harp Street and Alfred Street. Refer attached SKC005 in Appendix A.
- Substation located on the corner of Alfred Street and Harp Street. Refer attached SKC005 in Appendix A.

Energy Australia has informed that: *"The developer will be required to supply the distribution kiosk/substation, low voltage distribution cables and street lighting. The cost and method of supply for the development will depend on the final electrical load requirement. An application for Load Connection should be submitted to Energy Australia prior to making any financial commitments".*

Hyder has prepared proposed services plans which allows for new underground electricity lines within the subject site. Once approval is given an application for connection is made through a level 3 accredited electrical designer who will provide detailed design and construction documentation for Energy Australia's approval.

6.13.3 Gas

Existing gas network in the area consists of:

- 150mm (1050KPa - High Pressure) Secondary main in Harp Street; (current connection);
- 75mm (210KPa - Medium Pressure) main in Harp and Alfred Street;
- 75-50mm (low pressure) mains in Charlotte, Troy, Wade and Viking St. (not available for connection).

Elina Peters from Jemena (formally Alinta) Assets Management has indicated via email on 26 August 2008 that, depending on the final load; *"both high pressure and medium pressure gas supply can be made available to the site via the surrounding road network. This may require reinforcements to the existing network"*.

Jemena can provide associated costs once actual loads and consumers are identified. Subject to final demand Jemena may fund connection through a commercial arrangement.

Hyder has prepared proposed services plans which allows for new gas lines within the subject site. Once approval is given and actual loads and consumers are identified an application for connection is made through Jemena at which stage they will provide detailed design and construction documentation. Subject to final demand Jemena may fund connection through a commercial arrangement.

6.13.4 Telecommunications

Telecommunications Infrastructure in the area consists of:

- Optical fibre running along Canterbury Road. Refer attached SKC006 in Appendix A;
- Local cable running along Wade, Troy, Charlotte, Harp and Alfred Street. Local cable currently services the sunbeam warehouse from Troy Street. Refer attached SKC006 in Appendix A.

Soadad Doureihi from Telstra Area Planning has indicated via email on 26 August 2008 that, *"there will be sufficient telephony services at this development provided that the developer gives ample notice to Telstra regarding timeframes, number of living & commercial units, and road changes, etc"*.

Hyder has prepared proposed services plans which allows for new Telstra conduit within the subject site. Once approval is given an application for connection is made through Telstra Smart Communities at which stage they will provide detailed design and construction documentation. Telstra are obliged to supply telephony to new developments under a shared cost arrangement.

6.13.5 Waste Disposal

At present, the waste from the site is collected by Canterbury Council.

A Waste Management Plan has been prepared by JD Macdonald (**see Appendix 35**) which identifies and assesses the options for waste management and resource recovery for the proposed development during both the construction and operational phase.

During the construction phase, Building waste will be placed in bins located around the site and removed by a waste disposal contractor. Waste containers and storage areas will not be located in one centralised location but rather the Construction Contractor will allocate a waste are in the vicinity of the work area. This will allow easy access and encourage recycling.

Construction of the garbage area or garbage room is to meet all requirements set out in Canterbury City Council Codes, BCA and Australian Standards. Waste generation rates used are based on previous experience, industry standards and based on the large scale of the development.

In terms of operational waste, JD Macdonald recommends waste criteria at **Appendix 35** for the following:-

Residential & Child Care Facility Lot 3:

- General Waste
- Recycled Waste
- Paper & Cardboard:
- Co-mingled Recyclables:

Commercial Lot 1:

- General & Recyclable Waste

The Waste Management plan recommends that: *"the waste management system be monitored in the initial stages to ensure that sufficient bins have been provided to handle the waste generated. The bin numbers above are only an approximate and the number of bins provided and collection frequency will need to be monitored and adjusted to suit the needs of the individual tenants. Also, the bin size above is only a recommendation. Tenants may nominate an appropriate bin size to suit their needs".*

6.14 Consultation

There has been extensive consultation with the Council; at both staff and Council level, as to the future development of the site.

The proponent had a meeting with the Minister and Canterbury Council on 14 June 2007 wherein the details of proposal were discussed. At this preliminary meeting it was indicated by Council that, in principle, the proposal was supported. Subsequent consultations with Council were undertaken on 12 July 2007 and 16 July 2007.

Key Council personnel included:

- Mr. Robert Furollo - Mayor
- Mr. Jim Montague – General Manager
- Mr. Robert Davidson - Director of Planning

It is clear, as identified in the letter to the Department of Planning dated **28 September 2007** that in considering the initial proposal for the site, the Council confirmed their 'acceptance in principle'. It is understood that the application will be placed on public exhibition after the preparation of the Environmental Assessment and submissions will be invited for comment on the project.

The development of the concept plan was carried out in the context of the consultation undertaken by Parkview Sydney Developments as well as various consultants. Further post-lodgement consultation with government agencies has been coordinated by Hyder

Consulting (regarding all utilities) and Traffix (RTA). There is the opportunity for further consultation during the public exhibition of the Concept Plan.

6.15 Community Consultation

Elton Consulting was engaged by Parkview Sydney Developments to independently facilitate the community consultation sessions and compile a report (**Appendix 28**) on the community feedback that was received.

A community information and feedback session was held to provide the local residents and general public an overview of the proposed concept plans and to seek feedback on the plans. A notification of the session occurred via 2,200 flyers to the local community. The distribution catchment was bounded by Canterbury Road, Kingsgrove Road, William Street and Bexley Road.

The session was held from 6.00pm – 8.30pm 29 July 2008 in the former Sunbeam factory on site. The session was designed to allow members of the community the opportunity to view the background of the project, planning process and proposed concepts for the site. The session was well attended by the community who provided both verbal feedback on the night and written feedback through the forms provided.

The following outlines the key issues that were recorded by Elton Consulting during the session.

- *Many participants were positive about the proposed new village square and associated open space and local shopping;*
- *There were many older people who were positive about the introduction of a Seniors Living Zone. Some particularly liked the idea of the diversity of seniors housing, ranging from low to high needs housing options;*
- *Most people noted that the proposed medical and childcare centres are appropriate for the Site;*
- *Some noted that the bulky goods centre would help to provide local jobs;*
- *Some participants were positive about the design of the buildings, which are set back from the boundary. The proposed concept also incorporates many open spaces, which residents were positive about;*
- *The most frequently raised concern was the increase in traffic, particularly from the introduction of the bulky goods centre. Some residents were concerned that the long hours of trading would negatively impact on the quiet amenity of the area;*
- *Many participants discussed how the increase in traffic would impact their street and offered suggestions about how this impact could be reduced;*
- *Some attendees expressed concern about the proposed heights of the new buildings. One suggestion was to design all of the perimeter buildings to be limited to two or three storeys in height, to reduce shading and viewing impacts.*

The concerns were noted by the proponent and due regard has been given to these concerns during the design of the project. It is anticipated that the project will provide a positive effect to the local community by allowing for increased job opportunities, provision of community facilities (child care centre, public open space and seniors living) as well as convenience shopping in close proximity to where people live and work.

7. ENVIRONMENTAL ASSESSMENT –SUBDIVISION & ROADWORKS (INCLUDING SERVICES)

7.1 Subdivision design and identification of areas of Torrens title and strata title

The sub-division Plan, prepared by Dunlop Thorp confirms that the site will be divided into five (5) lots. The details of the subdivision are provided in **Appendix 6**, the details of which as provided by Dunlop Thorpe are as follows:

"The Torrens title subdivision provides for 5 development lots and new public roads to service those lots (to be dedicated to Council). Easements will be created where necessary to provide services such as the electricity as shown on the plans, but the sites of these easements will be clarified with the relevant public utility providers at the design stage.

Once the stormwater pipes are re routed some of the existing easements will become redundant and these easements will be released and recreated over the site of the new pipes if they run through private lands and not the public roads".

Proposed Lots
Lot 1 - Development Lot 1 – Project Application comprising bulky goods building.

Lot 2 - Development Lot 2 - comprising mixed use buildings C1; C2 and C3. The plan shows the subdivision of lot 2 into 4 stratum lots. Dunlop Thorpe describes the subdivision as follows:

"*The 4 proposed lots are based on the final use of the development, being retail, the residential component, the public reserve and the medical suites. These lots may then be further strata subdivided in the future to provide individual strata titles to the residential apartments, commercial areas or medical suites. It is still a Torrens title subdivision but as the lots 'overlap' it becomes a stratum type subdivision with a building management statement overseeing the operation of the subdivision.*

The carparking is included in the lot that it is allocated to, and easements will be created to provide, access, services to each part of the lots".

Lot 3 - Development Lot 3 – comprising a multiple unit housing building including a child care centre. Strata subdivision is sought for the 58 units consistent with the Architectural plans at **Appendix 30**. Detailed plans will be submitted prior to application for registration of the strata subdivision.

Lot 4 - Development Lot 4 - comprising residential buildings F1, F2; F3; F4; F5 and F6. Development Lot 4 will be subject to a future strata subdivision.

Lot 5 - Development Lot 5 - comprising seniors living buildings E1; E2 and E3. Development Lot 5 will be subject to a future strata subdivision.

Existing Easements:

- Drainage easement 1.83m wide and variable width
- Easement for stormwater channel 2.44m wide
- Easement for sewerage and stormwater purposed 6.095m wide and variable width

Proposed Easements

Easement for electrical purposes

An Easement for electrical purposes (k) are provided on future lots 2, 3, & 5.

Additional Easements

It is envisaged that the need for additional access and service easements will become apparent as the project develops.

7.2 Canterbury Council DCP 30– Subdivision of Land

Part 2 of the Canterbury DCP 30 Subdivision of Land details the requirements in relation to Subdivision and Engineering Standards.

The DCP requires that development consent be obtained for subdivision for all residential land within Canterbury Council. Assuming the site is appropriately zone, the purpose of this Plan is to establish objectives and standards for the subdivision of residential land to enable:-

(a) The orderly subdivision of residential land
(b) The development of land for residential uses
(c) The protection of the environment, and
(d) Equitable distribution of open spaces.

As such, Torrens title subdivision plans of the whole site have been prepared by Dunlop Thorpe. These plans identify the individual Lots as well as the public reserve shown as lot 23 in DP... (unknown at this time). Based on these plans together with the Lot 3 (Residential Building B) plans, prepared by Marchese architects, the proponent is seeking approval to proceed directly to application for registration of subdivision.

The DCP requires that easements for services are shown on the plans and created pursuant to the conditions of Section 88B of the Conveyancing Act. The proposed easements are shown on the plans at **Appendix 6.** In addition, the DCP requires engineering details for the new roads and drainage works which have been prepared by Hyder at **Appendix 14.**

The Environmental Assessment and attach Consultant Reports provides sufficient information to address the road network, site access, stormwater management, street planting and services.

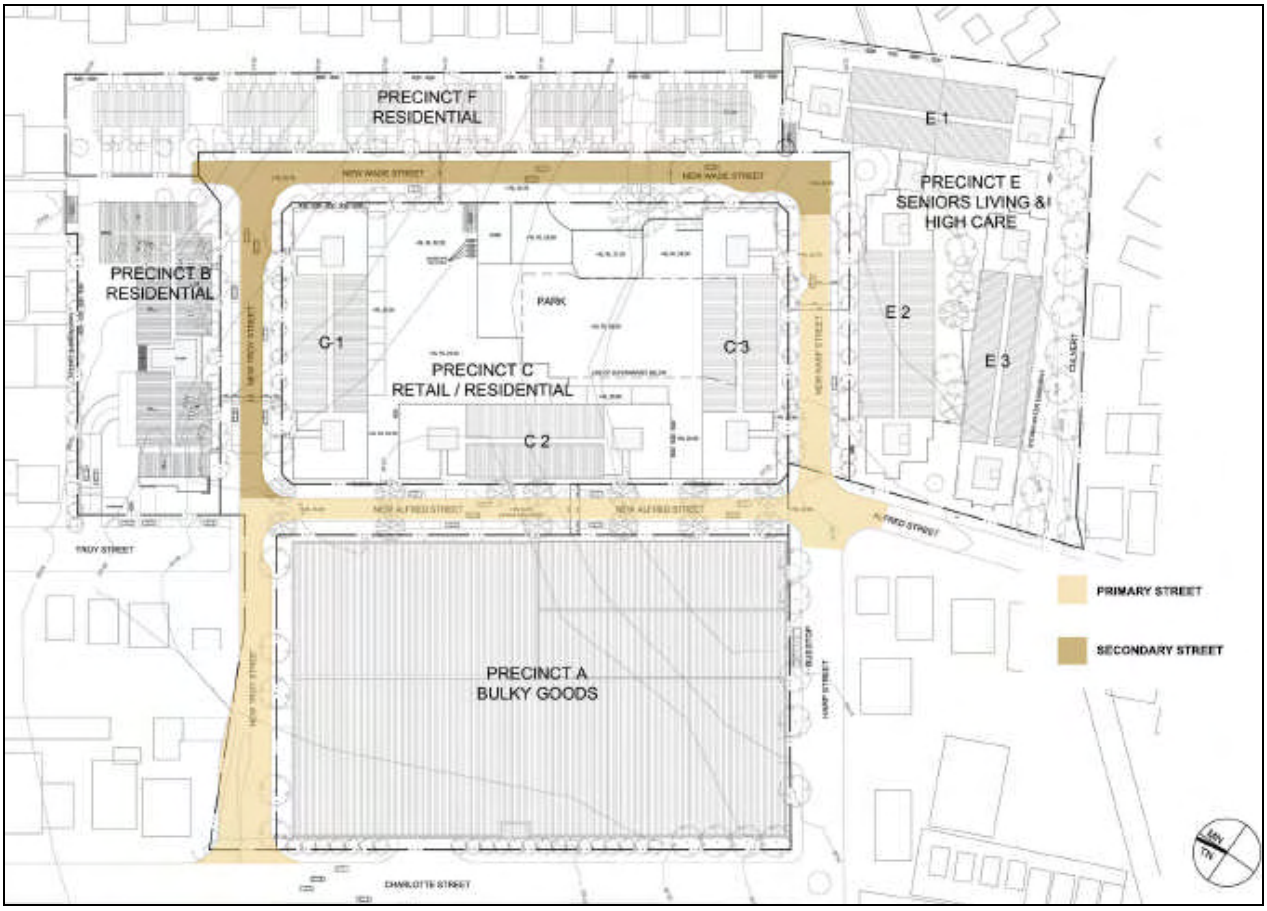

Figure 15 New Roads Source Marchese reproduced here

7.3 Roads and services

The area of the proposed roads is 9,451m² and contains the following facilities:

1. Proposed New Troy Street (variable width to 18m)
2. Proposed New Wade Street (15m wide)
3. Proposed New Harp Street (18m wide)
4. Proposed New Alfred street (15m wide)

Minor ancillary roadworks will be undertaken within these roads including intersection upgrades, kerb and central island realignments, signage and linemarking changes. Hyder has nominated the following works within their report (see **Appendix 14**):

- Road realignment/extension & closures;
- New roads
- External Intersections;
- Vertical and Horizontal geometry
- Pavement Design;
- Subgrade Preparation

A new road network (See Dunlop Thorpe Torrens Title Subdivision plans at **Appendix 6**) which includes New Troy Street, New Wade Street, New Harp Street and New Alfred Street (Proposed road widths, have been designed generally in accordance with advice from Traffix). Lane widths are 3.25m minimum and parking widths 2.5m minimum – See Hyder's Infrastructure report and plans at **Appendix 14**). Closure of Troy Lane (Troy Lane will be

realigned to form part of New Troy Street). Driveway crossings to two properties will be replaced.

The proposed Clemton Park Village will maintain the existing alignment of the following roads:

- Wade Street,
- Troy Street,
- Charlotte Street,
- Harp Street, and
- Alfred Street.

Troy Street and Wade Street are both local roads. Due to the sensitivity of local roads, limited access to the site is proposed from Troy Street and no access is proposed from Wade Street.

The proposed services for the project are indicated on the civil drawing prepared by Hyder at **Appendix 14**. The civil engineering aspects of these works are:

- Sedimentation and erosion control;
- Bulk earthworks;
- Horizontal and vertical road alignments,
- Stormwater drainage,
- Pavement types,
- Signage and line marking;
- Utilities

8. ENVIRONMENTAL ASSESSMENT – BUILDINGS A AND B

8.1 Building A – Lot 1

For description refer to Architectural plans at **Appendix 29** and **Section 4.2** of this EA also refer to Architectural plans and schedules at **Appendix 29** and **Table 6** for uses and floor space areas, heights etc.

8.1.1 The Suitability of the Site for Development

- *Site conditions*

The site includes factory and ancillary buildings which were vacated in August 2002 by the former Sunbeam Factory. The manufacturing operations of the Sunbeam Corporation (and its predecessors) took place on the site from 1954 until this date. Part of the site is currently occupied on a temporary lease basis by individual industrial operators. The site has a general fall from its northern corner southward to the Cup & Saucer Creek stormwater channel, which, subject to suitable design, do not inhibit development.

Existing vegetation is generally not significant and may either be retained where practicable or augmented with appropriate species as part of the landscape design. The site does not adjoin any environmentally sensitive land. Other site conditions such as drainage have been assessed elsewhere in this report as presenting no constraint to the development of the site.

- *Site dimensions*

The site is of a size suitable for the provision of landscaping, parking and access required for the nature of the building proposed. The future Lot 1 has an area of 14,037m², with site frontage of 93.1m and 150.4m respectively thus exceeding the 23m minimum requirement of **Clause 4.2 - Site Frontage** of **DCP No. 21.**

- *Utilities and Services*

The proposed development includes the provision of new services to Lot 1 (See Hyder drawings at **Appendix 14**). Service providers have confirmed that adequate bulk supply is available to cater for the new infrastructure/services network. Accordingly the site will be fully serviced by electricity, gas and other services to appropriately cater for the proposed use. It is considered that detailed servicing arrangements will be made at the construction certificate stage.

- ***Economic impact***

With regard to the surrounding bulky goods framework, MacroPlan expect the impacts upon the existing centres to be insignificant. While there are several major bulky goods retailers within 5 km and just beyond the trade area, in general turnover for this type of retail is significant comprised of a beyond trade area draw. The largest effects were experienced as follows:

- *"-13.2%: Canterbury Road*
- *-6,7%: Harvey Norman – Wiley Park*
- *-6,7 %: Harvey Norman – Punchbowl"*

Other spill off effects include:

- *"Increases in employment in the form of direct centre employment, indirect centre employment, direct construction employment and indirect construction employment*
- *Increased range of retail goods and services.*
- *Increased competition for supermarket spend*
- *Trade area expenditure retention.*
- *Contribution to council rates.*
- *Employment generating use of site that has been vacant for over 5 years".*

8.1.2 Building Design & Streetscape

Building A (Lot 1) has been designed by the Buchan Group (designers of the adjacent Hills Homemaker Centre) see plans at **Appendix 29.**

The Architect's Design Statement (at **Appendix 29**) an extract from that design statement follows below:

"The proposed bulky goods retail development at Lot1 60 Charlotte Street, Clemton Park is designed to reinforce the strength of the Campsie trading zone as a significant precinct and destination for bulky goods shoppers in the catchment area. The project allows for a wide range of commercial, trade, bulky goods retailers to be represented in the trading zone.

The proposed development is designed using the full benefit of the regular rectilinear shape of the site to provide efficient planning and circulation. The design follows the existing grades of the street to minimize the visual bulk and scale of the project. The design also provides the opportunity for service access to the trading levels, carpark and lobby entries using natural grades of the street.

The design provides the major entries and on-street retail shops with street seating area and creates a lifestyle based street environment along New Alfred Street in conjunction with the mixed used developments that are proposed opposite. The setback along Charlotte Street provides landscaping strip to compliment the building design and provide some visual screening to the loading dock and back of house.

The design complies with the Council DCP's and has been designed to meet the specialized loading, handling and display requirements of trade and bulky goods

retailing. The proposed development is designed to complement the adjacent mixed use residential projects as it uses similar scale and proportions in the massing of the building with similar materials, colors and assembly of components in order to define the building mass. The façade will be a composition of painted precast concrete and glass with a series of vertical elements to break the overall building length".

The Building has been designed with generous setbacks to ensure consistency with the street frontage of Charlotte Street with a setback of 3.94m to the site boundary and 8m to Charlotte Street kerb line. In addition, a landscaped area provided on the Charlotte Street frontage will provide visual screening both to and from the site. The careful use of building materials, generous setbacks and landscaping will ensure that the Building is consistent with the character of the street frontage.

At present, the site is occupied by a large 2-4 storey factory and ancillary buildings which were vacated in August 2002 by the former Sunbeam Factory. The existing factory building occupied more than 80% of the new proposed Lot 1 (bulky goods building) with a long continues façade with very little variation.

Photo 12: Existing continuous façade along Charlotte street

In order to reduce the perception of scale, the proposed building facades were carefully articulated so as not to dominate the streetscape by virtue of its bulk. The proposed building facades improve on the existing continuous wall plane by breaking it up into smaller areas to vary the elevation and provide visual interest. The facades of the buildings have been designed to respond primarily to internal/external functions (connection with street, lifestyle spaces, daylight, indoor-outdoor connectivity) and also to integrate the buildings into the local context with a considered balance of bulk and scale.

Building materials are reflective of place thereby ensuring that the proposal respects the character of the surrounding locality. The selection of materials and colour also reduces the visual bulk and improve articulation.

The proposed landscape plan (see Habitation plans at **Appendix 13**) largely maintains the street trees within Charlotte and Harp Streets whilst introducing additional boundary buffer planting to soften the bulk of the building and screen the mass from the street.

- ***Height of building***

The maximum building height is achieved at the eastern frontage with New Alfred Street (internal to the development) whilst the maximum height to the existing street frontage is achieved at the southern elevation (frontage to Harp Street) at 25.1m The proposed building does not directly adjoin residential or other sensitive land uses and as such its height creates no adverse impacts in terms of privacy or amenity. The shadow diagrams prepared by Marchese at **Appendix 11** demonstrate that there will be no adverse loss of sunlight to residential properties.

8.1.3 Landscaping and Tree Preservation

The landscape design integrates with and compliments the built form. The landscape design uses predominantly native plants to minimize watering. A storm water detention tank is proposed below the building and the stored water will be utilized for landscape watering. The landscape architects, Habitation, in their Design Statement (refer **Appendix 13**) describe their landscape design as follows:

"Pathways and landscaping were designed to facilitate access within the site and to reinforce the safety of pedestrians and vehicular movements on site. Variety in the landscape has been provided through the use of deciduous and evergreen plants. Trees and shrubs have been selected to provide summer shade, to improve privacy and to screen undesirable views. The vegetation used in the landscaping is a patchwork of colourful exotic, native indigenous and endemic plantings, which have been designed to reinforce the cultural evolution of the surrounding neighbourhood areas.

The streetscape character around Lot 1 has been maintained and strengthened through the retention of street trees and the addition of new trees".

8.1.4 Traffic and Transport

The building provides two levels of carpark, street trading, two trading levels and two levels of commercial premises. Each level has a major store proposed to anchor each end and these proposed anchors vary in size from approximately 2,000m² to 4,200m². The connecting mall between the anchors provides good planning flexibility to subdivide the leasable areas into trade retail and bulky goods stores of a range of sizes.

Car parking has been designed to comply with Canterbury Council DCP Car Parking. Public car parking access to the development will be provided off Harp Street into the carpark below the building. A second exit point will be provided off New Troy Street bringing vehicles back to the main road system at Charlotte Street.

The dock is accessed via Charlotte Street and is therefore physically separated from all light traffic. In addition, forward entry and exit movements are available to/from the driveway.

- ***Transport Context***

The report identifies that the site is currently has primary road frontages to Harp Street and Charlotte Street, while secondary accesses are also available at the southern end of Troy Street and Wade Street. These frontages have all been used historically for vehicular access to the site and continue to be used as significant site accesses. However, due to the sensitivity of Troy Street and Wade Street, which are both local roads, no access is proposed to either of these streets under the proposed development concept. This therefore results in a worst case scenario in that traffic impacts on Charlotte Street and Harp Street will be assessed at maximum levels. It would however be open to Council to permit limited access to these streets (perhaps for light vehicles associated with a small part of the development) but this would only be at Canterbury Council's discretion and is not relied upon.

Access will therefore only be available via Harp Street and Charlotte Street. Harp Street in turn provides access to Kingsgrove Road to the west of the site, while Charlotte Street provides the main access to Canterbury Road.

Traffix advises that the site is served by a local bus service, with direct services provided to the Sydney CBD, Rockdale, Bondi Junction, Bankstown, Drummoyne and Five Dock.

- ***Impact on local road system***

Existing road and traffic conditions, proposed design and relevant impacts associated with the development of Building A (Lot 1) are contained in the Traffic Report prepared by Traffix, appearing as **Appendix 20**.

> *"It can be seen from table 1 that the development will result in comparable traffic volumes during the weekday AM and PM peak periods as those that were associated with the previous use of the site by Sunbeam, with 2,500 staff and up to 600 veh/hr. In addition, the trips shown do not take account of any discount for the current traffic levels within the site associated with several tenancies. Finally, the volumes are only about 50% of future traffic volumes that arise from the overall site under the Concept Plan Application.*
>
> *Accordingly, assuming that the road system and other intersection improvements outlined in the Concept Plan traffic impact assessment are implemented, these volumes can be readily accommodated. The cumulative impacts associated with the overall site, including Lot 1, have been assessed in the Concept Plan application and are acceptable".*

- ***Vehicular Access***

In terms of vehicular access to and within the development site, Traffix (at **Appendix 20**) make the following assessment:

> *"The main vehicular access is onto Harp Street, via a combined entry and exit driveway. This will require a right turn storage bay to be linemarked within Harp Street to facilitate the right turn entry movement, with passing using the kerbside lane. Exits*

will also be available onto New Troy Street, via a ramp connecting to Basement Level 1. Vehicles can turn left or right on exit to provide a more efficient traffic distribution. Finally, the loading dock is provided with a separate driveway onto Charlotte Street, between New Troy Street and Harp Street. Sight distances at all driveways are excellent and in addition, all driveways incorporate visual splays in accordance with AS 2890.1 and AS 2890.2".

- ***Car parking***

The site is subject to the controls of Canterbury Council's Parking DCP No. 20 (Car Parking), although regard needs also to be given to the requirements of the RTA's Guideline as well as other surveybased assessments where these are of assistance. Specifically, the Director General's requirements seek to reduce parking as far as possible while promoting other (non-car) travel modes. This however needs to be balanced against the practical reality that some car-dependent uses (notably bulky goods uses) are car-dependent and need to provide sufficient parking to ensure that on-street demands do not occur, which would have amenity impacts.

Car parking has been provided for 701 car parking spaces which include 13 disabled spaces (representing 2% of the overall provision). A carparking schedule per use is provided below:

Table 17: Carparking schedule Lot 1

Lot	Use	Yield	Spaces Required	Spaces Proposed
1	Bulky goods	18,011m² GLFA	432	432
	Gym	1,244m²	60	60
	Specialty Retail	1,222m²	62	62
	Commercial	5,884m²	149	147
Total			**703**	**701**

Source: Traffix Appendix 20

The design of car parking, loading and other facilities will comply with the planning and engineering standards contained in DCP No. 20.

- ***Loading Dock***

All loading and delivery areas are provided on-site. The development incorporates a dedicated loading dock with capacity for 10 trucks, including three 19 metre long articulated truck spaces, three 12.5m HRV truck spaces, and 4 8.8m MRV truck spaces. The dock is accessed via Charlotte Street and is therefore physically separated from all light traffic. In addition, forward entry and exit movements are available to/from the driveway.

The loading docks proposed are designed in accordance with Australian Standard **AS 2890.2-1989, Off Street Parking - Part 2: Commercial vehicles facilities.** The use of loading and delivery areas will not conflict with the safe efficient circulation of pedestrians and other vehicles on-site and operate independently of other parking areas.

8.1.5 Pedestrian Access

The proposed development at 60 Charlotte Street is designed to provide safe, convenient and code-compliant access for people who are mobility impaired in accordance with the requirements of the Canterbury Council's "Making Access for All" policy guidelines. The proposed centre has car parking at the lower level and basement level. Parking for the mobility impaired is provided adjacent to the lift and travelator core at both parking levels. Please refer to the car parking schedule for the number of spaces provided at each level. The lifts provide access to and serve the Gym, Upper Level and Commercial premises on Level 2 and Level 3.

All floor levels are generally flat apart from the northern entry at New Alfred Street due to the existing site condition limiting the street RLs.

The main pedestrian street entry along New Alfred Street will transition from the council concrete footpath to concrete pavers selected for compliant surface texture and slip co-efficiency.

Car parking and amenities will be provided with the International Symbol of Access in locations clearly visible to people in both seated and standing positions and located against adequately contrasting backgrounds.

8.1.6 Stormwater Management and Quality

Existing drainage conditions, proposed design and relevant impacts associated with development are contained in the Civil Engineering Assessment prepared by Hyder Consulting at **Appendix 23**.

Hyder has addressed the issues of stormwater management within the project application Lot 1. A proposed stormwater system (as shown on the accompanying civil drawings) including a pit and pipe network and detention storages, has been developed.

Erosion and sediment control have been appropriately addressed within the Civil Engineering Assessment prepared by Hyder Consulting (See **Appendix 14**), as well as within the Construction Management Plan at **Appendix 36.**

8.1.7 Noise

A noise assessment report has been prepared by Acoustic Logic and is attached at **Appendix 17**. The noise report states that based on AS2107-2000 and AS3671-1989 a 45 dB(A) Leq,(15hr) noise level or assessment criteria would apply to the proposed commercial/retail development.

The noise report also states that "*For land use developments with the potential to create additional traffic on local roads the development should comply with the requirements detailed in the EPA Environmental Criteria for Road Traffic Noise (ECRTN)".*

Noise at the site has been measured and noise goals have been set in accordance with the requirements of the local council and relevant statutory/regulatory authorities. Accordingly, the noise for the Bulky Goods centre at the time of operation will need to meet these criteria.

8.1.8 Energy and Water Efficiency

There are no specific requirements at this stage of the assessment process for this building. Only the BCA Section J applies, and this is signed off at CC stage. Cundall has prepared a general assessment of glazing and envelope which showed that compliance could be achieved by performance glazing, reducing glazing or providing extra shading (see **Appendix 21**).

8.1.9 Security

The "Safer by Design" guidelines have been considered in this proposal (see CPTED assessment at **Appendix 19**). The building is long and rectangular with no re-entrant or hidden corners. The loading dock at the back of the bulky goods centre will be secured with gates after hours, the lower level and basement car park will be secured with gates and access to carpark will also be closed after hours. The whole site will have monitored video surveillance. Security guards will patrol the site during all trading hours. Lighting to the landscaped perimeter will also make for easy observation of the building surrounds from the perimeter roads during the day and at night.

8.1.10 Signage

The proposal allows for building and business identification signage zones as illustrated on the retail signage plan prepared by Buchan Group at **Appendix 29**.

The signage is designed to integrate with the overall building design. Signage areas/zones are shown on the façades. An assessment against SEPP 64 is attached at **Appendix 34.** Detailed signage will form part of future development applications once the tenants are known.

8.2 Building B – Lot 3

For description refer to Architectural plans at **Appendix 30** and **Section 4.2** of this EA also refer to Architectural plans and schedules at **Appendix 30** and **Table 6** for uses and floor space areas, heights etc.

8.2.1 The Suitability of the Site for Development

- ***Site conditions***

The site includes factory and ancillary buildings which were vacated in August 2002 by the former Sunbeam Factory. The manufacturing operations of the Sunbeam Corporation (and its predecessors) took place on the site from 1954 until this date. Part of the site is currently occupied on a temporary lease basis by individual industrial operators. The site has a general fall from its northern corner southward to the Cup & Saucer Creek stormwater channel, which, subject to suitable design, do not inhibit development

Existing vegetation is generally not significant and may either be retained where practicable or augmented with appropriate species as part of the landscape design. The site does not adjoin any environmentally sensitive land. Other site conditions such as drainage have been assessed elsewhere in this report as presenting no constraint to the development of the subject site.

The proposed land use is considered to be compatible within the context of the surrounding residential development. Given the similarity of the development in scale and built form to existing development in the area, the development is considered to contribute towards the quality and identity of the locality.

- ***Site dimensions***

The site is of a size suitable for the provision of landscaping, parking and access required for the nature of the building proposed. The future Lot 3 has an area of 4,009m². the irregular shaped allotments has frontage of 42.47m (east), 91.98m (New Troy street) 41.79m (Tory Street) 82.82 (sunbeam lane)**.**

- ***Utilities and Services***

The proposed development includes the provision of new services to Lot 3 (See Hyder drawings at **Appendix 14**). Service providers have confirmed that adequate bulk supply is available to cater for the new infrastructure/services network. Accordingly the site will be fully serviced by electricity, gas and other services to appropriately cater for the proposed use. It is considered that detailed servicing arrangements will be made at the construction certificate stage.

8.2.2 Building Design & Streetscape

Building A (Lot 1) has been designed by highly experienced architects the Marchese and Partners see plans at **Appendix 30.** A **multiple unit housing** pursuant to the SEPP has the meaning of *"…a building that comprises or includes:*

(a) 3 or more storeys (not including levels below ground level provided for car parking or storage, or both, that protrude less than 1.2 metres above ground level), and
(b) 4 or more self-contained dwellings (whether or not the building includes uses for other purposes, such as shops),
but does not include a Class 1a building or a Class 1b building under the Building Code of Australia".

Accordingly, the provisions of SEPP 65 apply to the subject site. The ten (10) design quality principles are outlined within the Architects SEPP 65 Design Verification Statement attached at **Appendix 31.**

The Building has been designed with generous setbacks. The proposed building has a setback of 6.9m to Troy Street which is greater than the adjoining residential building in order to ensure no adverse impact on the existing streetscape. In addition, the building is generally setback 7-17,5m from the north-western boundary. The child care centre is

setback approximately 29,5m from the nearest neighbour as a pedestrian pathway, Sunbeam Lane separates the site from the existing neighbouring dwellings.

The proposed building is a simple composition of forms that break up the linear scale of the building whilst creating an impression of a building added to over time. In order to reduce the perception of scale the proposed building facades were carefully articulated so as not to dominate existing and new streetscapes by virtue of its bulk. In addition, landscaped plantings provide visual screening both to and from the site. The careful use of building materials, generous setbacks and landscaping will ensure an attractive non-domineering building within the street.

Familiar palettes of materials, common to the area, such as face brick are proposed. Dividing the building into a number of linked elements with pitched roofs provides a transitional form from dwelling house to apartment building. Accordingly, building materials are reflective of place thereby ensuring that the proposal respects the character of the surrounding locality. The selection of materials and colour also reduces the visual bulk and improve articulation.

The proposed landscape plan (see Habitation plans at **Appendix 13**) introduces additional boundary buffer planting to soften the bulk of the building and screen the mass from the street.

- ***Height of building***

The maximum building height is 13m or 4 storeys. The building steps back from Sunbeam lane (closest residential land uses) as the wall height on this façade increases, in order to minimise visual bulk and allow for greater separation between buildings and thus alleviating privacy impacts and preserving the amenity of surrounding properties. The variation in roof design increases visual interest whilst breaking up the mass further. The shadow diagrams prepared by Marchese at **Appendix 11** demonstrate that the orientation of the building is such that there will be no adverse loss of sunlight to adjoining residential properties.

8.2.3 Landscaping and Tree Preservation

The landscape architects, Habitation, in their Design Statement (refer **Appendix 13**) describe their landscape design relating to Lot 3 as follows:

> *"Pathways and landscaping were designed to facilitate access within the site and to reinforce the safety of pedestrians and vehicular movements on site. Variety in the landscape has been provided through the use of deciduous and evergreen plants. Trees and shrubs have been selected to provide summer shade, to improve privacy and to screen undesirable views. The vegetation used in the landscaping is a patchwork of colourful exotic, native indigenous and endemic plantings, which have been designed to reinforce the cultural evolution of the surrounding neighbourhood areas.*
>
> *In regards to Lots 1 and 3, the landscape concept has addressed the requirements set out in the Child Care Centres DCP and the objectives of the Residential and Mixed Use Development sections of DCP 45. Planting around Lot 3 has taken into consideration*

screening, privacy, security and has been designed to compliment the architecture and address the surrounding laneway and streetscape environments".

8.2.4 Traffic and Transport

- ***Transport Context***

The report identifies that the site is currently has primary road frontages to Harp Street and Charlotte Street, while secondary accesses are also available at the southern end of Troy Street and Wade Street. These frontages have all been used historically for vehicular access to the site and continue to be used as significant site accesses. However, due to the sensitivity of Troy Street and Wade Street, which are both local roads, no access is proposed to either of these streets under the proposed development concept. This therefore results in a worst case scenario in that traffic impacts on Charlotte Street and Harp Street will be assessed at maximum levels. It would however be open to Council to permit limited access to these streets (perhaps for light vehicles associated with a small part of the development) but this would only be at Canterbury Council's discretion and is not relied upon.

Access to the existing site is currently available via driveways onto Harp Street, Charlotte Street, Troy Street and Wade Street. The Wade Street access is to be closed under the Concept Plan, while Troy Street is to be relied upon for access to Lot 3 (for predominantly residential uses) to preserve and protect its environmental amenity.

- ***Impact on local road system***

Existing road and traffic conditions, proposed design and relevant impacts associated with the development of Building B are contained in the Traffic Report prepared by Traffix, appearing as **Appendix 20**.

"The additional traffic equates to less than one additional movement through the intersection of Troy Street with Canterbury Road every minute. This can be readily accommodated and will create no impacts either in terms of the efficiency of this intersection; or the environmental amenity of Troy Street itself.

There will be less impacts during the day, an night time and on weekends when the child care centre will not be operational.

"Finally, the cumulative traffic impacts associated with the overall site, including Lot 3, has been assessed in the Concept Plan application and is acceptable. This also takes account of the proposal to remove Troy Lane and construct New Troy Street to connect with Charlotte Street. The existing Troy Street, at the site boundary, will be terminated as shown in the submitted plans. This will remove the ability of vehicles to use this route as a short cut, thereby preserving the amenity of existing residents in Troy Street. The minor inconvenience to existing Troy Street residents is considered to be outweighed by their enhanced amenity."

- ***Vehicular Access***

In terms of vehicular access to and within the development site, Traffix (at **Appendix 20**) make the following assessment:

"The development will make reliance on the developed road system as shown on the submitted Concept Plan documentation. Lot 3 will be accessed via Troy Street. This occurs via a single combined entry/exit driveway/ramp system with a width of 5500mm (kerb to kerb) and additional 300mm kerbs on both sides.

Sight distances at this driveway are excellent and Troy Street terminates to the immediate south of the site, so that traffic speeds will be very low.

The ramp gradients and widths comply fully with AS 28901 and the ramp access and internal manoeuvrability for critical spaces is shown in appendix 3. Parking spaces are a minimum of 2.5 metres wide and 5.4metres long with 5800mm wide aisles also in accordance with AS 2890.1.

Disabled parking spaces are 3.2 metres wide and 5.4 metres long, with a clear head height of 2300mm in all areas traversed and 2500mm within the spaces.
In summary, the internal design of the car park is acceptable and will provide a high standard of safety and efficiency".

- ***Car parking***

The site is subject to the controls of Canterbury Council's Parking DCP No. 20 (Car Parking), although regard needs also to be given to the requirements of the RTA's Guideline as well as other surveybased assessments where these are of assistance. Specifically, the Director General's requirements seek to reduce parking as far as possible while promoting other (non-car) travel modes.

A carparking schedule per use is provided below:

Table 18: Carparking schedule Lot 3

Lot	Use	Yield	Spaces Required	Spaces Proposed
3	Residential	58	74	74
	Visitors	58	12	5
	Disabled spaces			6
	Child Care	604m² 75 kids 15 staff	8	8
	Drop off and pick up		5	5
Total			94	93

Source: Traffix Appendix 20

The proposal provides for, 93 spaces this is considered satisfactory as peak residential visitor demands will occur outside the times of the operation of the child care centre. Hence, residential visitors will have access to 5 dedicated visitor spaces during the day; and 13

spaces during the evening and on weekends, which exceeds the 'nominal' requirement for 12 visitor spaces.

A total of 6 disabled spaces are provided for residents associated with the adaptable units (not all of whom will require parking) as well as for occasional visitors.

Regular servicing of the residential component of the development will relate to Council's garbage services, which will occur on-street adjacent to Troy Street, using the temporary garbage storage area that is provided.

A car wash bay is provided within the basement. This will be bunded and drained to avoid discharge into Council's stormwater system.

Council's DCP requires 1 space/5 units for residents and 1 space/10 units for visitors. With 58 units, the development requires 18 bicycle spaces (12 for residents and 6 for visitors). An additional 4 spaces are required for staff of the child care centre, resulting in a total requirement for 22 bicycle spaces. In response, 16 spaces are available within the basement within a central storage area for use by staff and residents; while the 6 visitor spaces would be more appropriately located at ground level, which can be the subject of a condition.

8.2.5 Pedestrian Access

The proposal provided safe, convenient and compliant access for people who are mobility impaired. All floor levels are flat and have no changes of level within each floor plate. Therefore there is no requirement for ramps.

The development and parking areas have been designed in accordance with **Australian Standard AS1428.1-1998** in relation to access and facilities for all persons. The applicant is aware of its responsibilities to comply with the requirements of the Federal Disability Discrimination Act.

8.2.6 Stormwater Management and Quality

Existing drainage conditions, proposed design and relevant impacts associated with development are contained in the Civil Engineering Assessment prepared by Hyder Consulting at **Appendix 23**.

Hyder has addressed the issues of stormwater management within the project application Lot 1. A proposed stormwater system (as shown on the accompanying civil drawings) including a pit and pipe network and detention storages, has been developed.

Erosion and sediment control have been appropriately addressed within the Civil Engineering Assessment prepared by Hyder Consulting (See **Appendix 14**), as well as within the Construction Management Plan at **Appendix 36.**

8.2.7 Noise

The proposed residential use will not generate offensive noise pollution or vibration. The proposed childcare centre is located on the Ground Level of Building B. The child care

facility would consist of an internal and external areas catering for up to a total of 75 children.

The noise report at **Appendix 17** states that the nearest affected residential occupancy would be located directly above the childcare centre within the proposed Clemton Park development. Compliance at this location would represent compliance at all other receivers.

In this respect it is noted that there is no specific noise emission objective for Child Care Centres set out in local council criteria. Generally the EPA guidelines, such as the Industrial Noise Policy and the Noise Control Manual can be used to determine noise emission objectives.

The noise report prepared by Acoustic logic at **Appendix 17** states *"that the general guideline for assessing noise emissions at residential receivers in the Industrial Noise Policy is that noise emissions are not to exceed the background noise level by more than 5dB(A) Leq. The analysis showed that noise associated with the operation of the proposed child care within the Clemton Park development at the potentially worst affected residential properties would comply with recommended criteria with minimum acoustic treatments"*.

The noise report also recommends management and acoustic treatment control strategies which will be required to control noise generation within the proposed child care centre to ensure compliance with the identified criteria and to ensure that amenity to surrounding properties are maintained. These are not limited, to the following:-

- *"Limit periods that children are allowed access to the external area. Time limits should be coordinated to ensure minimum impact on residence above, ie external area not in operation after 6pm.*
- *Limitation of the number of children using the external area at any one time.*
- *Continuous monitoring of children activities within the external play area.*
- *Keep external façade closed and install upgraded single* glazing with acoustic seals.
- *Install automatic door closers to external doors"*.

The report concludes that:

"The potential impact of noise emissions has been assessed based on noise objectives determined using EPA and previously agreed noise criteria within the Land and Environment Court.

Noise emissions from the proposed child care centre will comply with presented criteria provided acoustic treatments and management controls indicated in Section 5 of this report are adopted".

8.2.8 Energy and Water Efficiency

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (BASIX) was gazetted on 25 June 2004 and became applicable to multi-unit housing on 1 October 2005.

BASIX, a mandatory self-assessing Building Sustainability Index promoting sustainable residential development. The BASIX SEPP provides an overriding instrument setting standard objectives to ensure compliance with prescribed sustainability targets for reducing mains-supplied potable water consumption, for reducing greenhouse gas emissions and for improving the thermal performance of developments.

In accordance with the Environmental Planning and Assessment Regulation 2000, a BASIX certificate has been prepared by Cundall and is attached at **Appendix 33**.

8.2.9 Security

The "Safer by Design" guidelines have been considered in this proposal (See CPTED assessment at **Appendix 19**). The residential building will be access by electronic security devices at the vehicle entry point and the two residential entry lobbies on New Troy Street Building. Access to the car park and lobbies will be controlled electronically by the occupants. Private courtyards adjacent to the common areas are secured with fences and lockable gates. The common areas are to be well lit, with clearly defined paths Car park areas are to be well lit and lifts will have security control and close circuit television cameras.

9. CONCLUSION

9.1 Based on this Environmental Assessment, it is considered that the proposed Concept Plan Application and concurrent Project Application/s at No. 60 Charlotte Street, Clemton Park is consistent with all local regional and State planning objectives.

9.2 This project not only provides for employment at a rate consistent with the existing zoning and previous use of the site but also creates a new local "village centre" with some 303 new dwellings, approximately 176 aged care beds/units with convenience retail services to satisfy existing and future demands, as well as child care facilities and public open space over and above that which might be anticipated from the current zoning. It is thus consistent with the existing land use mix and the future desires of the Metropolitan Strategy.

9.3 The proposed development has been designed to ensure that quality accommodation is being provided which respects the existing character and form of the area. This has been achieved through careful orientation of buildings, generous setbacks, a variety of building heights and careful landscaping. This will therefore result in the provision of quality accommodation currently lacking in Canterbury Council area, whilst also generating significant economic benefits both during the development phase and the operational phase of the project.

9.4 The potential environmental impacts identified at **Sections 6, 7 and 8** of this report, are able to be effectively ameliorated by the mitigation measures recommended within the various consultant reports that have informed this report and are incorporated into the statement of commitments. This EA concludes that subject to the mitigation measures (including Statement of Commitments in **Appendix 38**) any significant adverse impacts would be managed and mitigated to the satisfaction of the Minister as the consent authority.

9.5 It is considered that the concept plan contemplates a form of development that will achieve the objects of the EP&A Act. In particular, the proposal represents "orderly and economic use and development of land" and provides the opportunity for additional employment generating uses.

9.6 A single application was lodged and approval is sought for the Concept Plan for the total project and approval to carry out those parts/aspects of the project defined as "Project Application/s" (Section 75M(3A). We submit that there is sufficient detail in relation to the aforementioned "Project Application/s" to enable the Minister pursuant to S75P(1) to approve the project and pursuant to **S75P(1)(c)** not require any further applications, assessments or determinations in relation to the "Project Application/s"

APPENDIX 1

CONCEPT PLAN
AUTHORISATION LETTER FROM DOP

APPENDIX 2

DIRECTOR GENERAL REQUIREMENTS

APPENDIX 3

SECTION 149(2) & (5) CERTIFICATE

APPENDIX 4

EXISTING SITE SURVEY

Prepared by Dunlop Thorpe

APPENDIX 5

SITE ANALYSIS PLAN

Prepared by Marchese & Partners

APPENDIX 6

SUBDIVISION PLANS

Prepared by Dunlop Thorpe

APPENDIX 7

STAGING PLANS

Prepared by Marchese & Partners

APPENDIX 8

ARCHITECTURAL PLAN - CONCEPT PLAN

Prepared by Marchese & Partners

APPENDIX 9

CONCEPT PLAN - HEIGHT STUDY

Prepared by Marchese & Partners

APPENDIX 10

CONCEPT PLAN - VIEW ANALYSIS

Prepared by Marchese & Partners

APPENDIX 11

CONCEPT PLAN – SHADOW DIAGRAMS

Prepared by Marchese & Partners

APPENDIX 12

CONCEPT PLAN – MASSING MODEL

Prepared by Marchese & Partners

APPENDIX 13

LANDSCAPE CONCEPT PLAN & STATEMENT

Prepared by Habitation

APPENDIX 14

INFRASTRUCTURE PROVISIONS PLAN

Prepared by Hyder

APPENDIX 15

QS COST ESTIMATE

Prepared by WT Partners

APPENDIX 16

DRAFT VOLUNTARY PLANNING AGREEMENT

Prepared by Maddocks

APPENDIX 17

NOISE IMPACT ASSESSMENT

Prepared by Acoustic Logic

APPENDIX 18

WIND STATEMENT

Prepared by Windtech

APPENDIX 19

CPTED

Prepared by PWA

APPENDIX 20

TRANSPORT AND ACCESSIBILITY STUDY

Prepared by Traffix

APPENDIX 21

ESD REPORT

Prepared by Cundall

APPENDIX 22

CONTAMINATION REPORT & REMEDIATION PROPOSAL

Prepared by URS and APP

APPENDIX 23

STORMWATER AND FLOOD MANAGEMENT REPORT

Prepared by Hyder

APPENDIX 24

EXISTING UTILITIES REPORT & PLANS

Prepared by Hyder

APPENDIX 25

HERITAGE SITE ASSESSMENT

Prepared by PWA

APPENDIX 26

RETAIL/ BULKY GOODS IMPACT ASSESSMENT

Prepared by Macroplan

APPENDIX 27

DRAFT SUB REGIONAL STRATEGY

Prepared by PWA

APPENDIX 28

COMMUNITY CONSULTATION

Prepared by Elton Consulting

APPENDIX 29

ARCHITECTURAL PLANS – PROJECT APPLICATION LOT 1

Prepared by Buchan Group

APPENDIX 30

ARCHITECTURAL PLANS - PROJECT APPLICATION LOT 3

Prepared by Marchese & Partners

APPENDIX 31

"CLEMTON PARK VILLAGE" DEVELOPMENT DESIGN STATEMENT – LOT 3

Prepared by Marchese & Partners

APPENDIX 32

SEPP 65 RESIDENTIAL FLAT CODE: LOT 3

Prepared by Marchese & Partners

APPENDIX 33

BASIX CERTIFICATE FOR PROJECT APPLICATION LOT 3

Prepared by Cundall

APPENDIX 34

SEPP 64 ASSESSMENT TABLE

Prepared by PWA

APPENDIX 35

WASTE MANAGEMENT PLAN

Prepared by DJ Macdonald

APPENDIX 36

CONSTRUCTION MANAGEMENT PLAN

Prepared by DavidsGroup

APPENDIX 37

CANTERBURY COUNCIL DCP COMPLIANCE TABLES

Prepared by PWA

APPENDIX 38

DRAFT STATEMENT OF COMMITMENTS