



# KIRRAWEE BRICK PIT



Henroth Investments Pty Ltd  
**PREFERRED PROJECT REPORT**  
October 2011

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We acknowledge the contribution of Woodhead Architects, Site Image (Landscape Architects) and Podgroup for montages.

Date: **October 2011**



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# 1.0 INTRODUCTION



## I.0 INTRODUCTION

GM Urban Design & Architecture (GMU) have been engaged by Henroth Investments Pty Ltd to provide urban design advice for the mixed use redevelopment at 566-594 Princes Highway Kirrawee, otherwise known as the former Kirrawee Brick Pit (Reference MP 10\_0076).

The application seeks approval for a mixed use development comprising residential, retail and commercial uses and building envelopes of between 4 and 14 storeys above podium level. The proposal also involves basement car parking, landscaping, services and the provision of a major new public park. The plan presented for the site as part of this report is intended to provide a comprehensive description of the urban design outcomes and principles sought by the proposal in the subsequent stages of the project.

This report documents a number of changes to the Concept Plan as part of the Preferred Project Report (PPR) and addresses a number of issues raised by the Department of Planning and Infrastructure (DoP) and submissions as part of the Part 3A approval process, in accordance with section 75H of the Environmental Protection and Assessment Act of 1979.

This report is based on the Urban Design Report that was submitted in support of the application for Concept Plan approval which specifically addressed issues (3, 4, 5 and 6) detailed in the Director General's Requirements (DGRs) issued by the Department of Planning on 24 August 2010. This report has been prepared to outline the key elements of the amended Concept Plan for the entire site and to consider how the urban design outcomes of the plan meet the Council's requirements, codes and objectives as well as issues raised by the DoP and the DGRs.

The Kirrawee Brick Pit site is in the ownership of the Henroth Investments Pty Ltd. The site has an area of approximately 42,542 sqm and is bounded by the Princes Highway to the north, Oak Road to the west and Flora Street to the south.

Over past years the site has been the subject of numerous studies, consultation and recently, amendments to Council's controls. The size, location, exposure and single ownership of the site makes it a significant opportunity for revitalisation in Kirrawee and the area generally. As such it offers the potential to initiate the revitalization of Kirrawee.

Henroth Investments Pty Ltd has put together a highly skilled consultant team to assist in realizing a high quality outcome for the former Brick Pit site. This proposal considers community expectations, Council objectives, the Metro and Sub Regional Strategy goals to deliver the highest and best use for the site and reinforcing Council's and the State Government's vision for the area.



View of the Kirrawee Brick Pit site from Flora Street looking north

## 1.0 INTRODUCTION

The response from the Department of Planning as provided on 24th August 2010 outlines the most significant DGRs with relation to built form and urban design.

These are:

- *The EA shall address how the proposal will relate to Kirrawee village centre and the adjacent employment land to the north*
- *The EA must demonstrate the proposal will achieve a high standard of urban design / design excellence.*
- *The EA shall address the height, bulk, scale and visual impact of the future character contemplated by local planning controls.*
- *Detailed envelope/height and contextual studies should be undertaken to ensure the proposal integrates with and is appropriate for the surrounding environment. Particular attention shall also be given to the siting and layout of the proposed building envelopes.*
- *Analysis of how the proposed built form, siting, level and arrangement of retail and commercial space will integrate with future retail and commercial development within Zone 7 Mixed-Use- Kirrawee, particularly along Flora Street and the Princes Highway.*
- *The EA shall also provide the following:*
  - *Comparable height study to demonstrate how the proposed height relates to the height of the existing/approved developments surrounding the subject site;*
  - *Options for the siting and layout of the building enveloped; and*
  - *View analysis to and from the site from key vantage points.*
  - *The EA must provide details on type, function and landscape character of the proposed areas of public/private open space.*
  - *The EA shall provide details on the interface between the proposed uses and public domain, and the relationship to and impact upon the existing public domain spaces. Particular consideration of Kirrawee town centre should be documented.*
  - *The EA must address solar access, acoustic and visual privacy, view loss, overshadowing and microclimate issues such as wind that may be generated around tall buildings and identify mitigation measures necessary to achieve a high level of environmental and residential amenity.*
  - *The EA must address the design principles of SEPP 65 and the Residential Flat Design Code.*

These DGRs listed above have been addressed through the general discussion in various subsequent sections within this report. As this is a Concept Plan rather than a full Development Application these requirements have been discussed at a level appropriate to a concept.

The comments received by the DoPI on their letter dated 14/04/2011 outline the most significant issues raised with regard to urban design. Each of the issues has been addressed through a number of changes to the concept design are discussed through the various sections of this report. A list of each of the issues (*in italics*) and a brief response outlining the way in which each of the issues has been addressed is provided immediately below.

These issues and responses are:

*“Due to the scale of the proposal, the Department considers that a minimum of three independent architects should be engaged to design the various individual buildings in particular each of the tall central towers should be designed by a different architect”.*

- While the design strategy has been provided by the scheme architects (Woodhead), it is envisioned that the detail design (DA Stage) of each of the building components can be undertaken by different architects providing an individual response and interpretation to the overall design concept for the site. The idea is that the forms of the towers although designed by different architects should reflect diversity within an overall family of sculptural forms. Details of the overall concept are discussed in Chapter 7 - Urban Design Review. Please refer to Principle 10 - Aesthetics.

*The Department also raised a concern regarding “the height of the proposed central towers, particularly Block A suggesting a reduction in the overall height of the proposed central towers. The PPR should also provide further justification of the proposed height of the central towers with regard to Council policy and the Metropolitan Plan for Sydney 2036”.*

- A reduction in height, mass and built form has been achieved; however the taller forms concentrated to the centre of the site remain as place markers for the site without creating negative impacts to the surrounding area. The changes in height are as follows:
  - Block A - 6-14 storeys including podium with upper floors as greatly reduced footprints to articulate the top of the building
  - Block B - 7-11 storeys including podium with upper floors as greatly reduced footprints to articulate the top of the building
- The amendments listed above have achieved a significant reduction in built form, height and mass also improving any potential visual impacts on the surroundings. Please refer to the architectural drawings by Woodhead and Chapter 6 - Built Form of this report containing the sections dealing with Massing, Height and Separation as well the Visual Impact Analysis.
- Kirrawee is a important support area to Sutherland which is quite constrained in terms of areas for potential growth. Kirrawee offers the opportunity to assist Sutherland in strengthening its role as a town centre or major centre servicing this part of the LGA and therefore Kirrawee should be allowed to experience additional

## I.0 INTRODUCTION

height due to the number of jobs, proximity to job hubs and other important centres as well as its location within the enterprise corridor and proximity to the railway station. An overview of the Metro Strategy 2036 and Draft South Sub-regional Strategy's vision for this part of the LGA as well as the objectives of the planning controls are discussed in Chapters 2, 3 and 5 of this report.

A concern was raised regarding *“the length of the proposed building envelopes fronting Flora Street. Consideration should be given to reducing / splitting the building envelopes to reduce built form and provide greater articulation.”*

- Reductions to the length of the buildings along Flora Street have achieved a better relationship to the existing grain across the street. Please refer to Chapter 7.

The Department also requested that *“the location of the residential entry lobbies to Blocks B and C be clarified. Lobbies should be provided from local streets or the public plaza areas and should be easily accessible and well defined”*.

- Further amendments to the articulation of Blocks D1 and D2 allows for a residential entry point and street address for Blocks B and C increasing the activation of Flora Street and allowing for an entry lobby and address for both of these blocks from Flora Street. Please refer to the Vehicle and pedestrian network diagram in Chapter 6 and the comment on Principle 8 in Chapter 7 of this report.

*“The proposal shall clearly demonstrate that all exterior elevations of the retail floor space have activated frontages”*.

- The ground level public domain, the northern linking street and the pedestrian link through the retail areas will all have active edges and frontages onto them from the proposed retail uses, in order to provide a level of surveillance and activation during shopping hours. After hours, shops will shed light and provide an interface onto the public domain. These areas will be further overlooked by residential uses above ground level. Please refer to the activation diagrams in Chapter 6 - Options and Design Strategies.

The Department also requested that *“additional details of the treatment and finishes proposed for building elevations fronting Flora Street and the Princes Highway should be submitted for consideration.”*

- Character images and details of the overall concept for treatments and finishes are discussed in Chapter 7 - Urban Design Review. Please refer in particular to Principle 10 - Aesthetics.

*“The proposal shall demonstrate that the building envelopes fronting the Princes Highway are sufficiently set back to provide an adequate buffer from the Highway”*.

- The final boundary line to the northern edge along the Princes Highway will be determined once the final design for the deceleration lane and the road dedication is finalized. The proposal will provide a minimum setback to the residential uses for

improved amenity and separation from the highway (building line excluding balconies and private open spaces) in the order of 10 meters from the boundary line which is yet to be determined. Please refer to the architectural drawings and to Chapter 6 - Built Form section: Massing, Height and Separation.

*“Given the scale of the residential component of the proposal, the Concept Plan must demonstrate how individual residential buildings can achieve compliance with the SEPP 65, and particularly the Residential Flat Design Code guidelines.”*

- As a Concept Plan, the buildings have not yet been designed, however the envelopes have the potential to maximize their orientation and benefit from northerly aspect and cross ventilation. The apartments have the potential to achieve appropriate visual and acoustic privacy, separation distances and solar access. Please refer to Chapter 7 - Point 5 (Review against the SSDCP) within this report and the report by Steve King on the proposal's cross ventilation and solar access performance.

The Department also required detailed information on the following sub-points:

- *How proposed Buildings C and D can comply with the solar access requirements at midwinter;*

Most proposed buildings achieve effective solar access except for Blocks C and D2 along Flora Street which are least favoured by location being subject to overshadowing by the proposed buildings to the north. However, both of these buildings can be designed to achieve a minimum of 70% of apartments with effective winter sun. Please refer to the report by Steve King on the proposal's overshadowing and cross ventilation analysis.

- *That a minimum of 60% of apartments within each residential building are naturally cross ventilated;*

The Overshadowing and Cross Ventilation analysis by Mr Steve King, “confirms that the 60% target has been met”. Please refer to his Summary Expert Opinion dated 21 August 2011.

- *That the depth of the proposed building envelopes will support a high level of residential amenity for future occupants*

Amendments to the overall bulk and scale of the central taller blocks have seen a reduction in the overall depth from 26m to an average of 14 meters wall to wall. An increase in depth to 21m is introduced in very specific locations around the stair and elevator cores to allow for vertical circulation, but maintaining the same unit depths as in the rest of the building. This in combination with dual aspect and corner units as well as the overall orientation of the buildings would ensure high amenity and adequate solar access and natural ventilation. Please refer to Item 5 of the Review Against the SSDCP in Chapter 7.



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- *That less than 10% of all units within each residential building are south-facing.*

According to the architect's revised area schedule, Blocks A and B contain no south facing units and the rest of the blocks range between 7% and 8% with a maximum of 9% for Blocks C, F and H only. This is below the RFDC 10% maximum requirement. Please refer to Item 5 of the Review Against the SSDCP in Chapter 7 of this report and the Architect's Area Schedule in the planning report.

- *Building separation between Buildings E and D is consistent with the RFDC requirements*

The separation distance between Buildings E and D is approximately 10.3m. The distance between Block D1 and D2 presents a similar condition (10.2m) after the length of Block D was divided into two separate segments in order to provide a better built response to Flora Street. According to the RFDC the required distance between habitable/balcony spaces and non-habitable rooms is 9m for buildings up to 12m. Therefore both of these conditions meet the RFDC separation requirement. High windows, north to south outlooks and screening devices can ensure privacy and outlook requirements are met. Please refer to the Building Separation diagram and the section on Built Form (Massing, Height and Separation) in Chapter 6.

Please note that issues with regard to traffic, Voluntary Planning Agreement (VPA), environmental and ecological issues, etc will be addressed in separate reports by the pertinent consultants.

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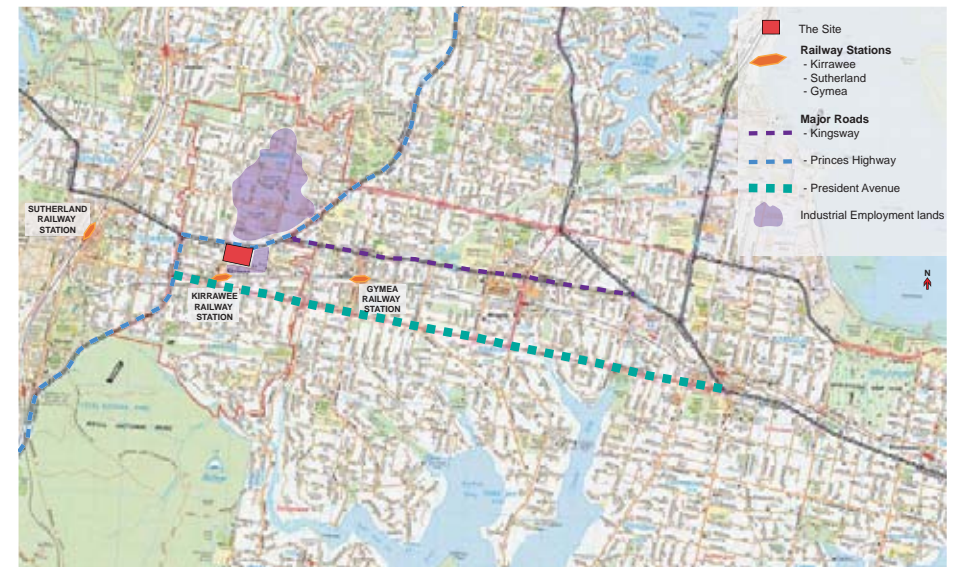
## **2.0 REGIONAL CONTEXT**

## 2.0 REGIONAL CONTEXT AND METRO STRATEGY

To appreciate the opportunities for the Brick Pit Site it is important to consider the regional context of Kirrawee and the site itself.

### 1.1 Regional Context:

- The site forms the north eastern edge of the Kirrawee Centre.
- Kirrawee is located within the Sutherland Shire of Sydney, approximately 26 km south-west of the Sydney CBD.
- Kirrawee is situated between Sutherland Town Centre and Gymea with Miranda to the east and Jannali to the north west.
- Kirrawee has direct access to a number of major road systems including the Princes Highway which links to the CBD and airport as well as to Wollongong to the south, Menai Road which connects to Alford Points Road and the western and north western areas of Sydney and the Kingsway which services the eastern portion of the peninsula.
- Public transport links are provided by various railway stations along the Cronulla line including Sutherland, Kirrawee and Gymea Stations. Kirrawee is however the closest railway station to the industrial areas as well as providing commuter parking for residents wishing to access the City or Sutherland.
- There are bus services to the City which run along the Princes Highway.
- To the immediate north of the Brick Pit site on the other side of the Princes Highway are various industrial estates and developments. This area creates a major employment node for the locality with employees using both public transport and vehicles to access their work locations.
- Currently the majority of the Kirrawee area comprises of residential and industrial uses with numerous local high and primary schools, golf courses and the Southern Sydney Institute of TAFE.
- The site is in close proximity to the Royal National Park and Gymea Bay which offer excellent recreational opportunities.
- The locality benefits from excellent connection to major road links, public transport links, proximity to regional/ local open space and recreational areas as well as good proximity to the Town Centre of Sutherland and its rail line connections.



Regional Context for Kirrawee and the Brick Pit site (courtesy Department of Lands)



## 2.0 REGIONAL CONTEXT AND METRO STRATEGY

### 1.2 Metro Strategy

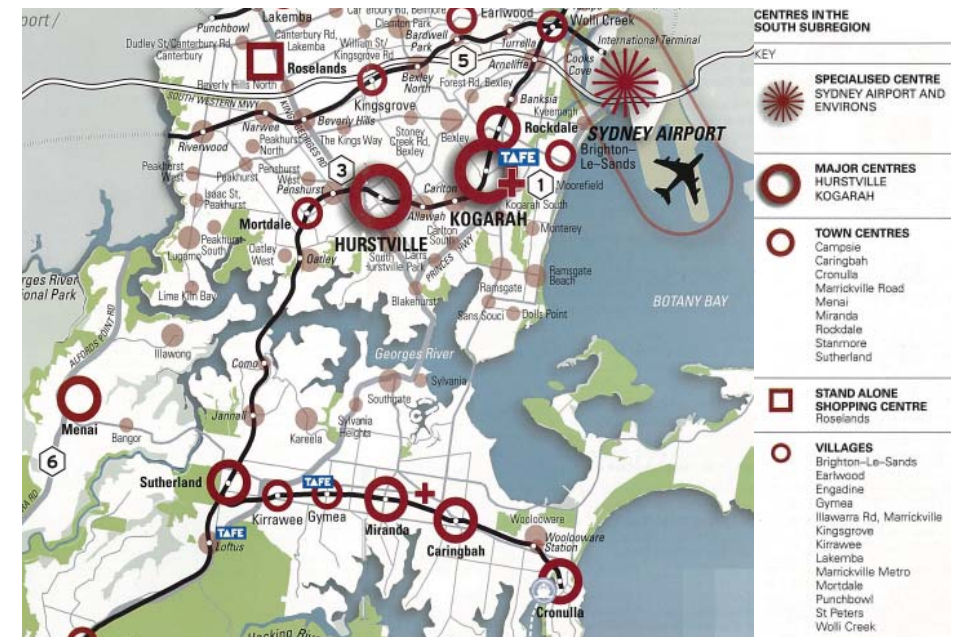
- Under the Metro Strategy the Sutherland Area has been broadly identified although Kirrawee has not been classified.
- The Metro Strategy identifies Sutherland as a planned Major Centre. However there are limitations on the potential for Sutherland to expand due to the fragmented land ownership and various sports clubs, schools and colleges and the highway.
- The rail line contains the western edge of the Centre so expansion would either require acquisition of the school lands or over rail development to link to the western side. The western side is also constrained by the Woronora Cemetery.
- The Metro Strategy considers areas for employment and housing as well as the locations for intensification around existing Centres.
- For the area around Sutherland the Metro Strategy has identified a major employment area as the industrial lands immediately to the north of the Kirrawee Centre.
- The strategy encourages the expansion of these employment lands to the north east to link up with the larger industrial areas at Taren Point in Caringbah.
- Employment uses in this area are targeted for manufacturing, telecom and computing industries.
- The employment corridor does not include the Kirrawee Centre or the small pocket of industrial land adjacent to the Brick Pit site.
- However the proximity of the Kirrawee Railway Station relative to the industrial area means that it has the potential to service the employment zone if appropriate measures are put in place to facilitate safe pedestrian movement and sufficient facilities are provided within the Kirrawee Centre.
- Under the Metro Strategy the Princes Highway qualifies as an enterprise corridor.
- This role is further reinforced by the Highway's proximity to the south and east of the existing industrial area.
- The uses that will occur along such a corridor further reinforce the area as linking to a major employment node requiring improved facilities.

### 1.3 Draft South Subregional Strategy

- The draft South Sub Regional Strategy provides additional detail to supplement the Metro Strategy for the future development on the southern region of Sydney.
- The strategy identifies key directions for Sydney's South as:
  - Retaining strategic employment lands - the restricted opportunities to provide additional jobs require employment lands are to be retained.
  - Ensuring that key sites with good access to the Princes Highway and other major road and rail infrastructure are retained for residential support services, light industry and more intensive employment land use opportunities. This will minimise the need for residents to travel outside the Subregion for employment opportunities.
  - Ensuring an adequate supply of employment land is identified within Centres and other specialised employment/industrial lands to accommodate the projected new jobs growth.
  - Identifying key bus corridors to service Miranda as a focal point.
- Under the Sub Regional Strategy Sutherland, Miranda, Caringbah and Cronulla have been identified as town centres.
- Although Sutherland Town Centre is shown currently as a town centre it also has the opportunity to become a Potential Major Centre.
- Unlike the Metro Strategy the Sub Regional Strategy identifies the issues with Sutherland and its potential conflict with the Centres of Caringbah - Miranda.
- The strategy identifies that whilst Sutherland is the local administration centre it is not strong in retail, health or employment services, which will affect its ability to meet Major Centre Status.
- Kirrawee, Engadine and Gymea have currently been identified as Villages. All three appear to have a different amount of retail within the Centres - for instance Engadine contains Engadine Court which has Franklins as its major tenant and there is also a Woolworths and a free standing Coles as well.
- On this basis it is arguable that the inclusion of a supermarket based centre would be compatible with the 'village' status under the Draft Sub-regional Strategy and should be considered for Kirrawee.
- The Centres and Corridors section of the strategy identify that some centres may change significantly e.g. a village may grow into a town centre as surrounding areas undergo renewal and residential density increases to provide for changing demographics. Kirrawee is ideally placed relative to Sutherland to provide additional density and services to support the Major Centre Status.

## 2.0 REGIONAL CONTEXT AND METRO STRATEGY

- The description for villages is 'a strip of shops and surrounding residential area within a 5-10 minute walk and usually containing a hairdresser, small supermarket, take-away food shop and having between 2,100 - 5,500 dwellings' (Excerpt from Draft South Sub Regional Strategy).
- Not only Engadine but also Kirrawee (when considered with the potential of the Brick Pit site) is at odds with this description.
  - Kirrawee via the Brick Pit site has extensive frontage onto an identified Enterprise Corridor (Princes Highway).
  - The Sub-regional Strategy identifies that Sutherland is heavily constrained in its redevelopment potential. It is not located in close proximity to the Enterprise Corridor or the major employment node of the industrial lands.
  - Kirrawee is located in close proximity to both and a strategic bus corridor also benefits from a railway station only one stop from Sutherland. Therefore it forms the peripheral area of Sutherland and can assist in providing opportunities difficult to realise in Sutherland Centre itself. It already has medium density apartments and a diverse mix of uses.
  - Within the designated 600m radii of Kirrawee the uses are far more varied than simply residential uses.
  - To the north is the major component of the strategic employment lands immediately across the Princes Highway. They are comfortably within the 600m catchment of the intersection of Flora and Oak Streets linked by the only pedestrian crossing point at traffic lights on the Princes Highway.
  - To the east are further employment uses located along Flora Street. Only to the west and south are there residential uses. Kirrawee actually services a much more intensive catchment that would normally occur for a village centre.
- Kirrawee offers the opportunity to assist Sutherland in strengthening its role as a Town Centre or Major Centre servicing this part of the Sutherland LGA.
- Employment within the Sutherland area is targeted to grow by some 8 000 jobs. Kirrawee currently provides some 5 500 jobs (2001) which is a significant proportion of the jobs in the southern part of the shire.
- Kirrawee has been identified as having the potential to offer utilities, urban services, local industry and manufacturing services and jobs.
- Given the location, single ownership and size of the Brick Pit Site it is appropriate for urban services and other associated facilities.



South Subregional Centres Map identifying the hierarchy of centres including Kirrawee (courtesy Department of Planning)

RADI	SUMMARY
800 m	Town Centres have one or two supermarkets, community facilities, medical centre, schools, etc. Contain between 4,500 and 9,500 dwellings. Usually a residential origin than employment destination.
N/A	Internalised, privately owned centres located away from other commercial areas, containing many of the attributes of a Town Centre but without housing or public open space—may have potential to become a traditional town centre in the long-term.
600 m	A strip of shops and surrounding residential area within a 5 to 10 minute walk contains a small supermarket, hairdresser, take-away food shops. Contain between 2,100 and 5,500 dwellings.
400 m	A small strip of shops and adjacent residential area within a 5 to 10 minute walk. Contain between 800 and 2,700 dwellings.
150 m	One or a small cluster of shops and services. Contain between 150 and 900 dwellings.
as above	Located in rural zones outside metropolitan urban areas with similar roles to towns, villages and neighbourhoods but rural in character with a wider driving catchment.

Excerpt from Table 7 - Centre Types and Metro Elements (courtesy Department of Planning)



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- GMU

An aerial map of Kirrawee NSW, Australia. The map shows a residential area with streets and buildings. A central point is marked with a red dot. Two concentric circles are drawn around this point: an inner circle with a dashed white line and an outer circle with a dashed red line. Both circles are labeled '600m' with a yellow line segment. A red rectangle is drawn around the central point, labeled '1400m' with a black line segment. A north arrow is located in the bottom right corner.

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## 2.0 REGIONAL CONTEXT AND METRO STRATEGY

- This potential is reinforced by the Minister for Planning's identification of the Brick Pit site as a potential catalyst for the revitalization of the Kirrawee Town Centre.
- Further as highlighted in the Centres Study, Sutherland Shire has a good supply of industrial lands and the Hill PDA study appears to indicate demand for industrial land in the existing suburbs is likely to decline further over the period to 2036.
- At a macro-economic level values could increase within the mixed use zones along Flora Street close to the brick pit site, with the right combination of uses on this site. The potential scale of the uplifts should be adequate to stimulate investment in these areas which overtime should transition from industrial to a more varied mix of uses.
- The redevelopment of a major site, immediately adjacent to these mixed use zones will act as a catalyst, speeding up this transition. The scale of the proposed development will transform the character of the area to a high quality, urban Centre.
- Therefore the proposed redevelopment of this site needs to realise these goals and contribute significantly to the housing growth for this subregion.

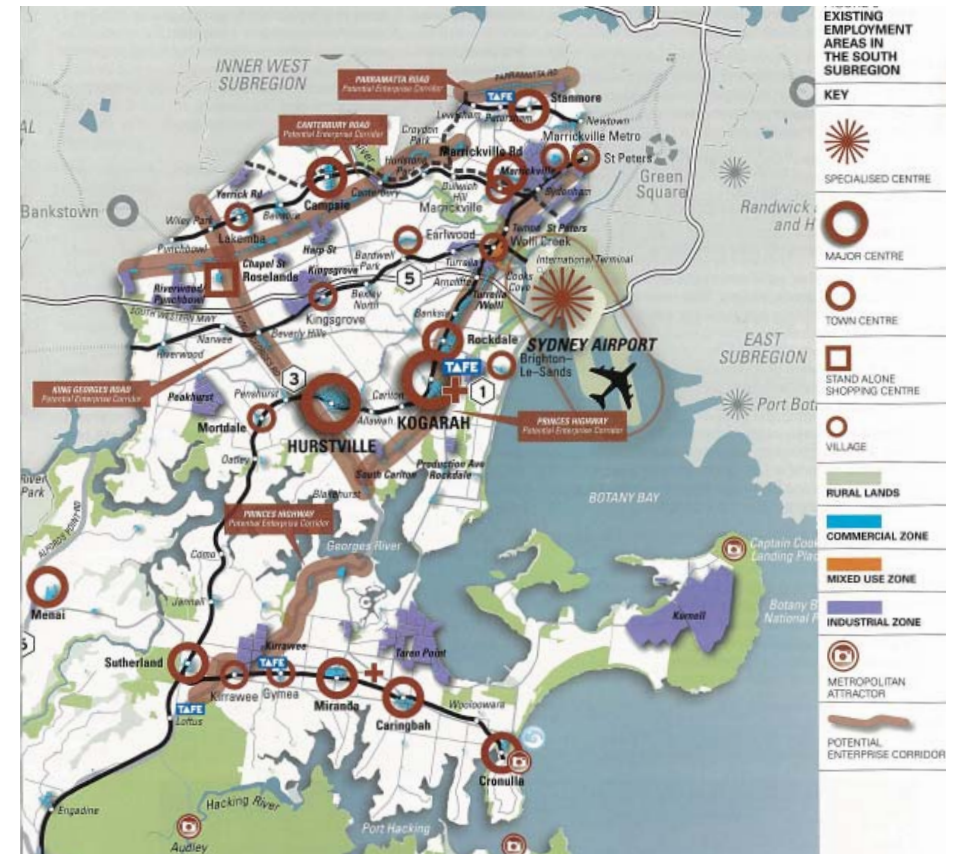
### 1.4 Metro Strategy 2036

Sydney Towards 2036 is the first step in a review of the Metropolitan Strategy. This review incorporates the feedback received from the community, stake holders and local government as well as the latest government policies.

The Metro Strategy 2036 has reinforced some of the findings and strategies of the 2005 Metro Strategy, but it provides the following key directions for the Centres and Corridors South:

- *Some centres are expected to change significantly, for example, a Village may grow into a Town Centre as surrounding areas undergo renewal and residential density increases to provide for changing demographics (pg. 68).*
- *Increasing residential densities within the walking radius of smaller local centres can make these places more vibrant and provide much needed housing choice for the ageing and changing population (pg. 70).*
- The Strategy 2036 continues to recognise the restricted development potential of Sutherland Centre mainly due a large cemetery that restricts growth to the west and the Princes Highway and park lands which restrict further growth of the town centre to the north, east and south (pg. 67).

Due to these reasons, Kirrawee offers the opportunity to assist Sutherland in strengthening its role as a town centre or major centre servicing this part of the LGA. It has the potential for growth and to provide the much needed housing choice for a changing



South Subregional Economy and Employment Map showing employment lands and potential enterprise corridors (courtesy Department of Planning)

population within a walking radius of a small local centre and railway station helping to transform Kirrawee into a more vibrant place.

Due to the number of existing jobs, proximity to job hubs and other important centres as well as its location within the enterprise corridor and proximity to the railway station, Kirrawee is well placed to experience sustainable growth as a support centre to Sutherland with corresponding residential densities and heights. A centre height comparison is discussed in the next chapter.



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## **3.0 CENTRE HEIGHT COMPARATIVE ANALYSIS**

### 3.0 CENTRE HEIGHT COMPARATIVE ANALYSIS

The DGRs require discussion on height. It is assumed that such a discussion encompasses both height for centres of similar classification as well as the heights being achieved for other sites in the area. The development proposal clearly proposes a new scale that was not contemplated by the DCP or previous studies. It seeks to anchor Kirrawee and to build on its location as a major public transport node, linked into multiple major road networks, adjacent to a significant and long term employment area and reinforce and expand the retail offer and facilities available to commuters, workers and residents.

To ascertain whether the proposed scale is reasonable in a broader sense it is necessary to review the development heights occurring in other centres in Sydney that have a similar classification.

In the assessment Hill PDA have identified the following as appropriate centres for such a comparison:

- Meadowbank - classified as a Small Village - Draft Sub Regional strategy
- West Ryde - classified as a Village - Draft Sub Regional strategy
- Hillsdale - Village - Draft Sub Regional strategy
- Wolli Creek - Village - Draft Sub Regional strategy
- Balgowlah - Village - Draft Sub Regional strategy

Hill PDA have carried out an analysis of similar centres in the Sydney basin and have researched the maximum - of new developments in each. These five centres are exhibiting the following characteristics:



Diagram showing location of comparable centres with residential towers

Comparable Centre	LGA	Hierarchy (draft sub regional Strategy)	Residential Towers	Proximity to Train Station
Kirrawee (post development scenario)	Sutherland Shire	Village	Proposed development provides eight residential buildings ranging from 4-14 storeys to provide approximately 450 units.	Train station within 150m
Meadowbank	City of Ryde	Small Village	Waterpoint is located a Shepherds Bay and is currently under construction. The development comprises a number 5/6 storey residential with direct access to Meadowbank Station and will also include Shepherds Bay Retail Village consisting of more than 10,000 sqm of retail and commercial space.	Meadowbank train station within 500m
West Ryde (marketplace)	City of Ryde	Village	8 Storey commercial and residential tower on West Parade. At 61 West Parade there are 2 apartment towers each approximately 9 storeys.	West Ryde train station with 250m
Hillsdale	City of Botany Bay	Village	12 storey residential tower above Southpoint shopping centre.	No train station nearby
Wolli Creek (Discovery Point)	City of Rockdale	Village	Developments of up to 21 storeys located close to the station and further proposals of a similar scale (up to 21 storey) for additional residential towers within the Discovery Point development.	Wolli Creek Train Station within 200m
Balgowlah (the Village)	Manly	Village	247 residential units rising 8 storeys above the podium/plaza	No train station nearby

### 3.0 CENTRE HEIGHT COMPARATIVE ANALYSIS

This data tells us that each of these centres play a significant role in servicing the surrounding areas in addition to major centres which in most cases are located along the same rail lines. Further none of these villages is located in such close proximity to a major employment area. Meadowbank's character is changing with new apartment development of 5-6 storeys. West Ryde has development of 8-9 storeys. Hillsdale has 12 storey development. Wolli Creek has development up to 21 storeys and Balgowlah is now rising to 8 storeys.

In each of these cases the new scale is established within 200-350m of the rail station. The proximity marks the centre and ensures adequate density to support the major facilities and activity needed.

The proposal introduces a maximum 14 storey scale. Given the site's history as a brick pit with tall chimney stacks which were visible against the skyline, the size of the site and the unique opportunity it presents further reinforces a scale in the order of these other centres.

It is also relevant to review the sort of scale that is occurring around the more localised area.

#### APPROVED DAs COMPARISON

##### Village centres:

- In Sutherland, an approved DA for Princes Highway and Belmont Street commercial building sought a 5 storey commercial building consisting of commercial offices and a supermarket.
- In Sutherland, an approved DA for Flora and Belmont Streets and Stapleton Avenue mixed development sought mixed residential and commercial development consisting of 1 x 6 and 1 x 9 storey building.
- In Cronulla, an approved DA for Gerrale Street mixed use building sought a 6 storey mixed commercial/residential building.
- In Woollooware, a DA known as Sharks Village seeks a mixed commercial and residential staged development of 5 buildings with a maximum height of 6 storeys.

These DAs demonstrate a general increase in scale throughout this LGA. Whilst not equivalent to the height sought they show an upscaling over the existing lower scale development forms.

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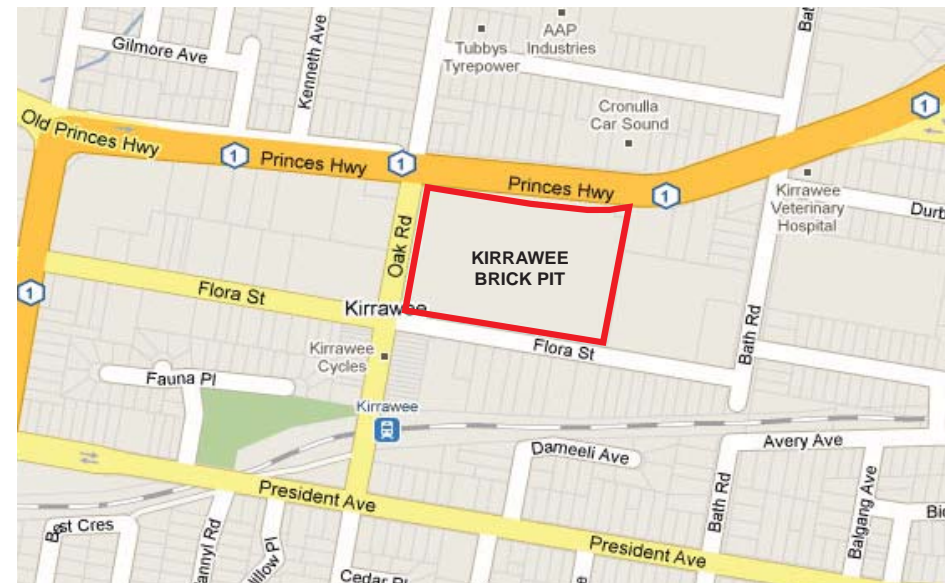


## **4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS**

## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS

### GENERAL CHARACTERISTICS OF THE SITE:

- Kirrawee is located 1.5km east of Sutherland Town Centre and 3km west of Miranda.
- The suburb enjoys a unique location, situated on a ridge with views to the Georges River, the Pacific Ocean and the Royal National Park.
- The Brick Pit site is located at the intersection of the Princes Highway and Oak Road bounded to the south by Flora Street. Oak Road is the primary access street to the exiting Kirrawee Centre.
- Kirrawee Centre has a defined existing character and due to the positioning of the station, shops and the permeable street system.
- It currently lacks presence to the Princes Highway (currently only marked by a small sign) although historically it was marked by tall kiln chimneys (see discussion on heritage).
- The surrounding context comprises a variety of uses - medium density residential apartment blocks, dwelling houses, retail shops, industrial uses and small scale motor uses and commercial businesses.
- The boundaries of the centre of Kirrawee are easily identifiable for the local residents, but it does have a broader role to play as discussed under Regional Context in servicing the transport/facilities needs of the employment uses across the Princes Highway to the north as well as to the east.
- The consideration of local context and the Brick Pit site will be organised under the following areas which are important to inform the character of the area and the site itself:
  - Environment - Vegetation and Landscape
  - Environment - Topography
  - Traffic and Transport - Vehicles and Public Transport
  - Traffic and Transport - Pedestrian and Cycle Network
  - Built form and Character
  - Heritage
  - Existing Centres
- A number of detailed studies have been undertaken on the site over time which have identified some changes within the site over the intervening years. These changes are documented in the following context analysis in addition to consideration of the local context.



Location of the Brick Pit site within the Kirrawee Centre (aerial and street map courtesy Google Earth)

## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS

### ENVIRONMENT - VEGETATION AND LANDSCAPE:

#### Context:

- The context surrounding the Brick Pit site is urbanised. To the north of the Brick Pit is the Princes Highway which lacks a strong landscape character and there is industrial and commercial development to the south and east of the site where vegetation only occurs along the street verge.
- To the west of the site the natural environment is created by street tree planting and the vegetation provided within the private development lots.
- Recreational opportunities are provided by a small park area located towards Acacia Road North and Rotary Park adjacent the railway line.
- Kirrawee itself is located to the north east of the Royal National Park and therefore benefits from the extensive natural environment provided by this major regional landscape.

#### The site:

- An analysis by Cumberland Ecology (October 2010) describes the flora and fauna on the site as follows:
  - The site contains the endangered ecological community of Sydney Turpentine Iron bark Forest (STIF) to the west of the existing pit;
  - The 'Grey-headed Flying-fox' and the 'Eastern Bent-wing Bat', both threatened species, utilise the site (specifically the flooded brick pit) as a seasonal foraging/drinking resource;
  - There are numerous hollow-bearing and mature trees which provide known nesting and foraging resources for non-threatened native bird and mammal species and potential nesting/roosting habitat for threatened bird and bat species;
- The Brick Pit site contributes to the natural environmental qualities of the Kirrawee Centre providing a green edge to Oak Road and Flora Street which acts as a landscape buffer between the more commercial/industrial areas to the east of Oak Road and ameliorates the visual impact of the parking areas along Flora Street.



*District views are available to the north of the site across the Princes Highway*



*Photo illustrating the landscape quality of vegetation to the west of the site between the apartment blocks*



## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS



Diagram showing the existing topographic / vegetation / open space character of the area and the site



## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS

### ENVIRONMENT - TOPOGRAPHY:

#### Context:

- There is a major ridge line that runs east west through Kirrawee. The alignment of the ridge is slightly to the south of Flora Street linking to the south west corner of the site and across to the Princes Highway.
- The gradients across the area are generally less than 10% with the site sloping from the west and north west to the south east.
- This ridge assists in mitigating the impacts of the Princes Highway as the land rises towards Flora Street and then falls towards the railway line and the south east.
- The topography creates a natural change in character between the residential areas to the west and the industrial/commercial uses to the east.

#### The site:

- Levels across the site ranging from 94.38 AHD in the north east at Princes Highway and 99.50 AHD in the north west up to 105.00 AHD in the south west corner of the site adjacent to Flora Street. The landform then slopes down to 93.16 AHD at the south east at Flora Street.

#### Conclusions:

- The Brick Pit site is part of a transitional area. It is important that the site continues to contribute to the environmental character of the area through maintaining the unique bushland character particularly in the high value areas to the west of the site close to the intersection of Oak and Flora Street.
- There is a lack of passive recreational open space to this side of the rail line. The site has the opportunity to contribute to the open space provision of this locality.
- A compensatory permanent water body/bodies will be significant in supporting existing fauna and flora for the site. Retaining some of the existing form of the brick quarry walls with water below will result in the water level and site level of any future park having to stay at a level well below the existing street levels.
- Redevelopment of the site needs to facilitate pedestrian and cycle access to and through the site to allow enjoyment of the bushland areas.
- The site will need to contribute to the street landscape character of Flora Street, Oak Road and the Princes Highway as well as within the site.
- Whilst it is likely that the existing 'treed' character can be maintained along Oak Road, it will be necessary to establish a new landscape character to most of Flora Street, to enable active frontages and integration of the site with town centre on Oak Road.



*Photograph showing the interface of the Brick Pit Site to Oak Road currently and the remnant bush land*

## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS

### TRAFFIC AND TRANSPORT - VEHICLES AND PUBLIC TRANSPORT:

#### Context:

- Kirrawee benefits from train and bus services. The Kirrawee Railway Station is located to the south of the Brick Pit site along Oak Street. The rail services run from the city to Cronulla at approximately every 15-20 minutes in peak periods.
- Duplication of the railway line was recently completed (April 2010).
- There is a commuter car park to the immediate north of the railway line and parking occurs around the railway station both formally and informally. However it is understood that Council may have plans to develop the site.
- Many local residents and workers walk to the Railway Station so the facilities within 400 - 600m of the Station are important in encouraging greater use of the public transport system. This area includes the Brick Pit site.
- The bus services run along the perimeter arterials i.e. Princes Highway and President Ave to the south of the station. These services include the 961 (Miranda to Barden Ridge, via Menai) and 962 (Miranda to Bankstown via Menai) bus routes. Kirrawee Station is also serviced by the 976 (Sutherland to Grays Point) and 993 (Miranda to Engadine, via Sutherland) bus routes.
- The road network surrounding the site consists of:
  - The Princes Highway as the major north south route to the CBD.
  - President Avenue is the east west arterial road that links Sutherland to Caringbah and is located to the south of Kirrawee Centre.
  - These two major networks are linked by Oak Road which provides the only direct rail crossing between the two road systems for some distance apart from the highway itself.
  - Flora Street provides a local east west road that connects to the Highway to the west and the local road system to the east. Beyond Oak Street this road is subject to commercial and industrial traffic loads.
  - Currently Flora Street provides extensive commuter and worker parking along its northern side bounding the Brick Pit Site.
  - Some on street parking is also provided along Oak Road south of the existing roundabout within the existing retail shop.



*Parking provided along the northern edge of Flora Street  
- no footpath is provided for the resultant pedestrian movement*

#### The site:

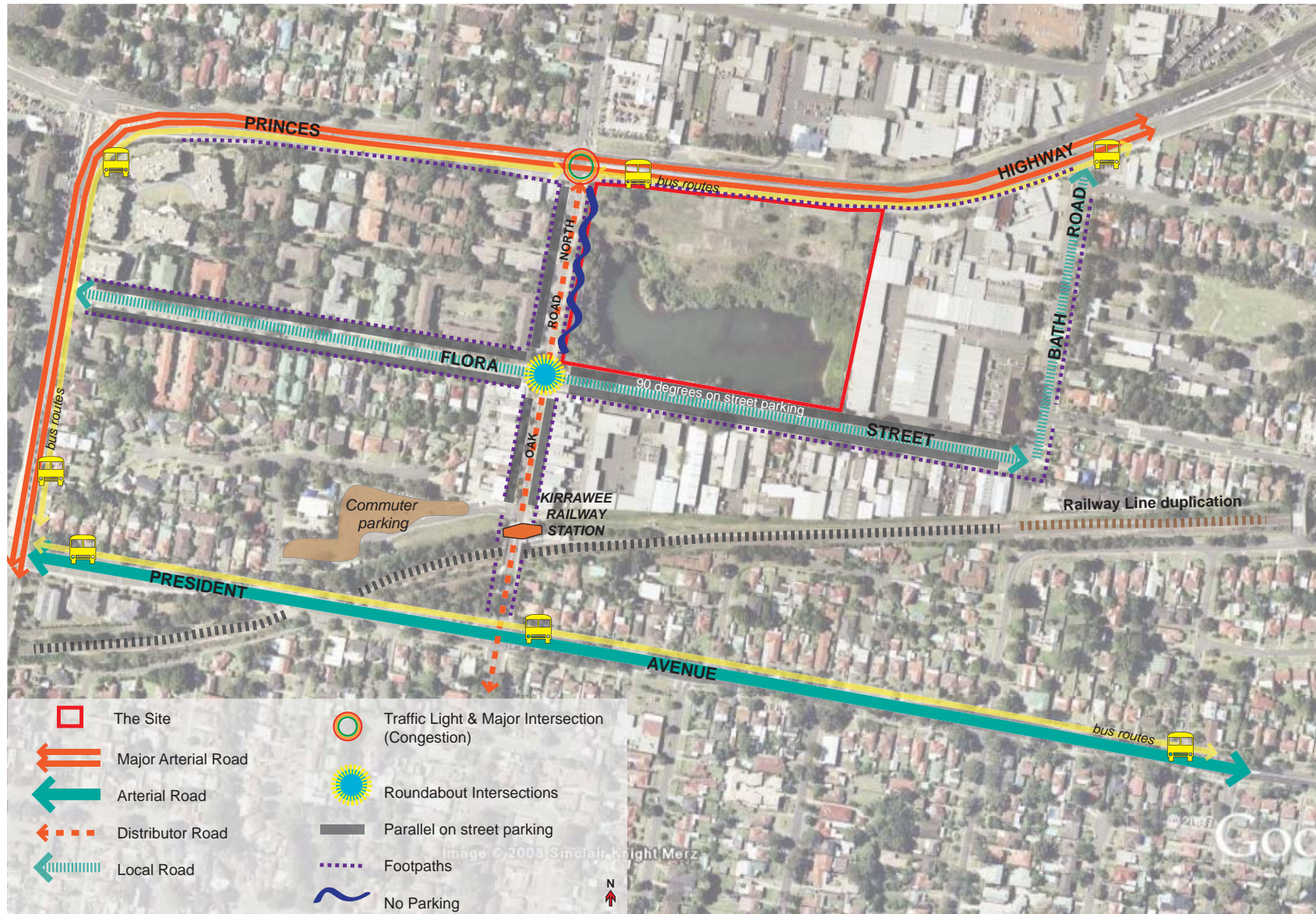
- Vehicle access to the site currently does not exist.
- The site has three street frontages being Oak Road to the west, Princes Highway to the north and Flora Street to the south.
- The size of the site will require a number of entry points and networks to handle traffic and pedestrian movement through the site.
- At least one vehicle entry point from each existing street will be required.

#### Conclusions:

- There is an opportunity to provide additional road improvements that ease traffic congestion for the major intersections and provide a service link close to the highway for future uses.
- Upgrading of the Oak Road / Princes Highway intersection and the introduction of a new pedestrian crossing and traffic lights to Flora Street/Oak Road would greatly benefit the local network.



## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS



Existing vehicle, parking and pedestrian network

## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS

### TRAFFIC AND TRANSPORT - PEDESTRIAN AND CYCLE NETWORK:

#### Context:

- The pedestrian network through Kirrawee occurs primarily along Oak Road and Flora Street accessing Sutherland to the west, the businesses to the east and north of the centre.
- Additionally Kirrawee Primary School is located to the east on Bath Road.
- The main pedestrian destinations are the employment uses east and north, Kirrawee Primary School to the east and the existing centre adjacent to the Railway Station.
- Footpaths are generally provided throughout the area except on the northern side of Flora Street and the western side of Bath Road. This creates safety issues for pedestrians leaving their vehicles in the on-street parking area and for the continuity of movement along the northern end of Flora Street towards the school.
- The highway and Kirrawee Centre are well serviced with footpaths to both sides of the street. However it is difficult for pedestrians to cross at the existing roundabout at the intersection with Flora Street.
- The traffic lights at the intersection of the Princes Highway and Oak Road provide pedestrian connection to the industrial area north of Kirrawee.
- The cycle network provided by Council does not include formal cycle ways through Kirrawee. Therefore any commuter or recreational cycling occurs informally through the local street system including Oak Road and Flora Street towards Sutherland or to the northern areas.

#### The site:

- There is currently no cycle or pedestrian access into or through the site.
- Its location on the corner of Oak Road, Flora Street and the Highway provides the opportunity to improve pedestrian permeability through the site and pedestrian amenity along Flora Street particularly.
- Given that the current bus routes pass along the Highway development of the site would improve the amenity and safety of the pedestrian movement to the north and to the bus links from the Station.

### Conclusions:

- Kirrawee has excellent access to a number of major road linkages and public transport.
- The Princes Highway provides the opportunity for high exposure for development of the site.
- The public transport links are significant for rail but the existing centre is not well linked to the bus route.
- Pedestrian access is reasonable north south but is poor for the businesses to the east.
- The cycle network is informal and will primarily operate externally to the Brick Pit site.
- Development of the site should seek to assist with the existing issues affecting with the street network such as the two intersections on Oak Road and should enable pedestrian movement through the site.



## 3.0 CENTRE HEIGHT COMPARATIVE ANALYSIS

### BUILT FORM AND CHARACTER

#### Context:

- Kirrawee has distinct character areas that are linked to their use and built form. The major characteristics are as follows:
  - Princes Highway - showroom and industrial/retail uses with high exposure and lower amenity, generally low scale development of around 2 storeys. This scale is likely to increase over time to respond to its enterprise corridor role.
  - Oak Road - mixture of medium density residential development within a landscape setting of 3 storeys to a lower scale retail character at the existing Centre with narrow shop fronts.
  - Flora Street - to the west a residential character with predominantly 2-3 storey medium density apartments to the north and lower scale 1-2 storey housing and villa homes. To the east and south the character is industrial/commercial with broader development frontages, warehouse and 2-3 storey business premises often with vehicle access and parking dominating the frontages.
- Oak Road at the retail centre has benefited from public domain upgrades to improve its amenity and it presents a good quality character for Kirrawee.
- Kirrawee lacks any strong presence to Princes Highway at the moment although the Brick Pit chimney provided this in the past. Apart from the service station on the north western corner of Oak Road there is no built form character or marker evident to indicate that Kirrawee Centre is located to the south. The small sign on the corner is easily missed by passing traffic.
- The built form character to the Highway is of poor quality.
- Flora Street East offers a low quality built form and public domain. Redevelopment of the Brick Pit site offers the opportunity to activate and improve the built form and streetscape character to both Oak Street (to the north of Flora Street) and Flora Street (to the east past the intersection with Oak Road).
- The height of development on this site and for redevelopment of the remainder of Flora Street east is dictated by the controls applying to the area.
- The proposed heights within the Sutherland Shire DCP 2006 (SSDCP) are generally from 4-6 storeys along the Princes Highway to 3-4 storeys within the Brick Pit site and for the industrial area to the east of the site. For the southern side of Flora Street 3 storeys is proposed. However it is understood that Sutherland Shire Council is reviewing heights generally across Kirrawee and is likely to increase heights to 6 storey on redevelopment sites. On that basis the 3-4 storey currently in the controls represent potential under development of this key area.

- The controls clearly indicate a desire to achieve a revitalisation of the Flora Street east area and an improvement in the built form character for this area.

#### The site:

- The site has no existing buildings remaining. There are building remnants from the original kilns which are discussed under heritage.

#### Conclusions:

- Whilst the retail centre offers a high quality amenity, grain and character the remainder of the streets surrounding the Brick Pit site would benefit from the revitalisation of the site.
- There are opportunities to improve and activate Flora Street and the Highway and to build on the landscape qualities and character of STIF located along Oak Road and Flora Street.
- Creation of a built form marker to encourage greater patronage of the Kirrawee Centre is also an important opportunity.
- The area generally would benefit from high quality contemporary architecture that sets the benchmark for the future regeneration of the remainder of Flora Street.
- Increased activation of Flora Street by active frontages and uses to the northern side of the street will be of major import in achieving a high quality result for the centre and area generally.
- The scale of new development to Flora Street and Oak Road needs to be responsive to the existing lower scale whilst also recognising to the existing lower scale whilst also recognising that heights may increase for new development, particularly for Flora Street.



Princes Highway frontage looking north from the Oak Road intersection



Medium density development to the western side of Oak Road opposite the Brick Pit site

### 3.0 CENTRE HEIGHT COMPARATIVE ANALYSIS



*Kirrawee Centre on Oak Road looking south towards the rail line*



*Kirrawee shops looking north*



*Flora Street west showing the typical medium density units*



*Flora Street to the east showing the character of the industrial/commercial area*



*Kirrawee Brick Pit site from Flora Street looking north near the south eastern corner*



*The lower scale 1 and 2 storey dwelling houses on the southern side of Flora Street to the west*



## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS

### HERITAGE

#### The site:

- The traditional owners of the land are the Gwegai people who are part of the Dharawai Nation.
- Prior to the late 1800s the area was used for small farms producing vegetables, fruit and poultry.
- From 1912 the Sutherland Brick Company established brick works on the site.
- In 1937 the Railway Station was built.
- The 1950s saw the establishment of the industrial zones and areas in Kirrawee. By 1960 the brick making on the site had ceased due to declining demand for the products and the proximity of residential development.
- Sydney Water Corporation acquired the site in 1974 with the tall chimneys and facilities demolished in the late 1970s.
- Henroth Investments Pty Ltd acquired the site in 2007 and sought to redevelop the site for a mixed use development.
- The Department of Planning study that was undertaken indicated there were no constraints arising from heritage and archeology on the site. The significance of the site was considered of low level.
- The study required only an excavation permit was required prior to work commencing on the site in addition to detailed historical research prior to the archeological investigation of the site.
- As part of the 2007/2008 studies undertaken by Henroth Investments Pty Ltd the following was discovered in the north western portion of the site:
  - Five kiln foundations were located parallel to the Princes Highway. Of the kilns, the two closest to the intersection of Oak Road and the Highway were better preserved.
  - Of the two kilns, the first one - Kiln 1 - is the best preserved and has most of its sub-floor almost intact. The upper part of the floor of kiln 2 also survives.
- A heritage report by Edward Higginbottom & Associates P/L commissioned by Henroth Investments Pty Ltd, indicated that the preferred response to these finds is to:
  - Retain Kiln 1 in its current location and incorporate it within the public domain of the site.
- The site historically contained two landmark chimneys which were highly visible across the area. One is shown in the photograph to the right.
- There are opportunities for interpretive strategies to acknowledge the Aboriginal and European heritage and uses of the site and to reinterpret the role of the chimneys.
- A further survey commissioned by Henroth Investments Pty Ltd shows that the heights of the towers ranged between 35 to 41m for the western tower and between 38 to 48m for the eastern tower. These heights are equivalent to 10-12 storeys and 10-14 storeys respectively.
- The chimneys at the brick pit site were considered to the extent that they gained the following local saying: "when you saw the brick pit chimney you knew you were back in Kirrawee".
- The twin chimneys of the Kirrawee Brickworks were a landmark for the site and for the Precinct. The Higginbottom report recommends that "the proposed development should respect this former landmark in its design and appearance as a gateway to Sutherland".



Brick Pit chimney photograph from Princess Highway (courtesy Edward Higginbottom & Associates)

## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS



Diagram showing location of the two remnant kilns on the Brick Pit Site with photograph of Kiln 1 right and above (courtesy of Edward Higginbotham & Assoc.)



Photograph of Brick Pit Site with Kiln 1 (courtesy of Edward Higginbotham & Assoc.)



Photograph of Kiln 1, showing survival of most of the floor components (courtesy of Edward Higginbotham & Assoc.)



Photograph of Kiln 1 showing the layer of flues and floor (courtesy of Edward Higginbotham & Assoc.)

## 4.0 LOCAL CONTEXT AND SITE CHARACTERISTICS

### EXISTING CENTRES:

- Kirrawee is divided into a number of distinct use areas.
- To the east including the Brick Pit site, the area is characterised by commercial/ industrial uses with high traffic generation.
- To the west, the uses are residential with a mix of apartments and dwellings.
- To the south the area is a mix of retail, industrial and residential.
- To the north the area is characterised by industrial and business uses.
- The industrial/business area to the east of the site has an identity within the area as auto repair centre. This character diminishes the amenity of the area and previous work undertaken by the Department of Planning and the Council indicates a desire to change this profile to a mixed use character with a range of business and residential opportunities.
- An increase in the residential and business population will require an increase in facilities to service the increased number of employees and residents.
- Kirrawee Village presently lacks any anchor retailer. Large supermarkets within centres are commonly recognised as important retail anchors and generate additional expenditure for other retailers.
- The centre of Kirrawee currently contains 34 retail and non-retail tenancies including a convenience food store, Post Office, chemist, Pizza Haven and a number of other convenience services. Kirrawee residents are forced to drive to Miranda or Caringbah or Sutherland to access retail facilities.
- Hill PDA has prepared a report into the economics of Kirrawee and the surrounding areas.
- The report notes that redevelopment of the Kirrawee brick pit site has the potential to provide 500 dwellings to support the Shire in achieving its housing target and to provide a mix of affordable housing types in the LGA (that are also in close proximity to a rail station).
- Over 60 000 vehicles pass the site frontage each day and the road network offers a high level of accessibility.
- The core region for the area is Kirrawee, Oyster Bay, Caravan Head, Bonnet Bay, Como, Jannali, Kareela, Sutherland, Gynea and Greys Point which have a total population of 55,600 person.
- Retail facilities within the Sutherland Shire generally form a typical retail hierarchy with a regional shopping centre (Westfield Miranda), sub-regional centres (Menai Marketplace and Southgate Sylvania) and a number of supermarket based centres

throughout the region to serve the local convenience shopping needs of the surrounding population.

- The study demonstrates that the current scheme could be viable and importantly, does not impact on the economic sustainability of surrounding centres. In particular there was a strong under supply of supermarket floor space in 2007 in the shire in the order of 20,982sqm - equivalent in size to at least four larger supermarkets. It is generally recognised that a number of supermarkets in the shire are trading up to twice the national average.
- The Hill PDA report further notes that it will be difficult to achieve additional supermarket floor space in the Shire for the following reasons:
  - A major, full-line supermarket has an area of at least 3,500m<sup>2</sup> plus a requirement for car-parking of approximately 6,000 m<sup>2</sup>.
  - Supermarket tenants will only pay a smaller percentage of rent and as such without supporting speciality tenants, returns for the developer will be low.
  - Demolition of existing buildings would most likely be required.
  - The suburb of Sutherland is not located on a main road and as a result access will be difficult for residents of the surrounding suburbs.
- Hill PDA states that the impact of a retail component within the proposed development on Kirrawee shops will be insignificant. Further it will provide a second retail anchor within walking distance and an additional population of residents.
- The report also predicts that in its first year of operations in 2014 the centre will turnover \$88 million.

### Conclusions:

- Hill PDA study has found that opportunities within existing centres are few. Of the nine key centres in the Shire, that currently account for 90% of centre floor space, only six have realistic potential for further growth by 2036.
- The growth of all centres within the Shire will be of fundamental importance to its ability to meet the retail, service, employment and housing needs of its community.
- The study has found that the proposal will address the necessary criteria in terms of desirability, availability and viability providing a mix of employment generating uses, improving the range of accessibility of shops and service and providing a mix housing types.
- It has also concluded that retail within the development will have an insignificant impact on the existing Kirrawee Centre and is likely in fact to increase trade.

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kirrawee brick pit **PREFERRED PROJECT REPORT**

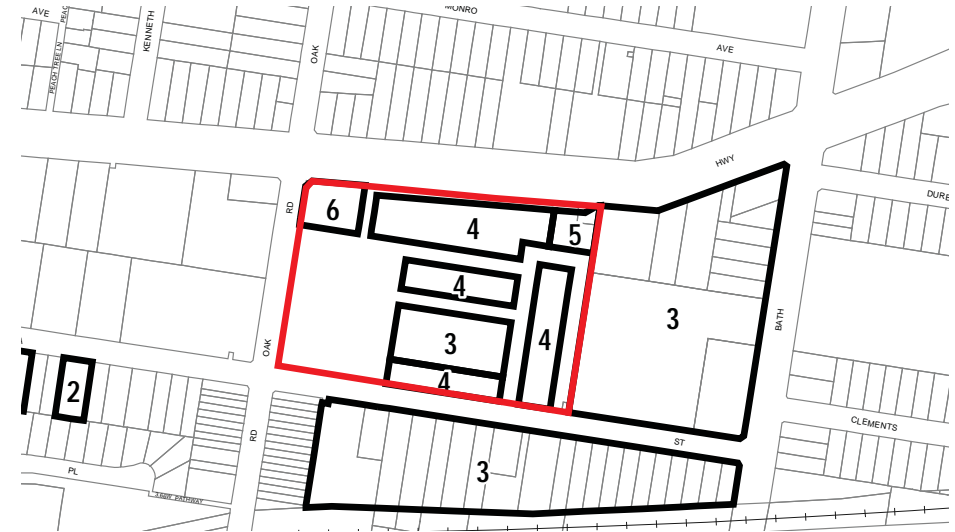
## **5.0 PLANNING CONTROLS**

## 5.0 PLANNING CONTROLS

Development within the Kirrawee Centre locality is regulated by the Sutherland Shire LEP 2006 (SSLEP) and Sutherland Shire DCP 2006 (SSDCP) current version for 30 July 2010 to date.

### SS DCP 2006:

- The urban design controls are contained within the DCP. The relevant controls are summarised below and the SSLEP height map is reproduced to the right on this page.
- It is relevant to note that the original DCP is based on a 2003 study. This is well before the Metro Strategy and draft Sub Regional Strategy and before housing density and affordability were identified as major state issues.
- In summary, the specific controls which affect the existing Kirrawee Centre and the site itself which will have a bearing on the design development of the site are:
  - Heights varying from 3-6 storeys with greatest height on the Princes Highway intersection to create an entry statement for Kirrawee and a built form buffer for the remainder of the site.
  - Aims to achieve a green, leafy environment, sense of community, good access to public transport, convenience and village atmosphere, lack of high rise and high density development, unique shopping experience.
- It is acknowledged that the Concept Application put forward by Henroth Investments Pty Ltd does not comply with the height controls and it does seek to introduce taller high density residential development. This is justified given the current issues of housing affordability, Metro Strategy targets for 70% growth of housing in the existing centres and major transport nodes available at this site.
- The SSDCP clearly states that the intention of the document is to provide a strategic framework rather than a prescriptive solution. It states that therefore “detailed building envelopes have not been developed... this recognises that development controls in the private domain need to be flexible to meet market demand”.
- This is an appropriate approach given that the needs and potential of the existing Centre and site have changed over time. The current demographic and economic drivers offer increased opportunities to those that were appropriate and viable at the time of the original study and DCP.
- Whilst the specifics of the site layout and use mix may vary over time the underlying objectives are appropriate and should be satisfied by any redevelopment of the site.
- The key objectives that apply to both the Kirrawee Centre and also the Brick Pit site were expressed in terms of the community aspirations and also as key controls as follows:



SSLEP Height map - Brick Pit site shown by red line

### Values and Character:

- Kirrawee is a friendly place, characterised by a strong sense of belonging and community, with a mix of age groups.
- Kirrawee has a vibrant, attractive lifestyle with a cafe culture, which makes it a fun, lively place to shop and a sought after place to visit, not just for drive through shopping.
- Kirrawee is attractive, well designed and safe, without high rise development. There is quality open space and recreation areas for the enjoyment of local residents and visitors.
- Kirrawee is 'green' in both the natural and urban landscape, with mature trees retained and new planting, good access to the National Park and environmentally friendly measures such as recycling.
- Kirrawee is people friendly, with accessible public transport, and good pedestrian and cycle access within the centre and linking Kirrawee and surrounds.
- Kirrawee is an employment centre, with a mixed economy, including commercial, banking services, professional, retail, entertainment, tourism and with some light industry retained.



## 5.0 PLANNING CONTROLS

- Kirrawee has a community focus supported by good community facilities and activities, catering for all ages.
- Kirrawee has family values, reflected in a population that is balanced in age, and supported by services and facilities, and community safety.
- Redevelopment of the Kirrawee Brick Pit complements the existing town centre by accommodating a variety of uses, possibly including residential, commercial, educational, community and open space.
- The SSDCP contains aims that apply to the Town Centre as a whole which includes the existing retail strip adjacent to the centre as well as specific requirements for the Brick Pit site.
- The relevant aims that need to be considered by a master plan and redevelopment of the Brick Pit Site are summarised and repeated from the SSDCP here as follows:

### Centre aims:

1. Create an Identifiable Character for Town Centre.
2. Create a street and block structure that optimise legibility, permeability and efficiency.
3. Create a network of public open spaces in order to create vegetation corridors and a wide range of recreation spaces, strongly linked to adjacent Shire parklands and sporting facilities.
4. Increase and enhance the opportunities for pedestrians and cyclists to access the precinct and to move safely and comfortably within the public domain.
5. Incorporate ESD principles into all stages of design, including the design of public spaces, block and site layout and built form.
6. Provide sensitive and high quality architecture and landscape design that contributes positively to the character of the public domain.
7. Support opportunities for a diverse community by promoting workplace and housing choice.
8. Provide a high level of residential amenity, including outdoor spaces as well as within apartments.

### Precinct 1: Main street precinct:

- The Main Street, Oak Road, is the retail precinct for Kirrawee Village. (...) New corner buildings at the northern and southern ends will define the edges of the precinct. (...)
  - Retain the main character of the street.
  - Corners will be emphasised in order to give character to the precinct.
  - The retail precinct is encouraged to expand allowing retail uses to extend around the corner into Flora Street for a short distance.
  - Encourage amalgamation of lots to achieve new feature corner buildings.
  - The new buildings should allow retail uses fronting at ground level and residential or commercial uses on the upper floors.
  - More native trees are to be planted in Oak Road.
  - Clear car parking spaces in between new street trees.
  - The pavement and street furniture of the area will be upgraded, including both Parks and commuter car park, consistent with town centre design concept.
  - Strong pedestrian connections within both sides of shopping strips and to integrated transport areas.
  - Pedestrian areas will be differentiated from the rest of the traffic areas.
  - Cycle network will take place with clear markings on Oak Road.
  - Service access to the shops will be within their boundaries at the back of the retail strip.
  - The buildings will be upgraded as they submit Development Applications.
  - Area of commercial and retail space to be increased by approximately 3000sqm.

### Precinct 2: Kirrawee Brick Pit precinct:

- The Brick Pit site is the main focus of future development. It presents huge potential for a mix of development including mixed employment, a variety of housing types including apartments, live / work building types, and accessible building for aged and disabled people. The Brick Pit has the potential to become an urban lifestyle area with high amenity, easy access to transport, and good access to facilities and services.
- The Brick Pit has been disused for some time. There is contamination to both soil and groundwater and, because of the unstable edges of the Pit, risks to pedestrians. There is a cost implication associated with the remediation of those edges. This strategy promotes and / or provides the following:

## 5.0 PLANNING CONTROLS

- *A lively mixed use precinct close to public transport and shops.*
- *New streets creating a permeable block structure and connectivity*
- *Larger barrier type apartment buildings located along the Princes Highway frontage with large landscape setbacks to reduce noise impacts and improve amenity and street address.*
- *Mixed employment / residential developments close to existing James Cook Business Park as a transition between existing industrial and future residential development.*
- *Mixed employment/ residential developments along Princes Highway and Flora Street.*
- *Housing for older people or people with a disability especially high care (nursing home) and low care (hostel) housing, be considered for any residential component on the Brick Pit site.*
- *Native tree plantation to proposed new streets.*
- *Clear car parking spaces in between new street trees.*
- *New pavement and street furniture should be incorporated within development applications, consistent with overall concept of town centre design.*
- *Proposed 0.9Ha public open space zoned as Park, including an amphitheatre, an outdoor café, artificial lake and community toilets. Park will include existing remnants of Sydney Turpentine Ironbark Forest and native flora. The park will be funded by the contributions of the developers within the study area.*
- *Proposed a total of 0.135Ha Public Open Space as pocket parks.*
- *Shops within the Mixed Use – Kirrawee zone shall not due to their size or intensity create a second town centre. Development of the mixed use zone shall not undermine the function of the Kirrawee Local Centre as the town centre for the locality, meeting the regular shopping and service needs of the local community.*
- *Shops within the Mixed Use – Kirrawee Zone shall help activate the public domain and enhance the predominately residential and non-retail commercial character of the site.*
- *The design and siting of any shops within the Mixed Use- Kirrawee Zone shall have clear, direct accessible pedestrian links to the existing Oak Road retail precinct so that shops support the revitalisation of the retail function of the Kirrawee Local Centre.*

kirrawee brick pit **PREFERRED PROJECT REPORT**

## **6.0 DESIGN STRATEGIES**

## 6.0 OPTIONS & DESIGN STRATEGIES

### OVERVIEW OF PREVIOUS DESIGN OPTIONS:

The Director General's Requirements for the concept design of this proposal lists documentation of options considered for the site relative to the locality. The site has a long history and a variety of different design approaches have been investigated. These options range from a Development Application design that was lodged with council which was essentially compliant with the heights and movement network in the DCP to the various options that led to the current Concept Plan.

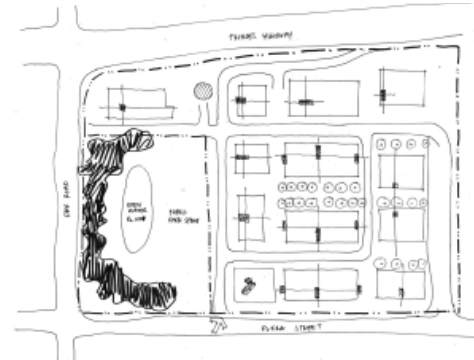
Further amendments to the Concept Plan have taken place in response to the comments received by the DoPI. These changes are discussed in the following sections of this report.

The advantages and disadvantages of each scheme are briefly considered below:

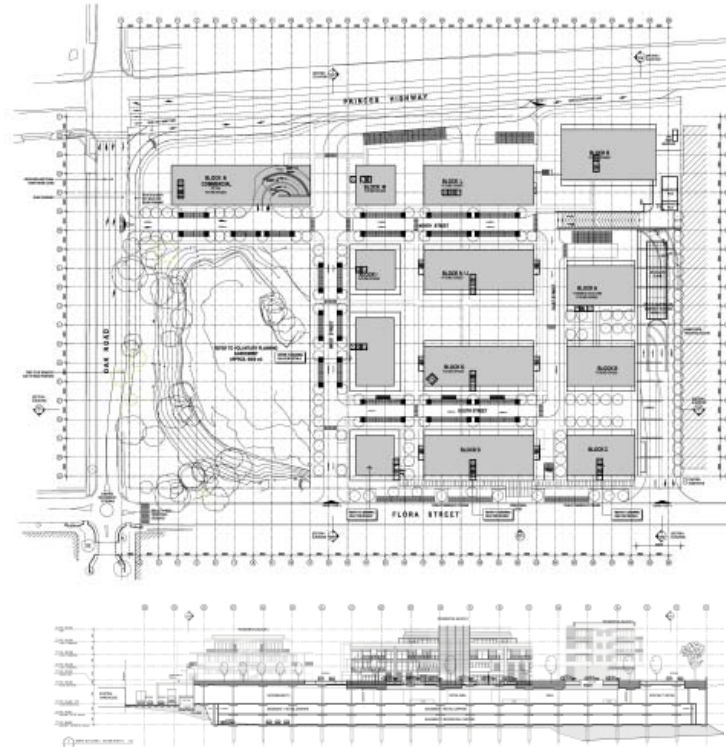
### PREVIOUS DEVELOPMENT APPLICATION:

#### ADVANTAGES:

- Essentially maintained the vision of the DCP
- Extension of existing street grid through the site
- Compliant with height in the DCP
- Maintained a street network through the site (Council commented too car dominated despite DCP)
- Connection and address to Princes Highway through streets and commercial showroom use
- Public park accessible from Oak Road and Flora Street
- Low scale mixed-use edges to Flora Street
- Significant landscape setback to adjoining industrial site to the east
- Street address to all apartment buildings
- Connection to existing local centre along Flora Street and Flora Street retail uses
- Cafes facing park and west street
- Community facilities to park and through child care centre
- Preserves majority of STIF bushland.



Concept for previous DA



Previous DA



## 6.0 OPTIONS & DESIGN STRATEGIES

### DISADVANTAGES:

- Limited opportunity to create an iconic scheme
- Does not consider opportunities to retain the quarry pit lake or use of the hole due to geotechnical issues.
- Park location isolates the private development from the existing Kirrawee Local Centre (required by DCP)
- Constrained relationship between proposed retail centre and existing shops
- Token water body due to Council's requirements
- Arguably an under utilisation of such a unique site
- Negative Council ARAP's conclusions for the previous DA: lacking sense of place and constituted 'manufactured landscaping' due to requirement to plant over slab.

The above DA was refused by Council. Since that time it was decided that Council ARAP's apparent lack of support for the building envelopes envisaged in the DCP, the changing landscape in terms of state strategies and retail policies justified a fresh look at the site. A number of schemes have been prepared culminating in the proposed Concept Plan.

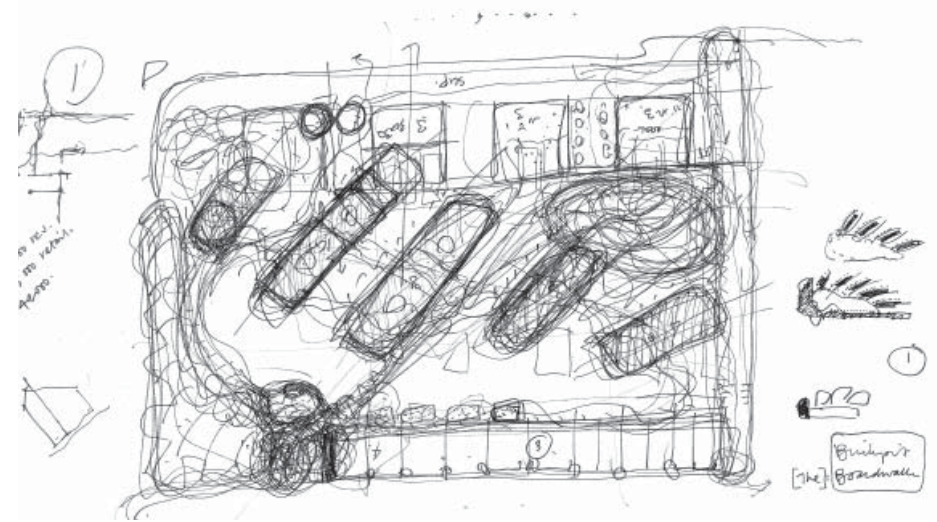
As these concepts were developed, they were evaluated for their individual merit in terms of advantages and disadvantages. They in turn informed the evolution of other concepts that resolved or addressed the various site constraints better as well as reducing the number of identified disadvantages with each scheme.

The advantages and disadvantages of each concept scheme are set out below:

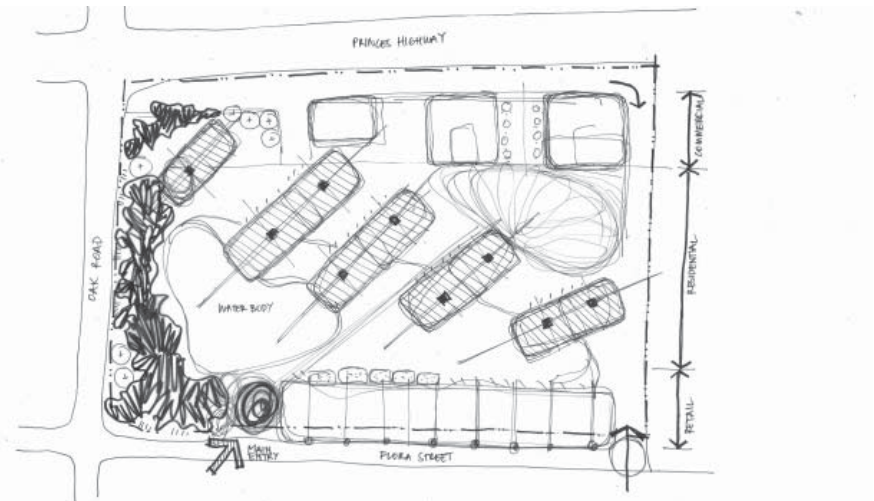
### **CONCEPT 1 - Radiating fingers of residential with edge built form retaining existing Brick Pit water body.**

#### ADVANTAGES:

- Maintain existing water body
- Reinforce streets with edge development
- Maintained low scale to streets compliant with the DCP
- Iconic marker to Kirrawee through taller built form cantilevered over water body
- Commercial uses to Princes Highway
- Pedestrian network only through site, no vehicles
- Character of site established by STIF and lake with grading height to Residential fingers.



Concept 1 - Brick Lake - initial idea



Concept 1 - Brick Lake

## 6.0 OPTIONS & DESIGN STRATEGIES

### DISADVANTAGES:

- Water level very low relative to existing ground plane
- Questionable stability of pit walls
- Water quality of existing pit
- Not viable economically
- Majority of open space occupied by existing pit, which reduces the opportunity for usable public park.

### CONCEPT 2 - Linear staggered forms

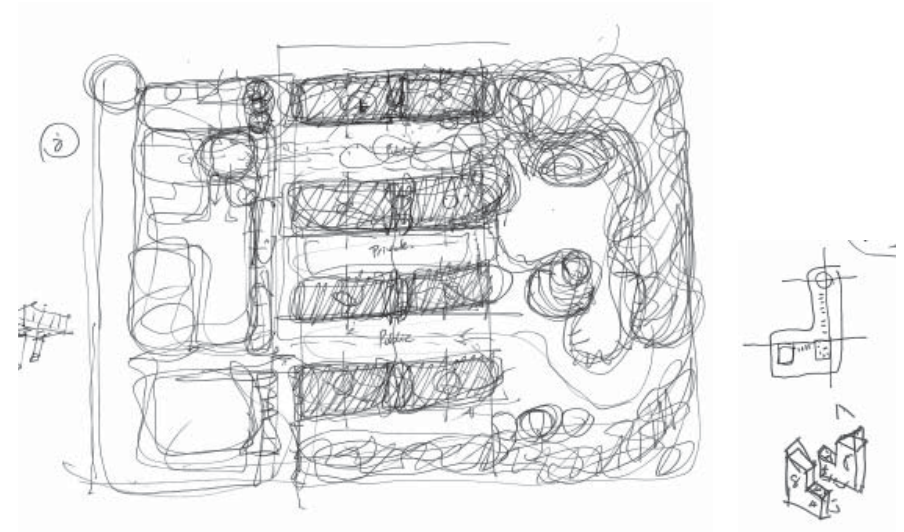
#### ADVANTAGES:

- Linear form with excellent solar access
- Expanded public park from highway to Flora Street
- Strong north-south street connection through site
- Good pedestrian connectivity north-south and from Oak to east of site
- Good water quality with new pond and larger water body than DA
- Landscape elements to deliver visual interest in the public domain
- Low scale edges to Princes Highway and Flora Street

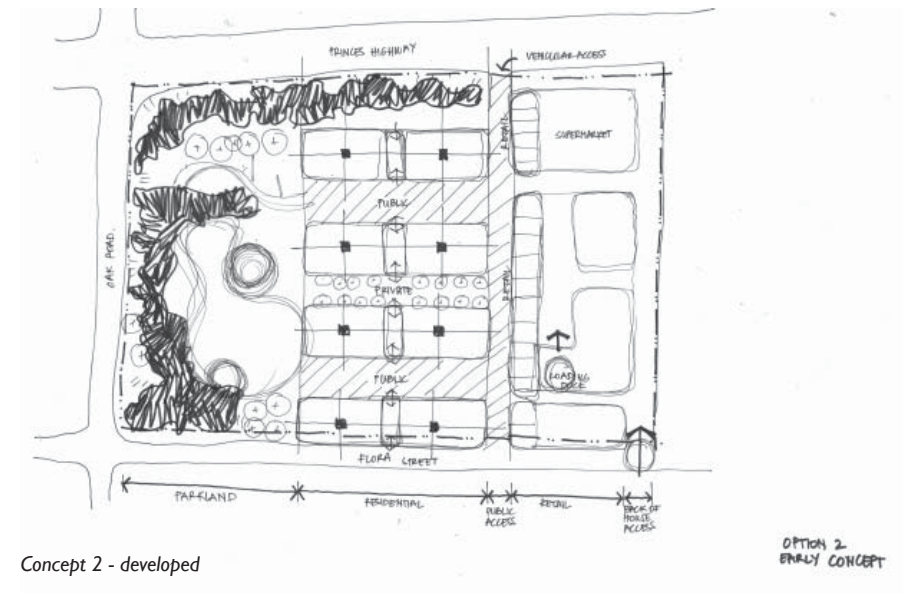
#### DISADVANTAGES:

- Potential solar access subject to proximity of linear blocks
- Regimented form
- Loss of Brick Pit water body
- Not viable
- Less outlook across public park

Both of these options were thought to have merit and were consolidated to form the basis for Concept 3. The advantages and disadvantages for this concept are considered on the following pages:



Concept 2 - initial idea



Concept 2 - developed

OPTION 2  
EARLY CONCEPT

## 6.0 OPTIONS & DESIGN STRATEGIES

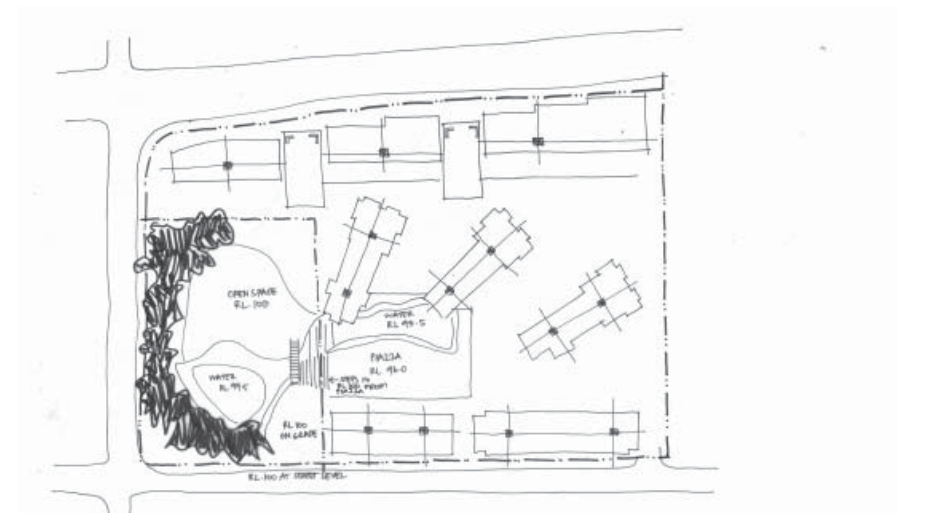
### CONCEPT 3

#### ADVANTAGES:

- Developed from Concept 1 this reduces the number of residential fingers
- Achieves good building to building separation
- Locates more massing onto the highway
- Raises park to previous natural ground level
- Low scale edge to Flora Street
- Excellent buffering to highway
- Provides piazza rather than full water body due to issues with retention of lake
- Good relationship of piazza to Flora Street

#### DISADVANTAGES

- Loses the reference to 'brick pit' heritage
- Likely loss of STIF due to raised level of park and water
- Solar access issues for leg of development to highway.

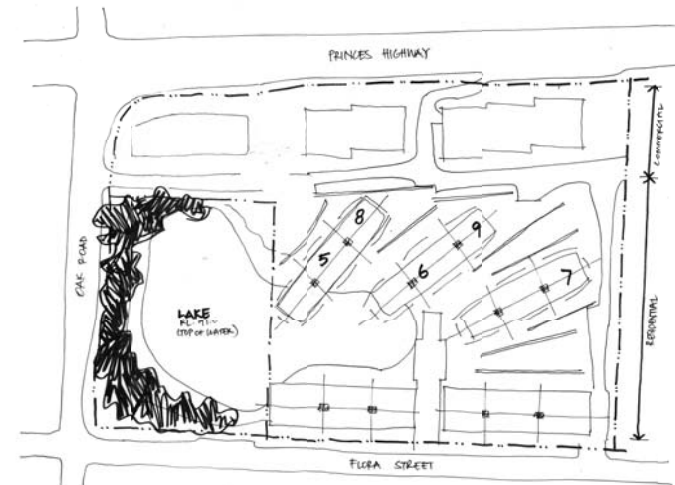


Concept 3

### CONCEPT 4 - Alternative development of Concept 1

#### ADVANTAGES:

- Position to residential towers have relationship to Kirrawee shops through address and geometry
- Celebrates the 'brick pit' unique heritage by reinterpretation of lake
- Celebrates gateway height of original chimneys
- Creates iconic forms with new water body that stretches through the site in different forms
- Utilises showrooms along Princes Highway
- Edge development responds to the STIF as a lower scale built edge of similar height
- Maintains STIF but elevates rest of water body to level of new piazza/link, which provides productive use of pit rather than filling it



Concept 4



## 6.0 OPTIONS & DESIGN STRATEGIES

- This concept incorporates the closest practicable connection with Kirrawee shops without impacting of the STIF
- Good pedestrian connectivity possible
- Excellent sense of place
- Maintains east-west new street and allows future connection to site at east.

### DISADVANTAGES

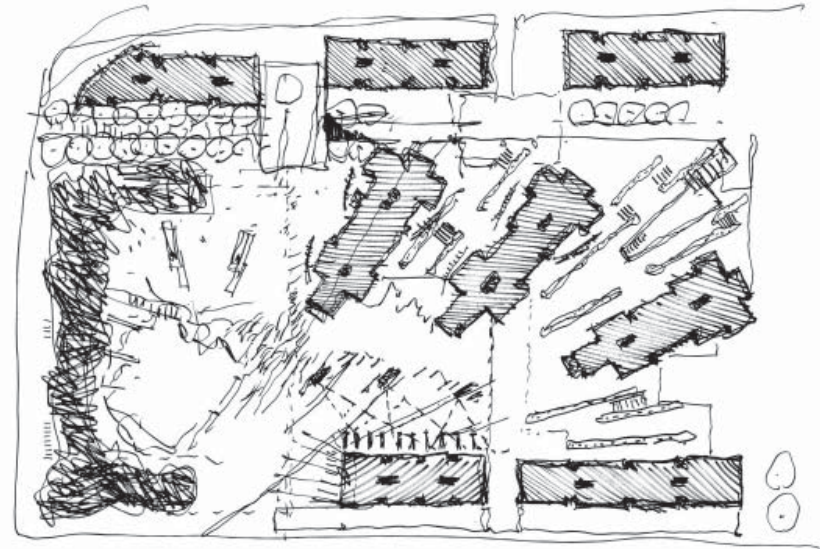
- Replaces existing water body
- Locates taller form too close to adjacent site
- Introduces taller forms overall which may be challenging for the community

Consideration of each of the options shows that Concept 4 offered the best opportunity for a high quality iconic marker for Kirrawee, combined with a dramatic town plaza, water body and open air retail centre whilst maintaining a lower scale edge to the site of similar scale to the STIF bushland and adjacent development.

### CONCEPT DESIGN - AS LODGED

#### ADVANTAGES:

- On grade connection from public piazza to Flora Street and new water body
- Maintains original 'STIF' and lower water level for 'natural' park
- Much greater public space, combined with parkland
- Showroom connection with Princes Highway maintained with strong built edge
- Higher residential towers are located centrally to the site and provide built form markers for Kirrawee as chimneys used to do
- Creates active frontages around piazza, spilling out to the public park and onto Flora Street
- Greater passive surveillance and increased safety at night
- Dramatic residential built form cantilevering over new water body
- Potential stronger and more dramatic visual and physical connection from piazza and retail to existing Centre
- Lower scale edges responding to STIF canopy height
- Maintains potential east-west connection for eastern site
- Acknowledges the existing form and retains some of the quarry walls of the Brick Pit.



Concept Plan - initial idea



Concept Plan application - as lodged



## 6.0 OPTIONS & DESIGN STRATEGIES

### DISADVANTAGES:

- No level connection between Flora Street and public park due to required level of water body
- Increased height of built form which may be challenging to local community and Council due to variance to prevailing heights in the area.

### CURRENT CONCEPT

#### ADVANTAGES:

- Reinterprets the existing body of water
- Splits Block D into two buildings, breaking its length and responding better to the existing grain across Flora Street
- New street address for Blocks B and C directly from Flora Street
- Creates a more legible pedestrian network
- On grade connection from public piazza to Flora Street and new water body
- Improved public space and amenities, combined with parkland
- Dedicated pedestrian link along parts of the internal northern street
- Reduced height for higher residential towers that continue to provide built form markers for Kirrawee as chimneys used to do
- Creates active frontages around piazza, spilling out to the public park and onto Flora Street
- Greater passive surveillance at ground level and increased safety at night especially along Flora Street with an increased number of residential entrances
- Minimum setbacks from the Princes Highway to the residential uses for improved amenity and separation in the order of 10 meters
- Dramatic residential built form and slimmed down tower forms cantilevering over new water body
- Lower scale edges responding to STIF canopy height with improved public domain features to upscale the entire street scape experience around the site
- Maintains potential east-west connection to eastern industrial uses

#### DISADVANTAGES:

- No level connection between Flora Street and public park due to required level of water body. However, unaided disabled access is available from all public frontages to the site: the eastern entrance on Flora Street and from Oak Road and Princes Highway as well as lift access at the west access point to the park from Flora St.



*Amended Concept Plan*

## 6.0 OPTIONS & DESIGN STRATEGIES

### DESIGN STRATEGIES FOR THE CONCEPT DESIGN:

The original concept application proposed a variation on the indicative layout and the proposed heights shown in Council's SSDCP and the SSLEP. The amended Concept Plan shows further changes to the original Concept Plan to address the comments generated by the DoPI. As indicated in the SSDCP the intention of the layout was to illustrate an approach rather than dictate a prescriptive solution for the site. Whilst the concept proposes a very different approach it still seeks to satisfy the underlying objectives of the controls.

Henroth Investments Pty Ltd and the project team have adopted these objectives and goals and propose an alternative Concept Plan interpretation for the redevelopment of the Brick Pit. The design strategies and key deliverables shown in the following diagrams embody the intent of the SSDCP and SSLEP whilst also meeting the needs of goals and targets of the Metropolitan Strategy, current apartment design approaches, economic analysis and more detailed studies of the site constraints as discussed in the previous sections as well as address the comments received by the DoPI in their letter dated 14/04/2011.

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### LAND USE STRATEGY AND PRECINCT INTEGRATION:

The amended concept application seeks to integrate to the existing surroundings by providing containment to the precinct. It creates a termination and anchor point to the northern end of the retail precinct and extends the medium density residential uses to the east of Oak Road increasing the residential catchment around the green open space. This will help to strengthen the precinct's residential character along the northern boundary of the precinct bound by the Princes Highway. This will help to consolidate the

disjointed nature of precinct which is currently fragmented by a large vacant site occupying a large quadrant of the existing precinct.

The proposed development creates an opportunity to link to the existing retail and mixed uses along Oak Road by providing retail uses along Flora Street with a direct visual connection within less than 90m metres of the existing retail strip. Activating the edges of the development to Flora Street and to the public piazza exposes the retail uses to the public domain instead of internalizing it within the site. The new uses can act as a catalyst for the redevelopment of the existing uses along the southern side of Flora Street.

The proposed retail and commercial uses on the site have the potential to integrate well with the existing industrial uses to the east and north of the subject site by providing much needed support areas such as eating and shopping outlets for the workers that currently work in that area. Proposed links along the northern internal street ensure that future pedestrian links to the east are possible from within the site as well as along the public domain surrounding the site.

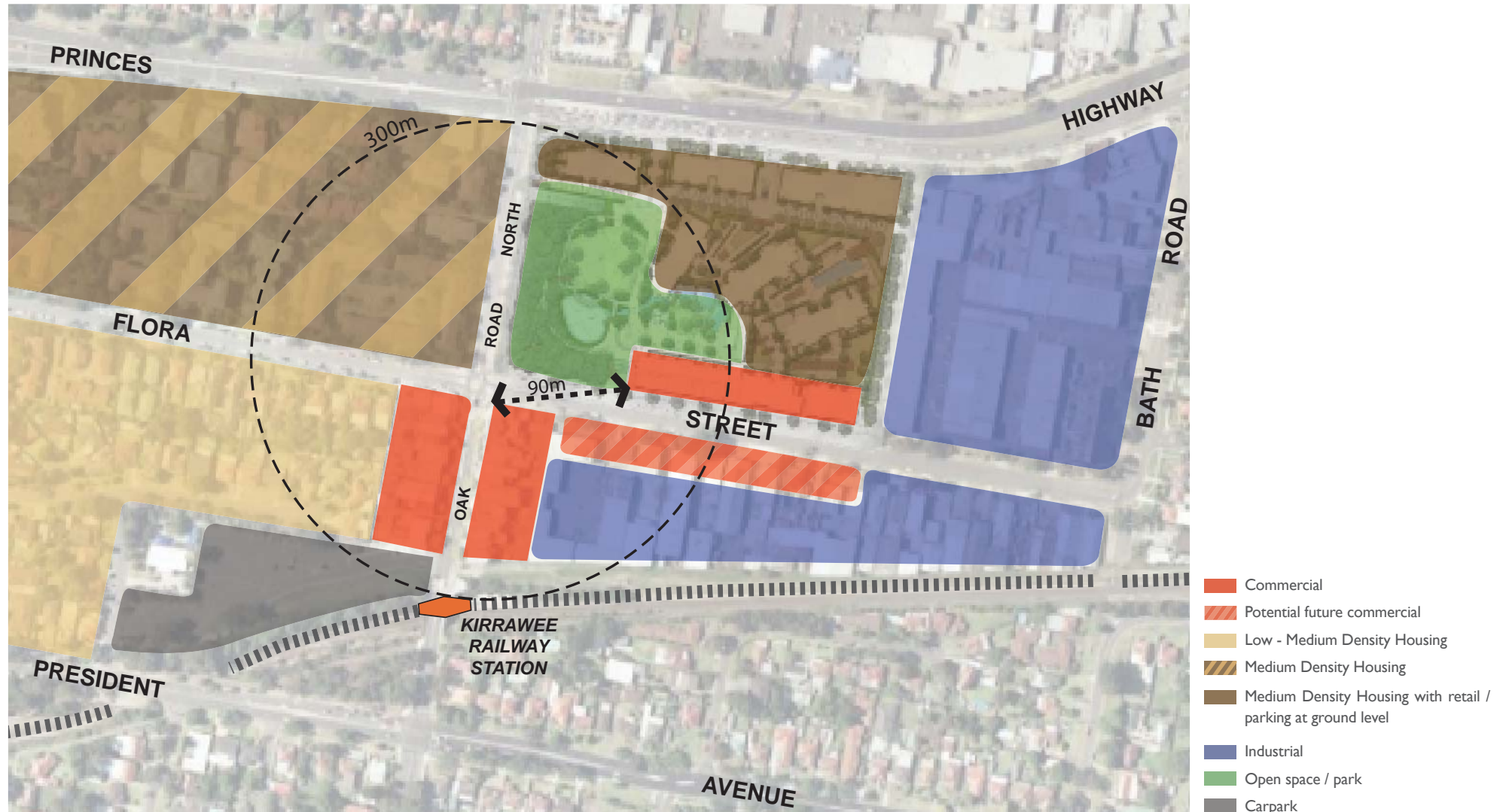
The proposal connects to the surrounding uses at various points. Residential uses on site create continuation of uses along Princes Highway above the ground floor. Retail and commercial uses extend from Oak Street to Flora Street. The public open space located at the corner of Oak Road and Flora Street will effectively be within walking distance of the medium density housing to either side of Oak Road and the low to medium density housing south of Flora Street.

As the diagram on the adjacent page shows, the site is contained within 300m distance of the Railway Station and will become an important link to the industrial uses to the east and north by creating links and active edges through the site that will help make the site permeable and more accessible to all sectors of the community including those with disabilities.

### USES STRATEGY:

- All development on the site will be either mixed use or residential.
- Princes Highway - Highway frontage to be showroom, SOHO or retail uses with residential or commercial uses above.
- Oak Road - SOHO uses to the intersection of Oak Road and the Highway with residential or commercial use above and the rest of the street to have an open space edge including retention of the existing STIF.
- Flora Street - Retail or commercial uses to the Flora Street frontage with entry points to residential uses from street level and above ground level.
- The piazza level for the rest of the development will be retail including the new major urban public open space with a water body connecting to the water body in the park.
- Given the site location, its exposure to Princes Highway, public transport links, the general lack of retail options within the area, the desire to reduce car travel for local needs and its

## 6.0 OPTIONS & DESIGN STRATEGIES



Centre Connectivity Diagram



## 6.0 OPTIONS & DESIGN STRATEGIES

proximity to major employment uses/worker populations there is a strong argument for providing a modest sized shopping centre on the site. The proposed retail will service weekly shopping needs for workers and residents of the site. This Centre will not compete with the existing retailing along Oak Road but rather will complement and integrate it.

- Below ground level car parking is proposed including parking for residents, retail, and commercial uses.
- East Street (Service Road) - for access loading and servicing of the retail component to the east of the site. This service road will be buffered from the industrial estate to the east by a heavy landscape and planting strip.
- The uses fronting the east boundary of the park to the north of the water body are residential uses with some communal spaces on the ground floor next to residential entry points.
- The remainder of the site above the ground level will be residential. All uses fronting the public domain (Piazza, park, street as well as the service corridor along the northern edge of the site, parallel to the Princes Highway) will have an activated ground floor via either retail, SOHO commercial, or residential uses (courtyards and entry lobbies).



*Residential uses within the development will provide a high quality solution and active public areas*



## 6.0 OPTIONS & DESIGN STRATEGIES



*Amended general concept uses strategy*

## 6.0 OPTIONS & DESIGN STRATEGIES

### OPEN SPACE AND LANDSCAPE STRATEGY:

- The public park will be concentrated as envisaged by the DCP towards the corner of Oak Road and Flora Street - its location enables retention of the vegetation areas identified as having high ecological constraints - i.e. STIF along the western side of the Brick Pit.
- The large water body within the park is to be replaced (due to issues of instability and water quality) and reinterpreted in a series of water bodies, ranging from a more natural pond for fauna, through a waterfall structure to a more formal water body and publicly accessed boardwalks along the water's edge.
- An amphitheatre/stairway are proposed as part of the entry statement to Flora Street, the park and piazza which links the piazza with the shops to the south west.
- Retention of native trees along the southern edge of the site will occur where the trees are viable as foraging for threatened bats and birds and supplementary native street tree planting along Flora Street. Where this is not possible due to the need to activate Flora Street, new street trees will be provided.
- Nesting boxes will be provided in existing trees to provide nesting habitat, where hollow bearing trees require removal.
- BBQ, picnic and seating areas will be located within focal amenity areas north of the water body within the new park.
- Communal Open Space will be provided above the retail level for the residential uses as a large open landscaped podium and will include amenities for residents.
- The entry nodes to the restricted 'shareway' areas will be provided as civic spaces to the pedestrian entry points from the Princes Highway.
- On street car parking will be punctuated with street trees throughout the development along Flora Street, the new east-west street and the Princes Highway slip lane to provide a high amenity.
- Provision of buffer planting and trees along the eastern boundary and along Princes Highway will occur to improve the outlook, street scape and amenity of the site and the adjoining uses.
- In ground deep soil planting will be provided to the eastern edge of the site, the Princes Highway frontage, the park and along Flora Street and will sustain significant trees.
- Deep soil planting will be provided via planter beds for the remainder of the new streets and communal spaces capable of supporting mature trees.



*Amphitheatre and stairway providing a pedestrian entry to the site*



*Water feature with boardwalk pathway edge for the more formal piazza edge*



*Activated Streetscapes such as Flora Street*



*Trees and planting beds breaking up on street parking areas*



*Roof top communal landscaped podium character*



*Water elements to the piazza*