

6.5 WSUD AND STORMWATER MANAGEMENT

The total catchment area for the entire SICEEP development is approx. 210 ha. Of this approx. 120 ha is to the south of the precinct and will drain through the Haymarket either from the south east at the junction of Hay and Harbour Streets or south west at the corner of Hay Street and Darling Drive. Ultimately this enters the harbour at Cockle Bay.

In order to facilitate the modelled 1 in 100 year flows, the Boulevard will accommodate a continuous overland flow path that can direct high velocity stormwater away from Haymarket and toward Cockle Bay. Stormwater will be directed toward the Boulevard from the east and west along Hay Street, with minor flows into Haymarket Square in significant rainfall events. Buildings facing The Haymarket Square and the Boulevard will be raised above the anticipated level of floodwater by steps and ramps. The square and surrounding surfaces will be graded to allow for efficient flows toward the Boulevard overland flow path.

WSUD principles within the Public Domain

The expected velocity of the stormwater in high rainfall events means that infiltration into porous surfaces will not occur during these events. Low flows events, however will be mostly absorbed through porous surfaces or soft landscape areas. As such, the public domain will be designed to fulfil the following WSUD principles for dealing with, capturing and re-using stormwater in the site:

- Contain and direct high velocity high rainfall events through the site.
- Design levels to address flooding models.
- Reduce runoff where possible through infiltration in either bio filtration beds or porous paving.
- Absorb runoff from low flow rain events and capture stormwater through permeable paving and high porosity structural soil where feasible within the tree avenue in the boulevard.

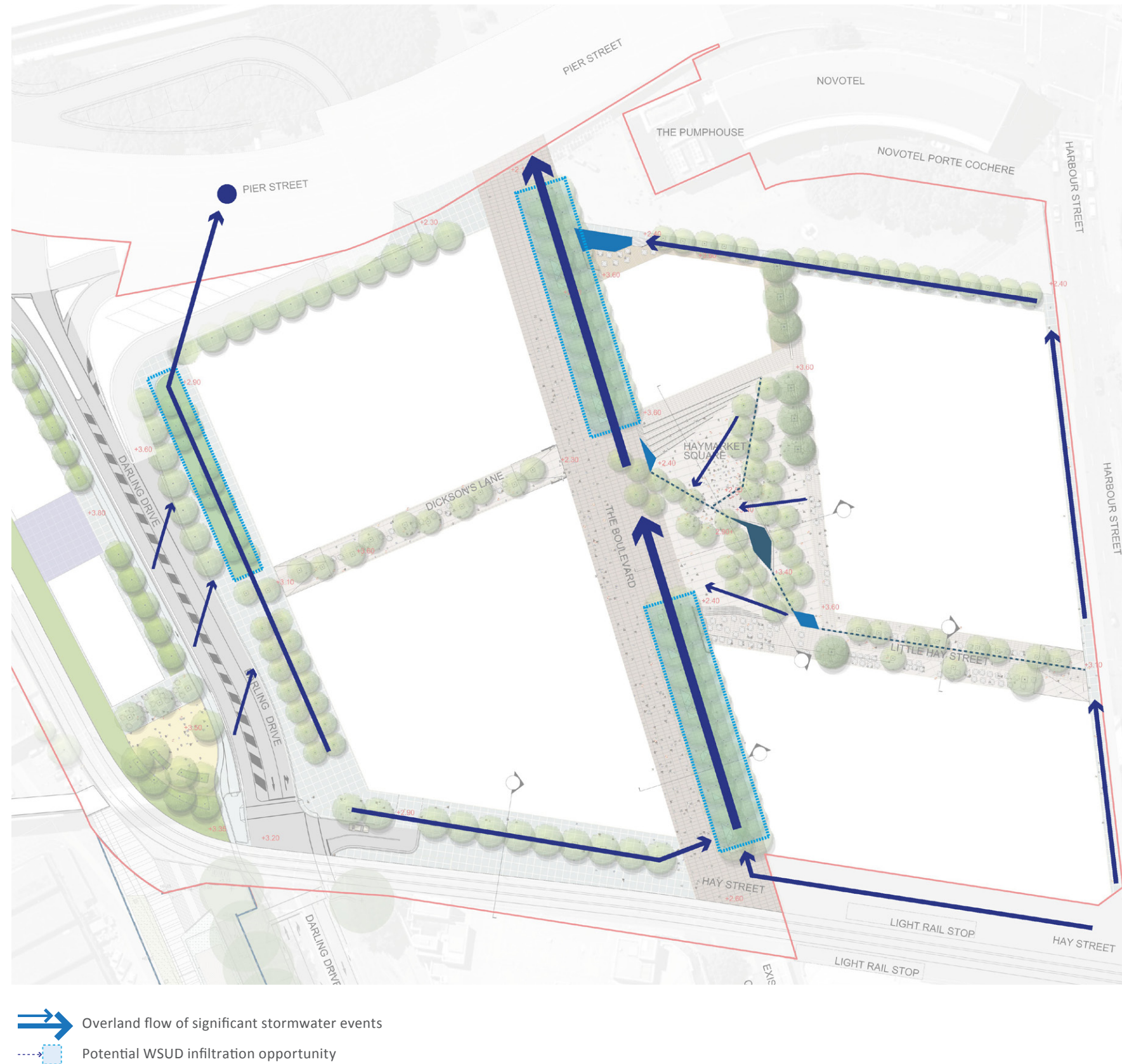


Figure 6.5.1 Haymarket Stormwater Management Strategy



Native planting to bio filtration beds - Source Abulk Nurseries

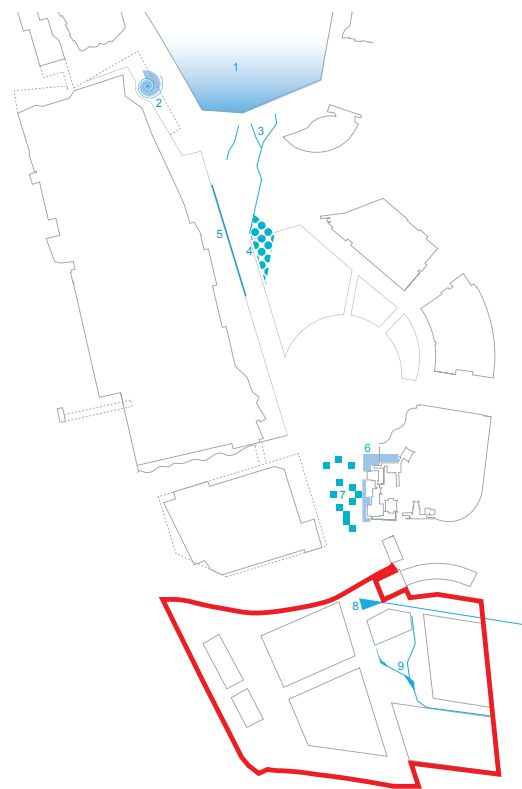


6.6 WATER ELEMENTS

A series of interactive water features represent the beginning of the 'urban stream' that unifies the SICEEP precinct and will play a central role in the interpretation of the lost creek lines and streams of the Darling Harbour basin. The features of The SICEEP precinct combine to create a connected urban stream from south to north, along the Boulevard and terminating at the harbour's edge. The urban stream will be both visually exciting, provide life and interest to the variety of spaces, plazas and play zones throughout the site and be integrated strongly with the site wide approach to art, light and activation.

The Haymarket

Much like a geological split in the pavement, the water element within The Haymarket Square will be a beautifully detailed slice through the plaza ground plane that helps divide the square and provide 'rooms' beneath the deciduous bosque of trees and introduce movement, reflectivity and subtle levels of engagement for workers, residents, visitors, retail shoppers and children. A combination of interpretive rills, bubbling fountains and open pools will enhance the feeling of the start of a stream and set the theme that is to build as the water moves northward through the SICEEP site to Cockle Bay.



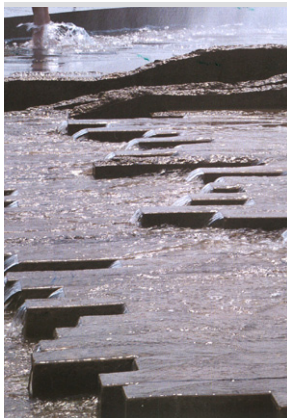
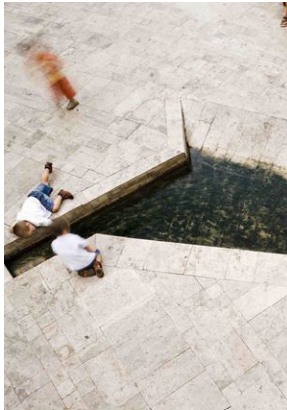
Site-wide Strategy

- 1 Harbour
- 2 'Spiral Cascade' Woodward fountain (retain)
- 3 Water lines
- 4 Interactive water play
- 5 Water wall
- 6 Chinese Garden water feature
- 7 Disappearing water film
- 8 Reflective pool
- 9 Urban water feature



Figure 6.6.1 Haymarket Water Play Strategy

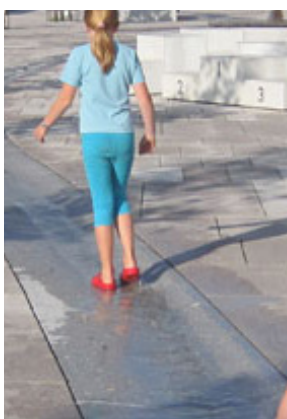
1 Central Water Feature



Central Interpretive Water Feature

An interpretation of both the site's natural history, lost creeks and Industrial past (Dickson's Dam) - this central water feature will feature an interpretation of the dam and form the central focal point of The Square.

2 Interpretive Rill



Interpretive Rills

Signifying water, these interpretive elements will connect to the central water feature - they can take the form of a paved strip, line of steel or lighting

3 Fountains



Entry Fountains

Creating movement and playfulness, entry fountains will vary from bubbles to jets at various times of the day and act as visual attractors.



4 Reflective Pool



Reflective Pools

A calm reflective shallow pool to create a more tranquil atmosphere away from the main square.

6.7 PUBLIC ART AND HERITAGE INTERPRETATION

Public art can deliver unexpected delight and lend a unique quality to a space. The cultural, historical and ecological past of The Haymarket can be interpreted in many ways and some of the opportunities for their integration within the fabric of the Haymarket public domain have been identified in this section.

There are also opportunities across the SICEEP and Haymarket precincts for the integration of artistic works that range from permanent major commissions for works of international standard, to temporary artistic installations.

Figure 6.7.1 outlines these locations and themes, site wide. The exact nature of the works will be developed in consultation with various stakeholders, and will be overseen by an art consultant who will work closely with the public domain design team to ensure that art pieces resonate with proposed character themes, site history, culture and ecology.

Within The Haymarket, public art should be integral to the fabric of the site. Haymarket Square is the main focus for public engagement and it is vital to the place making objectives for the square that the very nature of the square is seen as 'art'. The lost creek and interpretive rills, the fractured ground planes and central water feature are a strong focus and a public art work in themselves. Overlaid upon this, opportunities for more specific textural and graphical interpretations of heritage as depicted in the precedent images of this section can bring a unique identity to the Square and the Boulevard.

Feature lighting will also be a key artistic element within the Square and the laneways.



Interpretive water feature - Banyoles Town Centre, Josep Mias Architects. Source - Adria Goula

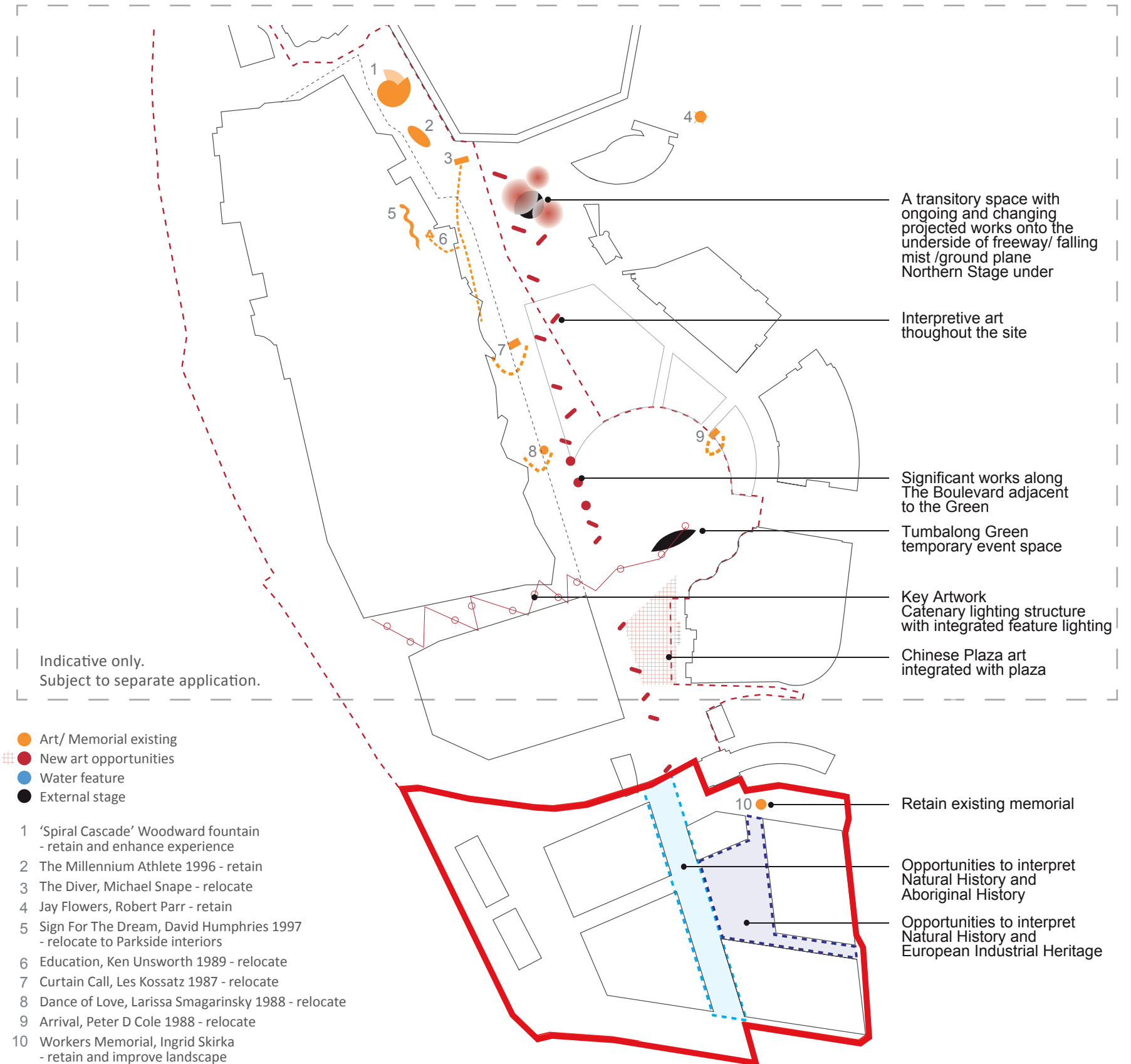


Figure 6.7.1 SICEEP Public Art Strategy

Heritage Interpretation

Within the Haymarket Precinct, there are opportunities to reference the past within the public domain in an artistic interpretation. The interpretation strategy document - **“Telling the Stories of Darling Harbour” by NSW Land & Management Authority** has been referred to in our assessment of specific opportunities relevant to the Haymarket precinct.

The site heritage can be broadly divided into three categories:

- Natural History
- Aboriginal
- European Industrial

Natural History

Section 3.0 of this document outlines the site’s past ecology, topography, foreshore and tidal histories. Opportunities for artistic interpretation of the valley floor are within the surface of the Boulevard, potentially demarcating harbour outlines, lost creek lines and interpretive references to tidal flows. The stormwater and tree planting strategies tie in naturally with this strategy.

Aboriginal History

Darling Harbour and the Haymarket precinct were a rich source of food for the Cadigal People where they fished in the creeks and gathered oysters in the harbour. Opportunities also lie within the Boulevard tree planting zone for an interpretive element within the surface materials referencing the food sources within the lost creek lines and foreshore patterns.

European Industrial

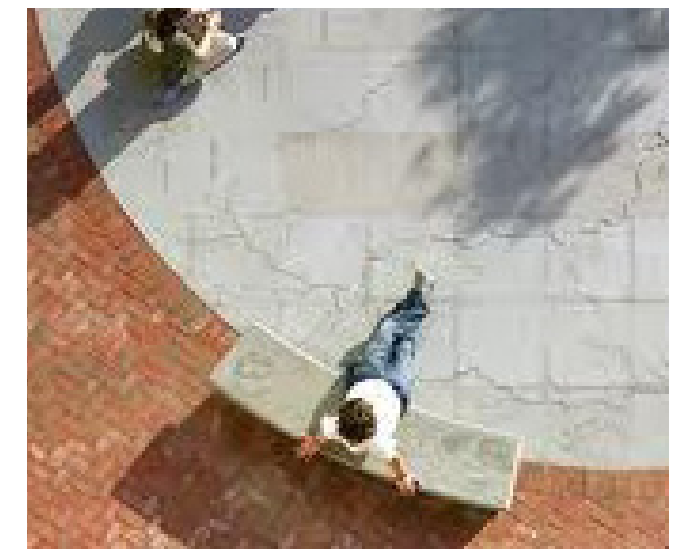
Section 3.2 of this document outlines the industrial heritage of the area. In 1815, Scottish engineer John Dickson set up the colony’s first steam engine where Sussex and Goulburn streets meet. To provide water for the steam engines, Dickson dammed a stream that ran down to Darling Harbour. Today the stream that fed Dickson’s steam engines still flows underground as the Hay Street sewer, and the current Sydney Entertainment Centre stands on the site of Dickson’s Dam. Opportunities for artistic interpretation of the Dickson’s Dam lie in the detailing of the central water feature and the sculptural land form of the Square. Other specific references could potentially be made to Barker’s Mill which once sat on the corner of Pier and Harbour Street. The surviving walls have been excavated and are in storage. These could potentially be recreated within the paving as a textural sandstone element.



Figure 6.7.2 Haymarket art and Heritage Interpretation Strategy



Interpretive art work within paving. Source: lidabashi Plano by Earthscape



Interpretive art work within paving. Source: Delaware River Watershed Map at Friends' Central School, by Stacy Levy



Interpretive art work within paving. Source: Gouvernementsplein, by Karres en Brands Landscape

Interpretive art in the public domain - precedent images

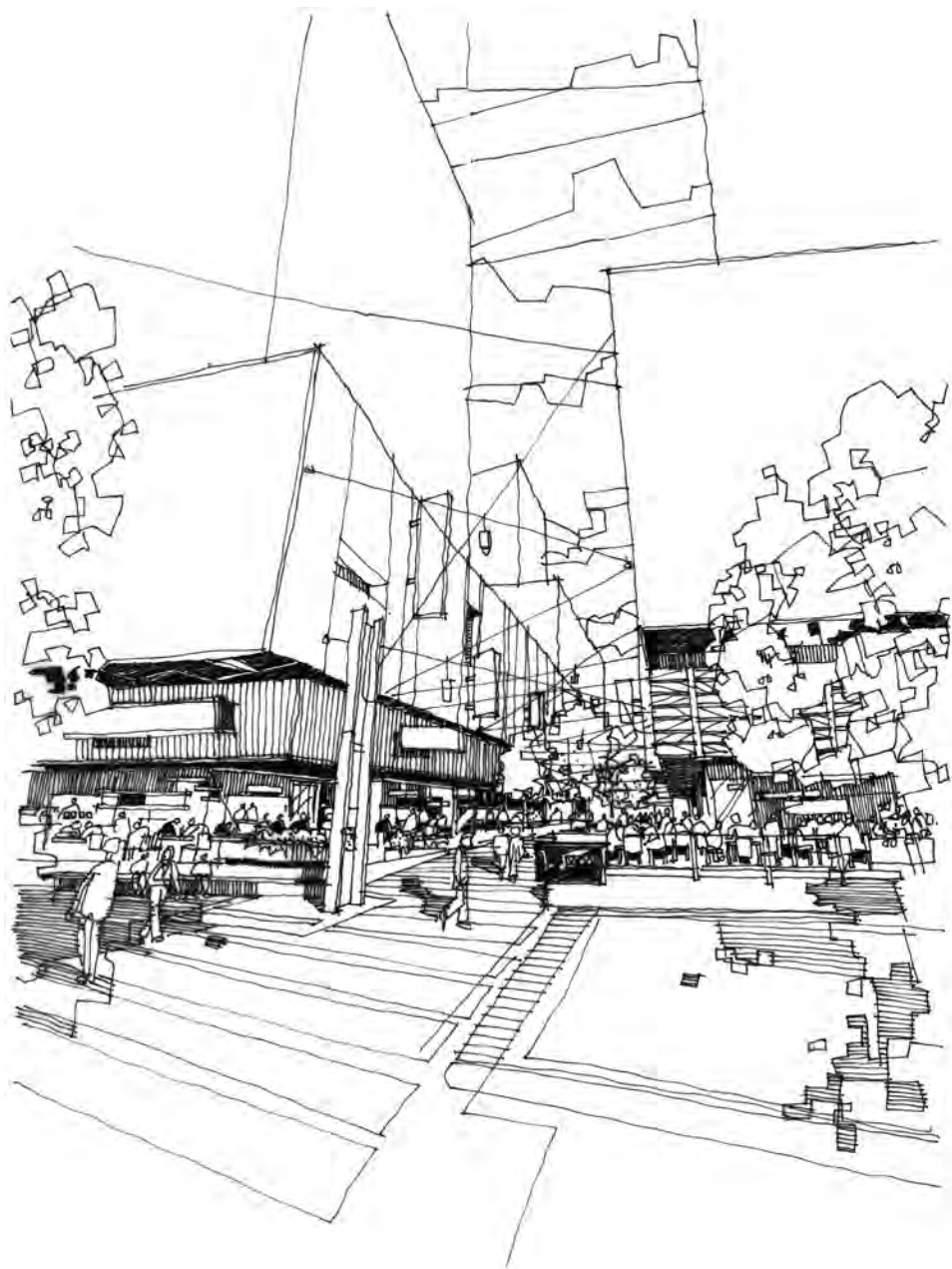


Appendix E

“The Haymarket”

Ground Plane and Retail Design Principles Report for SSDA 2

Six Degrees Pty Ltd Architects
March 2013



DESIGN REPORT

This report examines the proposed new precinct, The Haymarket. The intention is to maximise the opportunities for retail diversity and quality.

The use of conventional shopping centre planning with wide pedestrian paths and wide, shallow shopfronts can have a negative outcome. Common experience shows narrow footpaths and narrow shopfronts work better in this environment and provide more diversity and a more enjoyable human scale.

Several design techniques are employed in this design review:

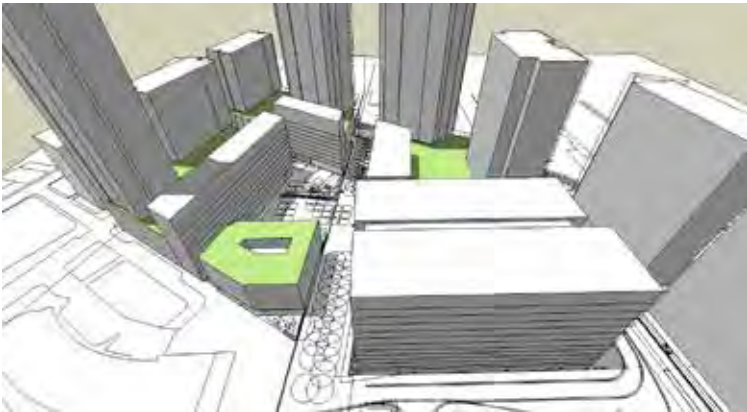
- Emphasis on tenancy models which minimise street widths and maximise the potential for a “fine grain” urban pattern.
- Orientation of the key tenancies away from the supermarket mall model and towards a street based model.
- Orientation of the key tenancies towards the sun and away from the cold southerly winds.
- Diversity of tenancy types and sizes.
- Compression of pedestrian paths.
- The idea that the precinct can develop and mature over time.

The aims of the retail area plan are:

- Promote high quality, long term, individual tenants with a real connection to the locality, and a long term vision.
- Food and beverage offering should be diverse, but emphasize individuality and be of high quality.
- Appropriate street kerbside design for trading to suit a diverse range of users.
- Encourage connection to existing streets and build on existing urban patterns.
- Orient activity into sunny, well lit areas.
- Maintain a sense of compression along footpaths and shop fronts.
- Integrate with and promote the use of public transport and bicycles.

Desire Lines / Opportunities

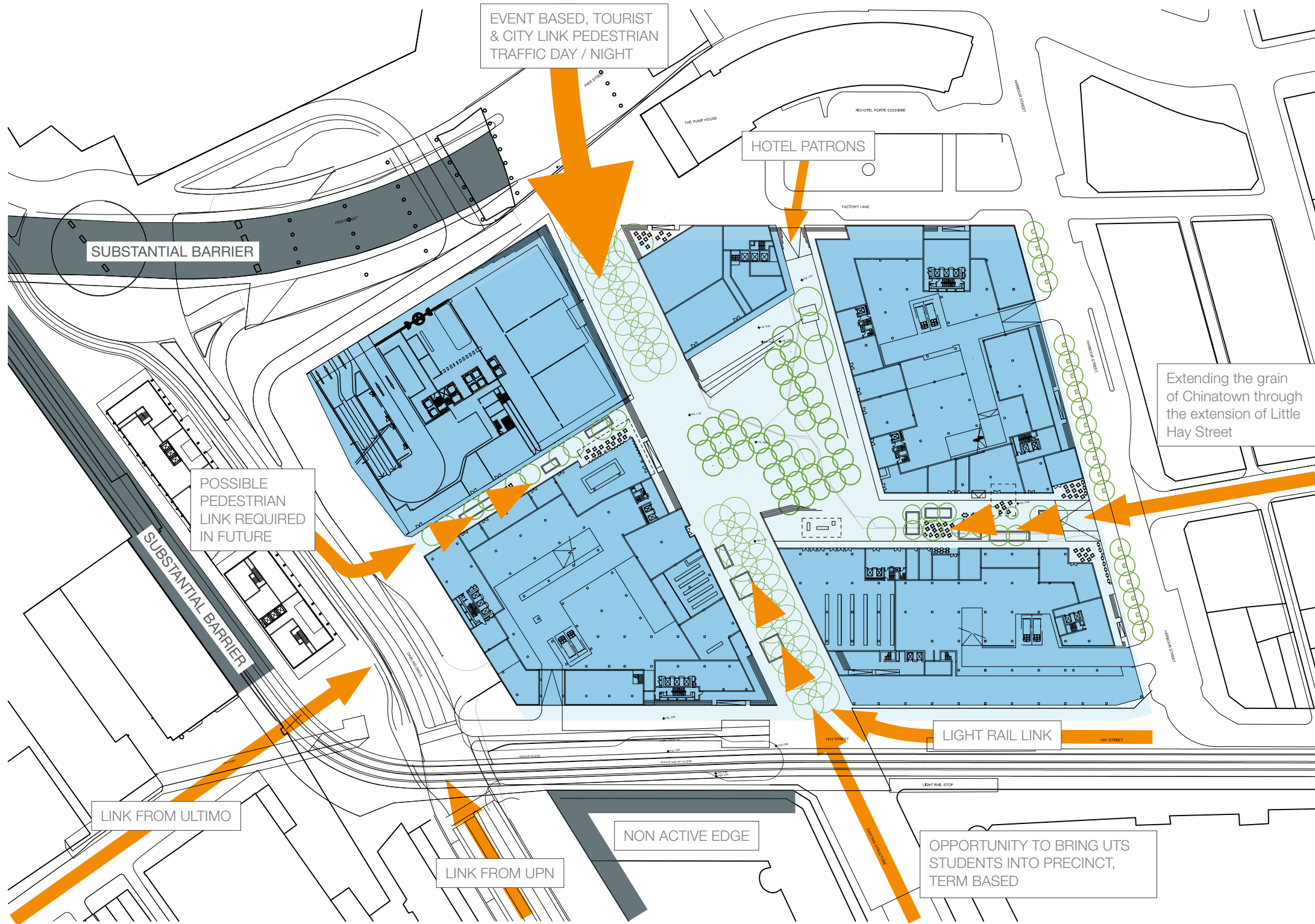
- The retail success of the precinct will be strengthened by careful consideration and integration with the existing surrounding context.
- The fine grain of Chinatown should be capitalised on and extended down Little Hay Street.
 - Opportunities exist to entice UTS students into the precinct from the south. Proposed student accommodation on Darling Drive should also help activate Dicksons Lane.
 - The Darling Harbour events precinct, ICC Sydney, to the north is an important source of large, tourist based crowds.



View looking south along The Boulevard



View looking west along Little Hay Street

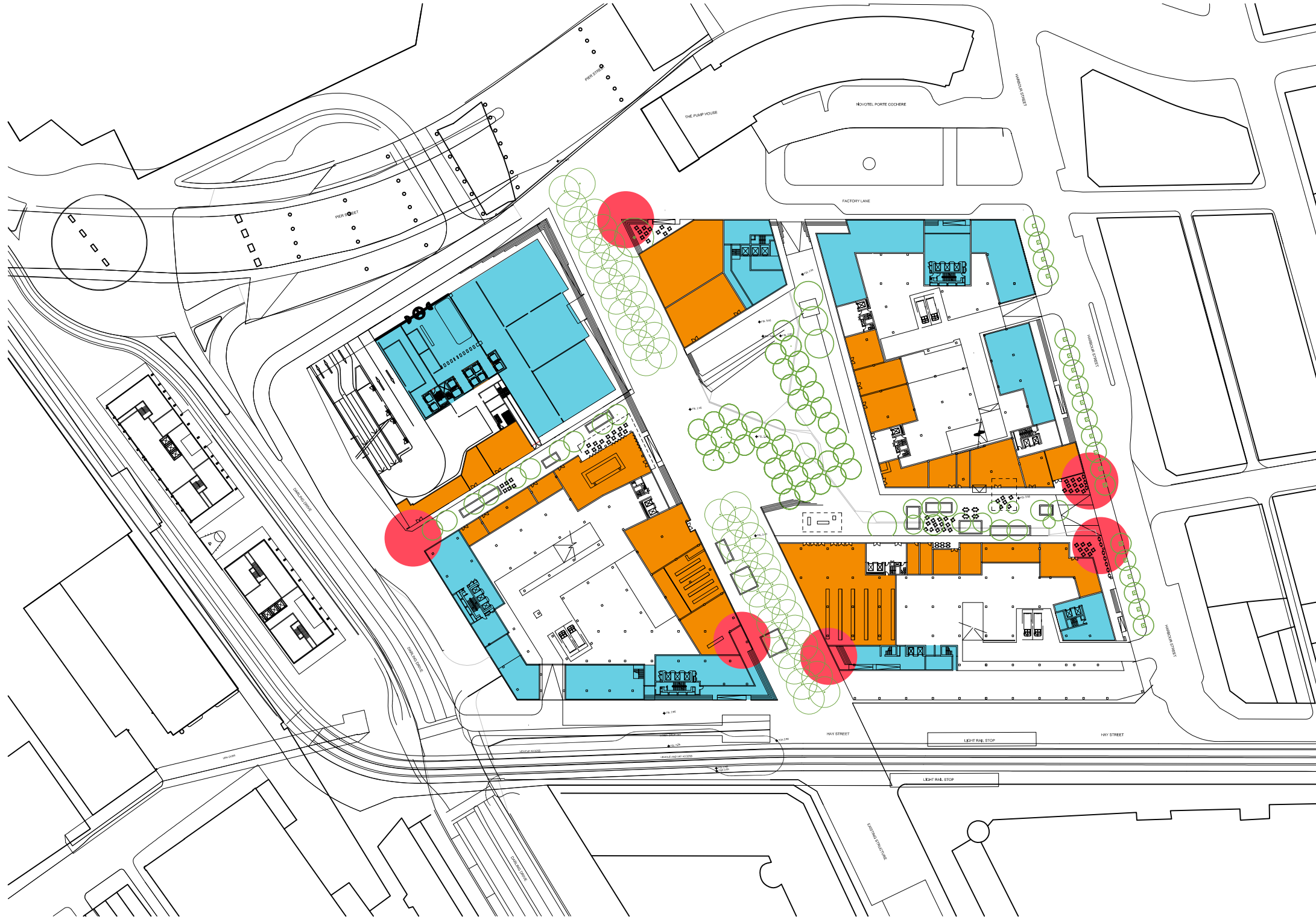


Positioning of Commercial & Retail

- The main entry points to the precinct are to have the most active retail uses, with clear visual links to tenancies that follow.
- A mix of commercial and retail tenancies are used to activate the perimeter of the site. Lobby / entry points are mixed into this grouping of larger scale tenancies.
- Tenancies become of a smaller scale as lanes and streets narrow, reinforcing the fine grain scale of the development.



Large numbers of people at the precinct entry points will help to congest the streetscape and entice visitors into the precinct.



Retail Types

- Food & Beverage**
These tenancies are located exclusively on the 'inside' of the Haymarket Square Precinct.
- Service**
These have been primarily grouped together to help create the atmosphere of a 'high street'. More secondary service tenancies are scattered in Dickson's Lane and Little Hay Street to deliberately break up the mix at a fine grain scale.
- Tech & Lifestyle**
This type of use has been loosely grouped to allow for the potential of this 'tech and lifestyle' category to become an identifying type of offer in this precinct. Flexibility in layout is a key for this fast evolving / changing type of retail offer.

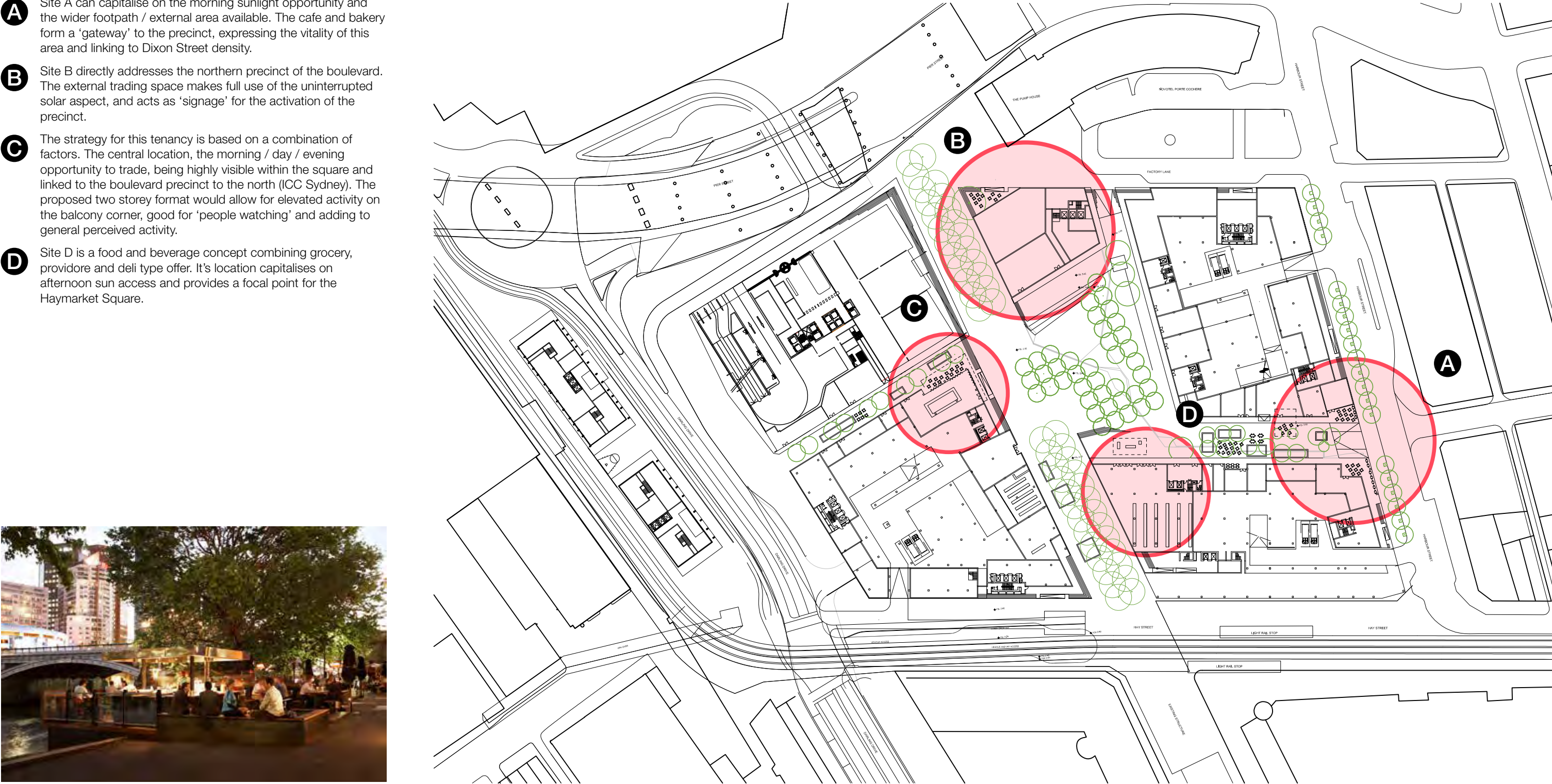


Retail frontages should be diverse and eclectic. Designs should reflect the variety of unique, individual offerings available.



Primary Food & Beverage Opportunities

- A** Site A can capitalise on the morning sunlight opportunity and the wider footpath / external area available. The cafe and bakery form a 'gateway' to the precinct, expressing the vitality of this area and linking to Dixon Street density.
- B** Site B directly addresses the northern precinct of the boulevard. The external trading space makes full use of the uninterrupted solar aspect, and acts as 'signage' for the activation of the precinct.
- C** The strategy for this tenancy is based on a combination of factors. The central location, the morning / day / evening opportunity to trade, being highly visible within the square and linked to the boulevard precinct to the north (ICC Sydney). The proposed two storey format would allow for elevated activity on the balcony corner, good for 'people watching' and adding to general perceived activity.
- D** Site D is a food and beverage concept combining grocery, providore and deli type offer. It's location capitalises on afternoon sun access and provides a focal point for the Haymarket Square.



Sunlighting & Shadows

The key retail / food and beverage tenancies have been placed to maximise sunlight.

- A** The low rise of Chinatown allows for excellent morning cafe opportunities at the Little Hay Street entry.
- B** Haymarket Square and the key food and beverage tenancy have maximum opportunity for direct sunlight from mid morning to mid afternoon.
- C** Good sun access from mid morning to early afternoon will ensure ongoing activation of this key tenancy front.
- D** The most uninterrupted sun opportunities exist to the north of the site



Morning light to the Little Hay Street entry



Afternoon light to the Square



The Square

The key north facing retail offer is a food and beverage concept tenancy combining grocery, providore and deli type offer with coffee and take away similar to Dean and DeLuca or Wholefoods NYC.

The tenancy will be clearly seen from all sides of the square and Little Hay Street and as such it has the chance to become a place for the unplanned, impromptu meetings that make a social space work.

The northern aspect, the seating, and landscaping all combine to form a true 'square' within the larger 'Haymarket Square'. The Square design must aim to maximise the extent of level space around this edge of the Square to accommodate public furniture zones.

The zone also helps to 'cap' the end of Little Hay Street and provide definition to the street as a precinct of it's own.

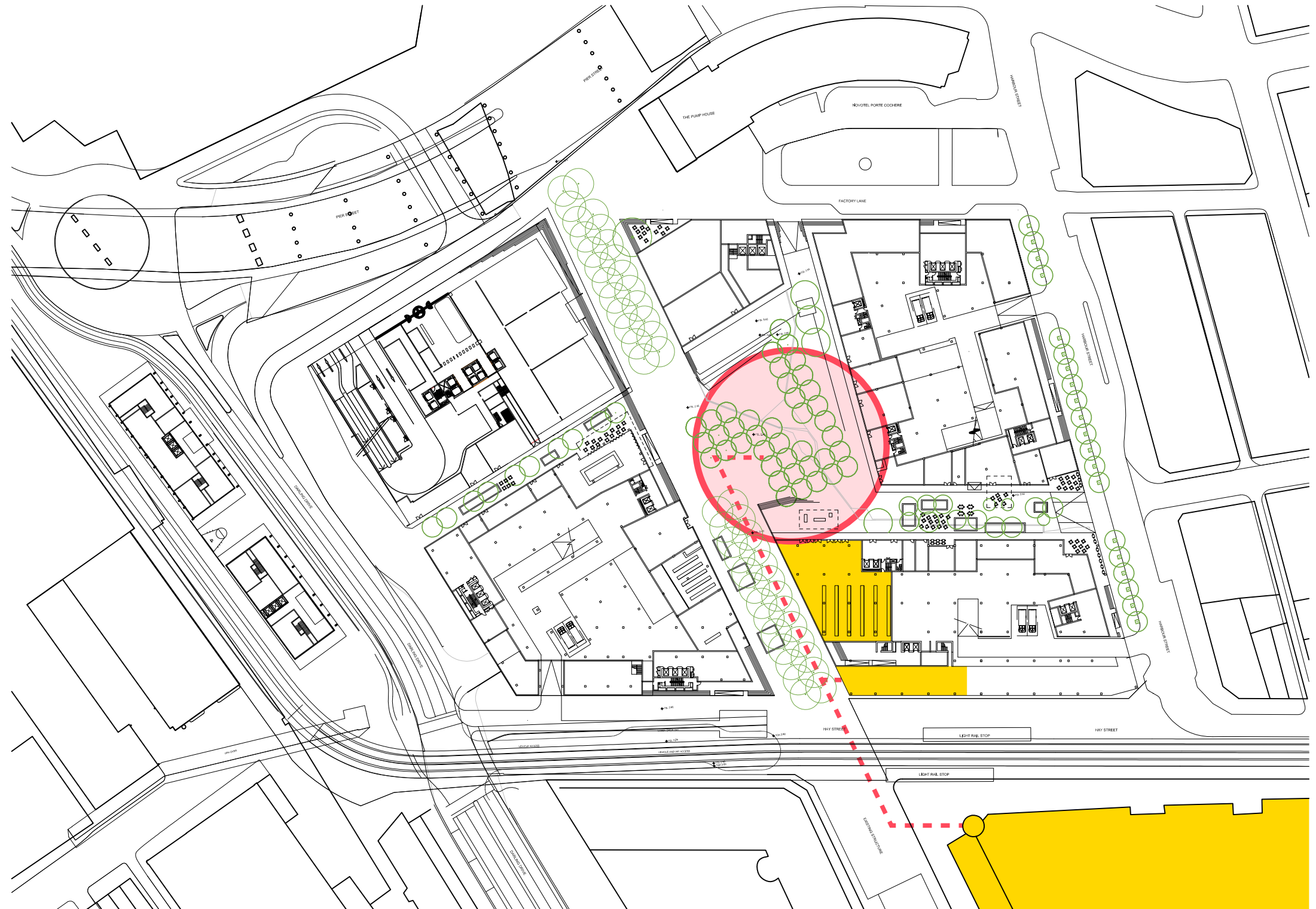
Public Amenities

The main public zones of the square, and the retail precincts in general should be provided with some public toilet facilities including DDA compliant toilets.

In general, tenancies should provide their own toilet facilities if possible, as part of the fitout works. The use of centrally provided toilet facilities can reinforce the feeling of a managed “mall” like space. However, tenant provided toilets do the opposite, and encourage a feeling of individual control and responsibility.



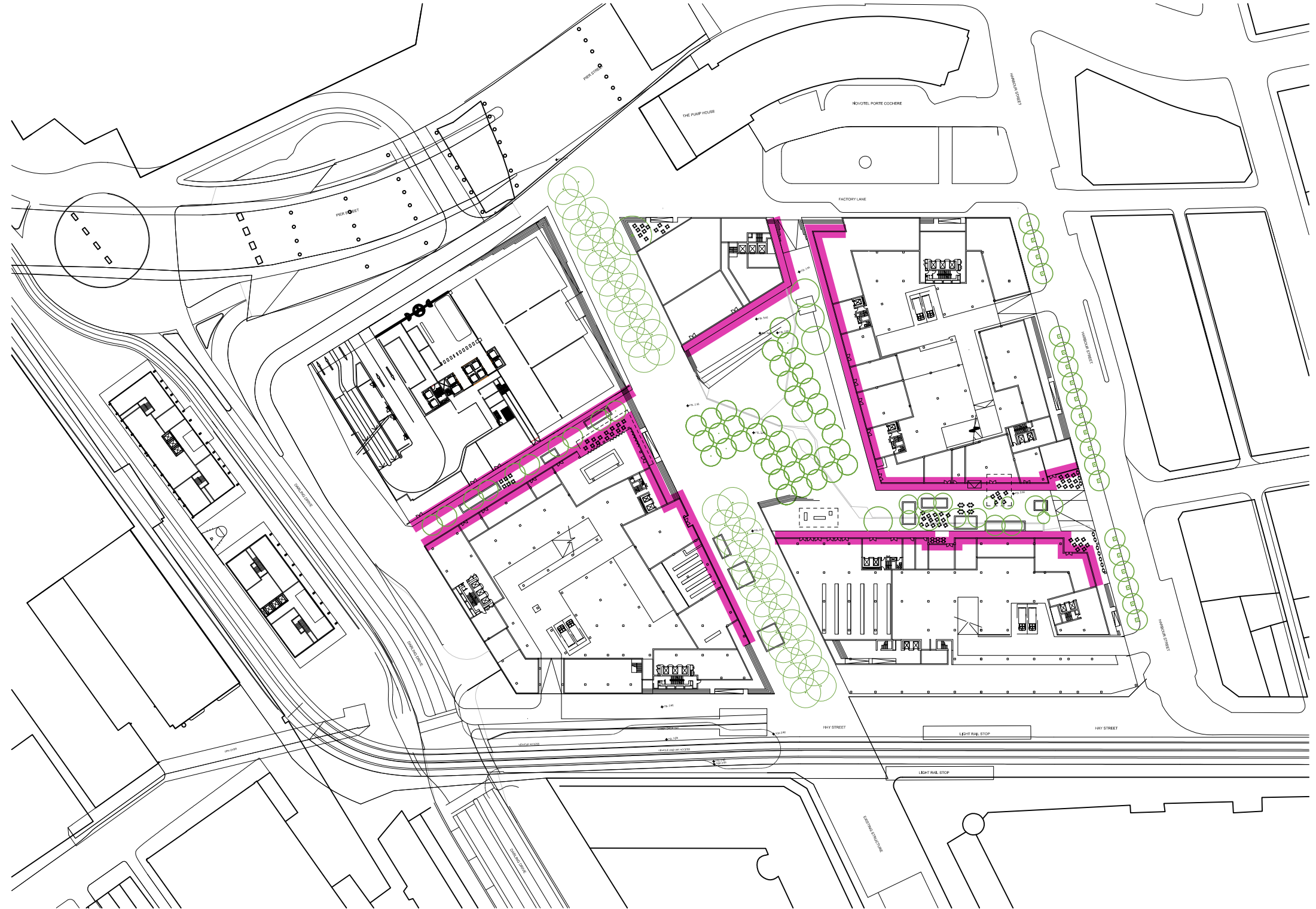
Dean and DeLucas, NYC



Canopies / Awnings

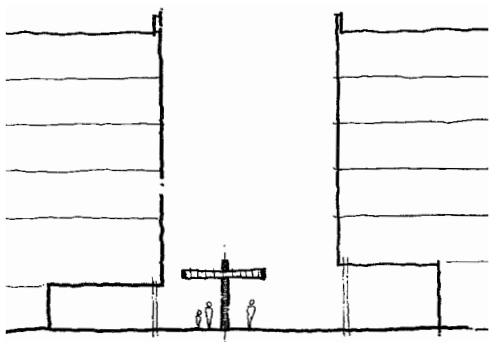
Pedestrians need to be able to circulate the site under cover. Awning structures should vary considerably in height, scale, material and type (eg. cantilevered or column support). This strategy will help to present the subliminal diversity that is experienced in a traditional High Street.

- Shopping strips should have awnings to provide pedestrian protection from sun and rain.
- Awnings should be fixed and continuous where ever possible.
- Kerbside areas should be permitted to have umbrellas.
- Larger kerbside areas should consider inclusion of fixed roofing which allows for street trading all year round.

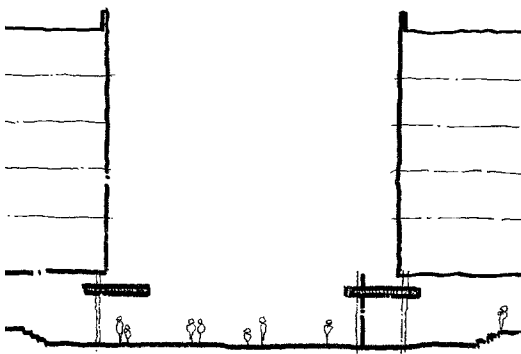


Canopies / Awnings

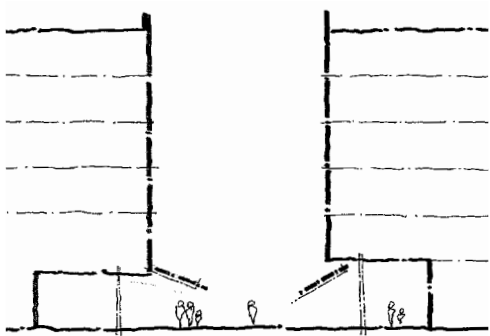
A variety of awning types should be encouraged. These awnings compress entry heights and help to further re-scale the building podiums to the pedestrian level. Combined with appropriate podium modelling, these awnings should aid in mitigating wind downwash impacts from structure above. Options of solid awning structures should be explored for noise attenuation potential.



TYPE 1 Free-standing awnings float within the street and provide pedestrian anchor points.



TYPE 2 Low building awnings compress the building entry. By carry inside beyond the glazing line they also help to blur the internal / external threshold.



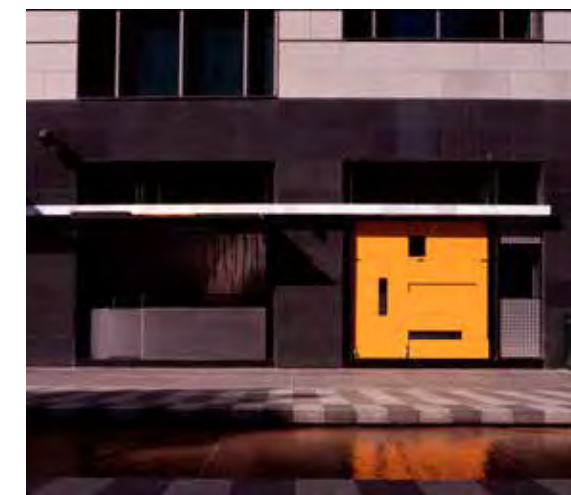
TYPE 3: Operable lightweight awnings can be retracted subject to weather conditions.



Facades / Shopfront / Thresholds

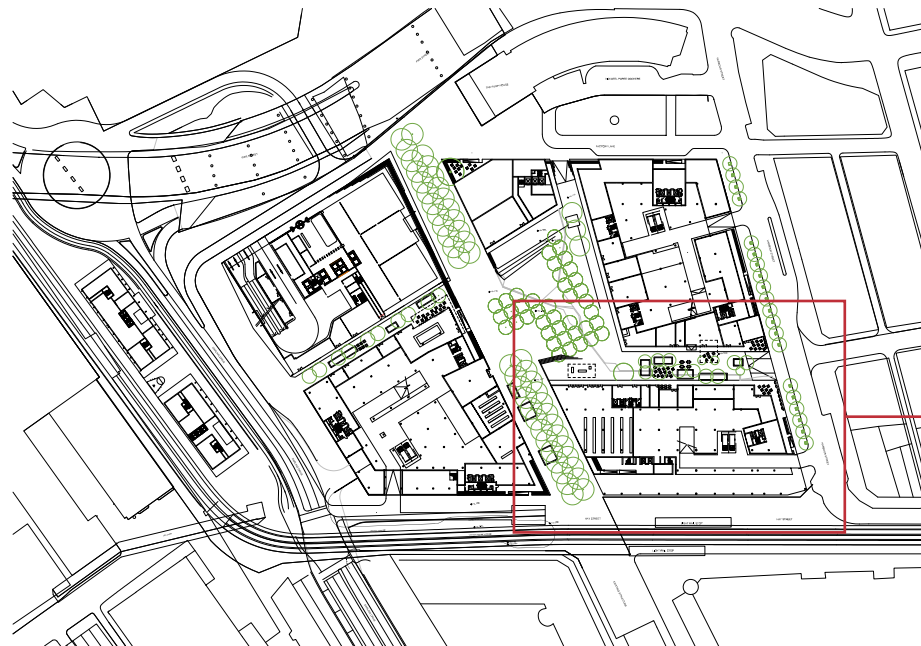
Shopfronts

- Shopfronts should have active edges. Designs should incorporate 500mm high informal seating ledges and operable windows and canopies.
- Designs should employ a diversity of glazing methods and materials, not a single repetitious solution.
- Setbacks to the glazing line, depending on the tenancy use, should be encouraged.
- Small tenancy sizes will encourage a high ratio of door entries to the street and foster an engaging pedestrian experience.



Landscape Principles

1. Deliberately placing raised planters adjacent to tenancies is a strategy to create compression at the shop front window line for better retail opportunities. The type of planting must reinforce the desired fine grain scale of each area within the precinct and respect required viewlines for commercial identity.
2. Off setting the landscape raised planters around the food and beverage tenancies allows clear trading destinations between tenancies, and helps to maximise the feeling of activity, again through controlled compression of the space. Custom made screens should be used in preference of generic sponsored glass screens.
3. Minimum required vehicle pathways for emergency vehicles and waste management services etc will need to be accommodated in the landscape design.
4. The landscaping should encourage pedestrian movement to 'weave' through the street. This movement should free up small pockets for seating or passive street activity.





A compressed entry point with a high level of pedestrian and visual activity will help encourage people to enter the precinct.

The use of double height spaces, especially at 'gateway' points will clearly identify major retail assets, and allow for flexibility of offer.