

20 March 2014

Development Manager  
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Zetland NSW 2017

### KIRRAWEE BRICK PIT - 75W MODIFICATION REVIEW

Dear Adrian,

Thank you for giving Cumberland Ecology the opportunity to prepare a letter report to assess the proposed modification of the approved Concept Plan of the development at the Kirrawee Brick Pit. The focus of this assessment is on the extent of Sydney Turpentine Ironbark Forest (STIF) that will be impacted, and on the proposed relocation of the waterbody to the north.

A comparison of the impacts of the approved Concept Plan and the proposed amended Concept Plan indicate that they both similar ecological outcomes. The proposed amended Concept Plan results in a reduction of STIF to be removed by 54 m<sup>2</sup>, and a 2:1 ratio of compensatory plantings are proposed. The relocated waterbody will contain minimum dimensions of 800 m<sup>2</sup>, and will continue to provide a water source for the species that currently utilise it. These will result in a similar ecological outcome to the approved Concept Plan.

Our full report is provided within **Appendix A** to this letter.

If you have any questions, please feel free to contact me at any time.

Yours sincerely



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*Appendix A*

Assessment of Proposed Amended Concept  
Plan

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## **A.1 Introduction**

Ionic Management represent the new owners of the Kirrawee Brick Pit, located at 566-594 Princes Highway, Kirrawee (the subject site) and have lodged a S75W Modification Application to amend the currently approved concept plan. Planning NSW have requested further information in order to assess the amended concept plan. Specifically, they require a comparison of the previously prepared report on the approved concept with the current proposal, with a focus on the Endangered Ecological Community (EEC) Sydney Turpentine Ironbark Forest (STIF), and two threatened fauna species; the Grey Headed Flying Fox (*Pteropus poliocephalus*) and the Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis*).

### **A.1.1 Purpose**

The purpose of this report is to present a comparison of the approved Concept Plan to the proposed amended Concept Plan. This report presents an appraisal of the approved Concept Plan and assesses the ecological impacts of the proposed amended Concept Plan, with particular reference to STIF, the Grey Headed Flying Fox and the Eastern Bentwing Bat.

## **A.2 Methods**

### **A.2.1 Literature and Database Review**

A literature review was conducted of earlier reports prepared for the subject site by Cumberland Ecology in order to inform our comparison with the new proposal. This included the Flora and Fauna Assessment (Cumberland Ecology 2010) and both the original Biodiversity Management Plan (Cumberland Ecology 2010a), and the updated BMP (Cumberland Ecology 2011). The Conditions of Consent for the approved concept plan were also reviewed, as was the amended Concept Plan documentation.

### **A.2.2 Site Inspection**

A site inspection was conducted on 19<sup>th</sup> March 2014 by Cumberland Ecology to assess the impact of the proposed modification in relation to the threatened species and STIF listed above. Notes and photographs were taken of the subject site in key areas in order to document current site conditions and the extent of vegetation communities present on the site. Areas of particular focus included the current areas of STIF and the waterbody present on the site, as well as the proposed new locations of STIF and the waterbody.

## A.3 Results

### A.3.1 Site Description

The subject site is a former brickworks quarry, and currently consists of largely disturbed areas of exotic grassland vegetation and grassland in the northern sector with some small areas of remnant native vegetation to the south and south-west (**Photograph 1**). The remnant native vegetation surrounds the former quarry pit, concentrated along the western and southern edges. This vegetation has been identified as Sydney Turpentine Ironbark Forest (STIF), which is listed as an Endangered Ecological Community (EEC) under the NSW *Threatened Species Conservation Act 1995*, and as Critically Endangered under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (under the name Turpentine-Ironbark Forest of the Sydney Basin Bioregion).



**Figure 1** STIF Vegetation in the Subject Site

The previous quarry pit holds a large body of fresh water, occupying approximately 1.4 ha in size and dominating the southern portion of the site. The flooded pit is significantly depressed within the local topography, with steep embankments of up to 15 m above the current water line, and the depth of water has been estimated at over 20 m (**Photograph 2**).

Two threatened mammal species have been recorded within the subject site, The Grey-headed Flying Fox (*Pteropus poliocephalus*) and the Eastern Bent-wing Bat (*Miniopterus schreibersii oceanensis*). These species were associated with the water body (the quarry), with the Grey-headed flying Fox observed drinking from the pit (Cumberland Ecology 2010).





**Photograph 2      Flooded Pit on the Subject Site**

### ***A.3.2    Approved Concept Plan***

In 2012, Concept Plan MP10\_0076 was approved for a mixed use development on the subject site. The Concept Plan provides for a mixed use development of the site comprising the following:

- Use of the site for a mixed use development with associated public open space;
- Indicative building envelopes for 9 buildings to a maximum height of 14 storeys above podium;
- Residential floor space (432 dwellings) and 15,230 square metres of retail/commercial floor space;
- Basement, ground and above ground car parking;
- Road layout to support the development;
- Public pedestrian and cycle pathway;
- Public park with lake and surrounding forest; and
- Landscaping areas throughout the site.

A total of 4,766 m<sup>2</sup> of STIF occurs in the subject site. According to the approved Concept Plan, the majority of the STIF vegetation occurring on original soils in the western sector is to be retained, except for a small portion to be removed in the northern sector for vehicle access to parking facilities. Some STIF vegetation, primarily comprising regenerating STIF on the quarry walls, is to be removed to allow for the construction of the public park and new permanent water body. The majority of the vegetation along the southern boundary will be removed, except for the western end. The total area of STIF to be removed according to the original Concept Plan is 3,296m<sup>2</sup>.

According to the original Concept Plan, compensation for the areas of STIF to be removed will be provided, by enhancing the STIF to be retained on site and by replanting additional offset areas with the aim for the vegetation in the long term to develop into a functional STIF community. The majority of the offset area is proposed to be located on Council land within the locality with the balance to be planted adjoining the STIF retained on-site.

As a compensatory measure for the drainage of the pit, a permanent pond will be constructed in the western side of the subject site. A temporary pond will be provided in the north-western part of the site during the reconstruction period for the water body.

### **A.3.3 Modifications 1 and 2**

The Concept Plan was subsequently modified on 17 January 2013 (Concept Plan MP07\_0076 MOD 1) to amend the wording of Environmental Assessment Requirement No. 18 so that the design excellence provisions only relate to above ground works.

In November 2013, MOD 2 to MP10\_0076 was lodged with the Department of Planning and Infrastructure and is currently under assessment. The proposed modification is essentially a housekeeping amendment and seeks consent for the following:

- Amendment of several of the conditions of consent to defer their satisfaction to allow the commencement of early works on the site as soon as possible including dewatering, bulk excavation and remediation.
- A minor amendment the methodology for dewatering including an addendum to the Biodiversity Management Plan, addendum to the Geotechnical Report and an updated Dewatering Report.

### **A.3.4 Proposed Amended Concept Plan**

The current application (MOD 3 to MP10\_0076) seeks to modify the approved Concept Plan (MP07\_0076 MOD 1), pursuant to S75W of the NSW *Environmental Planning and Assessment Act 1979* and the amended Concept Plan comprises the following:

- Use of the site for a mixed use development with associated public open space;
- Indicative building envelopes for 7 buildings to a maximum height of 15 storeys;

- Residential floor space (indicatively 749 dwellings) and 14,190 square metres of retail/commercial floor space;
- Basement, ground and above ground car parking;
- Road layout to support the development;
- Public park (9,000 square metres) with lake and surrounding forest; and
- Landscaping areas throughout the site.

The proposed modification retains the fundamental elements of the approved concept plan however seeks consent for a rationalised site layout and reconfiguration of buildings.

The amendments that are relevant to ecology are mainly in the western part of the subject site. This area will be occupied by a new 9,000 square metre public park which is to be embellished and dedicated to Sutherland Shire Council, as established by the approved Concept Plan. This arrangement of construction and delivery of the park is not proposed to be amended by the proposed modification.

However, the amended landscape design for the park relocates the water body to the north and includes a much larger open grass area at the south-eastern side. It also includes the construction of a new child's playground in the south-western corner of the site. Notwithstanding the re-configured landscape design, the park still provides the environmental benefits as originally approved including retention of the trees along the Oak Road frontage of the site and a drinking source for the bats which occupy the site.

## A.4 Assessment of Proposed Modification

The proposed modification to the approved Concept Plan involves relocating the final location of the water body further north, and involves removing different areas of the STIF vegetation community than previously proposed. This section compares the proposed Concept Plan to the approved Concept Plan, and provides an assessment of the ecological outcomes of the proposed Concept Plan in terms of STIF and the waterbody. **Appendix B** provides a landscape plan and a comparison of the areas of STIF to be removed under the proposed modification and the approved Concept Plan.

### A.4.1 STIF

Approximately 4,766 m<sup>2</sup> of STIF currently occur on the subject site, and the approved Concept Plan would result in the removal of approximately 3,296 m<sup>2</sup> of this community. According to the amended Concept Plan, approximately 3,242 m<sup>2</sup> of this community will be removed, which constitutes a reduction of approximately 54 m<sup>2</sup> of this community that is required to be removed (or an increase of approximately 54 m<sup>2</sup> in the area of original STIF that would be retained on the subject site).

To compensate for the removal of STIF vegetation, there is a requirement to replace the area of STIF to be removed by plantings, at a ratio of 2:1 to the area of impact. That means that for every square metre of STIF that is removed, two square metres must be planted. This is proposed to be provided both on-site and off-site in appropriate conservation reserves.

Due to the removal of approximately 3,296 m<sup>2</sup> of STIF, the approved Concept Plan required 6,592 m<sup>2</sup> of compensatory planting (2:1 ratio). Of this, approximately 1,693 m<sup>2</sup> of STIF was proposed to be provided on-site on re-graded batters and a further 5,300 m<sup>2</sup> was to be provided in off-site plantings. This provided a total of 6,993 m<sup>2</sup> of compensatory plantings.

The amended Concept Plan proposes to remove approximately 3,242 m<sup>2</sup> of STIF, and therefore requires 6,482 m<sup>2</sup> of compensatory plantings (2:1 ratio), which is a reduction of 110 m<sup>2</sup>. The amended Concept Plan proposes to plant a total of 2,785 m<sup>2</sup> of STIF on the site, made up of 872 m<sup>2</sup> on re-graded soil batter, as well as additional areas of STIF within the park and on the eastern boundary (554 m<sup>2</sup> and 1,359 m<sup>2</sup> respectively). In addition, approximately 3,697 m<sup>2</sup> of offsite plantings is proposed for the amended Concept Plan. In total, approximately 6,482 m<sup>2</sup> of compensatory plantings are proposed to be provided under the proposed Concept Plan, which is equivalent to a 2:1 ratio of STIF cleared to that replanted. This is in accordance with the agreed compensation measures for the removal of STIF, and is appropriate to compensate for the removal of some areas of this community.

Although the ultimate outcome in terms of amount of STIF that will exist after the development is complete is similar between the approved Concept Plan and the proposed amended Concept Plan, there are some key differences. These relate mostly to the amount of on-site versus off-site plantings that are proposed. The approved Concept Plan proposed to plant approximately 1,693 m<sup>2</sup> of STIF on the subject site compared to approximately 2,785 m<sup>2</sup> under the proposed amended Concept Plan. This is an increase of approximately 1,092 m<sup>2</sup>. This is considered to be a better ecological outcome, as it replaces SSTF closer to where it will be removed and will directly benefit the species impacted by the removal of SSTF on the subject site. This will also assist in maintaining genetic integrity of this occurrence of SSTF and will increase the area of this community in the subject site.

#### **A.4.2 Water Body**

The dimensions of the water body to be retained will be approximately 40 m x 20 m. These dimensions are consistent with the requirement of OEH, which require the water body to have an area of 800 m<sup>2</sup> with at least a 40 m landing zone for bats to approach and drink. Given that these criteria will be met, it is considered unlikely that the amended proposal will result in any reduction to ecological amenity relative to the approved Concept Plan. The two threatened species of bats that are known to use the waterbody will be able to continue utilising the waterbody as a water source and no impact will occur to these species.

## A.5 Conclusion

The proposed modification is not considered likely to result in a negative ecological outcome with regards to STIF and the threatened bat species known to use the waterbody. Approximately 54 m<sup>2</sup> less STIF will be removed from the subject site according to the proposed amended Concept Plan, which will remain. Appropriate re-plantings will occur of this community within the subject site and off-site to compensate for this removal, and a 2:1 ratio of STIF is proposed to be replanted to that being disturbed has been achieved. This is in accordance with the agreed compensation measures for the removal of STIF. Furthermore, significantly more STIF will be planted on the subject site than in off-site areas under the proposed amended Concept Plan, which will maintain the local occurrence of this community and will benefit the species impacted by the removal of SSTF on the subject site. The re-plantings of this community will increase the area and quality of this community in conservation tenure and results in a good outcome for this community.

The waterbody on the site will remain, albeit in a different location. The dimensions are appropriate as agreed with OEH, and it will continue providing a water source for the species that currently utilise it, including the Grey-headed Flying fox and the Eastern Bentwing Bat.

The proposed modified Concept Plan is considered to be appropriate and will result in similar ecological outcomes as the original approved Concept Plan.



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*Appendix B*

Kirrawee Brick Pit Landscape Plan and  
STIF Comparison

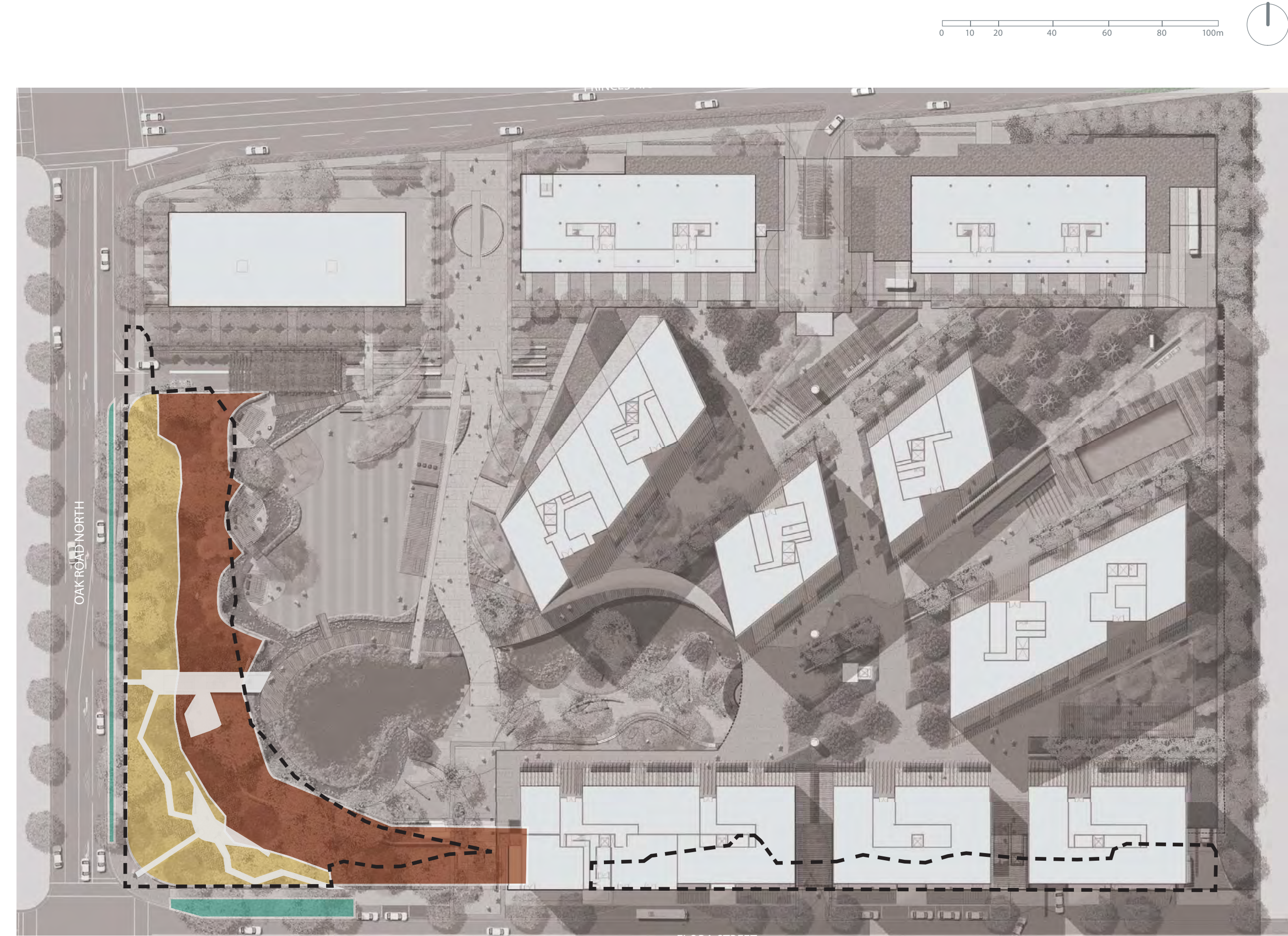
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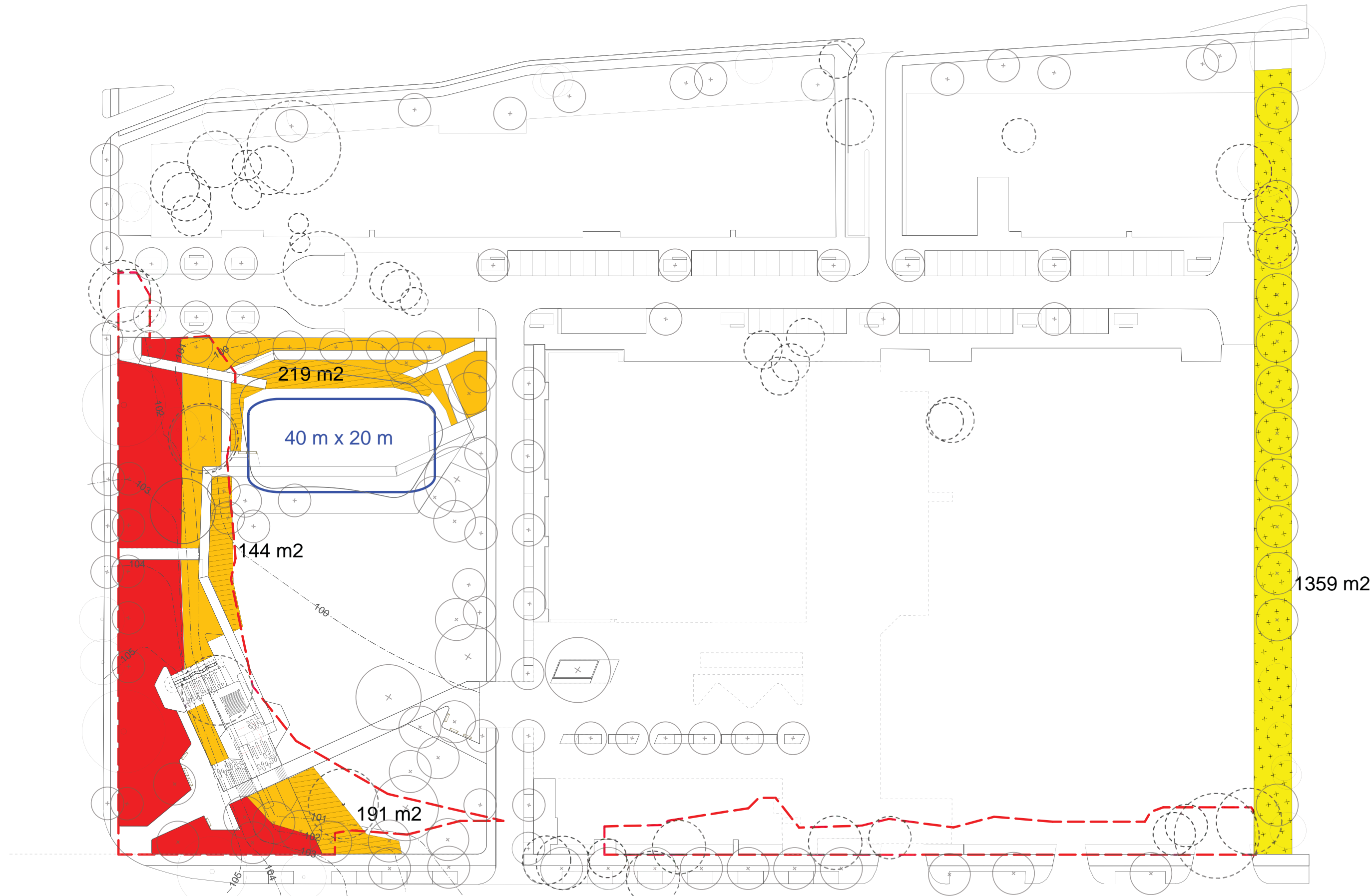




Approved DA Plan (content supplied by AECOM)

- Legend
- Existing STIF vegetation (Cumberland Ecology, 2011)
  - STIF vegetation to be retained on original soils
  - New areas of STIF to be planted on re-graded batters
  - STIF ground / low shrub layer and trees planted in verges
  - Pedestrian pathways / stairs / lookout

Description	Cumberland Ecology report (m²)	Approved Concept Plan (m²)	Proposed S75W (m²)		Difference between Approved Concept Plan/ Proposed S75W (m²)
Current extent of existing STIF vegetation	4766				0
Existing STIF vegetation to be retained on original soil	1973	1470	1524		54
STIF to be removed	2793	3296	3242		<54>
Compensatory STIF bushland planting replacement required (2:1 ratio)	5585	6592	6482		<110>
New areas of STIF to be planted within the Brick Pit on re-graded soil batter	-	1693	872	Total replacement on site = 2785	1092
Other potential areas of STIF planting within the park			554		
New area of STIF to the eastern boundary			1359		
Compensatory STIF bushland planting off-site as identified by the bushland compensatory planting report	-	5300	3697		<1603>
Total compensatory planting achieved	-	6993	6482		
New areas of STIF ground / low shrub layer and trees planted in verges	-	303			



Proposed Landscape Plan\_Impact of STIF

- STIF: EXISTING AREA
- STIF TO BE RETAINED
- STIF TO BE REINSTATED TO REGRADED BATTERS
- OTHER POTENTIAL STIF WITHIN THE PARK
- STIF TO EASTERN BOUNDARY