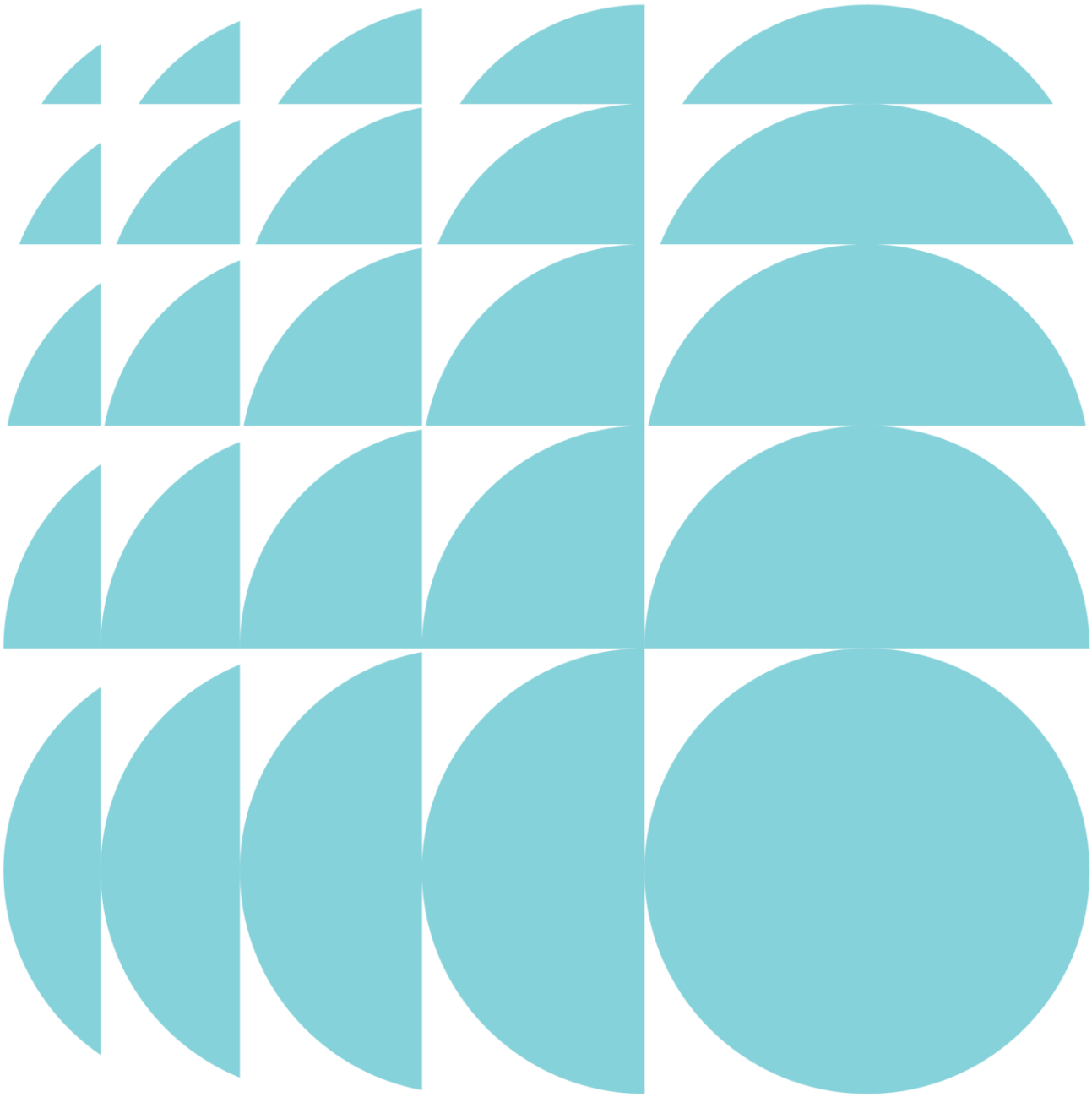
ETHOS URBAN

Response to Submissions No.2

Ivanhoe Estate
Concept Masterplan SSD17_8707

Submitted to Department of Planning and Environment
On behalf of Aspire Consortium

11 October 2019 | 17156



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1.0 Introduction

The Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD DA 17_8707) for a Concept Masterplan for Ivanhoe Estate was publicly exhibited for a second period between 23 May 2019 to 19 June 2019. Public exhibition occurred in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

58 submissions were received in response to the second public exhibition of the EIS, including submissions made by government agencies and authorities and the general public, as follows:

- Government agencies and authorities: 6
- Members of the public: 58

The Department of Planning, Industry and Environment (the Department) has also prepared a letter setting out additional information or clarifications sought prior to the final assessment of the project.

The proponent, Aspire Consortium, and its expert project team have considered all issues raised in the submissions made pursuant to the requirements of the EP&A Act.

This second Response to Submissions report, prepared by Ethos Urban on behalf of the proponent, sets out the responses to the issues raised in accordance with Clause 85A of the *Environmental Planning and Assessment Regulation 2000* (the Regulation) and details the final project design and mitigation measures for which approval is now sought. The final project design includes amendments made by Aspire Consortium pursuant to Clause 55 of the Regulation, including changes to address matters raised in submissions.

This report provides a detailed response to all of the issues raised by the various government agencies and the general public. Whilst the submissions received from agencies have been addressed individually, the submissions made by the general public have been addressed on an issue by issue basis. This approach has been adopted to reflect that many of the submissions raised similar issues and concerns.

The key issues raised in submissions (government agencies and the general public) can be broadly grouped into the following categories:

- Biodiversity and trees.
- Built form and urban design.
- Traffic and car parking.

This report provides a detailed response to each of the above issues and outlines the proposed amendments to the exhibited EIS. Where individual issues are not discussed in this report, a detailed response can be found in the tables at **Appendix A, Appendix B** and **Appendix C**.

1.1 Amendments to Proposed Development

To address the issues raised in submissions and reflect the resulting design changes, a range of updated plans and documentation has been prepared. The nature and range of changes made post-public exhibition are summarised as follows:

- Reduction in the total GFA from 278,000m^2 to 268,000m^2
- Increased envelope setbacks that range from 12 metres – 43 metres to Epping Road to maximise the preservation of the Sydney Turpentine Ironbark Forest.
- Deletion of the left in and left out access road to Epping Road
- Retention of 179 additional existing trees
- Redistribution of GFA in the form of increased building height to enable the above design improvements

The amendments will result in an overall reduction of dwellings from approximately 3,400 dwellings to 3,300 dwellings including around 950 social dwellings.

The revised drawings include Masterplan Drawings prepared by Bates Smart (**Appendix D**) and an Urban Design Report prepared by Bates Smart and Hassell (**Appendix E**).

The following consultants' reports and supporting information has also been updated or further supplements the material originally submitted in support of the EIS:

- Clause 4.6 Variation Request prepared by Ethos Urban.
- Design Excellence Strategy prepared by Ethos Urban
- Ivanhoe Masterplan Design Guidelines prepared by Bates Smart.
- Arboricultural Impact Assessment prepared by Ecological.
- Biodiversity Assessment Report prepared by Ecological.
- Visual Impact Assessment prepared by Virtual Ideas.
- Wind Assessment Response prepared by Cermak Peterka Petersen.
- Flood Impact Assessment Response prepared by BMT WBM.
- CIV Letter prepared by Altus Group.
- Stormwater and Drainage Addendum prepared by ADW Johnson.
- Concept Engineering Plans prepared by ADW Johnson.
- Traffic and Transport Response prepared by Ason.
- Waste Management Plan prepared by Elephant's Foot.

The revised supporting documentation enables the Department to undertake an informed assessment of the amended proposal. The findings of the revised supporting consultant documentation are summarised at **Section 4.0** of this report as relevant.

A final schedule of the mitigation measures proposed is provided at **Section 6.0**.

This report should be read in conjunction with the EIS prepared by Ethos Urban, dated 3 April 2018, and the Response to Submissions, dated 27 September 2018, as relevant.

2.0 Key Issues and Proponent's Response

2.1 Biodiversity and Trees

2.1.1 Issue

The Department, Council and OEH raised matters relating to tree removal, retention and replanting as well as impacts relating to wildlife habitat.

2.1.2 Response

A key change that has been made to the Masterplan is that the setback to Epping Road has been increased to a range between 12 metres and 43 metres, to allow for the retention of an additional 179 trees from the previous proposal (refer to **Figure 1**). The existing retaining wall and ancillary structures will be retained to avoid unnecessary impacts. In addition to this, the slip road to Epping Road has been removed, which allows for a continuous wildlife corridor to be provided from Herring Road to Shrimpton's Creek.

Figure 1 Comparison of native vegetation retention

Source: Bates Smart

An updated Biodiversity Assessment Report (**Appendix J**) and Arboricultural Impact Assessment (**Appendix I**) have been prepared, which outlines the following:

- There are 1,238 trees on the site. Of these trees:
  - 445 will be removed subject to a separate approval by Land and Housing Corporation.
  - 351 trees will be removed across the site subject to the separate Stage 1 application (SSD 8903).
  - 442 trees will be retained on the site.
- There is one critically endangered ecological community on the site, which is the Sydney Turpentine – Ironbark Forest (STIF). No other threatened plants or fauna species have been observed on the development site.
- Impacts on the STIF have been reduced from 0.28 hectares to 0.05 hectares. As a result, 94% of the critically endangered ecological community is retained.
- 16 ecosystem credits are required in accordance with the BioBanking Credit Calculator, all of which will be retired prior to the commencement of construction.

Table 1 compares the improvements made to the Masterplan to the previous schemes.

Table 1 Comparison of biodiversity impacts

Component	Original Masterplan Exhibited	Refined Master Plan (RTS No.1)	Refined Masterplan (proposed)	Difference (from original proposal)
Area of native vegetation impacted	8.05 hectares	2.5 hectares	2.24 hectares	An additional 5.81 hectares is retained.
Area of STIF impacted	0.41 hecatres	0.28 hectares	0.05 hectares	An additional 0.38 hectares is retained.

A detailed response to all issues raised relating to biodiversity and trees is provided at **Appendix B** and **C**. Overall, the revised proposal results in a significantly improved biodiversity outcome.

2.2 Future Built Form and Urban Design

2.2.1 Issue

A range of matters were raised by the Department and Council relating to:

- Concept Plan Design: clarification and further information required relating to key masterplan metrics and SEPP 65 Design Principles.
- Setbacks: provide further consideration of boundary and internal setbacks, with a focus on visual privacy and achieving deep soil depth.
- Communal open space: clarification on provision of dedicated communal open space within individual buildings.
- Masterplan Design Excellence Strategy: revisions required to the requirements and process for design excellence.
- Urban Design Guidelines: clarification and further revisions required relating to open space, deep soil and car parking structures.

2.2.2 Response

In response to the issues raised by the Department and Council, a number of key design changes have been made to improve the Masterplan, including:

- Increased building envelope setback to Epping Road to a range between 12m and 43m.
- Increased basement setback to Epping Road to a range between 12m and 43m.
- Increased building separation between A1.1 and B1.1 compliant with the ADG.
- Revised building heights and subsequent redistribution of GFA.

An illustration of the revised masterplan is provided at **Figure 2** below.

Figure 2 Revised masterplan

In addition to this, the revised Masterplan and accompanying Indicative Reference Scheme have been revised to clearly illustrate the future building form on the site. The Masterplan Design Excellence Strategy and Urban Design Guidelines have been updated to respond to issues raised, and provide a rigorous framework for achieving design excellence on the site. Specifically:

- A minimum of two design competitions will be required for the site, and all buildings from Stage 2 onward will be subject to the State Design Review Panel process.
- The masterplan and public domain architects were selected from a rigorous design process, ensuring that the built form and urban design foundations for the site achieve a high degree of design excellence.
- The provision of communal open space will be maximised throughout the site. Where individual buildings are not able to provide dedicated communal open space, the significant amount of public open space and other community amenities throughout the site will offset this.
- Design measures will be required to ensure that basement car parks are not visible above ground level.

A detailed response to all issues raised relating to built form and urban design is provided at **Appendix B** and **C**.

2.3 Traffic, Car Parking and Bicycle Parking

2.3.1 Issue

The Department and Council requested that further traffic modelling be undertaken, as well as other clarifications that relate to car parking, alternative transport modes and other technical and administrative requirements.

2.3.2 Response

A detailed response to all issues raised by the Department and Council has been prepared by Ason at **Appendix Q** and includes:

- Updated SIDRA modelling.
- Updated Aimsun modelling.

The updated modelling accounts for a scenario in which the slip lane to Epping Road has been removed. The results demonstrate that the future road network will operate with an acceptable level of service. The transport modelling and assessment for the Masterplan has been conducted based on the previously proposed GFA of 281,685m^2 and should be considered a worst case assessment of traffic generation impacts.

The proposed car parking on the site responds to the high level of accessibility, future trends in mobility and the need for reduced vehicle trips. The car parking rates, which vary from those set out in the Ryde Development Control Plan, are acceptable on the basis that a range of other transport measures will be implemented across the site, including provision of a car share scheme, community bus and pre-loaded Opal cards to encourage public transport usage.

3.0 Proposed Amended Development

Since the second public exhibition of the proposal, amendments have been made to the Masterplan. The changes include those made in response to the issues and comments by the Department, Council, government agencies and the general public (see Section 2.0).

The proposed changes are shown on the revised Masterplan Drawings prepared by Bates Smart (**Appendix D**), the Supplementary Design Report prepared by Bates Smart and Hassell (**Appendix E**) and the Concept Engineering Plans prepared by ADW Johnson (**Appendix P**).

The following section outlines the updated description of the modified development for which approval is now sought. As illustrated in the following section, the overall changes are positive and aim to deliver an improved outcome.

3.1 Overview of Proposal (as amended)

This application seeks approval for the following development:

- A mixed use development involving a maximum of GFA of 268,000m^2, including:
  - residential flat buildings comprising private, social and affordable housing.
  - seniors house comprising a residential care facilities and self-contained dwellings.
  - a new school.
  - child care centres.
  - minor retail development.
  - community uses.
- maximum building heights and GFA for each development block;
- public domain landscape concept, including parks, streets and pedestrian connections;
- provision of the Ivanhoe Estate Design Guidelines to guide the detailed design of the future buildings; and
- vehicular and intersection upgrades.

The amendments will result in an overall reduction of dwellings from approximately 3,400 dwellings to 3,300 dwellings including 950 social dwellings.

3.2 Numeric Overview

Table 2 and **Table 3** below provides the key numerical information of the proposed amended development.

Table 2 – Land Use and GFA by Development Block

Development Block	Maximum GFA (m^2) as originally exhibited	Maximum GFA (m^2) as amended (RTS 1)	Maximum GFA (m^2) as proposed to be amended (RTS 2)	Uses
A1	22,082 – 24,290	19,000 – 24,500	19,000 – 24,000	Residential, Child Care Centre
A2	8,378 – 9,216	6,000 – 11,500	8,000 – 10,000	Residential
A3	19,047 – 20,952	13,000 – 15,529	9,000 – 12,000	Residential
Precinct A Total	**49,507 - 54,458**	**38,000 – 51,529**	**36,000 – 46,000**	
B1	6,265 – 6,892	4,000 – 9,000	5,000 – 8,000	Residential
B1.2/3/4	15,010 – 16,511	12,000 – 17,500	13,000 – 17,000	Residential aged care
B2	9,006 – 9,907	7,000 – 12,500	2,000 – 5,000	School, Child care
B3	12,935 – 14,229	16,000 – 21,500	17,000 – 21,000	Residential

Development Block	Maximum GFA (m^2) as originally exhibited	Maximum GFA (m^2) as amended (RTS 1)	Maximum GFA (m^2) as proposed to be amended (RTS 2)	Uses
Precinct B Total	**43,216 - 47,539**	**39,000 – 60,500**	**37,000 – 50,000**	
C1	33,855 – 37,241	31,000 – 36,500	30,000 – 37,000	Residential, Retail
C2	15,811 – 17,392	700 – 2,500	1,000 – 3,000	Residential, Retail
C3	12,094 – 13,303	9,000 – 14,500	11,000 – 15,000	Residential, Retail, Community Facilities
C4	32,129 – 35,342	33,000 -38,500	34,000 – 43,000	Residential
Precinct C Total	**93,889 - 103,278**	**73,700 – 92,000**	**76,000 – 98,000**	
D1	26,860 – 29,546	24,500 – 30,000	26,000 – 33,000	Residential
D2	17,030 – 18,733	17,500 – 23,000	14,000 – 18,000	Residential
D3	19,653 – 21,618	14,000 – 19,500	14,000 – 18,000	Residential, Mission Australia Housing Office
D4	31,407 – 34,547	32,500 – 37,500	31,000 – 39,000	Residential
Precinct D Total	**94,950 - 104,444**	**88,500 – 110,000**	**85,000 – 108,000**	
Masterplan Total	**283,500**	**278,000**	**268,000**	
Change		**-5,500**	**-10,000**	

Table 3 Building heights

Development Block	Maximum Height (m) as originally exhibited 2018	Maximum height (m) a as amended in RTS 1	Maximum height as proposed to be amended RTS 2	Change (+/-)
A1	75	75	75	No change
A2	75	45	45	-30 metres
A3	75	75	75	No change
B1.1	Part 75/Part 45	45	45	-30 metres
B1.2	45	45	45	No change
B2	45	45	45	No change
B3	45	Part 45/Part 65	Part 45/Part 65	Part +20 metres
C1	Part 65/Part 45	Part 65/Part 45	Part 65/Part 45	No change
C2	Part 65/Part 45	3 storeys	3 storeys	-55 metres
C3	Part 65/Part 45	Part 50/Part 45	55	Part -13 metres and Part + 7 metres
C4	Part 65/Part 45	Part 45/Part 65/Part 75	75	Part +10 metres and Part -10 metres
D1	65	65	65	No change.
D2	65	Part 65/Part 75	Part 65/Part 75	Part +10 metres
D3	65	65	65	No change.
D4	65	Part 65/Part 75	Part 65/Part 75	Part +10 metres

3.3 Increased Setback to Epping Road

The building envelopes of A3, D1, D2, D3 and D4 have been significantly amended to increase the building and basement setback to Epping Road. Accordingly, the setback to Epping Road will range between 17.8m to 43.6m for building envelopes adjacent to the Sydney Turpentine Ironbark Forest and 12m to 24m to Block D4. The table below depicts the changes in setbacks to Epping Road and **Figure 3** and **Figure 4** illustrate the setback changes.

Table 4 Epping Road Building Envelope Setbacks

Development Block	Epping Road Setback as originally exhibited	Epping Road Setback as amended (RTS 1)	Epping Road Setback as proposed to be amended (RTS 2)
A3	10 metres	18 metres	34.8 – 43.6 metres
D1	10 metres	12 metres	17.8 metres
D2	10 metres	12 metres	23 – 37.1 metres
D3	10 metres	18 metres	18.8 – 24.6 metres
D4	10 metres	12 – 24 metres	12 – 24 metres

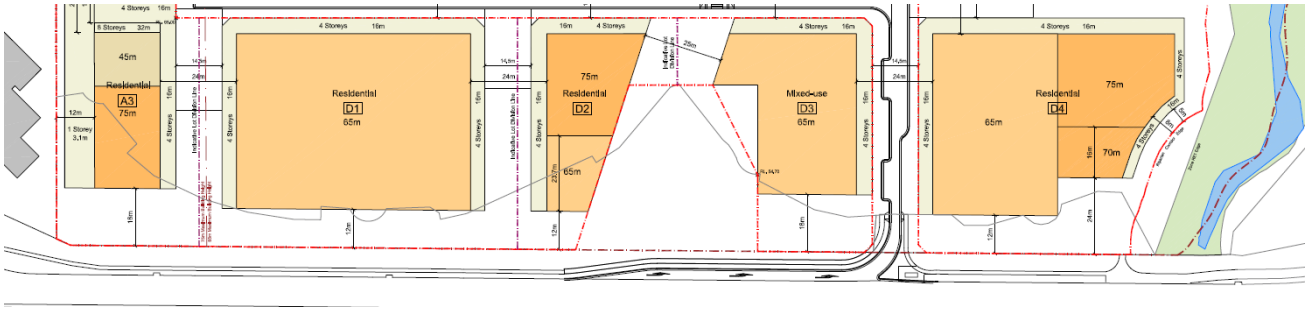


Figure 3 Previous Building Envelope Setbacks (RTS 1)

Source: Bates Smart

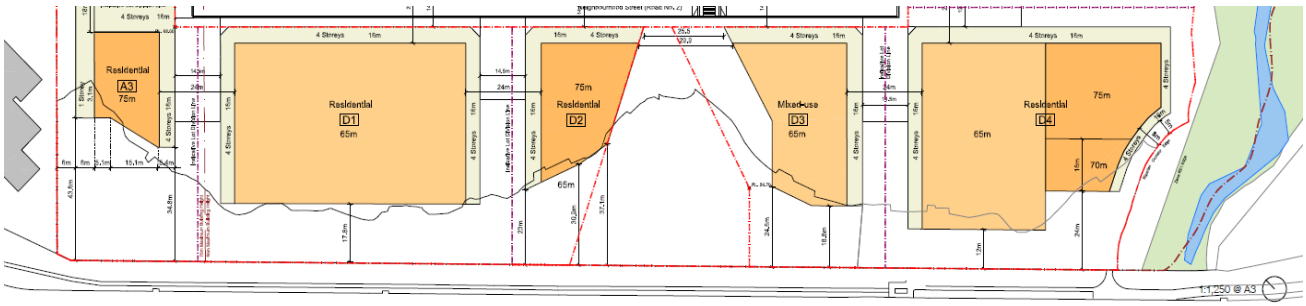


Figure 4 Revised Building Envelope Setbacks (RTS 2)

Source: Bates Smart

3.4 Maximise Retention of Existing Trees and Endangered Ecological Communities

The Masterplan has been refined to preserve the continuous corridor of Sydney Turpentine Ironbark Forest (STIF) and Smooth-Barked Apple Turpentine Blackbutt adjacent to the property boundary of Epping Road in order to minimise the impacts to biodiversity. This has been achieved by:

- Revision of building and basement footprints along Epping Road to be largely contained within existing areas of developed land.
- Consultation with the site owner, NSW Land and Housing Corporation, to reduce the impacts of site demolition on areas of STIF from 0.19 hectares to 0.03 hectares.
- Deletion of the proposed left in and left out access to Epping Road including associated deceleration lane.
- Retention of existing retaining walls and other existing structures that encroach into the STIF to minimise biodiversity impacts.

The amendments will result in a significant reduction to biodiversity impacts with a reduction from 0.41 hectares to 0.05 hectares of STIF to be impacted representing an 88% reduction in the area of STIF originally proposed to be impacted. Accordingly, 94% of the existing STIF will be retained within the development site.

The refined Masterplan will allow for the retention of an additional 179 trees, resulting in a total of 442 trees to be retained across the development site. Overall, the refined Masterplan will result in the removal of 796 trees

(including up to 445 trees that are being removed by the demolition works). Approval for tree removal physical works will be sought as part of the separate Stage 1 application (SSD 8903). A minimum of 950 trees will be planted as part of the redevelopment delivering a substantial net increase of trees on the site.

The increased areas of vegetation to be retained are illustrated at **Figure 5** and **Figure 6**.

Figure 5 – RTS 1 Retained Areas of Vegetation

Source: Bates Smart

Figure 6 – RTS 2 Retained Areas of Vegetation

Source: Bates Smart

3.5 Deletion of Road Connection to Epping Road

In order to preserve the continuous corridor of existing vegetation along Epping Road, the left in and left out access to Epping Road in addition to the associated deceleration lane has been deleted as shown in **Figure 7.**

Figure 7 RTS 1 Left

Source: Bates Smart

Figure 8 Previous Building Envelope Setbacks (RTS 1)

Source: Bates Smart

3.6 Reduction of Gross Floor Area / Floor Space Ratio

Due to the increase in building envelope setbacks to Epping Road and in response to preserving the continuous corridor of existing vegetation, approximately 14,000m^2 of GFA has been removed from A3, D1, D2, D3, D4 and community uses. A proportion of this GFA has been offset through refinements to A3, C3 and C4.2. Overall, the refined Masterplan will comprise a total GFA of approximately 268,000m^2 representing a reduction of approximately 10,000m^2 in GFA. This equates to a revised Floor Space Ratio (FSR) of 3.40:1.

3.7 Redistribution of Height and Floor Space

The Masterplan, as proposed to be amended, proposes an increase in height on two additional building envelopes (being a part of C3 and C4.2) as described in **Table 3** and as illustrated in **Figure 9.** The revised building heights remain below 75 metres, which is the largest of the LEP height limits which apply across the site. The increased building height and subsequent redistribution of height across the site allows floor area to achieve better amenity, enhanced open space, further preservation of the ecological communities and reduced impacts to the surrounding area.

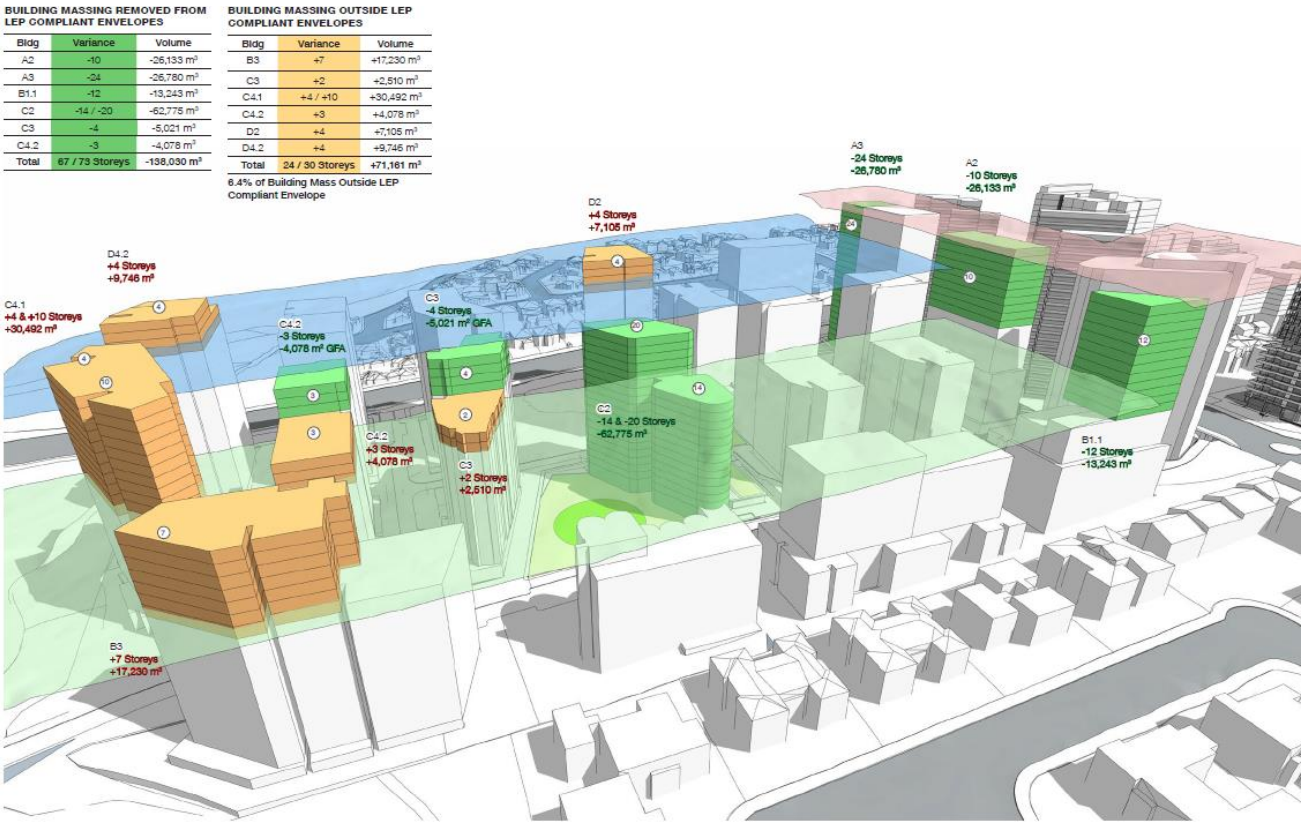


Figure 9 Revised height of buildings

Source: Bates Smart

4.0 Environmental Assessment

The exhibited EIS addressed the potential impacts of the overall development against a range of matters relevant to the development. Except where addressed in this report, the conclusions of the original assessment remain unchanged. Therefore, the assessment of the following matters remain unchanged:

- Social issues.
- Ecologically sustainable development.
- Safety.
- Flooding.
- Heritage and archaeology.
- Contamination.
- Utilities.
- Infrastructure delivery.
- Contributions.
- Geotechnical conditions.
- Noise.
- Water, drainage and stormwater.

4.1 Consistency with Original SSD DA Scheme

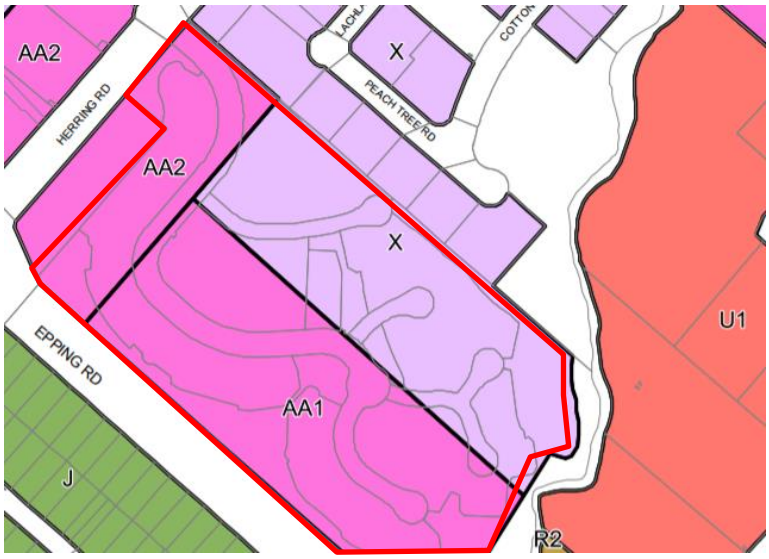
All key elements of the proposed development remain unchanged from what was proposed as part of the exhibited SSD DA and Response to Submissions. The scheme remains generally consistent with, and does not substantially differ from, the development as originally proposed and exhibited. The development proposed as part of this Response to Submissions incorporates an increased setback to Epping Road and removes the road connection to Epping Road to protect the EEC. This increased setback results in adjustments to height and floor space across he development, but does not substantially differ from the original SSD DA scheme. Previous design refinements made in response to submissions have resulted in the deletion of a building, provision of increased open space across the site, inclusion of a community centre and redistribution of height across the site, as well as other refinements to improve the amenity of the site and relationship to the surrounding area. Overall, the development, as proposed to be amended, retains the commitment to deliver social and affordable housing, as well as residential aged care facilities, a school and child care centres.

4.2 Consistency with Relevant EPIs, Policies and Guidelines

The development, as proposed to be amended, remains consistent with the majority of environmental planning instruments, policies and guidelines assessed as part of the exhibited SSD DA. **Table 5** below provides assessment against the relevant provisions only where the Masterplan, as proposed to be modified, results in a change to the assessment contained in the exhibited EIS or as requested by the Department of Planning and Environment.

Table 5 Summary of consistency with relevant strategies, EPIs, policies and guidelines

Instrument/Strategy	Assessment
Environmental Protection and Biodiversity Conservation Act 1999	The EPBC Act identifies Matters of National Environmental Significance to be protected. The Sydney Turpentine-Ironbark Forest is identified as critically endangered under the Act and is therefore a Matter of National Environmental Significance. The Masterplan has been amended to reduce the amount of Sydney Turpentine-Ironbark Forest that would be removed from 0.41 hectares to 0.05 hectares. Impacts on vegetation are further discussed at **Section 4.6**.
SEPP (Affordable Rental Housing) 2009	The Concept SSD DA seeks to utilise the FSR bonus set out in clause 13 of the Affordable Rental Housing SEPP. There is no change to the proposal's compliance with the relevant provisions of the SEPP, however an updated Clause 4.6 Variation Request is submitted at **Appendix F** and details how the proposed development seeks to utilise the FSR bonus.

Instrument/Strategy		Assessment
SEPP 65 (Design Quality of Residential Flat Development)	An updated Preliminary SEPP 65 Assessment has been undertaken by Bates Smart, which confirms that the proposed Masterplan is consistent with the design quality principles set out in SEPP 65 and that future development on the site will be capable of compliance with the design criteria recommended by the Apartment Design Guide. Compliance with SEPP 65 is discussed in further detail at **Section 4.4**.	
Ryde Local Environmental Plan 2014	Clause 4.3 – Height of Buildings	There are three building heights that apply to the Ivanhoe Estate site, as follows: • X: 45 metres. • AA1: 65 metres. • AA2: 75 metres.  The 2-4 Lyonpark Road site has a maximum height of buildings of 30 metres. The proposed envelopes result in a variation to the building height, as discussed at **Section 4.3** below and in the Clause 4.6 Variation Request at **Appendix F**.
	Clause 4.4 – Floor Space Ratio	The FSR of the site is 2.9:1. The Concept SSD DA seeks to utilise the Affordable Housing SEPP bonus, as well as vary the FSR standard to provide for additional community uses and affordable housing. A full explanation of the proposed FSR and Clause 4.6 Variation Request is provided at **Appendix F**.

4.3 Built Form and Urban Design

4.3.1 Gross Floor Area

The Concept SSD DA proposed a mixed-use development that will encompass a unique and diverse range of land uses which includes residential, commercial, civic, community and retail uses. Overall, the Concept SSD DA will comprise a total GFA of 268,000m^2, which includes approximately 7,269m^2 of community benefit uses. **Table 2** outlines the composition of the proposed GFA.

4.3.2 Height

The Masterplan, as proposed to be amended, has been designed to be generally consistent with the maximum height limits set by the Ryde LEP, which range from 45 to 75 metres across the site. However, given previous and proposed refinements to the Masterplan including the deletion of Building C2 to provide more public open space, reduced building heights and increased setbacks to reduce the impacts on the neighbouring properties and ecological communities, a height variation has been sought for six buildings across the Masterplan.

These buildings are Building B3, C3, C4.1, C4.2, D2 and D4 as outlined in **Table 1**. Buildings A1, A2, A3.1, A3.3, B1.1, B1.2, B2, C1, C2, D1 and D3 all either comply with the maximum height controls or are significantly less than the maximum height permitted.

Table 6 Proposed variations to building height

Building	LEP Height	Proposed Envelope Height (m)	Maximum Variation (m / %)
Building A1	75m	75 metres	-
Building A2	75m	45 metres	-30 metres (-40%)
Building A3	75m	75 metres	-
Building B1.1	45 / 75m	45 metres	-30 metres (-40%)
Building B1.2	45m	45 metres	-
Building B2 (School)	45m	45 metres	-
Building B3	45m	45/65 metres	20 metres (44%)
Building C1	45 / 65m	45/65 metres	-
Building C2	45 / 65m	10 metres	-55 metres (-85%)
Building C3	45 / 65m	55metres	+10 metres (15%) and -10 metres (15%)
Building C4.1	45 / 65m	75 metres	30 metres (70%)
Building C4.2	45 / 65m	55 metres	10 metres (15%) and -10 metres (15%)
Building D1	65m	65 metres	-
Building D2	65m	75 metres	10 metres (15%)
Building D3	65m	65 metres	-
Building D4	65m	65/70/75 metres	10 metres (15%)
TOTAL			**-45 metres**

It is prudent to note that 10 of the 16 buildings in the masterplan will comply with the maximum permitted building height. As detailed in **Table 1**, Building B1.1 and Building A2 are substantially below the maximum permitted building height by up to 30 metres. Furthermore, Building C2 (originally proposed at 65m in height) has been removed entirely and replaced with open space and a Community Facility building which will be substantially below the height limit by up to 55 metres. The impact of the height exceedances are generally internalised and will not result in adverse overshadowing to adjoining properties. The variation as a representation of building mass outside of the LEP compliant envelope is 6.4%. Further detail is provided in **Section 4.4.2**.

4.3.3 Setbacks

Boundary Setbacks

The proposed setbacks have been amended in response to submissions at a number of locations across the site, specifically:

- On the boundary adjoining Epping Road, a minimum 12 metre (and up to 43.4 metres) setback is provided in excess of the 10 metres required by the RDCP.
- The one storey element of Building A2 and A3 has been set back 6 metres from 137-143 Herring Road.

As outlined in the exhibited SSD DA, minimum perimeter building setbacks are incorporated into the Building Envelope Plan. The Ivanhoe Masterplan Design Guidelines provider further ground and upper level setbacks for each development block. In addition to this, all residential buildings will be set back on upper levels in accordance with the design criteria for visual privacy and building separation recommended by the Apartment Design Guide, as is illustrated on the Building Envelope Control Plan at **Appendix C**.

Basement setback

The Indicative Design Scheme at **Appendix E** illustrates that the basement design has been refined to provide increased setbacks along Epping Road and the Shrimptons Creek riparian corridor. Importantly, the basement has been refined to ensure that the basement does not encroach beyond the building footprint to the setback areas of

Epping Road and Shrimptons Creek. These increased setbacks allow for additional potential deep soil planting areas and the preservation of biodiversity. Accordingly, the deep soil area of the site as a percentage has been increased from 17.6% to 22.2%. An illustration of the refinement of the basement and the ability for vegetation to be retained and future deep soil planting to be provided is provided at **Figure 10**.

Figure 10 Refined indicative basement design

Source: Bates Smart

4.3.4 Visual Impact Assessment

An updated Visual Impact Photomontage Report has been prepared by Virtual Ideas for the revised Masterplan design (refer to **Appendix K**). Due to the nature of the proposed revisions, the revised Visual Impact Assessment is provided in this section of the Response to Submission Report. The revised assessment finds that the Masterplan, as proposed to be modified, will continue to have a medium visual effect, with a high visual effect from limited viewpoints.

The Visual Impact Photomontage Report shows the views of the proposed development from 13 key locations, as shown at **Figure 11** below.

Figure 11 View impact assessment locations

Source: Virtual Ideas

The visual effect of the proposal from these key points is presented in **Table 7**.

Table 7 Assessment of visual effect

View Location	Visual Effect (RTS #1)	Visual Effect (as proposed to be amended)
Intersection of Epping Road and Herring Road	High	Medium
Epping Road near Sobraon Road	Low	Low
Shrimptons Creek, north east of Cobar Way	High	High
Cottonwood Crescent near Peach Tree Road	Low	Low
Herring Road at Morling College	Medium	Medium
Macquarie University Station, Herring Road and Waterloo Road	Low	Low
Epping Road, westbound near Whiteside Creek	Medium	Medium
Epping Road, north of Lane Cove Road	Low	Low

View Location	Visual Effect (RTS #1)	Visual Effect (as proposed to be amended)
6-8 Lyonpark Road	Low	Low
Epping Road, near Booth Reserve bus stop	High	High
198 Epping Road	High	High

As set out in the exhibited EIS, whilst the overall visual impact of the proposal is medium, this impact is acceptable on the basis that the proposal is consistent with key strategic planning documents that seek to transform the character of Macquarie Park.

Whilst the revised Masterplan results to further variations to building height, these variations occur within the centre of the site where they are less visible from external locations. More importantly the revisions, which include additional setbacks and retention of trees, particularly along Epping Road, in some cases further reduce the visual impact of the proposal (see **Figure 12 - Figure 14**).

Measures to mitigate visual effects remain unchanged from the RTS 1 exhibited Masterplan and will include:

- Rehabilitation of Shrimptons Creek and increased riparian planting.
- Fragmentation of built form along Shrimptons Creek, including refinement of the building envelopes to taper away from the riparian corridor and site boundary.
- Maintaining vegetation along Epping Road, including increased retention of existing trees.
- Provision of vegetation and public domain through the site.
- Transitioning building height and bulk to lower-scale surrounding areas.
- Incorporation of substantial separation distances between buildings.
- Orienting buildings to present the narrow elevation to Epping Road.

The revised Visual Impact Assessment finds that the Masterplan, as proposed to be amended, has an acceptable visual impact.

RTS 1 – Exhibited Scheme

RTS 2 - Amended Scheme

Figure 12 View 1 from Epping Road and Herring Road

RTS 1 – Exhibited Scheme

RTS 2 - Amended Scheme

Figure 13 View 10 Epping Road near Booth Reserve Bus Stop

RTS 1 – Exhibited Scheme

RTS 2 - Amended Scheme

Figure 14 View 11 198 Epping Road

4.3.1 Ivanhoe Masterplan Design Guidelines

The Ivanhoe Masterplan Design Guidelines have been revised in response to the Department's further more detailed comments (refer to **Appendix H**). The following key changes have been made to the Design Guidelines:

- Additional design guidance is provided in relation to communal open space.
- Increased requirements for deep soil planting adjacent to A2 and A3.
- New provisions requiring basement car parks to not be visible above ground level.

The Guidelines will inform the design of future development within each stage and are provide certainty about the form of future buildings on the site by providing guidance on setbacks, interface with the public domain, provision of deep soil planting, façade expression and materials and design excellence.

4.4 Amenity

4.4.1 Residential Amenity

The Concept Masterplan has been designed to achieve a high level of residential amenity in accordance with SEPP 65 and the design criteria recommended by the Apartment Design Guide. The Indicative Design Scheme (refer to **Appendix E**) has been prepared to demonstrate that the proposed building envelopes are capable of accommodating buildings that can achieve key design criteria for solar access, cross ventilation and building separation. An assessment of the Masterplan against the ADG has been prepared by Bates Smart and is included at **Appendix E**.

4.4.2 Overshadowing

Shadow diagrams have been provided by Bates Smart using the Building Envelope and Indicative Design Scheme. The shadow diagrams depict the shadow cast generated by the Indicative Reference Scheme and the Building Envelope during the winter solstice and equinox and outlines the extent of the potential shadow cast generated by the LEP height plane (refer to Error! Reference source not found.**Figure 15** - **Figure 19**).

The shadow impacts are generally consistent with those assessed for the RTS 1 exhibited scheme. The main impacts from RTS 1 occurred during the winter solstice on the low-density residential properties on the opposite side of Epping Road. The assessment found these shadows to be acceptable, in particular noting that the affected properties will receive at least 2 hours solar access to at least 50% of the private open space area between 9am and 3pm on 21 June as required by the Ryde DCP. The revisions to the scheme, which include increased setbacks to Epping Road further reduce the shadow impacts on these properties resulting in an improved outcome.

The overshadowing assessment for RTS 1 considered the impacts of the height variations and found that the additional shadow generated by the additional height will be dispersed throughout the day and will fall within the RMS Surplus Land on the opposite side of Epping Road, the Epping Road reservation, Shrimptons Creek and 2-4 Lyonpark Road. Importantly, the additional shadow cast does not affect any nearby residential properties and therefore will not create any adverse impacts.

With respect to the additional height variations in the RTS 2 scheme, the location of these buildings within the centre of the site means that the additional shadows created by these buildings largely fall on or within shadows cast by the other buildings in the Ivanhoe Estate, and therefore do not generate additional shadows that impact on adjoining residential properties.

In light of the above, the overshadowing impacts created by the proposal, in particular the RTS 2 scheme, are considered to be minor and acceptable, are not significantly accentuated by the proposed height variations and are an improvement on the impacts previously exhibited.

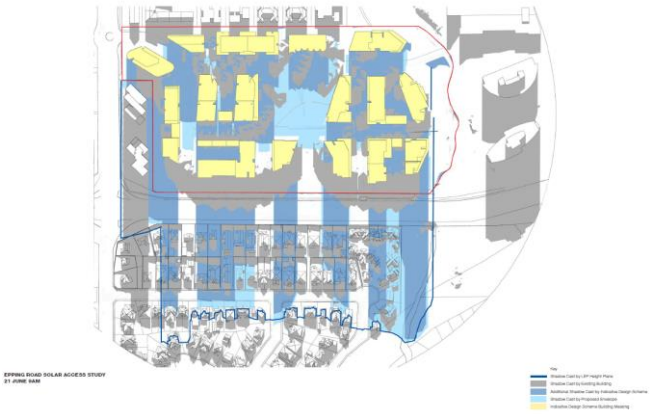


Figure 15 – 9am Shadow Diagram
Source: Bates Smart

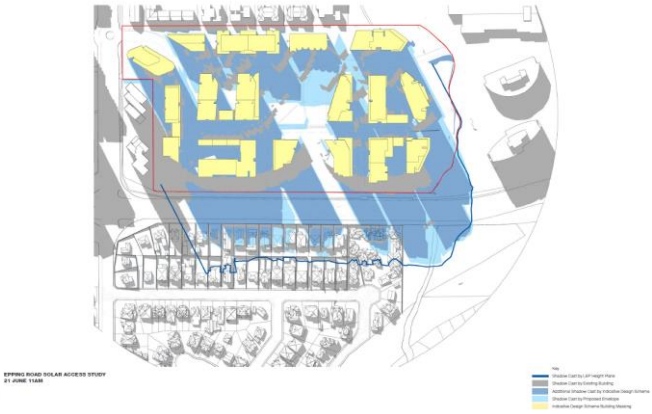


Figure 16 – 11am Shadow Diagram
Source: Bates Smart

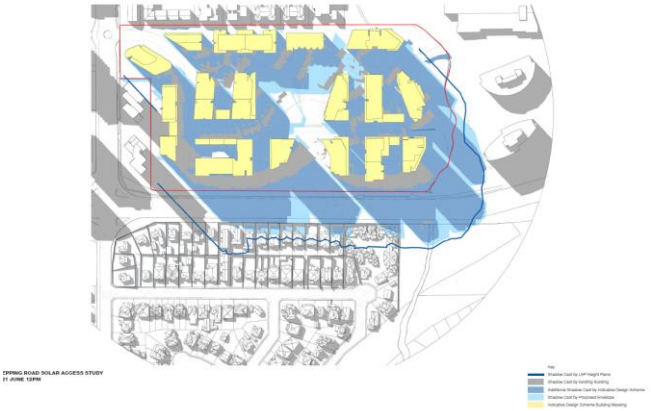


Figure 17 – 12pm Shadow Diagram
Source: Bates Smart

Figure 18 – 1pm Shadow Diagram
Source: Bates Smart

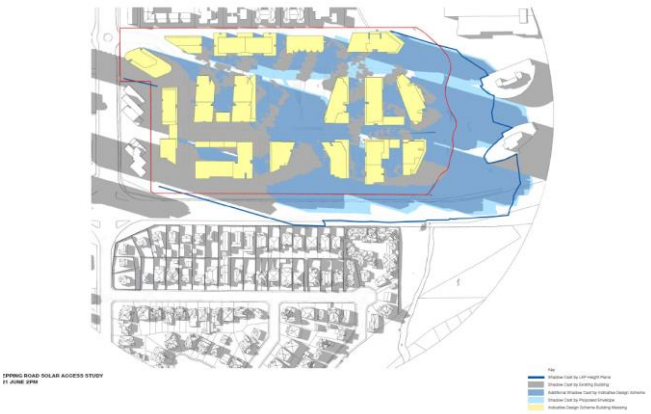


Figure 19 – 2pm Shadow Diagram
Source: Bates Smart

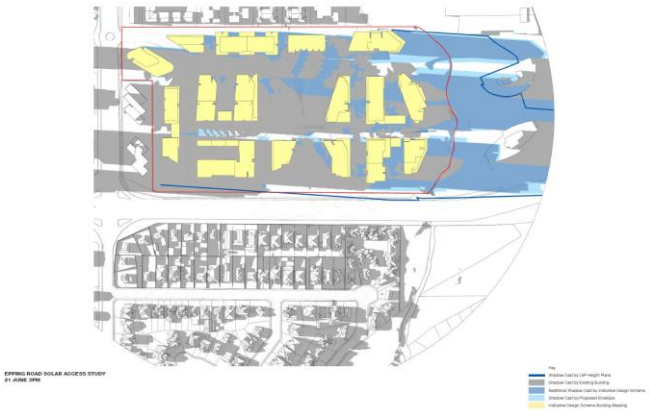


Figure 20 – 3pm Shadow Diagram
Source: Bates Smart

4.4.3 Wind

An addendum Wind Assessment letter has been prepared by Cermak Peterka Petersen (refer to **Appendix L**). The addendum assessment concludes that the changes to the Masterplan result in relatively minor changes to the original assessment, which found that the Masterplan is capable of achieving a suitable wind environment for pedestrians and of meeting the relevant safety criterion.

In relation to the specific revisions, the Addendum Wind Assessment found that:

- The conditions along Epping Road are expected to improve relative to the previous masterplan layout, with the increased setback containing the accelerated flow within the site boundary. Specifically, the modified shape of the west façade of building A3 would be expected to encourage the wind flow around the northern perimeter of the site rather than into the precinct.
- The increased setback from the ecological area is expected to provide some additional shielding from the channelling winds highlighted in the previous assessment.
- The replacement of the slip road from Epping Road with additional landscaping and public accessway will provide some protection from channelling flows between D3 and D4.

4.5 Transport, Traffic, Parking and Access

A Transport Management and Accessibility Plan (TMAP) was prepared as part of the exhibited Masterplan. A further Addendum was prepared for RTS 1. The TMAP concluded that the proposed development is supportable from a traffic planning and parking perspective. Ason has provided further detailed technical responses to the issues raised in the RTS submissions (refer to **Appendix Q**).

As the amended scheme further reduces the GFA proposed, the associated traffic impacts will further reduce as a result of the proposal. We note all of the previous transport modelling and assessments for the Masterplan have been conducted based on a proposed GFA of 281,685m2.

Ason has also assessed the removal of the left in (LI) access to Epping Road. The assessment shows that the proposed removal of the LI access would result in increased delays at the Epping Road / Herring Road intersection up to 10 seconds during each scenario assessed. At the intersection of Herring Road / Ivanhoe Place, increase in delay is noted during the PM peak (up to 18 seconds), while the AM peaks for both scenarios would perform somewhat similar. Other nearby intersections were assessed and found to have minimal or no impact due to removal of LI access.

Whilst the reduced performance of the Epping Road / Herring Road and Herring Road / Ivanhoe Place intersections is noted, these impacts have to be considered in the context of the request from Council to remove the proposed LI from the proposal in order to minimise the ecological impacts from the proposal. Accordingly, the reduced intersection performance is considered acceptable.

4.6 Biodiversity

4.6.1 Impact on Native Vegetation and Threatened Ecological Communities

The Masterplan, as proposed to be modified, will result in unavoidable impacts to 2.24 hectares of native vegetation and the removal of 0.03 hectares of Sydney Turpentine Ironbark Forest, which is a threatened ecological community under the *Biodiversity Conservation Act 2016* and critically endangered under the *Environmental Protection and Biodiversity Conservation Act 1999*. As outlined in **Section 2.1**, the Masterplan has been amended to further avoid impacts on native vegetation and will allow for the retention of increased areas of native vegetation and threatened ecological communities.

The updated Biodiversity Assessment considers the impact of shading on native vegetation. The existing STIF on the site is shaded by existing structures and future development would result in:

- Partial shading for up to 2 hours during spring.
- Partial shading for up to 2 hours during summer.
- Partial shading until 2pm during winter.

A comparison of the existing shade conditions to likely future conditions demonstrates that it is unlikely the additional shadow would impact the integrity of the native vegetation to an extent that any impact would be evident.

Where endangered ecological communities are required to be removed, the required biodiversity offset will be purchased and retired prior to construction commencing on the site. Mitigation measures to avoid or minimise impacts on native vegetation remain unchanged from the exhibited SSD DA and include:

- Siting of the development to minimise impacts to endangered ecological communities.
- Removal of vegetation using appropriate tools to minimise further impacts on remaining vegetation and supervision of works by a qualified ecologist.
- A Biodiversity Management Plan and Construction Environment Management Plan will be implemented prior to construction, which will include operational measures relating to clearance supervision and vegetation management.
- Providing nesting boxes to hollow bearing trees.

4.6.2 Tree Removal

It is proposed to remove 796 trees in total (including up to 445 of these trees that are being removed by the demolition works)**.** The amended masterplan allows for the retention of 442 trees in total, an increase of 211 trees since the originally exhibited masterplan. Approval for physical tree removal works will be sought under the separate Stage 1 application (SSD 8904). This can be seen in **Table 7** below, and as outlined in the Arborist Assessment prepared by Eco Logical at **Appendix I.**

It should also be noted that a minimum of 950 trees will be planted as part of the redevelopment delivering a substantial net increase of trees on the site.

Table 8 Changes in Number of Trees Removed Onsite

Impact boundary	Trees removed	Trees retained	Total trees
Masterplan as lodged	975 (858 originally assessed plus 117 trees in polygon A & B); includes 547 removed during demolition	231	1,206 (1,089 plus 117 trees in polygon A & B)
Masterplan as previously amended (RTS No. 1)	856 (includes up to 547 removed during demolition)	350	1,206
Masterplan as amended (proposed)	796 (including up to 445 removed during demolition)	442	1,238*
Difference	Gain in 211 trees retained onsite		

**within the previous Arboricultural Impact Assessment, trees of the same species, with similar dimensions growing in close proximity to each other, were document as a group. All trees are now counted individually, however the number of trees on the site has not changed.*

4.6.3 Offsets

An updated Biodiversity Offset Strategy has been prepared by Eco Logical in accordance with the NSW Biodiversity Offsets Policy for Major Projects and the *Environmental Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy. A total of 16 ecosystem credits are required to offset the 1.68 hectares of unavoidable impacts of the project. All ecosystem credits will be acquired and retired prior to the commencement of construction on the site.

5.0 Environmental Risk Assessment

The Environmental Risk Assessment (ERA) establishes a residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the Ivanhoe Estate has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools.
In accordance with the SEARs, the ERA addresses the following significant risk issues:

- the adequacy of baseline data;
- the potential cumulative impacts arising from other developments in the vicinity of the Site; and
- measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Figure 21 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

- the receiving environment;
- the level of understanding of the type and extent of impacts; and
- the likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- the complexity of mitigation measures;
- the known level of performance of the safeguards proposed; and
- the opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Figure 21 – Risk Assessment Matrix

				Risk Assessment		
Item	**Phase**	**Potential Environmental Impact**	**Proposed Mitigation Measures and / or Comment**	**Significance of Impact**	**Manageability of Impact**	**Residual Impact**
Built Form and Visual Impact	O	• Visual impact of the development when viewed from the public domain	• The proposed envelopes have been sited to minimise height and bulk whilst utilising the site in accordance with the applicable development standards. • Detailed Design Guidelines have been prepared to ensure that future development incorporates appropriate design mechanisms to appropriately treat the built form and minimise any visual impacts.	3	1	4
Amenity	O	• Potential privacy impacts on adjoining properties. • Potential overshadowing of adjoining properties.	• The location of building envelopes has been sited to minimise impacts on the amenity of neighbouring properties. • Future detailed design of the buildings will be designed to minimise overshadowing and incorporate privacy treatments.	2	1	3
Transport, Traffic, Parking and Access	C/O	• Increased traffic on local road network during construction and operation.	• Initiatives to promote alternative forms of transport, including public transport, walking and cycling as well as a car share scheme • Reduced number of car parking spaces. • Green Travel Plan to encourage sustainable transport.	3	1	4
Social	O	• Potential for social integration to be implemented poorly. • Potential pressure on existing infrastructure and community facilities in the area.	• Ensure that community programs and activities as recommended in the Social Impact Assessment prepared by Elton Consulting are implemented. • Ensure that the public domain and delivery of the redevelopment facilitates social interaction. • Provide open space, community facilities and other infrastructure to support the increased residential population.	3	2	5
Safety	O	• Potential for crime and unsafe behaviour.	• Designing so that the casual observer cannot delineate between social, affordable or market housing; • Providing non-residential uses or individual residential entries at ground floor, to activate the street; • Developing social engagement activities and the preparation of a Plan of Management(s) addressing, among other things, regular maintenance; • Delineating between public land (i.e.: roads to be dedicated to Council), community/communal land and private land through fencing, landscaping and signage; • Providing consistent and uniform outdoor lighting, pathways, and CCTV; and	3	2	5

				Risk Assessment		
			• Designing with consideration of sight lines, opportunities for concealment, pedestrian entry/egress points from main roads.			
Flora and Fauna	C/O	• Impact on protected vegetation. • Potential impact on fauna habitat.	• Offset planting in accordance with the relevant State and Commonwealth offsets policy. • Implementation of a Biodiversity Management Plan and Construction Environment Management Plan during construction. • Retention of protected and native vegetation where possible. • Provision of nest boxes.	3	1	4
Water, Drainage, Stormwater and Groundwater		• Potential impacts of flooding during construction. • Potential impacts on neighbouring sites stormwater drainage.	• Implement erosion and sediment control measures, including a temporary detention basin, during construction. • Ensure that future stormwater drainage system adequately caters for the adjoining site.	1	2	3
Flooding	C/O	• Potential flood impacts during 20 year ARI and 100 year ARI event.	• Ensure that all floor levels and entrances to basement car parking are located above the PMF event flood levels. • Flood modelling to be undertaken as part of future detailed DAs, where relevant.	2	2	4
Heritage	C	• Potential for Aboriginal archaeological objects to be found during construction. • Potential for European heritage archaeological objects to be found during construction.	• If potential Aboriginal objects are located during future works, works must cease in the affected area and an archaeologist must assess the finds. • If Aboriginal objects are located, OEH must be notified and an appropriate course of action in accordance with the National Parks and Wildlife Act 1974. • If European archaeological objects are discovered, works should cease and an archaeologist must assess the finds.	2	2	4
Contamination	C	• Potential contamination of small area of the site likely due to a petrol spill.	• Remediate affected area of the site and undertake further investigation.	1	2	3

				Risk Assessment		
Utilities	O	• Additional demand on existing utilities	• Utilities are agumented to provide appropriate capacity for the development	3	1	4
Geotechnical	C / O	• Noise and vibration as a result of excavation works. • Potential seepage of groundwater. • Potential foundation stability issues during construction.	• Implement appropriate engineering excavation and construction methods, as detailed in the Desktop Geotechnical Assessment prepared by Douglas Partners.	3	2	5
Noise	C / O	• Noise and vibration impacts on surrounding sensitive receivers during construction. • Noise impacts on surrounding sensitive receivers from operation of plant, school and child care centre. • Noise impacts on future residents as a result of traffic noise and nearby commercial uses.	• Comply with recommended acoustic and vibration criteria during construction, subject to detailed construction methodology. • Appropriately attenuate school and child care centres to meet recommended acoustic criteria. • Incorporate acoustic treatments into residential buildings where required.	2	2	4

6.0 Final Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 9** below.

Table 9 Mitigation measures

Mitigation Measures
Built Form and Visual Impact • Future buildings will be designed in accordance with the Ivanhoe Estate Design Guidelines prepared by Bates Smart. • Maintain or strengthen the existing vegetated buffers along the north-east, south-east and south-west boundaries. • The east-west green link through the central part of the site and associated green space should be delivered generally as proposed. • Align buildings to present the narrow elevation to Epping Road, as proposed. • Break down building form to provide a sense of smaller floorplates, particularly where fronting Shrimptons Creek. • Ensure separation distances between buildings comply with the relevant recommendations of the Apartment Design Guide. • Consider view sharing principles relevant to existing development on the northern side of Herring Road. • Include objectives and controls that mitigate visual impacts of building bulk and scale in the Ivanhoe Design Guidelines.
Amenity • Future residential buildings will take into consideration SEPP 65 and the Apartment Design Guide. • Future residential buildings will be designed in accordance with the Ivanhoe Estate Design Guidelines prepared by Bates Smart.
Wind • Further wind-tunnel testing will form part of future application(s) for the detailed design of buildings, where relevant. • Amelioration measures will be explored for specific locations where local wind speeds may be greater than desired during the detailed design stage. • Opportunities to improve existing wind conditions will be explored during the detailed design phase.
Traffic • Undertake road upgrades detailed in the Traffic and Transport Report prepared by Ason (November 2017 and August 2018). • Implement the travel sustainability measures outlined in the Green Travel Plan prepared by Ason (November 2017).
Social Impacts • Where practicable, implement the recommendations and mitigation measures to minimise social impacts and increase social cohesion outlined in the Social Impact Assessment prepared by Elton Consulting (November 2017).
Ecologically sustainable development • Consider the ESD initiatives outlined in the Ivanhoe Sustainability Report prepared by Frasers (November 2017) when developing the building design to maximise the environmental performance and energy efficiency of buildings.
Safety • Further CPTED certification will form part of future application(s) for the detailed design of buildings, where relevant. • Detailed applications should take into consideration the recommendations contained in the Crime Prevention Through Environmental Design report prepared by Ethos Urban (August 2018).
Flora and Fauna • Prepare a Biodiversity Management Plan and Construction Environment Management Plan prior to construction. • Acquire and retire biodiversity offsets in accordance with the Biodiversity Assessment prepared by Eco Logical Australia (September 2019). • Provide nest boxes to replace hollow bearing trees.
Water, Drainage, Stormwater and Groundwater • Design future stormwater drainage infrastructure in accordance with the Stormwater and Drainage Assessment prepared by ADW Johnson (November 2017 and September 2019).
Flooding • Ensure that all floor levels and entrances to basement car parking are located above the PMF event flood levels. • Flood modelling to be undertaken as part of future detailed DAs, where relevant.

Mitigation Measures
Heritage and Archaeology • If potential Aboriginal objects are located during future works, works must cease in the affected area and an archaeologist must assess the finds. • If Aboriginal objects are located, OEH must be notified and an appropriate course of action in accordance with the *National Parks and Wildlife Act 1974*. • If European archaeological objects are discovered, works should cease and an archaeologist must assess the finds.
Contamination • Undertake targeted remediation of the site to remediate the potentially contaminated portion of the site, as described in the Supplementary Site Investigation prepared by DLA Environmental (June 2017).
Geotechnical • Undertake further geotechnical investigation during prepartion of future detailed design and implement engineering construction methods, as detailed in the Desktop Geotechnical Asssment for Ivanhoe Estate and 2 – 4 Lyonpark Road prepared by Douglas Partners (August 2017).
Noise • Carry out construction in accordance with the acoustic and vibration criteria recommended by the Acoustic Assessment prepared by Acoustic Logic (November 2017). • Incorporate acoustic treatments into future residential buildings to comply with the acoustic criteria recommended by the Acoustic Assessment prepared by Acoustic Logic (November 2017). • Future design of the plant, school and child care centre will comply with the acoustic criteria recommended by the Acoustic Assessment prepared by Acoustic Logic (November 2017).

7.0 Conclusion

The proponent, Aspire Consortium, and its expert project team have considered all submissions made during public exhibition of the proposal. A considered and detailed response to all submissions made has been provided in this report and in the accompanying documentation.

In responding to and addressing the range of matters raised by the government agencies, authorities and the general public, Aspire Consortium has sought to refine the project design.

As outlined in this report, the assessment of the amendments to the proposed development confirms that the key elements of the original proposed development that was exhibited remain unchanged and that the refinements made post-exhibition result in overall improvements to the Masterplan.

To the benefit of the overall project, the environmental impacts of the amended development remain consistent with and have improved from the original application and deliver a project that results in an overall improvement to publicly exhibited development. The proposal has significant planning merit on the basis that:

- The proposed Masterplan is consistent with the NSW Government's 'Future Directions for Social Housing in NSW' and will deliver a significant increase in social and affordable housing as part of a mixed tenure community in accordance with the Communities Plus program.
- The Masterplan has been designed with respect to its unique context so that the most appropriate form and scale is being delivered in each portion of the site.
- The proposal is generally consistent with all the relevant strategic policies, environmental planning instruments, plans and guidelines. Specifically:
  - The building envelopes have been designed to provide an appropriate site-specific response that is generally consistent with the principles established in the Herring Road Priority Precinct process, contributing to the Macquarie Park skyline.
  - The variation to the maximum FSR standard in Ryde LEP by applying a number of bonusses related to the provision of affordable seniors housing, open space and community uses is supported by a Clause 4.6 Request which demonstrates that the variation is well founded and will provide a significant public benefit.
  - The variation to the maximum height standard in Ryde LEP is supported by a Clause 4.6 request, which demonstrates that the variation is well founded and will provide a significant public benefit.
- Biodiversity impacts have significantly improved, resulting in the retention of 442 existing trees and 94% of the critically endangered ecological community.
- The Masterplan accommodates a mix of residential and non-residential uses appropriate for the site, and is suitable to meet the needs of the future Ivanhoe Estate community. The provision of community facilities, residential aged care, a high school, retail and child care facilities will support the future residential community and will diversify the character of Macquarie Park.
- The built form of the site will allow for integration of private, affordable and social housing and community facilities and initiatives will foster social interaction between all future residents.
- All residential buildings will achieve a high level of residential amenity, consistent with the principles of State Environmental Planning Policy 65 (Design Quality of Residential Flat Buildings) and the Apartment Design Guide.
- The proposal will improve pedestrian and vehicle permeability within Macquarie Park, replacing the one point of access/egress, with multiple connections, including a new bridge and road extension to Lyonpark Road.
- The Masterplan includes a high quality public domain that will be publicly accessible and connect the site to the Macquarie Centre and regional open space network parklands. Rehabilitation works will also be undertaken to improve Shrimptons Creek, as well as improvements to the Epping Road pedestrian underpass.
- The Masterplan seeks to achieve a 6 Star Green Star Communities rating, and 5 Star Green Star v1.1 for all buildings, providing a sustainable community and setting a benchmark for future Communities Plus projects.
- There are no adverse environmental impacts that cannot be appropriately managed by the mitigation measures set out in this EIS.

In conclusion, the Ivanhoe Estate Masterplan will deliver a new community where social and affordable housing blends with private housing, with good access to transport, employment, education, community facilities and open space. The landmark project leverages the expertise and capacity of the private and non-government sectors to provide high quality, mixed tenure housing at a scale never previously achieved in Australia and will establish the benchmark for the delivery of social and affordable housing into the future.