

Rodger Roppolo
Key Sites Assessment
Department of Planning and Environment
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27 April 2022

Our reference: ENV/21/64

Dear Mr Roppolo,

Ivanhoe Estate Redevelopment – Stage 2 (SSD-15822622) RTS

Reference is made to the Department's request for advice with respect to the above matter.

Thank you for the opportunity for City of Ryde to make a submission. Please find enclosed comments from Council staff to assist the Department of Planning and Environment's assessment of this application.

Council had raised issues with respect to applicant's intent to dedicate the Village Green to Council. Applicants RTS still seems to suggest that the Village Green is intended to be dedicated to City of Ryde.

A review by Council Officers of the revised plans raises the following additional key concerns:-

- Dedication of Village Green
- Design issues with respect to the open space (Village Green);
- Inadequate provision for waste storage area and collection arrangement within the basements of proposed C3 and C4 blocks;
- Inadequate access arrangement for waste collection truck into the basement;
- Other matters discussed in Attachment 1.

It is important that the matters related to waste collection is fully addressed. This may require changes to the basement design.

I suggest that the issues raised via Council's formal submission to DPE should be addressed by altering the design rather than seeking an inferior arrangement by relying on Building Manager as the solution to the lack of physical storage/holding /collection space and compromised safety/ amenity.



These matters will have long term operational implication for Council and amenity implication for future residents when buildings are occupied.

Council staff will be happy to meet with you to clarify any issues. You may contact Council's Senior Coordinator Development Advisory Services – Sanju Reddy on telephone 9952 8187 if you require any further clarification.

Yours sincerely

SIGNED

Sanju Reddy

Senior Coordinator – Development Advisory Services

ATTACHED:

1. Attachment 1 – Submission with issues that require revised design
2. Attachment 2 – Recommended Conditions

City of Ryde Submission to RTS

IVANHOE ESTATE REDEVELOPMENT - STAGE 2

SSD-15822622


Submission Date: 28 April 2022



The table below shows relevant issues with respect to the RTS and revised proposal:

ITEM	Issues Previously raised by CoR	Applicants Response (RTS)	Status of matter upon review by City of Ryde
1	Open Space/ Village Green dedication		
a	Council does not accept the dedication of the Village Green.	The Village Green is to be dedicated in accordance with Condition A30.	Council does not accept the dedication of the Village Green.
	Council has raised issues in respect to the note in Condition A30 of the Concept Development and the proposed Mod 1 that is yet to be determined. Please refer to letter dated 16 September 2021 addressed to The Hon Rob Stokes MP, Minister for Planning and Public Spaces, GPO Box 5341, SYDNEY NSW 2001, for detailed explanation.	The Modification Application was withdrawn.	Noted
	Council expects Stage 2 Consent will be appropriately conditioned to enable payment of the s7.11 contributions in accordance with Condition A30 of the SSD 8707 Ivanhoe Concept Instrument.	Noted, the condition imposed on the Stage 1 SSDA is recommended. Section 7.11 contributions are to be payable consistent with the concept approval (SSD 8707).	Council expects Stage 2 Consent will be appropriately conditioned to enable payment of the s7.11 contributions based on the proposed development
b	Open Space design issues		
	<p>Location of a 3m high retaining wall limits pedestrian movement between the park and the pedestrian crossing.</p> <p>The Village Green design is to be revised to improve the integration with the Village Green and pedestrian crossing on Main Road. There should be a direct connection between these two elements and further within the park to activation nodes.</p>	<p>There is 3.5m of crossfall on the adjacent road which was approved under the Stage 1 SSDA. Accordingly, with these constraints in mind, access has been maximised with four (4) key access points at each corner. The retaining wall to the north is necessary and acts as both a barrier to the play area as well as providing shade, creating a safe and amenable play environment.</p> <p>The fence to Main Street has been minimised so that 35m of the 70m</p>	<p>In this instance then the wall should be utilised, and appropriate play elements designed to leverage the opportunity. The play elements should only be accessible from the playground however and no access provided to the top of the wall.</p> <p>Given the significance of the pedestrian crossing alignment to the design, the pedestrian crossing realignment should form part of this SSDA.</p>

		<p>northern frontage for the Village Green is open or accessible to street (this is 50% of the length of the lot).</p> <p>While the pedestrian crossing for Main Street is not the subject of this SSDA, and forms part of the Stage 1 approval, this crossing will be adjusted to better address park connections as well as planned future connections on the opposite side of Main Street.</p> <p>Likewise, signage and line marking are not the subject of this SSDA and is required to be approved by City of Ryde Council under the consent issued for the Stage 1 SSDA. Council has been issued line marking and signage plans for all roads for approval.</p>	
	<p>Maintenance vehicle access into and circulation within the park seems not have been provided. This must be provided at a minimum width of 2.5m. Materiality of surface treatments to reflect required vehicle attenuation.</p>	<p>An access path for maintenance vehicles have been provided with a minimum width of 2.5m as detailed in the Landscape Plans prepared by McGregor Coxall (see Appendix B).</p>	<p>The design needs to be adjusted so that maintenance vehicles (utes) are not required to reverse through an open space. A suitable engineered circulation path is to be provided within the lot to be dedicated.</p> <p>The proposed vehicular path will conflict with outdoor dining in front of the retail tenancies of C3.</p> <p>Extract from Appendix B</p>

			
	<p>Detail and specify public art within the Village Green as per SEARs requirement. Must include information demonstrating its role within the 'Ivanhoe' development and Macquarie Park. Public Art is to be fabricated to minimise ongoing maintenance requirements;</p> <p>Detail and specify public art within the Village Green as per EIS requirement. Must include information demonstrating its role within the 'Ivanhoe' development and Macquarie Park. Art is to be fabricated to minimise ongoing maintenance requirements and not include dynamic elements that can fail;</p>	<p>The Fulcrum Agency have prepared a Connecting with Country Strategy which identifies opportunities for commissioning Aboriginal artists for public art, which will be used as the strategy for the consideration of public art across the Estate. Additional information and concepts have been prepared for the public art opportunities within Blocks C4 and C2 and are provided at Appendix M.</p> <p>An additional Mitigation Measure is proposed which requires that public art opportunities are further explored with the detailed documentation of the Village Green and identified strategies are provided to Council for their review and comment. All public art associated with Block C2 will be installed prior to the final OC being issue for the Village Green.</p>	<p>Detail and specify public art within the Village Green as per EIS requirement. Must include information demonstrating its role within the 'Ivanhoe' development and Macquarie Park. Art is to be fabricated to minimise ongoing maintenance requirements and not include dynamic elements that can fail. Any public art proposed as play equipment must comply with all relevant Australian Standards.</p> <p>The Artist should engage with the retaining wall element to incorporate it into the playground.</p> <p>Identified strategies are provided to Council for their review and comment.</p>

2	TRAFFIC ISSUES		
	<p>Section 7.2 of Ason Group's Transport Assessment report (Reference: P1633r01, 5 August 2021) adopted the following weekday trip generation rates for the residential and retail components of the proposed development:</p> <p>Residential <i>AM Peak = 0.14 trips per dwelling</i> <i>PM Peak = 0.12 trips per dwelling</i></p> <p>Retail <i>AM/PM Peak = 1 trip per 100m²</i></p> <p>The abovementioned trip generation rates are well below the average rates specified within Transport for NSW's (TfNSW) <i>Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 2013/04a)</i> and <i>Trip Generation Surveys for Small Suburban Shopping Centres (7 November 2018)</i> stated below:</p> <p>Residential <i>AM Peak = 0.19 trips per dwelling</i> <i>PM Peak = 0.15 trips per dwelling</i></p> <p>Retail (GLFA less than 2000m²) <i>AM Peak = 17.42 trip per 100m²</i> <i>PM Peak = 21.96 trip per 100m²</i></p> <p>With regards to the above, there are concerns that the peak hour traffic potentially generated by the proposed development has been underestimated in the transport study. An updated traffic modelling assessment is therefore required, which is to be</p>	<p>The trip generation rates adopted are consistent with those approved under the Ivanhoe Concept Masterplan (SSD 8707). These rates were the result of a substantive planning process including assessment by the Department of Planning, TfNSW, and City of Ryde Council and peer reviewed by Arup. Infrastructure upgrades commenced and completed as part of the relevant conditions of consent are also predicated on these rates. They are therefore the most appropriate and relevant rates for the proposal.</p> <p>Notwithstanding the above, the proposed retail space is intended to support day-to-day needs of future residents of the Ivanhoe Estate, and nearby residents, where walking and cycling will be the dominant methods of transportation. Furthermore:</p> <ul style="list-style-type: none"> Appendix F1 of TfNSW's Guide to Traffic Generating Developments Updated Traffic Surveys uses trip rates for shopping centres with Gross Leasable Area ranging from 22,143m² for Warriewood to 100,134m² for Penrith, with trading areas far beyond their local suburb. These rates are inappropriate for the proposed retail floor area, which is only 970m² in GFA. Trip Generation Surveys for Small Suburban Shopping Centres surveys 7 shopping centres, 5 of which are Aldi supermarkets, one of which is a 	Noted

	<p>based on the trip generation rates established within the abovementioned TfNSW's technical documents (i.e. <i>Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 2013/04a)</i> and <i>Trip Generation Surveys for Small Suburban Shopping Centres (7 November 2018)</i>) to ensure a more accurate analysis of the traffic impacts of the proposed development.</p>	<p>Coles Supermarket, and one being an IGA Supermarket. With tenants and/or specific retail uses yet to be confirmed for the proposed retail tenancies, it is not appropriate to use trip rates for a full-size supermarket.</p>	
	<p>Stage 2 of TfNSW's Macquarie Park Bus Priority and Capacity Improvement Project (MPBPCI) outlined in Section 4.2.2 of Ason Group's Transport Assessment report (Reference: P1633r01, 5 August 2021) is currently on hold. In this regard, the traffic modelling assessment in the transport study needs to be amended to only include works that form Stage 1A and 1B of the MPBPCI project (e.g. the junction of Waterloo Road and Byfield Street needs to be modelled under its current roundabout configuration rather than under traffic signal control).</p>	<p>At the time of the Ivanhoe Concept Plan (SSD 8707) approval, the modelling scope outlined by TfNSW was met, and included the specific provision of the MPBPCIP works and signalisation of Waterloo Road with Byfield Street. The proposed development is consistent with the Concept Masterplan, and any changes to sequencing of upgrades made by TfNSW / Council is beyond the scope of this SSDA.</p>	<p>Since the Concept Masterplan (SSD 8707) was approved in 2020, there has been a significant level of development activity within Macquarie Park as well as changes to major TfNSW's projects in the area. In this regard, using the same traffic modelling assumptions as that of the Concept Masterplan traffic study to assess the traffic impacts associated with the proposed may not result in an accurate representation of the likely impacts of the proposed development on the surrounding road network, which also undermines the purpose of a traffic and transport study that is required for each stage of the development in accordance with Condition C2(h) of SSD 8707. In this regard, Council's original comments (dated 12/11/21) are still applicable. The DPE is requested to review this matter as seek that the traffic data is revised with each stage.</p>
	<p>Ason Group's Transport Assessment report (Reference: P1633r01, 5 August 2021) indicates that the future T-junction of Lyonpark Road and Ivanhoe Place is expected to operate with a good level of service (LoS) 'B' for both the weekday AM and PM peaks for the year 2031 (inclusive of development traffic).</p> <p>Considering the significant right turning traffic volumes to and from Lyonpark Road via Ivanhoe Place and the through southbound traffic volumes along Lyonpark Road, vehicles exiting</p>	<p>The operation of Lyon Park Road with Ivanhoe Place was specifically addressed in the Response to Submissions to SSD 8707 in Ason Groups Technical Note dated 22 August 2019 (Appendix H of RTS Report – March 2020). This included the acceptability of changes to the critical gap acceptance parameters adopted by Sidra.</p> <p>In this instance, the parameters were amended to reflect the recommended parameters under Austroads which better reflect more congested urban</p>	<p>Lyonpark Road is a local road under the care and control of City of Ryde Council ('Council'). As such, any assumptions adopted for the SIDRA modelling on intersections along Lyonpark Road whereby Council is the roads authority needs to be endorsed by Council. To date, Council have not received electronic copies of the SIDRA model to determine what input values have been assumed in the modelling and its appropriateness.</p> <p>Further to the above, there has been no evidence provided to Council to suggest that the traffic modelling forming part of the assessment of the subject development have been reviewed and endorsed by Transport for NSW (TfNSW).</p> <p>Based on the above, Council's original comments (dated 12/11/21) on the traffic impacts associated with the proposed development at the intersection of Lyonpark Rd/Main Street are still relevant. It is therefore</p>

	<p>Ivanhoe Place onto Lyonpark Road are expected to experience much greater delays than what is reflected in the SIDRA output on pages 114 and 115 of the transport study. This is substantiated by the SIDRA modelling undertaken by Council staff, which have incorporated the traffic volumes adopted in the Ason Group's transport report. Figure 1 overpage provides a comparison of the SIDRA outputs. It is evident from Figure 1 that based on the modelling undertaken by Council staff, the future T-junction of Lyonpark Road and Ivanhoe Place is projected to operate with a poor LoS 'F' under the proposed priority controlled intersection treatment. As such, an alternative intersection treatment/improvements is required to ameliorate the traffic impacts generated by the proposed development.</p>	<p>environments, and behaviour observed within Macquarie Park. This variation was endorsed by TfNSW and Arup. The modelling submitted as part of the proposed development is consistent with this previously agreed position.</p>	<p>advised that appropriate upgrades are to be considered at the intersection of Lyonpark Rd/Main Street to mitigate the traffic impacts generated by the proposed development in accordance with Condition C7 of SSD 8707.</p>
	<p>Table 6 of Ason Group's Transport Assessment report (Reference: P1633r01, 5 August 2021) indicates no difference in the level of service (i.e. average vehicle delay) for the intersections of Herring Road/Ivanhoe Place and Waterloo Road/Herring Road between the year 2021 (middle column of Table 6) and the year 2031 (right column of Table 6) scenarios. This is not considered to be realistic, as more traffic is expected to be concentrated on these intersections in 2031 than 2021. Further, other traffic studies undertaken at these intersections for the year 2031 have shown these intersections to be operating much worse than what is</p>	<p>Ason Group and the Proponent is not able to comment on variances in modelling results completed by others without reviewing the models and relevant input assumptions. Notwithstanding, the referenced 2021 and 2031 SIDRA modelling results referenced are extracted from 0421r04v02 TMAP Addendum – Ivanhoe Estate, Macquarie Park, Issue II, dated 13/09/2018. The Aimsun and Sidra modelling undertaken as part of the TMAP is based on information provided by TfNSW including relevant growth rates. The modelling outputs were submitted to TfNSW for review and subsequently endorsed, and the</p>	<p>See response above</p> <p>It is advised that consideration should also be given to appropriate active transport measures to minimise the private vehicle trips generated by the proposed development, which is also in line with the strategic planning vision for Macquarie Park. For instance, buildings C3 and C4 are proposed to be provided with 176 and 488 bicycle parking spaces respectively. In order to encourage greater usage of these bicycle end of trip facilities, consideration should be given to the provision of bicycle paths within the Main Street and Neighbourhood Streets to connect with on-road cycle paths on Lyonpark Road.</p>

	reflected in Table 6 of the report. The discrepancy in the modelling outcomes needs to be justified by the applicant.	TMAP approved by DPE as part of the SSD 8707 Concept Approval.	
3	WASTE STORAGE & COLLECTION		
	Inadequate Waste Storage Area in the basements and lack of Satisfactory access for collection truck		
	Building C3		
	<p>Building C3 comprises 168 residential dwellings and seven (7) retail tenancies over 17 storeys. Access is proposed via Neighbourhood St Road 3 to a ground floor loading dock. The waste truck will utilise a turntable which accommodates a 12.5m HRV. The same driveway is used for residential vehicular access. There are concerns surrounding the visibility of cars coming up the ramp exiting the driveway while the waste truck departs from the loading dock area. This needs to be reviewed from a safety and WHS perspective.</p>	<p>As outlined in Section 8.4 of Ason Group's Transport Assessment (Appendix P of exhibited EIS), the design vehicle adopted for waste collection is a 10.8m long City of Ryde Waste Vehicle. The turntable proposed provide a 600mm clearance, in excess of the minimum 300mm clearance required by AS2890.2:2018.</p> <p>The report also outlined a recommendation in Section 8.3 recommending a detailed operational traffic management plan, whereby traffic management devices such as signage in combination of warning probes activated by the loading area can be provided to mitigate safety issues raised.</p>	<p>The swept path assessment is for a 10.8m waste truck, however the turntable is designed to accommodate a 12.5m truck. For consistency, swept paths for 12.5m truck should be provided to cater for HRV 12.5m trucks if required.</p> <p>An Operational traffic management plan is required to be provided to ensure vehicles entering and exiting the carpark will not be impacted by the Waste Truck</p>
	<p>The Waste Management Plan prepared by SLR Consulting shows that there will be only 3 x 1100L waste bins and 6 x 660L recycle bins for the 168 units. This equates to 44L per unit which is not adequate. The bin configuration should be: 7 x 1100L waste bins serviced 3 times per week, 12 x 660L recycle bins serviced two times per week. The Waste Management Plan needs to be amended accordingly.</p>	<p>Schedule 2 – Standard Waste and Recycling Bins For Residential Developments under Section 7.2 of the Ryde DCP states that for residential flat buildings of 4 or more storeys (high-rise residential): Depending on the collection frequency... 1 x 1100 litre skip bin for garbage per 25 units is required. The DCP does not elaborate on collection frequencies and does not specify what the collection frequency is for each bin option.</p> <p>For the proposed development:</p> <ul style="list-style-type: none"> • One 1100 L bin per 25 units is 44 L 	<p>The RDCP2014 states that 1 x 1100L bin per 25 units may be provided, however this is based on the bins being collected 3 times per week. The provision of waste volume for each unit therefore equates to a minimum of 120L per unit.</p>

	<p>per unit.</p> <ul style="list-style-type: none"> • In C3A, 44 L per 104 units equals 4,576 L. If collected three times per week, this equates to 1,525.33 L per collection or 1.4 1100 L bins. This has been rounded up to two 1100 L bins. • In C3B, 44 L per 104 units equals 2,816 L. If collected three times per week, this equates to 938.66 L per collection or 0.9 1100 L bins. This has been rounded up to one 1100 L bin. <p>Furthermore, the DCP specifies that there should be 1 x 240 litre bin for recyclables per two units. This arrangement is impractical for C3 as it would result in a total of 84, 240 L bins. Instead, the same calculation has been used for recyclables with 660 L bins.</p> <ul style="list-style-type: none"> • In C3A, if collected twice per week, this would equate to 2,288 L per collection or 3.5 660 L bins. This has been rounded up to four 660 L bins. • In C3B, if collected twice per week, this would equate to 2,816 L per collection or 2.1 660 L bins. This has been rounded down to two 660 L bins. <p>Bin provision is therefore consistent with Section 7.2 of the Ryde DCP. Notwithstanding this, the designs have been amended to accommodate the requested bin numbers and have separately issued clarification to Council's waste department.</p>	<p>Recycling is to be calculated as 80 - 100L per unit per week.</p> <p>Bin configuration is not consistent with RDCP2014 however the updated bin numbers provided by SLR Consulting are consistent with the bin allocation numbers supplied in the previous Council submission</p>
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	<p>The residential bin holding area at the rear of the Loading Dock Turntable is not large enough to house the above 19 bins – The loading dock area needs to be amended and the plans are to show the above bin configuration to ensure that they can be stored without impeding on the turntable area.</p>	<p>Further to the above, evidence has been provided of the increased bin numbers requested by Council that can be positioned around the loading dock area with ease. Refer to the Building C3 ground floor plan at Appendix C</p>	<p>As previously stated, bins cannot be stored around the turntable due to WHS and access issues. Storage of all bins awaiting collection needs to be provided in a bin holding room adjacent to the loading dock but well clear so that it does not impede the truck access and maneuvering. Council seeks that this matter must be full addressed by provision of additional space. A redesign is required.</p>
	<p>There are dual chutes (one for waste and one for recycling) located on each floor of both Building A & B. The chute rooms on Basement 1 shows that waste will be compacted. Council does not allow for compactors due to breakage of the bins. The plans need to show that the above bin configuration can fit into the chute rooms.</p>	<p>No compaction will take place. The waste storage room detail shows bin conveyors in each case, not bin compactors. The submitted C3 Waste Management Plan (Appendix O of EIS) states on pages 7, 8 that no compaction is to occur.</p>	<p>Council is satisfied with this response</p>
	<p>The Bulky Waste Room is included as part of Building B waste store room. The bulky waste room needs to be a separate room so that access to the bins is not blocked and residents do not access the chute room. Plans need to be amended to provide a separate bulky waste storage room. It is suggested that the Bulky Waste Room is located on the ground floor adjacent to the loading dock to provide a more efficient service. Safe access for residents is to be considered when relocating the bulky waste storage room. This will be more efficient for the building manager in not being required to move the cleanup items from the Basement to Ground Floor.</p>	<p>Two (2) bulky waste rooms have now been provided. Refer to the Architectural Plans by Fox Johnston at Appendix C. These cannot be located on ground level due to the loading dock, substation, residential lobbies and retail uses that are required to activate the park and street frontages.</p>	<p>Council confirms that the 2 bulky waste rooms are adequate for the number of units albeit on the basement level.</p> <p>Location of where the bulky waste material will be stored awaiting collection from the loading dock is required.</p> <p>The Waste Management Plan needs to be updated to show how the bulky waste material will be taken up to the loading dock for collection. This matter is still unsatisfactory and will impact on the waste collection.</p>
	<p>The Waste Management Plan states that the bins will be taken up to the ground floor via a dedicated lift adjacent to Building A Waste Room. The path for bins to be moved from</p>	<p>The access pathway for bins from bin room to the dedicated lift that has been provided is considered more than reasonable.</p>	<p>Council is satisfied with the building manager utilising the lift on Basement 1 to take the bins and bulky waste up to the Ground Floor loading dock area, however provision for storage area at the dock is still required.</p> <p>Providing two separate receptacles can be part of the Occupation</p>

	<p>Building B Waste Room needs to be provided to ensure that safe access is provided.</p> <p>Two separate receptacles must be provided inside each dwelling to store up to two days worth of waste and recyclables awaiting transfer to the communal bin disposal areas to ensure source separation of recyclables</p>	<p>This will be developed as part of the construction documentation in accordance with the applicable standards, and confirmed at the relevant Crown Certificate stage</p>	<p>Certificate, however, will need to be conditioned. Appropriate condition must be imposed.</p>
<p>Building C4 (268 unit – Market, 216 units – Social, 4 townhouses over 24 storeys</p>			
<p>Inadequate Waste Storage Area in the basements and lack of Satisfactory access for collection truck</p>			
	<p>Access for the Waste Truck is proposed via a new combined ingress/egress driveway (Residential Mews) off Neighbourhood Street. The heavy vehicle driveway provides connectivity to an internal loading dock/turntable, which is intended to accommodate service vehicles up to the size of a 12.5m long Heavy Rigid Vehicle (HRV). Parking for residential units in Market will also access this driveway. Swept paths show that the residential vehicles may impede access for the waste truck. Traffic management signals will be required to be utilised while the truck is in the loading dock turntable.</p>	<p>As outlined in Section 8.4 of Ason Group’s Transport Assessment (Appendix P of exhibited EIS), the design vehicle adopted for C4 is the 12.5m Heavy Rigid Vehicle. The turntable proposed provide a 1 metre clearance, in excess of the minimum 300mm clearance required by AS2890.2:2018. The report also outlined a recommendation in Section 8.3, recommending a detailed operational traffic management plan, whereby traffic management devices such as signage in combination of warning probes activated by the loading area can be provided to mitigate safety issues raised.</p> <p>The swept path assessments and associated design comments provided in Appendix E of the Transport Assessment indicate there is to be a detailed operational traffic management plan, which will need to take into consideration the access control arrangement of residential</p>	<p>Swept path provided is for an 11m truck and will take up both lanes of the driveway going down to the turntable. As previously stated, this will impede access for residential cars either entering or exiting while the waste truck is coming the opposite direction. This will cause an issue and although an Operational Traffic Management Plan is mentioned, it is recommended that the driveway is widened to accommodate both vehicles passing as well as traffic management devices. A condition (Condition 36) has been recommended seeking that the driveway be widened.</p>

		private vehicles, signal arrangement and any other traffic management items required to support the safe movement and operation of the loading bay.	
	The access driveway is very tight in the horseshoe and should be revised to ensure that the waste truck can manoeuvre without issues	As above	This is not satisfactory and needs to be reviewed
	<p>The Waste Management Plan prepared by SLR Consulting shows that there will be only a total of 8 x 1100L waste bins and 17 x 660L recycle bins for the 488 units. This equates to 44L per unit which is not adequate. The bin configuration should be:</p> <ul style="list-style-type: none"> • Social North - 5 x 1100L waste bins serviced 3 times per week, 8 x 660L recycle bins serviced two times per week. • Social South – 4 x 1100L waste bins serviced 3 times per week, 7 x 660L recycle bins serviced two times per week. • Market– 11 x 1100L waste bins serviced 3 times per week, 20 x 660L recycle bins serviced two times per week. • Townhouses will have a set of bins provided to each property – 140L waste serviced weekly & 240L recycle serviced fortnightly <p>The Waste Management Plan needs to be amended accordingly.</p>	<p>Schedule 2 – Standard Waste and Recycling Bins For Residential Developments under Section 7.2 of the Ryde DCP states that for residential flat buildings of 4 or more storeys (high-rise residential): Depending on the collection frequency... 1 x 1100 litre skip bin for garbage per 25 units is required. One 1100 L bin per 25 units equals 44 L per unit. The proposed 44L per unit is therefore entirely consistent with the Ryde DCP.</p> <p>Specifically, for waste:</p> <ul style="list-style-type: none"> • In C4 Social North, 44 L per 118 units equals 5192 L. If collected three times per week, this equates to 1,730.66 L per collection or 1.6 1100 L bins. This has been rounded up to two 1100 L bins. • In C4 Social South, 44 L per 98 units equals 4,312 L. If collected three times per week, this equates to 1,437.33 L per collection or 1.3 1100 L bins. This has been rounded up to two 1100 L bins. • In C4 Market, 44 L per 268 units equals 11,792 L. If collected three times per week, this equates to 3,930.66 L per collection or 3.6 1100 L bins. This has been rounded up to four 1100 L bins. 	<p>As per Building C3 response, Council notes that the bin configuration now meets the requirements submitted by Council, however this is not shown in the bin collection room.</p> <p>Plans must be revised to clearly show the storage configurations on the plans. A construction Certificate must not be issued without first obtaining approval from Council’s Waste Management Section that these changes have been made on the plans.</p>

		<p>The DCP specifies that there should be 1 x 240 litre bin for recyclables per two units. This arrangement is impractical for C4 as it would result in a total of 242, 240 L bins over both buildings. Instead, the same calculation has been used for recyclables with 660 L bins.</p> <ul style="list-style-type: none"> • In C4 Social North, if collected twice per week, this would equate to 2,596 L per collection or 3.9 660 L bins. This has been rounded up to four 660 L bins. • In C4 Social South, if collected twice per week, this would equate to 2,156 L per collection or 3.3 660 L bins. This has been rounded up to four 660 L bins. • In C4 Market, if collected twice per week, this would equate to 5,896 L per collection or 8.9 660 L bins. This has been rounded up to nine 660 L bins. <p>Notwithstanding the above. The Plans have been revised to capture Councils recommendations.</p>	
	<p>The residential bin holding area at the side of the Loading Dock Turntable is not large enough to house the above 20 x 1100L waste bins and 36 x 660L recycle bins awaiting to be serviced. – The plans need to be amended to ensure the bin collection room can accommodate the above bin configuration without impeding on the turntable area.</p>	<p>The waste room is large enough to accommodate the calculated number of bins based on the DCP specification of 44 L per dwelling. Bin configuration has been demonstrated in Drawing A-DA-2052 (Basement 1 Plan) of the Architectural Plans by Cox Architecture (Appendix D).</p>	<p>As per the above, the bin holding room is not adequate to hold the required bin allocation awaiting collection and needs to be revised</p>
	<p>There are 3 dual chutes (one for waste and one for recycling) located on each floor - 2 for social but only 1 for market</p>	<p>The documentation appears to have been misinterpreted. Two chutes continue to be provided for both</p>	<p>The Waste Management Plan only shows one chute room for Market and the other chute room seems not to have been provided on the plans. Please provide the location of the 2nd chute on the plans.</p>

	which has 268 units. A second chute should be provided for Market to ensure that waste and recycling does not overflow in the bins provided at the end of the chute on Basement 2.	buildings, as confirmed in the Architectural Plans (Appendix D).	
	Market Housing waste room is located on Basement 2 which includes a bulky waste room. The bulky waste room needs to be a separate room so that access to the bins is not blocked and residents do not access the chute room. Plans need to be amended to provide a separate bulky waste storage room for Market. The size of the bulky waste room should be a minimum of 25m2.	A Market Bulky Waste Room has now been provided. Refer to Drawing A-DA-2051 of the Architectural Plans by COX Architecture (Appendix D). This room is to be 7m2 in size which meets the Ryde DCP requirements.	The plans show that the bulky waste room on Basement 2 is 25m2 which meets Councils requirements
	The Bulky Waste Room for Social is located on Basement 1, with the Waste Chute for Market running through it to the basement 2. It is suggested that the storage room for bulky waste is located adjacent to the loading dock to provide a more efficient service thus meaning the building manager will not be required to move the cleanup items. Safe access for residents is to be considered when relocating the bulky waste storage room.	Significant design development has been undertaken with various engineers to achieve a viable configuration for the ramp and loading dock. As a result, there is a limited space adjacent the loading dock to locate the social bulky waste room with for example, the main switch room required to be as close as possible to the substation above. Despite the various constraints, the social bulky waste room is located relatively close to the loading dock.	The social bulky waste room is shown on the plans as 35m2. Please advise the distance from the room to the loading dock and advise where the material from the Market bulky waste room will be taken for collection on Basement 1 from Basement 2
	The Waste Management Plan states that the bins will be taken to the Loading Dock via a tug. The path for moving the bins from each of the chute rooms to the loading dock needs to be provided to ensure that safe access is provided.	The revised Architectural Plans for Buildings C3 and C4 provide the requested details.	There is no details of where the tug will be stored and the journey it will take.
	Two separate receptacles must be provided inside each dwelling to store up to two days worth of waste and recyclables awaiting transfer to the communal bin disposal areas to	This will be developed as part of the construction documentation in accordance with the applicable standards, and confirmed at the relevant Crown Certificate stage.	Providing two separate receptacles can be part of the Occupation Certificate, however will need to be conditioned

	ensure source separation of recyclables.		
4	DRAINAGE COMMENTS		
	PMF levels shall be detailed in the vicinity of the buildings impacted. A detailed assessment of all openings that maybe affected by PMF floods must be undertaken to ensure all openings, ramps, etc are above the PMF at each specific point.	The submitted Flood Impact Assessment (Appendix H of EIS) assessed the Shrimpton's Creek mainstream PMF levels utilising a digital terrain model (DTM) of the proposed site gradings. Section "Finished Floor and Basement Entry Levels" indicates that the FFL and basement entry of building C4 are both located well above the PMF level.	This information have not been provided in the revised documents. Appendix H referred to in the RTS relates to Waste Management matters. This remains outstanding.
	Electronic copies of the Hydraulic model (HEC-RAS/TUFLOW) shall be submitted to Council.	TUFLOW Model prepared by ADW Johnson has been submitted under separate cover to DPE and Council.	Council has not received this detail.
	As per the City of Ryde DCP "For sites where flood level information is available, the issued flood level information should be utilised to calibrate the model." It is understood that the flood modelling has been done using Council information. However, it is required to include Flood Levels provided by Council to ensure the model is based on the current information provided by Council. Since the Flood Impact Statement does not demonstrate any records of the Calibration to Council flood certificate, it is requested that this is provided for Council's consideration.	This was undertaken as part of the Concept Masterplan (SSD 8707) approval. Validation of the Ivanhoe TUFLOW flood model against Council's existing Shrimpton's Creek flood model was undertaken by BMT Group, where it was demonstrated that there is reasonable agreement between the two. The validated Ivanhoe TUFLOW flood model has been refined for the Stage 2 SSDA. The Stage 2 TUFLOW model has been submitted under separate cover.	This information cannot be verified as revised flood report has not been provided with the RTS.
	VD product (Velocity x depth) of overland flows to be supplied and, if increased inside the development, restricted to below 0.4 m ² /s.	A large portion of each site will be a roof catchment will be capture and convey flows through the underground system. The overland flow catchments will be minor and therefore any overland flows will be minimal. The detailed stormwater	This information cannot be verified as revised flood report has not been provided with the RTS.

		design at the relevant Crown Certificate stage will ensure VxD is less than 0.4 m2/s in accordance with industry best practice.	
	VxD map to be included in the Flood Study, including neighbouring properties.	The submitted Flood Impact Assessment (Appendix H of EIS) indicates that in the 1% AEP with climate change scenario, the flood level impact within the creek is minimal and negligible on neighbouring land. It is therefore considered that the impact to the creek is negligible and the VxD product will not have changed from existing.	Flood Impact Assessment has not been with the RTS. Appendix H relates to "Updated Waste Numbers"
	Details of the driveway leading to the basement carpark shall clearly demonstrate that the proposed basement ramps have crest levels up to PMF level.	The submitted Flood Impact Assessment (Appendix H of EIS) assessed the Shrimpton's Creek mainstream PMF levels utilising a digital terrain model (DTM) of the proposed site gradings. Section "Finished Floor and Basement Entry Levels" indicates that the FFL and basement entry of building C4 are both located well above the PMF level.	This information cannot be verified as revised flood report has not been provided with the RTS.
	As this is a critical issue for this development, a clear study of all ramps/basement flood immunity shall be provided. Long sections of all basement ramps shall be provided including proposed crests AHD level, 1 in 100yr ARI AHD level and PMF AHD level. Also, an analysis of all basement openings shall be included (emergency exits, stairs, ventilation, etc...) to ensure the full flood immunity of all basements.	As above. The architectural drawings indicate the lowest louvres into the basement (C4) are also well above the PMF level (RL 48.1).	This information cannot be verified as revised flood report has not been provided with the RTS.
	PUBLIC DOMAIN		
	Refer to recommended conditions in		

	Attachment 2		
	ADG Design Issues		
	<p>A 3m setback has been provided from the public footpath to the habitable rooms of Unit C4.2-GF.01. The separation is not sufficient to protect the privacy of the unit. It is recommended that the distance between the public footpath to the habitable rooms of the unit increases to a minimum of 6m.</p>	<p>The proposed 2m setback is consistent with the approved Ivanhoe Masterplan Development Design Guidelines (pp. 108, 126). Notwithstanding the above, a planter has been amended to wrap around the building corner to Unit C4.2 – GF.01 that will provide additional visual privacy to its habitable rooms.</p>	<p>As pointed out previously, the setbacks of 3m from the public footpath to the habitable rooms of Units C4.2-GF.02 and GF.01 are inadequate to maintain visual privacy of the units. A 3m street setback may only be acceptable when the ground floor units are elevated above the adjacent footpath levels (by no more than 1.2m) to increase privacy. Without sufficient setbacks, occupants of the ground floor units often have to keep the blinds down, losing passive surveillance to the street or they tend to rely on retrofitted screenings to protect their privacy (see example in images below), which will adversely impact the visual amenity of the public domain. It is recommended that, in addition to landscape planting, the glass line of the two ground floor units should be pulled back to align with Unit GF.03 to achieve a consistent character and increase visual privacy.</p>
	<p>Common circulation and spaces Section 4F-1 of the ADG requires that for buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40. Lot C4 fails to comply with the ADG in the following areas:</p> <ul style="list-style-type: none"> • The social housing building, on average, has 56 units serviced by a single lift in the northern core and 47.5 units serviced by a single lifts in the southern core. The market housing building provides 3 lift to service 256 units, i.e. 85 units serviced by a single lift. 	<p>The submission included advice from Donnelley Simpson Cleary Consulting Engineers (Appendix GG of exhibited EIS), an established vertical transportation engineer that the proposed lift arrangement for Lot C4 is acceptable.</p> <p>The advice letter confirmed that although the lift design does not strictly comply with ADG 4F-1 clause 2, it does meet international design criteria outlined by Chartered Institute of Building Services Engineers (CIBSE) and the design of similar residential buildings, and therefore is acceptable in the circumstances of the case.</p>	<p>The proposal still relies on a 57m long corridor with a single core in the Market Housing Building C4.1, instead of providing two cores as recommended in City of Ryde’s submission. This is an issue raised by the State Design Review Panel and City of Ryde repeatedly. The proposal has attempted to justify the design by providing additional features such as break-out areas to make the extremely long corridors seem acceptable. In our views, the current approach is only to seek a barely acceptable design outcome that might meet the minimum design standards; it does not deliver the level of design excellence expected for the development. It is apparent that using a double-core configuration will have advantages in:</p> <ul style="list-style-type: none"> • Increasing the number of cross-ventilated apartments; • Reducing the number of apartments sharing a single lift; • Reducing the number of apartment per circulation core, as a result - improving the amenity and security of the development; and • Reducing the length of common corridor to achieve a more comfortable length to width ratio. <p>Amending the design of Building C4.1 to incorporate a double-core configuration will be far superior than the currently proposed outcome; it is our views that the recommended changes to the internal configuration can be done without substantially impacting the overall built form and façade design.</p>

ATTACHMENT 2

Recommended Conditions - SSD-15822622 Ivanhoe Redevelopment Stage 2

RECOMMENDED PUBLIC DOMAIN CONDITIONS FOR SSD-15822622

Council requests that the issues raised in the submission be fully addressed by the applicant and changes be reflected in the revised proposal. Should the consent authority be recommending approval (subject revised plans and documents to address the issues in the submission (ATTACHMENT 1), the following matters must be addressed by condition in addition to those that would typically be applied to consent approvals:

PUBLIC DOMAIN

General

- 1. Design and Construction Standards** – All engineering works shall be carried out in accordance with the requirements as outlined within Council's DCP 2014 Part 8.5 *Public Civil Works* and relevant Development Control Plans except as amended by the conditions herein.
- 2. Public Utilities and Service Alterations** – All mains, services, poles, etc., which require alteration due to works associated with the development, shall be altered at the Applicant's expense. The Applicant shall comply with the requirements (including financial costs) of the relevant utility provider (e.g. Energy Australia, Sydney Water, Telstra, RMS, Council, etc) in relation to any connections, works, repairs, relocation, replacement and/or adjustments to public infrastructure or services affected by the development.
- 3. Works on Public Roads** – Any works performed in, on or over a public road reserve pursuant to this consent must be carried out in accordance with this consent and with the Road Opening Permit issued by Council as required under Sections 138 and 139 of the Roads Act 1993.
- 4. Construction Staging** – For any staging of the public domain works, the applicant shall provide a detailed construction management and staging plan.
- 5. Public areas and restoration works** - Public areas must be maintained in a safe condition at all times. Restoration of disturbed road and footway areas for the purpose of connection to public utilities, including repairs of damaged infrastructure as a result of the construction works associated with this development site, shall be undertaken by the Applicant in accordance with Council's standards and specifications, and DCP 2014 Part 8.5 *Public Civil Works*, to the satisfaction of Council. Council's standards and specifications are available on the Council website.
- 6. Land Boundary / Cadastral Survey** – If any design work relies on critical setbacks from land boundaries or subdivision of the land is proposed, it is a requirement that a land boundary / cadastral survey be undertaken to define the land. The land boundaries should be marked or surveyed offset marks placed prior to the commencement of any work on site.

7. Required Conditions relating to Open space (Refer to Part 1(C) of ATTACHEMENT 1)

Prior to Construction Works Certificate for Stage 2

8. **Public Domain Construction Staging.** The Applicant shall be responsible for the design and construction of all public domain improvement and infrastructure works for each stage. All engineering civil works shall be carried out in accordance with the requirements as outlined in the Ryde DCP 2014 Part 8.5 *Public Civil Works*, and the City of Ryde Public Domain Technical Manual Section 6 – Macquarie Park Corridor.

The staging of the development works and associated Public Domain will require the preparation and implementation of a Public Domain Construction Staging Plan (PDCSP) and be submitted to Council ***prior to issue of any Construction Certificate for Stage 2.***

The PDCSP must address the following matters:

- (a) Which existing and new buildings will be occupied and operational during each stage of the development.
- (b) How vehicular and pedestrian access will be maintained to each operational stage, throughout each stage of the development works.
- (c) How uninterrupted pedestrian access will be maintained along the full frontage of the development site throughout the stage of the development.
- (d) Provide details of any staging of the street lighting works and how any interim arrangement will meet the required street lighting standards.

9. **Public domain improvements** - Public domain plans detailing upgrades along Epping Road frontages of the development site in accordance with the City of Ryde Public Domain Technical Manual Section 6 – Macquarie Park are to be prepared and submitted to Council. The plans shall detail works including paving, multifunction light poles, street furniture and plantings, and must be completed to Council's satisfaction at no cost to Council. Public domain works plans associated with all three stages shall be submitted to Council and approved prior to issue of any Construction Certificate for Stage 2, for the following works:

- (a) Footpath paving as specified in the condition of consent for public infrastructure works. Plans must demonstrate smooth transition to existing adjacent footway at the completion of each phase of the public domain works.
- (b) Street trees to be provided along the Epping Road frontage in accordance with the Macquarie Public Domain Technical Manual. In the case that there is insufficient space to plant the required trees, Council's Landscape

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Architect to specify an alternate species or landscape treatment where possible.

Note: In designing the street tree layout, the consultant shall check and ensure that all new street trees are positioned such that there are no conflicts with the proposed street lights, utilities and driveway accesses. The proposed street lights will have priority over the street trees. All costs associated with the removal of existing street trees, where required, will be borne by the Developer.

- (c) All telecommunication and utility services are to be placed underground along the Epping Road frontages. The extent of works required in order to achieve this outcome may involve works beyond the frontage of the development site. Plans are to be prepared and certified by a suitably qualified Electrical Design Consultant for decommissioning the existing network and constructing the new network; and are to be submitted to, and approved by Council and relevant utility authorities, prior to commencement of work. The public utility cover requirements shall be based on the approved Finished Surface Levels for the footpath, driveways and kerb ramps.

For the undergrounding of existing overhead electricity network, the requirements specified in the Ausgrid Network Standards NS130 and NS156 are to be met.

- (d) New street lighting serviced by metered underground power and on multifunction poles (MFPs) shall be designed and installed to Australian Standard AS1158:2020 Lighting for Roads and Public Spaces. Lighting upgrade shall be in accordance with the City of Ryde Public Domain Technical Manual Chapter 6 – Macquarie Park. The consultant shall liaise with Council's City Works Directorate in obtaining Council's requirements and specifications for the MFP and components, including the appropriate LED luminaire and location of the meter boxes. Plans are to be prepared and certified by a suitably qualified Electrical Design Consultant and submitted to, and approved by Council's City Works Directorate prior to lodgement of the scheme with Ausgrid for their approval. **Note:** Council has prepared a design guide and schema for the provision of the street lighting on MFPs. A copy of the design guide including the design template and checklist, and the street lighting schema can be made available to the Electrical Design Consultant upon request to Council's City Works Directorate.

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- 10. Public Infrastructure Works** – Public infrastructure works shall be designed and constructed as outlined in this condition of consent. The approved works must be completed to Council’s satisfaction at no cost to Council. Engineering drawings prepared by a Chartered Civil Engineer (registered on the NER of Engineers Australia) are to be submitted to, and approved by Council’s City Works Directorate **prior to the issue of the Construction Certificate for Stage 2**. The drawings must cover public domain works associated with all three stages of the development works. The works shall be in accordance with City of Ryde DCP 2014 Part 8.5 - Public Civil Works, and DCP 2014 Part 8.2 - Stormwater Management, where applicable.
- The drawings shall include plans, sections, existing and finished surface levels, drainage pit configurations, kerb returns, existing and proposed signage and line marking, and other relevant details for the new works.
- The Applicant must submit, for approval by Council as the Road Authority, full design engineering plans and specifications for the following infrastructure works:
- (a) Reconstruction of any damaged kerb and gutter on the Epping Road frontage and any associated road restoration works in accordance with TfNSW requirements. These works will be subject to TfNSW specification, approval and inspection.
 - (b) Construction of granite a new 2.40m granite footway along the Epping Road frontage of the development site in accordance with the City of Ryde Public Domain Technical Manual Section 6 – Macquarie Park.
 - (c) Street trees to be provided along the Epping Road frontage in accordance with the Macquarie Public Domain Technical Manual. In the case that there is insufficient space to plant the required trees, Council’s Landscape Architect to specify an alternate species or landscape treatment where possible.
 - (d) Upgrade of any bus stop located on the Epping Road frontage in accordance with Council’s requirements.
 - (e) Stormwater drainage installations in the public domain in accordance with the consent approved plans.
 - (f) Signage and line marking details.
 - (g) The relocation/adjustment of all public utility services affected by the proposed works. Written approval from the applicable Public Authority shall be submitted to Council along with the public domain plans submission. All the requirements of the Public Authority shall be complied with.

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Notes:

1. The Applicant is advised to consider the finished levels of the public domain, including new or existing footpaths, prior to setting the floor levels for the proposed building.
 2. Depending on the complexity of the proposed public domain works, the Council's review of each submission of the plans may take a minimum of six (6) weeks.
 3. Prior to submission to Council, the Applicant is advised to ensure that the drawings are prepared in accordance with the standards listed in the City of Ryde DCP 2014 Part 8.5 - *Public Civil Works*, Section 5 "*Standards Enforcement*". A checklist has also been prepared to provide guidance, and is available upon request to Council's City Works Directorate.
 4. City of Ryde standard drawings for public domain infrastructure assets are available on the Council website. Details that are relevant may be replicated in the public domain design submissions; however Council's title block shall not be replicated.
- 11. Reinstatement of any Bus Stop** – Access to any existing bus stop along the Epping Road frontage of the development shall be maintained throughout the public domain improvement works. The bus stop shall be reinstated and upgraded in accordance with the Council requirements and the Disability Standards for Accessible Public Transport 2002. Plan must be provided to Council detailing this work prior to issue of construction certificate for stage 1.
- 12. Vehicle Footpath Crossing and Gutter Crossover** – Any new vehicle footpath crossings and associated gutter crossover shall be designed for the approved vehicular access location/s. The reconstruction of this infrastructure may be required in order that it has a service life that is consistent with that of the development, and that it is also compliant with current Council's standards and specifications. The location, design and construction shall be in accordance with City of Ryde Development Control Plan 2014 Part 8.3 *Driveways* and Part 8.5 - *Public Civil Works* and Australian Standard AS2890.1 – 2004 *Offstreet Parking*. The drawings shall be prepared by a suitably qualified Civil Engineer using the standard B99 vehicle profile. The drawings shall show the proposed vehicle footpath crossing width, alignment, and any elements impacting design such as service pits, underground utilities, power poles, signage and/or trees. In addition, a benchmark (to Australian Height Datum) that will not be impacted by the development works shall be included.
- All grades and transitions shall comply with Australian Standard AS 2890.1-2004 *Offstreet Parking* and Council's specifications. The width of the new crossing shall be sufficient to accommodate turning manoeuvres of the largest vehicle requiring access to the site as demonstrated by swept paths submitted to and reviewed by Council. The driveway must be designed without splays, and shall be constructed at right angle to the alignment of the kerb and gutter, and located no closer than 1m

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from any power pole and 3m from any street tree unless otherwise approved by Council.

- 13. Engineering plans assessment and works inspection fees** – The applicant is to pay to Council fees for assessment of all engineering and public domain plans and inspection of the completed works in the public domain, in accordance with Council's Schedule of Fees & Charges at the time of the issue of the plan approval, prior to issue of any Construction Certificate for Stage 2.

Note: An invoice will be issued to the Applicant for the amount payable, which will be calculated based on the design plans for the public domain works.

- 14. Anticipated Assets Register - Changes to Council Assets** - In the case that public infrastructure improvements are required, the developer is to submit a listing of anticipated infrastructure assets to be constructed on Council land as part of the development works. The new elements may include but are not limited to new road pavements, new Multi-Function Poles (MFPs), new concrete or granite footways, new street trees and tree pits, street furniture, bus shelters, kerb and gutter and driveways. This information should be presented via the Anticipated Asset Register file available from Council's Assets and Infrastructure Department. The listings should also include any assets removed as part of the works. The Anticipated Asset Register is to assist with council's future resourcing to maintain new assets. There is potential for the as-built assets to deviate from the anticipated asset listing, as issues are resolved throughout the public domain assessment and Roads Act Approval process. Following completion of the public infrastructure works associated with the development, a Final Asset Register is to be submitted to Council, based upon the Public Domain Works-As-Executed plans.

Prior to Commencement of Construction

- 15. Notice of Intention to Commence Public Domain Works** – Prior to commencement of the public domain works, a *Notice of Intention to Commence Public Domain Works* shall be submitted to Council's City Works Directorate. This Notice shall include the name of the Contractor who will be responsible for the construction works, and the name of the Supervising Engineer who will be responsible for providing the certifications required at the hold points during construction, and also obtain all Road Activity Permits required for the works. Separate applications must be made prior to commencement of public domain works for both Stages 2 and 3.

Note: Copies of a number of documents are required to be lodged with the Notice; no fee is chargeable for the lodgement of the Notice.

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- 16. Notification of adjoining owners & occupiers – public domain works** - The Applicant shall provide the adjoining owners and occupiers written notice of the proposed public domain works a minimum two weeks prior to commencement of construction. The notice is to include a contact name and number should they have any enquiries in relation to the construction works. The duration of any interference to neighbouring driveways shall be minimised; and driveways shall be returned to the operational condition as they were prior to the commencement of works, at no cost to the owners. Separate notifications must be provided prior to commencement of public domain works for stage2.
- 17. Pre-construction inspection** - A joint inspection shall be undertaken with Council's Engineer from City Works Directorate prior to commencement of any public domain works. A minimum 48 hours' notice will be required when booking for the joint inspection. Separate inspections are to be carried out prior to commencement of public domain works associated with for stage2.
- 18. Pre-Construction Dilapidation Report** - To ensure Council's infrastructures are adequately protected a pre-construction dilapidation report on the existing public infrastructure in the vicinity of the proposed development and along the travel routes of all construction vehicles, up to 100m either side of the development site, is to be submitted to Council. The report shall detail, but not be limited to, the location, description and photographic record (in colour) of any observable defects to the following infrastructure where applicable.
- (a) Road pavement,
 - (b) Kerb and gutter,
 - (c) Footpath,
 - (d) Drainage pits,
 - (e) Traffic signs, and
 - (f) Any other relevant infrastructure.
- The report is to be dated and submitted to, and accepted by Council's City Works Directorate, prior to any work for any stage commencing.
- All fees and charges associated with the review of this report shall be in accordance with Council's Schedule of Fees and Charges and shall be paid at the time that the Dilapidation Report is submitted.
- 19. Road Activity Permits** - To carry out work in, on or over a public road, the Consent of Council is required as per the *Roads Act 1993*. Prior to the commencement of the relevant works and considering the lead times required for each application, permits for the following activities, as required and as specified in the form "*Road Activity Permits Checklist*" (available from Council's website) are to be obtained and copies submitted to Council with the *Notice of Intention to Commence Public Domain Works*.
- a) Road Use Permit - The applicant shall obtain a Road Use Permit where any area of the public road or footpath is to be occupied as construction workspace, other than activities covered by a Road Opening Permit or if a Work Zone Permit is not obtained. The permit does not grant exemption from parking regulations.

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- b) Work Zone Permit - The applicant shall obtain a Work Zone Permit where it is proposed to reserve an area of road pavement for the parking of vehicles associated with a construction site. Separate application is required with a Traffic Management Plan for standing of construction vehicles in a trafficable lane. **A Roads and Maritime Services Road Occupancy Licence shall be obtained for State Roads.**
- c) Road Opening Permit - The applicant shall apply for a road-opening permit and pay the required fee where a new pipeline is to be constructed within or across the road pavement or footpath. Additional road opening permits and fees are required where there are connections to public utility services (e.g. telephone, telecommunications, electricity, sewer, water or gas) within the road reserve. No opening of the road or footpath surface shall be carried out without this permit being obtained and a copy kept on the site.
- d) Elevated Tower, Crane or Concrete Pump Permit - The applicant shall obtain an Elevated Tower, Crane or Concrete Pump Permit where any of these items of plant are placed on Council's roads or footpaths. This permit is in addition to either a Road Use Permit or a Work Zone Permit.
- e) Crane Airspace Permit - The applicant shall obtain a Crane Over Airspace Permit where a crane on private land is operating in the air space of a Council road or footpath. Approval from the Roads and Maritime Services for works on or near State Roads is required prior to lodgement of an application with Council. A separate application for a Work Zone Permit is required for any construction vehicles or plant on the adjoining road or footpath associated with use of the crane.
- f) Hoarding Permit - The applicant shall obtain a Hoarding Permit and pay the required fee where erection of protective hoarding along the street frontage of the property is required. The fee payable is for a minimum period of 6 months and should the period is extended an adjustment of the fee will be made on completion of the works. The site must be fenced to a minimum height of 1.8 metres prior to the commencement of construction and throughout demolition and/or excavation and must comply with WorkCover (New South Wales) requirements.
- g) Skip Bin on Nature Strip - The applicant shall obtain approval and pay the required fee to place a Skip Bin on the nature strip where it is not practical to locate the bin on private property. No permit will be issued to place skips.

20. Ryde Traffic Committee Approval - A plan showing details of the proposed signage, line marking, and/or traffic devices including pedestrian refuge, pedestrian crossing or LATM measures on the proposed civil works on Epping Road and shall be submitted to the Council and approved by the Ryde Traffic Committee prior to the installation of any traffic devices, signage and linemarking. The plans must clearly show signage line marking works associated with each stage of the public domain works. Any temporary, interim arrangements necessary between completion of public domain works associated with Stages 2, must be shown on the plans for RTC approval.

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During Construction

- 21. Hold Points during construction - Public Domain** – Council requires inspections to be undertaken by a Chartered Civil Engineer (registered on the NER of Engineers Australia), for the public domain on Epping Road, at the hold points shown below. The Applicant shall submit to Council's City Works Directorate, certification from the Engineer, at each stage of the inspection listed below, within 24 hours following completion of the relevant stage/s. The certificates shall contain photographs of the works in progress and a commentary of the inspected works, including any deficiencies and rectifications that were undertaken. A separate set of inspections are to be carried out and certificates to be submitted for public domain works associated with both Stages 2 and 3 of the development.
- a) Prior to the commencement of construction and following the set-out on site of the position of the civil works to the levels shown on the approved civil drawings.
 - b) Upon excavation, trimming and compaction to the subgrade level - to the line, grade, widths and depths, shown on the approved civil engineering drawings.
 - c) Upon compaction of the applicable sub-base course.
 - d) Upon compaction or construction of any base layers of pavement, prior to the construction of the final pavement surface (e.g. prior to laying any pavers or asphalt wearing course).
 - e) Upon installation of any formwork and reinforcement for footpath concrete works.
 - f) Final inspection - upon the practical completion of all civil works with all disturbed areas satisfactorily restored.

Prior to Occupation Certificate

- 22. Public Domain Works Staging Bond** – Prior to issue of any Occupation Certificate for Stage 2 of the development, a Public Domain Works Bond, equal to the value of the public domain civil works for stage 1 approved under SSD8903 and SSD8707 must be lodged with Council. The applicant must submit an estimate for the full scope public domain works prepared by a suitably qualified and experienced Quantity Surveyor and the value of this bond must be reviewed and approved by Council. The bond must be provided to Council in the form of a bank cheque or unconditional bank guarantee with no expiry date, in favour of City of Ryde. In the case that the public domain works are delayed beyond the timeframes, Council may undertake the completion of any unsafe or outstanding public domain works and recoup the full costs of the works including project management fees, from the bond without any further notice to the applicant. The bond will only be released following the issue of the final compliance certificate for public domain works associated with the final stage of the development.

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23. Public Domain Improvements and Infrastructure Works – Completion – Public domain improvements and infrastructure works associated with stages 2 of the development shall be completed to Council's satisfaction, in accordance with the approved public domain plans and at no cost to the Council, prior to the issue of the relevant Occupation Certificate for stages 2.

24. Restoration – Supervising Engineer's Certificate - Prior to the issue of any Occupation Certificate for the relevant stage, the Applicant shall submit to Council a certificate from the Supervising Engineer confirming that the final restoration of disturbed road and footway areas for the purpose of connection to public utilities, including repairs of damaged infrastructure and replacement of any redundant vehicular crossings as a result of the construction works associated with this development site, have been completed in accordance with the Council's standards and specifications, and DCP2014 Part 8.5 *Public Civil Works*, or the Roads and Maritime Services' standards and specifications, where applicable.

Separate certification must be submitted for public domain works associated with both stages 2.

25. Electricity accounts for new street lighting - Prior to the issue of any Occupation Certificate for the relevant stage, the Applicant shall liaise with Council's Public Domain Development Section regarding the setting up of the electricity account/s in order to energise the newly installed street lighting. Separate account set ups must be submitted for connection of new MFPs associated with both stages 2.

26. Compliance Certificates – Street Lighting – Prior to the issue of any Occupation Certificate for the relevant stage, the Applicant shall submit to Council, a *Certificate of Compliance - Electrical Work (CCEW)* from the Electrical Contractor, and certification from a qualified Electrical Engineering consultant confirming that the street lighting in the public domain has been constructed in accordance with the Council approved drawings and City of Ryde standards and specifications. Separate certification must be submitted for street lighting works associated with both stages 2.

27. Compliance Certificate – External Landscaping Works – Prior to the issue of any Occupation Certificate for the relevant stage, the Applicant shall submit to Council, certification from a qualified Landscape Architect confirming that the public domain landscaping works have been constructed in accordance with the Council approved drawings and City of Ryde standards and specifications. Separate certification must be submitted for external landscaping works associated with both stages 2.

28. Public Domain Works-as-Executed Plans – To ensure the public infrastructure works are completed in accordance with the approved plans and specifications, Works-as-Executed (WAE) Plans shall be submitted to Council for review and approval. The WAE Plans shall be prepared on a copy of the approved plans and shall be certified by a Registered Surveyor. All departures from the Council approved details shall be marked in red with proper notations. Any rectifications

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required by Council shall be completed by the Developer prior to the issue of any Occupation Certificate. Separate public domain works-as-executed plans must be submitted for public domain works associated with both stages 2. In addition to the WAE Plans, a list of all infrastructure assets (new and improved) that are to be handed over to Council shall be submitted in a form advised by Council. The list shall include all the relevant quantities in order to facilitate the registration of the assets in Council's Asset Registers.

- 29. Registered Surveyor Final Certificate** – Upon completion of all construction works for stages 1 and 2, and before the issue of the relevant Occupation Certificate, a Certification from a Registered Surveyor must be submitted to Council, stating that all works (above and below ground) are contained within the site's land boundary. Separate certification must be submitted for public domain works associated with both stages 1 & 2.
- 30. Supervising Engineer Final Certificate** – Prior to the issue of the relevant Occupation Certificate for stages 2, the Applicant shall submit to Council, a Final Certificate from the Supervising Engineer confirming that the public domain works have been constructed in accordance with the Council approved drawings and City of Ryde standards and specifications. The certificate shall include commentary to support any variations from the approved drawings. Separate certification must be submitted for public domain works associated with stage 2.
- 31. Post-Construction Dilapidation Report** – To ensure Council's infrastructures are adequately protected a post-construction dilapidation report on the existing public infrastructure in the vicinity of the completed development and along the travel routes of all construction vehicles, up to 100m either side of the development site, is to be submitted to Council. The report shall detail, but not be limited to, the location, description and photographic record of any observable defects to the following infrastructure where applicable.
- (a) Road pavement,
 - (b) Kerb and gutter,
 - (c) Footpath,
 - (d) Drainage pits,
 - (e) Traffic signs, and
 - (f) Any other relevant infrastructure.
- The report shall include summary statement/s comparing the pre and post construction conditions of the public infrastructure. The report is to be dated and submitted to, and accepted by Council's City Works Directorate, prior to issue of the Occupation Certificate for the relevant stage. The report shall be used by Council to compare with the pre-construction dilapidation report, and to assess whether restoration works will be required prior to the issue of the Compliance Certificate for External Works and Public Infrastructure Restoration. Separate post-construction dilapidation reports must be submitted for public domain works associated with stage 2.

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All fees and charges associated with the review of the report shall be in accordance with Council's Schedule of Fees and Charges, and shall be paid at the time that the Dilapidation Report is submitted.

- 32. Final Inspection – Assets Handover** - For the purpose of the handover of the public infrastructure assets to Council, final inspections shall be conducted in conjunction with Council's Engineer from City Works Directorate following the completion of the external works for stages 2. Defects found at such inspections shall be rectified by the Applicant prior to Council issuing the Compliance Certificate for the External Works for public domain works associated with stages 2. Additional inspections, if required, shall be subject to fees payable in accordance with Council's Schedule of Fees & Charges at the time. A minimum 48 hours' notice will be required when booking for the final inspection.
- 33. Compliance Certification – External Works and Public Infrastructure Restoration** – Prior to the issue of any Occupation Certificate for stage 2, a compliance certificate shall be obtained from Council's City Works Directorate confirming that all works in the road reserve associated with the relevant stage, including all public domain improvement works and restoration of infrastructure assets that have dilapidated as a result of the development works, have been completed to Council's satisfaction and in accordance with the Council approved drawings. The applicant shall be liable for the payment of the fee associated with the issuing of each Certificate in accordance with Council's Schedule of Fees and Charges at the time of issue of the Certificate.
- 34. Public Domain Design and Construction Staging** – The Applicant shall be responsible for the design and construction of all public domain improvement and infrastructure works for each stage. All engineering civil works shall be carried out in accordance with the requirements as outlined within Council's DCP 2014 Part 8.5 *Public Civil Works*, relevant Development Control Plans and in accordance with Council's specifications and to the satisfaction of Council. Council has full control to implement and impose any necessary condition to coordinate staging of the public domain work thought out the assessment phase of the development applications. All design and construction to public domain and utilities services as a consequence of the development and associated construction works shall be at the full cost to the applicant.

OPEN SPACE DESIGN

35. Village Green

The Applicant shall ensure the following:

- A. Detailed Landscape Drawings (drawn to scale by a registered landscape architect) for the Village Green must be provided for Council's review and comments prior to the issue of Construction Certificate or its equivalent. The

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- Applicant to provide these drawings, that include plans, elevations, sections, details, specification, renders to demonstrate the design at suitable scales to be understood. These drawings must be prepared to Council's approval and;
- i. Identify location and details of existing and proposed materials and structures on the site;
 - ii. Include public WiFi, lighting compliant with relevant codes and standards;
 - iii. Specify materials that are suitably robust for public open space and minimise ongoing maintenance requirements. The use of timber should be minimised and only used as a decorative element with a minimum design life of >30 years;
 - iv. Detail and specify public art within the Village Green as per EIS requirement. Must include information demonstrating its role within the 'Ivanhoe' development and Macquarie Park. Art is to be fabricated to minimise ongoing maintenance requirements and not include dynamic elements that can fail;
 - v. Demonstrate universal design principles;
 - vi. Include Council standard urban garbage bin enclosures;
 - vii. Include CCTV;
 - viii. Detail inclusive wayfinding signage;
 - ix. Identify existing services and the location and depth of proposed services;
 - x. Detail drainage, waterproofing and watering systems;
 - xi. Detailed grading plan with existing and proposed levels, falls, and pits;
 - xii. Details of soil depths including finished levels and any mounding;
 - xiii. Detail the location, species, maturity and height at maturity of proposed plants;
 - xiv. All proposed tree planting shall be advanced tree planting stock (minimum pot container size of 100 litres or greater, compliant with AS2303);
 - xv. Playground equipment to have a minimum of 50% shade at commencement of operation;
 - xvi. Solar access is to be maximised to the main turf area;
 - xvii. Turf area to have sand slit drainage and irrigation from non potable sources;
 - xviii. Demonstrate soil depth, volumes and irrigation to support all proposed plantings to achieve their full potential consistent with industry best practice;
 - xix. All areas of the park to be within 30 metres of a hose cock;
 - xx. Detail adequate stormwater system for drainage;

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- xxi. Prepare and implement a plant maintenance specification until the completion of the last stage of the overall 'Ivanhoe' development and commit to replacing vegetation with the same species and size at time of failure within 1 month of failure, should any vegetation loss occur within this maintenance period;
 - xxii. Not include any decorative water feature as proposed;
 - xxiii. 25 bicycle parking identified in the EIS;
 - xxiv. Detail the active terraces required under the concept approval.
- B. The Landscape Drawings are to be prepared with consideration of Council's Development Control Plan, Public Domain Manual, Standard Details including requirements for footway pavement, drainage, vehicle crossovers, pedestrian ramps and other relevant elements to the approval of Council's Parks section.

DRAINAGE CONDITIONS

Prior to Construction Certificate

36. Flooding - Flood and Overland Flow Protection. The property has been identified as being susceptible to flooding and overland flow during large storm events. In accordance with the floodplain management controls started within Council's DCP Part 8.2 (Stormwater and Floodplain Management), the following measures must be implemented in the development.

A certificate from a suitably qualified Chartered Civil Engineer (registered on the NER of Engineers Australia), or equivalent, shall be submitted to the Principal Certifying Authority stating compliance with this condition prior to the issue of the Construction Certificate for the following items:

- a) The applicant shall comply with the flood recommendations provided in the Flood Impact Report prepared by ADW Johnson.
- b) The habitable floor levels of all dwellings encompassed under this approval must not be constructed less than the approved Flood Impact Statement by Flood Impact Report prepared by ADW Johnson.
- c) All electrical connections and flood sensitive equipment shall be located above the 1% AEP (100 year ARI) flood level plus 500 mm freeboard.

Where it is not practical and feasible to install the equipment above the 1% AEP (100 year ARI) flood level plus 500 mm freeboard, the installations shall generally be in accordance with the recommendations in ABCB Construction of Buildings in Flood Hazard Areas (2012) Section C2.9 - Requirements for Utilities.

- d) All fencing shall be constructed in a manner that does not affect the flow of flood waters so as to detrimentally change flood behaviour or increase flood levels on adjacent properties.

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To this end, any fencing angled to the anticipated overland flowpath must incorporate either louvres, open type pool fencing, frangible screen, battens or floodgate system, at the base of the fence, extending from the finished surface level up to the 1% AEP (100 year ARI) flood level plus 300 mm freeboard (minimum 300 mm from the ground).

- e) All basement carpark areas shall be designed to resist floodwater ingress for up to the Probable Maximum Flood (PMF) event. This includes protection of lifts, stairwells, ventilation shafts and other components which may otherwise create a water ingress risk.
- f) All external steps leading to natural ground are to have open risers to permit the free flow of flood waters.

A certificate from a suitably qualified Chartered Structural Engineer (registered on the NER of Engineers Australia), or equivalent, shall be submitted to the Principal Certifying Authority stating compliance with this condition prior to the issue of the Construction Certificate for the following items:

- a) All structures subject to flooding and overland flows must be constructed of flood compatible building components below the 1% AEP (100 year ARI) flood plus 500 mm freeboard.
- b) All structures subject to flooding and overland flows must be structurally designed to withstand the forces of floodwaters having regard to hydrostatic pressure, hydrodynamic pressure, the impact of debris and buoyancy forces up to the Probable Maximum Flood (PMF) event
- c) Any portion of the development which is to be suspended above the estimated flooding and overland flow must be designed and constructed to allow for the free passage of flood waters. To ensure that a clear flowpath is maintained for the life of the dwelling, the ground surface in the region of the undercroft must be stripped of vegetation, levelled and coated with blue metal (or similar aggregate) to prevent the growth of vegetation under the structure.

To ensure the area is maintained and kept clear, a placard is to be installed on the underside of the structure advising the undercroft is to be kept clear at all times to allow for the conveyance of overland flow during extreme storm events.

Reason: to ensure flood protection measures are as per approved flood report.

- 37. Stormwater - Council Drainage - Reflux Valve** - A design certificate from a suitably qualified Chartered Professional Civil Engineer (CPEng) or Registered Professional Civil Engineer (RPEng), or equivalent, shall be provided to the Principal Certifying Authority, prior to the issue of the Construction Certificate, confirming that the site drainage outlet pipe has been designed with a reflux valve in order to stop any

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backwater effect from Council's stormwater system for events up to the 1% AEP (100 year ARI).

Reason: To ensure no water from Council's Stormwater Drainage Network

- 38. Stormwater - Council Drainage – Creek Discharges** - The proposed site drainage discharge to the creek shall be made as per the standard detail in Council's DCP (2014) Part 8.2 Stormwater and Floodplain Management Technical Manual.

Amended stormwater plans complying with this condition shall be submitted to and approved by the Principal Certifying Authority prior to the issue of the Construction Certificate. The plans shall be prepared by a Chartered Professional Civil Engineer (CPEng) or Registered Professional Civil Engineer (RPEng).

Reason: to ensure connection to pipe compliance with Council's DCP and Australian Standards.

- 39. Stormwater - Drainage Design Submission** - Engineering drawings prepared by a Chartered Professional Civil Engineer (CPEng) or Registered Professional Civil Engineer (RPEng) are to be submitted to, and approved by Council's City Works Directorate for the proposed drainage works in accordance with Council's DCP (2014) Part 8.2 Stormwater and Floodplain Management Technical Manual, prior to the issue of the Construction Certificate.

The design submission shall address the following:

- a) A drainage system layout plan and structural details shall be drawn at a scale of 1:100, 1:200 or 1:250 and shall show the location of drainage pits and pipe and any other information necessary for the design and construction of the drainage system (i.e. utility services).
- b) A drainage system longitudinal section shall be drawn at a scale of 1:100 or 1:200 horizontally and 1:10 or 1:20 vertically and shall show the underground channel and pipe size, class and type, pipe support type in accordance with AS 3725 or AS 2032 as appropriate, pipeline chainages, pipeline grade, hydraulic grade line and any other information necessary for the design and construction of the drainage system (i.e. utility services).
- c) The location and as-built information (including dimensions and invert levels) of the existing Council kerb inlet pit as shown on Civil Plans prepared by ADW Johnson Dated 22/1/22 is to be confirmed by a suitably qualified surveyor. This shall be incorporated into the drainage engineering drawings.
- d) Special details including non-standard pits, pit benching and transitions shall be provided on the drawings at scales appropriate to the type and complexity of the detail being shown.
- e) Any stormwater pit with a depth greater than 1.8 metres shall be designed and certified by a suitably qualified Structural Engineer and the certification shall be submitted with the drainage design drawings.

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- f) The drainage system layout plan shall be documented on a detailed features survey plan that describes all existing structures, utility services, vegetation and other relevant features.
- g) New stormwater drainage pipes shall be located underneath the kerb & gutter alignment to facilitate future maintenance.

Reason: to ensure the Stormwater Civil Design complies with Council's and Australian Standards and has sufficient details to obtain construction certificate.

- 40. Stormwater - Council Drainage Works – Bond** - To ensure satisfactory performance of the excavation, laying of pipes, back filling, disposal of excess soil and restoration including new kerb and gutter works, a maintenance period of twelve (12) months shall apply to the trunk drainage works following completion of the development.

The maintenance period shall commence from the date of issue by Council, of the Compliance Certificate for the Council Drainage Works. The applicant shall be liable for any part of the work which fails to perform in a satisfactory manner as outlined in Council's standard specification, during the twelve (12) months' maintenance period. Any defects identified during the maintenance period shall be rectified at their cost within a period of thirty (30) days after notification from Council. The details of the defects and repairs shall be documented and certified by a suitably qualified Civil Engineer (registered on the NER of Engineers Australia), or equivalent.

A bond in the form of a cash deposit or Bank Guarantee of \$200,000 shall be lodged with the City of Ryde prior to the issue of a Construction Certificate to guarantee this requirement will be met.

Council engineers from the City Works Directorate shall be notified in writing three (3) months prior to the expiry of the maintenance period for the inspection of the trunk drainage works and restored areas. Details and certifications of the defects and repairs shall be provided to Council's City Works Directorate at this notification. The inspection shall be jointly conducted between Council engineers and the applicant's site engineers.

Notifications and inspections may be arranged by telephoning Council's Customer Service Section on 9952 8222 during office hours. A minimum of five (5) working days' notice shall be given to Council to inspect the works.

The bond will only be refunded when the works are determined to be satisfactory to Council, in writing, after the expiry of the twelve (12) months maintenance period.

Reason: to ensure satisfactory performance of drainage works during 12 months after the Compliance Certificate for the Council Drainage Works was issued.

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- 41. Stormwater - Pre-Construction CCTV Report** - To ensure Council's stormwater infrastructures are adequately protected, a pre-construction CCTV report on the existing stormwater pipelines and in the vicinity of the proposed development is to be submitted to Council prior to the commencement of any construction works.

An electronic closed circuit television report (track mounted CCTV camera footage) prepared by an accredited operator (with a certificate of attainment in NWP331A Perform Conduit Condition Evaluation) that assesses the condition of the existing drainage line adjacent to the site is required. This report shall include the date of CCTV inspection and shall be submitted to Council's City Works Directorate for approval prior to commencement of any works.

Note: The applicant shall contact Council's Assets and Integration section to obtain a map of Council's existing Stormwater Network in the vicinity prior to conducting the CCTV survey.

All fees and charges associated with the review of the report shall be in accordance with Council's Schedule of Fees and Charges, and shall be paid at the time that the report is submitted.

Reason: to verify the pre-construction condition of Council's asset/s.

- 42. Stormwater - Council Drainage - Structural Adequacy** - Council stormwater pits which are being connected into shall be surveyed and confirmed to be capable as being structurally adequate for receiving the upstream connection from the development and satisfy durability requirements. If it is deemed appropriate to replace the pit, kerb inlet pits shall be cast in-situ and conforming to Council's standard drainage pit details.

A certificate from a suitably qualified Structural Engineer (registered on the NER of Engineers Australia), or equivalent, shall be submitted to the Principal Certifying Authority, prior to the commencement of any works, certifying compliance with this condition.

Reason: to verify the structural integrity of the pit.

- 43. Notice of Intention to Commence Council Drainage Works** – Prior to commencement of the Council drainage works, Council's City Works Directorate shall be notified for written acceptance.

This Notice shall include the name of the Contractor who will be responsible for the construction works, and the name of the Supervising Engineer who will be responsible for providing the certifications required at the hold points during construction, and also obtain all Road Activity Permits required for the works.

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Reason: to ensure Council's City Works Directorate is notified about the intention of commencing drainage works.

- 44. Notification to adjacent properties – Council Drainage Works** - The Applicant shall provide the adjoining owners and occupiers written notice of the proposed Council drainage works a minimum two weeks prior to commencement of construction. The notice is to include a contact person name and number should adjoining owners and occupiers have any enquiries in relation to the construction works.

All structures and surface areas affected by the drainage connection works must be reinstated at the completion of this activity, at no cost to the affected property owner.

Reason: to ensure adjacent properties are notified about the intention of commencing drainage works.

During Construction

- 45. Stormwater - Hold Points during construction – Council Drainage Works –** Council requires inspections to be undertaken by a suitably qualified Chartered Professional Civil Engineer (CPEng) or Registered Professional Civil Engineer (RPEng), or equivalent, for all Council stormwater drainage works/for all stormwater drainage works in Council's land.

The Applicant shall submit to the Principal Certifying Authority, certification from the Engineer, at each stage of the inspection listed below, stating all civil and structural construction works have been executed as detailed in the stamped approved plans, and in accordance with the relevant Australian Standards, City of Ryde standards and specifications within 24 hours following completion of the relevant stage/s. The certificates shall contain photographs of the works in progress and a commentary of the inspected works, including any deficiencies and rectifications that were undertaken.

- a) Upon excavation of trenches shown on the approved drainage drawings.
- b) Upon installation of pit reinforcement but prior to concrete pour for cast in-situ pits.
- c) Upon installation of pipes and other drainage structures prior to backfilling.
- d) Upon backfilling of excavated areas and prior to the construction of the final pavement surface.
- e) Upon building headwalls to discharge to creek.
- f) Final inspection - upon the practical completion of all drainage and associated works (including road pavements, kerb & gutters, footpaths and driveways) with all disturbed areas satisfactorily restored.

Reason: to ensure construction works satisfy Council's DCP and Australian Standards requirements.

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46. Stormwater - Council Drainage Works - Council Construction Inspection —

Joint inspections shall be undertaken with Council's Engineer and the Site Engineer to confirm the construction for the stormwater drainage is to Council's satisfaction.

The scope and number of inspections required shall be discussed and mutually agreed with Council's Engineer at the construction commencement stage. Council shall be given a minimum 7 days' notice prior to the commencement of drainage Construction works.

Inspections shall typically occur at the following hold points:

- a) Upon installation of pipeline in the trench and installation of other drainage structures, prior to backfilling.
- b) Upon backfilling of excavated areas and prior to the construction of the final pavement surface.

Further work is not to proceed until the works are inspected and accepted by Council in writing.

Note: An inspection fee is applicable for each visit, and at least 48 hours' notice will be required for the inspections. Please contact Council's Customer Service Section on 9952 8222 to book an inspection subject to fees payable in accordance with Council's Schedule of Fees & Charges at the time.

Reason: to ensure works are conducted up to Australian and Council's standards.

Prior to Occupation Certificate

47. Positive Covenant - Overland Flow - A positive covenant shall be created for the existing overland flow path through the subject site, under Section 88E of the Conveyancing Act 1919. All associated costs shall be borne by the applicant.

This is to place a restriction on the title that the overland flow path and flood storage areas are maintained and kept free of debris/weed to allow unobstructed passage of overland flow of water through the site and underneath the residence. The new buildings shall not have the subfloor area enclosed or utilised for storage.

The wording of the Instrument shall be submitted to, and approved by Council's City Works Directorate prior to lodgement at NSW Land Registry Services. The Instrument shall be registered and a registered copy of the document shall be submitted to and approved by the consent authority prior to the issue of an Occupation Certificate/use of the building.

Reason: To ensure the overland flow and flood storage areas are maintained and unobstructed.

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- 48. Flooding – Engineering Compliance Certificate** – A certificate from a suitably qualified Chartered Professional Civil Engineer (CPEng) or Registered Professional Civil Engineer (RPEng), or equivalent, shall be provided to the Principal Certifying Authority, prior to the issue of the Occupation Certificate, confirming that all requirements of condition “*Flooding - Flood and Overland Flow Protection*” have been satisfied.

The qualified and practising Chartered Professional Civil Engineer (CPEng) or Registered Professional Civil Engineer (RPEng) shall have experience in the area respective of the certification unless stated otherwise.

Reason: To ensure that all flood and overland flow protection requirements are satisfied.

- 49. Stormwater - Council Drainage Works – Post Construction Certifications -** Following completion of the final stage of the drainage and associated works and prior to the issue of the Occupation Certificate, the applicant shall submit all certifications from the Supervising Engineer for each hold point inspection required for the drainage works, as outlined in the condition for “Stormwater - Hold Points during construction – Council Drainage Works”, to Council’s City Works Directorate for written acceptance.

The certificates shall contain photographs of the completed works and commentary of the inspected works, including any deficiencies and rectifications that were undertaken.

Reason: To ensure the public infrastructure works have been completed following all quality requirements.

- 50. Stormwater – Council Drainage Works - Works-as-Executed Plans -** To ensure the public infrastructure works are completed in accordance with the approved plans and specifications, and that the assets to be handed over to Council are accounted for inclusion in Council's Assets Register, Works-as-Executed Plans (in both hard and soft copies - AutoCAD, CivilCAD, Civil 3D, 12D or any other commercially used program), certified by a Registered Surveyor shall be submitted to, and accepted by Council in writing, with any rectifications required by Council to be completed by the Developer prior to the issue of any Occupation Certificate.

The Works-as-Executed Plans are to note all departures clearly in red, on a copy of the approved Construction Certificate drawings, and certification from a suitably qualified Civil Engineer shall be submitted to support all variations from the approved plans.

Reason: To ensure the public infrastructure works are completed in accordance with the approved plans and specifications.

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- 51. Stormwater - Post-Construction CCTV Report** - To ensure Council's stormwater infrastructures are adequately protected, there are no damages and no protruding pipe inside Council's pipeline due to proposed construction activities and property drainage connection, a post-construction CCTV report on the Council's stormwater pipeline through the proposed development site and the existing kerb inlet pit in front of the property is to be submitted to Council.

An electronic closed circuit television report (track mounted CCTV camera footage) prepared by an accredited operator (with a certificate of attainment in NWP331A Perform Conduit Condition Evaluation) that assesses the condition of the existing drainage line adjacent to the site is required. The report is to be dated and submitted to, and accepted by Council's City Works Directorate, prior to issue of the Occupation Certificate.

The report shall be used by Council to compare with the pre-construction CCTV footage report, and to assess whether any rectification works will be required to Council's satisfaction at no cost to Council. The applicant shall obtain written approval from a Council Engineer prior to the issue of the Occupation Certificate.

Note: The applicant shall contact Council's Assets and Integration Section to obtain a map of Council's existing stormwater network in the vicinity prior to conducting the CCTV survey.

All fees and charges associated with the review of the report shall be in accordance with Council's Schedule of Fees and Charges, and shall be paid at the time that the report is submitted.

Reason: to verify the post-construction condition of Council's drainage assets.

- 52. Final Inspection – Council Drainage Assets Handover** - For the purpose of the handover of the trunk drainage assets to Council, a final inspection shall be conducted in conjunction with Council's Engineer from City Works Directorate following the completion of the Council Drainage Works. Defects found at such inspection shall be rectified by the Applicant prior to Council issuing the Compliance Certificate for the trunk drainage Works.

Note: An inspection fee is applicable for each visit, and at least 48 hours' notice will be required for the inspections. Please contact Council's Customer Service Section on 9952 8222 to book an inspection subject to fees payable in accordance with Council's Schedule of Fees & Charges at the time.

Additional inspections, if required, shall be subject to fees payable in accordance with Council's Schedule of Fees & Charges at the time.

Reason: to verify the new drainage asset/s have been built as per Council's standards.

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- 53. Compliance Certificate – Council Drainage Works** – Prior to the issue of any Occupation Certificate, a compliance certificate shall be obtained from Council’s City Works Directorate confirming that all Council drainage and associated restoration works have been completed to Council’s satisfaction and in accordance with the Council approved drawings.

Note: The applicant shall be liable for the payment of the fee associated with the issuing of this Certificate in accordance with Council’s Schedule of Fees and Charges at the time of issue of the Certificate.

Reason: to ensure drainage and its consequent restoration works have been conducted as per Australian and Council’s standards.

- 54. Restoration – Supervising Engineer’s Certificate** - Prior to the issue of any Occupation Certificate, the Applicant shall submit to Council a certificate from the Supervising Engineer confirming that the final restoration of disturbed road and footway areas for the purpose of connection to public utilities, including repairs of damaged infrastructure and replacement of any redundant vehicular crossings as a result of the construction works associated with this development site, have been completed in accordance with the Council’s standards and specifications, and DCP (2014) Part 8.5 Public Civil Works, or the Roads and Maritime Services’ standards and specifications, where applicable.

Reason: to ensure road and footpath restoration works have been completed as per Australian and Council’s standards.

- 55. Stormwater - Council Easements - Creation of a Council Drainage Easement**

Where Council Stormwater assets have been built on private land, an easement in favour of Council shall be created over the pipeline/s and pit/s traversing the site for the purpose of constructing and maintaining stormwater drainage structures. The easement must be centrally located over the pipeline and with a width as per City of Ryde DCP.

The wording of the dedication shall be submitted to, and approved by Council’s City Works Directorate prior to lodgement at NSW Land Registry.

The easement shall be registered and a registered copy of the document shall be submitted to and approved by Council prior to the issue of an Occupation Certificate/use of the building.

Reason: To ensure stormwater assets are located within a drainage easement in favour of Council.

Operational

- 56. Flood Emergency Response Matters** - The development must at all times comply with the recommendations made within the Flood Emergency Response Plan (FERP) formulated as part of the Occupation Certificate for the proposed development.

Implementation and maintenance of the FERP shall be the responsibility of building management and all owners, tenants and users of the building must be made aware of the FERP. FERP shall include details of the proposed 'on-site' refuge area. Permanent signage shall be installed in the common areas informing the future occupants of the emergency evacuation procedures and refuge areas

Reason: to ensure Flood Emergency Response Plan is in place during and after construction is completed.

REDESIGN REQUIRED TO COMPLY WITH WASTE STORAGE/ COLLECTION

- 57. Other matters raised in the submission to be resolved includes:**

- a. Easements required for waste collection arrangement – in accordance with the Consent Approval (conditions) and similar to conditions imposed for Stage 1.
- b. Waste Storage area to be is per RDCP2014 and as per the comments/ requirements in this submission (see Attachment 1).
- c. Waste truck access to the basement collection areas for all buildings C3 & C4.
- d. Provide storage areas suitably located in the close vicinity of loading bays within the basement for bulky wastes.
- e. Council expects Stage 2 Consent will be appropriately conditioned to enable payment of the s7.11 contributions based on the proposed development
- f. The Village Green requires various matters to be addressed via redesign (refer to Appendix 1 pages 1-2).
- g. Building C3: The swept path design/assessment must be for 12.5m HRV. An Operational traffic management plan is required to be provided to ensure vehicles entering and exiting the carpark will not be impacted by the Waste Truck.

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- h. Building C3: Storage bins cannot be stored around the turntable due to WHS and access issues. Storage of all bins awaiting collection needs to be provided in a bin holding room adjacent to the loading dock but well clear so that it does not impede the truck access and maneuvering.
- i. Building C4 access driveway: Swept path provided is for an 11m truck and will take up both lanes of the driveway going down to the turntable. This will impede access for residential cars either entering or exiting while the waste truck is coming the opposite direction. This will cause an issue for waste collection. The applicant must amend the plans to widen the driveway to accommodate both vehicles passing as well as traffic management devices.
- j. Building C4: The access driveway is very tight in the horseshoe and should be revised to ensure that the waste truck can manoeuvre without issues
- k. Building C4: The bin storage area is not shown in the bin collection room. Plans must be revised to clearly show on the plans. A construction Certificate must not be issued without first obtaining approval from Council's Waste Management Section.