Ref: **SSD-24299707**
WTJ21-203

WILLOWTREE PLANNING

RESPONSE TO SUBMISSIONS:
TALAVERA ROAD DATA CENTRE CAMPUS EXPANSION (IC3 SUPER WEST)

17 – 23 TALAVERA ROAD, MACQUARIE PARK
LOT 527 DP 752035

—

Prepared by Willowtree Planning Pty Ltd
on behalf of Macquarie Data Centres

8 November 2022

SYDNEY

Suite 1, Level 10
56 Berry Street
North Sydney NSW 2060

NEWCASTLE

Unit 2, 56
Hudson Street
Hamilton NSW 2303

GOLD COAST

Level 1, 5/1150
Gold Coast Highway
Palm Beach QLD 4221

BRISBANE

Level 3, 240
Queen Street
Brisbane QLD 4000

02 9929 6974
equiries@willowtp.com.au
willowtreeplanning.com.au

WILLOWTREE
PLANNING

In the spirit of reconciliation and recognition, Willowtree Planning acknowledges the Traditional Owners of this Country throughout Australia and their continuing and ongoing connections to land, waters and community. We show our respect to Elders – past and present. We acknowledge that we stand on this Country which was and always will be recognised as Aboriginal Land. We acknowledge the Traditional Owners of the Lands in this Local Government Area, belonging to the local Aboriginal People, where this proposal is located upon.

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EXECUTIVE SUMMARY

This report has been prepared by Willowtree Planning Pty Ltd, on behalf of Macquarie Data Centres (MDC), as a combined response to submissions (RTS) and amendment application to the Department of Planning and Environment (DPE), in relation to the following proposed State Significant Development (SSD):

- Talavera Road Data Centre Campus Expansion – SSD-24299707

The proposed development consists of an extension to the existing data centre at 17 – 23 Talavera Road, Macquarie Park (Lot 527 DP 752035), approved under LDA2018/0322, to allow for additional data storage capacity in response to increasing demand.

The Environmental Impact Statement (EIS) for the proposal was exhibited from 18 November 2021 to 15 December 2021, during which a number of submissions were provided to the NSW DPE, as discussed herein. Submissions received by NSW DPE outside the exhibition period have also been addressed in this report.

In addition, this report seeks to amend the current SSD application, by virtue of section 55AA of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), in response to the submissions and consultations undertaken since.

The proposed amendments are generally described as:

- Inclusion of new stormwater pipeline works;
- Clarification of tree removal, both on-site and off-site;
- Increased tree planting, to ensure a minimum 1:1 replacement ratio on site;
- Increased landscape areas, including increased rear setback;
- Increased total MW capacity and diesel storage capacity;
- Minor façade building layout amendments;
- Refinement of plant deck louvers;
- Addition of communal open space;
- Updated project description to align with the proposed changes; and
- Updated management and mitigation measures.

The proposal seeks to operate 24 hours per day, seven (7) days per week, and would generate approximately 610 construction jobs per annum for the new purpose-built data centre and a total of approximately 49 operational jobs for the consolidated facility.

The proposal is summarised below:

- Minor earthworks involving cut and fill works;
- Construction of new 2,100mm stormwater pipeline and decommissioning of existing 1,800mm stormwater pipeline;
- Infrastructure comprising civil works and other utilities servicing;
- Removal of 79 trees and planting of 83 new trees (within the site);
- Removal of 4 trees (outside the site);
- Construction of a seven (7) storey plus ground level, building extension, comprising up to:
    - An additional 16,142m^2 of GFA
    - 15 data halls
- Increase in total data centre capacity by an additional 38MW;
- Increase in the diesel storage capacity by an additional 461,000L;
- Additional 20 backup generators, plus one (1) small diesel emergency generator;
- Additional set of dual 33kV feeder;
- Storage of lithium ion batteries (Class 9 DGs);

- 71 On site car parking spaces;
- Complementary landscaping (2,978m^2);
- Hours of operation being on a 24 hours per day, 7 days per week, basis.

This report aims to respond to the received submissions, describe the amended proposal, assess any changes to impacts that may result from the proposed amendments, and provide updated mitigation and management measures, as deemed necessary.

SUMMARY OF SUBMISSIONS

During the exhibition period, submissions were received from NSW government agencies, local council and other key public authorities. There were no submissions received from member of the public or nearby land holders.

The submissions received from public agencies and authorities include:

- Environment, Energy and Science Group in the NSW DPE
- NSW Environment Protection Authority
- Fire and Rescue NSW
- Heritage NSW
- Transport of NSW
- City of Ryde Council
- NSW DPE

ACTIONS TAKEN SINCE EXHIBITION

Since the proposal was publicly exhibited, MDC has undertaken further consultation with NSW government agencies, local council authorities and adjoining landowners to resolve matters raised.

The key discussion topics include:

- Discussions and ongoing engagement with City of Ryde Council regarding the impacts to stormwater infrastructure and impacts to trees, including the provision of additional information (and design refinements) for consideration and comment.
- Discussions and ongoing engagement with NSW DPE industry assessments team to attain guidance on the submissions received and intentions to refine the proposal to reach an amicable outcome with City of Ryde Council.
- Engagement with Sydney Water on the impact to existing sewer infrastructure and solutions to resolve that impact.
- Engagement with the adjoining landowner of 63 – 71 Waterloo Road, Macquarie Park, in relation to the potential impact to trees within their property.

RESPONSE TO SUBMISSIONS

MDC has amended the proposal in response to the submissions and subsequent consultation. The key changes to the proposed development are summarised as follows:

1. As part of discussions with City of Ryde Council, the proposal to relocate the existing 1,800mm stormwater pipeline and easement to outside of the building under croft was explored. Subsequent various alignments for a new proposed easement were developed for City of Ryde Council's review. Consequently, the option to relocate from the middle of the site to be along the southern and western boundary was agreed upon.

   The proposal has been amended to include the construction of a new 2,100mm stormwater pipeline and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council, which closes out many of the matters raised by the City of Ryde Council. This

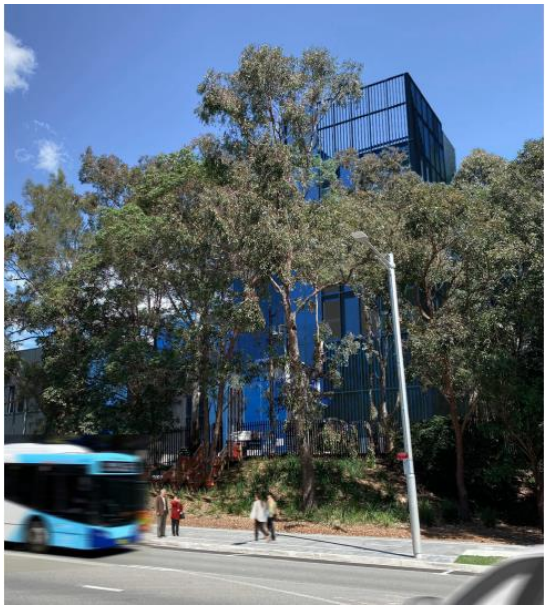
includes the diversion of the trunk stormwater infrastructure to the perimeter of the subject site, and at the same time, upgrading to a 2,100mm pipeline.

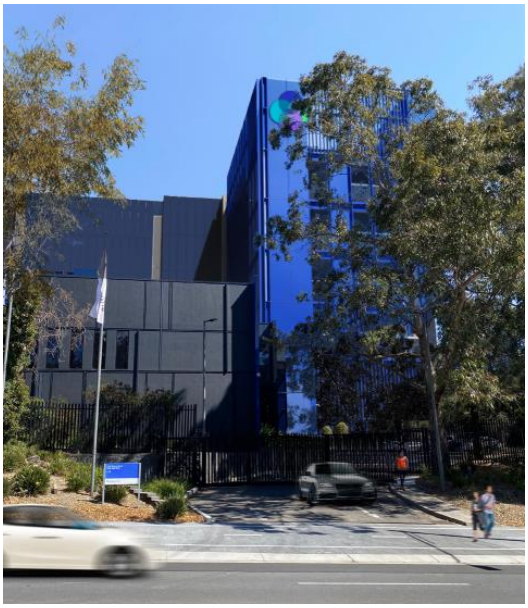
2. As part of the proposed stormwater pipe realignment, a sewer main within proximity of the site is to be reconstructed to provide appropriate clearances to Sydney Water specifications. Approval of the proposed sewer diversion has been granted by Sydney Water,

3. The alignment of the new 2,100mm stormwater pipeline has been coordinated to minimise encroachment into the western neighbouring boundary's tree protection zones. Four (4) trees within 63 – 71 Waterloo Road, Macquarie Park (Lot 3 DP 1043041), may still be impacted by the proposed development. However, it is noted that development consent has already been granted for the removal of these trees under NSW Land and Environment Court (LEC) Order 2021/220838, granted on 31 March 2022.

4. Following the resolution to construct the new 2,100mm stormwater pipeline and relinquish the existing/redundant 1,800mm pipeline (which currently traverse the centre of the subject site) the proposed built form has been amended to introduce further design efficiencies. With this, design amendments at the ground level have allowed for further efficiencies in the location of data halls and plant across all levels of the development.

   The proposed floor plate has been designed to best practices of data centre design and to fit seamlessly with the existing building. Towards the Talavera Road boundary, the building has been purposely set back to allow a landscaped area to the entry point. This allows the proposed building to nestle into its surroundings and cohesively address the form and architecture of the existing building.





UPDATED JUSTIFICATION AND EVALUATION

Based on the findings of the original EIS and further matters considered as part of this report, it is concluded that the proposed development is consistent with the Objects of the EP&A Act, under section 1.3, particularly the notion of promoting the orderly and economic development of the land.

The proposed development is considered a quality outcome, which responds to several ambitions to increase data storage offerings at a local, State and Regional level. Additionally, in the promotion of employment-generating opportunities throughout the construction and operational phases, the proposed development further delivers on the rationale of full economic utilisation and proper and orderly development of the land for its intended purpose namely employment uses. The proposed

development is suitable and is considered orderly and appropriate, based on social, cultural, economic and environmental matters.

Overall, the proposal, as amended, is considered in the public interest and recommended for approval by the NSW DPE, subject to suitable conditions.

PART 1 INTRODUCTION

1.1 PROJECT OVERVIEW

Macquarie Data Centres (MDC) is one of the world's most certified data centre operators, delivering data centre solutions in Australia for more than 20 years. The development proposed under **SSD-24299707** involves an expansion to an existing MDC facility at 17 – 23 Talavera Road, Macquarie Park (Lot 527 DP 752035) to support additional data storage supply, in a well-suited location.

17 – 23 Talavera Road, Macquarie Park (Lot 527 DP 752035) shall be identified as the 'subject site' throughout this Response to Submission (RTS) Report.

This proposal seeks to provide a purpose-built data centre in line with Industry Best Practice, adjacent to the existing data centre, constructed under Development Consent LDA2018/0322. LDA2018/0322 informed the approval for the MDC Intellicentre 3 Super West (IC3w) development, which granted consent for a smaller extension to the existing data centre, of which Stage 1 (IC3e) has been completed, while Stage 2 (IC3w) has not commenced. The intent of this application (**SSD-24299707**) is to complete a further expansion of the constructed data centre, which would encapsulate the abovementioned Stage 2 works, plus additional built form.

In short, the proposal involves the construction and operation of an expansion to an existing data centre (identified as the IC3w development), comprising:

- a seven-storey building, plus ground floor
- ancillary office space and staff amenities
- a back-up power system, including lithium-ion batteries
- associated infrastructure, car parking, loading docks and landscaping

Figure 1: Proposed Development Perspective (Source: HDR, 2022)

The subject site is located within the City of Ryde Local Government Area (LGA) and is zoned B7 Business Park under the provisions of the *Ryde Local Environmental Plan 2014* (RLEP2014). Development for the purpose of a data centre falls within the definition of 'storage premises' (used for

the storage of data and related information technology hardware), which was deemed permissible with consent in the B7 Business Park zone, pursuant to Part 3, Division 3, Clause 27 of the former *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP), now Part 2.3, Division 3, Clause 2.31 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP).

The proposed development satisfied the definition of State Significant Development (SSD) pursuant to Schedule 1, item 25 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) and continues to satisfy the definition under the *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP), being development for "storage premises used for the storage of data and related information technology hardware" that has a total power consumption of more than 10 megawatts.

NSW's economic development ambitions place an increased reliance on the role of the digital economy and related investment in leading-edge physical infrastructure. The subject site will be one of the most advanced data centres in Sydney, a vital investment in supporting economic growth, creating jobs of the future, building sovereign security skills and offering protection against cyber threats.

The proposed data centre will create approximately 610 full time equivalent (FTE) construction jobs per annum, and host 49 highly skilled specialist roles, growing the state's workforce of cyber security experts.

1.2 APPLICATION PROCESS OVERVIEW

Development consent is being sought for the proposal, as SSD, under Division 4.1, Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In accordance with section 77 of the EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), the Environmental Impact Statement (EIS) for the proposal was required to be placed on exhibition for not less than 30 days.

The proposal was exhibited from 18 November 2021 to 15 December 2021, during which a number of submissions were provided to the NSW Department of Planning and Environment (DPE), as discussed herein. Submissions received by NSW DPE outside the exhibition period have also been addressed in this RTS Report.

In addition, this RTS Report seeks to amend the current SSD application, by virtue of section 55AA of the EP&A Regulation, in response to the submissions and consultations undertaken since. The proposed amendments are described in **PART D**.

1.3 PURPOSE OF THIS REPORT

The purpose of this RTS Report is to detail and respond to matters raised in the submissions received for **SSD-24299707**.

The RTS report has been set out to address each submission matter, and is structured as follows:

PART 1	provides an overview of the project, the application process and the RTS Report purpose and structure;
PART 2	provides a summary of the submissions received;
PART 3	provides a description of the project amendments;
PART 4	provides an updated assessment of the project amendments against the relevant statutory requirements;

PART 5	provides an update on project engagement and responses to each of the issue raised in the submissions received;
PART 6	addresses any additional environmental assessment requirements;
PART 7	provides a justification to support the proposal.
APPENDIX A	provides an updated development description;
APPENDIX B	provides a summary of the submissions received;
APPENDIX C	provides a revised set of project management and mitigation measures, following the review of submissions and technical responses;
APPENDIX D	provides copies of any supporting information required by the received submissions.

1.4 CHANGES TO THE PROPOSAL AS EXHIBITED

Following the exhibition phase, and upon review of all submissions received, several amendments have been made to the proposal. These amendments include:

- Inclusion of new stormwater pipeline works;
- Clarification of tree removal, both on-site and off-site;
- Increased tree planting, to ensure a minimum 1:1 replacement ratio;
- Increased landscape areas, including increased rear setback;
- Increased total MW capacity and diesel storage capacity;
- Minor façade building layout amendments;
- Refinement of plant deck louvers;
- Addition of communal open space; and
- Updated project description to align with the proposed changes;
- Updated management and mitigation measures.

PART 2 SUMMARY OF SUBMISSIONS

2.1 SUBMISSIONS PROCESS

The proposal was exhibited from 18 November 2021 to 15 December 2021, during which a number of submissions were provided to the NSW DPE.

Section 82 of the EP&A Regulation permits the Planning Secretary of the NSW DPE to request that the Applicant to provide a written response in relation to the issues raised within any submissions made during public exhibition. This RTS Report aims to fulfil the request from the Planning Secretary.

Submissions received by NSW DPE outside the exhibition period have also been addressed in this RTS Report. This has also included numerous rounds of consultation with City of Ryde Council, as described in **Section 5.1**.

2.2 SUBMISSIONS RECEIVED

A total of six (6) submissions were received during the exhibition period, all of which have been received from government agencies, as summarised below:

- Environment, Energy and Science Group (EES) in the NSW DPE
- NSW Environment Protection Authority (EPA)
- Fire and Rescue NSW (FRNSW)
- Heritage NSW
- Transport of NSW (TfNSW)
- City of Ryde Council
- NSW DPE

Of the six (6) submissions, we note the following:

- Four (4) submissions provide support, no comment and/or conditions of consent
- Two (2) submissions provide comment and request additional information

2.3 SUBMISSION TOPICS

The following subsections provide a general overview of the matters of concern raised by the abovementioned submitters, including commentary on how the relevant matters are addressed.

2.3.1 Hazards and Risks

The storage of dangerous goods (DGs) has been analysed, and it is concluded that the risks at the site boundary are not considered to exceed the acceptable risk criteria; hence, the facility would only be classified as potentially hazardous and would be permitted within the current land zoning for the site.

The proposal does not necessitate an Environmental Protection Licence (EPL), based on:

- The proposed diesel fuel storage capacity being up to 572 tonnes;
- The total testing time for all generators being 148 hours per annum.

The storage of lithium-ion batteries is also proposed. Lithium-ion batteries are Class 9 miscellaneous dangerous substances and articles; however such substances/articles are excluded from the former *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* (SEPP 33) screening process.

An updated Fire Safety Strategy Report has been prepared by Innova Fire Safety Specialists and included within **Appendix D8** of this RTS Report.

2.3.2 Transport and Traffic

This RTS Report seeks to resolve traffic-related matters raised by submitters, by which the following documents have been updated:

- Transport Impact Assessment (TIA) has been updated and included within **Appendix D6**;
- Preliminary Construction Traffic Management Plan (CTMP) has been updated and included within **Appendix D7**.

The potential impact of construction traffic has been further considered and addressed as part of this RTS Report. During construction works the existing MDC facility is to continue operations with reduced on-site staffing levels (i.e. circa 35 staff members working on-site per day). During this time, parking for operational staff is to be provided off-site, with the site operator intending to rent parking spaces at neighbouring sites – the number of which is yet to be confirmed noting that the majority of staff are expected to travel via public transport.

It is anticipated that there would be up to a maximum of 50 construction vehicles (mixed type) generated from the proposed construction activities of the site per day, during the building fit-out phase. In addition, it is anticipated that there would on average 7 vehicles (7 in; 7 out) per hour during the busiest period.

It is noted that there will be existing car spaces on-site that will be unaffected by the construction works. These spaces may be allocated to select construction workers on a "needs" basis. However, all remaining construction workers will be expected to use public transport to travel to/from the site given the proximity of the site to Macquarie Park Metro Station. This will be incorporated in the workers' induction program to ensure minimal parking impact on surrounding streets.

Taking the above into consideration, it is proposed to implement the following measures to encourage workers to use public transport:

- provide an on-site tool drop-off and storage facility to allow tradespeople to drop off and store their specific machinery for the project to prevent the need to drive equipment in everyday
- inform staff during the induction and regular management meetings that no car parking will be available for staff on-site
- instruct staff to use public transport to access the site during the induction and regular management meetings, and
- display public transport timetable information at key locations within the work site and ensure that it is easily accessible by staff.

Given the limited public car parking availability in the surrounding areas, construction workers and operating staff are unlikely to drive to the site unless parking is provided.

Cumulative impacts of nearby developments have been assessed through information sourced from the NSW DPE State Significant Projects website and the City of Ryde DA Tracker. The assessment shows that for the projects with known construction traffic trips, the cumulative impacts are expected to be minimal considering the low number of traffic movements generated by those projects and the proposal cumulatively.

It is concluded that the proposal is supportable from a transport and traffic perspective.

2.3.3 Air Quality

This RTS Report seeks to clarify a number of matters that relate specifically to air quality, with an updated Air Quality Impact Assessment (AQIA), prepared by SLR Consulting, forming **Appendix D4** of this RTS Report.

The main identified potential sources of air emissions remain as suspended particulate matter and deposited dust during the construction stage, and combustion gases and particulate matter during the operational phase of the project.

The potential for off-site air quality impacts during the construction stage of the project were assessed using a qualitative risk-based approach, concluding that given the nature of the operations proposed, the location of the subject site and the local meteorological conditions, exceedances of the relevant air quality criteria are unlikely.

The potential for off-site air quality impacts during the operational stage of the project were conservatively assessed quantitatively through the use of dispersion modelling techniques in general accordance with the '*Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*' ('Approved Methods') (NSW EPA, 2022). The dispersion modelling study, which accounted for worst-case testing conditions predicted no exceedance of the relevant ambient air quality during operation.

The dispersion of emissions due to emergency conditions, where loss of all feeders to the subject site requiring all generators to operate simultaneously, was conservatively modelled and predicted compliance with relevant CO, SO_2 and PAHs criteria. For PM_{10} and $PM_{2.5}$, the 24-hour average criterion is predicted to exceed the relevant criteria at 14 and 6 of the 57 receptors modelled respectively. These exceedances are limited to days with elevated background PM_{10} and $PM_{2.5}$ concentrations. At the worst impacted receptor, four (4) additional (on top of background exceedances) PM_{10} exceedances and two (2) additional $PM_{2.5}$ exceedance were predicted. For NO_2, exceedance of the 1-hour average criterion were predicted for 11 of the 57 receptors modelled. However, the predicted low likelihood of an exceedance coupled with the low likelihood of an emergency condition event happening was demonstrated to result in a very low risk of an exceedance occurring.

It is concluded that air quality impacts do not pose a constraint for the project.

2.3.4 Noise and Vibration

This RTS Report seeks to clarify a number of matters that relate specifically to noise and vibration; in particular, further justification is proposed to confirm the appropriateness of the noise monitoring data. With some of design changes proposed, an updated Noise and Vibration Impact Assessment (NVIA) has been prepared by Renzo Tonin (**Appendix D5**).

Operational noise impacts from the proposed development have been assessed and a range of feasible and reasonable mitigation measures incorporated into the design to minimise noise impacts on sensitive receivers nearby and further removed from the site, as described in **Section 3.1.2.2**.

The assessment reviewed the existing noise environment and established the noise emission objectives in accordance with the *NSW Noise Policy for Industry* (NPfI) (NSW EPA, 2017). A review of the potential noise generating activities that will likely take place as part of the proposed operations was undertaken, and cumulative impacts from the existing data centres on site was assessed.

The assessment has predicted the potential noise impacts under both standard meteorological conditions and noise-enhancing meteorological conditions. Following the implementation of a range of mitigation and management measures, the predicted noise levels have demonstrated that the

facility can comply with the requirements of the NPfI at all potentially impacted receivers that surround the site.

The assessment remains that any potential sleep disturbance and operational road traffic noise increases attributed to the project, would respectively meet the NPfI and *NSW Road Noise Policy* (RNP) (DECCW, 2011) requirements.

An assessment of potential construction noise and vibration impacts from the site establishment and civil works, building construction and building fit-out stages of the project has been undertaken.

Noise mitigation and management measures have been presented to aid in providing additional noise reduction benefits, where exceedance of the objectives may occur.

During the building construction and building fit-out phases vibration intensive plant and equipment are not proposed to be typically used as part of the construction works and so the risk of vibration impacts is minimal. Vibration intensive equipment is expected to be required for the civil works and management measures have been presented to aid in minimising any potential vibration impacts.

The noise impact of construction traffic on the existing road network has been reviewed and is considered insignificant.

It is concluded that noise and vibration impacts do not pose a constraint for the project.

2.3.5 Ecologically Sustainable Development

The Sustainability and GHG Emissions Statement has been updated to detail the predicted energy and water usage of the proposed development, as amended – refer to **Appendix D19**.

The Statement shows the predicted reduction in CO_2 equivalent emissions associated with energy consumption due to decarbonisation of the grid and use of biodiesel, resulting in zero Scope 1 and 2, Green House Gas emissions from 2050.

The proposal is targeting a Power Usage Efficiency (PUE) of 1.3, which is equivalent to a (pre-June 2021) 5-star NABERS rating. There is currently only one 5-star NABERS rated data centre in Australia, therefore the targeting of a 5-star NABERS rating for the proposed development would make it one of the most energy efficient data centres in Australia. Testing undertaken by the Applicant during commissioning showed PUE results of less than 1.3, providing a high level of confidence in the abovementioned target.

The Climate Neutral Data Centre Pact (CNDCP) (a European based data centre self-regulatory group tasked with making data centres climate neutral by 2030) set the following PUE target:

> *"By January 1, 2025 new data centres operating at full capacity in cool climates will meet an annual PUE target of 1.3, and 1.4 for new data centres operating at full capacity in warm climates."*

The proposal meets this international target, thereby being one the most energy efficient data centres in Australia and in line with international standards.

The following reasonable and feasible energy efficient measures have been included in the design;

- High efficiency chilled water-cooling system
- VSD drives will be used on fans and pumps allowing turndown and energy savings at part load
- High efficiency electrical drives will be used on the various systems
- All lighting to be LED

- Sub-metering throughout the facility to help monitor and interpret energy consumption in operation and enable optimisation year-on-year

Water Usage Efficiency (WUE) is a recognised measure of water efficiency for a data centre. The lower the WUE the more water efficient a data centre is. However, it is important to consider WUE in the context of PUE – for example an air sourced cooling system would have a WUE of zero but would be less energy efficient (based on current air-cooling technologies) resulting in a higher PUE.

The WUE for the proposed development is 1.79l/kWhr. There are no recognised WUE benchmarks or targets set, as yet; however it is considered current best practice for data centres to calculate and consider the WUE, when designing a data centre. It is understood that the CNDCP are to confirm a WUE target in 2022.

The following reasonable and feasible water efficiency measures have been incorporated into the design:

- Cooling towers will be selected to provide no more than 0.002% drift coefficient
- The cooling system will be controlled to operate with no less than 6 cycles of concentration
- All sanitary wares will achieve a minimum WELS – 5-star rating

The proposed development is targeting a (pre-June 2021) NABERS infrastructure rating of 5 stars. NABERS identify this rating type for data centre owners and managers as it allows them to determine their facility's energy efficiency in supplying the infrastructure services to the IT equipment housed in a data centre. This rating is suitable for co-location centres where the operators do not have control of any tenant IT equipment but provide the cooling and power delivery systems. The achievement of a 5-star NABERS rating is dependent on full occupation.

The development is to be fully commissioned prior to handover, with the PUE tested at different loads to ensure the facility is operating efficiently as possible during the predicted short period until it is fully occupied. The Applicant intends to install major plant and equipment progressively, such that the loads are managed to minimise the extent of low load efficiencies.

2.3.6 Impacts to Stormwater Infrastructure

Concerns around the potential risks, constraints and cost burdens associated with the proposed extension of the building over an existing stormwater pipeline have been considered and responded to as part of this RTS Report.

As part of discussions with City of Ryde Council, the proposal to relocate the existing easement to outside of the building under croft was explored. Subsequent various alignments for a new proposed easement were developed for City of Ryde Council's review. Consequently, the option to relocate from the middle of the site to be along the southern and western boundary was agreed upon with Council, as shown in **Figure 2**.

The proposal has been amended to include the construction of a new 2,100mm stormwater line and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council, which closes out many of the matters raised by the City of Ryde Council. This includes the diversion of the trunk stormwater infrastructure to the perimeter of the subject site, and at the same time, upgrading to a 2,100mm pipeline.

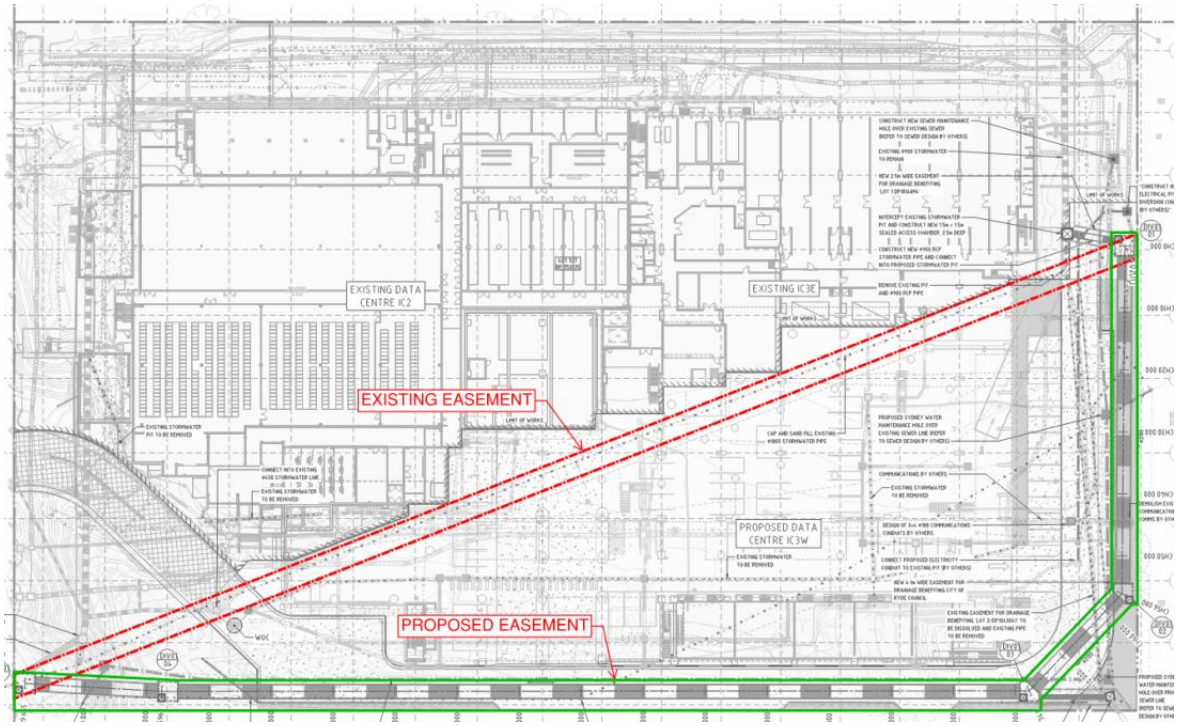


Figure 2: Existing and Proposed Easement Alignments (Source: Northrop, 2022)

The option to place the alignment near the boundary was ultimately chosen to minimise the potential number of clashes with the existing services pipes. This alignment also provides City of Ryde Council with less obstructions for maintenance and access if required.

The alignment of the actual stormwater pipe has been coordinated to minimise encroachment into the western neighbouring boundary's tree protection zones (TPZ). The resulting alignment also took into consideration the 3m wide shoring widths for construction, which would have also encroached into the neighbouring TPZ's if not appropriately considered.

As part of the proposed stormwater pipe realignment, a sewer main within proximity of the site is to be reconstructed to provide appropriate clearances to Sydney Water specifications. **Figure 8** shows the approximate location of the new sewer lines and the proposed easement. The coordination of the sewer alignment is to avoid the proposed new trunk drainage alignment and comply to Sydney Water requirements. Approval of the proposed sewer diversion has been granted by Sydney Water, as included in **Appendix D25** of this RTS Report. Some minor impact to trees may result from these works, which is further discussed in **Section 2.3.7** of this RTS Report.

The new 2,100mm pipe and easement is proposed to replace the existing 1,800mm pipe easement to continue to convey flows across the site. The existing 1,800mm pipe will continue to function until such time as the new 2,100 pipe alignment has been laid. There will be three (3) main connection locations.

1. The first (1) connection point at the downstream northern boundary intercepting the 1800mm pipe is suggested. The most downstream end of the proposed 2,100mm pipe can be constructed and 'stubbed' close to the future boundary pit. The 2,100mm pipe and intermediate pits can then be laid towards the upstream direction. Optionally, the northern boundary pit can be constructed to intercept the exiting 1,800mmm pipe and the 2,100mm pipe 'blocked' to ensure no backflow into the 2,100mm.
2. The second (2) point of connection at the southwestern corner pertains to the western neighbouring incoming easement. To convey the flow of the temporary private easement, a temporary diversion of the pipe can be constructed to connect into the closest pit until the 2,100mm pipe and pit is live.

3. Lastly, the most upstream boundary pit (point 3) can be constructed over the existing 1,800mm pipe. This sequence can be constructed within concurrently with the last segment of the 'stubbed' or 'blocked' downstream pit. Once points 1 and 3 are completed and connected, the removal or grout filling of the 1,800mm pipe and easement can be removed and/or undertaken.

The agreed stormwater pipe alignment is shown in **Figure 3** below. Reference should be made to the full Stormwater Management Report, within **Appendix D13** of this RTS, for detailed information.

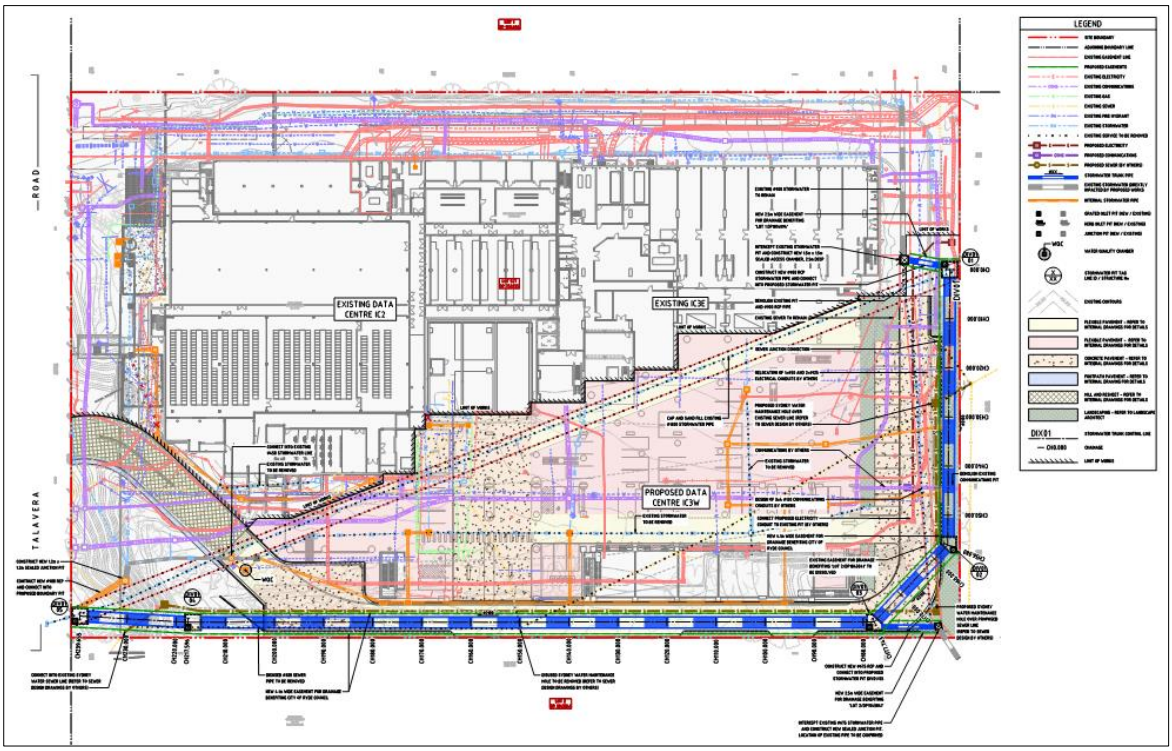


Figure 3: Agreed Stormwater Alignment (Source: Northrop, 2022)

2.3.7 Tree Loss and Landscaping

In accordance with *Ryde Development Control Plan 2014* (RDCP2014) and Tree Management Technical Manual, the RTS Report includes the following updated documents:

- Landscape Plans, prepared by Geoscapes (**Appendix D2**)
- Arboricultural Impact Assessment Report, prepared by Urban Arbor (**Appendix D25**)

The abovementioned documents cover the extent of impacts to trees, associated with the proposed development, as amended, including direct on-site impacts and indirect off-site impacts associated with the proposed development footprint, as shown in the updated Landscape Plans, contained within **Appendix D2**.

The Arboricultural Impact Assessment Report has been updated to assess the potential impacts associated with the proposed stormwater realignment (refer to **Section 2.3.6** above for detail on the stormwater matters), as requested by DPE.

With the various design amendments, the proposal can now retain, in a viable condition, 31 trees within the subject site. Based on the amendments detailed within this RTS Report, **SSD-24299707** now seeks development consent for the clearing of 79 trees within the subject site.

As demonstrated in the updated Arboricultural Impact Assessment Report, four (4) trees within 63 – 71 Waterloo Road, Macquarie Park (Lot 3 DP 1043041), may be impacted by the proposed development. However, it is noted that development consent has already been granted for the removal of these trees under NSW Land and Environment Court (LEC) Order 2021/220838, granted on 31 March 2022.

Notwithstanding, landowners' consent has been obtained from UT 65 Pty Ltd for the impact/removal of the abovementioned trees at 63 – 71 Waterloo Road, Macquarie Park (**Appendix D27**).

The overall extent of tree impacts are articulated in **TABLE 1** and further information is provided in **Section 2.3.7.1** and **Section 2.3.7.2** below.

TABLE 1: IMPACT ON TREES			
Project Element		**No. of Trees Impacted**	**No. of Replacement Trees**
Proposed development footprint (inc. new stormwater pipeline)	Within the subject site	79	83
	Outside the subject site	4	0
Total		**83**	**83**

2.3.7.1 On-site trees

Trees proposed to be removed on-site total 79 (including group G1 containing 20 trees), which presently matches the number as documented in the updated Arboricultural Impact Assessment, contained within **Appendix D25** of this RTS Report.

It is noted that the G1 group of trees are tightly grouped together and are, therefore, quite sparse of branching with thin trunk sizes, with species including some shorter-lived trees such as Acacia. Replacement planting is considered a better outcome for the G1 tree group, which will allow for greater spacing and ultimately a better outcome for tree maturity than contained within the G1 group. Refer to **Appendix D2** of this RTS Report for the proposed tree replanting regime.

Where possible, the proposal seeks to retain and enhance landscaping at the subject site, offering 14.8% of the subject site as landscaped area. The proposed landscaping aims to offset loss of vegetation by replanting 83 endemic/native trees, approximately 290 shrubs, 5,600 groundcovers and climbers. This will enhance existing areas of landscaping within the site especially those to the east and adjacent to the street. By adding additional tree planting to Talavera Road, not only will the canopy cover be increased within the public domain, but also views from the street will be further screened providing visual mitigation. Presentation to the building main entry will also be enhanced with a proposal to remove the existing monoculture and replace it with a more varied visually inviting landscape.

While this does not meet the minimum 20% deep soil percentage requirement of the RDCP2014, this is still a generous outcome in the context of the area.

It is considered that the proposed areas for landscaping are sufficient to support endemic canopy trees of significant size and therefore adding to the urban tree canopy objectives. The proposal, as amended through the RTS process, achieves a balanced built form and landscaped outcome that is commensurate to the surrounding Macquarie Park, as illustrated in **Figure 4** below.

Figure 4: Current Site Context including SSD-24299707 (Source: Willowtree Planning, 2022)

It is also noteworthy to consider that data centre design is strictly guided by the dimensional requirements of their data halls and associated plant and equipment. As such, the proposed building size is optimised for the IT load required to make this development viable for MDC.

The building scale and surrounding hardstand is dictated by these factors, and the unique operations of a data centre. For instance, the perimeter of the building is required to provide sufficient space for cranage to navigate and install / replace plant on the rooftop of the building. Notwithstanding, the design has been further resolved to include additional landscape strips either side of the southern driveway, as shown in **Figure 5** below. This includes a 1.2m to 6.8m landscape buffer between the building and perimeter driveway, planted with grasses, shrubs (5m) and trees (7-12m). To far south of the perimeter driveway, a 3.5m to 4.2m landscaped buffer is proposed along the rear boundary, which will be planted with various grasses and hedges (1m). Planting of tall species is avoided in this setback area to allow for suitable passive surveillance beyond the site boundary.

The proposal has ensured that sufficient landscaping is provided to soften the proposed built form and achieve an outcome that is commensurate with the surrounding area. The proposal attains to enhance existing areas of landscaping within the site especially those to the east and adjacent to the street. By adding additional tree planting to Talavera Road, not only will the canopy cover be increased within the public domain, but also views from the street will be further screened providing visual mitigation. Presentation to the building main entry will also be enhanced with a proposal to remove the existing monoculture and replace it with a more varied visually inviting landscape.

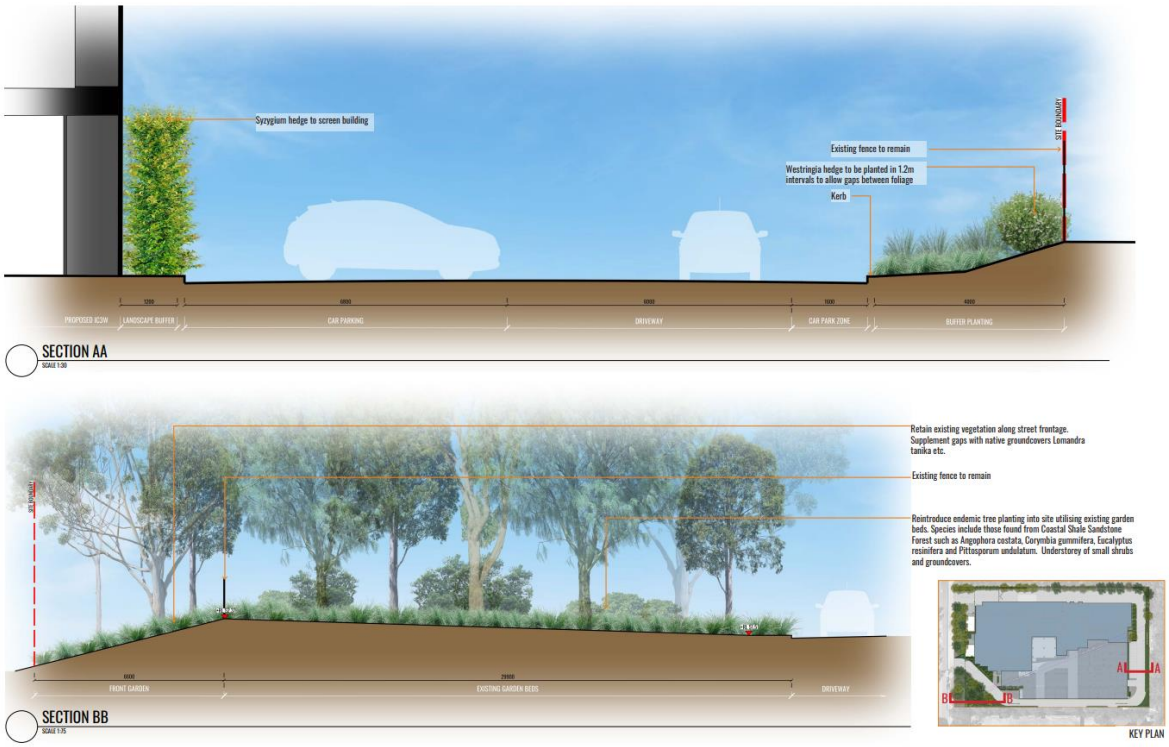


Figure 5: Landscape Sections (Source: Geoscapes, 2022)

2.3.7.2 Off-site trees

Concern has also been raised regarding the potential impact to neighbouring trees.

In response, the proposal has been refined to avoid any impact to neighbouring trees along the north-western boundary (within Lot 2 DP 1043041); resulting in the potential impact of only four (4) at the very rear of Lot 3 DP1043041.

As mentioned above, development consent has already been obtained for the removal of these trees under NSW Land and Environment Court (LEC) Order 2021/220838, granted on 31 March 2022. Notwithstanding, landowners consent has been obtained from UT 65 Pty Ltd for the impact/removal of the abovementioned trees (**Appendix D27**).

It is also worthy to note that the trees located within the rear of Lot 3 DP1043041, will be impacted by the alignment of (City of Ryde Council's) future Road 1, regardless of the development proposed under **SSD-24299707.**

PART 3 DESCRIPTION OF AMENDMENTS

In reviewing the submissions received from various agencies, some amendments to the project are proposed. However, it is noted that most matters required further clarification, rather than design changes for the project. Items for clarification and their related responses are provided within **PART C** of this RTS Report.

The following subsections outline the project amendments and any necessary environmental assessment and/or commentary.

3.1 UPDATED PROJECT DESCRIPTION

The proposed development consists of an extension to the existing data centre at 17 – 23 Talavera Road, Macquarie Park (Lot 527 DP 752035), approved under LDA2018/0322, to allow for additional data storage capacity in response to increasing demand.

The proposal seeks to operate 24 hours per day, seven (7) days per week, and would generate approximately 610 construction jobs per annum for the new purpose-built data centre and a total of approximately 49 operational jobs for the consolidated facility.

Based on the amendments sought as part of this RTS, the proposed development incudes a minor element of works within the neighbouring property of 3-71 Waterloo Road, Macquarie Park (Lot 3 DP 1043041). Such works are limited to the removal of four (4) trees at the rear boundary, as a result of the new stormwater pipeline works, which have been granted landowners consent by Ut 65 Pty Ltd.

The updated particulars of this proposal are summarised below:

- Minor earthworks involving cut and fill works;
- Construction of new 2,100mm stormwater pipeline and decommissioning of existing 1,800mm stormwater pipeline;
- Infrastructure comprising civil works and other utilities servicing;
- Removal of 79 trees and planting of 83 new trees (within the site);
- Removal of 4 trees (outside the site);
- Construction of a seven (7) storey, plus ground level, building extension, comprising up to:
    - An additional 16,142m^2 of GFA
    - 15 data halls
- Increase in total data centre capacity by an additional 38MW;
- Increase in the diesel storage capacity by an additional 461,000L;
- Additional 20 backup generators, plus one (1) small diesel emergency generator;
- Additional set of dual 33kV feeder;
- Storage of lithium ion batteries (Class 9 DGs);
- 71 On site car parking spaces;
- Complementary landscaping (2,978m^2);
- Hours of operation being on a 24 hours per day, 7 days per week, basis.

Consent is sought to develop the subject site for additional data storage, in accordance with the following provisions, as outlined in **TABLE 2** below.

TABLE 2: PROPOSED DEVELOPMENT PARTICULARS		
Project Element	**Development Proposal**	**Development As Amended**
Site Area	20,094m² (approx.)	No change
General	The proposed development is considered SSD, pursuant to Schedule 1, item 25 of SRD SEPP	No change
Primary Land Use	Storage premises (data centre)	No change
Operation	Data centre with total power consumption capacity up to 61MW (additional 33MW)	Data centre with total power consumption capacity up to 66MW (additional 38MW)
Total GFA	20,606m² (9,097m² new)	27,651m² (16,142m² new)
Floor Space Ratio	1.02:1	1.37:1
Building Height	45m	No change
Number of Stories	Five (5) storeys	Seven (7) storeys
Tree Removal	55 trees to be removed within the site	79 trees to be removed within the site (including 1 group of small trees)
		4 trees to be removed from neighbouring properties
Landscaping	2,743m² (14% of the site) - Planting of 47 new trees	2,978m² (14.8% of the site) - Planting of 83 new trees
Earthworks	Minor earthworks are proposed beneath the building footprint range from a maximum of 0.25m cut to a maximum of 0.25m of fill. The extent of cut and fill includes: Cut: 799m³ Fill: 1,019m³ Import: 220m³	Minor earthworks are proposed beneath the building footprint range from a maximum of 0.25m cut to a maximum of 0.25m of fill. The extent of cut and fill includes: Cut: 799m³ Fill: 692m³ Export: 107m³
Car parking	71 spaces	No change
CIV	$ 289,731,682.00 (exc. GST)	$ 333,630,431 (exc. GST)
Construction Jobs	Approximately 1,200 direct construction jobs	No change
Operational Jobs	Approximately 49 ongoing jobs (total facility)	No change

3.1.1 Site Preparation

The first phase development includes the following scope of works:

- Tree removal and retention
- Stormwater works
- Earthworks
- Other infrastructure works

A detailed description of the abovementioned items is included in the following subsections.

3.1.1.1 Tree removal and retention

With the various design amendments, the proposal can now retain, in a viable condition, 31 trees within the subject site. Based on the amendments detailed within this RTS Report, **SSD-24299707** now seeks development consent for the clearing of 79 trees within the subject site.

As demonstrated in the updated Arboricultural Impact Assessment Report, four (4) trees within 63 – 71 Waterloo Road, Macquarie Park (Lot 3 DP 1043041), may be impacted by the proposed development.

However, it is noted that development consent has already been granted for the removal of these trees under NSW Land and Environment Court (LEC) Order 2021/220838, granted on 31 March 2022.

Notwithstanding, landowners' consent has been obtained from UT 65 Pty Ltd for the impact/removal of the abovementioned trees at 63 – 71 Waterloo Road, Macquarie Park (**Appendix D27**).

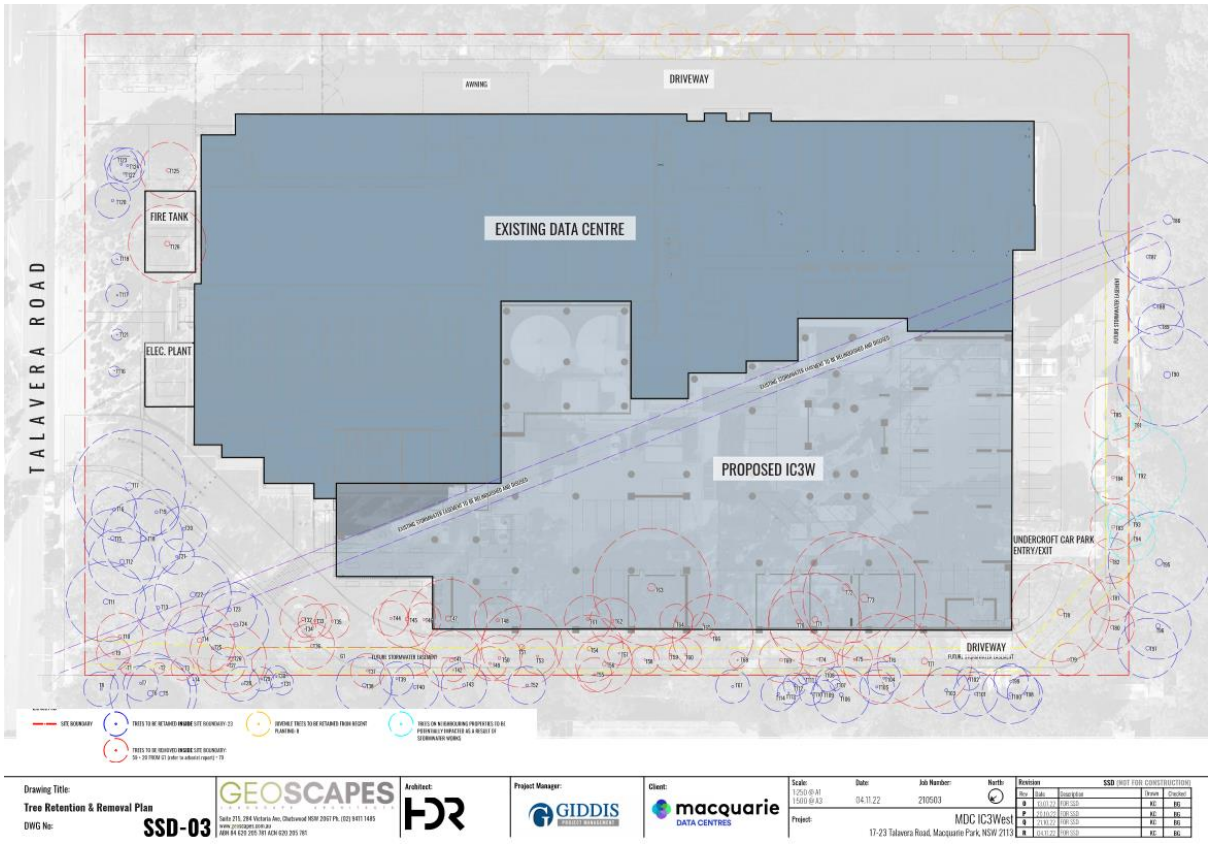


Figure 6: Tree Retention and Removal Plan (Source: Geoscapes, 2022)

3.1.1.2 Stormwater works

The proposal has been amended to include the construction of a new 2,100mm stormwater line and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council, which closes out many of the matters raised by the City of Ryde Council. This includes the diversion of the trunk stormwater infrastructure to the perimeter of the subject site, and at the same time, upgrading to a 2,100mm pipeline.

The agreed stormwater pipe alignment is shown in **Figure 3**, and full development details are reflected in the Northrop Stormwater Management Report, within **Appendix D13** of this RTS.

The anticipated staging of the proposed stormwater includes:

1. Further Agreement to Amend Easement executed and registered on title (which will set out the process for constructing the new 2,100mm stormwater pipeline and cutting over to it in accordance with the Terms Sheet proposed separately to City of Ryde Council).
2. Security Bond (A) placed on obligation to complete works and register the new easement.
3. Security Protection Bond (B) provided to City of Ryde Council for protection of existing 1,800mm stormwater pipeline asset during works on site.
4. Works (stormwater and IC3w) can commence on site other than within existing 1,800mm stormwater pipeline easement.

5. New 2,100mm to be built and commissioned by MDC, as per plans approved by City of Ryde Council.
6. MDC to provide Civil Engineering sign off, CCTV report for City of Ryde Council records.
7. Protection Bond (B) transferred to new 2,100mm stormwater asset.
8. Existing 1,800mm pipeline can be grout filled and works in the existing easement can commence (in accordance with the Terms Sheet proposed to City of Ryde Council).
9. New 4.1m wide Easement to be created in favour of City of Ryde Council for the purpose of drainage stormwater.
10. Security Bond (A) returned.
11. Old easement/s for drainage purposes in favour of City of Ryde Council, that are no longer required, to be extinguished.
12. Post occupation certificate (OC) and inspection by City of Ryde Council.
13. Security Protection Bond (B) returned.

3.1.1.3 Earthworks

Minor earthworks are proposed as part of the development. The earthworks are required to allow formation of the overland flow path, such that it limits the depth and spread of water and construction of the perimeter access driveway. The site has been designed so that overland flow can safely pass through the site. The work will involve modification of the surface levels on the western side of the site to accommodate over land flow.

The extent of cut and fill includes:

- Cut: 799m^3
- Fill: 692m^3
- Export: 107m^3

Figure 7 demonstrates the extent of earthworks and the relative change in surface level as a resulting from the earthworks.

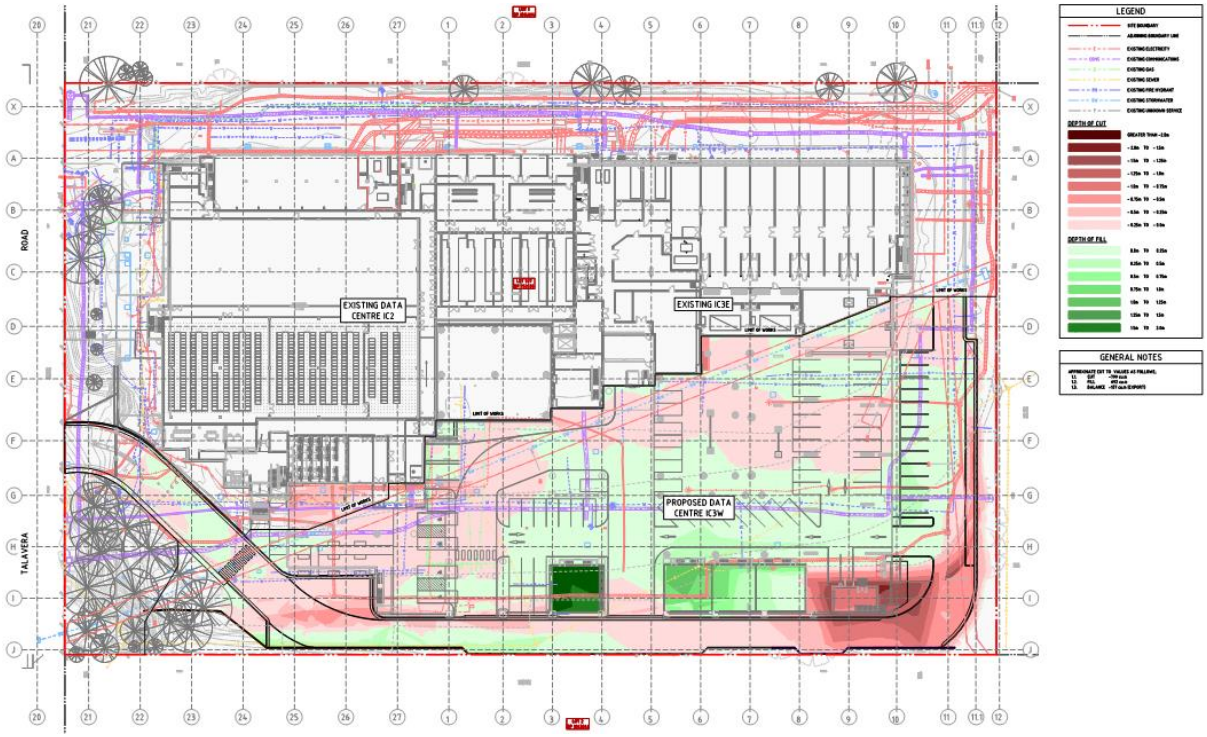


Figure 7: Earthworks Plan (Source: Northrop, 2022)

The earthworks beneath the building footprint range from a maximum of 0.25m cut to a maximum of 0.25m of fill 1.0m of fill is required to allow formation of the pad for the services platform on the western side of the building.

Deeper cut operations are required adjacent to the southern and western boundary of up to 0.5m are proposed. Existing boundary levels will be maintained with the introduction an upturn kerb (up to 0.6m high will) partially along each boundary. Adjacent to the south-west corner of the site, cut of up 1.25m is required to remove a landscape mound.

Earthworks will occur under engineering supervision as the resultant surface will need to be suitable for future vehicle and building loads.

Overall, the earthworks are minor and will result from some material being exported from site. Earthworks proposed generally lower the site levels to improve access and overland flow outcomes.

3.1.1.4 Other Infrastructure

The following utility connections available/required for the proposed development.

Electrical Services:

Under the IC3w proposed development there is a requirement for future dual 33kV feeders, MDC have entered into an agreement with Ausgrid around the new feeder expansion as part of future fit out works of IC3w.

The existing and future feeders serving the site are suitability sized to cater for the existing and proposed buildings on site.

Telecommunications:

The subject site currently has dual diversely routed underground pathways for telecommunications, cabling from street pits in Talavera Road to the existing IC3e and proposed development of IC3w. This external pit and pipe system shall be extended to serve the proposed development.

Sewer Drainage:

This subject site is serviced via an existing 300mm Sydney Water sewer, and Sydney Water has confirmed that the existing main is suitable to serve the proposed works.

The 300mm diameter sewer main traversing the site is currently concrete encased. The project will follow the post approval s73 submission requirements to Sydney Water, under detailed design, to ascertain updated site wastewater demand and approvals.

The existing Sydney Water sewer is proposed to divert, along the southern and western boundaries, to be clear of the proposed development works. Approval has been granted by Sydney Water, as included in **Appendix D25** of this RTS Report.

The new sewer layout is show in **Figure 8** below.

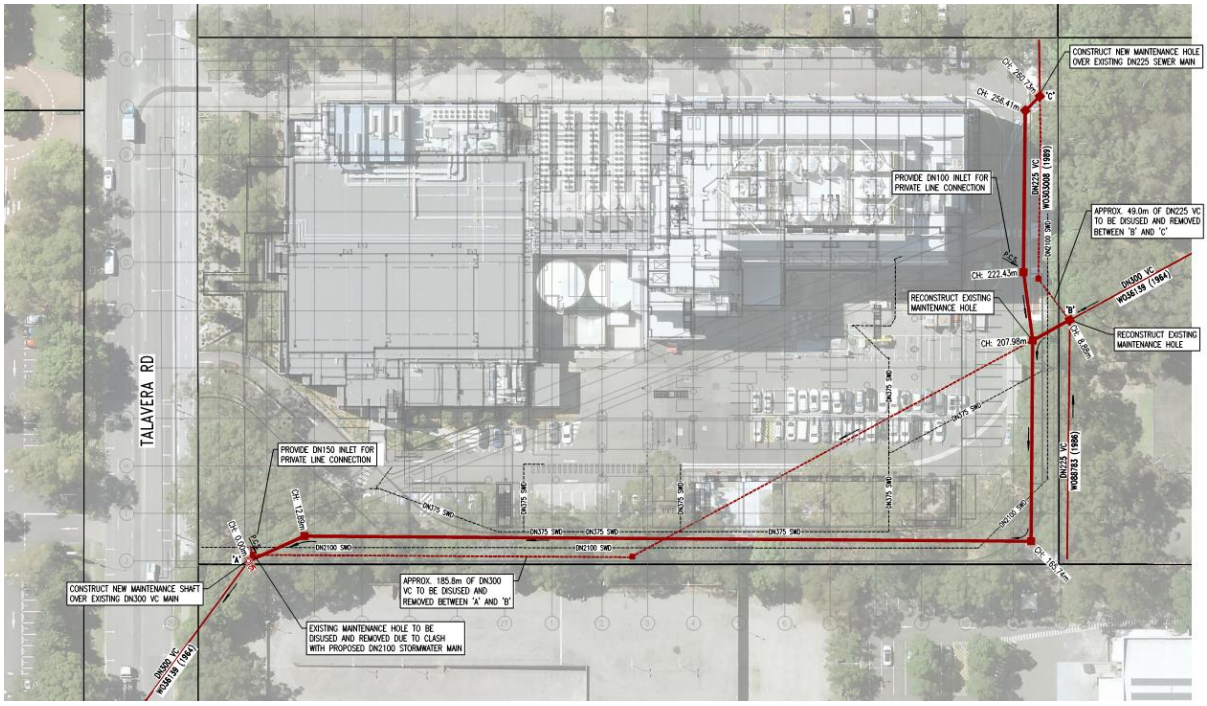


Figure 8: Sewer Layout Plan (Source: Sydney Water, 2022)

Potable Water:

The existing Sydney Water potable water supply is suitable to supply the water and fire services demand of the combined development (IC2, IC3e and IC3w).

The required flow rate for the site is 29.68L/s spread across the three (3) buildings:

- Existing IC2 = 1L/s
- Existing IC3e = 6.54L/s
- Proposed IC3w = 22.14L/s

The total resulting demand for the site is 29.68L/s and the Pressure and Flow Enquiry conducted in previous stages indicates that the street flow rate is capable of delivering 50L/s. A new Pressure and Flow Enquiry is being conducted as part of detail design with existing pressure and flow information provided as part of the updated Infrastructure Report, prepared by HDR (**Appendix D14**).

With the indicated flow rate of 29.68L/s, it is anticipated that tanks and pumps will be required to meet uptime and tenant requirements.

The project will follow the post approval s73 submission requirements to Sydney Water, under detailed design.

Fire Hydrant System:

The building is required to be covered by a fire hydrant system throughout in accordance with National Construction Code (NCC) / Building Code of Australia (BCA) Volume 1 Section E1.3 and complying with AS 2419.1 – 2005. Internal fire hydrants shall be provided in accordance with AS2419 and BCA. Hydrants shall not be provided with data halls therefore more than one length of hose may be required for hydrant coverage.

Onsite Detention:

The proposed internal site drainage is designed to convey all runoff from the 5% AEP event via a below ground pit and pipe network inclusive of an existing OSD tank (OSD 1). All new proposed roof areas are to drain via internal and external pipework to new above ground OSD tank (OSD 2) and subsequently connect into the localised site stormwater network prior to discharging to City of Ryde Council's stormwater system. The proposed pit and pipe network drains the site to the existing City of Ryde Council stormwater network on Talavera Road.

The development proposes to use existing site drainage infrastructure. This can be achieved as the proposed building generally extends over existing hardstand area. Thus, the runoff from the new roof area is similar to it falling directly onto ground level paved areas.

To maintain consistency with the drainage system approved under LDA2018/0322 the same total roof area will be directed to OSD 1 and OSD 2. Stormwater runoff from the new building roof will be connected directly to OSD 2, which has the capacity to accommodate this additional flow, refer to **Figure 9**. The stormwater runoff from the western hardstand areas will be captured in a new drainage system that joins with the outlet pipe from OSD 2 ultimately discharging to City of Ryde Council's system near the northern boundary.

Reference should be made to the Stormwater Management Report, prepared by Northrop Consulting, and contained with **Appendix D13** of this RTS Report.

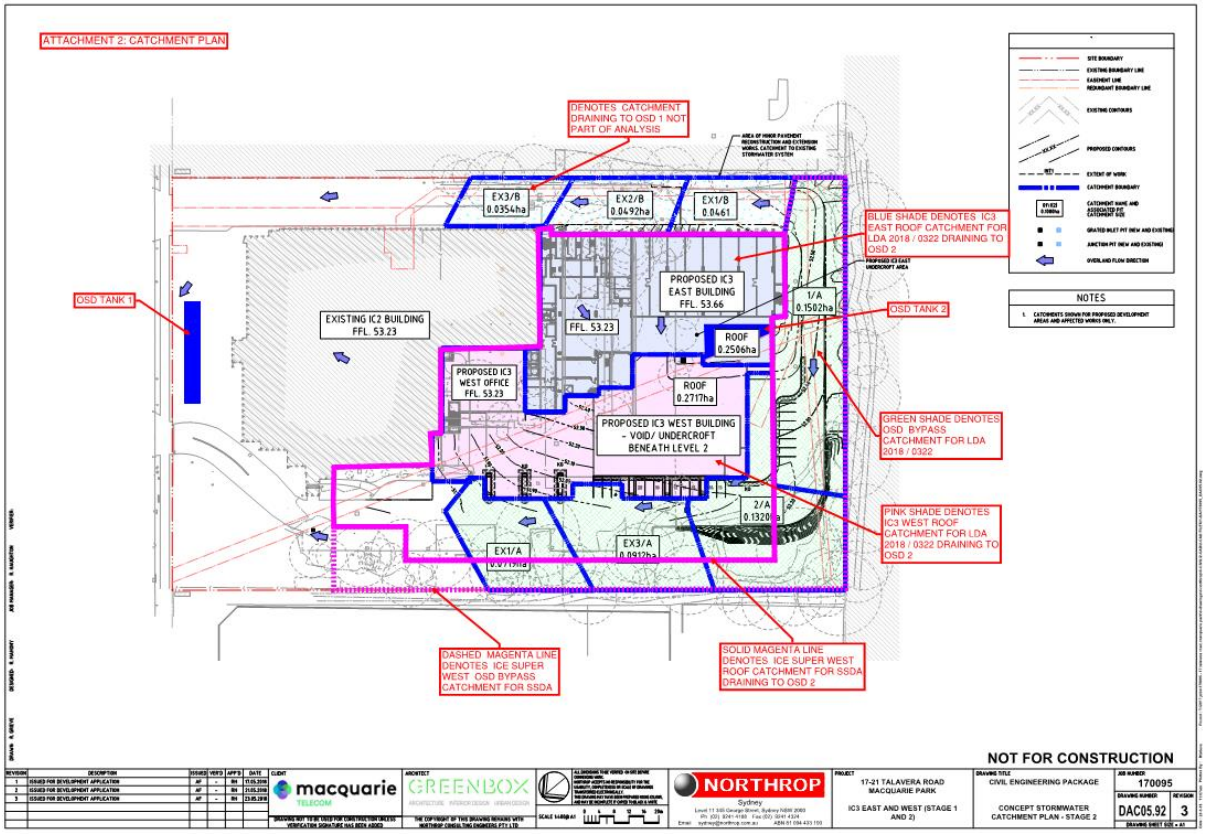


Figure 9: Concept Stormwater Catchment Plan (Source: Northrop, 2022)

3.1.2 Built Form

The proposed built form has been amended to introduce further design efficiencies, following the resolution to construct the new 2,100mm stormwater pipeline and relinquish the existing/redundant 1,800mm pipeline (which currently traverse the centre of the subject site). With this, design amendments at the ground level have allowed for further efficiencies in the location of data halls and plant across all levels of the development.

The proposed floor plate has been designed to best practices of data centre design and to fit seamlessly with the existing building. Towards the Talavera Road boundary, the building has been purposely set back to allow a landscaped area to the entry point. This allows the proposed building to nestle into its surroundings and cohesively address the form and architecture of the existing building.

The building envelope and design is considered commensurate to the existing built environment of Macquarie Park.

Figure 10: Indicative Permeated Views from Talavera Road (Source: HDR, 2022)

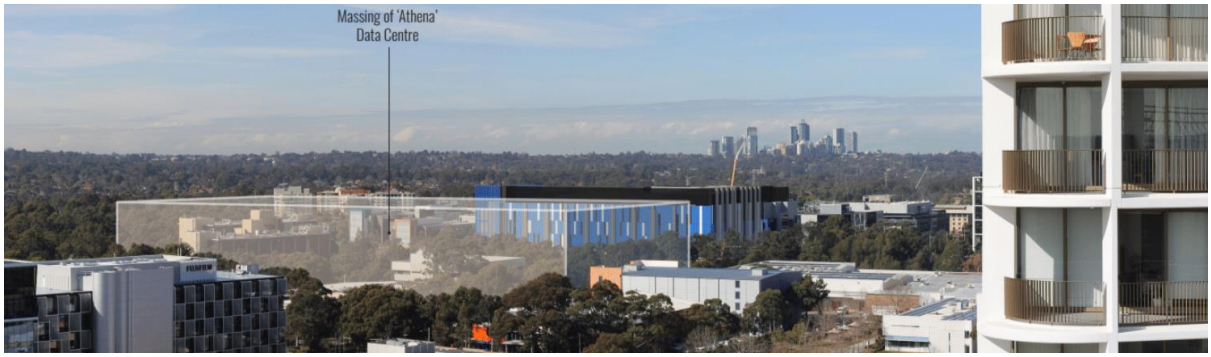


Figure 11: Proposed Development Photomontage (Source: Geoscapes, 2022)

The proposal, as amended, is articulated through red ballooning on plans in **Appendix D0** of this RTS Report.

3.1.2.1 Building envelope

The proposed building shall be attached to the existing facility at sensible locations to enable flow between the building areas. A campus look and feel is required with a commonality of soft services.

Envelope design has been developed to include a precast concrete and/or insulated sandwich panel facade (with decorative cladding). Areas of glazed façade are provided as part of the design development to permit natural light to selected areas without compromising the integrity of the data centre. A concrete roof (with waterproof membrane) has been provided with drainage to eaves gutters. The roof includes enclosed plant/pump rooms, as well as external areas for the mechanical plant. Consideration has been given to City of Ryde Council's requirements of building form, finish and articulation.

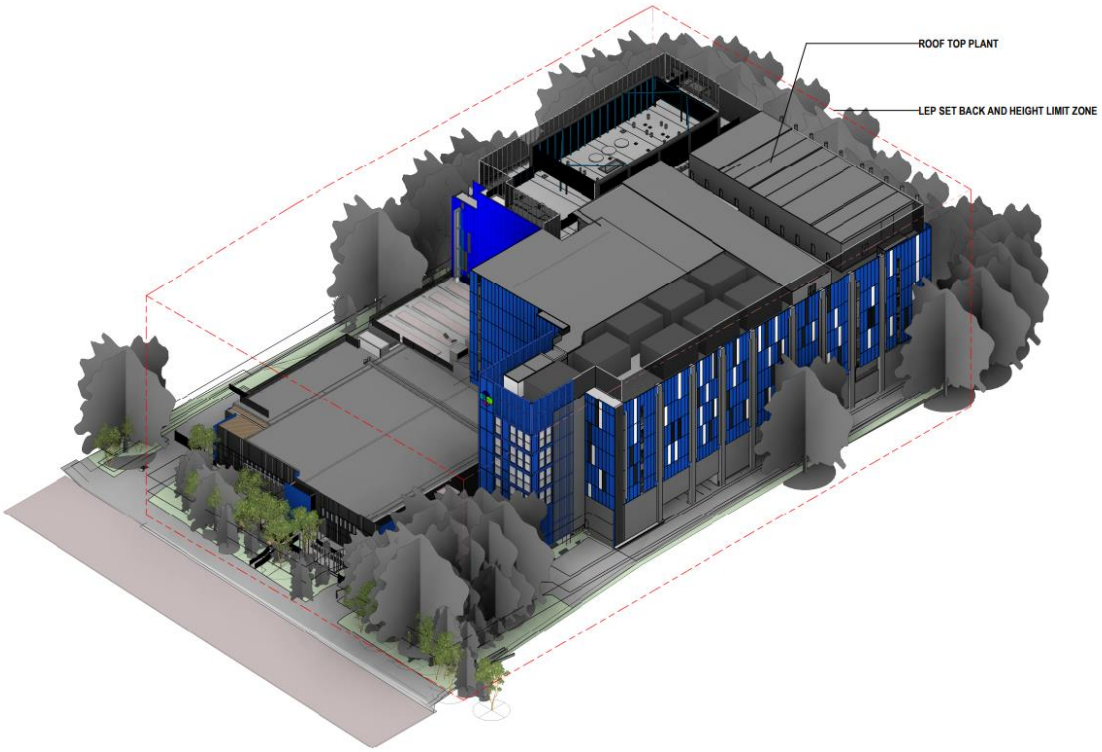


Figure 12: Indicative Building Mass (Source: HDR, 2022)

3.1.2.2 Plant and equipment

TABLE 3 below summarises the new mechanical services plant and equipment associated with the proposed IC3w. The location of the main items of plant are shown in **Figure 13**. Mechanical and electrical plant are installed to provide power and cooling to meet the required IT load capacity of the centre.

TABLE 3: PROPOSED OPERATIONAL PLANT AND EQUIPMENT	
Plant / equipment type and quantity	**Location on site**
Chillers x 8	Level 1
Chilled water pumps x 8	Level 1
Air handling units (AHU) x 60	Levels 1 to 6
Fan wall unit x 150	Levels 2 to 6
Cooling towers x 8	Roof
Carpark exhaust fan x 1	Outlet on roof

TABLE 3: PROPOSED OPERATIONAL PLANT AND EQUIPMENT	
Plant / equipment type and quantity	**Location on site**
Condenser water pumps x 8	Level 1
Generators within rooms x 20	Level 1 and Roof
Life safety generator x 1	Roof (within acoustic enclosure)

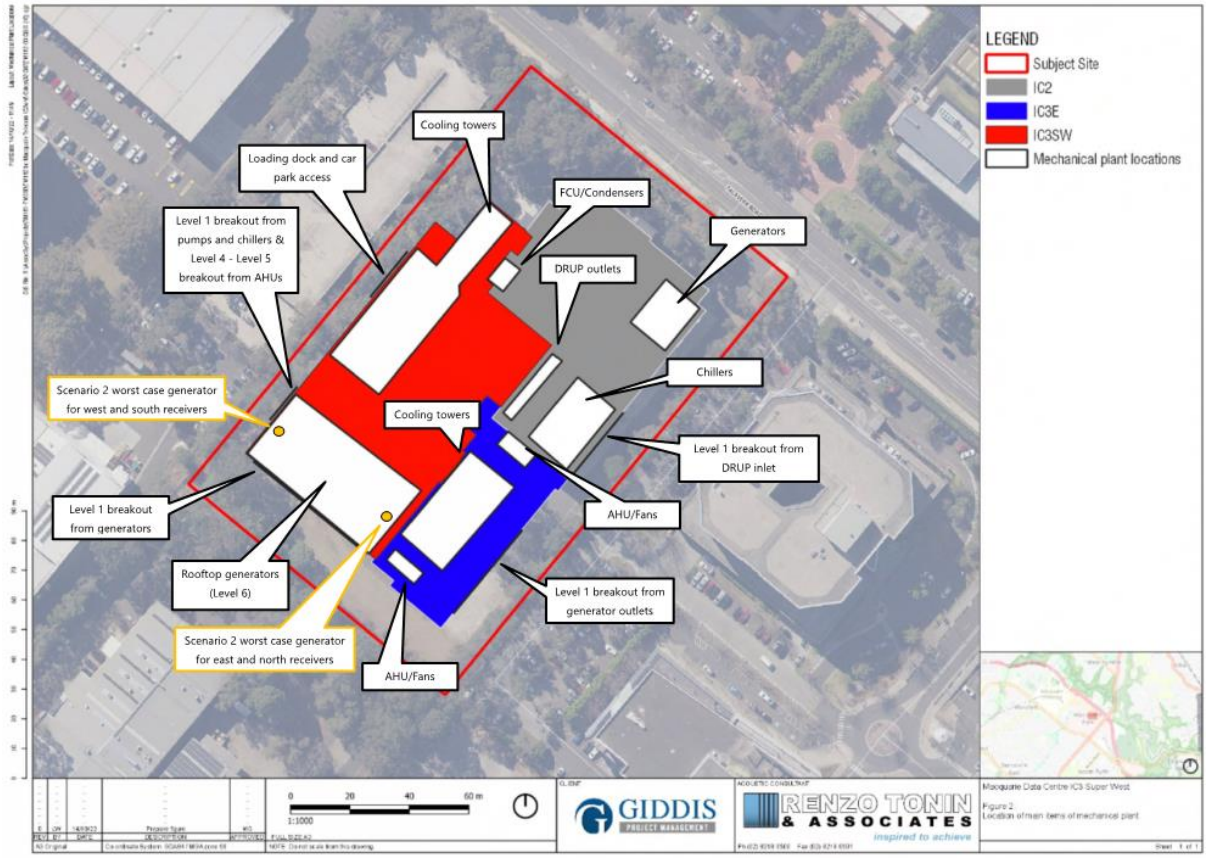


Figure 13: Location of main Mechanical Plant (Source: Renzo Tonin, 2022)

The following acoustic mitigation was developed with the project team in order to determine a design that would achieve the required NPfI project trigger levels detailed in the NVIA (contained within **Appendix D5**).

Generators:

Ten (10) backup generators will be located on the roof within acoustically treated rooms. An additional smaller safety generator will be located on the roof within an acoustic enclosure. The remaining ten (10) generators are located on Level 1 within acoustically treated rooms. Allowance within the purpose-built enclosures has been made for intake and discharge attenuators to each be up to 4.5m long. The backup generators would only be used temporary in an emergency situation (i.e. where there is a grid power outage). During an emergency situation, all 21 generators can operate concurrently.

The exception is periodic maintenance testing, which would only occur during the daytime and one generator would be operating at any one time.

Chillers and pumps:

The chillers and pumps will be located on the Level 1 plant zone. The plant zone will be primarily enclosed. Any openings for ventilation and temperature control, may require acoustic louvres to

minimise noise emission emanating from the Ground Level and First Level of the building. Internal noise levels within the Level 1 plant zone have been calculated, and the insertion loss of in-principle acoustic louvres is presented below has been assumed in the modelling based upon 50m^2 of façade louvres. The required performance of the acoustic louvres will be reviewed during detailed design, subject to the final plant selection and required louvre areas.

Fan wall units:

The fan wall units are located to service the data halls from Level 2 – Level 6. Each fan is within its unit's respective casing. Additionally, all fan wall units are located within fully enclosed rooms. Based on the NVIA, the only clear path for noise from operation of the fan wall units to receivers is via transmission through the precast concrete walls. Consequently, any noise transmission from IC3w due to operation of the fan wall units will be negligible.

Air handling units:

Sixty (60) AHUs are distributed in the plant rooms between Levels 1-6. Any openings for ventilation and temperature control, may require acoustic louvres to minimise noise emission emanating from Level 4 and Level 5 of the western face of the building. Internal noise levels within the Level 4 and Level 5 plant zone have been calculated, and the insertion loss of in-principle acoustic louvres obtained. The required performance of the acoustic louvres is presented in in the NVIA. Further review will be conducted during detailed design, subject to the final plant selection and required louvre areas.

Cooling towers:

The cooling towers will be located on the roof. This equipment has been carefully selected to minimise noise emission. The modelled cooling towers have been assumed to include a manufacturer supplied super low sound fan.

Condensers and carpark extract fan:

The condenser water pumps outlet and outlet for the carpark exhaust fan will be located on Level 1 and on the roof respectively. It has been assumed that a minimum of 4m of 50mm internally lined ductwork will be installed the discharge side of the carpark exhaust fan prior to the discharge point.

3.1.2.3 Internal fitout

The proposal includes data halls over six (6) levels of the proposed development, equivalent to 15 data halls. The data halls are intended to be fitted out with hardware in a staged manner, over time, as demand increases. The specifics of the data hardware are dependent on the requirements of the future customer.

It is noted that the data hall fitout will occur on an as-needs basis.

The data halls are designed to allow for a cooling corridor to one side and electrical corridor to the opposite side of each data hall. The cooling corridor shall be separated from the data hall via a mesh cage / perforated metal type wall. The wall design shall meet the necessary security requirements. Access to the data hall shall be via a dedicated access door/s and will allow a clear 1,800mm corridor from the entry door along the side of the data hall. This will facilitate the installation of future cages for tenants with access to these areas from the main corridor.

3.1.2.4 Height / scale

The proposed development would be in keeping in terms of scale of nearby developments. The proposed height of the new built form, as amended, maintains a 45m building height (measured in

accordance with the Standard Instrument). The highest portion of the proposed development continues to sits at an RL of 96.88 AHD.

The subject site has the capacity to employ incentive provisions under Clause 6.9 of the RLEP2014, to achieve a height of 45m.

3.1.2.5 Colour / materials & finishes

The proposal maintains a consistent palette of colours and materials.

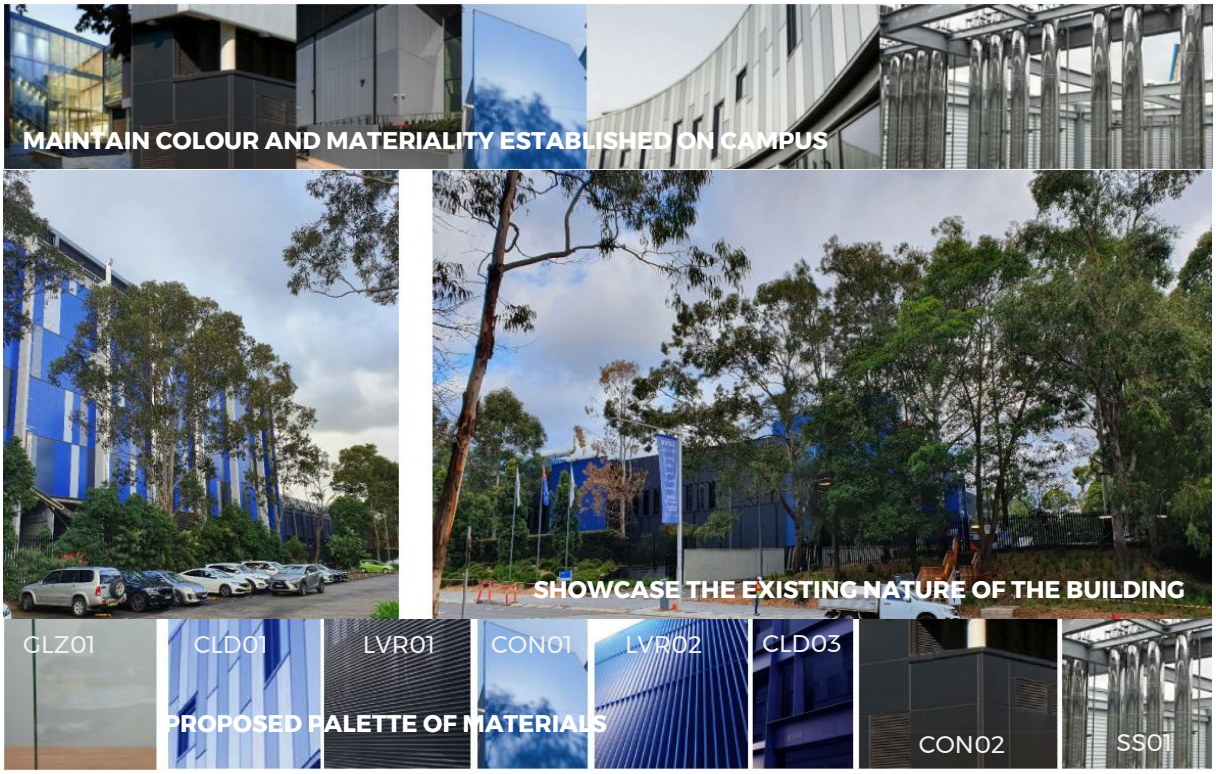


Figure 14: Proposed Palette of Materials (Source: HDR, 2022)

3.1.2.6 Landscape

To help mitigate and soften the building particularly from Talavera Road and receptors to the north, native species will be planted at regular intervals along the northern and eastern boundaries of the subject site.

The proposal, as amended, offers 14.8% of the subject site as landscaped (2,978m^2), and seeks to offset loss of vegetation by replanting 83 endemic/native trees, approximately 290 shrubs and 5,600 groundcovers. The resolved design seeks to offset the loss of trees on-site through replanting at a rate of 1.01:1.

This will enhance existing areas of landscaping within the site especially those to the east and adjacent to the street. By adding additional tree planting to Talavera Road, not only will the canopy cover be increased within the public domain, but also views from the street will be further screened providing visual mitigation. Presentation to the building main entry will also be enhanced with a proposal to remove the existing monoculture and replace it with a more varied visually inviting landscape.

This includes a 1.2m to 6.8m landscape buffer between the building and perimeter driveway, planted with grasses, shrubs (5m) and trees (7-12m). To far south of the perimeter driveway, a 3.5m to 4.2m landscaped buffer is proposed along the rear boundary, which will be planted with various grasses and

hedges (1m). Planting of tall species is avoided in this setback area to allow for suitable passive surveillance beyond the site boundary into the future public domain of Road 1.

Presentation to the building main entry will also be enhanced with a proposal to remove the existing monoculture and replace it with a more varied visually inviting landscape.

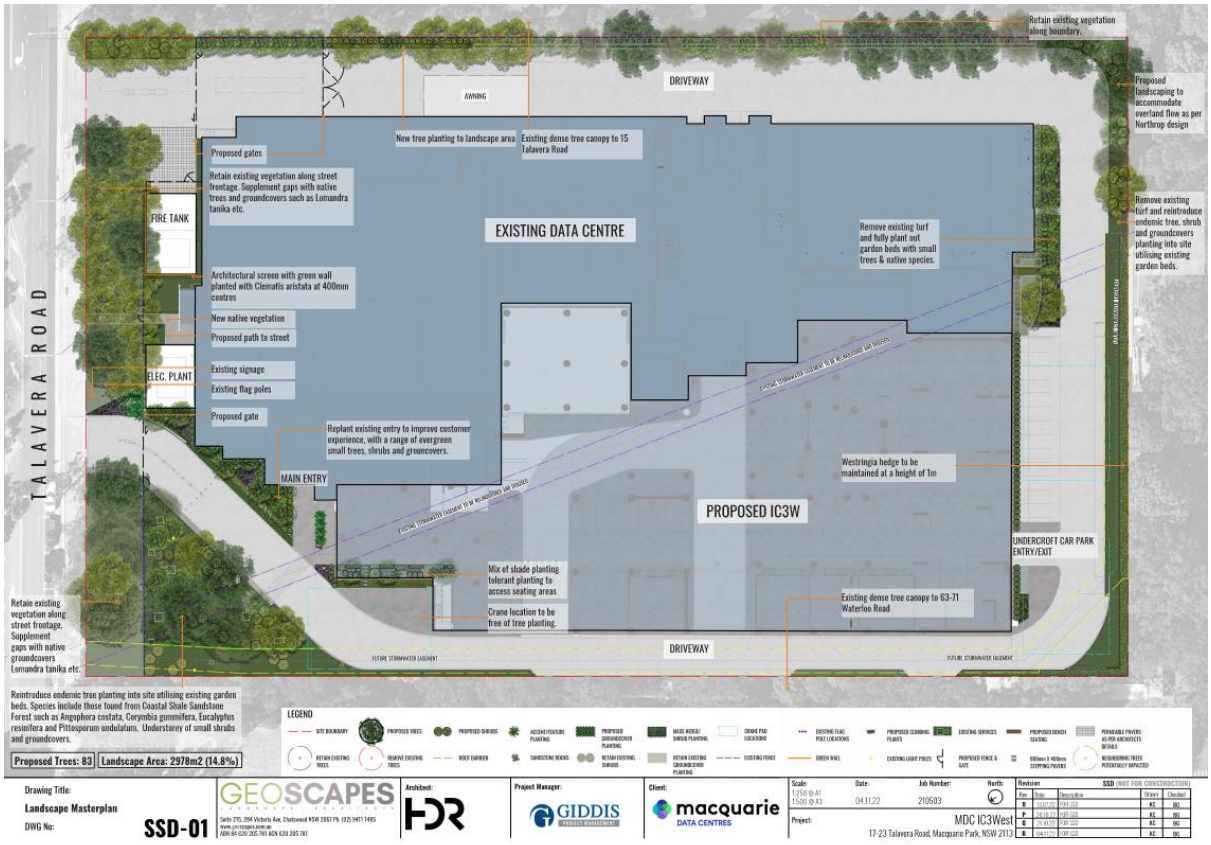


Figure 15: Proposed Landscape Plan (Source: Geoscapes, 2022)

Proposed landscaping includes:

- Retention of existing vegetation along the street frontage, with supplementary native ground covers in gaps;
- Reintroduction of endemic tree planting into the site, utilising existing garden beds – species include those found from *Coastal Shale Sandstone Forest* such as *Angophora costata, Corymbia gummifera*, *Eucalyptus resinifera* and *Pittosporum undulatum*; understorey of small shrubs and groundcovers;
- Planting of narrow tall hedge along the western boundary;
- Removal of existing turf from the rear of the site and reintroduce endemic tree, shrub and groundcover planting utilising existing garden beds;
- Retention of existing vegetation along the eastern boundary;

Updated Landscape Plans, prepared by Geoscapes Landscape Architecture, are included in **Appendix D2** of this RTS Report.

3.1.3 Operational Details

Recent times have shaped the way we live and work, resulting in an increasing demand for cloud-based services. Such demand is playing a key role in overall market growth of data centres.

This proposal seeks to design, procure, construct and commission a brand new, multi-storey, world class, highly reliable data centre facility suitable for the needs of retail, wholesale and hyperscale computing customers. The facility is expected to reflect MDC's standing as a leading data centre developer and operator.

The proposal is expected to provide ongoing reliable and resilient service to the highest standards expected of data centre operators and customers.

The proposed development would see the expansion of the existing data centre facilities on the site. This expansion, adjoining the existing data centres, allows for additional data storage on site.

The new development would be managed by existing facilities management and security operations teams, operating under a centralised model, appropriately sized for this development.

The main product offerings at the site are:

- Data halls and colocation space to house customer IT equipment (data storage)
- Interconnect services for customers to connect to carrier networks

3.1.3.1 Hours of operation

The facility is proposed to operate 24 hours a day, seven days a week, in line with the existing operations of MDC and is required to provide continuous operation of the data centre service.

However, the main business activities including deliveries, maintenance and customer equipment connections are typically conducted during business hours Monday to Saturday.

3.1.3.2 Staff

In line with the proposal, as amended, the typical anticipated staffing requirements would be as follows:

- Day shift 20-30 staff
- Night shift 10-20 staff

The maximum anticipated employee numbers on site at any one time is expected to be approximately 49 staff.

3.1.3.3 Customer and visitors

Customers using the site fall into two main groups:

- Most customers would visit the site for initial equipment installation, and thereafter manage their systems remotely, visiting the site only for break/fix or maintenance activities
- A small number of customers (typically customers with significant leased space) may lease office space in the tower building as a touch down space when supporting their installed equipment

Visitors to the site include specialist contractors and maintenance technicians, on a programmed basis, prospects, and project personnel.

Approximately 25-50 customers and visitors per day has been assumed. Customers and visitors access the site via the Talavera Road West Gate (main entry) via secure vehicle or pedestrian gates., with access managed by on-site security.

Customer and visitor parking is available on site. The proposal, as amended, provides 71 parking spaces at ground level.

3.1.3.4 Deliveries and truck movements

Deliveries are made via the two existing secure gates at the Talavera Road boundary.

The new development would utilise the existing loading facilities at the site:

- IC2 loading dock, located at the South West corner of the IC2 data centre.
- IC2 east loading bay, located on the Eastern side of the IC2 data centre
- IC3 loading dock, located on the Western side of the IC3 east data centre

The IC2 east loading bay would be improved under this development.

Loading docks are located well within the site to avoid traffic congestion at the boundary. Dock access paths are shown in the site plans.

All deliveries are managed by the Security team.

3.1.3.5 Operational activities

The operational process on the subject site remain unchanged, as follows:

1. Data halls are provided with uninterruptable power and cooling to maintain the operating conditions for customer IT equipment. Data Centre Operations teams monitor, manage, and maintain the power and cooling systems to ensure high uptime consistent with data centre requirements.
2. On-site security personnel provide monitoring, patrols, event response and related security operations function
3. Customers lease data hall space to house their IT equipment. Customer transport their systems to the site and installed them into data halls using a mix of on-site teams and 3rd party transport and installation specialists.
4. Customers connect their systems to carrier networks through cross connect services
5. Customers operate their systems remotely, via carrier networks. Customers or their nominated service representatives attend as required to service their equipment
6. Waste generated predominantly comprises packaging materials for new equipment, and old electronic components. These materials are transported internally through the facility to the waste collection areas adjacent to loading bays for collection by contracted recycling and waste services.

3.2.3.6 Dangerous goods storage

The proposed operations involve the storage and handling of diesel fuel and lithium-ion batteries.

TABLE 4: ESTIMATE OF STORAGE SUBSTANCES

Substance	Hazardous Class	Packing Group	Combustible Liquid Class	Total Storage	Manifest Quantity	Level Findings
Diesel	N/A	N/A	C1	681,400L	100,00kg or L	**Safework NSW notification required**
				Equivalent to 576 tonnes	2,000 tonnes	EPL not required from NSW EPA

Lithium-ion batteries	Class 9	N/A	N/A	316,800kg	10,000kg or L	**Safework NSW notification required**

Diesel fuel to be stored on site, is not classed as a DGs, but is classed as a C1 Combustible Liquid provided no flammable liquids are stored with the diesel. No flammable liquids will be stored with the diesel; therefore, the proposed storage of diesel will be classed as a C1 Combustible Liquid.

Note that C1 combustible liquids are not a dangerous good under UN (United Nations) classification. However, they are defined as dangerous goods under NSW workplace legislation. Where dangerous goods are used or stored in volumes greater than the manifest quantities specified in schedule 11 of the *Work Health and Safety Regulation 2017*, Safework NSW must be notified, which will include manifests and lodgement of an emergency plan to Fire and Rescue NSW.

Lithium-ion batteries are Class 9 Miscellaneous dangerous substances and articles, which are excluded from the risk screening process.

Hazards associated with these lithium-ion batteries relate to fires and are covered within the updated Fire Safety Strategy Report prepared by Innova Fire Safety Specialists, which forms **Appendix D8** of this RTS Report.

In the proposed development, lithium-ion batteries will be contained in Vision Revo Le TP200 Battery cabinets. Estimates of total quantity of lithium-ion batteries are based on the weight of cabinets (900kg) and 352 cabinets in IC3w. This gives an estimate of total quantity of lithium-ion batteries as 316,800kg for IC3w. The existing Data Centre does not have lithium-ion batteries. Note this is likely to be an overestimate as the supplier details do not specify weight of lithium and therefore the total weight may include non-lithium components, such as wire, frames, etc.

There will be no transport of DGs associated with the facility.

3.1.4 Construction Staging

The approval strategy seeks to obtain Development Consent to complete the construction works over several construction stages upon issue of the relevant Construction Certificates; however, any such staging does not constitute staged development as defined under Section 4.22 of the EP&A Act.

The approximate phases and duration of works are amended as follows:

- Stage 1A – provision of stormwater infrastructure, minor earthworks and civil works = 6 months
- Stage 1B – structural piling = 3 months
- Stage 2 – construction of main building = 6 months
- Stage 3 – deliveries and initial fitout of the data centre, including operational plant and equipment = 9 months

In addition to the above, it is noted that the fitout of remaining data halls would be gradual, on an as needed basis. This would be driven by tenant uptake of data halls and may occur over a period of up to 3 to 5 years, depending on market demand.

3.1.5 Construction Hours

Construction works for the project are proposed to take place during and outside the standard construction hours, as summarised in **TABLE 5** below.

TABLE 5: CONSTRUCTION HOURS AND ASSOCIATED PROPOSED ACTIVITY		
Defined hours		**Proposed Construction Activity**
Standard hours	▪ Monday to Friday 7:00am to 6:00pm ▪ Saturday 8:00am to 1:00pm ▪ No work performed on Sunday and Public Holidays	All activities: ▪ Minor earthworks and civil works ▪ Building construction ▪ Building fit-out
Extended hours Period 1	▪ Monday to Friday 6:00am to 7:00am and 6:00pm to 7:00pm ▪ Saturday 6:00am to 8:00am and 1:00pm to 5:00pm ▪ Sunday 7:00am to 3:00pm	▪ Building construction ▪ Building fit-out
Extended hours Period 2	▪ Remaining hours ▪ Monday to Friday 7:00pm to 6:00am ▪ Saturday 5:00pm to 6:00am ▪ Sunday 3:00pm to 7:00am	▪ Internal fit-out works with hand tools only – Only when building fabric has been completed ▪ No external activities, only light vehicles accessing site

PART 4 STATUTORY CONTEXT

This Part of the RTS Report addresses and responds to the legislative and policy requirements relevant to the proposed development at the site, in accordance with the EP&A Act. The statutory planning framework relevant to the proposed development, as amended, at the subject site includes:

State Planning Context

- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2020*
- *Biodiversity Conservation Act 2016*
- *Protection of the Environment Operations Act 1997*
- *State Environmental Planning Policy (Industry and Employment) 2021*
- *State Environmental Planning Policy (Planning Systems) 2021*
- *State Environmental Planning Policy (Resilience and Hazards) 2021*
- *State Environmental Planning Policy (Transport and Infrastructure) 2021*

Strategic Planning Context

- *Greater Sydney Region Plan – A Metropolis of Three Cities*
- *North District Plan*
- *Better Placed*
- *Future Transport Strategy 2056*

Local Planning Context

- *Ryde Local Environmental Plan 2014*
- *Ryde Development Control Plan 2014*

This proposal, as amended, has been carefully assessed against the requirement and objectives of all of the above planning statutory and policy documents. A detailed analysis is set out in the following sections:

4.1 STATE PLANNING CONTEXT

4.1.1 Environmental Planning and Assessment Act 1979

Pursuant to Section 4.36(2) of the EP&A Act, a *State environmental planning policy may declare any development, or any class or description of development, to be State significant development*.

The proposed development constitutes SSD as outlined in the EIS.

The proposal, as amended, remains consistent with the EP&A Act, particularly Clause 1.3.

4.1.2 Environmental Planning and Assessment Regulation 2000

The EP&A Regulation is the EP&A Act's primary subordinate legislation and contains key operational provisions for the NSW planning system, including those relating to EIS'. Pursuant to section 115 of the EP&A Regulation all appropriate documentation has been submitted as a part of the EIS and subsequent RTS.

4.1.3 Biodiversity Conservation Act 2016

As presented in the EIS, the *Biodiversity Conservation Act 2016* (BC Act) is the key legislation in NSW, relating to the protection and management of biodiversity and threatened species. The purpose of the BC Act is to "maintain a healthy, productive and resilient environment, for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development". The BC Act is supported by a number of regulations, including the *Biodiversity Conservation Regulation 2017* (BC Regulation).

Pursuant to Section 7.9 of the BC Act, an SSD is to be accompanied by a biodiversity development assessment report unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values.

Under section 7.9(2) of the BC Act, an updated BDAR wavier has been granted by the NSW DPE.

4.1.4 Protection of the Environment Operations Act 1997

Another important item of legislation, against which this proposal has been assessed, is the *Protection of the Environment Operations Act 1979* (POEO Act). Schedule 1 of the POEO Act contains a core list of activities that require a licence before they may be undertaken or carried out. The definition of an 'activity' for the purposes of the POEO Act is:

> *"an industrial, agricultural or commercial activity or an activity of any other nature whatever (including the keeping of a substance or an animal)."*

4.1.4.1 Schedule 1 – Clause 9(1) – Petroleum products storage

Under the POEO Act, Schedule 1, Clause 9(1) 'petroleum products storage', which would include diesel fuel storage, is a Scheduled Activity. Capacity to store greater than 2,000 tonnes requires an EPL from the NSW EPA.

The proposed diesel fuel storage capacity is increased to 576 tonnes and is not expected to require an EPL.

4.1.4.2 Schedule 1 – Clause 17 – Electricity generation

Clause 17 'electricity generation' applies to electricity works (wind farms), general electricity works, metropolitan electricity works (gas turbines) and metropolitan electricity works (internal combustion engines). Clause 17 does not apply to the generation of electricity by means of electricity plant that is emergency stand-by plant operating for less than 200 hours per year. Given the total testing time of the standby generators is less than 200 hours per year the proposal is not classified as a Scheduled Activity.

The total testing time for all generators is 148 hours per year (based on 1 generator per test).

4.1.5 State Environmental Planning Policy (Planning Systems) 2021

The Planning Systems SEPP supersedes the SRD SEPP, however no key policy changes have been made, with the Planning Systems SEPP continuing to identify development that is SSD, State significant infrastructure and critical State significant infrastructure, and regionally significant development.

Pursuant to Schedule 1 the proposed development maintains its SSD status.

Clause 25 of Schedule 1 of the Planning Systems SEPP states:

25 Data storage

(1) Development for the purpose of storage premises used for the storage of data and related information technology hardware that has a total power consumption of more than the relevant amount.

(2) In this clause—

relevant amount means—
(a) for development in relation to which the relevant environmental assessment requirements are notified under the Act on or before 31 May 2023—10 megawatts, or
(b) for any other development—15 megawatts.

The proposed development (being the expansion capacity) has a total power consumption capacity of up to 38 MW. As the proposal exceeds the current 10 MW statutory threshold and meets all other criteria in Planning Systems SEPP, it maintains its SSD status.

4.1.6 State Environmental Planning Policy (Transport and Infrastructure) 2021

The Transport and Infrastructure SEPP replaces the ISEPP, with an aim to facilitate the effective delivery of infrastructure across the State. In accordance with the meaning bestowed under the ISEPP, a data centre is defined as "development for the purposes of storage premises used for the storage of data and related information technology hardware".

4.1.6.1 Division 3 – Data storage

Pursuant to Chapter 2, Part 2.3, Division 3, Clause 2.31(1) of the Transport and Infrastructure SEPP, development for the purpose of storage premises used for the storage of data and related information technology hardware may be carried out by any person with consent on land in a prescribed zone.

The B7 Business Park zone is identified as a 'prescribed zone' pursuant to Clause 2.31(2) of the Transport and Infrastructure SEPP.

As such, despite the prohibition of the RLEP2014, the proposed data centre expansion maintains its permissibility with consent, in accordance with the Transport and Infrastructure SEPP.

4.1.7 State Environmental Planning Policy (Resilience and Hazards) 2021

The *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP) repealed the following instruments:

- *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development*
- *State Environmental Planning Policy No 55 – Remediation of Land*
- *State Environmental Planning Policy (Coastal Management) 2018*

In respect to the proposed development, the following chapters of the Resilience and Hazards SEPP are relevant.

4.1.7.1 Chapter 3 – Hazardous and offensive development

The proposed operations involve the storage and handling of diesel fuel and lithium-ion batteries.

Diesel fuel to be stored on site, is not classed as a DGs, but is classed as a C1 Combustible Liquid, provided no flammable liquids are stored with the diesel. No flammable liquids will be stored with the diesel; therefore, the proposed storage of diesel will be classed as a C1 Combustible Liquid.

Lithium-ion batteries are Class 9 miscellaneous dangerous substances and articles, which are excluded from the SEPP 33 screening process.

As outlined in the EIS, the Preliminary Risk Screening Report, prepared by SLR Consulting, presents information pertaining to the presence of any hazardous materials, flammable substances, and compressed or liquefied gases proposed to be stored or handled in relation to the proposed development, including on site storage, or transported to or from the site. The Preliminary Risk Screening Report has been updated to reflect the proposal, as amended in this RTS Report; refer to **Appendix D9**.

Hazards associated with these lithium-ion batteries related to fires are covered in a separate Fire Safety Strategy for the development, which has been updated and included within **Appendix D8** of this RTS Report.

4.1.7.2 Chapter 4 – Remediation of Land

No changes are proposed to remediation strategy described within the EIS.

4.2 STRATEGIC PLANNING CONTEXT

4.2.1 Greater Sydney Region Plan – A Metropolis of Three Cities

The *Greater Sydney Region Plan – A Metropolis of Three Cities* divides the Sydney Region into three (3) Cities, with a vision of growth until 2056. The Plan aims to anticipate the housing and employment needs of a growing and vastly changing population. The overall vision pursues an objective of transforming 'Greater Sydney' into a Metropolis of Three Cities, including:

- The Western Parkland City;
- The Central River City; and
- The Eastern Harbour City.

The division into three cities puts workers and the wider community closer to an array of characteristics such as, intensive jobs, 'city-scale' infrastructure and services, entertainment and cultural facilities. By managing and retaining industrial land close to city centres and transport, this will ensure critical and essential services are readily available to support local businesses and community members and residents. Once constructed and operational, the subject site would achieve economic growth and prosperity, as well as encourage employment-generating opportunities within an area zoned for such permissible purposes, that is considered relatively close in conjunction to residential communities, providing an ease of commute. The proposed development across the site considers the employment-generating outcomes that can be achieved for the immediate and wider localities.

The proposed development also contributes to the four (4) standardised elements communicated across for all three (3) cities, including:

- Infrastructure and collaboration – the proposed development of the site for the purposes of a data centre, would facilitate the provision of services to support the wider locality and region;
- Liveability – the proposed development encourages employment-generating opportunities and economic prosperity, which has positive influences on the wider locality;
- Productivity – the proposed development is situated within the *Northern District Plan* (refer to **Section 4.2.2** below); and

- Sustainability – the proposed development would not exhibit or emit any detrimental impacts to its wider ecological surroundings.

In summary, the subject site and proposed development contributes to the objectives set out in the *Greater Sydney Region Plan – A Metropolis of Three Cities* by promoting minor environmental impacts and the further promotion of technological advancements and employment-generating opportunities to the wider locality and community, positioned within the City of Ryde LGA.

4.2.2 North District Plan

The subject site forms part of the Northern City District and is subject to the provisions of the *North District Plan*.

The strategic importance of the subject site, Macquarie Park and the Eastern Economic Corridor (to the regional and national economy) is outlined in the *North District Plan*. Macquarie Park is identified as a strategic centre and health and innovation precinct, anticipated to support between 73,000 (baseline target) and 79,000 (higher target) jobs by 2036 (an additional 15,000-19,000 jobs on 2016 estimates). Outcomes supported by this proposal are consistent with the strategic direction of *A Metropolis of Three Cities* and the *North District Plan*. The proposed development aligns with the following planning priorities of the *North District Plan*:

- N8: Eastern Economic Corridor is better connected and more competitive: The Eastern Economic Corridor extends from Macquarie Park to Sydney Airport, containing close to a third of Greater Sydney's jobs. The proposal would contribute to further job creation in this respect.
- N9: Growing and investing in health and education precincts: The proposed data centre expansion at the subject site supports the growth of the Macquarie Park Corridor, which is intended as a hospital and high-tech industrial employment hub.
- N10: Growing investment, business opportunities and jobs in strategic centres: The proposed data centre expansion supports improved access to jobs, goods and services in the Macquarie Park strategic centre.
- N13: Supporting growth of targeted industry sectors: Increased data storage capacity would enable economic opportunities created by changing technologies, embracing opportunities to expand start-up and digital innovation that can allow people to work closer to home.

Importantly, the proposed development would provide data storage solutions for both public and private cloud, enabling the proposal to support services for multinational corporations that require their own private hosting solutions, as well as Tier 1 Government agencies. Emerging digital technology (including cybersecurity, AI and quantum computing) is a priority industry to achieve Global NSW's vision for a globally connected, smart and vibrant economy.

As mentioned throughout this RTS Report, the need for data centres was given a burning platform by changes to business as usual catalysed by COVID-19. The NSW DPE recognises data centres as a type of development 'well-placed' to support economic recovery from COVID-19. Data centres were included as one infrastructure asset encouraging investment and job-generating development in DPE's Productivity Acceleration Package. This relative importance is reflected in amendments to the SRD SEPP, which temporarily allows greater scope for warehouses and data centres to be assessed as SSD.

4.2.3 Better Placed

This policy establishes a baseline of what is expected to achieve good design, across all projects in NSW. Good design is a phrase that encapsulates the aspirations of *Better Placed* including its vision for NSW, its definition of good process, and its outline of objectives for the built environment.

Better Placed defines seven (7) objectives for good design, which are addressed as follows.

4.2.3.1 Better fit (contextual, local and of its place)

The subject site is situated within a highly urbanised area close to the commercial core of Macquarie Park. Talavera Road is home to a number of commercial offices, data centres and educational facilities. Typically, these include onsite parking and landscaping. The surrounding area is characterised by commercial buildings and land uses consistent with the character of Macquarie Park as a business precinct. Large multi-storey commercial buildings within scattered landscaped grounds are typical of the area, with on-site parking provided.

Vegetation cover is typified by native and exotic canopy trees to streets and individual lots fronting roads. These are usually underplanted with a mono culture of native grasses and clipped shrubs such as Lomandra and Japanese Box. Some lots as seen in aerial maps contain open lawn or car park areas with large trees, shrubs and groundcovers surrounding the open spaces.

Other similar types of large scale, multi-level developments are located in the immediate context of the site including NEXT Data Centre S1 and S2. It is clear from site and aerial analysis that the proposed extension to the facility is not out of character for the site or the surrounding area.

Comparable Existing Development within the Surrounding Area:

To the southeast of the subject site is the NEXTDC Sydney Data Centre (S1) located at 4 Eden Drive, Macquarie Park. This was approved in 2011 (LDA2011/0413) and completed in 2013. It contains seven data halls within a five-storey building over a development area of 18,000m^2.

The NEXTDC Sydney Data Centre (S2) is located to the south of the site at 6-8 Giffnock Avenue, Macquarie Park. This development was recently completed in 2019 (LDA2017/0192) and contains eight data halls within an eight-storey building. The upper limit of the building is RL101.9m which sits just below the DCP 45m height limit with some small roof elements protruding through it. The data centre is highly prominent within the immediate area and has been attributed very minimal landscaping, as demonstrated in **Figure 16**.

Figure 16: Extract of completed development at NEXTDC Sydney Data Centre (Source: Google Maps, 2022)

Comparable Future Development in the Surrounding Area:

In close proximity to the north at 11-17 Khartoum Road and 33-39 Talavera Road is the Stockland 'M_Park' site. This Concept Development (LDA2017/0547) received approval from Sydney North Planning Panel in December of 2019. A recent SSD was approved in May 2021, which proposed a data centre to the southern portion of the M_Park site. The development known as Macquarie Park Data centre (SSD-10467) is a five-storey building with a roof level RL of 93.6m, the parapet wall and lift overrun extend beyond this height, but the building still falls under the height limit of 45m.

As part of the abovementioned application, the M_Park site received consent to remove a number of established trees across a large portion of the site. Like the subject site in question under SSD-24299707, the M_Park site is within the vicinity of future roadways. It is understood that SSD-10467 captured the alignment and construction of Road 22, which is to be located within the southern extent of Lot 1 DP633221. The interface of approved Building B with the future Road 22 generally devoid of trees, presenting a harsh transition from built form to hardstand and then onto the future public Road 22, refer to **Figure 17** below.

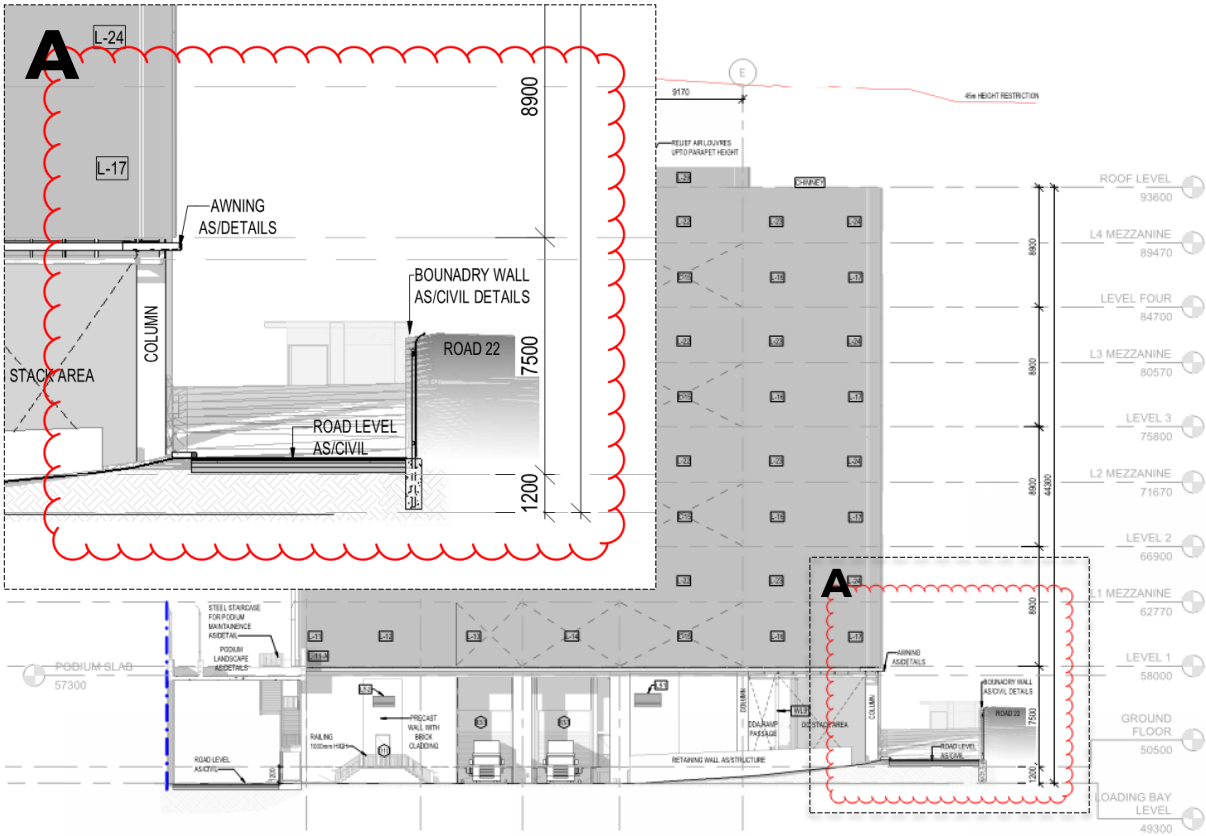


Figure 17: Extract of approved development at M_Park – SSD-10467 (Source: SSD-10467)

In comparison to the abovementioned developments, **SSD-24299707** is far more understanding of the vegetation endemic to the surrounding area, with trees, shrubs and groundcovers from these endemic/native communities being proposed in excess of the vegetation proposed for removal.

Proposed landscaping aims to offset loss of vegetation on-site by replanting 83 endemic/native trees, approximately 290 shrubs and 5600 groundcovers. This will enhance existing areas of landscaping within the site especially those to the east and adjacent to the street. By adding additional tree planting to Talavera Road, not only will the canopy cover be increased within the public domain, but also views from the street will be further screened providing visual mitigation.

4.2.3.2 Better performance (sustainable, adaptable and durable)

The following provides a summary of the ESD initiatives adopted in the proposal:

Indoor air quality:

Ductwork will be protected during construction to minimise contamination with debris and moisture prior to occupation. In order to minimise indoor air contamination and promote occupant health, preference will be given to paints, adhesives, sealants and floor coverings which have low Volatile Organic Compound (VOC) emissions and engineered wood products with low formaldehyde emissions.

Biodiversity:

The subject site is considered of low ecological value, as assessed by Cumberland Ecology, and a BDAR waiver has been granted for this proposal. However, a carefully selected landscape setting has been chosen for the subject site, comprising a mix of native and endemic plant species, shrubs, trees and grasses, enhancing the biodiversity of the site. 2,978m^2 of landscaping has been proposed for the site, equating to 14.8% of the site being landscaped.

Whilst strict compliance with the deep soil requirement (also being 20% of the site area) cannot be achieved for this site, the proposal has ensured that sufficient landscaping is provided to soften the proposed built form and achieve an outcome that is comparable to similarly approved developments in the area and the overall intent for the Macquarie Park corridor. It is acknowledged that the proposal warrants unavoidable impact to existing trees, which is dictated by various aspects of data centre design. The proposal seeks to offset loss of vegetation on-site by replanting 83 endemic/native trees, approximately 170 shrubs and 5,600 groundcovers. The resolved design seeks to offset the loss of trees on-site through replanting at a rate of 1.01:1.

The provision of urban tree canopy seeks to combat heat island effects by replacing removed trees where possible. Further tree planting has also been proposed along the Talavera Road frontage which will increase shade to the public domain, with further trees and hedges proposed along the rear site boundary to inform the interface with future Road 1.

Waste:

Waste management measures have been adopted as part of the proposal, as captured in **Appendix D20** of this RTS Report.

Transport:

The subject site is within close proximity to transport infrastructure routes (predominantly the bus and rail networks). 71 car parking spaces have been provided for the proposed development (including three (3) accessible spaces). The subject site is located within close proximity to active transport links, such as bicycle routes. Up to 10 bicycle spaces are proposed for the site.

Energy:

Data centres consume significant amounts of power, and energy efficiency is generally considered to be the single most important sustainability feature of any data centre design.

The NABERS provide a star rating system for energy usage within data centres. Three (3) types of rating systems are available – IT Equipment, Infrastructure and Whole Facility. The Infrastructure rating is used for this proposal. The two other rating types take IT equipment efficiency (which form part of end customer fit-out and is unknown at this stage) into account and hence is not appropriate for this assessment.

The rating ranges from 4 star to 6 stars. For comparison purposes, the NABERS key principle indicates that an average facility would perform equivalent to 2 to 3 energy stars level.

The NABERS Data Centres Infrastructure rating assesses the efficiency by comparing the following:

- Infrastructure Energy Consumption (i.e. exclusive of IT Equipment)
- IT Energy

The above has been converted to PUE and tabulated as the maximum permissible PUE with respect to each NABERS energy star rating as follows:

TABLE 6: NABERS ENERGY STARS WITH PERMISSIBLE PUE

NABERS Energy Stars	Maximum PUE
3	1.88
4	1.61
4.5	1.48
5	**1.34**
5.5	**1.2**
6	1.07

The proposal is targeting a PUE of 1.3, which is equivalent to a (pre-June 2021) 5-star NABERS rating. There is currently only one 5-star NABERS rated data centre in Australia, therefore the targeting of a 5-star NABERS rating for the proposed development would make it one of the most energy efficient data centres in Australia. Testing undertaken by the Applicant during commissioning of the first stage of this development showed PUE results of less than 1.3, providing a high level of confidence in the abovementioned target.

The proposal meets the CNDCP target, thereby being one the most energy efficient data centres in Australia and in line with international standards.

Water:

WUE is a recognised measure of water efficiency for a data centre. The lower the WUE the more water efficient a data centre is. However, it is important to consider WUE in the context of PUE – for example an air sourced cooling system would have a WUE of zero but would be less energy efficient (based on current air-cooling technologies) resulting in a higher PUE.

The WUE for the proposed development is 1.79l/kWhr. There are no recognised WUE benchmarks or targets set, as yet; however it is considered current best practice for data centres to calculate and consider the WUE, when designing a data centre. It is understood that the CNDCP are to confirm a WUE target in 2022.

The following reasonable and feasible water efficiency measures have been incorporated into the design:

- Cooling towers will be selected to provide no more than 0.002% drift coefficient
- The cooling system will be controlled to operate with no less than 6 cycles of concentration
- All sanitary wares will achieve a minimum WELS – 5-star rating

The proposed development is targeting a (pre-June 2021) NABERS infrastructure rating of 5 stars. NABERS identify this rating type for data centre owners and managers as it allows them to determine their facility's energy efficiency in supplying the infrastructure services to the IT equipment housed in a data centre. This rating is suitable for co-location centres where the operators do not have control of any tenant IT equipment but provide the cooling and power delivery systems. The achievement of a 5-star NABERS rating is dependent on full occupation.

The development is to be fully commissioned prior to handover, with the PUE tested at different loads to ensure the facility is operating efficiently as possible during the predicted short period until it is fully occupied. The Applicant intends to install major plant and equipment progressively, such that the loads are managed to minimise the extent of low load efficiencies.

Whilst most of the water used on site will be for the operation of the data centre some will be used for the welfare area. To minimise the potable water usage in the welfare area all sanitary wares will achieve a minimum WELS – 5-star rating.

In addition, the proposal has been updated to provide a 5,000L rainwater tank, pump and filtration unit to serve landscaping irrigation.

Materials:

Preference will be given to materials responsibly sourced as per below:

- Fabricated structural Steelwork – Environmental Sustainability charter of the Australian Steel Institute (ASI)
- Steel – ISO 14001 / World Steel Associates Climate Action Programme
- Timber – Reused / FSC / AFC/ PEFC
- PVC – Best practice PVC
- Other – ISO 14001

Precast concrete will be used to expedite construction and reduce the embodied carbon of the development.

Through the implementation of the initiatives noted within this subsection, the project clearly demonstrates the commitment to ESD principles throughout the design, construction, and operation. Additionally, the project design team has worked to optimise energy performance and address key climate related risks posed to the site, work that will continue to be developed throughout the detailed design process.

4.2.3.3 Better for community (inclusive, connected and diverse)

The proposal contributes to a better community through increasing the capacity and capability of secure data storage and cloud-based infrastructure, which is of regional, state and national significance. The provision of data storage provides a platform for a competitive digital economy, with increased capacity creating the conditions for multinationals to enter the Australian market.

In addition to the economic and technological benefits of the proposal, it also seeks to retain and enhance its interface with Talavera Road, as a lush treelined active corridor.

The proposal, as amended through the RTS process, achieves a balanced built form and landscaped outcome that is commensurate to the surrounding Macquarie Park, as illustrated in **Figure 18** and **Figure 4**.

Figure 18: View from Talavera Road (East) looking West towards the proposed development (Source: Geoscapes, 2022)

4.2.3.4 Better for people (safe, comfortable and liveable)

The proposal has been designed with extensive input from specialist consultants to ensure that it responds to the needs and desires of its employees and visitors, its consumers and its surrounding community.

Comfort for occupants is of utmost importance for the proposed data centre. Stringent thermal, acoustic and lighting requirements will be met to ensure a comfortable environment is provided. Natural Light, oversight of vegetation and successful planning are all seen as key factors in the health and well being of staff and visitors.

The design of the proposal and its operations respond to the increasing market needs for data storage, while ensuring a safe and sustainable design outcome. The proposal has been informed by Industry Best Practice, resulting in:

1. Support for growth and transformation of the data storage realm;
2. Employment generation during construction and once the development is operational;
3. Improved access to jobs for residents of the immediate community and wider locality;
4. Complimentary outcome for the Macquarie Park Corridor and its strategic intent;
5. Architectural excellence, through siting and design compatibility, with minimal visual impact; and
6. Suitable mitigation measures where required, to minimise any unforeseen impacts arising in the future.

4.2.3.5 Better working (functional, efficient and fit for purpose)

The proposed development is an expansion to the existing data centre, co-located with an existing facility that is demonstrated to operate in line with the character of the local area. The expansion would further support the secure operation of business to business and business to consumer services, helping provide employment-generating opportunities in the professional services, start-up and creative industries in the City of Ryde LGA.

The design of the proposal must take into consideration the best practice of data centre design. Consideration has also been given, not only to the operation of the facility once fully completed, but also to the incremental fit out of the building and data halls. Paramount to this is recognition of the separation of existing completed areas and new construction areas. Security of the existing tenanted areas and construction areas would be clearly separated.

4.2.3.6 Better value (creating and adding value)

Increasing the capacity and capability of secure data storage and cloud-based infrastructure is of regional, state and national significance. The events of recent times have radically shaped the way people live and work. These macro-economic forces have created challenging conditions for many enterprises; traditional business models are being forced aside and how a company responds will determine its future – adapt and survive or resist and fold.

The provision of data storage provides a platform for a competitive digital economy, with increased capacity creating the conditions for multinationals to enter the Australian market.

The proposed development would provide data storage solutions for both public and private cloud, not just public cloud, enabling support services for multinational corporations that require their own private hosting solutions, as well as Tier 1 Government agencies. Emerging digital technology (including cybersecurity, AI and quantum computing) is a priority industry to achieve Global NSW's vision for a globally connected, smart and vibrant economy.

Further, the NSW Government has documented that 'each data centre development directly contributes as much as $1 billion in construction and fit-out costs to the NSW economy and forms critical infrastructure for the IT sector', emphasising the importance of these investments towards economic stimulus.

Not only does the proposal offers a total investment value of $333,360,431.00 (excluding GST), but it will also act as a catalyst for further investment and bring more businesses to the area.

4.2.3.7 Better look and feel (engaging, inviting and attractive)

The proposed development has been designed to best practices of data centre design and to fit seamlessly with the existing Stage 1 building. Towards the Talavera Road boundary, the building has been purposely set back to allow a landscaped area to the entry point. This allows the proposed building to nestle into its surroundings and cohesively address the form and architecture of the existing building.

The design of the proposal, whilst differing in scale from the existing built form, will achieve an overall cohesive visual outcome. A sympathetic and considered palate of forms, articulation and materials will result in an overall "one building" outcome, with each building element respecting the other.

1. Adopt vertical emphasis already established on campus.
2. Emphasis placed on MDC brand through colour and materials palette adopted in the Stage 1 development to ensure a cohesive campus.
3. Showcase secure nature of the building as well as plant that highlight the technical prowess.

The proposed building has been set back considerably from the Talavera Road boundary. By maintaining the tree bund along Talavera Road, the building is viewed through the vegetation, which creates a permeated view from the public domain.

4.2.4 Future Transport Strategy 2056

The *Future Transport Strategy 2056* is a 40 year strategy, supported by plans for regional NSW and for Greater Sydney. The strategy and plans focus on the role of transport in delivering movement and place outcomes that support the character of the places and communities we want for the future.

The proposed development aligns with the strategies of the *Future Transport Strategy 2056* on the following basis:

- the site has access to regular public transport services;
- the site is accessible by active transport;
- a travel demand management approach is proposed through implementation of a work place travel plan;
- parking provision is appropriate;
- access, servicing and internal layout will be provided in accordance with Australian Standards AS2890.1-2004 and AS2890.2-2018;
- the surrounding road network and intersections will be able to cater for the proposed development traffic.

4.3 LOCAL PLANNING CONTEXT

4.3.1 Ryde Local Environmental Plan 2014

RLEP2014 is the principal EPI that applies to the subject site, within which the subject site is zoned B7 Business Park.

Whilst the permissibility of the proposal, being development for the purposes of storage premises used for the storage of data and related information technology hardware, can be achieved under the Transport and Infrastructure SEPP, the development standards of the RLEP2014 continue to apply.

4.3.1.1 Zone objectives

The subject site is zoned B7 Business Park under the RLEP2014, which adopts the following objectives:

- *To provide a range of office and light industrial uses*
- *To encourage employment opportunities*
- *To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area*
- *To encourage industries involved in research and development.*

Whilst it has been established that the proposal is permissible with consent in the B7 Business Park zone, pursuant to the Clause 2.31 of the Transport and Infrastructure SEPP, the proposal also aligns with the objectives of the B7 Business Park zone.

The proposal is considered consistent with the zoning, based on the following:

- It would provide additional employment opportunities during both and construction and operation of the data centre;
- It would provide a complimentary service offering to Macquarie Business Park, including the wider IT sector;
- It would support research and development through the secure storage of IT data for both private and public organisations.

4.3.1.2 Development standards

TABLE 7 outlines the consistency and compliance of the proposal with the relevant development standards and controls under RLEP2014.

TABLE 7: DEVELOPMENT STANDARDS – RLEP2014	
Clause	**Comment**
Principal development standards	
Clause 4.1 – Minimum subdivision lot size	Not applicable to the proposed development.
Clause 4.3 – Height of buildings	The subject site is mapped (pursuant to map sheet HOB_004) to have a maximum building height of 9m in the southern (rear) portion of the site and 30m in remaining portion of the site. However, pursuant to Clause 6.9 of the RLEP2014, the subject site is afforded bonus incentives pertaining to building height and FSR – refer to Clause 6.9.
Clause 4.4 – Floor space ratio	The subject site is mapped (pursuant to map sheet FSR_004) to have a maximum FSR of 1:1 across the whole site. However, pursuant to Clause 6.9 of the RLEP2014, the subject site is afforded bonus incentives pertaining to building height and FSR – refer to Clause 6.9.
Clause 4.5B – Macquarie Park Corridor	The objectives for development on land in Zone B7 Business Park within the Macquarie Park Corridor are as follows— *(a) to provide for the daily convenience needs of employees and visitors,* *(b) to ensure that development supports the needs of businesses and organisations in the area.* It is noted that the proposal does not seek consent for any use listed under Clause 4.5B(4) or 4.5B(5).
Clause 4.6 – Exceptions to development standards	Where variations to development standards are sought, Clause 4.6 offers a mechanism to vary such development standards. However, pursuant to Subclause 4.6(8)(cc), a Clause 4.6 Variation Request cannot be pursued for development that invokes the bonus incentives under Clause 6.9 of RLEP2014. As such, the proposed development does not exceed 45m in height, or an FSR of 2:1 – refer Clause 6.9.
Miscellaneous provisions	
Clause 5.21 – Flood planning	Pursuant to Clause 5.21 of the RLEP2014, the consent authority must be satisfied that the development — *(a) is compatible with the flood function and behaviour on the land, and* *(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and* *(c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and* *(d) incorporates appropriate measures to manage risk to life in the event of a flood, and* *(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian*

TABLE 7: DEVELOPMENT STANDARDS – RLEP2014	
Clause	**Comment**
	vegetation or a reduction in the stability of river banks or watercourses. A detailed flood study has been prepared and presented as updated in **Appendix D11** of this RTS Report. The study has been prepared, by Northrop Consulting Engineers, in accordance with City of Ryde Council's engineering guidelines, analysing the potential impacts to flooding resulting from the proposed development. The flood assessment concludes that the proposed building footprint and associated site development does not unacceptably block the flow path. This is achieved by elevating the building to create an under-croft area, allowing flood waters to pass beneath the building.
Additional local provisions	
Clause 6.2 – Earthworks	The proposal involves minor earthworks to be undertaken at the site. The proposed earthworks are considered to comply with the requirements of Clause 6.2.
Clause 6.4 – Stormwater management	Clause 6.4 of the RLEP2014 applies to all land in residential, business and industrial zones, requiring the consent authority to be satisfied that the development — *(a) is designed to maximise the use of water permeable surfaces on the land having regard to the soil characteristics affecting on-site infiltration of water, and* *(b) includes, if practicable, on-site stormwater retention for use as an alternative supply to mains water, groundwater or river water, and* *(c) avoids any significant adverse impacts of stormwater runoff on adjoining properties, native bushland and receiving waters, or if that impact cannot be reasonably avoided, minimises and mitigates the impact.* Further modelling has been performed to provide results of the 1 in 20 year and 1 in 50 year stormwater – refer to **Appendix D13** of this RTS Report.
Clause 6.6 – Environmental sustainability	Proposed development, for the purposes of a data centre, incorporates a number of ESD initiatives to reduce the consumption of potable water and greenhouse gas emissions of the future operations. Such initiatives are outlined in **Section 2.3.5** and **Appendix D19** of this RTS Report.
Clause 6.9 – Development in the Macquarie Park Corridor	The subject site is mapped (pursuant to map sheet MPC_004) as within Precinct 01 – Macquarie Park. The objective of Clause 6.9 is to encourage additional commercial development in the Macquarie Park Corridor. By application of Clause 6.9, the subject site is afforded bonus incentives for building height and FSR.

<table>
<tr><th colspan="2">TABLE 7: DEVELOPMENT STANDARDS – RLEP2014</th></tr>
<tr><th>Clause</th><th>Comment</th></tr>
<tr><td></td><td>A summary of the incentives and how they have been applied includes:
<table>
<tr><th>Development control</th><th>Development standard</th><th>Incentive provision</th><th>Proposal</th></tr>
<tr><td>Height</td><td>9m – rear of site
30m – front of site</td><td>45m</td><td>45m</td></tr>
<tr><td>FSR</td><td>1:1</td><td>2:1</td><td>1.37:1</td></tr>
</table>
To achieve such parameters, the proponent intends to enter into a VPA with the City of Ryde Council.

Discussions have been ongoing with City of Ryde Council regarding the provision of a VPA under the subject SSD Application.

To invoke the provisions under Clause 6.9 of RLEP 2014 and achieve a 45m height limit and FSR of 1.37:1, MDC propose to enter into a VPA with the City of Ryde Council. MDC have made a formal offer to City of Ryde Council, which is currently under review by City of Ryde Council.</td></tr>
</table>

4.3.2 Ryde Development Control Plan 2014

The RDCP2014 provides a non-statutory instrument to guide development in the City of Ryde LGA.

The aims and objectives of the RDCP2014 are as follows:

- *To achieve a responsible development control system that has sustainable environmental outcomes;*
- *To enhance the existing amenity and character of the City of Ryde;*
- *To create vibrant, viable and economically sound employment and living centres;*
- *To ensure new development is appropriate for its site and context;*
- *To ensure that urban centres and special areas are identified and their special qualities protected and enhanced;*
- *To provide guidelines for specific development types and development sites to ensure appropriate high quality development.*

The proposed development has considered the RDCP2014, which contains controls relevant to the subject site. Such controls, as they relate to the proposed development are outlined within **TABLE 8** below, which have been considered for consistency and completeness, despite DCP's not applying to SSD, pursuant to section 2.10 of Planning Systems SEPP.

TABLE 8: DEVELOPMENT CONTROLS – RDCP2014	
Control	**Comment**
Macquarie Park Corridor	
Streets:	The subject site adjoins one (1) proposed new road, as shown on Figure 4.1.1 of the RDCP2014: ▪ Proposed new 20m road to the south (rear) of the subject site (outside its boundary)

<table>
<tr><th colspan="2">TABLE 8: DEVELOPMENT CONTROLS – RDCP2014</th></tr>
<tr><th>Control</th><th>Comment</th></tr>
<tr><td></td><td>In accordance with the RDCP2014, the proposed buildings are suitably setback from the proposed roads.</td></tr>
<tr><td>Parking:</td><td>The RDCP2014 states that for a new floor space in non-residential land uses, a maximum of 1 space per 60m^2 can be applied. For an additional floor space of 16,119m^2, a maximum of 269 additional spaces is permitted.

The previous development was approved with 71 on-site car parking spaces. The proposal seeks to maintain the previously approved 71 car parking spaces. Hence, no additional car parking spaces will be proposed on site as part of the proposed expansion.

It is noted that RDCP2014 car parking requirement is set at maximum rates, hence the proposed car parking provision complies with the RDCP2014.</td></tr>
<tr><td>Planning incentives:</td><td>Discussion have been ongoing with the City of Ryde Council regarding the provision of a VPA under the subject SSD Application.

To invoke the provisions under Clause 6.9 of RLEP2014 and achieve a 45m height limit and an FSR of 1.37:1, MDC propose to enter into a VPA and have made a formal offer to City of Ryde Council. The offer is currently under review by City of Ryde Council.</td></tr>
<tr><td>Built form:</td><td>The proposed development, being an extension of the existing built form, has been designed in accordance with the RDCP2014 setbacks, and seeks to employ incentive provisions under Clause 6.9 of the RLEP2014, to achieve a height 45 m.

Section 7.4 of the RDCP2014 sets out specific street setback controls, which apply to the Talavera Road frontage, the south-eastern side boundary (adjacent to future Road 17) and the rear boundary (adjacent to future Road 1). The building setback required for the north-western side boundary is prescribed by Section 7.6 of the RDCP2014.

The RDCP2014 building setbacks for the subject site are as follows:

<table>
<tr><th colspan="3">TABLE 9: RDCP2014 BUILDING SETBACKS</th></tr>
<tr><th>Setback</th><th>Requirement</th><th>Proposal</th></tr>
<tr><td>Front – Talavera Road</td><td>10.0m</td><td>10.0m</td></tr>
<tr><td>Rear – Road 1</td><td>5.0m *</td><td>16.5m</td></tr>
<tr><td>Side (south-eastern) – Road 17</td><td>5.0m</td><td>14.0m</td></tr>
<tr><td>Side (north-western)</td><td>5.0m</td><td>6.5m</td></tr>
<tr><td colspan="3">Note: * Section 7.6, control a., documents that ‘Buildings are to be set back 10m from the rear boundary and 5m from a side boundary unless a proposed new road is shown on the site’, as such Section 7.4 applies.</td></tr>
</table>

The design of the proposal, whilst differing in scale from the existing built form, will achieve an overall cohesive visual outcome. A sympathetic and considered palate of forms, articulation and materials will result in an overall “one building” outcome, with each building element respecting the other.</td></tr>
</table>

TABLE 8: DEVELOPMENT CONTROLS – RDCP2014	
Control	**Comment**
	Section 7.4 of the RDCP2014 also requires that 60% of the street setback area is to be soft landscaping. Existing mature trees are to be retained where possible. Paved areas are to relate to the materials and finishes of the adjacent streetscape. At grade car parking must not be located within this setback. In response the following is noted: ▪ 100% of the Talavera Road setback area (excluding access areas) is provided with soft landscaping, and existing mature trees a retained; ▪ No change from LDA2018/322 is proposed to the setback arrangement to the south-eastern side setback; ▪ Approximately 80% of the rear setback area is provided with soft landscaping; ▪ The north-western side boundary is not subject to a 'street setback' therefore Section 7.4 does not apply.
Landscaping:	Data centre design is strictly guided by the dimensional requirements of their data halls and associated plant and equipment. As such, the proposed building size is optimised for the IT load required to make this development viable for MDC. The building scale and surrounding hardstand is dictated by these factors, and the unique operations of a data centre. For instance, the perimeter of the building is required to provide sufficient space for cranage to navigate and install / replace plant on the rooftop of the building. Whilst strict compliance with the deep soil requirement (of 20% of the site area) cannot be achieved for this site, the proposal has ensured that sufficient landscaping is provided to soften the proposed built form and achieve an outcome that is comparable to similarly approved developments in the area. The proposal offers 14.8% of the subject site as landscaped (2,978m^2), and seeks to offset loss of vegetation on-site by replanting 83 endemic/native trees, approximately 290 shrubs and 5,600 groundcovers. The resolved design seeks to offset the loss of trees through replanting at a rate of 1.01:1. This will enhance existing areas of landscaping within the site especially those to the east and adjacent to the street. By adding additional tree planting to Talavera Road, not only will the canopy cover be increased within the public domain, but also views from the street will be further screened providing visual mitigation. Presentation to the building main entry will also be enhanced with a proposal to remove the existing monoculture and replace it with a more varied visually inviting landscape. In addition, the resolved design includes a 1.2m to 6.8m landscape buffer between the building and perimeter driveway, planted with grasses, shrubs (5m) and trees (7-12m). To far south of the perimeter driveway, a 3.5m to 4.2m landscaped buffer is proposed along the rear boundary, which will be planted with various grasses and hedges (1m). Planting of tall species is avoided in this setback area to allow for suitable passive surveillance beyond the site boundary.

TABLE 8: DEVELOPMENT CONTROLS – RDCP2014	
Control	**Comment**
	Whilst the proposal cannot achieve strict compliance with Section 8.2 of the RDCP2014, it is respectfully submitted that the alternate arrangements sought warrant favourable consideration by City of Ryde Council.

PART 5 COMMUNITY ENGAGEMENT

5.1 ENGAGEMENT SINCE EXHIBITION

Since the proposal was publicly exhibited, MDC has undertaken further consultation with NSW government agencies, local council authorities and adjoining landowners to resolve matters raised.

A summary of MDC's consultation since exhibition is documented in **TABLE 10**.

The remaining matters, as described below, are suitably addressed as part of this RTS Report:

- Drainage realignment details – refer to **Section 3.1.1.2**
- Existing redundant pipe – refer to **Section 3.1.1.2**
- OSD requirement – refer to **Section 3.1.1.2**
- Sydney Water approval – refer to **Section 3.1.1.4**
- Rooftop screening – refer to **Section 3.1.2.2**

TABLE 10: POST EXHIBITION CONSULTATION

Date	Topics	Actions
City of Ryde Council		
29 August 2022	Meeting with Council to discuss the commercial arrangements (offsetting the cost of the stormwater works).	-
22 August 2022	Email from Council noting: ▪ The stormwater design is acceptable in principle; ▪ That legal agreement / instruments are required to indemnify Council; ▪ That OSD will be required for the proposal; ▪ Final approval from Sydney Water is required for the finalised design; ▪ That Council will accept a staged installation of the screens on the roof top/ parapet to screen off the plant room/installations rather than deleting this requirement.	**Drainage realignment details:** A final consolidated detailed proposal will be provided for Council review (and conditions) through DPE when MDC submits their RTS. **Existing redundant 1,800mm pipe:** Council Engineers requested that MDC provide legal agreement / instruments to indemnify Council in the form of: ▪ legal agreement/ instrument registered on title, and ▪ structural certification to Council The certification is to detail that the grout filling of the existing 1800mm stormwater pipe will not cause any damage the existing IC2 and IC3 East buildings nor the proposed IC3 West building and any other proposed developments. This matter will be reviewed by Council's General Counsel upon receipt of further details. **OSD requirement:** Council's Stormwater Engineer are of the view that OSD will be required for the new proposal. If this is not currently provided / shown on the plans, it could be provided with the

		revised details. Council Officers will likely recommend a condition of consent. **Sydney Water approval:** MDC to obtain final approval for the finalised design and provide details to the DPE / Council. **Rooftop screening:** Roof top screening must be integral component of the building design and is to be provided. Council will accept a staged installation of the screens on the roof top / parapet to screen off the plant room / installations rather than deleting this requirement.
3 August 2022	Meeting with Council to discuss and close out comments received from Council on the stormwater design (email received from Sanju 28/7)	-
20 July 2022	Email sent to Council closing out their comments on the flooding package	-
13 July 2022	Email sent to Council responding to queries received from them on 30/06/22 (stormwater design topic)	-
27 June 2022	Meeting with Council to discuss their comments on the flooding report and agree close out.	Flood report and modelling to be updated.
10 May 2022	Meeting with Council to review revised stormwater design and the impact to trees (following the meeting on 29 April 2022). Council advised they (if neighbours consent provided) would have no objection to the impact on the neighbouring trees on the Southern boundary as these trees are designated to be removed as part of the published Road Network Plans at some point in the future.	MDC/Northrop to further develop stormwater designs that: (a) avoids any impact to the neighbour's trees for Council's detailed review if neighbours or DPE consent for tree impacts is not forthcoming (b) that meets Council's hydraulic requirements with an impact on southern trees for acceptance. Designs to be supported with final drawings, arborist reports, sewer design etc for formal review by Council.
4 May 2022	Meeting with Council assets team to discuss pathway for approval of the stormwater works (SSDA vs possible DA) also spoke about design and location of the stormwater pipe.	-
29 April 2022	Meeting with Council and DPE on the stormwater matters and impact to neighbouring trees.	Council and DPE requested that MDC review the stormwater alignment, with a goal to avoid impact to neighbouring trees.
Sydney Water		

19 October 2022	Sydney Water granted approval to deviate the sewer main within the subject site.	MDC will continue to work with their Water Servicing Coordinator (WSC) to fulfill the requirements of Sydney Water.
63 – 71 Waterloo Road, Macquarie Park		
5 September 2022	Landowner's consent obtained from UT 65 Pty Ltd for the impact to trees at 63 – 71 Waterloo Road, Macquarie Park.	-

5.2 RESPONSE TO AGENCY SUBMISSIONS

This section seeks to tabulate all submissions received from government agencies and provide a detailed response to each matter.

TABLE 11: RESPONSE TO AGENCY SUBMISSIONS

SUBMITTER	MATTERS RAISED	COMMENTS / REQUESTS	FORMAL RESPONSE
EES	**Biodiversity**	*EES notes that a waiver for the requirement to submit a biodiversity development assessment report (BDAR) was granted on 28 September 2021. EES has no further no comments in relation to biodiversity.*	No action required. However, with the proposed design changes, as described in **PART D** of this RTS Report, a revised BDAR Waiver has been obtained and included within **Appendix D23**.
	Flooding	*EES has reviewed the potential flooding and floodplain impacts of the project and considers that they have been adequately assessed with appropriate mitigation and management measures proposed.*	No action required.
NSW EPA	**Testing of Back-up Generators**	*The EPA recommends that a condition of consent be included stating that the applicant must ensure the on-site generation of electricity for emergency operations (including operation and testing) does not exceed 200 hours per annum. It is the responsibility of the applicant to apply for an environment protection licence (EPL) if they determine that the total testing time of the generators is expected to exceed 200 hours.*	Understood and noted. The total testing time for all generators is 148 hours per annum; being calculated for a total of 37 generators, tested four (4) times per year for one (1) hour. No more than five (5) generators will be tested per day and the five generators will not necessarily be tested concurrently, noting that in previous discussions with the EPA on annual operating hours of diesel generators, they have indicated that time spent testing more than one generator concurrently will be counted once, i.e. not hours multiplied by number of generators running.
	General	*The EPA requests to be consulted if any aspect of the proposal is altered in a way that will result in an environment protection licence being required under the Protection of the Environment Operations Act 1997.*	Understood and noted.
FRNSW	**Fire Safety Study**	1. *To ensure that the fire prevention, detection, protection and firefighting measures are appropriate to the specific fire hazards and adequate to meet the extent of potential fires, a comprehensive Fire Safety Study (FSS) is recommended to be undertaken.*	An updated Fire Safety Strategy Report has been prepared and included within **Appendix D8** of this RTS Report. It is acknowledged that FRNSW recommends that the development of a Fire Safety Study be a condition of consent.
		2. *That the FSS is developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper No.2 (HIPAP No.2).*	Consultation with FRNSW is underway and a draft Fire Safety Study is in preparation, in line with the requirements of *Hazardous Industry Planning Advisory Paper No.2* (HIPAP No.2).
		3. *That the FSS is required to be developed in consultation with FRNSW and to the satisfaction of the operational requirements of FRNSW. FRNSW recommend that the development of a FSS be a condition of consent.*	Understood and noted. Consultation with FRNSW is underway and a draft Fire Safety Study is in preparation, in line with the requirements of HIPAP No.2.
		4. *That the development of the FSS considers the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence.*	Understood and noted. Consultation with FRNSW is underway and a draft Fire Safety Study is in preparation, in line with the requirements of HIPAP No.2.
	Preliminary Hazard Analysis	5. *FRNSW recommends a Preliminary Hazards Analysis (PHA) be undertaken as this will determine the approach and design of the recommended fire safety study.*	As demonstrated in the updated Preliminary Risk Screening Report, contained with **Appendix D9**, and further concurred by NSW DPE under item 24 of their Additional Matters for Submission Report letter (dated 22 December 2021), the proposal does not require a PHA.
	Emergency Response Plan	6. *Should a fire or hazardous material incident occur, it is important that first responders have ready access to information which enables effective hazard control measures to be quickly implemented. Without limiting the scope of the Emergency Response Plan (ERP), the following matters are recommended to be addressed:* a. *That a comprehensive ERP is developed for the site.* b. *That the ERP specifically addresses foreseeable on-site and off-site fire events and other emergency incidents, (e.g. fires involving solar panel arrays, bushfires in the immediate vicinity or potential hazardous material incidents).* c. *That the ERP detail the appropriate risk control measures that would need to be implemented in order to safely mitigate potential risks to the health and safety of firefighters and other first responders (including electrical hazards). Such measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures,*	The subject site has an existing Emergency Response Plan (ERP), which can be updated as a condition of consent, prior to Occupation Certificate. Reference should be made to planned management and mitigation measure HR3, as included within **Appendix C** of this RTS Report.

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		minimum evacuation zone distances and a safe method of shutting down and isolating power (either in its entirety or partially, as determined by risk assessment). *d. Other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site should also be included in the ERP.* *e. That two copies of the ERP (detailed in recommendation 6 (a) above) are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s.*	
Heritage NSW	**ACHAR**	*Heritage NSW concurs with the findings of the ACHAR and supports all the recommendations made in relation to the management of Aboriginal cultural heritage and the development of the Talavera Road Data Centre Campus Expansion (SSD-24299707).*	No action required.
TfNSW	**Cumulative Traffic Impacts**	*Talavera Road, at this location, is a 7000 series regional unclassified road under the care and control of Council. As such, the development's proposed access arrangement and any mitigation measures should be to Council's satisfaction.* *In this regard, TfNSW recommends that Council undertakes a traffic study to understand the cumulative traffic impacts of developments, including SSD 24299707, along the Talavera Road corridor to identify any potential mitigation measures, particularly at the signalised intersection of Talavera Road / Khartoum Road.*	It is understood that this item is for City of Ryde Council's consideration, however it is noted that SIDRA traffic modelling of the Talavera Road / Khartoum Road intersection has been undertaken, as required by the SEARs. The proposed operations are expected to generate at most, 23 vehicle trips per hour in the AM and PM peak period. This equates to one vehicle movement every two to three minutes, which is considered negligible. As such, the proposed development traffic is considered minimal and could not be expected to result in any noticeable traffic impacts on the surrounding road network. Also, in comparison with other nearby large commercial developments, the proposed expansion of the data centre would generate significantly less vehicle trips during the commuter peak periods. Reference should be made to Section 6.1.7 of the EIS and the updated TIA contained within **Appendix D6** of this RTS Report.
NSW DPE	**Air Quality**	*1. While the AQIA has identified a number of residential or childcare receivers in the vicinity of the site, this approach is not consistent with the provisions of the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales. Sensitive receptors are defined as 'A location where people are likely to work or reside…' and the AQIA should subsequently be amended to reflect this. The AQIA should also clarify the type of sensitive receptor located at 15 Talavera Road.*	The number of discrete receptors included in the model representing sensitive receptors has been increased from 18 to 57. A site visit conducted by SLR Consulting observed that all nearby buildings (generally office buildings) have fixed glazed windows (non-operable). SLR Consulting therefore included discrete flagpole receptors to represent potential ventilation intakes for the air conditioning system on the facades and roofs of these buildings. Reference should be made to the updated AQIA contained within **Appendix D4** of this RTS Report.
		2. The criteria for NO_2 and SO_2 were recently amended in the National Environment Protection (Ambient Air Quality) Measure (NEPM) and has been endorsed at federal and state levels across Australia. It is understood arrangements are being made for its incorporation into the 'Approved Methods'. Please evaluate the development using the NEPM criteria.	The results sections of the AQIA have been updated to assess the results against both the Air NEPM criteria and the current 'Approved Methods' criteria. The potential for off-site air quality impacts during the operational stage of the proposal have been conservatively assessed quantitatively through the use of dispersion modelling techniques in accordance with the 'Approved Methods'. The dispersion modelling study, which accounted for worst-case testing conditions predicted no exceedance of the relevant ambient air quality as a result of the operation of the proposal. The dispersion of emissions due to emergency conditions, where loss of all feeders to the subject site requiring all generators to operate simultaneously, was conservatively modelled and predicted compliance with relevant SO_2 (as well as CO and PAHs) criteria. An insignificant incremental increase of SO_2 is predicted at the identified receptors, however given the existing low concentrations of SO_2 (both relative to the criteria), exceedances of the relevant criteria due to the operation (including emergency conditions) of the proposal are not predicted.

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			For NO_2, while no exceedances of the relevant 'Approved Methods' criteria were predicted, exceedance of the 1-hour average Air NEPM criterion were predicted for 11 of the 57 receptors modelled. However, the predicted low likelihood of an exceedance coupled with the low likelihood of an emergency condition event happening was demonstrated to result in a very low risk of an exceedance occurring. Reference should be made to the updated AQIA contained within **Appendix D4** of this RTS Report.
		3. *The AQIA demonstrates that exceedances of the applicable criteria will occur at the nearest sensitive receptor during the 'worst case' scenario. The AQIA/proposed management and mitigation measures should be updated to include a pro-active program for notifying neighbouring properties when all generators are operating.*	Section 11.2 of the AQIA has been updated in line with this recommendation, which has subsequently been included within **Appendix C** of this RTS Report – refer to planned management and mitigation measure AQ2.
		4. *Please update the emissions data provided for all existing and proposed generators to ensure consistency (i.e. a fuel burn rate should be provided for all generators, the same units of measurement should be used, etc). This information should be readily available from the manufacturer.*	Table 4 and Table 5 of the AQIA has been updated to include fuel rates for all generator types. Where fuel consumption rates were not available (not provided in the available manufacturer specifications) conservative assumptions have been made in relation to fuel consumption rates. It is noted that fuel consumption rates have only been used in the calculation of PAH emissions (in the absence of emission data). For all other pollutants, emission data provided in specification sheets have been used. Refer to the updated AQIA contained within **Appendix D4** of this RTS Report.
		5. *Are the emission figures provided in Table 4 reflective of a single generator unit or all units combined, and what power setting has been adopted*?	The emission figures expressed in Table 4 of the AQIA are in units of g/kw and therefore are independent of whether one or more generator is operating.
		6. *Table 5 – 34 generators tested four times per year for 1 hour = 136 hours not 132 hours.*	Table 6 (previously Table 5) of the AQIA has been corrected in line within this item. With the total number of generators proposed now being 37, the resulting total testing time is 148 hours per annum. Refer to the updated AQIA contained within **Appendix D4** of this RTS Report.
		7. *The text description provided under Table 5 is not consistent with the testing regime described in the table. Table 5 states 1 – 5 generators per test and a maximum of 8 tests per day, which would permit all generators to be tested in a single day. However, the text under Table 5 states that no more than 5 generators would be tested per day.*	This is a conservative assumption used to ensure the model accounts for all possible meteorological conditions, background pollutant concentrations, etc. That is, the modelling undertaken assumes five (5) generators operate at any time during testing to provide a conservative impact assessment. However, Table 6 (previously Table 5) has been corrected to correctly indicate that the proposed actual testing regime is one (1) generator at a time. Refer to the updated AQIA contained within **Appendix D4** of this RTS Report.
		8. *Table 6 – footnote 'd' does not exist in the table.*	Table 7 (previously Table 6) of the AQIA has been corrected in line within this item. Refer to the updated AQIA contained within **Appendix D4** of this RTS Report.
		9. *Please confirm the figures used for NO_2 and SO_2 in Table 9 (i.e. should they be listed as ppb?).* *If the information provided is correct, please clarify why a different unit of measurement is appropriate in this context.*	The units used for NO_2 and SO_2 in Table 10 (previously Table 9) of the AQIA are correct. Accompanying text has been amended to explain that this is for consistency with the model output which is in units of mass concentration (e.g. $\mu g/m^3$). The figures use for NO_2 and SO_2 in Table 10 of the AQIA have been converted from ppb, using the factors listed in Table 12.1: Common conversion factors for criteria air pollutants of the 'Approved Methods'.
		10. *Table 27 – PM_{10} and $PM_{2.5}$ should be listed separately.*	In the absence of detailed PM_{10}/$PM_{2.5}$ data in the engine spec sheets, SLR have conservatively assumed all PM_{10} is $PM_{2.5}$. Table 28 (previously Table 27) of the AQIA has been amended to clarify. Refer to the updated AQIA contained within **Appendix D4** of this RTS Report.
		11. *Tables 27, 29, 30 and 31 – Cumulative amounts should be provided such as done in Table 28.*	The particulate (PM_{10} and $PM_{2.5}$) results table (Table 28 of the AQIA) has been updated to include maximum cumulative concentrations for each receptor.

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			CO and SO_2 tables (Table 30 and Table 31 of the AQIA, respectively) have been updated to provide conservative maximum cumulative impacts (calculated from the maximum incremental and maximum background) at the base of the table for comparison with the relevant criteria. No background data is available on PAHs. It is noted that the 'Approved Methods' only require the reporting of incremental impact for toxic air pollutants (such as PAHs), unlike for criteria pollutants for which it requires the reporting of incremental and cumulative impacts. Regardless, given the insignificant incremental impact predicted, the addition of the incremental impacts to a background concentration are not predicted to cause an exceedance. Refer to the updated AQIA contained within **Appendix D4** of this RTS Report.
		12. Table 32 – In columns 2 and 7, PM_{10} and $PM_{2.5}$ 5 should be listed separately.	As outlined in **item 10** above, in the absence of detailed PM_{10}/$PM_{2.5}$ data in the engine spec sheets, SLR have conservatively assumed all PM_{10} is $PM_{2.5}$. Table 32 of the AQIA has been amended to clarify. Refer to the updated AQIA contained within **Appendix D4** of this RTS Report.
		13. Tables 34, 35 and 36 – Cumulative amounts should be provided such as done in Table 28.	See response to DPE **Item 11** above.
	Noise and Vibration	*14. The Department understands the SSD application is seeking approval for construction works to take place outside of the Interim Construction Noise Guideline's (ICNG's) standard construction hours. The ICNG notes that works may be undertaken outside the recommended hours where an applicant demonstrates and justifies a clear need to operate outside of these hours for reasons other than convenience. The Submissions Report must address this requirement of the ICNG, noting that in general, only works undertaken on public infrastructure need to be undertaken outside the recommended standard hours.*	Out of hours construction is being sought for lower impact building works and fitout only, not for earthworks and civil works. It is noted that the ICNG identifies five (5) categories of works that may be undertaken outside the recommended standard hours, including: 6 the delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads 7 emergency work to avoid the loss of life or damage to property, or to prevent environmental harm 8 maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours 9 public infrastructure works that shorten the length of the project and are supported by the affected community 10 works where a proponent demonstrates and justifies a need to operate outside the recommended standard hours As required by **item 5**, the Applicant is required to provide the relevant authority with clear justification for reasons other than convenience, such as to sustain operational integrity of road, rail and utility networks. The driving factor for the proposed out of hours work is to limit the impact of construction works on surrounding businesses and stakeholders. The subject site is located within the B7 Business Park zone of the *Ryde Local Environmental Plan 2014* (RLEP214), with the surrounding area constituting a mix of the following land use zoning: ▪ B7 Business Park ▪ B3 Commercial Core ▪ B4 Mixed Use ▪ SP2 Infrastructure

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			Within the immediate vicinity of the subject site are various commercial premises, educational establishments, and childcare centres, which operate during standard business hours. To limit potential impacts to such businesses, including subsequent traffic impacts, the Applicant proposes to undertake some construction works during out of hours. The follow-on benefits of such, include: ▪ allow for large plant and equipment deliveries out of hours, during non-peak traffic periods – reducing traffic impacts; ▪ increased parking availability outside general business hours for construction workers; ▪ ability to spread construction traffic impacts away from peak traffic periods; ▪ facilitate flexible working hours and greater work hours outside periods of high UV index; ▪ a shorter construction timeline and return to normal operations earlier. Section 4.5.1.2 and 4.5.1.3 of the updated NVIA, contained in **Appendix D5**, confirm that these proposed out of hours works would comply with the noise management levels at nearby sensitive receivers including residences further abroad. As the impacts are low, it is considered reasonable to conduct such low impact works outside of standard hours. Furthermore, since the subject site is surrounded by other commercial premises, there will be less impact on the nearby office workers in adjacent buildings by carrying out these proposed works outside of standard hours rather than during standard hours when the adjacent offices would most likely be occupied.
		15. *The Department notes that the noise measurement data provided for L2 is several years old (obtained in 2016), and may not be representative of current background levels within NCA 2. Further justification should be provided to confirm the appropriateness of this data, particularly given the level of change which has occurred in that area over the past five years and the fact that greater Sydney is, at the time of writing, not in a lockdown.*	The operational noise assessment has a dual criteria. One criterial is based on the background noise levels (intrusive criteria), and one is based on the zoning (amenity criteria), and then the lower of the two is used. The residential receivers in NCA 2 are currently governed by the amenity criteria, and therefore the L2 background levels don't affect the criteria being used. With reference to Table 7 of the NVIA, contained in **Appendix D5** of this RTS Report (extract below), the L2 night time background levels would need to drop from 40dB(A) to 38dB(A) before the intrusive criteria is applied. **Table 7: Long-term noise monitoring results, dB(A)** Monitoring location | L_{A90} Rating Background Level (RBL) | L_{Aeq} Ambient noise levels Day[1] | Evening[2] | Night[3] | Day[1] | Evening[2] | Night[3] L1 - Unit 6, 37 Khartoum Road, Macquarie Park | 45 | 45 | 38 | 57 | 59 | 51 L2 - 82 Waterloo Road, Macquarie Park[4] | 52 | 48 | 40 | 61 | 60 | 54 L3 -7 Booth Street, Marsfield | 42 | 42 | 33 | 55 | 56 | 47 Notes: 1. Day: 07:00-18:00 Monday to Saturday and 08:00-18:00 Sundays & Public Holidays 2. Evening: 18:00-22:00 Monday to Sunday & Public Holidays 3. Night: 22:00-07:00 Monday to Saturday and 22:00-08:00 Sundays & Public Holidays 4. As required by the NPfI, the external ambient noise levels presented are free-field noise levels. [ie. no façade reflection] Therefore, even if the background levels at L2 are lower now than in 2016, they would need to be lower than 38dB(A) (lower than L1) to make any difference to the operational assessment; Renzo Tonin (Acoustic Consultant) believe that is unlikely to be the case.

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			Furthermore, the residential receivers in NCA 2 are R4, R5 and R6. The worst case operational prediction is 41dB(A) at R4 compared to a criterion of 43dB(A). Therefore, there is 2dB head room and the levels at L2 could actually be 36dB(A) and the proposal would still be compliant. The above doesn't provide a justification that the current noise levels at L2 are still the same as what they were in 2016, but it does show they would need to be very low to make any difference to the assessment. Renzo Tonin also note that the construction assessment works to a different noise policy compared to the operational assessment, and it has used the measured L2 values.
		16. Given the operational status of the site, please justify why on-site measurements have not been undertaken to verify existing plant noise emissions.	On site verification measurements <u>have</u> been conducted of the Generators and DRUPS as these are noisy items and have acoustic enclosures and attenuators. The verification measurements assisted in determining the effectiveness of the mitigation measures and were conducted as part of a previous phase of work specifically related to the procurement of these items. The other plant items (chillers, condensers, AHUs etc) are more standard items and the supplier data is reliable. Reference should be made to Section 5.1.1 of the updated NVIA, contained in **Appendix D5**.
		17. For Table 27, please confirm which measurements have been verified by on-site monitoring and which measurements have been based on the technical data provided by the manufacturer. In addition, please confirm whether the noise level provided is per individual unit or for all units within the same category (i.e. 1 x DRUPS or 5 x DRUPS = 105 dB(A)).	The data verified by on site measurements are the IC2 DRUPS, IC2 Generators and IC3e Generators, while other plant was operational and taken into account. The remaining data is manufacturers technical data. The noise level provided in Table 28 of the NVIA is for 1 x item of plant; i.e. where 5 x DRUPS is stated, this is acknowledging there are 5 of these items, each at 105dB(A).
		18. The NIA notes that periodic maintenance testing "…would only occur during the daytime and one generator would be operating at any one time". This statement is not consistent with the assumptions used in the AQIA and should subsequently be clarified.	The AQIA has been updated to note that only one (1) generator is to be tested at any one time, to comply with the Noise and Vibration Impact Assessment, despite there being no air quality impacts for testing five (5) generators. Reference should be made to **Appendix D4** of this RTS Report, which contains the updated AQIA.
		19. Please justify why an 'emergency' scenario has not been modelled in the NIA, particularly given this scenario was considered as part of the AQIA.	An emergency scenario with power grid outage is a rare event that would generally not occur. It is not reasonable to assess and apply noise mitigation for a scenario that would not likely occur. The assessment does assess and mitigate for the scenario that would occur, which is the generator maintenance testing scenario. MDC have undertaken a review of their emergency and/or unplanned events, which have resulted in generators being started to supply power, since 2016. On average, there have been between 5 to 9 short duration evens per annum lasting only a few seconds and 1 or 2 longer events, which are typically coordinated events with the utility provider. Once the generators are called to start, they run until normal utility mains power is restored. However, for short duration events, the generators run for a minimum 30 minutes before being shut down automatically. This protects the generator and ensures that any other minor anomalies, within the utility supply, do not cause the generators to stop/start unnecessarily. The following shows an analysis of generator logs over the past five years, based on cumulative generator run time due to 'emergency events': ▪ 2016 = 10 events with 5 hours engine run ▪ 2017 = 5 events with 4.5 hours engine run ▪ 2018 = 13 events with 8.5 hours engine run ▪ 2019 = 5 events with 6.5 hours engine run ▪ 2020 = 6 events with 16.5 hours engine run

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			Notwithstanding the above, the 'Planned Management & Mitigation Measures for the Proposed Development' have been updated to ensure the nearby receivers are notified of any 'emergency' event that will extend beyond 30 minutes, as presented in **Appendix C** of this RTS Report.
	Traffic and Access	20. *The Department notes the Preliminary Construction Traffic Management Plan (CTMP) included in the EIS does not include a breakdown of vehicle movements by heavy vehicles/construction staff vehicles. The Submissions Report must clarify the total number of heavy vehicles/construction staff vehicles per day and during the morning/afternoon peak periods, and include a cumulative assessment of construction traffic impacts on the surrounding road network (i.e. consideration of the nearby Stockland site and impacts associated with SSD-10467).*	The Preliminary CTMP anticipates an average 7 construction related vehicles (7 in; 7 out) per hour during the morning and afternoon peak periods during construction works. Table 4.2 of the Preliminary CTMP has been updated to include the Stockland Macquarie Park Data Centre development in its cumulative impact assessment. The revised assessment demonstrates that for the projects with known construction traffic trips the cumulative impacts are expected to be minimal considering the low number of traffic movements generated by those projects and the proposal. Although, the remainder of the projects in Table 4.2 have no available information on construction vehicle trip generation, it is unlikely that there will be adverse cumulative impacts. Reference should be made to **Appendix D7** of this RTS Report, which contains the updated Preliminary CTMP.
		21. *The Preliminary CTMP does not clearly describe parking arrangements for staff vehicles. Given the significant number of construction staff, the Submissions Report must provide a clear, conservative assessment of the number of staff likely to drive to the site and how these movements would be accommodated/minimised.*	The updated Preliminary CTMP, contained within **Appendix D7** of this RTS Report, now includes a section on staffing and parking arrangements (Section 3.6), identifying that during construction works the existing MDC facility is to continue operations with reduced on-site staffing levels (i.e. circa 35 staff members working on-site per day). During this time, parking for operational staff is to be provided off-site, with the site operator intending to rent parking spaces at neighbouring sites – the number of which is yet to be confirmed noting that the majority of staff are expected to travel via public transport. It is noted that there will be existing car spaces on-site that will be unaffected by the construction works. These spaces may be allocated to select construction workers on a "needs" basis. However, all remaining construction workers will be expected to use public transport to travel to/from the site given the proximity of the site to Macquarie Park Metro Station. This will be incorporated in the workers' induction program to ensure minimal parking impact on surrounding streets. Taking the above into consideration, it is proposed to implement the following measures to encourage workers to use public transport: ▪ provide an on-site tool drop-off and storage facility to allow tradespeople to drop off and store their specific machinery for the project to prevent the need to drive equipment in everyday ▪ inform staff during the induction and regular management meetings that no car parking will be available for staff on-site ▪ instruct staff to use public transport to access the site during the induction and regular management meetings, and ▪ display public transport timetable information at key locations within the work site and ensure that it is easily accessible by staff. Given the limited public car parking availability in the surrounding areas, construction workers and operating staff are unlikely to drive to the site unless parking is provided.
		22. *The Submissions Report must clearly describe how current on-site operations and construction activities would be managed.*	Refer to DPE **Item 21** response above.
		23. *The Traffic Impact Assessment (TIA) included in the EIS models vehicle movements generally, but does not include a breakdown of vehicle movements by heavy vehicles/operational staff vehicles. The Submissions Report must clarify the total number of heavy vehicles/construction staff vehicles per day and how often heavy vehicles are likely to visit the site (i.e. 2-3 times a week for deliveries/garbage collection, etc).*	Section 3.3.1 of the TIA has been updated to include a breakdown of the heavy vehicles likely to visit the subject site. Noting that the site is anticipated to generate service vehicles at the following frequencies: ▪ Two MRVs per week relating to waste collection (garbage and recycling)

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			▪ One to two AVs per year ▪ Infrequent use of HRVs (deliveries are not expected to be undertaken by vehicles larger than an MRV). If an HRV accesses the site, it would likely relate to emergency vehicles) Reference should be made to **Appendix D6** of this RTS Report, which contains the updated TIA.
	Hazards and Risk	24. *The EIS makes several references to 'no dangerous goods are to be used or stored at the facility' (e.g. in Section 6.1.8 and Appendix 18, Section 3.1).* *The Department notes that lithium ion batteries would form part of the proposal and are classified as Dangerous Goods Class 9 – Miscellaneous Dangerous Substances (DG Class 9) under the Australian Dangerous Goods Code.* *The Department acknowledges DG Class 9 are excluded from the preliminary risk screening method outlined in Applying SEPP 33 and note the method has been applied correctly, demonstrating that the SSD is not potentially hazardous under SEPP 33 and a PHA is not required to be submitted.*	The project description has been updated to include the storage of lithium ion batteries (Class 9 DGs); refer to **Section 3.1** of this RTS Report. However, it is noted that Class 9 DGs are excluded from the preliminary risk screening method outlined in Applying SEPP 33 and note the method has been applied correctly to the proposal, demonstrating that the SSD is not potentially hazardous under the former SEPP 33 and a PHA is not required to be submitted.
		25. *However, the Department notes that the EIS (especially Section 6.1.8 'Hazards and risk', Appendix 18 'SEPP 33 Report' and Appendix 19 'Fire Safety Strategy Report') does not provide any information on whether the proposal can comply with AS 4681, AS 62619, FM Global DS 532 and AS 1940 which are the standards specified in the SEARs. Accordingly, the Department requests the Applicant provide sufficient information to demonstrate that allowances have been made in the design of the expansion to incorporate all relevant requirements under these standards. In particular, the final fire safety strategy should be informed by the requirements of FM Global DS 5-32 and FRNSW, rather than just the BCA (noting this was the primary focus of the Fire Safety Strategy Report provided in Appendix 19 of the EIS).*	The Fire Safety Strategy Report has been updated to include reference to the relevant Australian Standards, raised by DPE. The changes include: ▪ Conformance with the relevant provisions of AS 1940, AS 4681 and AS 62619 for the storage of dangerous goods and flammable liquids; which exceed the building requirements of the National Construction Code. ▪ A statement confirming that the design will be developed in accordance with FRNSW has also been reiterated in Section 2.1 of the report. It is noted that there is conflict between FM Global DS 5-32, and the requirements of the other Australian Standards that have been referenced. For example, Clause 7.4.2 of AS 4681 mandates compliance with AS 1670.1 for the smoke detection system; whereas FM Global requires compliance with DS 5-48. These standards are not compatible, and it is not possible to comply with both. For this reason, the strategy being put forward is designed to satisfy the Authority Having Jurisdiction and the Fire Brigade wherever possible, and that the Fire Brigade must be consulted as part of the building approval process. In this manner the proposal can ensure that the fire safety system is designed to provide adequate protection for the commodity being stored. Reference should be made to **Appendix D8** of this RTS Report, which contains the updated Fire Safety Strategy Report.
	Ecologically Sustainable Development	26. *Based on the EIS, the Department understands the proposal will consume a substantial volume of water and electricity each year. The Submissions Report should demonstrate how the development has been designed to minimise water and electricity use, with regard to the principles of ESD. While external factors (such as the electricity grid's gradual transition to sustainable technologies) will help reduce the impact of the development over time, the Submissions Report should confirm that the Applicant has explored all reasonable and feasible measures to reduce electricity/water use for the subject proposal.*	The updated Sustainability and GHG Emissions Statement, that forms **Appendix D19**, details the predicted energy and water usage of the proposed development. The Statement shows the predicted reduction in CO_2 equivalent emissions associated with energy consumption due to decarbonisation of the grid and use of biodiesel, resulting in zero Scope 1 and 2, Green House Gas emissions from 2050. The Statement also details that the proposed data centre is targeting a PUE of 1.3, which is equivalent to a (pre-June 2021) 5-star NABERS rating. There is currently only one 5-star NABERS rated data centre in Australia, therefore the targeting of a 5-star NABERS rating for the proposed development would make it one of the most energy efficient data centre in Australia. Testing undertaken by the Applicant during commissioning showed PUE results of less than 1.3, providing a high level of confidence in the abovementioned target.

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			The CNDCP (a European based data centre self-regulatory group tasked with making data centres climate neutral by 2030) set the following PUE target, "By January 1, 2025 new data centres operating at full capacity in cool climates will meet an annual PUE target of 1.3, and 1.4 for new data centres operating at full capacity in warm climates." The proposed data centre meets this international target, thereby resulting in the proposed data centre being one the most energy efficient in Australia and in line with international standards. The Statement details that the following reasonable and feasible energy efficient measures have been included in the design; ▪ High efficiency chilled water-cooling system ▪ VSD drives will be used on fans and pumps allowing turndown and energy savings at part load ▪ High efficiency electrical drives will be used on the various systems ▪ All lighting to be LED ▪ Sub-metering throughout the facility to help monitor and interpret energy consumption in operation and enable optimisation year-on-year WUE is a recognised measure of water efficiency for a data centre. The lower the WUE the more water efficient a data centre is. However, it is important to consider WUE in the context of PUE, for example an air sourced cooling system would have a WUE of zero but would be less energy efficient (based on current air-cooling technologies) resulting in a higher PUE. \he WUE for the proposed development is 1.79L/Kwhr. There are no recognised WUE benchmarks or targets set as yet, however it is considered current best practice for data centres to calculate and consider the WUE when designing a data centre. It is anticipated that the CNDCP are to confirm a WUE target in 2022. The following reasonable and feasible water efficiency measures have been incorporated into the design: ▪ Cooling towers will be selected to provide no more than 0.002% drift coefficient ▪ The cooling system will be controlled to operate with no less than 6 cycles of concentration ▪ All sanitary wares will achieve a minimum WELS – 5-star rating
		27. *Based on the Sustainability and Greenhouse Gas Emission Statement, the Department understands the completed data centre will achieve a NABERS Energy Stars rating of between 5 and 5.5 stars. However, the Department also notes it may be several years before the expansion is fully occupied and this could negatively impact the development's energy efficiency during this period. The Submissions Report should detail how the NABERs Energy Stars rating would be maintained during partial operations, and consideration should be given to the Applicant signing up to a NABERS commitment agreement for the proposed expansion.*	The proposed development is targeting a (pre-June 2021) NABERS infrastructure rating of 5 stars. NABERS identify this rating type for data centre owners and managers as it allows them to determine their facility's energy efficiency in supplying the infrastructure services to the IT equipment housed in a data centre. This rating is suitable for co-location centres where the operators do not have control of any tenant IT equipment but provide the cooling and power delivery systems. The achievement of a 5-star NABERS rating is dependent on full occupation. The development is to be fully commissioned prior to handover with the PUE tested at different loads to ensure the facility is operating efficiently as possible during the predicted short period until it is fully occupied (circa 2029).
	Tree Removal	28. *The Department understands the proposal would involve the removal of 55 on-site trees and the retention of 39 trees. It is unclear if this takes into consideration any additional trees that may need to be removed to facilitate the proposed stormwater easement along the western boundary of the site. This discrepancy should be clarified in the Submissions Report.*	The details of tree retention and removal, contained within the EIS, was reflective of the proposed design, and did not consider any tree retention linked to the construction of the future stormwater pipe. As the proposal now involves the construction of the new stormwater pipe, the Arboricultural Impact Assessment Report has been updated to consider the impact to trees associated with these works – refer to **Appendix D3** of this RTS Report. The extent of tree impacts are articulated in **TABLE 1** and further information is provided in **Section 2.3.7.1** and **Section 2.3.7.2** of this RTS Report.

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		29. The Department understands the proposal would involve planting of 47 new trees across the site. In accordance with Council's DCP and Tree Management Technical Manual, the Submissions Report should include updated landscape plans for the proposal demonstrating that those trees proposed for removal from the site would be replaced at a ratio of 1:1 or greater. *Alternatively, clear justification should be provided as to why a ratio of 1:1 is not reasonable/feasible.*	An updated Landscape Plan has been prepared by Geoscapes, forming **Appendix D2** of this RTS Report, which now attributes a minimum 1:1 replacement ratio for tree loss to tree planting.
	Clarifications	*30. The Department notes the GFA figures referred to in the EIS differ slightly from those figures referenced in the architectural plans. Please clarify accordingly.*	The correct GFA is noted within **Section 3.1** of this RTS Report.
		31. The Department notes the number of proposed construction jobs (1,200 jobs) is significantly higher than comparable projects in the surrounding area. The Submissions Report should clarify the assumptions which have informed this number.	The project construction jobs have been recalculated and are anticipated it be in the order of 610 FTE jobs per annum.
City of Ryde Council	**1.1. Impact on trees on the site**	*Following an arboricultural review of the plans and documentation forming part of the SSD Application, concerns are raised in relation to the extent of vegetation removal including multiple large, locally endemic trees. These trees were required to be retained under existing development consent that apply to the site.* *The proposed built form and external access arrangements have given no consideration to the retention of existing, significant vegetation on the site. Failure to consider retention of this vegetation during the design development process has resulted in a scheme which is unsympathetic to existing vegetation, the established character of the subject site and affords a poor contribution to the surrounding landscape setting.* *The proposed works in their current form will require the removal of an additional thirty-one (31) trees which were to be retained and protected under Condition 21 of the Development Consent associated with LDA2018/0322. These trees approved for retention and now proposed for removal include Tree 47, 48, 51, 54, 55, 56, 57, 61, 62, 63, 64, 65, 66, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84 & 85.* *Most of those affected trees are primarily located along the north western boundary with a smaller number positioned adjacent to the southern boundary and within the front setback.* *The extent of the proposed tree removal along the northwestern and southwestern boundaries and the loss of deep soil area on the site is unacceptable. The impact of the tree loss will be permanent as most of the proposed replacement trees are not located in the original western side setback or rear setback zones, where the impact is most significant. The proposal should be designed to retain these existing trees for the following reasons:* *a) The trees are significant vegetation that contributes positively to the visual amenity and environmental aspects of Macquarie Park. The replacement of soft planting and trees with a 6m wide driveway along the boundary will negatively impact the amenity of the adjoining site and the future public domain of Road 1. It will not meet the objective of 'better performance' and 'better look and feel' under GANSW's Better Placed framework.* *b) The Macquarie Park Corridor DCP sets out an objective in Section 7.4 to "retain and reinforce the existing character of green setbacks with mature planting". Green setbacks are an important component of the existing and desired future character of the Macquarie Park Corridor. All developments within the area are required and expected to provide generous landscaped setbacks along the front, side and rear boundaries. This SSD should not be an exception.* *c) The trees are located at the peripheries of a large development site with a total area of 20,094sqm. On a large site like this, the removal of the trees can be avoided if*	As detailed in **Section 4.2.3** of this RTS Report, the proposal is very much commensurate to the surrounding area and comparable developments. The suggestion of a more compact building envelope is not a feasible option, as it would result in major change to the building envelope and is not necessary based on the following justification and the wider findings of this RTS Report. The following subsections provide a response to each of City of Ryde Council's reasons for retaining trees. **a)** As described in **Section 2.3.7** and **Section 3.1.2.6** of this RTS Report, the proposal has been amended to include additional landscaped area, primarily along the rear site boundary. The resolved design includes a 1.2m to 6.8m landscape buffer between the building and perimeter driveway, planted with grasses, shrubs (5m) and trees (7-12m). To far south of the perimeter driveway, a 3.5m to 4.2m landscaped buffer is proposed along the rear boundary, which will be planted with various grasses and hedges (1m). Planting of tall species is avoided in this setback area to allow for suitable passive surveillance beyond the site boundary. This addition promotes a full length landscaped area along the rear boundary that will act to screen the subject site from the future public domain of Road 1. As further justification for this response, reference should be made to **Section 4.2.3** of this RTS Report, which provides an assessment of the *Better Placed* framework. **b)** Section 7.4 of the RDCP2014 sets out specific street setback controls, which apply to the Talavera Road frontage, the south-eastern side boundary (adjacent to future Road 17) and the rear boundary (adjacent to future Road 1). The building setback required for the north-western side boundary is prescribed by Section 7.6 of the RDCP2014, and is not called up for assessment against the RDCP2014 Section 7.4. In response to Section 7.4, it is noted that 60% of street setback areas are to be soft landscaping, and existing mature trees are to be retained where possible. In response the following is noted: ▪ 100% of the Talavera Road setback area (excluding access areas) is provided with soft landscaping, and existing mature trees a retained; ▪ No change from LDA2018/322 is proposed to the setback arrangement to the south-eastern side setback; ▪ Approximately 80% of the rear setback area (measured 5m from the rear boundary, as per **TABLE 9** of this RTS Report) is provided with soft landscaping; ▪ The north-western side boundary is not subject to 'street setback' therefore Section 7.4 of the RDCP2014 does not apply.

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		designed appropriately. The extent of tree removal required to accommodate the proposed expansion is a sign of overdevelopment and indicates an inappropriate built form approach. It does not meet the objective of 'better fit' in GANSW's Better Placed framework. *d) The Ryde Local Strategic Planning Statement (LSPS) has set out a vision for Macquarie Park to become a CBD in a natural setting. The significant tree loss as a result of the proposal does not align with City of Ryde's vision for Macquarie Park.* *e) The design under the existing approval (LDA2018/322) was able to retain these existing significant trees. Condition 21 of the existing approval also specifically prescribes the trees to be retained on the site.* *f) A number of trees proposed for removal are of a species consistent with those listed under two Critically Endangered Ecological Communities (CEEC), being Blue Gum High Forest in the Sydney Basin Bioregion (BGHF) and Sydney-Turpentine-Ironbark Forest in the Sydney Basin Bioregion (STIF).* *g) Further impacts on trees would result as a result of drainage works (based on the future drainage alignment plans) which may not have been factored.* *The Applicant should consider a more compact building envelope on the site and setback the building sufficiently from existing large trees in the side and rear setback zones to retain the existing vegetation. A potential solution can be to redevelop IC2 together so that a large portion of the building area can be allocated to the north-eastern part of the site so as to avoid the adverse impacts on the existing trees and the adjoining property.*	The design of the proposal, whilst differing in scale from the existing built form, will achieve an overall cohesive visual outcome. A sympathetic and considered palate of forms, articulation and materials will result in an overall "one building" outcome, with each building element respecting the other. In relation to City of Ryde Council's comment that 'this SSD should not be an exception', reference should be made to **Section 4.2.3.1** of this RTS, which demonstrates how the proposal performs against recent comparable developments. **c)** Based on a number of factors, the proposal is not considered an overdevelopment of the subject site. As mentioned above, this RTS Report demonstrates that the proposal is commensurate to the surrounding area and generally consistent with recent comparable developments in the area. Attention is also drawn to the incentive building height and floor space ratio (FSR) provisions for the Macquarie Park Corridor, pursuant to Clause 6.9 of the RLEP2014. As outlined in **TABLE 7** the subject site afforded is afforded bonus incentives for building height (up to 45m) and FSR (up to 2:1). This proposal seeks to achieve a maximum building height of 45m, however only generates an FSR of 1.37:1. This proposed FSR is well below the allowable incentive limit, which suggests that the proposal is not an overdevelopment of the site. As further justification for this response, reference should be made to **Section 4.2.3** of this RTS Report, which provides an assessment of the *Better Placed* framework. **d)** City of Ryde Council has chosen to call on just one aspect of the Ryde LSPS, however the proposal contributes and responds positively to many more visions for the Macquarie Park Corridor, including: ▪ Retention of a distinct commercial core, that supports the continued role of the precinct as a top ten contributor to Australia's economy; ▪ Promotion of excellence and innovation in both business and the physical environments; ▪ Contribute to the North District Plan target of an additional 13,000–19,000 jobs by 2036; ▪ Promotion of a resilient local economy able to respond to emerging technologies and lifestyle needs and capable of economic restructuring; ▪ Support Macquarie Park as a globally and locally recognised, innovative education and technology hub. Further, it is noted that the vision to retain significant trees is a precinct-wide strategy; which in this instance the proposed removal of 79 on-site trees and compensatory replanting of 83 endemic/native trees is considered to respond to this vision and target moving to the future. **e)** Of the trees identified for retention under condition 21 **of LDA2018/322,** the following is noted based on the findings of the updated Arboricultural Impact Assessment, prepared by Urban Arbor and contained within **Appendix D25** of this RTS Report: ▪ Trees 57, 65, 68, 74, 76 and 79 are identified as holding a retention value category of 'Z', which pertains to unimportant trees not worthy of being a material constraint. Notwithstanding, the proposal is capable of retaining Trees 4, 5, 6, 7, 8, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 28, 29, 30, 31, 38, 39, 40, 43, 52, 67, 86, 87, 88, 89, 90, 95, 96, 97, 98,

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			99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 116, 117, 118, 120, 121, 122, 123 and 124 in a viable condition, which equates to the retention of 61 trees. In addition, the proposal has ensured that sufficient landscaping is provided to soften the proposed built form and achieve an outcome that is comparable to similarly approved developments in the area. The proposal offers 14.8% of the subject site as landscaped area and seeks to offset loss of vegetation by replanting 83 endemic/native trees, approximately 290 shrubs and 5,600 groundcovers. Upon completion, the subject site will be informed by a total of 114 trees (retention of 23 established trees and 8 juvenile trees within the subject site boundaries, and planting of 83 new trees). It is considered that the proposed areas for landscaping are sufficient to support endemic canopy trees of significant size and therefore adding to the urban tree canopy objectives. **f)** Review of historical aerial imagery of 17 – 23 Talavera Road, Macquarie Park (subject site) via the NSW Government 'Spatial Portal' shows that by 1943 the site was nearly completely cleared for agriculture, though some vegetation may have remained along the north-western boundary of the site. By 1971 all vegetation across the site had been cleared, and some of the current plantings appear to have been undertaken in the intervening period between then and 1986, in neat lines surrounding hard stand car parking areas. As the entire site has been cleared of historical vegetation which may have originally comprised either the *Blue Gum High Forest in the Sydney Basin Bioregion* (BGHF) or the *Sydney-Turpentine-Ironbark Forest in the Sydney Basin Bioregion* (STIF) threatened ecological communities (TECs), there are no current ecological values present on the site pertaining to a remnant or regrowth occurrence of either TEC. Some tree species are present which would naturally occur in either TEC, such as *Eucalyptus saligna* (Sydney Blue Gum) and *Angophora costata* (Smooth-barked Apple); however, these species have been planted for landscaping purposes in a matrix including non-indigenous native and exotic species. As such, there is no similarity between this landscaped vegetation and a natural occurrence of either TEC beyond that the vegetation contains some species that could occur in either TEC. However, the individuals of these species are of unknown provenance, and are likely to have been sourced from mass nursery stock which has the potential to either be of non-local provenance, or potentially from inbred nursery stock which may have an accumulation of deleterious recessive alleles. These trees are therefore unlikely to contribute to the retention of local genetic diversity of the species and have no ecological value beyond foraging habitat for local fauna species. While the final determination for BGHF and STIF mention the community can persist as remnant trees over an exotic understorey, the value of these trees is described only in terms of ecological significance due to being persistent remnant trees, and as a source of genetic material to be used in rehabilitation plantings. Neither final determination states that planted trees of characteristic species (even if undertaken for revegetation versus landscaping purposes) conform to the listed communities. As the trees are landscape plantings, and not intentional revegetation plantings, and furthermore were from a time before provenance of plants in revegetation projects was considered important, the trees are very unlikely to contain local genetic diversity or have any particular ecological significance in terms of being associated with TECs. The ecological purpose they serve is therefore of no greater significance than any other garden

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			plantings of native species. It is further noted that the species present within the site are commonly used in landscaping in Sydney and elsewhere in NSW. **g)** The Arboricultural Impact Assessment has been updated to reflect the number of trees impacted by the proposed new stormwater pipe - refer to **Appendix D3** of this RTS Report. **Section 2.3.7** of this RTS Report provides confirmation of the number of trees proposed for removal from the subject site, under **SSD-24299707**.
	1.2. Impact to trees on adjoining site	*Further concerns are raised in relation to the extent of impact to be sustained to existing trees located on adjoining site.* *The works are also expected to result in substantial impacts to neighbouring Trees 29, 30, 38, 39, 40, 43, 52, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96, 97, 99, 100, 102, 104, 108, 111. The assessment of impact to these trees have not been fully considered by the Arboricultural Impact Assessment and therefore it should not be relied upon to form an accurate description of impacts to existing trees on site.* *The development should not be approved that results in loss of trees on neighbouring site.*	Through the RTS process the impact to trees has been a key consideration, with design changes being implemented to lessen the potential impacts. Through consultation with the City of Ryde Council, the impact to neighbouring trees has been reduced to just four (4) trees close to the rear site boundary, within Lot 3 DP1043041. Such impacts are as a result of the agreed stormwater pipe alignment. These trees are located within the rear of Lot 3 DP1043041, which will be impacted by the alignment of future Road 1, regardless of the development proposed under **SSD-24299707.** Notwithstanding, land owners consent has been obtained from the registered owners of Lot 3 DP1043041 – refer to **Appendix D27** of this RTS Report.
	1.3. Inadequate ecological impact	*Despite the extent of vegetation clearing outlined above, no assessment of the ecological impacts has been undertaken to demonstrate the proposal is acceptable with regards to impacts to flora and fauna on site. Whilst acknowledged the Planning Secretary of the Department of Planning, Industry and Environment has determined that the proposed development is not likely to have any significant impact on biodiversity values, and subsequently waived the requirement for a BDAR, it is maintained that insufficient information has been provided to determine what level of impact is to be imposed upon flora and fauna species.* *Of particular note is the removal of Trees 36, 45, 47, 51, 54, 56, 62, 66, 71, 76, 77, 78, 119 & 121 which are of a species consistent with those listed under two Critically Endangered Ecological Communities (CEEC), being Blue Gum High Forest in the Sydney Basin Bioregion (BGHF) and Sydney-Turpentine-Ironbark Forest in the Sydney Basin Bioregion (STIF). Although the documentation provided asserts that site vegetation is likely to have been planted following land clearing works undertaken prior to 1943, it remains unclear what ecological value this planted, but well-established, CEEC vegetation holds.*	As documented in City of Ryde Council response **Item 1.1 – Impact on Trees**, the entire site has been cleared (in the past) of historical vegetation which may have originally comprised either the BGHF or the STIF TECs; there are no current ecological values present on the site pertaining to a remnant or regrowth occurrence of either TEC. Some tree species are present which would naturally occur in either TEC, such as *Eucalyptus saligna* (Sydney Blue Gum) and *Angophora costata* (Smooth-barked Apple); however, these species have been planted for landscaping purposes in a matrix including non-indigenous native and exotic species. As such, there is no similarity between this landscaped vegetation and a natural occurrence of either TEC beyond that the vegetation contains some species that could occur in either TEC. However, the individuals of these species are of unknown provenance, and are likely to have been sourced from mass nursery stock which has the potential to either be of non-local provenance, or potentially from inbred nursery stock which may have an accumulation of deleterious recessive alleles. These trees are therefore unlikely to contribute to the retention of local genetic diversity of the species and have no ecological value beyond foraging habitat for local fauna species. While the final determination for BGHF and STIF mention the community can persist as remnant trees over an exotic understorey, the value of these trees is described only in terms of ecological significance due to being persistent remnant trees, and as a source of genetic material to be used in rehabilitation plantings. Neither final determination states that planted trees of characteristic species (even if undertaken for revegetation versus landscaping purposes) conform to the listed communities. As the trees are landscape plantings, and not intentional revegetation plantings, and furthermore were from a time before provenance of plants in revegetation projects was considered important, the trees are very unlikely to contain local genetic diversity or have any particular ecological significance in terms of being associated with TECs. The ecological purpose they serve is therefore of no greater significance than any other garden plantings of native species. It is further noted that the species present within the site are commonly used in landscaping in Sydney and elsewhere in NSW.
	1.4. Landscaping	*Only a limited area has been provided for landscaping and deep soil zone. The proposal has inadequate provisions of communal open space and fails to meet the minimum 20% deep soil area, as well as the minimum 20% landscaped area under RDCP2014. Further, no*	Data centre design is strictly guided by the dimensional requirements of their data halls and associated plant and equipment. As such, the proposed building size is optimised for the IT load required to make this development viable for MDC.

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		substantial attempt at screening the bulk of the proposed building form via the use of landscape screen planting. *The proposed development has been calculated as having a non-compliant landscaped area, being calculated at approximately 2,695m2 or 13.65% of the site area – failing to adhere to the 20% minimum requirement under Section 8.2(d) of Part 4.5 of the RDCP 2014. In order to achieve compliance with this above control, an approximate additional 1,255m2 of landscaped area is required to be provided. Similar to the lack of deep soil, insufficient landscaped area results in minimal opportunities for soft landscaping to be provided to ensure the proposal makes a positive contribution to the local landscape character.*	The building scale and surrounding hardstand is dictated by these factors, and the unique operations of a data centre. For instance, the perimeter of the building is required to provide sufficient space for cranage to navigate and install / replace plant on the rooftop of the building – refer to City of Ryde Council **Item 1.13 – Vehicle Access and Parking** for further detail. Whilst strict compliance with the deep soil requirement cannot be achieved for this site, the proposal has ensured that sufficient landscaping is provided to soften the proposed built form and achieve an outcome that is comparable to similarly approved developments in the area. The proposal offers 14.8% of the subject site as landscaped (2,978m^2), and seeks to offset loss of vegetation by replanting 83 endemic/native trees, approximately 290 shrubs and 5,600 groundcovers. The resolved design seeks to offset the loss of trees on-site through replanting at a rate of 1.01:1. This will enhance existing areas of landscaping within the site especially those to the east and adjacent to the street. By adding additional tree planting to Talavera Road, not only will the canopy cover be increased within the public domain, but also views from the street will be further screened providing visual mitigation. Presentation to the building main entry will also be enhanced with a proposal to remove the existing monoculture and replace it with a more varied visually inviting landscape. In addition, the resolved design includes two (2) landscaped strips at the rear of the subject site. This includes a 1.2m to 6.8m landscape buffer between the building and perimeter driveway, planted with grasses, shrubs (5m) and trees (7-12m). To far south of the perimeter driveway, a 3.5m to 4.2m landscaped buffer is proposed along the rear boundary, which will be planted with various grasses and hedges (1m). Planting of tall species is avoided in this setback area to allow for suitable passive surveillance beyond the site boundary. Whilst the proposal cannot achieve strict compliance with Section 8.2 of the RDCP2014, it is respectfully submitted that the alternate arrangements sought warrant favourable consideration by City of Ryde Council.
	1.5. Deep soil area	*The proposed development has been calculated as having a non-compliant deep soil area, being calculated at approximately 1,355m2 or 6.90% of the site area – failing to adhere to the 20% minimum requirement under Section 8.2(a) of Part 4.5 of the RDCP 2014. In order to achieve compliance with this above control, an approximate additional 2,593m2 of deep soil area is required to be provided. The lack of deep soil provided limits opportunities for the provision substantial canopy tree planting to assist in softening the proposed built form and integrating the site with the surrounding landscape character.*	Refer to City of Ryde Council **Item 1.4 – Landscaping** above.
	1.6. Communal Open Space (COS)	*No consideration has been given to the provision of ground floor communal open space areas which afford amenity to staff members and visitors to the site. Given the scale of the development and nominated personnel to be on site as outlined in the Plan of Management, it is considered important that quality useable communal open space is provided on site. Given the lack of communal open space, additional concern is raised in relation to the ability of any COS to provide suitable levels of solar access.*	Due to the nature of the facility, and the typology of the ground floor (vehicle movements, parking, and a perimeter access roadway) there are limited opportunities for communal open space. There is also a necessity to provide permanent hardstand locations for cranage of rooftop plant for installation and replacement. There is also a desire for visitors to report to security immediately and not to loiter in common areas (unaccounted for). To best accommodate the above safety and security requirements and provide an amenable communal open space, the project proposes seating be provided along the fringes of the landscaped area adjacent the entrance of the facility. This location is within acceptable range of the data centre security, and limits any interaction with vehicle movements and negates the requirement to cross the perimeter roadway.

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			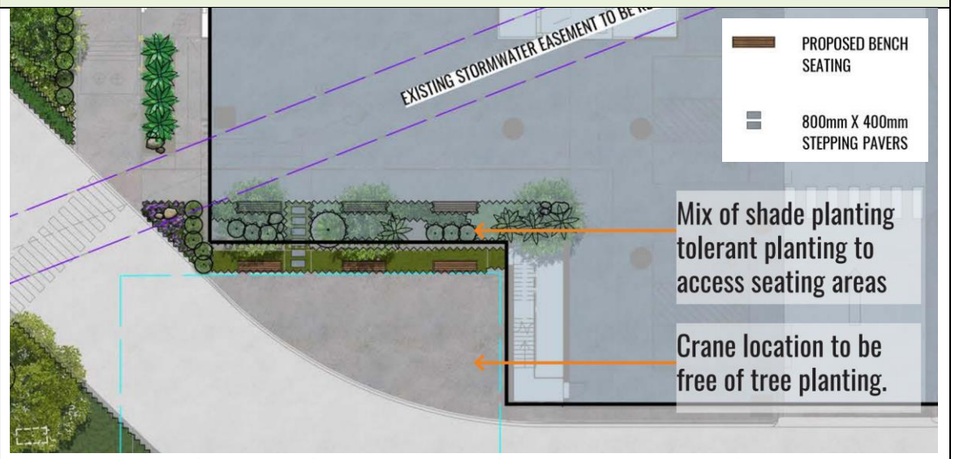 **Figure 19: Proposed Communal Open Space Area** (Source: Geoscapes, 2022) Details of the area proposed include: ▪ The area is north-west facing thus providing a year round setting for gathering. ▪ This location will likely be utilized for internal and external social / corporate gatherings. The nominated opportunity is adjacent a hardstand which is a designated cranage zone (very rare use requirement); this will exclude the ability to erect any permanent structures to this zone.
	1.7. Rights to build over the easement	*In its response to SEARs request, Council had raised an issue regarding construction of private development over a public easement. It should be noted that City of Ryde has not granted its consent as the beneficiary of the easement for applicant to build over it, with respect to this SSD proposal. Council's rights and interests under the terms of the easement are not affected by the provisions of clause 1.9A(1) of the Ryde Local Environmental Plan 2014 by virtue of clauses 1.9A (2)(a) and (3) of that Instrument.*	As part of this RTS, the proposal has been refined to further align with the requirements of the RDCP2014, in consultation with the City of Ryde Council. The proposal now includes the construction of the new 2,100mm stormwater pipeline, in accordance with the Terms Sheet proposed to City of Ryde Council, which will in turn allow for the decommissioning of the existing/redundant 1,800mm stormwater pipeline and associated easement, that runs diagonally through the subject site. By including these works, the City of Ryde Council concerns associated with construction of a private development over a public easement are resolved.
	1.8. Previous LDA Approval	*It is the applicant's intention not to proceed with Stage 2 works identified under a former LDA proposal but rely on a much more extensive proposal under the current SSD (Larger footprint, 5 storey with additional 9,097m² GFA). On this basis the applicant cannot pick and choose elements of what may have been possible under the previous approval.* *Previous agreements for the site, amongst other things, allows Council to convey stormwater within a different alignment to that existing under the building. It is a requirement that the new easement under Dealing AP628954H must remain clear of any buildings and obstructions. It was always intended via the deed to have the easement free of restrictions, that is, no building above it. The deed and the terms of the easement also creates legal rights for Council over the land that the DPE may not have power to override.* *The agreement gives Council 20 years to relocate the pipe. The existing easement is to remain in place until the pipe is relocated into the new easement that has been registered on the Title. The design approved under LDA2018/322 allows for adequate clearances in terms of height and width over the existing easement in case Council is required to complete any work within the existing easement. Refer to extract of plan below showing comparatively smaller footprint over the existing easement.*	Following a substantive consultation process with the City of Ryde Council, MDC have agreed to provide the new 2,100mm stormwater pipe and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council, as part of the **SSD-24299707** proposal. The intention is to carry out the drainage relocation works as described in **Item 1.10**. The approval strategy seeks to obtain Development Consent to complete the construction works over several construction stages upon issue of the relevant Construction Certificates; however, any such staging does not constitute staged development as defined under Section 4.22 of the EP&A Act. The approximate phases and duration of works are as follows: ▪ Stage 1A – provision of stormwater infrastructure, minor earthworks and civil works = 6 months ▪ Stage 1B – structural piling = 3 months ▪ Stage 2 – construction of main building = 6 months ▪ Stage 3 – deliveries and initial fitout of the data centre, including operational plant and equipment = 9 months

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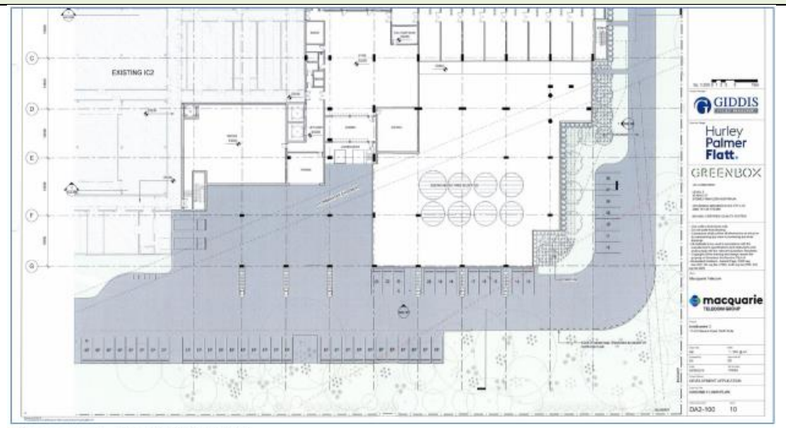
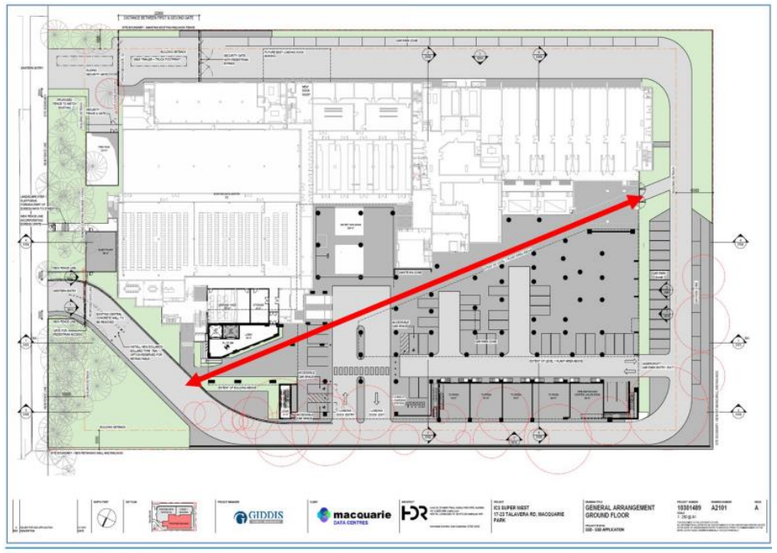
		 Source: LDA2018/322 *The current SSD comprises of a more extensive development and seeks to build on the existing easement as well as the location of the new easement agreed in LDA2018/322. The building footprint over the existing pipe is much greater compared to previous approval and parts of the building encumbering over the easement that will limit access for maintenance and replacement will be much greater.*  Source: SSD-24299707 *Council considers the SSD proposal as a new application with a substantial increase to the footprint of the building over the easements, thereby restricting Council's ability to maintain the existing easement, increasing the costs of future maintenance/ relocation and increase in risk and liability to Council with no inherent benefit to the community.* *The SSD also seeks to relocate the easement further to the north western side with much longer run which is likely to incur greater costs on Council due to the longer run of the easement and there are also environmental concerns as detailed in this submission. Council*	In addition to the above, it is noted that the fitout of remaining data halls would be gradual, on an as needed basis. This would be driven by tenant uptake of data halls and may occur over a period of up to 3 to 5 years, depending on market demand.

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		will need the proponent of the new proposal to bear the costs associated with relocation of the easement and the stormwater pipe once or if any agreement is reached on a suitable location and specifications of the proposed new easement. In particular, the drainage relocation works must then occur with the SSD prior to the issue of any Construction Certificate.	
	1.9. Construction over existing pipe/easement and proposed new easement	*The proposal is to further extend the building over existing pipeline located in existing easement, build over the new easement (which is currently outside the existing building footprint) and provide an alternate easement (proposed new easement) along its north western boundary for future relocation of the trunk drainage.* *The proposed building footprint and scale is substantially larger than any previous proposal on the site.* *The proposal to build over existing and the new easement would result in a significant risks, constraints and cost burden on Council which are deemed unacceptable as mentioned previously. Location of a building over existing pipe and easements creates a confined working environment which poses restraints on future stormwater pipe works for maintenance and its replacement/ relocation. No matter what sort of clearances are provided, if the building is over the easement, it is likely to increase costs, risks and liability for Council. These matters are discussed below:* ***a. Inadequate Clearance and increased risks*** *Despite the applicants insistence that the development will maintain clearance from the services, the plans seems to depict new columns in the existing easement or close to it (that contains the pipes) such that it presents considerable implications in terms of construction logistics and additional costs burden on Council. The proposal depicts various concerns with respect to existing easement and drainage infrastructure:* *i. The new works entail increased number of columns over a longer distance adjoining the existing easement, with some appearing to be located over the line. This will increase risks for Council and will hinder access to the trunk drainage line for maintenance. The new development is bigger in size and covers greater area over the easement which means that getting access to the easement is futured hindered. Accordingly, the revised application presents substantially less opportunity to access the drainage line, even for minor repair works which may be required.* *ii. The retention of the drainage service (1800mm diameter) under the building presents a significant compromise to the security of the building given it has to be readily accessed from the public domain. Council will not permit any access prevention measures (such as grates, etc) to be implemented in the service, due to the potential for blockage. The configuration also does not allow unrestricted access to the site which may be required in the event of an emergency (blockage of the line).* ***b. Drainage works to be done during construction of building works, by the developer*** *The proposal to expand the building over existing easements would result in increased future risks, liabilities and costs for Council. For this reason, Council is of the view that the easement relocation and relocation of the existing trunk drainage pipe should occur before the construction of the building that is proposed under the SSD Application.*	As outlined in the response to City of Ryde Council **Item 1.7 – Rights to build over the easement**, the proposal has been refined to include the construction of the new 2,100mm stormwater pipeline and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council, which will in turn allow for the decommissioning of the existing/redundant 1,800mm stormwater pipeline and associated easement. By including these works, the City of Ryde Council concerns associated with construction over the existing pipeline/easement are resolved. The intention is to carry out the drainage relocation works as a first stage of development works, alongside some minor earthworks and civil works.

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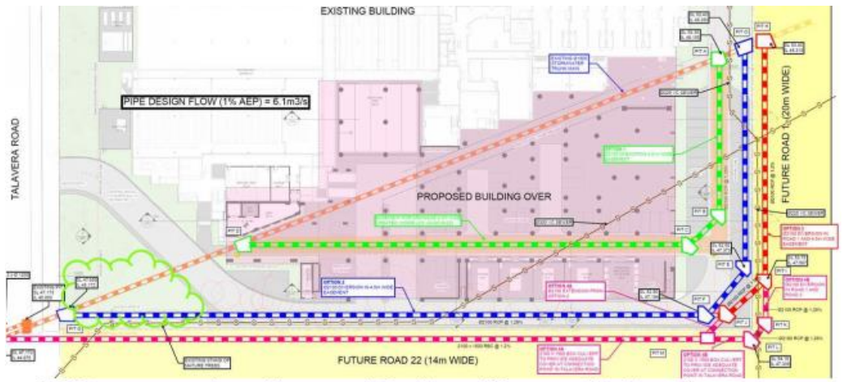
		The development significantly increases Council's exposure to potential property damage should the service be subject to partial structural failure or in the process of Council undertaking maintenance works on the service. The risk of damage is exacerbated by the sensitive use of the building as a data centre, which would accommodate components and systems unlikely to tolerate vibration arising from any such works or any excavation in the building footprint could sever power to the building.	
	1.10. The SSD documents include a proposal to relocate the existing stormwater easement	*There are several concerns in relation to this proposal seeking to build over the existing easement and create a new separate easement. These issues are highlighted below:* *a. It is Council's position that the existing easement which is clear of the current and stage 1 building works must not be built upon and must always remain clear of any obstructions/ structures.* *b. There are several options shown on the easement realignment options proposal and it has not been indicated as to the applicants preferred option.*  **SSD easement realignment Options** (Source: Northrop) *c. Options 3, 4A & 4B (shown in red colour) are not considered feasible as they are located outside the subject property for which neither Council nor the applicant has control over at this stage. The SSD Consent cannot incorporate development on land that is not part of the subject development site. It should also be noted that future Road 22 as shown on the above plan is not in the correct location. Future Road 22 has already been approved by Council in a different location.* *d. Assuming Option 2 (shown with a blue line) is preferred by the applicant, the option has various issues for which the option is not feasible and not supported by Council for the following reasons:* ***1.** Applicant has not confirmed if the proposed easement and the relocation of the pipes into the new easement would be delivered by the applicant as part of the SSD.* ***2.** The applicant is seeking to relocate the existing easement further to the north western side boundary (blue line), an alignment that is about twice as long as the existing pipes in the existing easement. The diverted easement will incur additional construction cost due to the appreciable difference between the present easement and proposed diversion, owing to the longer line and additional junction pits. This will also incur an increased maintenance cost. Council, at the very least, should not have to bear this cost.*	The proposal has been refined to include the construction of the new 2,100mm stormwater pipeline and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council, which will in turn allow for the decommissioning of the existing/redundant 1,800mm stormwater pipeline and associated easement, and resolves a number of concerns raised by the City of Ryde Council, including items a to c. Responses to the remaining items d and e are included below: **d.** The following subsections provide further clarity around matters raised by City of Ryde Council in this item: **i.** MDC now propose to deliver to new 2,100mm stormwater pipeline and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council. **ii.** As a result of the amended proposal, the City of Ryde Council would not have to bear the costs of the new stormwater pipe alignment. **iii.** As above, the intention is to carry out the drainage relocation works as part of the first stage of development works, alongside minor earthworks civil works. **iv.** As outlined above, MDC now propose to deliver a new 2,100mm stormwater pipeline and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council. **v.** Refer to the response to City of Ryde Council **Item 1.14 – Inadequate side setback along north western side boundary (impact on trees)**. **vi.** Refer to the response to City of Ryde Council **Item 1.1 – Impact on trees on the site** and **Section 2.3.7** of this RTS Report. **vii.** Now that a preferred option has been established, engineering details are now progressed and documented as follows: **1.** Civil Engineering Plans, prepared by Northrop, forms **Appendix D10** of this RTS Report. **2.** As above. **3.** The anticipated staging of the proposed stormwater includes: ▪ Further Agreement to Amend Easement executed and registered on title (which will set out the process for constructing the new 2,100mm stormwater pipeline and cutting over to it in accordance with the Terms Sheet proposed separately to City of Ryde Council). ▪ Security Bond (A) placed on obligation to complete works and register the new easement. ▪ Security Protection Bond (B) provided to City of Ryde Council for protection of existing 1,800mm stormwater pipeline asset during works on site.

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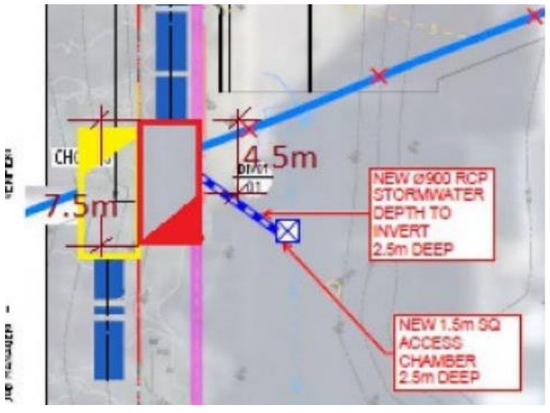
		3. *The works to be carried out by the applicant. Relocation of easement is required by the developer for their development and it is Council's contention that the costs of easement and pipe relocation must be borne by the developer/ applicant as part of the SSD development works. The relocation of pipeline works would need to occur during or before the construction of the building.* ***4.*** *The length of new easement would require much longer pipes and associated infrastructure compared to existing easement located under the building.* ***5.*** *The side setback of 5m required under RDCP2014 has not been provided, that also requires landscaped setting and trees to be retained. The proposed easement results in removal of most of the tress.* ***6.*** *This option results loss of trees on the neighbouring property and the subject site (refer to comments on trees in this submission). The impact on the number of significant trees are unacceptable (see tree comments below) and requires the easement, the building footprint and the driveway to be moved further away from the north western side boundary. The proposal is not supported for this reason as well.* ***7.*** *The Option lacks engineering details including the following:* ***1.*** ***Lack of clarity****: There is no clarity regarding how far away from the side boundary the edge of proposed easement will be located.* ▪ *Plans are not dimensioned adequately.* ▪ *The easement will require wider area along the building than shown on the architectural plan.* ▪ *Provide setback dimensions and exact location of the easement from the boundary.* ***2.*** ***Upstream Boundary Pit*** *to be extended and shaped to avoid turbulences internally;* ▪ *Boundary pit at Talavera. Details of this pit to be included, paying special attention to the cover of the pipe at this point. Pit to be extended as per the diagram below (in red the pit required at 17-23 Talavera Road site, in orange the future pit outside the boundary). Pit to be shaped to avoid turbulences internally (e.g. red triangle).*  ▪ *All pipe class to be Class 4.*	▪ Works (stormwater and IC3w) can commence on site other than within existing 1,800mm stormwater pipeline easement. ▪ New 2,100mm to be built and commissioned by MDC, as per plans approved by City of Ryde Council. ▪ MDC to provide Civil Engineering sign off, CCTV report for City of Ryde Council records. ▪ Protection Bond (B) transferred to new 2,100mm stormwater asset. ▪ Existing 1,800mm pipeline can be grout filled and works in the existing easement can commence (in accordance with the Terms Sheet proposed to City of Ryde Council). ▪ New 4.1m wide Easement to be created in favour of City of Ryde Council for the purpose of drainage stormwater. ▪ Security Bond (A) returned. ▪ Old easement/s for drainage purposes in favour of City of Ryde Council, that are no longer required, to be extinguished. ▪ Post occupation certificate (OC) and inspection by City of Ryde Council. ▪ Security Protection Bond (B) returned. **4.** Updated Architectural Plans, prepared by HDR, are included in **Appendix D1** of this RTS Report. The FFLs for the transformer rooms (at ground level) are sited at least 53m AHD; they are positioned at approximately the 1% AEP + 650mm. This FFL exceeds the City of Ryde Council requirement for the 1% AEP + 300mm and the previous preference to position the facility at or above the PMF. **e.** As detailed throughout this RTS Report, the impact to trees on site cannot be lessened without major impacts to the design and overall feasibility of the proposed development. The design of the proposal must take into consideration the best practice of data centre design. Consideration is also given, not only to the operation of the facility once fully completed, but also to the dimensional requirements of its data halls. By maximising development of the existing data centre site, the need for locating further centres elsewhere is reduced. The scale of the proposed development is considered suitable, and the built form proposed would completely enhance and renew an undeveloped and underutilised land portion into a modernised, state-of-the-art data centre, which evolves as a logical extension to an existing data centre. In relation to the stormwater matters and relative costs, MDC is committed to delivering the new stormwater pipeline, in accordance with the Terms Sheet proposed to City of Ryde Council, as detailed in **Section 2.3.6** of this RTS Report.

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		▪ *All new pits to be designed to reduce hydraulic losses.* ▪ *Including longitudinal sections with hydraulic grade lines.* ▪ *Trees to remain to be marked,* ▪ *Trees affected by new driveway and stage 3 building to be marked.* ▪ *Trees affected ONLY by the new 2100mm pipe to be marked.* ▪ *Alignment of the 2100mm to be adjusted at the northwest boundary to minimise the impact on trees. At the Southwestern boundary, the new 2100mm pipe to be adjacent to the boundary (easement to start at the boundary).* 3. ***Proper staging plan** will be required for consideration by Council. A staging plan showing the initial stages of the works proposed shall be provided. The stages plan must consider the following steps in order (these steps must be followed in order; a step cannot start until the previous step is completed):* ▪ *New 2100mm to be built by the applicant, as per plans approved by Council.* ▪ *New 4.5m wide Easement to be created in favour of Council for the purpose of drainage stormwater* ▪ *Easement created for stage 2 to be extinguished.* ▪ *Existing 1800mm Council pipe to be removed.* ▪ *Old easement/s for drainage purposes in favour of Council, that are no longer required, to be extinguished.* ▪ *Structural works can start. No footing works can start until the existing 1800mm pipe is removed from the site.* 4. ***Architectural Plans to be updated.** Architectural plans to be updated showing all Finished Flood Levels of all Ground Floors, with the intention to compare these levels with the Flood Levels provided in the Flood Assessment Report (Issue 1) prepared by Northrop dated 14/10/2021 (Northrop Ref: SY170095-02_B01 [A]).* e. *The proposed easement alignment along the north western side boundary is poorly considered and results in the destruction of all significant vegetation/ trees that were required to be protected on the site. A relocation option may only be considered by Council is it minimized impact on the trees and matter of costs of relocating the trunk drainage pipe is resolved prior to the SSD determination.*	
	1.11. Revised engineering plans required to enable further assessment/ review	*There are details missing that is required for Council to review the proposal. These include:* a. *A revised proposal to maximise retention of trees and also comply with Ryde Development Control 2014 – setback requirements, that is 5m clear landscaped setback along the north western side boundary.* b. *Provide a plan showing the preferred or proposed relocation option excluding all the irrelevant once since some of the options currently shown are on the neighbouring property and cannot be considered under the current SSD.* *The Civil Engineering Plans prepared by Northrop, dated 22/10/2021, to be updated to include revised Option 2 (2100mm DIVERSION IN 4.5M WIDE EASEMENT) and address other matter highlighted under Section 9 above.*	Updated Engineering Plans, prepared by Northrop, are provided in **Appendix D10** of this RTS Report.

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	1.12. Stormwater management	*The development proposes an extensive increase in hardstand area yet has not accommodated OSD in the drainage system. This is unsatisfactory considering the scale of development and Council's DCP policy requirement for such a system.* *The applicant has sought exemption from this based on a clause in the DCP which considers flood affectation. The intent of this clause respects that the implementation of onsite detention storage, typically below ground, may pose difficult to implement on a flood affected lot as they could be inundated or above ground tanks be dislodged and contribute to flood debris. This was resolved with the original application (LDA2018/322) by the implementation of large rainwater tanks located in the undercroft area which were to be anchored. The same system could be replicated in this proposal. Notably the applicant's consultant has supported parking in the region of flooding and therefore locating large rainwater tanks in this area should not pose a threat of being dislodged by flood water. The report also appears to claim that the implementation of OSD would "negatively impact flood levels within the vicinity of the development" however this is not well clarified and considers only the impact on the site itself, not downstream areas which OSD seeks to mitigate.* *Further to the above, whilst the development has provided WSUD devices to address the DCP controls concerning pollution, the stormwater system provides no rainwater storage.*	Onsite detention is provided for as part of the stormwater management scheme for the proposed development. Currently the subject site offers 302.65m^3 of on-site detention storage in two discrete on-site detention tanks. On-site detention tank 1 (OSD1) has a storage volume 91.9m^3, and services the IC2 building, eastern driveway and northern landscaped area. OSD 1 has been in service since initial occupation of the IC2 building. On-site detention tank 2 (OSD 2) is a 210.75m^3 detention tank located within the footprint of the already constructed IC3e building. OSD 2 provides the full on-site detention requirement (minimum 203.78m^3) for Stages 1 (IC3e) and future Stage 2 (IC3w) as per Condition 42 of in LDA 2018/0322. Currently, only Stage 1 has been constructed, as such the site provides 108.86m^3 more storage than is currently required for constructed development (IC2 and IC3e). The new IC3w development (the subject of **SSD-24299707**) seeks to utilise the over and above 108.86m^3 for on-site detention, as described in **Section 3.1.1.4** of this RTS Report.
	1.13. Vehicle access and parking	*The proposed vehicle access and parking configuration has been reviewed and the following matters are noted;* ▪ *With parking maximums applying in this area, there is scope to remove the number of parking spaces on the site to retain a number of trees adjoining the rear boundary which will adjoin the future Road 1 and therefore may have an implications relating to parking in front setback along this new frontage.* ▪ *The gated entry at the western end is noted to at a diagonal angle to the access road and therefore is contrary to typical traffic control point design (ie perpendicular across the path of travel).* *The Transport report depicts a HRV vehicle accessing the loading bay however a portion of the swept path encroaches over the southern kerb when exiting. This may require adjustment of the plans to ensure the manoeuvre can be safely undertaken in one turn.*	The area in question has been provided, not solely to accommodate parking bays, but to provide both a cranage hardstand to install and replace rooftop plant and to provide an adequate swept path route for the large articulated vehicles which will be servicing the facility to navigate around the arterial roadway. Due to the height / boom range and the physical crane needed, the hardstand must be positioned a set distance from the building to enable the plant and equipment to be craned to the appropriate location on the roof. The project team and numerous external suppliers, contractors and cranage specialists conducted an extensive review of the market equipment, crane options and site specifics. This location was clearly identified as the only opportunity to enable the plant installation and replacement needed to serve the proposed data centre. As the hardstand was deemed essential to the function of the facility, the design team utilized the area (due to the sporadic instance of large articulated vehicle movements) to cater for off-street parking for staff and / or visitors. Complete removal of this hardstand area renders the vehicular access around all sides of the site unachievable and the servicing of the plant to the building impossible. Notwithstanding, the design team have achieved a solution that reinstates a minimum 3m depth of landscaping in this location – refer to response to City of Ryde Council **Item 1.15 – At grade car parking within the rear setback area** for further detail. Updated swept path analysis of the subject site and proposed development has been undertaken and included within **Appendix D6** of this RTS Report.
	1.14. Inadequate side setback along north western side boundary (impact on trees)	*The extension of the building further to north west, pushing the driveway/accessway within the 5m setback, will result in the removal of existing trees with no opportunity for deep soil replacement planting. This is not in keeping with the vision of Macquarie Park Corridor, Sections 2, 7.4, 7.6, 8.2 & 8.6 of Council's DCP Part 4.5 – Macquarie Park Corridor sets out the vision, and objectives of the area. The setback area must remain landscaped (to retain existing trees).*	A further assessment of the relevant Macquarie Park Corridor objectives and controls is provided as follows. **Section 7.4 – Setbacks and Build-to Lines:** Section 7.4 of the RDCP2014 sets out specific "street setback" controls, which in this instance apply to the Talavera Road frontage, the south-eastern side boundary (adjacent to future Road 17) and the rear boundary (adjacent to future Road 1). The building setback required for the north-western side boundary is prescribed by Section 7.6 of the RDCP2014. **Section 7.6 – Rear and Side Setbacks:** The controls set out by Section 7.6 of the RDCP2014 are reassessed in **TABLE 12.**

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		The extension of the building to the north west, whilst within the required 5m setback does not satisfy the above vision and objectives within the Macquarie Park Corridor. The extension has pushed the driveway within the 5m setback requiring the removal of well-established trees that currently screen the existing site and provide a green setback. The removal of these trees takes away the landscape setting and landscape character. Furthermore, there is no ability to provide deep soil replacement planting within the side setback, makes the building visually imposing from the adjoining site as there will be no soft landscaping to screen and soften the building.	**TABLE 12: REAR AND SIDE SETBACKS - MACQUARIE PARK CORRIDOR** **RDCP2014 – Section 7.6 Controls** / **SSD-24299707 Response** **a. Buildings are to be set back 10m from the rear boundary and 5m from a side boundary unless a proposed new road is shown on the site.** – Complies – the proposed building is setback 6.5m from the north-western side boundary. All other setbacks are prescribed by Section 7.4 RDCP2014 controls. **b. Buildings are not to be constructed on the locations for proposed new roads. An allowance for a 5m setback from a proposed road should also be made.** – Complies – the proposal does not result in any buildings being constructed on the location of any proposed new roads. **c. Awnings, canopies, balconies, sun shading and screening elements may project into the rear setback zones.** – Noted. **d. Basement car park structures should not encroach into the minimum required rear or side setback zone unless the structure can be designed to support mature trees and deep root planting.** – Not applicable – the proposal does not include any basement parking. **e. Above ground portions of basement car-parking structures are discouraged and deep soil planting is promoted.** – Not applicable – the proposal does not include any basement parking. **f. Natural ground level is to be retained throughout side and rear setbacks, wherever possible. Refer to Section 8.4 Topography and Building Interface for controls.** – Acceptable on merit – the proposal requires a flat perimeter driveway to meet the operational requirements of the data centre; refer to City of Ryde Council **Item 1.13** response. **Section 8.2 – Site Coverage, Deep Soil Areas and private open space:** Refer to the response to City of Ryde Council **Item 1.4 – Landscaping**. **Section 8.6 – Vehicular Access:** RDCP2014 states the importance of vehicle access being integrated into site planning from the earliest stages to balance any potential conflicts with streetscape requirements and traffic patterns and to minimise potential conflicts with pedestrians. The proposal has captured this and seeks to maintain existing vehicular access points.
	1.15. At grade car parking within the rear setback area	*The proposed at grade parking along the rear south western boundary is not supported by Council. At grading parking is proposed within the rear setback. One of the objectives of having a setback is to provide landscaping so as to ensure that the landscape character of the area is retained and to screen and soften the development from adjoining properties.* *The proposal does not comply with Section 8.7 of DCP Part 4.5 which states (for at grade parking) – parking areas must not be located within the front, side or rear setbacks. The proposal to provide at grade parking within the rear setback does not satisfy Council's objectives to retain and provide landscaping and to minimise the visual impact of car parking on adjoining sites.*	As outlined in the response to City of Ryde Council **Item 1.13 – Vehicle access and parking**, the area in question has been provided, not only to accommodate parking bays, but primarily to provide both a cranage hardstand to install and replace rooftop plant and to provide an adequate swept path route for the large articulated vehicles which will be servicing the facility to navigate around the arterial roadway. The complete removal of this hardstand area renders the vehicular access around all sides of the site unachievable and the servicing of the plant to the proposed building impossible. Notwithstanding, the design team have reviewed City of Ryde Council's suggestion and sought to achieve a suitable outcome for the rear setback area, as described in **Section 2.3.7** of this RTS Report.

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		The failure to retain existing trees and provide replacement tree planting is a major concern as it does not satisfy any of Council's objectives in terms of landscaping and setback zones.	Whilst the proposal is not capable of retaining all existing trees on site, the resolved design seeks to offset the loss of trees on-site through replanting of 83 endemic/native trees, that account for an offset of 1.01:1. In addition, the proposal meets the objectives of the B7 Business Park of the RLEP2014, demonstrating that: ▪ It would provide additional employment opportunities during both and construction and operation of the data centre; ▪ It would provide a complimentary service offering to Macquarie Business Park, including the wider IT sector; ▪ It would support research and development through the secure storage of IT data for both private and public organisations..
	1.16. Plant rooms in front of building	*The two large plant area/rooms (approx. 9m x 14m and 8m x 10m, height of between 5 to 6.5m) are proposed in front setback area adjacent to Talavera Road (behind the required 10m front setback zone). The location of the proposed plants rooms in front of the existing building does not appropriately address the streetscape. Whilst this is an existing building (facing the street), the introduction of 2 large unarticulated plant rooms in front of the building will detract from the existing front façade and the streetscape. The proposal is replying on planting to screen the large plant rooms however such prominent mechanical services should not be located within the front area where is it is visible from the public domain. Given the size of the proposal the facilities should be located within the building itself. Council objects to the location of the plant rooms within the front landscaped area.*	The design team have collectively proposed locating both the plant spaces (Fire and Electrical) to the front of the site due to a number of motivating factors. Being situated adjacent the main road (Talavera Road), there are benefits to being close to main authority utilities. Close access to the main connection points limits the disturbance to the site in question, thus minimising the disruption to construction activities and maintaining access to the facility. This location will also minimise the demolition needed to the recently completed street works carried out under the now operational IC3e development. The associated disruption to the general public should also be minimised. The positioning of these serviced areas has been considered and deemed beneficial in relation to ease of access to emergency authorities. In the event of an incident, the Fire Brigade can and will access the site from Talavera Road (via the eastern gate and the new pedestrian emergency egress on Talavera Road) and continue to the Fire Control Room. The Fire Control Room is situated on the north-eastern corner of the building (directly adjacent these areas) and they will require access to the plant zones in question (fire and hydrant pumps and tank). Co-locating this to the Fire Control Room was considered and deemed necessary from a Safety in Design responsibility. As the site is an established and functioning data centre facility, the in-ground space available to reticulate major utilities (and their associated clearances and easements) through the site is extremely minimal. The design team feel this is the appropriate location to facilitate the services in question. The location was also chosen to help limit the removal of large existing trees on the site. Selection of another area to bring in major utilities of this nature would require extensive clearing, excavation and shoring (which would intersect major tree root systems). The alternative site locations have major established trees which the design team have endeavoured to leave undisturbed. The highlighted location is well within the required building setbacks and the existing street landscaped area directly between it and the street is very well established and contains a number of large trees which screen the views. The landscaping also grades up in height towards the building, further elevating the trees' screening from the street. The landscaping design has nominated a green wall to help further screen the plant in question – refer to **Appendix D2**. An updated Visual Impact Assessment is provided within **Appendix D15**, which has considered all of the above comments and provided a number of rendered views and commentary in support of the suitability of the development.

TABLE 11: RESPONSE TO AGENCY SUBMISSIONS			
SUBMITTER	**MATTERS RAISED**	**COMMENTS / REQUESTS**	**FORMAL RESPONSE**
	1.17. Bulk and scale	*The following matters are raised for applicant's consideration:* ▪ *The height of the roof plant level is approximately 8m which is unusually high. It is recommended that the plant level be reduced to the absolute minimum to minimise the building bulk of the proposal.* ▪ *The screening along the edge of the roof level is supported, but the Applicant should explore the opportunity to setback the screening structure from the parapet as much as possible to reduce the visual bulk. That will assist the proposal in articulating the built form by creating a distinguishable 'body' and a 'cap'.* ▪ *Further articulation is required to break up the 84m long roofline on the south elevation (which will be an important façade to the future Road 1). The straight roofline on the south elevation needs to be broken up visually into two to three components. Strong articulation is also required to visually separate the new works from the existing IC3 building. This can be achieved by creating substantial indents on the elevation, height variation to the parapet and varying setbacks to Road 1, combined with colour and material changes.*	In response to City of Ryde Council's suggestions on bulk and scale, the following further information is provided. **Plant level reduction:** MDC and the project design team are highly motivated to minimise the height of the rooftop screening as this item is a major structural steel element and carries a significant cost premium to install. Architecturally a reduction of this screening is a positive aesthetic outcome, however this should be balanced with providing a reduced visual impact to the surrounding area (i.e. screening the roof plant). To reduce the perceived bulk of the roof plant level, further articulation has been provided through the use of both horizontal screening, precast concrete panels and stainless-steel flutes. With such design refinements, external perception of the roof plant level appears to be circa 5.5m high. **Roof louvre screening reduction:** Through the amended design, HDR have further resolved the façade treatments and materiality, including the screening solutions to the roof level plant deck. Reference should be made to the updated Architectural Plans contained within **Appendix D1** of this RTS Report. **Further articulation of southern façade:** The proposed development (IC3w) is the amalgamation of individual stages of the one whole facility master plan. Since inception, both from an architectural and a client vision, the end goal has been to provide a "One Campus" facility (no differentiation between the "old building" and the "new building"). The request to …"visually separate the new works from the existing IC3 building" is not desirable from an architectural aspiration and this may have a negative influence on the developers ability to attract tenants to all areas on offer within the campus. The "straight roofline" (both louvres and parapet) has intentionally been designed to link the east and west build stages as IC3w (one whole building). They are both fulfilling an operational function, as screening to the roof plant and directing the rainwater to the extreme east and west of the roofline (mandatory for data centre quality compliance). The southern elements of the IC3w floorplates, are all major plant dense rooms. The southern façade and roadway will be utilised to install and replace major plant throughout the life of the building. Introducing further articulation to this façade will both complicate the structural design and render the plant replacement strategy no longer relevant. This will likely require a complete redesign of the facility and greatly affect the long-term operational sustainability of the building. The project design consultants have designed the southern façade with the aspiration to integrate the preceding Stage 1 architectural façade key elements and integrate into the current design. This design has also incorporated the requirement to facilitate the major plant replacement strategy which has been formalised over the past 6 months. The project team feel the as-designed façade submitted within **SSD-24299707** is appropriate and reflects the architectural and client vision. Adding additional articulation for aesthetic reasons will greatly and negatively affect the project design as a whole and potentially its viability moving forward.

TABLE 11: RESPONSE TO AGENCY SUBMISSIONS			
SUBMITTER	**MATTERS RAISED**	**COMMENTS / REQUESTS**	**FORMAL RESPONSE**
	1.18. Interface design	***a. Talavera Road –*** ▪ *The proposed new fence along the Talavera Road frontage and the removal of the existing railings and fence are not supported. If any new fences are required for security reasons, they should be setback and located behind the 10m landscaped setback zone to be screened by the landscape planting and reduce the prominence to the street.* ***b. Façade facing Road 1 –*** ▪ *As stated above the proposed at-grade car parking off the internal access road near the future Road 1 frontage is not supported. The Macquarie Park Corridor DCP has an objective to "minimise the visual impact of car parking on streets, public spaces and adjoining sites." Providing at-grade car parking visible from Road 1 is inconsistent with the desired future character of the area and will not meet the objective of 'better fit' and 'better look and feel' under GANSW's Better Placed framework.* ▪ *Despite the potential level differences with the future Road 1 in the 63-71 Waterloo Road site, providing a retaining wall and railing along the frontage is not supported as they will create a hostile interface to the public domain. An appropriate approach is providing a 10m landscaped setback gradually terracing down from the road reserve to negotiate the level changes and avoid any fencing or railing along the frontage.* ▪ *If any fences are required along the Road 1 frontage for security reasons, they should be provided behind the landscaped setback zone to reduce their visual impacts, similar to the existing setting on Talavera Road.*	In response to City of Ryde Council's suggestions on interface design, the following further information is provided: **a.** The updated Architectural Plans, contained within **Appendix D1** of this RTS Report, have relocated the fence back to the existing alignment. **b.** As detailed in response to City of Ryde Council **Item 1.15**, the interface to future Road 1 has been further resolved as part of this RTS. Further, an assessment of the GANSW *Better Placed* framework has been articulated in response to City of Ryde Council **Item 1.1**, finding that the proposal aligns with the objectives of 'better fit' and 'better look and feel'. In particular, the proposal offers similar attributes to the recently approved Macquarie Park Data centre (SSD-10467). As shown in **Figure 17** the built form approved under SSD-10467 results in a harsh transition from built form to hardstand and then onto the future public Road 22, incorporating 1,200mm retaining wall and fence within very minimal vegetation. In comparison, the proposal and its interface with future Road 1 achieves a far less hostile interface to the future public domain. The proposal offers a fully landscaped rear boundary that will create substantial screening from the future public domain. In relation to fencing, the proposal seeks to establish fencing along the rear perimeter for security reasons. As the timing of the construction of future Road 1 is generally unknown, it is not feasible to adopt stepped fencing at this stage of development. Such an outcome would prove difficult for maintenance of the rear landscape area.
	1.19. RLEP2014 incentive provisions and VPA	*The proposal relies on incentive building height and floor space ratio provisions of the RLEP2014.* *Council advises that the proposed SSD cannot rely on the previous VPA applicable under the DA.* *As such a new VPA between Council and the applicant will be required to ensure that it is reflective of the proposed expansion and increase floor space as part of the proposed SSD. The applicant is advised to refer to Clause 6.9 of the RLEP2014. The VPA should be in place prior to any approval of the SSD.*	A formal VPA offer, and terms has been provided by MDC to City of Ryde Council for their consideration and acceptance.
	1.20. Conclusion	*City of Ryde appreciates the applicants need for the expansion of the data centre, however the design has not taken into consideration a number of critical issues that have been raised in this submission.* *It is recommended that the application be amended to address these issues and additional information be made available for Council to review the matter again before any approval is granted. At that stage Council will be able to provide suggested conditions of consent.*	MDC and the project team have carefully considered each item raised by City of Ryde Council and resolved the design to achieve a balanced outcome for both parties. Since the receipt of City of Ryde Council's submission, dated 21 January 2022, significant ongoing consultation has been undertaken to resolve the proposal. A summary of these dealings are provided in **Section 5.1** of this RTS Report.
	Further matters:		
	2.1. Owner of the site not involved	*Council notes that the "owners" of the site have not been involved in any discussions with Council with respect to applicant's proposal to seek a variation to the easement and a Deed of Variation that currently affects the site. Council seeks that the owners of the land must be involved in any such discussions and not in the absence of the owners. Whether the owner of the land would entertain any further variation to the easement is not known.*	The owner of the site is One Funds Management Limited who is a corporate trustee for the Keppel Data Centre Real Estate Investment Trust (Keppel DC REIT). Keppel DC REIT operates out of Singapore but has been actively involved in the proposed development and provided a letter of consent for the SSD application on 29 October 2021. On 5 November 2021 Keppel DC REIT also specifically provided confirmation of their support for MDC to continue to pursue the easement relocation option with City of Ryde Council, and to also make the VPA offer to City of Ryde Council. In addition, written confirmation from One Funds Management Limited (dated 31 March 2022) is provided as an offer to City of Ryde Council to amend the *Deed of Variation* (2019 Agreement)

TABLE 11: RESPONSE TO AGENCY SUBMISSIONS			
SUBMITTER	**MATTERS RAISED**	**COMMENTS / REQUESTS**	**FORMAL RESPONSE**
			so that they location of the previously agreed future easement alignment (Varied Easement) is replaced with the location of the proposed New Easement, which will follow the new proposed 2,100mm stormwater pipeline alignment. Refer to **Appendix D27** of this RTS Report for One Funds Management Limited letter of consent.
	2.2. Council rights over the easement	*City of Ryde has a legal right to the existing easement under the building and the new easement that was created via the LDA process and has no preference to see the building built on it. As Council is a party to the easement, it is not in Council's interest to entertain any further variations to the easement especially when the cost burden and risks on Council increases to keep maintaining the existing easement/ pipe will increase significantly. This matter is detailed in the submission to DPE.* *City of Ryde has not granted its consent as the beneficiary of the easement for applicant to build over it, with respect to this SSD proposal. Council's rights and interests under the terms of the easement are not affected by the provisions of clause 1.9A(1) of the Ryde Local Environmental Plan 2014 by virtue of clauses 1.9A (2)(a) and (3) of that Instrument.*	It is understood that City of Ryde Council has a legal right to the existing easement and the future easement approval (Varied Easement) under LDA2018/322. As MDC propose to undertake the works associated with the new 2,100mm stormwater pipeline and associated easement, in accordance with the Terms Sheet proposed to City of Ryde Council, the necessities of the abovementioned future easement and the *Deed of Variation* that currently affects the site would therefore be superseded. It is expected that upon registration of the new easement, the existing arrangements would be relinquished.
	2.3. Major overland flow path	*The site is affected by a major overland flow path and the proposal is likely to have significant adverse impact on the flow path. This impact has not been investigated in detail. The catchment captures flow from estimated 40 hectare of land upstream. This type of development that is proposing to block majority of the flow path will warrant a solution as part of the proposed development work. The Overland Flow Path – Pre and Post Development Scenarios (1in20 yr, 1in50 yr, 1in100 yr ARI), including the proposed new stormwater pipe must be submitted to Council. This will require external assessment (cost of external consultants assessing the flood models and reports to be covered by applicant).* *In addition to this matter, please note that a condition of LDA condition required a Restriction on Use Covenant be registered placed on the Title of site as follows:* *Appeal No 19/89912* 111. **Creation of a Floodway Restriction.** A restriction as to user is to be placed on the property title to prevent the alteration of the ground surface and maintenance within the 100 Year Average Recurrence Interval (ARI) flow path and also not to have any structure placed inside without Council permission. The terms of the restriction shall be generally in accordance with Council's draft terms for provision for overland flow and to the satisfaction of Council. The extent of the identified overland flow path within the subject site shall be shown on a scale sketch, attached as an annexure to the request forms. City of Ryde Council shall be the authority empowered to release or modify the Restriction. Documentary evidence of registration of the instrument with the Land Registry Services shall be submitted to Council and the Principal Certifying Authority prior to the issue of an Occupation Certificate for **Stage 1**/use of the building *It needs to be established that the proposed footprint will not unacceptably block the flow path.*	A detailed flood study has been prepared by Northrop, and included within **Appendix D11** of this RTS Report. The study has been prepared based on a previous approved development assessment using Council's adopted flood study–namely the Macquarie Catchment Flood Risk Management Study and Plan (Bewsher, 2011). Amendments to the model are presented as previously discussed with City of Ryde Council. The results presented in the Flood Assessment Report suggest that the proposed development is not expected to have a significant adverse flood impact on the subject site or in adjacent properties. The below ground network and overland flow path through the subject site have also been assessed. The below ground network is based on the data presented in City of Ryde Council's adopted flood study, while the overland flow path has been designed using 12D software. The proposal includes the diversion of the existing 1800mm stormwater pipe around the perimeter of the subject site and at the same time, upgrade the trunk pipeline to a 2100mm stormwater pipe. The results presented in the Flood Assessment Report suggest the diversion and the proposed development are not expected to result in a significant adverse flood impact on the subject site or in adjacent properties. Reference should be made to the updated Flood Assessment Report, included in **Appendix D11**, for detailed impact assessment.

TABLE 11: RESPONSE TO AGENCY SUBMISSIONS			
SUBMITTER	**MATTERS RAISED**	**COMMENTS / REQUESTS**	**FORMAL RESPONSE**
	2.4. Impact on trees and need to reduce footprint	*Fine tuning the overall footprint of the building to allow retention of additional trees and allow adequate area for driveway (and pipe works and wider easement if relocation option was agreed). Trees on neighbouring trees are also affected.*	The subject site is considered of low ecological value, as assessed by Cumberland Ecology in response to City of Ryde Council **Item 1.1** and **Item 1.3**, and a BDAR waiver has been granted for this proposal, including an updated BDAR waiver in response to the proposed amended development. A carefully selected landscape setting has been chosen for the subject site, comprising a mix of native and endemic plant species, shrubs, trees and grasses, enhancing the biodiversity of the site. 2,978m^2 of landscaping has been proposed for the site, equating to 14.8% of the site being landscaped, short of the 20% site landscaping requirement. While tree clearing is necessary, the proposal has ensured that sufficient landscaping is provided to soften the proposed built form and achieve an outcome that is comparable to similarly approved developments in the area and the overall intent for the Macquarie Park corridor. It is acknowledged that the proposal warrants unavoidable impact to existing trees, which is dictated by various aspects of data centre design. The proposal seeks to offset loss of on-site vegetation by replanting 83 endemic/native trees, approximately 290 shrubs and 5,600 groundcovers, involving tree planting along the Talavera Road frontage, and further landscape buffers at the rear of the subject site to inform the interface with future Road 1. The resolved design seeks to offset the loss of trees on-site through replanting at a rate of 1.01:1. The second aspect of this item is the potential impact to neighbouring trees. The proposal seeks consent for the removal of just four (4) trees that are in close proximity to the rear of the subject site. These trees are located within the rear of Lot 3 DP1043041, which will be impacted by the alignment of future Road 1 regardless of the impacts associated with the proposed development.
	2.5. Proposed pipe alignment conflicts with sewer line	*The proposed easement conflicts with Sydney Water easement and sewer line. It seems that no service investigation and has been conducted and any reports or details have not been included in the SSD. Even Sydney Water may have issues. The depth of the pipes and achieving required gradient may also be an issue.*	The proposed alignment of the stormwater pipeline (i.e. along the southern and western site boundaries) is in close proximity to the existing 300mm sewer main. A detailed services investigation has been undertaken to accurately locate the alignment and depth of the Sydney Water sewer main (using normal survey techniques). This information has directly informed the alignment of the proposed stormwater pipeline. Subsequently an application to deviate the sewer main has been approved by Sydney Water on 19 October 2022; refer to **Appendix D25** of this RTS Report. it is expected that the Sydney Water requirements will form a suitably worded condition of consent.
	2.6. Lack of clarity/details on drainage option	*The feasibility of the easement relocation (engineering, environmental and cost) have not been investigated by the applicant as the SSD Application lacks details with respect to proposed easement and drainage realignment.*	The EIS for **SSD-24299707** included various easement alignment options for further discussion with City of Ryde Council, and 'Option 2' has emerged as the preferred option through consultation with City of Ryde Council. Northop has prepared engineering drawings (incorporating a hydraulic assessment) describing the alignment of the alternate easement route in more detail than the diagrams presented as part of the consultation process with City of Ryde Council. The engineering drawings are presented in **Appendix D10** of this RTS Report.

TABLE 11: RESPONSE TO AGENCY SUBMISSIONS			
SUBMITTER	**MATTERS RAISED**	**COMMENTS / REQUESTS**	**FORMAL RESPONSE**
	2.7. Issues in expanding building over the existing easement	*The current SSD comprises of a more extensive development and seeks to build on the existing easement as well as the location of the new easement agreed in LDA2018/322. The building footprint over the existing pipe is much greater compared to previous approval and parts of the building encumbering over the easement that will limit access for maintenance and replacement will be much greater. Council considers the SSD proposal as a new application with a substantial increase to the footprint of the building over the easements, thereby restricting Council's ability to maintain the existing easement, increasing the costs of future maintenance/ relocation and increase in risk and liability to Council with no inherent benefit to the community. Structural integrity of the building would be compromised resulting from any excavation, hammering, large excavators (possibly 6-7m depth of excavation) and this is additional risk on Council each time Council goes in to maintain or even during relocation of the pipe. Every time Council goes in to maintenance works may require Council to do dilapidation report, liability insurance etc. Given the much longer under croft area under the new proposal, it will become much more difficult for larger excavators etc to enter within the limited easement area and machinery to work in between the columns. This is a hazardous working space, for the workers and for the integrity of the building, therefore it should be avoided. Details were included in the formal submission.*	The proposal has been refined to include the construction of the new 2,100mm stormwater pipeline and associated easement by MDC, in accordance with the Terms Sheet proposed to City of Ryde Council, which will in turn allow for the decommissioning of the existing/redundant 1,800mm stormwater pipeline and associated easement.
	2.8. Major cost in relocating easement/ pipe	*Why should Council bear the cost and increased risks of relocating the drainage pipe. Also note that the longer alignment would require much more work, additional head room to compensate for loss, greater number of pits, different gradients and so on. The developer has to agree to bear the cost of relocating the drainage pipes as the relocation is required for the benefit of the developer.*	As above.
	2.9. No QS or engineering investigation reports	*No QS or engineering investigation reports have been provided regarding the works involving relocation of the pipe, costs and risks involved in accessing the existing easement (under the building) now that a greater length of the easement is being covered by a bigger building with significantly more columns, restrictions on access for machinery, construction costs, liability on Council and so on. Applicant needs to commission service reports, QS Reports, survey, Work method staging details etc. Council would then peer review as owners of the easement.*	Refer to **Appendix D22** of this RTS Report.
	2.10. Timing of drainage relocation	*If any drainage relocation option were to be agreed to, the trunk drainage line needs to be relocated at the time of construction of the building and be carried out by the developer.*	The proposal has been refined to include the construction of the new 2,100mm stormwater pipeline and associated easement by MDC, in accordance with the Terms Sheet proposed to City of Ryde Council, which would be undertaken as staged in **Item 1.10**.
	2.11. Council seeks that no Consent be issued for the SSD unless any variations that may be agreed to is registered on title	*Council seeks that no Consent be issued for the SSD development unless any variations that may be agreed to is registered on the title.*	MDC understand City of Ryde Council's concern and accept that any variations to the existing easement are registered on the title. This is the same approach that was agreed in 2019 under LDA2018/322. However, it is proposed that this be included as an appropriately worded condition of consent.

5.3 RESPONSE TO PUBLIC AND OTHER STAEKHOLDER SUBMISSIONS

No public submissions were received for the project.

PART 6 ASSESSMENT OF IMPACTS

The following subsections provide an updated assessment of potential impacts, with consideration of the amended proposal, as described in **PART 3** of this RTS Report.

TABLE 13 is included to recognise the Secretary's Environmental Assessment Requirements (SEARs) for SSD-24299707, dated 12 August 2021, and those matters that have been reassessed.

TABLE 13: UPDATE ON SEARs ITEMS	
SEARs Items	**Updated Assessment**
1. Statutory and strategic context	Refer to **PART 4** of this RTS Report.
2. Suitability of the site	Not applicable – the proposal, as amended, maintains its suitability for the subject site.
3. Community and stakeholder engagement	Refer to **PART 5** of this RTS Report.
4. Back-up power system	Refer to **Section 6.1** of this RTS Report.
5. Noise and vibration	Refer to **Section 6.2** of this RTS Report.
6. Air quality	Refer to **Section 6.3** of this RTS Report.
7. Traffic and transport	Refer to **Section 2.3.2** of this RTS Report.
8. Hazard and risk	Refer to **Section 2.3.1** of this RTS Report.
9. Infrastructure requirements	Refer to **Section 2.3.6** and **Section 3.1.1** of this RTS Report.
10. Soil and water	Refer to **Seciton 6.5** of this RTS Report.
11. Flood risk	Refer to **Section 6.6** of this RTS Report.
12. Urban design and visual	Refer to **Section 6.7** of this RTS Report.
13. Ecologically sustainable development	Refer to **Section 2.3.5** of this RTS Report.
14. Greenhouse gas and energy efficiency	Refer to **Section 6.8** of this RTS Report.
15. Biodiversity	Not applicable – an updated BDAR waiver has been obtained for the amended proposal.
16. Aboriginal cultural heritage	Not applicable – the proposal, as amended, does not warrant any changes to the ACHAR.
17. Non-aboriginal cultural heritage	Not applicable – there are no heritage listed items within the vicinity of the subject site.
18. Socio-economic	Refer to **Section 6.9** of this RTS Report.
19. Waste	Refer to **Section 6.10** of this RTS Report.
20. Planning agreement/development contributions	Refer to **Section 6.11** of this RTS Report.

6.1 BACK-UP POWER SYSTEM

Through design efficiencies, an increase to the total power consumption capacity of the subject site is sought, up to 66MW – which is a 5MW increase from the original proposal under SSD-24299707. This proposed increase results in an increase to the back-up power supply.

The proposal, as amended, includes provision for 20 backup generators, plus one (1) small diesel emergency generator. The potential impacts of this increase have been assessed in the following subsections:

- Noise and vibration (**Section 6.2**)
- Air quality (**Section 6.3**)
- Infrastructure requirements (**Section 6.4**)

- Greenhouse gas and energy efficiency (**Section 6.8**)

The generators will be subject to scheduled maintenance activity and will be tested during business hours Monday to Friday. The maintenance testing schedule will be quarterly with runtime for each individual engine less than half an hour. In addition, generators are tested individually with one annual load bank test for each generator taking approximately 1 hour.

The generators are scheduled to operate on the loss of mains utility. The site is supported by two (2) substations and power loss at the site is uncommon.

TABLE 14 provides the updated testing regime.

TABLE 14: PROPOSED GENERATOR TESTING REGIME		
Parameter	**Development Proposal**	**Development As Amended**
No. of generators	34 (inclusive of 16 existing and 18 proposed)	**37** (inclusive of 16 existing and **21** proposed)
Test of frequency per generator	Quarterly	Quarterly
Run time per test	60 minutes	60 minutes
No. of generators per test	1 – 5	1 – 5
Number of tests per day	8	8
Testing schedule	Monday to Friday (9:00 am to 4:00 pm)	Monday to Friday (9:00 am to 4:00 pm)
Total testing time for all generators	136 hours per annum (based on 1 generator per test)	**148** hours per annum (based on 1 generator per test)

The backup generators would only be used temporary in an emergency situation (i.e. where there is a grid power outage). During an emergency situation, all 21 generators can operate concurrently.

The exception is periodic maintenance testing, which would only occur during the daytime and one generator would be operating at any one time.

6.2 NOISE AND VIBRATION

This RTS Report seeks to clarify a number of matters that relate specifically to noise and vibration; in particular, further justification is proposed to confirm the appropriateness of the noise monitoring data. With some of design changes proposed, an updated NVIA has been prepared by Renzo Tonin (**Appendix D5**), to determine any changes to the potential levels of noise and vibration at sensitive receivers and the levels of mitigation that would be required to enable compliance with the current NSW requirements.

The updated NIVA suggests no increase to the potential noise and vibration impacts during construction and operation of the proposed development, subject to the following changes to the mechanical plant noise mitigation measures:

- **Fan wall units**: The fan wall units are located servicing the data halls from Level 2 – Level 6. Each fan is within its unit's respective casing. Additionally, all fan wall units are located within fully enclosed rooms. Based on the provided reference material as presented in Table 3, the only clear path for noise from operation of the fan wall units to receivers is via transmission through the precast concrete walls. Consequently, any noise transmission from IC3w due to operation of the fan wall units will be negligible.
- **Air handlings units**: The AHUs are distributed in the plant rooms between Levels 1-6. Any openings for ventilation and temperature control, may require acoustic louvres to minimise

noise emission emanating from Level 4 and Level 5 of the western face of the building. Internal noise levels within the Level 4 and Level 5 plant zone have been calculated, and the insertion loss of in-principle acoustic louvres obtained. The required performance of the acoustic louvres is presented in Table 31 of the updated NIVA. Further review will be conducted during detailed design, subject to the final plant selection and required louvre areas.

It is concluded that the proposal, as amended, does not increase noise and vibration impacts for the project.

6.3 AIR QUALITY AND ODOUR

This RTS Report seeks to clarify a number of matters that relate specifically to air quality, with an updated AQIA, prepared by SLR Consulting (**Appendix D4**), to determine any changes to the potential air quality and odour impacts of the amended proposal and the levels of mitigation that would be required to enable compliance with the current NSW requirements.

The main identified potential sources of air emissions remain as suspended particulate matter and deposited dust during the construction stage, and combustion gases and particulate matter during the operational phase of the project.

The potential for off-site air quality impacts during the construction stage of the project were assessed using a qualitative risk-based approach, concluding that given the nature of the operations proposed, the location of the subject site and the local meteorological conditions, exceedances of the relevant air quality criteria are unlikely.

The potential for off-site air quality impacts during the operational stage of the project were conservatively assessed quantitatively through the use of dispersion modelling techniques in general accordance with the 'Approved Methods' (NSW EPA, 2022). The dispersion modelling study, which accounted for worst-case testing conditions predicted no exceedance of the relevant ambient air quality during operation.

The dispersion of emissions due to emergency conditions, where loss of all feeders to the subject site requiring all generators to operate simultaneously, was conservatively modelled and predicted compliance with relevant CO, SO_2 and PAHs criteria. For PM_{10} and $PM_{2.5}$, the 24-hour average criterion is predicted to exceed the relevant criteria at 14 and 6 of the 57 receptors modelled respectively. These exceedances are limited to days with elevated background PM_{10} and $PM_{2.5}$ concentrations. At the worst impacted receptor, four (4) additional (on top of background exceedances) PM_{10} exceedances and two (2) additional $PM_{2.5}$ exceedance were predicted. For NO_2, exceedance of the 1-hour average criterion were predicted for 11 of the 57 receptors modelled. However, the predicted low likelihood of an exceedance coupled with the low likelihood of an emergency condition event happening was demonstrated to result in a very low risk of an exceedance occurring.

It is concluded that air quality impacts do not pose a constraint for the project.

6.4 INFRASTRUCTURE REQUIREMENTS

The proposal, as amended, warrants changes to the delivery of infrastructure, as documented in **Section 3.1.1** of this RTS Report.

6.5 SOILS AND WATER

In relation to water, the amended proposal has:

- resolved a more sustainable outcome for water use efficiency (WUE); and
- clarified the provision for onsite stormwater management.

The total WUE for the proposal, as amended, has reduced to 597,000m^3. This is attributed to the building redesign, which achieves a sustainable outcome from more hyperscale and more liquid immersion. From these, the proposal achieves a lower power usage efficiency (PUE) of 1.3 and lower water consumption, as described in **Section 2.3.5** of this RTS Report.

The matter of onsite stormwater detention is addressed as part of this RTS Report. The proposed internal site drainage is designed to convey all runoff from the 5% AEP event via a below ground pit and pipe network inclusive of an existing OSD tank (OSD 1). All new proposed roof areas are to drain via internal and external pipework to new above ground OSD tank (OSD 2) and subsequently connect into the localised site stormwater network prior to discharging to City of Ryde Council's stormwater system. The proposed pit and pipe network drains the site to the existing City of Ryde Council stormwater network on Talavera Road.

The development proposes to use existing site drainage infrastructure. This can be achieved as the proposed building generally extends over existing hardstand area. Thus, the runoff from the new roof area is similar to it falling directly onto ground level paved areas.

To maintain consistency with the drainage system approved under LDA2018/0322 the same total roof area will be directed to OSD 1 and OSD 2. Stormwater runoff from the new building roof will be connected directly to OSD 2, which has the capacity to accommodate this additional flow, refer to **Figure 9**. The stormwater runoff from the western hardstand areas will be captured in a new drainage system that joins with the outlet pipe from OSD 2 ultimately discharging to City of Ryde Council's system near the northern boundary.

The Stormwater Management Report, prepared by Northrop Consulting, and contained with **Appendix D13** of this RTS Report, has been updated to reflect the changes to the stormwater management approach.

6.6 FLOOD RISK

The Flood Impact Assessment has been updated, by Northrop Consulting Engineers, to review any changes in flood behaviour as a result of the amended proposal. The detailed results and discussions are presented in the updated Flood Impact Assessment contained within **Appendix D12** of this RTS Report.

The results suggest generally only minor changes are observed during the 1% AEP. The largest change is observed in the driveway along the southern boundary with an increase in flood depth in the order of 95mm. This increase is expected to be due to regrading to suit the new concept layout. Only relatively minor changes in flood levels are observed elsewhere on the subject site and in the vicinity during the 1% AEP. During the PMF the results suggest minor decreases across the south-western portion of the subject site.

An increase in flood elevation, which is generally less than 40mm, but peaks up to 130mm, is observed around the existing IC2 loading dock. This is expected to be created by the introduction of the new service lift adjacent to the dock, constricting the flow path and raising flood levels locally. However, the PMF flood levels in this area remain below the nearby FFL of 52.50m AHD and the minimum of 300mm freeboard as per the RDCP2014 is achieved. Similarly, an increase of up to approximately 170mm is observed at the base of the proposed fire stair located adjacent to the IC2 loading dock. As outlined by the updated Flood Impact Assessment the fire stair is not considered a habitable space. As such, this increase is not expected to significantly adversely impact this proposed stair.

Overall, the revised modelling demonstrates minor changes to flood behaviour at the subject site.

6.7 URBAN DESIGN & VISUAL

The proposed built form has been amended to introduce further design efficiencies, following the resolution to construct the new 2,100mm stormwater pipeline and relinquish the existing/redundant 1,800mm pipeline (which currently traverse the centre of the subject site). With this, design amendments at the ground level have allowed for further efficiencies in the location of data halls and plant across all levels of the development.

The proposed floor plate has been designed to best practices of data centre design and to fit seamlessly with the existing building. Towards the Talavera Road boundary, the building has been purposely set back to allow a landscaped area to the entry point. This allows the proposed building to nestle into its surroundings and cohesively address the form and architecture of the existing building.

Overall, the proposal, as amended, has maintained a similar building bulk and scale, with the main external design changes being to the façade treatments, as described in **Section 3.1.2** of this RTS Report. The proposal also continues to align with Better Placed principles documented in **Section 4.2.3** of this RTS Report.

To ensure that no additional visual impacts result from the amended proposal, an updated Visual Impact Assessment (VIA) has been prepared by Geoscapes and included within **Appendix D15** of this RTS Report. Whilst it is still concluded that the proposed development will create visual impacts for receptors in close proximity of the site, the following table provides a comparison of the visual impacts from the original VIA (dated 3 November 2021) and the updated VIA (dated 26 October 2022).

TABLE 15: VISUAL IMPACT COMPARISON

Receivers	**Significance of Visual Impact**	
	Original proposal	**Amended proposal**
VP1 – Talavera Road (North), Macquarie Park	Minor/negligible	Minor
VP2 – Talavera Road (East), Macquarie Park	Moderate/minor *	Moderate/minor *
VP3 – Macquarie Gardens, 1-15 Fontenoy Road, Macquarie Park	Moderate/minor *	Moderate/minor *
VP4 – Waterloo Road, Macquarie Park	Minor **	Minor **
VP5 – 54 Waterloo Road (Novartis), Macquarie Park	Moderate/minor *	Moderate/minor *
VP6 – Natura Apartments, 82 Waterloo Road, Macquarie Park	Minor *	Minor *
VP7 – 8 Khartoum Road, Macquarie Park	Minor *	Minor *

Note: * The 'Athena' (SSD-10467) has been represented as an opaque massing model in the Year 15 image. The above significance of visual impact has been determined on the MDC development in isolation only, however once Athena has been constructed the sensitivity from this location is likely to decreased due to another large scale development within the view and in close proximity. This in turn is likely to lower the significance of visual impact.

** The visual receptor is located adjacent to the Macquarie Square development at 45-61 Waterloo Road. Following construction of Macquarie Square the MDC Data Centre would likely be no longer visible at this location and further northwest along Waterloo Road. Therefore, any visual impacts assessed may not be relevant in the near future.

The proposal, as amended, remains supportable from a visual impact perspective.

6.8 GREENHOUSE GAS AND ENERGY EFFICIENCY

With the proposed amendments to the project's operational parameters, further consideration is given to the energy usage of the proposal to demonstrate all reasonable and feasible measures that would

be implemented on site to minimise the proposal's greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050).

The following provides a summary of the emissions arising from consumption:

- In the first year of operation, based on the predicted 2022 emissions factors, diesel consumption will result in 0.0460 tonnes of CO^2 (increase from 0.0207 tonnes of CO_2).
- In the first year of operation based on the predicted 2022 emissions factors, Electricity consumption will result in 368,084 tonnes of CO^2 (increase from 308,032 tonnes of CO^2).
- The total greenhouse gas (GHG) emissions for life of the asset is predicted to be 5,886,747 tonnes CO_2 equivalent (increase from 4,926,330 tonnes CO_2 equivalent).
- The total GHG emissions for the first year of operations is predicted to be 368,084 tonnes CO_2 equivalent (increase from 308,032 tonnes CO_2 equivalent).
- The total GHG emissions for the last year of operations is predicted to be 0 tonnes CO_2 equivalent (no change from original proposal).
- The average annual GHG emissions for the life of the asset is precited to be 115,426 CO_2 equivalent (increase from 965,95 CO_2 equivalent).

The proposed development is predicted to contribute 368,084 tonnes CO_2 equivalent to the 2022/2023 State and territory greenhouse gas inventories. The predicted GHG emissions will fall year on year in line with the decarbonisation of grid electricity. The proposed generators are capable of using biodiesel when a suitable supply becomes available in Sydney, therefore conservatively estimated the changeover from diesel to biodiesel to be 2050.

Through the combination of a decarbonised grid and the use of biodiesel the proposed development is predicted to have 0 GHG contributions by 2050. Digital infrastructure assets have a central role to play in the transition to a low-carbon economy and sustainable cities and can improve the states GHG emissions per gross domestic product.

6.9 SOCIO-ECONOMIC

The proposal, as amended, is not expected to generate greater negative impacts to the socio-economic environment, but rather increase the benefits by the provision of increased data storage capacity and refined façade treatments and landscaped offerings.

The proposal generates positive impacts for the local Macquarie Park community and aligns with its values and expectations for the future in relation to growth and change in Macquarie Park. The proposal is consistent with the Community Strategic Plan vision for the City of Ryde. The data centre expansion will support positive socio-economic impacts across the seven identified categories, it is most relevant to the category 'Our smart and innovative city'.

The proposal supports community aspirations for Macquarie Park as home to world-class businesses, innovation, research and education precinct. The proposal also aligns with improved movement and place outcomes for Macquarie Park, noting its strategic location next to Macquarie Park Station.

The proposal aligns with the vision for North Park (Ngalawala), as set in the Macquarie Park Innovation Precinct Place Strategy, supporting the generation of a new commercial activity hub. The data centre expansion does not impact on the current and future amenity of the North Park neighbourhood area.

The proposal supports liveability and sustainability outcomes for Macquarie Park through improved utilisation of an existing site. NSW's economic development ambitions place an increased reliance on the role of the digital economy and related investment in leading-edge physical infrastructure. IC3w will be one of the most advanced data centres in Sydney, forging a vital investment in supporting economic growth, creating jobs of the future, building sovereign security skills, and offering protection against cyber threats.

6.10 WASTE

As a result of the proposed amendments, the Waste Management Plan has been updated by SLR Consulting, as appended in **Appendix D20** of this RTS Report. Key changes include:

- increase to the quantities of construction waste
  (note – this increase is largely attributed to underestimate of construction waste in the original calculations)
- Slight increase to the estimated operational waste

To accommodate the additional operational waste quantities, the proposal has been amended to include provision for the following waste storage areas.

TABLE 16: **UPDATED** TOTAL RECOMMENDED STORAGE AREA FOR OPERATIONS

Waste type	**Bin required**	**Collection frequency**	**Storage area size (m²)**
General waste	2 x 1,100L	4 x weekly	7.6
Cardboard	1 x 1,100L	4 x weekly	3.8
Other recyclables	1 x 1,100L	3 x weekly	3.8
Electronic waste	1 x 1,100L	As required	1.7
Bulky waste	-	As required	8.0
Total			**35.0**

The proposed waste storage area is shown **Figure 20**, adjacent to the existing loading dock, and has a total area of 35m².

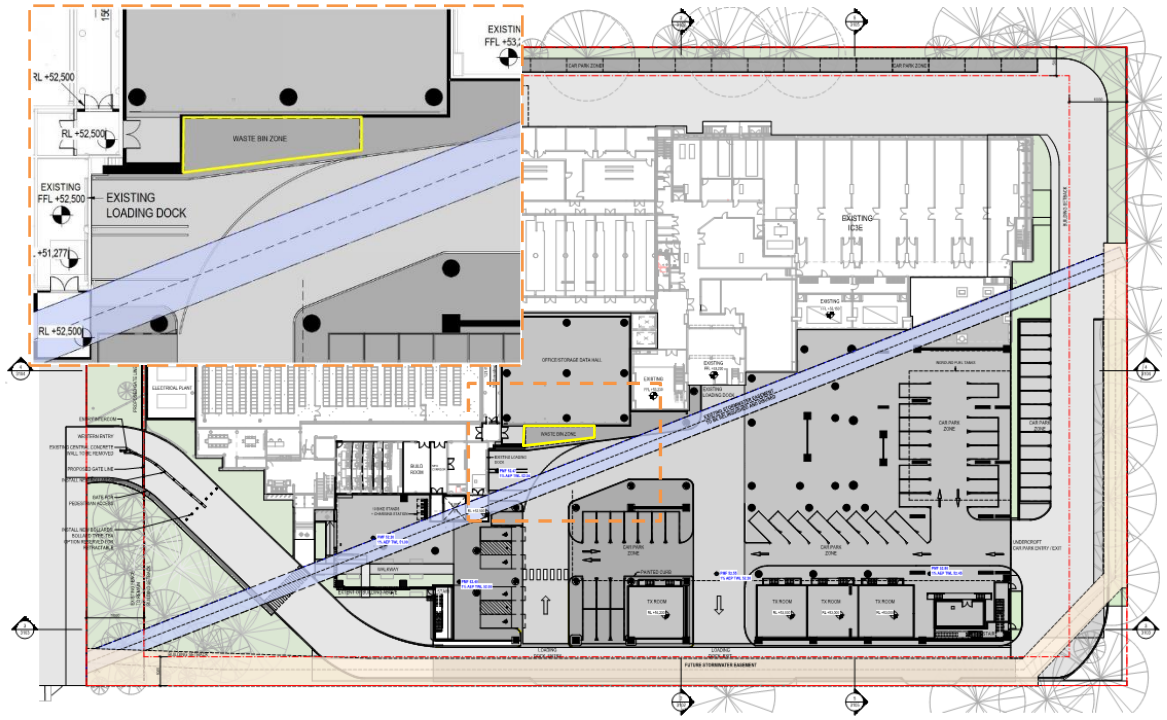

Figure 20: Indicative Waste Storage Area layout (Source: SLR, 2022)

6.11 PLANNING AGREEMENT/DEVELOPMENT CONTRIBUTIONS

MDC seeks to enter into a VPA with the City of Ryde Council to invoke the incentive height and FSR provisions under Clause 6.9 of the RLEP2014. A formal offer has been made for City of Ryde Council's consideration and acceptance.

This formal offer demonstrates that satisfactory arrangements would be made to contribute to the provision of, necessary local and regional infrastructure required to support the development, in accordance with the RLEP2014.

PART 7 PROJECT JUSTIFICATION

7.1 JUSTIFICATION

The proposed development is justified on environmental, social and economic grounds and is compatible with the locality in which it is proposed. The proposed development would enhance the subject site from an otherwise underutilised landholding to a productive employment generating facility.

This RTS Report seeks to provide an updated justification and evaluation, as required, for the proposal as a whole.

7.1.1 Supports State, Regional and Local Planning Objectives

The proposed development is consistent with the objectives, provisions and vision contained within *A Metropolis of Three Cities – Greater Sydney Region Plan*; the *North District Plan*; and RLEP2014. The proposal would contribute to employment generation in an area already earmarked for employment through both State and Regional planning policies.

Increasing the capacity and capability of secure data storage and cloud-based infrastructure is of regional, state and national significance. The events of recent times have radically shaped the way we live and work. The massive demand for cloud-based services, is generating more data and driving demand for localised storage offerings. The NSW DPE recognises data centres as a type of development 'well-placed' to support short-term economic recovery from COVID-19. Data centres were included as one infrastructure asset encouraging investment and job-generating development in NSW DPE's Productivity Acceleration Package. This relative importance is reflected in amendments to the SRD SEPP (and now the Planning Systems SEPP), which temporarily allows greater scope for warehouses and data centres to be assessed as SSD.

Nationally, data centres are a foundational element of cyber security. Cyber security is one of the Federal Government's six (6) 'Priority Industry Growth Sectors', and the State and Federal Governments both have cyber security strategies in place. AustCyber's *Cyber Security Sector Competitiveness Plan* (2020 Update) notes a need for critical infrastructure (which includes data centres) to enable the rapid digitization of the Australian economy. Cyber security is a 'horizontal sector' that creates growth opportunities for other industry priority growth sectors, including advanced manufacturing and medical technologies and pharmaceuticals.

The strategic importance of the subject site, Macquarie Park and the Eastern Economic Corridor to the regional and national economy is outlined in the Greater Sydney Commission's (GSC) *North District Plan*. Macquarie Park is identified as a strategic centre and health and innovation precinct, anticipated to support between 73,000 (baseline target) and 79,000 (higher target) jobs by 2036 (an additional 15,000-19,000 jobs on 2016 estimates). Outcomes supported by this proposal are consistent with the strategic direction of *A Metropolis of Three Cities* and the *North District Plan*. The proposed development aligns with the following planning priorities of the *North District Plan*:

- N8: Eastern Economic Corridor is better connected and more competitive: The Eastern Economic Corridor extends from Macquarie Park to Sydney Airport, containing close to a third of Greater Sydney's jobs. The proposal would contribute to further job creation in this respect.
- N9: Growing and investing in health and education precincts: The proposed data centre expansion at the subject site supports the growth of the Macquarie Park Corridor, which is intended as a hospital and high-tech industrial employment hub.
- N10: Growing investment, business opportunities and jobs in strategic centres: The proposed data centre expansion supports improved access to jobs, goods and services in the Macquarie Park strategic centre.

- N13: Supporting growth of targeted industry sectors: Increased data storage capacity would enable economic opportunities created by changing technologies, embracing opportunities to expand start-up and digital innovation that can allow people to work closer to home.

The provision of data storage provides a platform for a competitive digital economy, with increased capacity creating the conditions for multinationals to enter the Australian market. CBRE (2020) *CBRE Research: Asia Pacific Data Centre Trends H1 2020* identifies Sydney is one of four tier one data centre markets in the in Asia-Pacific, recording the strongest growth in IT capacity in the Asia Pacific region in the last financial year – an increase of 76%. This is significantly greater than comparable cities such as Singapore (14%) and Hong Kong (27%).

Importantly, the proposed development would provide data storage solutions for both public and private cloud, not just public cloud. This enables the proposal to support services for multinational corporations that require their own private hosting solutions, as well as Tier 1 Government agencies. Emerging digital technology (including cybersecurity, AI and quantum computing) is a priority industry to achieve Global NSW's vision for a globally connected, smart and vibrant economy.

The proposed development is an expansion to the existing data centre, co-located with an existing facility that is demonstrated to operate in line with the character of the local area. The expansion would further support the secure operation of business to business and business to consumer services, helping provide employment-generating opportunities in the professional services, start-up and creative industries in the City of Ryde LGA, the Macquarie Park Innovation District and the Eastern Economic Corridor. If additional data supply is not provided in well suited locations, additional pressure would be placed on cloud-based storage capacity, limiting the capability of digital transformation in economy.

The proposed development would assist in providing new employment opportunities (directly and indirectly), through the promotion of further industry diversification in regional growth industry sectors (i.e. ICT sector). Accordingly, this proposal would not alter the quantity or configuration of land currently zoned for commercial-related uses pursuant to the B7 Business Park zone under RLEP2014. Rather, the proposed development would represent a logical extension to the existing data centre approved at the subject site, under LDA2018/0322. The proposal would support the retention and maintenance of existing commercial land stocks and employment objectives, whilst promoting land use diversification (and generating new employment sources), and would generate more employment through the relevant planning, construction, operational and maintenance stages.

The proposed increase in capacity seeks to align with the demand of committed customers, with contractual commitments.

Additionally, the proposed development would see the following public benefits:

- Supporting a distributed work model and the ability to 'work from anywhere'. There is a liveability benefit from enabling digital infrastructure that extends beyond the precinct, supporting people to work flexibly if it suits their circumstances;
- Reduced travel distances, leading to savings in time and fuel for local working residents, due to much better access to the subject site, as opposed to other dense employment areas at the local level. It is noted, that a reduction in travel times and distances generates related benefits, including reduced vehicle wear and tear, reduced fuel costs, reduced pollution, reduced traffic congestion, reduced risks of car accidents and more time which can be spent either working, socialising or undertaking other activities;
- New employment opportunities from other industries enabled by increased capacity and capability, such as knowledge sector businesses operating within the City of Ryde LGA and Macquarie Park Innovation District;
- Job creation near homes and consequent economic multiplier impacts, which boosts the local economy.

NSW's economic development ambitions place an increased reliance on the role of the digital economy and related investment in leading-edge physical infrastructure. The subject site will be one of the most advanced data centres in Sydney, a vital investment in supporting economic growth, creating jobs of the future, building sovereign security skills, and offering protection against cyber threats.

NSW Government's Jobs Plus Program commits $250 million to strengthening the state's economy, creating up to 25,000 jobs before 30 June 2022 by supporting companies expanding their footprint in NSW. Through Investment NSW, the Jobs Plus Program has confirmed its support for this project, providing infrastructure rebates and payroll tax relief to accelerate the creation of additional jobs on this site. This support will facilitate the development of a new Sovereign Cyber Security Centre of Excellence, bringing NSW one step closer to its vision of being the leading cyber security jurisdiction in the Asia Pacific Region.

7.1.2 Demonstrates an Appropriate Use of a Permissible Development

The proposed development would retain and contribute to the growth of Macquarie Park Corridor and the wider region. The proposed development would be a highly appropriate and compatible (given its contiguousness to other existing operations) response to the strategic goals and objectives of the whole region as set out in *A Metropolis of Three Cities – Greater Sydney Region Plan* and the *North District Plan*. These documents all envisage employment-generating land uses at this location.

The proposed development, being an expansion to an existing data centre, is permissible with consent, pursuant to Clause 2.31(1) of the Transport and Infrastructure SEPP, which permits that development for the purpose of storage premises used for the storage of data and related information technology hardware may be carried out by any person with consent on land in a prescribed zone.

The B7 Business Park zone is identified as a 'prescribed zone' pursuant to Part 2.2, Division 3, Clause 2.31(2) of the Transport and Infrastructure SEPP. As such, despite the prohibition of the RLEP2014, the proposed data centre expansion is permissible with consent.

Whilst it has been established that the proposal is permissible with consent in the B7 Business Park zone, under the Transport and Infrastructure SEPP, the proposal should also be considered against the objectives of the B7 Business Park zone, which seek to:

- *To provide a range of office and light industrial uses*
- *To encourage employment opportunities*
- *To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area*
- *To encourage industries involved in research and development.*

The proposal is considered consistent with the zoning, based on the following:

- It would provide additional employment opportunities during both and construction and operation of the data centre;
- It would provide a complimentary service offering to Macquarie Business Park, including the wider IT sector;
- It would support research and development through the secure storage of IT data for both private and public organisations.

In summary, the subject site is highly-suited to accommodate the proposed development based on the following factors:

- It's location, subject to the provisions of the B7 Business Park zone pursuant to the provisions of RLEP2014 and the Transport and Infrastructure SEPP;

- All potential environmental impacts concerning the proposed development are able to be suitably mitigated within the site;
- The proximity to the regional road network provides accessibility and linkages to the broader Sydney Metropolitan Region and regional areas of NSW;
- The capability for continued employment-generating opportunities (both directly and indirectly), during both the construction and operational (including maintenance) phases;
- It's consistency with the surrounding commercial nature of the area;
- The subject site has not been identified as containing any items of Heritage significance, including Aboriginal Cultural Heritage and State or Local Heritage items, that require further consideration; and
- The subject site can be developed with appropriate visual amenity achieved given its surrounding context.

7.1.3 Minimises Environmental Impacts

Specialist consultants have assessed the potential impacts of the proposed development, determining that it could be undertaken with minimal environmental impacts. The commissioned reports have collectively concluded that no significant risk to the locality would result from the proposed development. Where impacts have been identified, these fully-developed strategies are set out in detail for mitigation. These measures have been revisited and updated where necessary, as addressed within **Appendix C** of this RTS Report.

7.1.4 Creates Compatibility with Surrounding Development

The proposed development is compatible with existing land uses on adjacent lands, all of which provide very similar employment-generating functions. All are within the immediate vicinity of the proposed development. Detailed investigations undertaken, as part of this application, conclude that no significant environmental cumulative impacts, would occur from the proposed facility.

7.1.5 Delivers Ecologically Sustainable Development

The principles of ESD, as outlined in Schedule 2, section 7 of the EP&A Regulation, have been carefully considered in the formulation of this amended proposal and are addressed as follows:

7.1.5.1 Precautionary Principle

After careful assessment by both the project team and specialist consultants, it is concluded that no unmanageable threat or irreversible damage to the environment, would result from the proposed development.

7.1.5.2 Inter-generational Equity

The project team and specialist consultants have examined the overall effects of the proposed development, on both the natural environment and the existing built environment within the vicinity of the subject site.

This detailed assessment has concluded that no unreasonable use of resources, affectation of environmental processes or prevention of the use of land for future generations would occur from the proposed development. The proposed development would improve the status of the subject site and contribute to the economies of the region through both substantial investment and new employment, thereby improving the inter-generational equity.

7.1.5.3 Improved Valuation, Pricing and Incentive Mechanisms

Increasing the capacity and capability of secure data storage and cloud-based infrastructure is of regional, state and national significance. The events of recent times have radically shaped the way people live and work. Macro-economic forces have created challenging conditions for many enterprises and traditional business models are being pushed aside; how a company responds will determine its future – adapt and survive or resist and fold.

The provision of data storage provides a platform for a competitive digital economy, with increased capacity creating the conditions for multinationals to enter the Australian market, as referenced in **Section 5**.

Further, the NSW Government has states that 'each data centre development directly contributes as much as $1 billion in construction and fit-out costs to the NSW economy and forms critical infrastructure for the IT sector', emphasising the importance of these investments towards economic stimulus.

This proposal also offers a total capital investment value of $333,630,431.00 (excluding GST).

7.1.5.4 Environmental Management

The proposed development implements significant and elaborate measures that avoid, contain and address any possible impacts, through avoidance, better design and management. This is exemplified through the following measures., which would be implemented throughout both the construction and operational phases of the proposed development as outlined in **Appendix B** of this RTS Report.

7.2 CONCLUSION

Based on the findings of the original EIS and further matters considered as part of this RTS, it is concluded that the proposed development is consistent with the Objects of the EP&A Act, under section 1.3, particularly the notion of promoting the orderly and economic development of the land.

The proposed development is considered a quality outcome, which responds to several ambitions to increase data storage offerings at a local, State and Regional level. Additionally, in the promotion of employment-generating opportunities throughout the construction and operational phases, the proposed development further delivers on the rationale of full economic utilisation and proper and orderly development of the land for its intended purpose namely employment uses. The proposed development is suitable and is considered orderly and appropriate, based on social, cultural, economic and environmental matters.

Based on the specialist studies and extensive investigations carried out for the proposed development, the following conclusions are made:

1. **Strategic and Statutory Context** – The proposal aligns with the strategic planning framework, namely *A Metropolis of Three Cities* and the *North District Plan*. Consistency is achieved through:

    - N8: Eastern Economic Corridor is better connected and more competitive: The Eastern Economic Corridor extends from Macquarie Park to Sydney Airport, containing close to a third of Greater Sydney's jobs. The proposal would contribute to further job creation in this respect.
    - N9: Growing and investing in health and education precincts: The proposed data centre expansion at the subject site supports the growth of the Macquarie Park Corridor, which is intended as a hospital and high-tech industrial employment hub.
    - N10: Growing investment, business opportunities and jobs in strategic centres: The proposed data centre expansion supports improved access to jobs, goods and services in the Macquarie Park strategic centre.

- N13: Supporting growth of targeted industry sectors: Increased data storage capacity would enable economic opportunities created by changing technologies, embracing opportunities to expand start-up and digital innovation that can allow people to work closer to home.

The appropriateness of the proposed development is also demonstrated through compliance with the Transport and Infrastructure SEPP, Planning Systems SEPP and RLEP2014 in that it achieves the employment generating outcomes envisaged for the subject site with minimal impact on surrounding land uses.

2. **Suitability of the Site** – The subject site is highly suitable for the proposed development, as it is directly adjacent to the existing data centre. It also presents a suitable platform for development in that it is relatively flat, is located within close proximity of key infrastructure and has limited environmental constraints.

3. **Community and Stakeholder Engagement** – The EIS and supporting reports, including this RTS Report, have been prepared in accordance with the matters prescribed by the SEARs. A comprehensive level of community and stakeholder engagement has been undertaken for the proposed development, which has continued through the RTS phase.

4. **Noise and Vibration** – The updated NVIA carried out by Renzo Tonin & Associates has quantified construction and operational noise emissions from the proposed development and has assessed noise at the nearest sensitive receivers. Based on the assumptions and inputs the assessment, it has been established that operation of the site can comply with relevant EPA and City of Ryde Council noise emission requirements.

5. **Air Quality and Odour** – The updated AQIA prepared by SLR Consulting has assessed construction and operational air quality implications from the proposed development, with a range of mitigation measures recommended to ensure that short-term impacts associated with construction activities are minimised.

   Based upon the assumptions presented in the AQIA and the implementation of the recommended mitigation methods, the site is assessed as being capable to not give rise to significant air quality and odour impacts during the construction and operational phases associated with the proposal.

   Traffic and Transport – Sufficient access and parking arrangements are provided as part of the proposed development, ensuring that there would be no undue impact on the surrounding road network. Further construction impacts have been considered and addressed as part of this RTS Report, which have determined suitable management measures to be employed during construction.

6. **Hazards and Risks** – The storage of DGs has been analysed, and it is concluded that the risks at the site boundary are not considered to exceed the acceptable risk criteria; hence, the facility would only be classified as potentially hazardous and would be permitted within the current land zoning for the site.

7. **Infrastructure Requirements** – The proposed development seeks to ensure that future planned infrastructure can be accommodated to support the proposed and future development. This includes the proposed construction of a new 2,100mm stormwater pipeline within the subject site, and the relinquishment of the existing 1,800mm stormwater pipeline, in accordance with the Terms Sheet proposed to City of Ryde Council.

8. **Soils and Water** – The proposed development is supportable based on soil and water investigations and management methodologies. Stormwater modelling indicates that the

proposed OSD tanks will preserve the permissible site discharge rates from new roof catchment areas for the range of AEP's as required by City of Ryde Council's Stormwater and Floodplain Management Technical Manual.

9. **Flood risk** – The proposed development is not expected to have a significant adverse flood impact on the subject site or adjacent properties.

10. **Urban Design and Visual** – The proposed development provides a suitable urban design outcome that reflects the existing locality.

11. **Ecologically Sustainable Development** – The proposed development would aim to achieve a high Green Star Rating by applying ESD principles. The proposed design is highly energy efficient. A maximum PUE of 1.3 is expected, which places the proposed development at NABERS Energy Stars rating between 5 and 5.5 stars and meeting the CNDCP's target of 1.3.

12. **Greenhouse Gas and Energy Efficiency** – Through the implementation of the initiatives noted within this statement the project clearly demonstrates the commitment to ESD principles and reduction of GHG emissions throughout the design, construction, and operation.

13. **Biodiversity** – A BDAR wavier has been granted. By 1971 all vegetation across the site had been cleared, and some of the current plantings appear to have been undertaken in the intervening period between then and 1986, in neat lines surrounding hard stand car parking areas. As the entire site has been cleared of historical vegetation, there are no current ecological values present on the site pertaining to a remnant or regrowth occurrence of either TECs.

14. **Aboriginal cultural heritage** – There are no recorded Aboriginal sites, nor have any areas of Aboriginal archaeological sensitivity been identified within the subject site.

15. **Non-Aboriginal cultural heritage** – The proposal does not involve works that would impact a listed heritage item, and there is low potential that significant archaeological remains are present within the subject site.

16. **Socio-economic** – Long term socio-economic impacts of the proposal are expected to be positive, with benefits to be felt by groups extending beyond the immediate study area, through the enhanced digital connectivity and broad economic benefits realised in operation.

17. **Waste** – The proposal has adopted waste management areas to ensure the effective management and disposal of waste can occur.

18. **Planning agreement / Development contributions** – The applicant seeks to enter into a VPA with the City of Ryde Council to invoke the incentive height and FSR provisions under Clause 6.9 of the RLEP2014. A formal offer has been made for City of Ryde Council's consideration and acceptance.

Based on the findings of the EIS, and this subsequent RTS Report, it is concluded that the proposed development would support the continued and targeted growth of the digital economy. The proposal would contribute to the retention and growth of the Macquarie Park Corridor. The proposed development is therefore considered suitable from both a local and regional context and is considered orderly and appropriate, based on social, cultural, economic and environmental matters.

Given the above reasons and the satisfaction of both of the Objects of the EP&A Act and the aims of Transport and Infrastructure SEPP and RLEP2014, it is recommended that the proposed development, as described in **Section 3.1** of this RTS Report, be supported subject to relevant and reasonable conditions.

APPENDIX A
UPDATED PROJECT DESCRIPTION

PROJECT DESCRIPTION – SSD-24299707

Project:	State Significant Development Application (SSD-24299707) For Talavera Road Data Centre Campus Expansion
Applicant:	Macquarie Data Centres
Site:	17 – 23 Talavera Road, Macquarie Park Lot 527 DP 752035

The proposed development consists of an extension to the existing data centre at 17 – 23 Talavera Road, Macquarie Park (Lot 527 DP 752035), approved under LDA2018/0322, to allow for additional data storage capacity in response to increasing demand.

The proposal seeks to operate 24 hours per day, seven (7) days per week, and would generate approximately 610 construction jobs per annum for the new purpose-built data centre and a total of approximately 49 operational jobs for the consolidated facility.

The proposal is summarised below:

- Minor earthworks involving cut and fill works;
- Construction of new 2,100mm stormwater pipeline and decommissioning of existing 1,800mm stormwater pipeline;
- Infrastructure comprising civil works and other utilities servicing;
- Removal of 79 trees and planting of 83 new trees (within the site);
- Removal of 4 trees (outside the site);
- Construction of a seven (7) storey plus ground level, building extension, comprising up to:
    - An additional 16,142m^2 of GFA
    - 15 data halls
- Increase in total data centre capacity by an additional 38MW;
- Increase in the diesel storage capacity by an additional 461,000L;
- Additional 20 backup generators, plus one (1) small diesel emergency generator;
- Additional set of dual 33kV feeder;
- Storage of lithium ion batteries (Class 9 DGs);
- 71 On site car parking spaces;
- Complementary landscaping (2,978m^2);
- Hours of operation being on a 24 hours per day, 7 days per week, basis.

Consent is sought to develop the subject site for additional data storage, in accordance with the following plans.

REGISTER OF PROJECT PLANS			
Drawing	**Title**	**Rev.**	**Date**
Civil drawings			
170095-02 C201.01	COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN	01	26.10.22
170095-02 C201.02	SPECIFICATION NOTES	01	26.10.22
170095-02 C202.01	SEDIMENT AND SOIL EROSION CONTROL PLAN	01	26.10.22
170095-02 C203.01	LEVEL DIFFERENCE PLAN	01	26.10.22
170095-02 C204.01	SITEWORKS AND STORMWATER MANAGEMENT PLAN	01	26.10.22
170095-02 C204.21	STORMWATER LONGITUDINAL SECTION – SHEET 1	01	26.10.22

170095-02 C204.22	STORMWATER LONGITUDINAL SECTION – SHEET 2	01	26.10.22
170095-02 C204.51	STORMWATER CATCHMENT PLAN	01	26.10.22
170095-02 C208.01	RETAINING WALL ALIGNMENT CONTROL PLAN	01	26.10.22
170095-02 C208.11	RETAINING WALL LONGITUDINAL SECTION – SHEET 1	01	26.10.22
Tree works & landscaping drawings			
210503 SSD-00	LANDSCAPE COVER SHEET	R	04.11.22
210503 SSD-01	LANDSCAPE MASTERPLAN	R	04.11.22
210503 SSD-02	LANDSCAPE DETAIL PLAN	R	04.11.22
210503 SSD-03	TREE RETENTION & REMOVAL PLAN	R	04.11.22
210503 SSD-04	LANDSCAPE SECTIONS	R	04.11.22
210503 SSD-05	SPECIFICATIONS & DETAILS	R	04.11.22
210503 SSD-06	PLANT SCHEDULE & IMAGERY	R	04.11.22
Architectural drawings			
10301489 A1001	COVER PAGE	B	26.10.22
10301489 A1301	SITE PLAN	G	26.10.22
10301489 A1302	LOCATION PLAN	F	26.10.22
10301489 A2001	GFA – SHEET 1	G	26.10.22
10301489 A2002	GFA – SHEET 2	G	26.10.22
10301489 A2003	GFA – SHEET 3	C	26.10.22
10301489 A2101	GENERAL ARRANGEMENT – GROUND LEVEL	E	26.10.22
10301489 A2102	GENERAL ARRANGEMENT – LEVEL 01	E	26.10.22
10301489 A2102.1	GENERAL ARRANGEMENT – LEVEL 01B	C	26.10.22
10301489 A2103	GENERAL ARRANGEMENT – LEVEL 02	E	26.10.22
10301489 A2104	GENERAL ARRANGEMENT – LEVEL 03	E	26.10.22
10301489 A2105	GENERAL ARRANGEMENT – LEVEL 04	E	26.10.22
10301489 A2106	GENERAL ARRANGEMENT – LEVEL 05	E	26.10.22
10301489 A2107	GENERAL ARRANGEMENT – LEVEL 06	E	26.10.22
10301489 A2108	GENERAL ARRANGEMENT – ROOF LEVEL	D	26.10.22
10301489 A3011	NORTH ELEVATION	E	26.10.22
10301489 A3012	WEST ELEVATION	E	26.10.22
10301489 A3013	SOUTH ELEVATION	E	26.10.22
10301489 A3014	EAST ELEVATION	D	26.10.22
10301489 A3101	SECTION – 1	B	26.10.22
10301489 A3102	SECTION – 2	B	26.10.22
10301489 A3103	SECTION – 3	B	26.10.22
10301489 A3104	SECTION – 4	B	26.10.22
10301489 A3105	SECTION – 5	B	26.10.22
10301489 A8010	INDICATIVE VIEW OF ENTRY	C	26.10.22
10301489 A8011	INDICATIVE VIEWS FROM TALAVERA ROAD	C	26.10.22
10301489 A8051	SHADOW DIAGRAM – SPRING-SUMMER	D	26.10.22
10301489 A8052	SHADOW DIAGRAM – AUTUMN-WINTER	D	26.10.22
10301489 A8051	SHADOW DIAGRAM – SPRING-SUMMER	D	26.10.22
10301489 ADA-3001	OVERALL SITE ELEVATIONS	F	26.10.22

APPENDIX B
SUBMISSIONS REGISTER

SSD-24299707 – SUBMISSIONS REGISTER			
Group	**Name**	**Matters**	**Addressed**
Agencies / authorities	EES Group in the NSW DPE	No concerns raised	N/A – no action required for DA.
	EPA	Testing of back-up generators	Refer to **Section 5.2** (**page 56**) of this RTS Report.
	FRNSW	Fire Safety Study	Refer to **Section 5.2** (**page 56**) and **Appendix D8** of this RTS Report.
		Preliminary Hazard Analysis	Refer to **Section 5.2** (**page 56**) of this RTS Report.
		Emergency Response Plan	Refer to **Section 5.2** (**page 56**) of this RTS Report.
	Heritage NSW	No concerns raised	N/A – no action required for DA.
	TfNSW	Cumulative assessment	Refer to **Section 5.2** (**page 57**) of this RTS Report.
	NSW DPE	Air quality	Refer to **Section 2.3.3**, **Section 5.2** (**page 57 – 59**) and **Appendix D4** of this RTS Report.
		Noise and vibration	Refer to **Section 2.3.4**, **Section 5.2** (**page 59 – 62**) and **Appendix D5** of this RTS Report.
		Traffic and access	Refer to **Section 2.3.2**, **Section 5.2** (**page 62 – 63**), **Appendix D6** and **Appendix D7** of this RTS Report.
		Hazards and risk	Refer to **Section 2.3.1**, **Section 5.2** (**page 63**) and **Appendix D8** of this RTS Report.
		Ecologically sustainable development	Refer to **Section 2.3.5**, **Section 5.2** (**page 63**) of this RTS Report.
		Tree removal	Refer to **Section 2.3.7**, **Section 5.2** (**page 65**) and **Appendix D2** of this RTS Report.
		Clarifications	Refer to **Section 5.2** (**page 65**) and **Section 3.1** of this RTS Report.
Councils	City of Ryde Council	Impact on trees	Refer to **Section 2.3.7** and **Section 5.2** (**page 65 – 67**) of this RTS Report.

SSD-24299707 – SUBMISSIONS REGISTER			
Group	**Name**	**Matters**	**Addressed**
		Ecological impact assessment	Refer to **Section 5.2** (**page 68**) and **Appendix D23** of this RTS Report.
		Landscaping	Refer to **Section 2.3.7**, **Section 5.2** (**page 69**) and **Appendix D2** of this RTS Report.
		Deep soil area	Refer to **Section 2.3.7**, **Section 4** (**page 69**) and **Appendix D2** of this RTS Report.
		Communal open space	Refer to **Section 5.2** (**page 70**) and **Appendix D2** of this RTS Report.
		Rights to build over easement	N/A – closed out through the proposed construction of the new 2,100mm stormwater pipeline.
		Previous LDA approval	Refer to **Section 2.3.6** and **Section 5.2** (**page 71**) of this RTS Report.
		Construction over existing pipe/easement	N/A – closed out through the proposed construction of the new 2,100mm stormwater pipeline.
		Proposal to relocate existing stormwater easement	Refer to **Section 5.2** (**page 73 – 75**), **Appendix D10** and **Appendix D13** of this RTS Report.
		Revised engineering plans	Refer to **Appendix D10** of this RTS Report.
		Stormwater management	Refer to **Section 5.2** (**page 76**) of this RTS Report.
		Vehicle access and parking	Refer to **Section 5.2** (**page 76**) of this RTS Report.
		Inadequate setbacks	Refer to **Section 5.2** (**page 76 – 77**) and **Section 4.3.2** of this RTS Report.
		Parking within the rear setback area	Refer to **Section 5.2** (**page 77**) of this RTS Report.
		Plant rooms in front of building	Refer to **Section 5.2** (**page 78**) of this RTS Report.

SSD-24299707 – SUBMISSIONS REGISTER			
Group	**Name**	**Matters**	**Addressed**
		Bulk and scale	Refer to **Section 5.2** (**page 79**) and **Section 4.2.3** of this RTS Report.
		Interface design	Refer to **Section 5.2** (**page 80**) and **Section 4.2.3** of this RTS Report.
		Incentive provisions and VPA	Refer to **Section 5.2** (**page 80**) of this RTS Report.
		Site ownership	Refer to **Section 5.2** (**page 80**) of this RTS Report.
		Council rights over the easement	Refer to **Section 5.2** (**page 81**) of this RTS Report.
		Major overland flow path	Refer to **Section 5.2** (**page 81**) and **Appendix D11** of this RTS Report.
		Impact on trees and need to reduce footprint	Refer to **Section 2.3.7**, **Section 5.2** (**page 82**) and **Appendix D1** of this RTS Report.
		Proposed pipe alignment conflicts with sewer line	Refer to **Section 5.2** (**page 82**) of this RTS Report.
		Lack of clarity/details on drainage option	N/A – closed out through the proposed construction of the new 2,100mm stormwater pipeline.
		Issues in expanding building over the existing easement	N/A – closed out through the proposed construction of the new 2,100mm stormwater pipeline.
		Major costs in relocating easement/pipe	N/A – closed out through the proposed construction of the new 2,100mm stormwater pipeline.
		No QS or engineering investigation reports	Refer to **Appendix D10** and **Appendix D22** of this RTS Report.
		Timing of drainage relocation	Refer to **Section 2.3.6** and **Section 5.2** (**page 83**) of this RTS Report.
		No consent to be issued unless any variations that may be agreed are registered on title	Refer to **Section 5.2** (**page 83**) of this RTS Report.
Stakeholder Groups	N/A	N/A	N/A
Individuals	N/A	N/A	N/A

APPENDIX C
UPDATED MITIGATION MEASURES

PLANNED MANAGEMENT & MITIGATION MEASURES FOR THE PROPOSED DEVELOPMENT

By:	Macquarie Data Centres
In relation to:	State Significant Development Application (SSD-24299707) For Talavera Road Data Centre Campus Expansion
Site:	17 – 23 Talavera Road, Macquarie Park Lot 527 DP 752035

Macquarie Data Centres (MDC), plan to undertake the construction and operation of the proposed data centre, in accordance with the following subsections.

PLANNED MANAGEMENT AND MITIGATION MEASURES FOR SSD-24299707		
ID	**Management / Mitigation Measure**	**Timing**
Administrative Commitments		
A1	**Commitment to Minimise Harm to the Environment** MDC will commit to implement all reasonable and feasible measures, to prevent and/or minimise any harm to the environment, that may result from the construction or operation of the proposed development	Prior to construction, during construction, and during operation.
A2	**Terms of Approval** MDC would carry out the project generally in accordance with the: (a) Environmental Impact Statement; (b) Drawings; (c) Management and Mitigation Measures; (d) Any Conditions of Approval. If there is any inconsistency between the above, the Conditions of Approval shall prevail to the extent of the inconsistency.	Prior to construction, during construction, and during operation.
A3	**Occupation Certificate** MDC would ensure that Occupation Certificates are obtained prior to the occupation of the facilities.	Prior to operation.
A4	**Compliance** MDC would ensure compliance with any reasonable requirement(s) of the Secretary of the DPIE arising from the assessment of: (a) Any reports, plans, programs, strategies or correspondence that are submitted in relation to this Approval; and (b) The implementation of any recommended actions or measures contained in reports, plans, programs, strategies or correspondence submitted by the Project Team as part of the application for Approval.	Prior to construction, during construction, and during operation.
A5	**Structural Adequacy**	During construction.

PLANNED MANAGEMENT AND MITIGATION MEASURES FOR SSD-24299707		
ID	**Management / Mitigation Measure**	**Timing**
	MDC would ensure that all new buildings and structures on the site are constructed in accordance with the relevant requirements of the National Construction Code.	
A6	**Construction Environmental Management Plan** Prior to the commencement of construction, MDC would prepare a Construction Environmental Management Plan (CEMP) that addresses the following: (a) Air Quality; (b) Noise and Vibration; (c) Waste Classification; (d) Erosion and Sediment Control; (e) Materials Management Plan; and (f) Community Consultation and Complaints Handling.	Prior to construction.
A7	**Site Induction** All staff employed on the site by the construction contractor would be required to undergo a site induction.	Prior to construction.
A8	**Operation of Plant and Equipment** MDC would ensure that all plant and equipment used on-site, is maintained and operated in proper and efficient manner, and in accordance with relevant Australian Standards.	During operation.
A9	**Monitoring the State of Roadways** MDC would monitor the state of roadways leading to and from the subject site, during construction, and will take all necessary steps to clean up any adversely impacted road pavements as directed by the City of Ryde Council.	During construction.
A10	**Waste Receipts** MDC would ensure that a permanent record of receipts, for the removal of both liquid and solid waste from the subject site, be kept and maintained up to date at all times. Such records would be made available to authorised person upon request.	During construction and operation.
A11	**Complaints Handling** MDC would prepare an Operational Complaints Handling Protocol for the development, prior to the commencement of operations.	Prior to operation.
Specific Environmental Commitments		
Noise and Vibration		
NV1	During construction, MDC is committed to: ▪ The use of less noisy plant and equipment, where feasible and reasonable. ▪ Proper maintenance of plant and equipment. ▪ Providing special attention to the use and maintenance of 'noise control' or 'silencing' kits fitted to machines to ensure they perform as intended.	During construction.

PLANNED MANAGEMENT AND MITIGATION MEASURES FOR SSD-24299707		
ID	**Management / Mitigation Measure**	**Timing**
	▪ Strategically positioning plant on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel. ▪ Avoiding any unnecessary noise when carrying out manual operations and when operating plant. ▪ Switching off any equipment not in use for extended periods during construction work. ▪ Limiting/avoiding, where possible, the simultaneous operation of noisy plant within discernible range of a sensitive receiver. ▪ Maximising, where practical, the offset distance between noisy plant and adjacent sensitive receivers. ▪ Where practical, plant that is used intermittently is to be throttled down or shut down when not in use. ▪ Direct noise-emitting plant away from sensitive receivers, where possible. ▪ Staging of construction works so as to erect solid external walls first and utilising them to provide noise shielding to the noise sensitive receivers. However, the structural integrity of the external walls should be investigated prior to implementing this measure and should be prioritised over the noise benefits.	
NV2	In addition to the noise mitigation measures outlined above, a management procedure will need to be put in place to deal with noise complaints that may arise from construction activities. Each complaint will need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits.	Prior to construction.
NV3	MDC would consult with nearby stakeholders prior to commencing construction and throughout the construction phase, to keep them informed of progress and allow for feedback to be received on any complaints.	Prior to and during construction.
NV4	Noise monitoring would be carried out during the construction phase, in line with recommendations, as required.	During construction.
NV5	Construction noise and vibration management would form part of the CEMP, to be prepared for the project, as outlined in **A6**.	Prior to construction.
NV6	Where construction activity is to occur in close proximity to sensitive receivers, vibration testing of actual equipment would be carried out prior to their commencement of site operation, to determine site-specific acceptable buffer distances to the nearest affected receiver locations.	Prior to construction.
NV7	MDC would prepare an Operational Noise Management Plan, in line with the recommendations of the Noise and Vibration Report TM162 - 01F02 (Renzo Tonin & Associates, November 2021).	Prior to operation.

PLANNED MANAGEMENT AND MITIGATION MEASURES FOR SSD-24299707		
ID	**Management / Mitigation Measure**	**Timing**
Air Quality		
AQ1	Air quality mitigation and monitoring would form part of the CEMP, to be prepared for the project, as outlined in **A6**.	Prior to construction.
AQ2	MDC would ensure that all neighbouring properties be notified of any event that may require the emergency operation of all generators beyond a 30 minute duration.	During operation.
Traffic and Transport		
TT1	MDC would ensure that a Construction Traffic Management Plan (CTMP) is prepared and submitted to DPIE. This plan would: (a) be submitted to the Secretary for approval prior to the commencement of construction; (b) describe the traffic volumes and movements to occur during construction; (c) detail proposed measures to minimise the impact of construction traffic on the surrounding network, including driver behaviour and vehicle maintenance; and, (d) detail the procedures to be implemented in the event of a complaint from the public regarding construction traffic.	Prior to construction.
TT2	A site specific Traffic Control Plan (TCP) would be prepared in accordance with TfNSW's *Traffic Control at Work Sites Manual* once detailed construction staging is completed post-approval and if the vehicle haulage routes that utilises manoeuvres with traffic control are required.	Prior to construction.
TT3	A Site Supervisor would check all relevant traffic control management measures are in place prior to commencement of works.	Prior to construction.
TT4	MDC would prepare a Workplace Travel Plan.	Prior to operation.
Hazards & Risks		
HR1	MDC would notify Safework NSW of the proposed storage of diesel fuel and lithium ion batteries.	Prior to operation.
HR2	MDC would ensure that the storage of combustible and flammable liquids shall be in accordance with Australian Standard *AS1940 Flammable Liquids Storage and Handling*.	During operation.
HR3	An emergency management plan (EMP) would be prepared in accordance with AS2745:2010. The EMP shall incorporate first attack firefighting training for Emergency Planning Committee and Emergency Control Organisation members and emergency procedures which reinforce containment of fires only where safe to do so.	Prior to operation.
Cultural Heritage		

PLANNED MANAGEMENT AND MITIGATION MEASURES FOR SSD-24299707		
ID	**Management / Mitigation Measure**	**Timing**
H1	An Unexpected Finds Policy would be developed, in the unlikely event that relics are identified during ground disturbing works.	Prior to construction.
H2	Unexpected Aboriginal objects remain protected by the National Parks and Wildlife Act 1974. If any such objects, or potential objects, are uncovered in the course of the activity, all work in the vicinity would cease immediately. A qualified archaeologist would be contacted to assess the find and Heritage NSW and Metropolitan Local Aboriginal Land Council would be notified.	During construction.
H3	If human remains, or suspected human remains, are found in the course of the activity, all work in the vicinity would cease, the site would be secured, and the NSW Police and Heritage NSW would be notified	During construction.
H4	All relevant staff, contractors and subcontractors would be made aware of their statutory obligations for heritage under the NSW *Heritage Act 1977* and best practice as outlined in *The Burra Charter 2013*, during site inductions.	Prior to construction.
H5	Consultation with the registered Aboriginal parties would continue.	Prior to and during construction.
Socio-Economic		
SE1	MDC would notify surrounding businesses and residents one (1) week before commencement of construction activities. Notices should include: ▪ Details of the proposal, including contact details of management team ▪ Hours and expected period of construction ▪ Details regarding process should businesses or residents have concerns, questions or complaints	Prior to construction.
SE2	MDC would set up a feedback process to manage and respond to stakeholder concerns, questions, or complaints. MDC would ensure that this process is clear and accessible to stakeholders such as surrounding businesses and residents.	Prior to and during construction.
SE3	MDC would prioritise engaging with local businesses, where practicable, e.g. site induction for visiting workers to include profile of surrounding food and beverage retailer.	During construction.
Waste Management		
WM1	Effective management of construction materials and construction and demolition waste, including options for reuse and recycling where applicable and practicable, would be conducted. Only wastes that cannot be cost effectively reused or recycled would be sent to landfill or appropriate disposal facilities.	During construction.

PLANNED MANAGEMENT AND MITIGATION MEASURES FOR SSD-24299707		
ID	**Management / Mitigation Measure**	**Timing**
WM2	Waste materials produced from site preparation and construction activities would be separated at the source and stored separately on-site.	During construction.
WM3	The Site Manager or equivalent role would: ▪ Arrange for suitable waste collection contractors to remove any construction waste from site ▪ Ensure waste bins are not filled beyond recommended filling levels ▪ Ensure that all bins and loads of waste materials leaving site are covered ▪ Maintain waste disposal documentation detailing, at a minimum: o Descriptions and estimated amounts of all waste materials removed from site o Details of the waste and recycling collection contractors and facilities receiving the waste and o recyclables o Records of waste and recycling collection vehicle movements, for example, date and time of loads o removed, licence plate of collection vehicles, tip dockets from receiving facility, and o Waste classification documentation for materials disposed to off-site recycling or landfill facilities. ▪ Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as Council, SafeWork NSW or NSW EPA, and ▪ Remove waste during hours approved by Council.	During construction.
WM4	Site inductions, as required under **A7** would ensure the following training is covered: ▪ Legal obligations and targets ▪ Emergency response procedures on-site ▪ Waste priorities and opportunities for reduction, reuse, and recycling ▪ Waste storage locations and separation of waste ▪ Procedures for suspected contaminated and hazardous wastes ▪ Waste related signage ▪ The implications of poor waste management practices, and ▪ Responsibilities and reporting, including identification of personnel responsible for waste management and individual responsibilities.	Prior to construction.
WM5	The following monitoring practices would be undertaken to improve site preparation and construction waste management and to obtain accurate waste generation figures:	During construction.

PLANNED MANAGEMENT AND MITIGATION MEASURES FOR SSD-24299707		
ID	**Management / Mitigation Measure**	**Timing**
	▪ Conduct waste audits of current projects where feasible. ▪ Note waste generated and disposal methods. ▪ Look at past waste disposal receipts. ▪ Record this information to track waste avoidance, reuse, and recycling performance and to help in waste estimations for future waste management plans.	
WM6	Waste audits would be undertaken approximately one (1) month into the operational phase of the project to quantify actual waste generation rates.	During operation.
WM7	Waste avoidance, reuse and recycling measures would implemented throughout the life of the project, where possible.	During operation.
WM8	Monitoring would be undertaken by MDC to ensure waste and recycling management arrangements and provisions for the project are functional, practical and are maintained to the standard outlined in this plan, at a minimum.	During operation.
WM9	Visual assessments of bins and bin storage areas would be conducted by the Building Manager, at minimum: ▪ Weekly, in the first two months of operation to ensure the waste management system is sufficient for the operation, and ▪ Every six months, to ensure waste is being managed to the standards outlined in this document.	During operation.
WM10	Audits would be conducted on a half-yearly basis to ensure waste management provisions are maintained. Quantities of waste and recycling associated with disposal of waste and recycling, including dockets, receipts and other physical records would be recorded by the Building Manager. This would allow reviews of the waste management arrangements and provisions at the site over time. Records of waste disposal would also be available to regulatory authorities such as the NSW Environmental Protection Authority and SafeWork NSW, upon request.	During operation.
Tree Protection		
TP1	Trees to be retained on site must be protected in accordance with AS4970-2009.	During construction.

APPENDIX D
SUPPORTING INFORMATION