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Karen Harragon  
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**RE: SECTION 4.55(2) MODIFICATION TO SSD 7709 – PROPOSED MOOREBANK INTERMODAL PRECINCT WEST – STAGE 2 – SSD 7709 MOD 1**

**PROPERTY AT: MOOREBANK AVENUE, MOOREBANK (LOT 1 DP 1197707)**

Dear Karen,

Reference is made in relation to the subject State Significant Development (SSD) Application – **SSD 7709** – that was approved by the Independent Planning Commission on 11 November 2019 for Moorebank Precinct West Stage 2 at the Subject Site – Moorebank Avenue, Moorebank (Lot 1 DP 1197707).

Following a review of the NSW Department of Planning, Industry and Environment's (DPIE's) request for the Response to Submissions (RTS), dated 7 September 2020, the matters raised have been taken into consideration and are accurately addressed in the response matrix that is attached this letter. Clause 82 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), permits the Planning Secretary of the NSW DPIE to request the Applicant to provide a written response in relation to the issues raised within the submissions following public exhibition. This RTS aims to fulfil the request from the Director-General.

Additionally, as a result of the RTS, the Submissions have been considered and revisions to the design have been made which have resulted in an improved design that addresses the following key concerns:

- **Design:** During the notification period, the JN warehouse included provisions for shade sails in the car park to improve on the visual amenity of the Site reducing potential visual impacts on surrounding residential receivers, whilst further assisting in reducing the potential impacts of the Urban Heat Island Effect. It is noted in the last iteration of Submissions these shade sails were removed as an error; however, for consistency and completeness have been reinstated in the final plans requesting to be approved as part of the Modification Application (refer to **Appendix 1-2**).
- **Visual:** Hatch Roberts Day have prepared a letter of support (refer to **Appendix 3**), which includes a concise summary in relation to the justification of viewpoint locations utilised as part of the Visual Impact Assessment undertaken for the subject Modification Application.
- **Noise:** Renzo Tonin & Associates have reviewed the peer review comments provided by Northrop Consulting and have prepared a comprehensive response matrix which satisfactorily addresses and ameliorates the requirement for any further consideration to be required with respect to acoustics concerning the proposed modifications (refer to **Appendix 4**).

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It is considered, that this information now provides the NSW DPIE with all the necessary facts and relevant particulars related to the proposed modifications subject to this Modification Application (**SSD 7709 MOD 1**); thereby, enabling the assessment to be finalised and the Proposal determined.

We look forward to the NSW DPIE's feedback on the information provided and look forward to progressing with the assessment of this Modification Application.

Should you wish to discuss further, please contact the undersigned.

Yours Faithfully,



Chris Wilson  
Managing Director  
Willowtree Planning Pty Ltd  
ACN 146 035 707

**Enclosed:**

- **Appendix 1 – Architectural Plans JN**
- **Appendix 2 – Architectural Plans JR**
- **Appendix 3 – Visual Impact Assessment Letter of Support**
- **Appendix 4 – Noise and Vibration Impact Assessment Letter of Support**

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<b>Table 1: Response Matrix</b>	
<b>Relevant Entities Response to Submissions</b>	<b>Formalised Response</b>
<b>NSW Department of Planning, Industry and Environment (Karen Harragon – Director – Social and Infrastructure Assessments)</b>	
<b>Visual Impact Assessment</b>	
<p><i>The information provided suggests that the revised visual assessments do not revisit all of the vantage points used to inform the visual impact analysis for the approved MPW Stage 2 project (Arcadis, October 2016). Should some vantage points not be revisited, the Department will assume that the visual impact from these vantage points would remain unchanged as a result of SSD 7709-Mod-1. Please confirm whether this is the case; if not, please ensure that the revised assessment revisits and references all vantage points used to inform the approved MPW Stage 2 visual impact analysis prepared by Arcadis (October 2016).</i></p>	<p>In the letter of support (dated 14 December 2020), Hatch Roberts Day, provide a succinct and accurate analogy with respect to the Viewpoints visited when undertaking their Visual Impact Assessment Reports to inform the justifications on potential visual impacts as a result of the proposed modifications (refer to <b>Appendix 3</b>).</p> <p>Accordingly, the Visual Impact Assessment Reports prepared by Hatch Roberts Day assesses 19 vantage points from the surrounding areas, which includes the vantage points used to inform the visual impact analysis for the approved MPW Stage 2 (SSD 7709) (Arcadis, October 2016). The Table outlined in the letter of support (refer to <b>Appendix 3</b>) demonstrates consistency between the parent SSD Application, as well as the potential visual impacts / changes as a result of the subject Modification Application – <b>SSD 7709 MOD 1</b>. Further consideration is not considered to be required in this respect.</p>
<b>Northrop Review</b>	
<b>Noise &amp; Vibration Impact Assessment Report – Renzo Tonin &amp; Associates Report, 8 July 2020 (Appendix 10 of Planning Report)</b>	
<p>1. <i>3.5 Construction Noise Assessment</i></p> <p><u>Consultant's Remarks:</u></p> <p><i>Construction activities for the proposed modification are predicted to be consistent with the assessed and approved construction noise impacts under MPW Stage 2 SSD 7709.</i></p> <p><u>Northrop Remarks:</u></p> <p><i>Assessment details are not presented in this report. We have assumed that the construction assessment details including the mitigation measures are correct and good.</i></p>	<p>In the letter of support prepared by Renzo Tonin, they confirm that no additional information is considered to be required in this respect (refer to <b>Appendix 4</b>).</p>

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<p>2. 3.7 Construction Related Road Traffic Noise</p> <p><u>Consultant's Remarks:</u></p> <p><i>Construction traffic on site will not alter in respect of the proposed modification and remains in accordance with the construction traffic assessment as approved for MPW Stage 2 SSD 7709. The impact from noise due to construction traffic on public roads is consistent with the MPW Stage 2 SSD 7709 assessment and consent and is considered negligible as per the assessment in the Wilkinson Murray (WM) Acoustic Report.</i></p> <p><u>Northrop Remarks:</u></p> <p><i>The report does not provide assessment details and relies on the results of Wilkinson Murray (WM) acoustic report. We have assumed that the construction traffic assessment by RT&amp;A and by WM are correct and good.</i></p>	<p>In the letter of support prepared by Renzo Tonin, they confirm that no additional information is considered to be required in this respect (refer to <b>Appendix 4</b>).</p>
<p>3. 4 Construction Vibration Assessment</p> <p><u>Consultant's Remarks:</u></p> <p><i>Details of vibration criteria, assessment and mitigations are given in the report. The report concludes that vibration impact is unlikely because of large distances to receivers.</i></p> <p><u>Northrop Remarks:</u></p> <p><i>Vibration assessment section is good. We agree with the analysis, the results and mitigation measures.</i></p>	<p>In the letter of support prepared by Renzo Tonin, they confirm that no additional information is considered to be required in this respect (refer to <b>Appendix 4</b>).</p>
<p>4. 5.1 Applicable Noise Criteria</p> <p><u>Consultant's Remarks:</u></p> <p><i>Based on condition B131 Table 4, RT&amp;A have allocated noise quotas for Casula and have reached at figures of 36dBA for day, 32dBA for Evening and 32dBA for night time.</i></p>	<p>Renzo Tonin note, that as the noise quotas are allocated at the receiver, the distance and propagation consideration are taken into account as part of the assessment of each site against these quotas. This addresses the concern raised. The quota is derived from a "Whole of complex" approach as per the NSW Environment Protection Authority (EPA) Noise Policy for Industry (NPfI), and the focus remains on the cumulative noise level at the receiver. Accordingly, no additional information is considered to be required in this respect (refer to <b>Appendix 4</b>).</p>

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<p><u>Northrop Remarks:</u></p> <p><i>A system with allocated noise quotas is not accurate as noise proportions or distances will offset the quotas. The "Whole of Complex" approach for a Noise Management Precinct as defined in the Noise Policy for Industry (NPI) to treat the precinct as a single site is a good approach / alternative.</i></p>	
<p><i>5. 5 Operational Noise Assessment</i></p> <p><u>Consultant's Remarks:</u></p> <p><i>Section 5 considers operational noise impact upon Casula as it is the nearest residential area.</i></p> <p><u>Northrop Remarks:</u></p> <p><i>Although Casula is the nearest/most critical area concerned with the modifications, other surrounding areas though further away, could be impacted by the same identified noise sources, under normal or adverse meteorological conditions. Therefore, the impact assessment should also include Glenfield &amp; Wattle Grove. Those assessments should also investigate possibility of Sleep Disturbance.</i></p>	<p>Renzo Tonin confirm that the updated noise levels were included in the revised NVIA report (report reference: TL265-01F04 DA Acoustic Assessment_Construction and Operation (r10), dated 16 October 2020) which was provided in the formal Response to Submissions (RtS). This included predicted noise levels for the receivers in Glenfield. Reference should be made in relation to Table 2-1 and Table 2-2 of the report which has been reinserted within the letter of support (refer to <b>Appendix 4</b>) for the additional predicted noise levels, including Glenfield &amp; Wattle Grove for consistency and completeness satisfying the comments from Northrop.</p>
<p><i>6. 5.3 Noise Predictions</i></p> <p><u>Consultant's Remarks:</u></p> <p><i>The consultant has used CadnaA Version 2020 for noise modelling for prediction of total noise from the site.</i></p> <p><u>Northrop Remarks:</u></p> <p><i>1. Details of Noise Modelling are not given in the report. As Northrop does not have access to the noise model, we assume that the noise model assumptions, details, calibration and prediction results are correct/accurate.</i></p>	<p>The predicted noise levels in the subject Modification Application do not cover the detailed noise emissions from operational activities outside of the modification area (JN and JR sites – Warehouses 5 &amp; 6).</p> <p>Accordingly, high level predictions for all Moorebank Precinct West (MPW) activities were undertaken at the EIS stage during the assessment and determination of SSD 7709. More refined detailed design predictions have not been subsequently completed as detailed designs have not been finalised.</p> <p>It is for this reason, in order to manage the total accumulated noise from MPW Stage 2 (SSD 7709), that site-noise quotas were established for all operational areas within MPW Stage 2 (SSD 7709), which included the allocation to the modification area. Each of these quotas are less than the overall total noise allowed from all combined SSD 7709 activities, with the</p>

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<p>2. <i>The noise model does not include all noise sources such as noise from spur trains and cargo handling. Although these sources are not part of the modification, the model should assess the total accumulated noise (noise from modification in addition to the original noise).</i></p>	<p>combined noise level then adding up to the overall noise limits.</p> <p>Other areas of operational noise, such as rail terminal activities are allocated a different noise quota level. This is as per the approach for managing this total accumulated noise detailed in the Operational Noise Management Review (Renzo Tonin &amp; Associates Report, TJ741-11F05 (r4) Moorebank Noise Management Precinct – Requirements review, 30 June 2020), as part of the proposed “Whole of Complex” approach, which was provided during the Modification Application.</p>
<p>7. <i>5.3.2 Noise Prediction Results and Assessment</i></p> <p><u>Consultant’s Remarks:</u></p> <p><i>Table 5.8 of the report presents noise impact levels at receivers R1, R2, and R3 in Casula.</i></p> <p><i>The results are given for two cases 1. without a barrier 2. with an 8m barrier.</i></p> <p><i>Results indicate that without a barrier, at receiver R1 there is 1 dBA exceedance at daytime, 3 dBA in the evening and up to 4 dBA at night under adverse meteorological conditions.</i></p> <p><i>With an 8 m barrier there is no exceedance at daytime, 2 dBA in the evening and 2 dBA at night under adverse conditions.</i></p> <p><i>For other receivers R2 and R3 there is compliance at all times.</i></p> <p><u>Northrop Remarks:</u></p> <p>1. <i>1. It would have been preferred to also present the results for the intermediate 5m wall to compare results with the 8m wall. If the results from increasing the height of the barrier from 5m to 8m are improved by 1-2 dBA then it may be decided not to opt for the 8m barrier. It should be noted that within the feasible and reasonable assessment, a 1-2 dBA difference in noise level is considered a just noticeable difference for human hearing</i></p>	<p>All noise modelling undertaken has included provisions for the 5 metre noise barrier along the western boundary of the Subject Site, outside of the modification area, in accordance with SSD 7709 Condition of Consent – B129, as detailed in Section 5.6.1 of the NVIA assessment included as part of the RtS.</p> <p>There was no intermediate 5 metre barrier assessed in the NVIA report, and therefore no results were presented. Accordingly, all noise barriers for mitigating and managing site noise emissions referenced in the assessment are within the modification site boundary.</p> <p>All noise barrier heights have been referenced against the final finished ground levels of the MPW development. This is independent of the topography in the area of the MPW site prior to the construction of the Site. Therefore, all surrounding receivers have been assessed considering the existing ground topography of the area.</p> <p>Further consideration is not considered to be required in this respect.</p>

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<p><i>and has negligible level difference when perceived by human ear.</i></p> <p><i>It should also be noted that in adverse meteorological conditions at night, the 8m barrier will have the same effect as a 5m barrier with no apparent difference in results.</i></p> <p>2. <i>An 8m barrier height may have additional considerations such as structural and wind loading. The feasible and reasonable analysis indicates that the 8m barrier is feasible, however the marginal dBA improvements should be considered against structural, wind-loading, buildability and cost constraints.</i></p> <p>3. <i>We note that if the RT&amp;A recommended noise criteria (see Operational Noise Management Review Report below), is approved, the noise limits will be more lenient and the noise impact will be reduced further, in which case a 5m wall as required by condition B129 may be adequate.</i></p> <p><i>It is noted that the MPW development is proposed to raise the ground surface level to 3m above the existing ground level. Acoustic barrier heights specified in the report should note relative levels in the report for clarity.</i></p>	
<p>8. <i>5.6.3 Mechanical Plant &amp; Equipment</i></p> <p><u><i>Consultant's Remarks:</i></u></p> <p><i>It is proposed to undertake an acoustic assessment of the mechanical plant at the Detailed Design Stage. In addition, consent conditions require noise monitoring for the mechanical plant when in operation.</i></p> <p><u><i>Northrop Remarks:</i></u></p>	<p>Mechanical plant noise emissions were modelled at the proposed roof level (ie. 45 metres) with an acoustic screen enclosing the area. The modelling included the adverse meteorological conditions as previously detailed in the assessment.</p> <p>Furthermore, as detailed in Section 5.6.3 of the NVIA, noise emissions from mechanical services would be designed (e.g. selected or mitigated) to ensure that the cumulative noise of all equipment does not exceed the applicable noise criteria. This includes all other noise generating plant / equipment on-site, to achieve the allocated noise quota levels.</p> <p>Renzo Toning note, that enclosure doors for the mechanical plant are unlikely to be opened during the night period as part of normal operations, and maintenance would typically occur</p>

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<p><i>The modification involves a height increase from 21m to 45m. A rooftop mechanical plant is proposed at 45m although the locations are not yet finalized. The rooftop plant will be enclosed within 4 walls with no roof.</i></p> <p><i>Although the report identifies mechanical plant as a main noise source, it does not indicate whether the source has been considered at 45m roof level and if that noise will be shielded by the noise wall.</i></p> <p><i>The report does not indicate whether noise propagation to receivers through the roofless enclosure will be affected by the adverse meteorological conditions. It is also possible that Sleep Disturbance may occur when the enclosure door is momentarily opened for access. These items should be considered in the next run of the model and in the upcoming mechanical plant noise assessment.</i></p>	<p>during the daytime period.</p>
<p><i>9. 5.3.2 Noise Prediction Results &amp; Assessment (last Paragraph)</i></p> <p><u><i>Consultant's Remarks:</i></u></p> <p><i>As the project noise criteria for sleep disturbance is based on the development consent, it has been considered and no further or more detailed assessment is considered necessary. Moreover, the proposed site will be developed on an existing warehouse area with similar noise source levels to that assessed in the WM acoustic report and not expected to generate higher LAmax noise levels. Therefore, LAmax noise levels are very unlikely to result in sleep disturbance at the surrounding area as per section 7.4 of WM Acoustic Report.</i></p> <p><u><i>Northrop Remarks:</i></u></p> <p><i>As the development operates 24/7, Sleep Disturbance assessment for night time operations is an important part of the assessment. However, it seems that it has not been considered adequately.</i></p>	<p>As direct reference was made to Section 7.4 of the WM Acoustic Report, this did not include the specific mitigation measures reviewed as part of the NVIA forming part of the subject Modification Application. Accordingly, reference should be made to Section 2.2 of the NVIA for the updated predicted noise levels to assess potential sleep disturbance impacts. Section 2.2 of the NVIA has been included in the letter of support prepared by Renzo Tonin forming part of this Submission (refer to <b>Appendix 4</b>).</p>

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*The report relies on Part 7.4 of WM acoustic report and states that at residential receivers Sleep Disturbance is unlikely to occur. However, the assumptions in the noise calculations in Part 7.4 of WM acoustic report should be clarified and reviewed. Noting that the report assumes a SWL of 122 dBA for a truck trailer break, it states that the corresponding noise at Casula is 43-47 dBA which complies with the 48 dBA Screening Level.*

*However, our calculations indicate that the truck brake noise of 122 dBA will result in a level of 61 dBA at Casula 635m away, which exceeds the 48 dBA screening level.*

*The RT&A report does not specify whether the acoustic barrier was considered in the calculations. However, considering the barrier effect, the noise exceedance figure will be improved.*

**Operational Noise Management Review – Renzo Tonin Report, 30 June 2020 (Appendix 11 of Planning Report)**

*10. Executive Summary*

*Consultant's Remarks:*

*Part of the Executive Summary states: This report reviews the relevant project documentation, relevant project data and recommends noise limits that would be applicable for the Moorebank Noise Management Precinct and are consistent with objectives of the NSW EPA Noise Policy for Industry in Particular Sec 2.8 Noise Management Precincts. These recommended noise limits would seek to amend the operational noise limits established within Table 4 of condition B131 in SSD 7709 to establish noise management objectives which are consistent across MPE and MPW, to manage noise impacts on the community which are appropriate and achievable.*

*Northrop Remarks:*

*RT&A have produced a comprehensive detailed report to review Consent Condition B131. The report is well detailed and documented showing the set criteria is not in line with the existing*

Renzo Tonin note and agree to the comments made by Northrop. However, they recommend that the revised noise limits included in the RtS are adopted for the subject Modification Application. These are presented in Table 2-3, which added a morning shoulder period following an analysis of the EIS monitoring data (refer to **Appendix 4** for consistency and completeness).

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*background noise levels, relevant authority requirements or Australian Standards and proposes new criteria (presented in Table 6.1).*

*Northrop has conducted its own assessment using the ambient levels of the quietest areas defined in Australian standards, (i.e. the lowest background level obtained from AS 1055.3) and ambient level for a rural area (as defined in NPfI) and the results indicate that the noise limits can be set higher than those prescribed by Condition B131 Table 4.*

*Northrop agrees that the Condition B131 is not suitable and agrees with RT&A that the new proposed criteria shown in Table 6.1 of the report should be used. The recommended criteria is appropriate and achievable while maintaining acoustic amenity to the residences.*

**11. 5.2.1.1.1 Established Background Noise Levels**

Consultant's Remarks:

*Substantial noise monitoring has been undertaken at residential areas as part of the assessment at various stages of the environmental impact assessment process.*

Northrop Remarks:

*Noise monitoring has been conducted by previous consultants in the past at Casula, Glenfield and Wattle Grove, presumably at the closest distance to the site. As those areas are large, monitoring at one location at each area is not representative of the whole area.*

*For each area there may be locations with the lowest ambient noise and locations at the closest distance to the site, both will be of interest in the assessment. Therefore initially, monitoring should have been conducted in at least two locations in each area of Casula, Glenfield and Wattle Grove.*

Renzo Tonin confirm that no further action is required in this respect, as this item is in relation to the EIS and initial planning stages of MPW Stage 2.

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*12. 6 Conclusion*

Consultant's Remarks:

*In conclusion, it is recommended that Table 4 of condition B131 in SSD 7709 be modified to reflect the noise limits set out in Table 6-1 of the report.*

*The modified noise limits would apply to the relevant operational noise sources within the Moorebank Noise Management Precinct boundary shown in Fig 5-1. These modified noise limits would apply under prevailing meteorological conditions presented in Section 5.2.1.5.*

Northrop Remarks:

*The outcome of the report is presented in Table 6-1 (proposed replacement for Table 4 of Condition B131).*

*Northrop agrees that the Condition B131 is not suitable and agrees with RT&A that the new proposed criteria shown in Table 6.1 of the report should be adopted. The recommended criteria are appropriate and maintains acoustic amenity to the residences.*

As mentioned above, Renzo Tonin note and agree to the comments made by Northrop. However, they recommend that the revised noise limits included in the RtS are adopted for the subject Modification Application. These are presented in Table 2-3, which added a morning shoulder period following an analysis of the EIS monitoring data (refer to **Appendix 4** for consistency and completeness).

**Willowtree Planning Report, 21 July 2020**

*13. 6.5 Noise*

Consultant's Remarks:

*The Planning Report considers details including Noise & Vibration for the modification. The report considers details of Renzo Tonin acoustic reports and summarizes all their findings and results.*

Northrop Remarks:

- 1. The Willow Tree Planning report has summarized the findings and results of Renzo Tonin report and presents them in a concise and prompt order. However, the*

Renzo Tonin confirm that all items raised in the adjoining column are consistent with the responses provided above and are transcribed in the letter of support provided in **Appendix 4** of this Submission. Further consideration is not considered to be required in this respect.

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*following comments should be noted as listed below:*

- 2. Renzo Tonin's supplementary review to change the noise criteria from values shown in Figure 27 to those values shown in Figure 28 is good. The supplementary review considers the relevant project documentation, relevant project data and recommends noise limits that are more realistic and are considered to be consistent with NSW NPFI requirements.*

*Northrop agrees with details of the supplementary review and recommends changing noise limits of consent B131 to those shown in Figure 28 of the report.*

- 3. If approval is granted to change noise limits of condition B131 to noise limit values shown in Figure 28, the new noise criteria will be more lenient, therefore the noise impact figures presented in the assessment will be lower, and in that case increasing the noise wall from 5m to 8m may not be necessary.*

*RT&A Operational Noise Management Review has provided cumulative noise impact figures from MPW and MPE in Appendix B4, however the noise impact figures are for night period and do not present the whole picture. Considering the noise impact levels of Table 5.8 of RT&A N&V Impact Assessment against the recommended new noise criteria, it appears that at Casula, compliance will be achieved with a 5m wall, in that case a 8m wall will not be required.*

*We recommend the model be run again to assess the impact of cumulative noise (to include mechanical noise and to assess Sleep Disturbance) against the new proposed criteria for confirmation and decision of the above. Considering the limited acoustic attenuation benefits of the 8m wall, with a cost-benefit analysis, a 5m*

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*wall may prove favorable or adequate.*

*The assessments currently consider Casula as it is the closest residential area to the subject site. The model should also extend the assessment to consider noise impacts at other areas i.e. Glenfield and Wattle Grove as noise impacts may occur under normal or adverse meteorological conditions.*

*4. Whether the wall is 5m or 8m it should be noted:*

- *The suggested height is the "effective height", therefore considering the topography of the area and relative heights of the noise source, noise receiver and location of the wall, the "actual height" may need to be higher or lower than 5m or 8m. A topology survey will provide the relative heights of the above points and that will determine the actual height to give an effective height for construction.*
- *Walls of such height may have additional considerations such as structural and wind loading. Lightweight structures such as fibre cement sheets or lapped and capped timber as suggested in the Planning Report may not be suitable.*

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**Appendix 1**  
Architectural Plans JN

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**Appendix 2**  
Architectural Plans JR

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**Appendix 3**  
Visual Impact Assessment Letter of Support

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**Appendix 4**  
Noise and Vibration Impact Assessment Letter of Support