

SICEEP PPP – Response to Department of Planning and Infrastructure Submission

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| | The geographic coverage of the model is insufficient to demonstrate that the critical intersections assessed in the model will operate at a satisfactory level. It is therefore recommended that all upstream intersections are modelled to ensure the traffic approach profiles are correctly represented at the critical intersections. | Originally the geographic coverage of the AIMSUN Micro-simulation model was determined by Mott MacDonald as part of the assessment of the SICEEP development proposal. Hyder carried forward the AIMSUN model and updated it to support the environmental assessment of the SICEEP project. Hyder has re-assessed the geographic coverage of SICEEP for modelling purposes and found that the modelling study area coverage as included in the AIMSUN Micro-simulation model is fit for the study purpose and has advised that no further upstream intersections need to be included in the model in order to ensure that the traffic approach profiles are correctly represented at critical intersections. |
| | | Figure 6 included in the Response to Submissions Report shows key SICEEP development footprint and modelling study area coverage. |
| 1. Traffic Impacts | | The following factors were considered in determining the adequacy of the geographic coverage used in the AIMSUN model: 1. Future Traffic distribution to and from SICEEP i.e., |
| | | North-south movement to and from the development has been captured by Darling Drive/Murray Street and Darling Drive/Ultimo Road intersections. |
| | | East-west movement to and from the development has been captured by Darling Drive/Pier Street and Harbour Street/Goulburn Street/Pier Street intersections. |
| | | North-south movement to and from the development has been captured by Harbour Street and Hay Street. |
| | | Potential impact locations. In general the road network impact from SICEEP will decline with greater distance from the site. Additional traffic impact from SICEEP will be largely confined within the boundary of the modelling study area (see Figure 6 included in the Response to Submissions report). |
| 2. Traffic Impacts | Concern is raised as to whether the proposed single lane Darling Drive has the capacity to accommodate peak hour flows as identified in Table 5-15 of the Transport and Traffic Assessment due to the | A detailed micro-simulation model was undertaken for Darling Drive to further investigate the likely impacts that the multiple access points and pedestrian crossing impacts may have on through traffic. The site's entry/exit points and the pedestrian crossings off Darling Drive have been included in the traffic model. |

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| | introduction of multiple access points and two at grade crossings. In this regard clarify whether the site's entry/exit points and the pedestrian crossings off Darling Drive have been included in the traffic model. | pedestrian crossing locations. The modelling suggests that there will be a minimal impact in |
| | | This information is outlined in more detail in the Transport and Traffic Assessment Addendum Report prepared by Hyder (refer to Appendix M). |
| 3. Traffic Impacts | Provide details in relation to vehicle queuing arrangements along Darling Drive, in particular the number of vehicles to queue at any one time and how this aligns with the expected demand, the location of boom gates and measures to prevent queuing onto Darling Drive. | Exhibition Car Park Access In the northbound direction on Darling Drive, a dedicated right turn lane is provided, with similar queuing storage to existing conditions. Hyder has assessed and confirmed that the proposed |

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| | | will provide 2 boom gates on entry to the car park. The proposed car park will provide 196 spaces. |
| 4. Traffic Impacts | Demonstrate how the traffic model has been suitably calibrated and validated against all agreed criteria within the RMS's Traffic Modelling Guidelines - RMS 13.184. | Hyder previously calibrated AIMSUN traffic model using the October 2012 counts. Further model calibration and validation has been undertaken using new traffic data collected in June 2013. The June 2013 traffic data includes travel time, intersection turning movement counts and queue length at key intersections. The AIMSUN model has been calibrated and validated according to the RMS's Traffic Modelling Guidelines (RMS 13.184). Detailed model calibration and validation results were documented in Technical Note 1 and included as an Appendix A in the Transport and Traffic Assessment Addendum Report (refer to Appendix M). |
| 5. Traffic Impacts | Demonstrate that strategic modelling approach adopted is a suitable methodology to determine the distribution of traffic at a local level. | In assessing the proposed SICEEP development, Hyder has made the following traffic distribution assumptions: Trip distribution within the PPP component of the SICEEP was based on actual traffic counts. Trip distribution in the Haymarket Precinct (Mix-use Development) was based on combined actual traffic counts and 2006 journey-to-work (JTW) distribution obtained from Bureau of Transport Statistic (BTS). Strategic traffic model was not used for this study. The reference to strategy modelling was only made regarding the journey to work distribution. |
| 6. Traffic Impacts | Provide a plan showing the proposed construction vehicle routes to the site from surrounding areas and assess the cumulative traffic impact for other major construction projects (eg. Barangaroo and CBD Light Rail). | The Traffic and Transport Assessment Addendum Report prepared by Hyder (refer to Appendix M) includes information relating to construction routes for the SICEEP development, programme and other concurrent projects. An assessment of cumulative construction traffic impacts of SICEEP with concurrent adjacent projects has been undertaken and it has been determined that no significant impact will arise. A preliminary Construction Transport Management Plan is attached which outlines truck routes and cumulative impacts for other major construction projects including Barangaroo and CBD Light Rail (refer to Appendix V). It will be reviewed and updated in consultation with TfNSW prior to commencement of construction. This is a matter appropriately dealt with via condition of consent. It is noted no information is currently available on the CBD & South East Light Rail Project. INSW has been liaising with the TfNSW Monorail project team and measures are being undertaken |

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| | | | to ensure the timing of the two projects are being coordinated. The current advice indicates removal |
| | | | of the monorail in the associated area will be completed by December 2013. |
| | | Provide justification for the proposed northernmost | |
| | | pedestrian crossing on Darling Drive along with | Place. |
| | | details demonstrating that warrants can be met. | |
| | | | An existing pedestrian crossing connects the eastern side of Darling Drive to the light rail stop and |
| | | | crosses two lanes of traffic. |
| 7. | Traffic Impacts | | The existing crossing is proposed to be moved slightly north. DHL propose to convert the existing |
| | | | pedestrian crossing to a signalised crossing in order to comply with RMS standards as outlined in |
| | | | the Transport and Traffic Assessment Addendum Report prepared by Hyder (refer to Appendix M). |
| | | | |
| | | | SHFA is the road authority for Darling Drive. The new signalised pedestrian crossing will require a |
| | | | WAD with RMS only in relation to the traffic signal and not for Darling Drive civil works. |
| | | Clarify the wider directional signage strategy | Variable messaging signs utilising dynamic carparking information will be provided to drivers similar |
| | | following closure of the Entertainment car park and the greater use of Darling Quarter car park during | to that adopted for the Star Casino. |
| | | events at Darling Harbour. | The improvement of pedestrian access to and from existing and/or upgraded public transport nodes |
| | | | will be provided through interactive wayfinding and signage systems located throughout the |
| | | | Precinct. |
| 8. | Traffic Impacts | | |
| • | | | The detailed design of the wayfinding and signage systems is currently under development and will |
| | | | be completed in accordance with the SICEEP Wayfinding and Signage guidelines that are being prepared by INSW. All on-site way finding signage is to be delivered as part of the project, subject |
| | | | to final approval of detailed design by Sydney Harbour Foreshore Authority in accordance with the |
| | | | SICEEP Wayfinding and Signage Guidelines. Off-site way finding signage will be the responsibility |
| | | | of the Sydney Harbour Foreshore Authority (within the Darling Harbour Precinct). This is a matter |
| | | | appropriately dealt with by condition of consent. |
| | | Clarify the provision for future public bus transport to | |
| 9. | Public Transport | service the precinct in consultation with Transport | |
| | | for NSW. | Bus Servicing Strategy for the CBD, however TfNSW is unable to provide any further information |

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| | | until an announcement is made by government as to a preferred CBD Bus Plan in conjunction with |
| | | the proposal for the George St Light Rail system. |
| | | |
| | | DHL is committed to undertaking further consultation with the NSW Bus and Coach Association to |
| | | ensure any future requirements are considered. |
| | Provide details of proposed future consultation with | Initial consultation meetings have been held with the NSW Bus and Coach Association and the NSW Taxi Council. DHL is committed to undertaking further consultation during design |
| | various transport providers including coach and taxi operators to ensure efficient movement of vehicles | development stage to ensure any future requirements are considered prior to construction |
| 10. Public Transport | to and from the precinct. | commencing, to ensure coordination with DHL's Construction Transport Management Plan. |
| | | |
| | | HASSELL has prepared a series of diagrams showing the location of taxi, coach and bus parking |
| | | and VIP access areas. Refer to diagrams SK_PP_LA_2060, 2062, 2063 and 2065 at Appendix K. |
| | Demonstrate that the taxi storage is sufficient to | DHL is providing taxi storage in line with the INSW Brief which requires a dedicated taxi zone of at |
| | meet the future needs of the site during event mode. | least 20 spaces. Following consultation with the NSW Taxi Council, their initial indications |
| | | suggested this was sufficient. During detailed design DHL will determine if additional taxi storage |
| 11. Public Transport | | can be provided. |
| | | HASSELL has prepared a series of diagrams showing the location of taxi, coach and bus parking |
| | | and VIP access areas. Refer to diagrams SK_PP_LA_2060, 2062, 2063 and 2065 at Appendix K. |
| | Provide a plan showing sufficient patron storage | DHL will provide sufficient patron storage around taxi zones and re-assess this during design |
| 12. Public Transport | areas around the taxi zones which do not impede | development. As part of the detailed design, DHL will access patron storage areas and provided a |
| | pedestrian flows. | plan prior to the relevant Construction Certification stage |
| | Investigate the opportunities for alternative transport | DHL is committed to undertaking consultation with TfNSW regarding potential for the provision of |
| 13. Public Transport | • | future and or improved bus services to the SICEEP. |
| | the site. | |
| | The turning path for 19m articulated trucks exiting | Trucks entering the lower and upper level loading docks of the Exhibition Centre are provided with |
| 14. Vehicular | the Exhibition Centre loading dock onto Darling | a dedicated slip lane along Darling Drive. Trucks leaving the upper level loading dock will egress in |
| Access | Drive crosses over two lanes of traffic and the footpath. Demonstrate how safe truck access can | the same direction of traffic as southbound traffic on Darling Drive, via a dedicated exit lane. Trucks exiting the lower level loading dock have to exit using both southbound lanes of Darling Drive. The |
| ALLESS | be achieved by either reconfiguring the dock or the | majority of truck movements into and out of the Exhibition Centre loading dock facilities will be |
| | angle of access or providing an acceleration/merge | made between 6am and 7pm but may occur all night in some circumstances. It is noted the |
| | angle of accous of providing an accountation/morge | |

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| | lane. In this regard a revised turning path is required to demonstrate how trucks will safely enter and exit | Exhibition Loading dock will be able to operate 24/7 on a similar basis to the existing facilities. |
| | the Exhibition Centre loading dock. | The majority of truck movements into and out of the Theatre loading dock facilities will be made in- off peak times, during the night or very early morning. |
| | | A Safety Audit has been undertaken which confirms there are no safety issues in relation to truck movements entering or existing the Exhibition Centre loading dock. The Hyder Addendum report outlines the swept path for trucks exiting the lower loading dock. |
| 15. Vehicular Access | Provide details of any truck marshalling area in terms of capacity, waiting periods and location. | An off-site marshalling yard is not contemplated as part of this DA. |
| 16. Vehicular Access | Provide clarification as to how the VIP access and drop off will operate between the Exhibition Centre and the Entertainment Centre. | HASSELL has prepared a Tumbalong Place Circulation Plan (refer to diagram SK_PP_LA_2065 at Appendix K) which describes VIP access in Tumbalong Place. This area is reserved for VIP drop- off and limousine drop-off and pick-up only. There is no intention for bus and coach access in this location. |
| 17. Vehicular Access | Provide a plan showing the location of all taxi, coach and bus parking and VIP access areas. | HASSELL has prepared a series of diagrams showing the location of taxi, coach and bus parking and VIP access areas. Refer to diagrams SK_PP_LA_2060, 2062, 2063 and 2065 at Appendix K . |
| 18. Vehicular Access | Provide a plan showing the location of emergency vehicle access points to all areas of the precinct. | Emergency access is provided to the site via Darling Drive and The Boulevard. The Boulevard is accessed from Harbourside Place, Exhibition Place and Liverpool Street. HASSELL has prepared a diagram showing Ambulance and Fire Truck access routes (Refer to diagrams SK_PP_LA_2058 at Appendix K). |
| 19. Pedestrian Network | Provide a detailed pedestrian network plan showing the connectivity between the precinct and surrounding areas including the CBD to the east, Pyrmont/Ultimo to the west and Haymarket/Chinatown to the south. The plan should be accompanied by graphic insets and sections at key connection points to clearly illustrate level changes and pedestrian movements. The pedestrian network plan should also show the location of the future pedestrian goods line along the western interface of the site. | Drawings SK PP_LA_2056/ 2057/ 2006 included at Appendix K show all the pedestrian connections through the SICEEP site as well as sections illustrating level changes and access at the key connection points relevant to this DA i.e light rail to Pyrmont and Harbourside Place to Pyrmont. The connections through the Haymarket precinct will be covered in the Stage 2 DAs for that Precinct. Changes are not proposed to the connection points to the CBD to the east. |

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| 20. Pedestrian Network | Demonstrate how the Quarry Street pedestrian link across Darling Drive will provide a desired pathway for pedestrians given the level changes and restricted access across the event deck during event mode. | The Pedestrian Networks diagram (SK_PP_LA_2056) and Level Transitions diagrams (SK_PP_LA_2057) prepared by HASSELL at Appendix K show the various pedestrian connections across the site and to surrounding areas, demonstrating an appropriate level of accessibility and connectivity with surrounding pedestrian networks. Diagram SK_PP_LA_2023 outlines the pedestrian route across the Quarry Street bridge and the Event Deck. Access will be maintained along the north side on the Event Deck and into the public realm via stairs, escalators and lifts. During certain private events, the Event Deck will be closed to pedestrians. |
| 21. Pedestrian Network | Provide further detail as to how pedestrian flows will be managed prior to and following large events particularly at key pedestrian/vehicle conflict points along Darling Drive including the Exhibition Light Rail, Tumbalong Place and Harbourside Place. | Transport for NSW has recommended that prior to the issue of any occupation certificate, the proponent must prepare an Event Management Plan and Traffic and Pedestrian Management Plan in consultation with RMS, TMC, Council, Transport Agencies, NSW Police, and CBD Parking Operators. These plans must be forwarded to RMS, TMC, Council and Transport for NSW for approval. The plans should be prepared to address the following matters: a. Maximising public transport use. b. Traffic and crowd management. c. Safe and efficient access to and from the venue. d. Minimising disruption to public transport prior to and after events. e. Enhancing access to car parking, minimising traffic congestion at the end of events. f. Uninhibited access for emergency vehicles. h. Establishing processes I procedures for individual Event Management Plans. A preliminary Event Management Plan and Traffic and Pedestrian Management Plan have been prepared, and will be updated prior to Occupation Certification for approval. This is a matter appropriately dealt with via condition of consent. |

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| | | Further, SHFA has advised that it has in place event, pedestrian and traffic management plans for |
| | | all major events at Darling Harbour. These are developed in conjunction with all relevant authorities |
| | | and relevant stakeholders such as the managers of the existing convention, exhibition and |
| | | entertainment facilities. These will be reviewed as required to take into account the construction |
| | | impacts of the SICEEP project and the changed operational circumstances when the new facilities open in 2016/17. |
| | Demonstrate that the size and scale of pedestrian | The footpath alignment and pathway geometry in and around Tumbalong Green has been |
| | paths across Tumbalong Green will be adequate to | amended to address the concerns raised by the Department (refer to diagram SK_PP_LA_2061 at |
| | cater for projected volumes of people to and from | Appendix K). Whilst DHL has considered widening the paths to cater for people movements in |
| 22. Pedestrian | Town Hall Station during event mode. | large events, this would change the character of the Green, and would mean that it was defined by |
| Network | | the paths instead of green space which is its primary role. Further, it is considered that primary |
| | | pedestrian movement from Town Hall into SICEEP will also include the significant circulation zones around Darling Quarter and the Chinese Gardens, and not just Tumbalong Green in isolation. As a |
| | | result, it is not considered necessary to widen the paths for events. |
| | Incorporate a wider footpath on the southern side of | DHL concurs with Council's comments and will address this further during design development. |
| | Tumbalong Green which avoids the backstage area. | |
| 23. Pedestrian | | HASSELL has prepared a diagram for the Tumbalong Green Pedestrian Network (refer to diagram |
| Network | | SK_PP_LA_2061 at Appendix K, and Section 2.5 of the Response to Submissions report) which |
| | | gives an indication of the revised geometry. This is a matter appropriately dealt with via condition |
| | | of consent requiring final detailed design prior to issue of a construction certificate for public domain works. |
| | Provide an at-grade junction with a ramp at the | |
| | Exhibition Centre and Entertainment Centre | drawings (refer to Appendix H). |
| | forecourt. | |
| | | Notwithstanding this, the steps at the Exhibition Centre and Entertainment Centre forecourt are |
| 24. Pedestrian | | required for the following reasons: |
| Network | | - The steps act as a perched meeting place on the edge of The Boulevard during event mode. |
| | | This 'Town Hall steps' concept is an important aspect of the design. |
| | | The stair entries to both the Theatre and the Exhibition Centre run perpendicular to the direction of the suggested rame. 'Slither' or 'diminishing' stops would be required. This would |
| | | direction of the suggested ramp. 'Slither' or 'diminishing' steps would be required. This would create an awkward and unsafe condition at such major entries. |
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| | | | The steps define the edge of the boulevard as a distinct wayfinding gesture in the site |
| 25. | Pedestrian Network | Provide a plan showing how pedestrian movement along Harbourside Place will avoid vehicles using the loop road. | The attached diagrams outlines pedestrian movement alongside Harbourside Place (refer to diagram SK PP_LA_2062 prepared by HASSELL at Appendix K). It shows that the whole area is designated as a pedestrian priority shared zone, with vehicular movements to be managed with road indicators. |
| 26. | Pedestrian Network | Confirm the type of operation of the two proposed at-grade crossings on Darling Drive. In particular clarification is sought in terms of whether they are signalised scramble crossings or zebra crossings. | The existing northern on-grade crossing near the Convention Centre stop will be moved slightly south to align with Harbourside Place north, and will be a zebra crossing. The existing southern crossing at the Exhibition Stop will be moved north and converted to a signalised crossing. |
| 27. | Pedestrian Network | Consider whether the pedestrian crossing located between the proposed Exhibition Centre and the Entertainment Centre over multiple lanes of traffic along Darling Drive should be signalised to improve pedestrian safety. | An existing pedestrian crossing connects the eastern side of Darling Drive to the light rail stop and crosses two lanes of traffic. The crossing will be moved slightly north. DHL propose to convert this to a signalised crossing to comply with RMS standards, as outlined in the Transport and Traffic Assessment Addendum Report prepared by Hyder at Appendix M . |
| 28. | Pedestrian Network | Provide further information in relation to the at-grade pedestrian/cyclist crossing along Darling Drive and whether grade separation of such movements was investigated for feasibility. | Connectivity within and surrounding the site at-grade is the deliberate intent of the proposal. There are significant amenity advantages provided by ensuring active streets and footpaths through the provision of at grade pedestrian / cyclist crossing. Furthermore at grade access reduces issues relating to CPTED within the public realm. Grade separated movements are not proposed for these reasons. |
| 29. | Pedestrian Network | Consideration should be given to using variable message signage for pedestrians. | The improvement of pedestrian access to and from existing and/or upgraded public transport nodes will be provided through interactive wayfinding and signage systems located throughout the Precinct. The detailed design of the wayfinding and signage systems is currently under development and will be completed in accordance with the SICEEP Wayfinding and Signage guidelines. It is noted that variable messaging signs utilising dynamic carparking information will be provided to drivers similar to that adopted for the Star Casino. |
| 30. | Pedestrian Network | Consider the provision of pedestrian refuges on all approaches to the new roundabout on Darling Drive. | Refer response to response above for Item 27. |

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| 31. Pedestrian Network | Investigate the opportunity for pedestrian ramp instead of stairs from the Convention Light rail station access along the eastern side of Darling Drive | DHL concurs with the Department, and this will be converted into a ramp and has been outlined in the amended drawings. |
| 32. Cycle Network | Further detail is required in relation to the interaction of cyclists, pedestrians and vehicles and measures that will be adopted to minimise conflicts and ensure safety. In this regard the Department seeks a detailed cycleway plan showing the location of the proposed cycle path and where it connects to the existing cycleway network including pedestrian crossings and paths and vehicular entry/exit points. | DHL will work with INSW, CoS, SHFA throughout the detailed design stage to work through design resolution of conflict points. Diagram SK_PP_LA_2059 prepared by HASSELL (refer to Appendix K) shows the indicative location of proposed cycle paths connecting to the existing network. |
| 33. Cycle Network | Provide details of the provision of bicycle parking for visitors and employees as well as end of trip facilities. | The allocation for bicycle facilities has been considered throughout the design process. DHL's current allocation of public bicycle facilities is located within the RL2.5 Car Park situated below the Exhibition building. DHL is targeting storage space for approximately 200 bicycles, with an allocation of 90m ² of end of trip facilities containing showers and locker facilities. These spaces are also intended for staff use, to be used in conjunction with other staff facilities in the core facilities. Further details are provided on drawing EX_AR_D_200000 prepared by HASSELL at Appendix K . The Theatre is also targeting a bicycle storage area of approximately 20m ² for staff use. Its location and configuration will be further refined during the design process. |
| | | Furthermore, there will be facilities comprising bicycle racks within the public realm and will be confirmed during design development. The proposed Cycle Strategy is shows on diagram SK_PP_LA_2059 prepared by HASSELL (refer to Appendix K). |
| 34. Visual Impact Analysis | The section plans included in the view impact analysis should indicate the RLs at the top of the existing buildings including the tower elements protruding above the parapet of the Convention | The following drawings have been updated to show RLs at the top of the existing buildings, including the tower elements protruding above the parapet of the Convention Centre and the vertical masts atop the Exhibition Centre. The updated drawings are included in the updated Visual and View Impact Analysis (refer to Appendix L). |

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| | | Centre and the vertical masts atop the Exhibition Centre. | PP_AR_D_900053- VIEW IMPACT ANALYSIS. 18-20 ALLEN STREET SECTION |
| | | | PP_AR_D_900058- VIEW IMPACT ANALYSIS. BULLECOURT - SECTION |
| | | | PP_AR_D_900063 VIEW IMPACT ANALYSIS. GOLDSBROUGH - SECTION] |
| | | | PP_AR_D_900068- VIEW IMPACT ANALYSIS. NOVOTEL - SECTION |
| | | | PP_AR_D_900069- VIEW IMPACT ANALYSIS. NOVOTEL - ELEVATION |
| 35. | Visual Impact Analysis | The Department notes that drawing number PP AR 2034 incorrectly labels the building as the Bullecourt Apartments. | Noted. This has been corrected. The updated drawing is included in the updated Visual and View Impact Analysis (refer to Appendix L). |
| | Built form/Design | The sectional diagrams on page 63 of the Design Report should be provided at a smaller scale to clearly illustrate the built form relationship in terms of height and scale with surrounding buildings. Also provide additional east-west sections through the Entertainment Centre and the Convention Centre to demonstrate the contextual built form relationship. | This has been updated in the revised Design Report prepared by HASSELL at Appendix I . |
| | Built form/Design | Clarification regarding the height of the proposed Convention Centre is sought noting the inconsistencies with the information provided between the EIS (RL 48.3m AHD) and drawing number CO_AR_ 0121 indicates the height to the top of the roof as RL 50.3m. | DHL confirms that the height set on the Architectural Drawings indicates the correct height to the top of the roof at RL +50.3m. |
| | Built form/Design | Provide details of the loading dock overhang at the rear of the Exhibition Centre in relation to its location, number of levels, access points and visual appearance. | For details on the Exhibition Loading Docks Location, Access and Levels refer to drawings: EX_AR_2211 RL 21.5 UPPER EXHIBITION |

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| | | VEHICULAR MOVEMENT DIAGRAM |
| | | EX_AR_2210 RL 6.0 LOWER EXHIBITION |
| | | VEHICULAR MOVEMENT DIAGRAM. |
| | | For further detail on the visual appearance of the Loading Dock please refer to drawing EX_AR_1021 EX_AR_1022 EX_AR_1023 |
| | The event deck has the potential to generate significant noise to nearby residential receivers particularly during special events. In terms of operational noise the background noise levels | ENVIA utilised a monitor in front of the Bullecourt Apartments on Pyrmont St, and while not strictly on the residential receiver's property, the monitoring location is considered to clearly adequately represent ambient noise conditions at Bullecourt. |
| 39. Acoustic | should be measured at the nearest residential receivers. The Environmental Noise and Vibration Impact Assessment indicates a noise logger location at No. 220 Pyrmont Street and shows it as the Bullecourt apartments. However, the Bullecourt apartments is addressed No. 287 Pyrmont Street. Clarification is sought as to whether a noise logger | The Noise Catchment 1 monitor was located at the Novotel. While this is not immediately adjacent to the Goldsbrough Apartments, Acoustic Logic has advised that it would not be expected that noising monitoring at the Goldsbrough Apartments would yield significantly different background noise levels to those provided. Notwithstanding this, it is intended to conduct further monitoring at the Goldsbrough Apartments at both ground level and roof level to confirm existing background noise levels in developing the detailed CNVMP. |
| Impacts | was used to measure noise levels at the Bullecourt apartments noting its proximity to the proposed event deck. It is also recommended that the Goldsbrough residential building at No. 243 Pyrmont Street is also included as a noise logger location. Provide further detail of mitigation measures that will | DHL is committed to preparing an Operational Noise Management Plan for the Event Deck in consultation with the EPA. Recommendations of the EPA, acting reasonably, will be adopted, with appropriate management of operations to ensure compliance with EPA guidelines. The preparation of an Operation Noise Management Plan for the Event Deck is a matter appropriately dealt with via condition of consent. |
| | be adopted to minimise noise impacts to surrounding residential properties from the event deck. | Events or functions will be undertaken between the hours of 7am and 10pm (including bump-in and bump-out) except for large celebratory events. |
| | | Low noise events or functions where there is no risk of exceeding the recommended noise level at |

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| | | | the nearest residence at Night Time (after 10pm) will be finished by 11.00pm as recommended in |
| | | The Departmente cooke a draft Event Management | the Environmental Noise and Vibration Impact Assessment prepared by AECOM. |
| 40. Acous Impac | | The Departments seeks a draft Event Management Plan for the use of the outdoor deck which includes but is not limited to details of the frequency and type of outdoor events likely to occur, amplified and live music and measures to mitigate noise impacts, occupancy, the layout and location of plant and equipment, pedestrian management, hours of operation, noise monitoring and complaints handling. | AEG Ogden has prepared a draft Event Management Plan (refer to Appendix R) for the operation of the Event Deck. It provides details on public access, frequency of use, hours of operation and noise impacts and noise monitoring. |
| 41. Acous Impac | | Confirm whether or not the at-grade loading areas off Darling Drive for the Convention Centre will be designed to allow trucks to enter and leave in a forward motion so as to minimise amenity and safety impacts. | The ICC loading dock facility has been designed to allow forward motion access into and out of the loading dock. |
| | | Provide an internal layout plan clearly showing the internal connections between the buildings. | HASSELL and Populous have prepared a series of drawings detailing the internal connection between the buildings. These drawings are provided for information purposes, and appended to this table. The main connections are highlighted as follows: |
| 42. Buildi Functi | ing tionality | | PP_AR_0010_L0 – connections into Exhibition carpark form ICC back of house areas and main north Exhibition entry |
| | unotionanty | | PP_AR_0011_L1 – connections into RL 6.0 Exhibition loading dock from ICC main production kitchen and the Boulevard |
| | | | PP_AR_0012_L2 – connections through all Core Facilities that allow patrons to move from the ICC in the north to the Theatre in the south via the RL12.0 Exhibition main concourse |
| 43. Buildi Functi | ing tionality | Clarification is sought as to whether there is a reduction in column free space in the proposed | The following table indicates the difference between the existing and proposed facility: |

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| | Exhibition Centre compared to the existing situation. In addition, provide details of how the proposed Exhibition Centre will achieve world best practice in | | Column Free | Columns Within Hall | | |
| | terms of functionality and layout noting it is proposed over multiple levels. | EXISTING | | | | |
| | | Exhibition Halls 1 to 5* | 25,000m ² | | | |
| | | Exhibition Hall 6* | | 2,200m ² | | |
| | | TOTAL | 25,000m² | 2,200m ² | 27,200m ² | |
| | | | | | | |
| | | PROPOSED | | | | |
| | | Exhibition Halls 1 to 4 | | 19,535m ² | | |
| | | Exhibition Halls 5 to 7 | 13,375m ² | | | |
| | | Convex (ICC) | | 2,510m ² | | |
| | | Secondary Exhibition | 4,878m ² | | | |
| | | TOTAL | 18,253m ² | 22,045m ² | 40,298m ² | |
| | | | | | | |
| | | * Areas sourced from the S Note that we cannot verify the net is less than indicate | the exact net exhibi | | | |

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| | | The table indicates there is a difference in column free space, with the current Exhibition Halls 1 to |
| | | 5 providing 6,747m ² extra column free space. |
| | | The global market is trending toward a western convention and exhibition model where convention centers and exhibit halls are combined and ideally located within the CBD or fringe. Meeting planners and the end customers increasingly want an urban experience. |
| | | The convergence of these two points has resulted in stacked configurations to limit purchase of expensive land, but still accommodate the need for very large halls and meeting spaces while creating a smaller foot print and therefore a more appropriately scaled building in the heart of the city. |
| | | New urban centers around the world are increasingly designed in a stacked configuration due to the desire to be located within the CBD, commercial and cultural value of the land, the desire to limit the size of the foot print for urban design reasons and mixed-use development integrated with the facilities. Singapore, Vancouver and Hong Kong are good examples of this. There is a requirement to provide supporting exhibition space for the primary use, which are large local and international plenary sessions. |
| | | As with Singapore and Hong Kong, Sydney also has a secondary Exhibition Centre located outside of the CBD at Homebush. These facilities primarily service the exhibition business and provide at grade and column free space for the large exhibition focussed business |
| | | Truck docks in stacked configurations typically are easier to screen and therefore more urban friendly. We have also reduced the impact of the loading dock to the lower halls by designing the dock enclosed within the building on the eastern edge of the Exhibition Centre. This provides an internal, controlled environment with no light or noise spill. We are also able to hold trucks within the access road pre loading dock, minimizing the amount of traffic held on Darling Drive, as is |

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| | | currently the case. |
| | | The stacked halls facilitate multiple events within the facility at the same time by providing grade separation between the halls, separating the flow of patrons in the front of house areas and materials handling in the back of house areas. |
| | | For both front and back of house operations, horizontal travel distances are significantly reduced due to the halls being stacked. Vertical transportation is provided in the back of house areas with the ramped loading dock, as well as heavy goods lifts which access the car park, the lower and upper halls. Front of house vertical transport is through stairs, lifts and escalators. |
| | | The front of house areas can be managed through a variety of concurrent and single user scenarios with flexible secure lines, dependent on the use. |
| | | Columns within the exhibition halls are achievable and acceptable in the exhibition market. This was tested with various user groups before proceeding with the design. |
| | | Spacing is large enough to not negatively impact operations and efficiency and small enough to maximize structural efficiency and minimize construction cost and vibration. |
| | | The geometry of the halls have been based around a 3 x 3m exhibition booth module, with detailed booth layouts developed as part of the initial planning to ensure optimal functionality and efficiency of Exhibition Halls 1 to 7. |
| | | The layout of the column grid structure has been closely developed with the operators, AEG Oden and based on our teams experience with similar projects. As with the overall hall geometry, the structural grid has been based on the 3 x 3m booth footprint. The primary grid of Exhibition Halls 1 to 4 is based on a 27m grid, with the zone between the outer grid and wall being 9m and 21m, again based on the 3 x 3m booth footprint. |

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| | | The 27m grid is typical within facilities with columns in them. The booth layout has been optimized with the grid layout to minimize booth- kills, as have the in- slab services. |
| 44. Public Real Landscaping Activation | Clarification is sought regarding the area of existing accessible open space and proposed accessible space for the site and a distinction between the extent of hard and soft landscaping. The plan on page 33 of the Design Report should provide a key to identify the hard and soft components of the landscaping treatment in the precinct. | Realm across the whole SICEEP, as well as within Tumbalong Green. Useable public space across the SICEEP precinct is summarised as follows: Existing Useable PR –58,750m² Proposed Useable PR –71,400m² Increase PR – 12,650 or 20% additional The turfed and staged area within Tumbalong Green will increase from approx. 8,000m² to 11,000m², an increase of approximately 25%. These values are based on the following criteria: excludes road verges, roundabouts, traffic islands and back of house areas includes the Event Deck, Tumbalong Place and Harbourside Place which did not exist previously exist Haymarket shows a significant increase in open space with the new pedestrian lanes and Haymarket square includes the terraced landscape in the calculation which has a significant portion of accessible grass terraces opposite Tumbalong Green. While some areas are not accessible they play an important role in generating the experience of space for the occupiable RL12 link, ramps, paths, balconies, and decks that traverse this landscape |
| | | It is important to note that the Event Deck is included in the calculation because it is a significant east-west link and will be used by the public when not used for events. |
| 45. Public Real Landscaping Activation | Clarification is sought regarding whether any existing trees will be retained in the site. If yes, clearly identify the trees to be retained on the Landscape Plan. | |

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| | | | • A Wollemi nobili, located in the exhibition lawn will be transplanted within the proposed design. |
| | | | All other trees shown on the DA plans will be removed. |
| 46. | Public Real Landscaping Activation | Provide a plan which shows the proposed changes to Tumbalong Park in terms of its location and configuration and include section plans showing any change in levels. | The functionality and useability of Tumbalong Green will be enhanced by the proposed development. DHL has calculated the existing and proposed areas within Tumbalong Green (refer to SK_PP_LA_2066 at Appendix K). They demonstrate that the turfed area will increase from 7,573m ² to 10,073m ² , an increase of approximately 25%. |
| | | | The proposed changes to Tumbalong Green, including a section plan showing the change in level, are shown in SK_PP_LA_2065 at Appendix J . |
| 47. | Public Real Landscaping | Clarify what type of 'retail' is proposed at The Boulevard along the Exhibition Centre frontage as shown on the Public Domain Master Plan. | The retail will be at grade level of the Boulevard and predominantly food and beverage and cafes, with associated outdoor dining. |
| | Activation | | This has been shown on diagram SK_PP_LA_2054 prepared by HASSELL at Appendix K. |
| 48. | Public Real Landscaping Activation | Consider retail activation along the northern side of Tumbalong Place. | There is no intention to provide any further retail within Tumbalong Place. Rather, activation will be achieved through raised seating terraces and outdoor performance spaces with further activation to include lighting and art along the northern face of the exhibition wall. |
| | | | A diagrams showing activation within Tumbalong Place has been prepared by HASSELL and is provided at Appendix K (refer to diagram SK PP_LA_2055). |
| 49. | Public Real Landscaping Activation | Consider better retail activation along the northern side of the Entertainment Centre by removing car spaces behind and revising stair configuration. | DHL is investigating opportunities for better retail activation along the northern side of the Entertainment Centre. Refer to the revised Theatre Drawings at Appendix H . |
| 50. | Public Real Landscaping Activation | Clarify the public use of the event deck is limited to pedestrian access or if community uses are proposed outside of event mode. | When the Event Deck is not being used for events, it will be an open space area available to the public for activities and will allow for the expansion of the types of events and activities that already occur in Tumbalong Park (such as community events, sporting activities, and cultural events). The Deck will be closed to the public at night. |
| 51. | Stormwater and Flooding | The Department has sought independent advice with regard to potential Flooding and Stormwater impacts. The Department's consultant has | The existing groundwater conditions which contain low concentrations of metals are considered minor and comparable to screening criteria as outlined in the Human Health and Ecological Risk Assessment report. It is considered that there may be localised variations in sea water level rise |

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| | requested further clarification on the following matters: | around Cockle Bay and these will be monitored over the next few months and during construction to determine extent. |
| | The EIS states that groundwater levels on the site have been measured at depths of RL - 0.55 to -1.7m and are subject to variations as a result of tidal flows from Cockle Bay. The groundwater levels at the site will rise due to sea level rise which could impact on future drainage and stormwater treatment measures. Details are sought regarding potential groundwater risk on the site and the measures to ameliorate any impacts. | As it is not intended to build any basements within the site, it is not considered drainage measures to be necessary. Furthermore, as it is not intended to significantly change the level of the public realm, new in-ground services will be installed generally at existing levels above the water table level. In the occasional situation where services are installed below the groundwater levels, such as stormwater, it is considered that this will also be similar to existing underground service invert levels, and will be constructed using appropriate and approved methods. Therefore, the installation of underground services on-site are not expected to significantly impact on existing groundwater concentrations, flows and water table levels and are considered to pose a very low risk to groundwater disturbance on site. |
| 52. Stormwater and Flooding | Based on the rainfall and tide events data provided in Appendix F of the Stormwater and Flooding report there is a risk that peak runoff for a significant rainfall event will coincide with tide levels equal to or above 0.7m AHD once every 20 to 30 years. Therefore adopting the design still water levels of 0.9m AHD for the 100 year ARI rainfall event may not define the worst case 1% Annual Exceedance Probability event that takes into account the joint probability of rainfall and high tide. In order to support the argument for adopting the lower design still water levels it is recommended that further comment is provided on the approximate probability of occurrence of a tide level of 0.9m AHD and the risk of tide levels of this magnitude coinciding with peak runoff. | The coincident catchment runoff and tide level is a function of probability. As stated by Hyder in report section 'Coincidence of Cockle Bay and Catchment Runoff' (p18), this probability has been investigated by Australian Rainfall & Runoff Revision Project 18 'Interaction of Coastal Processes And Severe Weather Events' (June 2012, ARR) using Sydney Harbour and Sydney metropolitan catchments, with the conclusion that storm surge and rainfall runoff is independent. Further investigation of the SICEEP catchment (having a rapid response time of only 25 minutes) and examination of 99 years of continuously recorded Sydney Harbour water levels, and 155 years of rainfall data affirms the ARR (June, 2012) findings. While it is noted that there is a possibility of any and all catchment runoff events coinciding with Cockle Bay water levels greater than 0.9mAHD, there is also the need when determining flood frequency, to understand that such possibility sits alongside all the other the possibilities of any and all catchment runoff coinciding with Cockle Bay water levels of less than 0.9mAHD and in fact as low as -0.8mAHD (or lower). As noted in the report (p18), the highest recorded Harbour level (in 155 years of records) is |

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| | | 1.475mAHD (on 25 May 1974) – and that event had a maximum recorded surge component of 0.6m yet was not associated with major event rainfall. In fact none of the fifteen worst Sydney Harbour water levels are associated major event rainfall. |
| | | Based on the independence between rainfall and storm surge found by ARR Project 18 (June 2012) for small urban stormwater catchments with rapid response times, and the review of historic events carried out by Hyder, it may be reasonable to adopt a coincident Sydney Harbour water level of 0.2mAHD (being the average coincident water level for the twenty maximum recorded rainfall events). |
| | | However, Hyder has adopted a more conservative fixed coincident water level of 0.9mAHD with all catchment rainfall runoff conditions, which allows for an additional 0.7m surge component. As such, the ARR (June 2012) and Hyder assessments indicate that the probability of a >0.9mAHD Cockle Bay water level coinciding with a 100 year ARI peak catchment flow would be a >100 ARI flood. |
| | | Further, based on a desktop review of the tidal data, the probability of the still water level being at or above 0.9mAHD is approximately 1% for any given hour. |
| 53. Stormwater and | Confirm whether Sydney Water has agreed in principle to the amplification of the underground box culvert system and whether it is technically feasible | The amplification of the culvert system is wholly located and related to the Haymarket development. |
| Flooding | and desirable for them to take ownership of the amplified assets | While the flooding implications from the amplifications would affect flood levels within the PPP site area it will be assessed as part of the Haymarket development approval. |
| 54. Stormwater and Flooding | The existing large inlet pit under Pier Street has been identified as a hydraulic hazard. Clarification is sought as to whether it will be accessible by the public or workers on the site, or fenced off to prevent exposure. | The existing large inlet pit is located within the SHFA compound. It is not expected to be exposed to or able to be accessed by the public. Worker access will be controlled through the Construction and Environmental Management Framework. The issue will be addressed by negotiation with SHFA. |
| 55. Stormwater and Flooding | Clarification is sought in regard to the duration of flooding for the site under the PMF event including | Hyder do not consider this question is relevant since 2.7mAHD (ponded still water) would not incur |

| Iten | n Number | Issue extreme Cockle Bay water levels (e.9. the 2Jm AHD design still water level for the PMF at 2100) noting that flood dispersal times still relatively short under extreme events. | Response preliminary hydraulic high hazard conditions. That said, tidal fluctuation indicates that the Hyder have investigated the modelling completed and determined that the duration of flooding for; • The 'Maximum Tide' of 2.7mAHD would have a duration of flooding of less than 1 hour. • The 'Maximum Tide' of 1.8mAHD (calculated with DMD raiefoll) would have a duration of flooding of less than 1 hour. |
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| | | Clarify whether the existing and proposed stormwater systems have 20 year ARI capacity for | The 'Maximum Tide' of 1.8mAHD (coincident with PMP rainfall) would have a duration of less than 1 hour. Not all existing trunk drainage systems have 20 year ARI capacity for runoff (when considering the entire externment flow). |
| 56. | Stormwater and Flooding | runoff from the site only and if the modelling includes overland flow from adjacent areas. | entire catchment flow). The modelling of underground systems extends beyond the site boundary. In the TUFLOW model, all upstream catchment flows have been applied to the culvert. Once the culvert has reached capacity, the excess is applied to the surface. Therefore modelling includes overland flow from adjacent areas. |
| | | | Hyder do not consider it useful to complete modelling for the unrealistic condition of runoff from the site only. |
| | | | For design purposes, at the detailed design stage, systems will provide 20 year ARI capacity except when limited by downstream system capacities. |
| 57. | Stormwater and Flooding | Clarify whether any preliminary concept work has been undertaken to confirm whether the opportunities to improve the drainage of surface water conditions along Darling Drive are feasible. | Hyder have completed a concept road design and stormwater design. The improved surface drainage conditions will be assessed during the detailed design stage. This is considered to be a matter appropriately dealt with by condition of consent. |
| 58. | Stormwater and Flooding | The Flooding and Stormwater Report submitted with the EIS states that when adopting a 30% and 50% blockage assumption there are sufficient inlet pits so that the underground system will not be limited by surface inlet capacities. Clarification is sought as to | Please refer to the response to item 56. Catchment flows are not contained within the underground system. The underground systems have limited capacity and the modelling includes overland flows in excess of the underground capacity. The flood mapping provided is considered adequate to address this comment. |

| Item Number | Issue whether the modelling assumes all upstream catchment flows entering the project site are contained within the underground pipe systems with no overland flow component. | Response |
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| 59. Stormwater and Flooding | In terms of the potential flood impacts in Section 3.4 further explanation is sought as to the key differences in hydrological and hydraulic representations between the existing and proposed case DRAINS and TUFLOW models. | The key differences between the existing and proposed case DRAINS and TUFLOW models are; Inclusion of concept minor drainage system in the proposed model. Modifications to the digital elevation model (Including the proposed building ground floor footprints). Sub-catchment boundary delineation, noting that overall (total) existing and proposed catchment areas are the same. Amplification option. All other parameters are consistent in existing and proposed models. |
| 60. Stormwater and Flooding | Section 5.7 MUSIC Models and assumptions does not explain how the runoff from flyover road structures are drained and whether they have any interaction with the existing or proposed site drainage systems including Sydney water trunk drainage systems. Provide a brief explanation in that regard. | The flyover road structures have been included in the MUSIC model as a 'bypass' catchment in both the existing and proposed modelling. Runoff from the flyover drains into existing stormwater system below or in the case of the proposed development into the new drainage system within the PPP site. Hyder have assumed that drainage from the flyover structures will be independent of the proposed stormwater quality treatment strategy for SICEEP. The runoff from the flyover is not considered in the determination of the percentage pollutant reductions achieved by the treatment strategy proposed for the PPP site hence being called a 'bypass' catchment. |
| 61. Stormwater and Flooding | Provide an explanation as to slight increase of SS pollutant load given that there will be a slight decrease in the TP and TN pollutant loads. | The slight increase in TSS can be attributed to an increase in areas allocated for roads (i.e. Darling Drive, shared zones and taxi ranks) within the proposed PPP site relative to the existing scenario (see table below). Runoff from roads bears far more TSS than roofs and general impervious areas (see Table 5-7 of Hyder PPP report) and so even with a slight decrease in the overall imperviousness of the proposed site, the addition of areas trafficable by vehicles will result in the generation of more TSS pollutants. |

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| | | COMPARISON OF LAND USE AREAS | | | |
| | | EXISTING versu | us PROPOSED DEVELOPN | IENT - SICEEP PPP | |
| | | Land Use Type | 'Existing' Area (ha) | 'Proposed Development' Area (ha) | |
| | | Pervious Areas | 1.439 | 1.836 | |
| | | Roads | 2.789 | 2.991 | |
| | | Roofs | 4.587 | 4.337 | |
| | | Impervious Areas | 4.157 | 3.808 | |
| | | Total | 12.972 | 12.972 | |
| | | % Imperviousness | 89% | 86% | |
| | In terms of the TUFLOW Model clarify the following: | Hyder has applied sea-level rise only to the PMF modelling. | | | |
| | . how potential climate change applied to the PMF event and whether this involved applying sea level rise only . It is not clear from the colour coding for localised flood impacts what are the maximum impact is at the northern end of the Boulevard. Identify the cause of the aflux and provide details as to whether is it possible to eliminate/mitigate at a later stage of the design. Clarify the technique used to map the provisional hydraulic hazard and provide an explanation of how the hazard categories defined in Figure L2 of the Floodplain Development Manual are translated to the maps. | | | odelling. It seems to be due to expected that with further deta | |
| 62. Stormwater and Flooding | | and velocities) with the _Z1 | <i>d.dat</i> function. The results (Hazard, Intermediate Haza | utput from TUFLOW (similar to based on the maximum DxV) o ard and High Hazard respectiv utput. | output a |
| 63. Economics Impacts | The EIS states that the new facilities will generate a \$200 million annual economic benefit for NSW. Provide details as to how this compares with the | • | | related to the new developmer by Infrastructure NSW and NSV | • |

| Item Number | Issue economic return associated with the existing facilities. | Response DHL is not party to the calculation methodology. However, it is noted that the PWC determined that the economic benefit of the new development compared to 'business as usual' at the existing facility was an annual increase of \$160 million to \$270 million. This increased amount is relative to the \$431 million quoted above (p.86, A world class convention and exhibition centre for Sydney: Pre-feasibility Study, ATEC, IPA, PCA, SBC, TTF, PwC). |
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| 64. Overshadowing | Further information is required to accurately assess shadow impacts to nearby residences and also Tumbalong Park. In particular, the Department requires smaller scale shadow diagrams (existing and proposed) which clearly show the extent of overshadowing to residential properties on the western side of Pyrmont Street (Goldsbrough and Bullecourt Apartments) and the public domain (Tumbalong Park). In the event there is any overshadowing of residential properties, the Department seeks elevation shadow diagrams to enable an assessment of the extent of shadow impacts. | |
| 65. Reports to be updated | All reports submitted as part of the EIS should be reviewed in light of any revisions made in the resolution of the issues noted. Supplementary and technical reports should also be reviewed and amended to ensure that the extent of the proposal is accurately reflected. | address issues raised in the submissions, as well as the design changes that have been made in the response to the submissions. Where appropriate, letters have been provided confirming that no |