STATE SIGNIFICANT DEVELOPMENT ASSESSMENT REPORT: Australian Institute of Nanoscience Science Research and Education Facility, The University of Sydney, Camperdown Campus (SSD 5087-2011)

Director-General's
Assessment Report
Section 89H of the
Environmental Planning and Assessment Act 1979

October 2013

ABBREVIATIONS

Applicant	The University of Sydney
CIV	Capital Investment Value
Department	Department of Planning and Infrastructure
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning and Infrastructure, or his delegate.
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental Planning Instrument
LEP	Local Environmental Plan
MD SEPP	State Environmental Planning Policy (Major Development) 2005
Minister	Minister for Planning and Infrastructure
PAC	Planning Assessment Commission
RtS	Response to Submissions
SEPP 2011	State Environmental Planning Policy (State and Regional Development) 2011
SEPP	State Environmental Planning Policy
SEE	Statement of Environmental Effects
SSD	State Significant Development

Cover Photograph: Visual Impact Aerial View

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EXECUTIVE SUMMARY

This report is an assessment of a State significant development application (SSD 5087-2011) lodged by The University of Sydney (the applicant) seeking approval for the construction of a new four storey science research and education facility, known as the Australian Institute of Nanoscience, located centrally within the Camperdown Campus at The University of Sydney within the City of Sydney Local Government Area.

The proposal is State significant development because is it development for the purpose of an educational establishment (including associated research facilities) with a capital investment value (CIV) in excess of $30 million, under clause 15 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011.

The proposal involves the construction of a new 10,540 sqm, four storey building, including roof top plan and ancillary external plant room, demolition of minor structures and interface of the existing Physics Building to enable the construction of pedestrian bridge links, ancillary landscaping and public domain works and construction of two car parking spaces and loading dock. The construction of the new educational establishment will house Australian first research technologies in the nanoscience field, providing opportunities for the growth of interdisciplinary relationships with other major research initiatives.

The CIV of the proposal is $70.77 million and will generate 120 construction jobs and a further 24 full time equivalent jobs. The new educational establishment will also generate 93 additional student enrolment positions.

The site is zoned SP2 Infrastructure – Educational Establishment under Sydney Local Environmental Plan 2012 (LEP). The proposed development is permissible with consent.

In accordance with section 89F of the EP&A Act and clause 83 of the EP&A Regulation, the application was exhibited from 21 January 2013 until 28 February 2013, and relevant public authorities and surrounding landowners were notified. The department received four submissions from public authorities and one submission from the general public. The key issues raised in submissions related built form and urban design, heritage impacts, amenity impacts, construction impacts and noise impacts

The applicant provided a Response to Submissions report (RtS) which addressed the issues raised, proposing design amendments to the built form of the proposed development in response to concerns raised. In accordance with section 89F(4) of the EP&A Act, the amended development proposal was not re-exhibited as it does not substantially differ from that originally exhibited, and that the purpose, function and intensity of the AIN development has not changed, but environmental impacts of the development have been reduced.

The department has assessed the merits of the proposal and considers the key issues associated with the proposal to be: built form and urban design; heritage, traffic and transport; environmental and residential amenity; and developer contributions. These issues have been assessed in detail and the department is satisfied that any impacts can be adequately mitigated and managed to achieve acceptable levels of environmental performance. The department has recommended a range of conditions to ensure this occurs and consideris the proposal to be in the public interest and that the application should be approved, subject to recommended conditions.

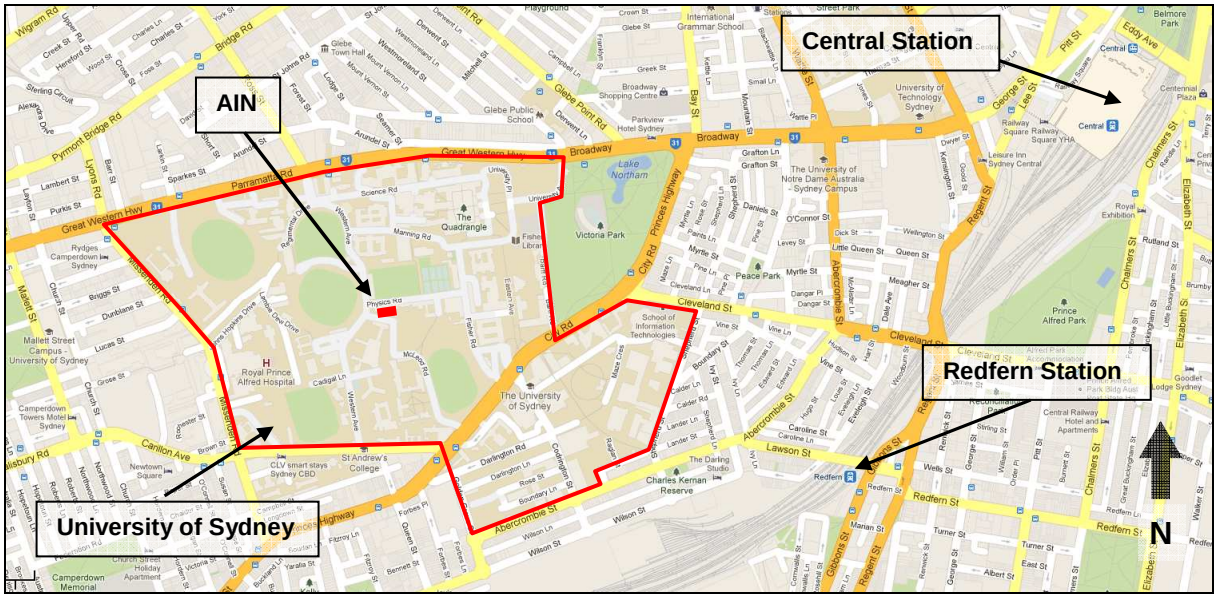
In accordance with the Ministerial delegations issued on 27 February 2013, as the council has not made an objection, a political disclosure statement has not been made, and there are less than 25 public submissions on the proposal in the nature of objections, the application can be determined by the Executive Director, Development Assessment Systems and Approvals.

1. PROPOSED DEVELOPMENT AND SITE DESCRIPTION

1.1 The Proposal

The University of Sydney (the applicant) proposes to construct a new four storey science research and education facility, known as the Australian Institute of Nanoscience (AIN), and associated infrastructure and landscaping at The University of Sydney Camperdown Campus, Camperdown (Part Lot 101 in DP 1171804 and Part Lot 1966 in DP 1117595). The project location is shown in **Figure 1**.

Figure 1: Development Location



1.2 Site Description and Surrounding Development

The University's Camperdown Campus is bound by Parramatta Road to the north, City Road and Carillion Avenue to the south, Missenden Road to the west and Victoria Park to the east and lies approximately 2.5 km southwest of Sydney CBD. The Camperdown Campus contains a variety of educational and research related buildings of varying architectural styles and heritage significance.

The subject development site (see **Figure 2**) is located centrally within the campus on the heritage significant Wilkinson Axis at the rear of the existing Physics Building and bordered by the Edward Ford Building, Wesley College and St Paul's College. The development site was formally occupied in part by the former Physics Annexe Building and has an area of approximately 5,000 sqm.

The development site is located on land under the ownership of the University and St Paul's College. A land exchange between the both parties is currently being finalised to transfer St Paul's College land into the ownership of the University. To formalise the arrangement, a subdivision application has been lodged with council (yet to be determined). Notwithstanding, land owner's consent has been provided for the AIN SSD application by St Paul's College.

On 24 December 2012, City of Sydney Council (council) approved a development application for early works on the subject site, involving bulk earthworks, construction of site retaining walls and relocation of services in preparation for the development of the AIN. Works associated with the approval have commenced on site (see **Figure 3**). Topographically, the site slopes downwards to the north, from St Paul's College to the Physics Building.

Figure 2: Site Location

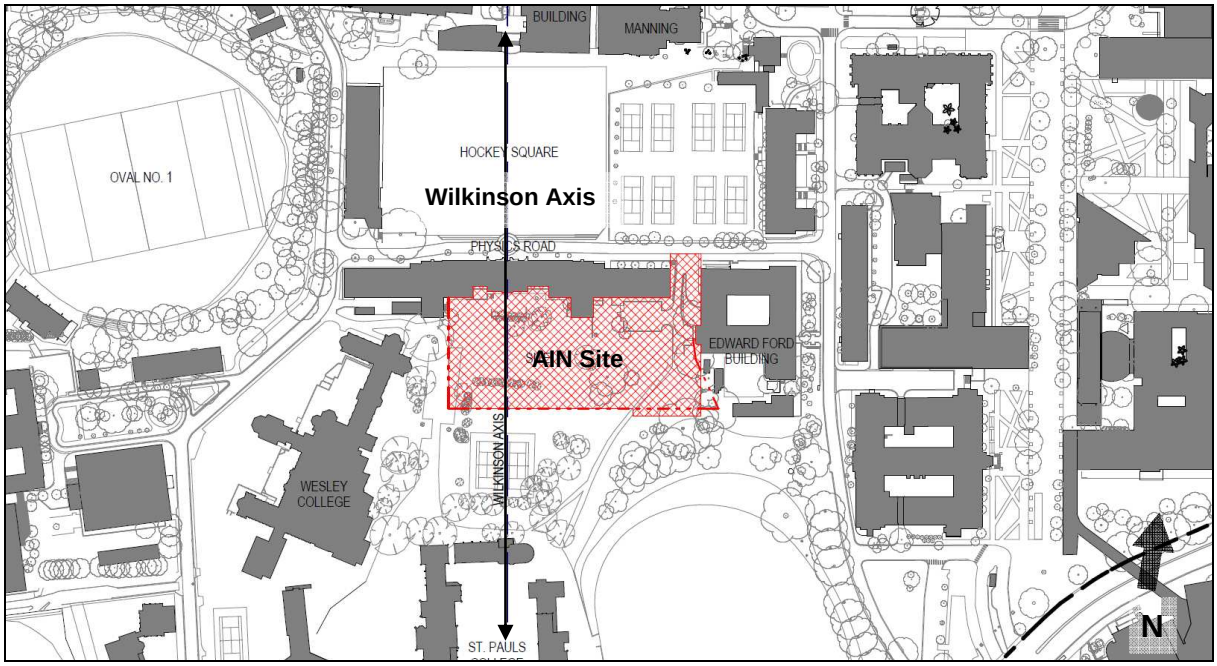
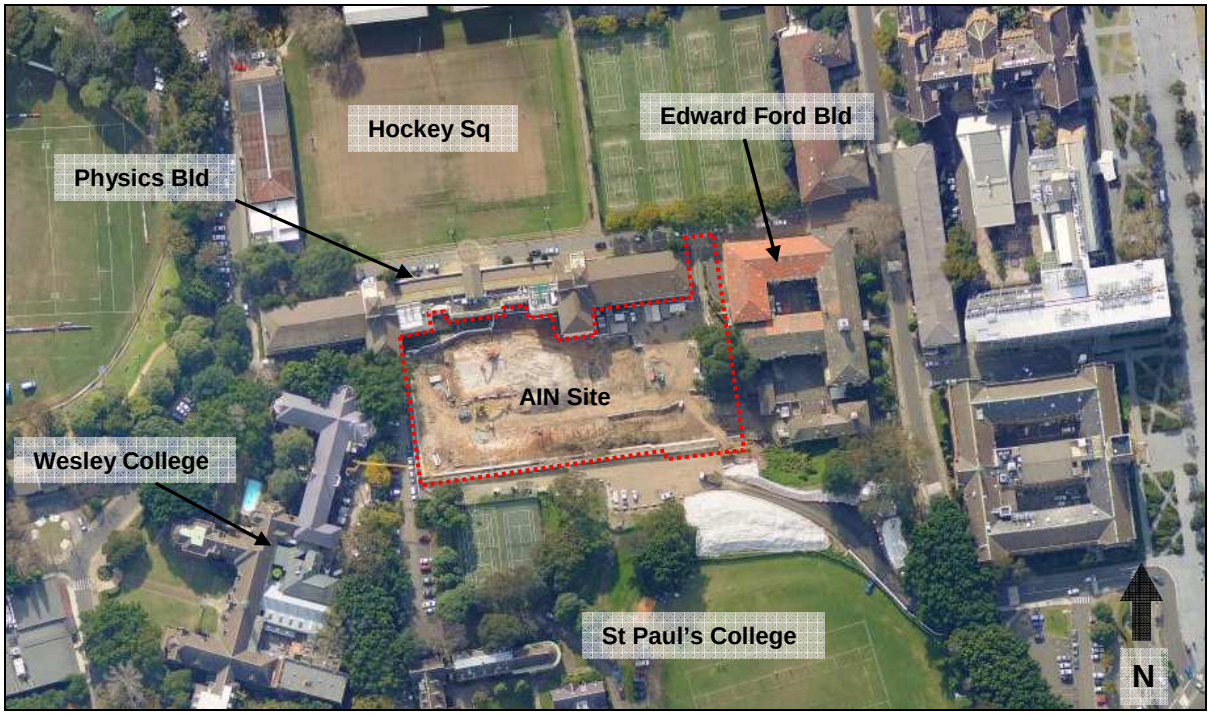


Figure 3: Existing Site Conditions (Source: www.nearmap.com)



1.3 St Paul's College Student Accommodation Development

On 22 August 2013, council determined a development application (DA) lodged by St Paul's College for the following:

- master plan for St Paul's College new student accommodation and associated communal and recreational facilities, future building envelopes, vehicular access, underground resident parking, and landscaping and infrastructure works; and
- stage 1 works including demolitions, site preparation and infrastructure works, construction and use of three new residential buildings; minor alterations to the Garnsey wing; underground parking; new outdoor sports court and pavilion; new vehicular access and landscaping.

The majority of the approved student accommodation development will border the proposed AIN Building along the new common boundary (see **Figure 4**) and will be up to approximately 12 m greater in height.

1.4 Key Development Components and Features

Table 1 provides a summary of the development's key components and features (as amended within the response to submissions). The proposed development layout is shown in **Figures 4 to 6**.

Table 1: Key Components

Development Summary	• **demolition of minor structures** • **construction of the four storey (20.5 m top of plant) AIN building, comprising:** o **24 laboratories;** o **57 offices; and** o **two seminar rooms plus break out spaces.** • **construction of new links to the Physics Building** • **ancillary works**
Demolition	• demolition of the existing site access, bitumen car park and loading dock; and • demolition of interface of existing Physics Building to enable construction of links.
AIN Building	• construction of a new 10,540 sqm, four storey science research and education facility, comprising: o Level 1 – entry including café space, laboratories, offices, storage rooms (chemicals and gas), plant and loading dock; o Level 2 – pedestrian linkages to Physics Building, entry forecourt, landscaped green roof, meeting rooms, 28 offices, lecture theatres (main and case study theatre), medium seminar room, and plant and storage rooms; o Level 3 – 28 offices, amenities, meeting rooms, case study lecture theatre, learning studio, large seminar room; and o Level 4 – third year teaching laboratory, student commons and plant rooms. • construction of an external plant room, comprising storage and maintenance rooms and substation.
Ancillary Works	• construction of new public domain spaces known as the 'Shared Way' and the 'Physics Courtyard'; • hard and soft landscaping and public domain improvements; and • construction of two new car parking spaces and loading dock.
Value [CIV] / Jobs	• $70.77 million / 24 new operational jobs and 120 construction jobs.

Figure 4: Proposed Development Layout

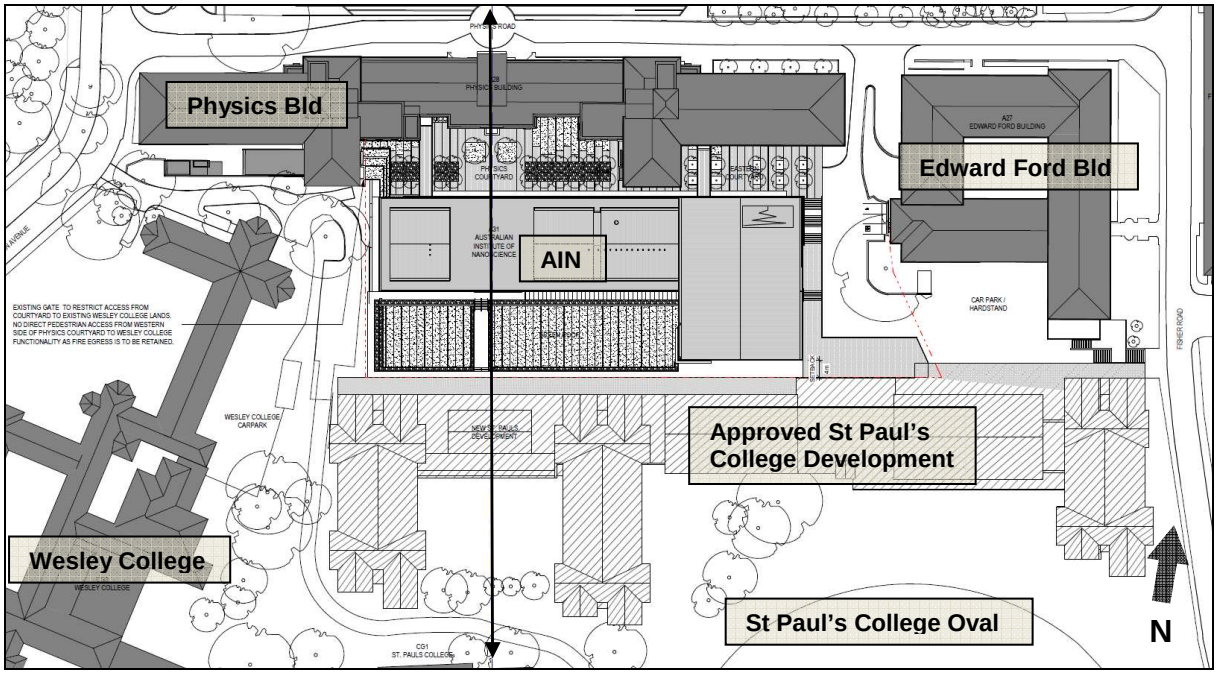


Figure 5: Proposed Level 2 Layout

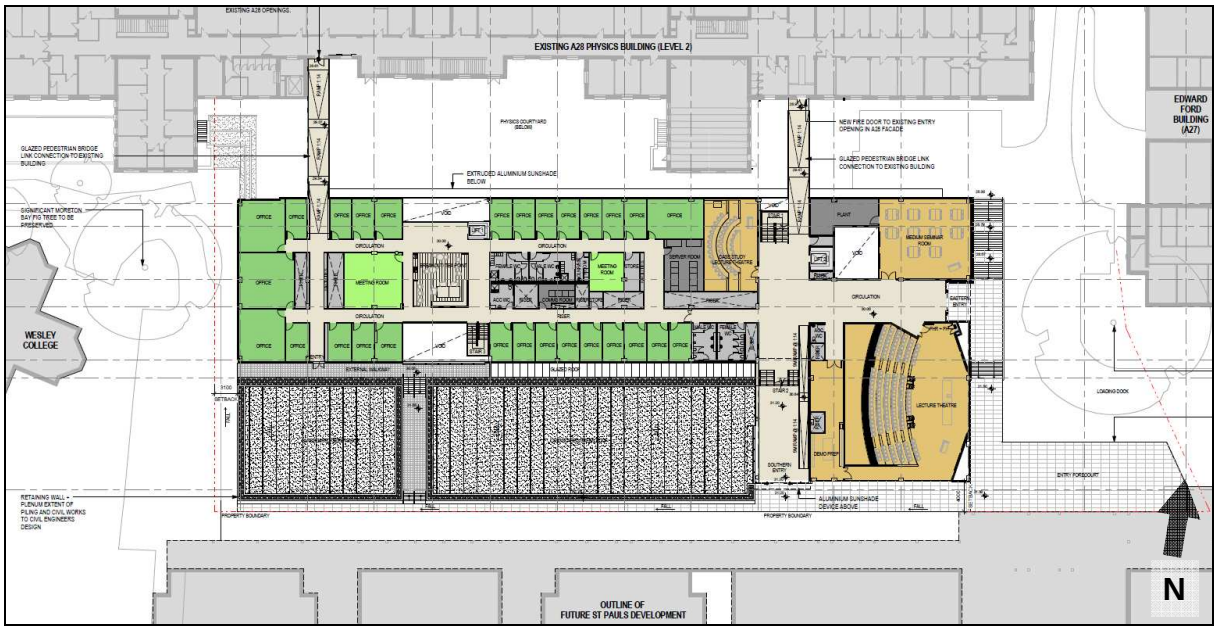
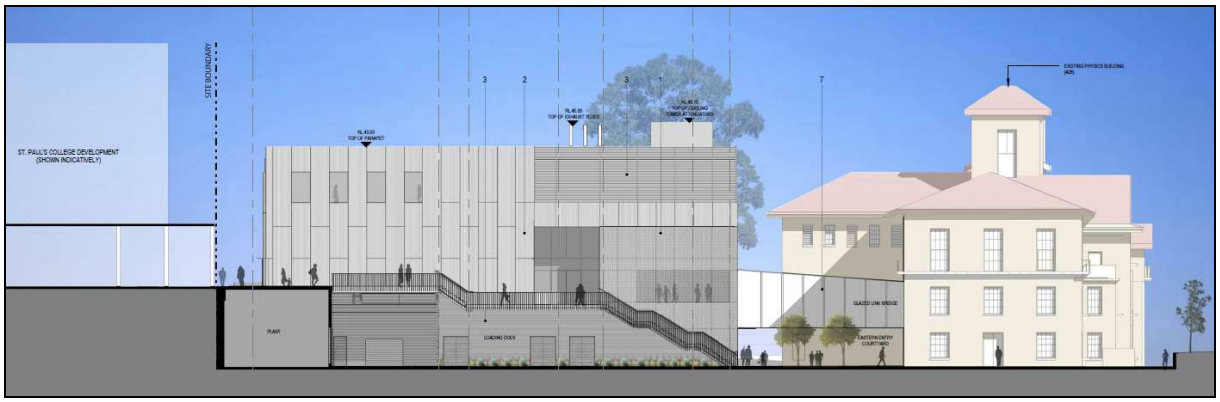


Figure 6: Proposed East Elevation



2. STATUTORY AND STRATEGIC CONTEXT

2.1 SEPP (State and Regional Development) 2011

The proposal is State significant development because it is development for the purpose of an educational establishment (including associated research facilities) with a capital investment value (CIV) in excess of $30 million, under clause 15 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011. Therefore the Minister for Planning and Infrastructure is the consent authority.

2.2 Delegation

On 27 February 2013, the Minister for Planning and Infrastructure delegated responsibility for the determination of State significant development under Division 4.1 of Part 4 of the *Environmental Planning and Assessment Act 1979* to the Executive Director, Development Assessment Systems and Approvals, where:

(a) the relevant council has not made an objection, and
(b) a political disclosure statement has not been made, and
(c) there are less than 25 public submissions in the nature of objections.

The proposal complies with the terms of the delegation as council has not objected to the proposal, no political disclosure statement has been made and there were less than 25 submissions received.

2.3 Permissibility and Zoning under Local Environmental Plan

The site is zoned SP2 Infrastructure – Educational Establishment under Sydney Local Environmental Plan 2012 (LEP). The proposed development is permissible with consent.

No specific development standards, such as building height and floor space ratio, apply to the proposed development. The Camperdown Campus is identified as a heritage conservation area under Sydney LEP, and the campus itself includes a number of local heritage items, including the Physics Building (Item 187) and Edward Ford Building (Item 188). Further consideration of relevant provisions of the LEP is provided in Appendix B.

2.4 Environmental Planning Instruments

The department's consideration of relevant EPIs (including SEPPs) is provided in Appendix B. The proposal is consistent with the relevant requirements of the EPIs.

2.5 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in section 5 of the EP&A Act. The proposed development is consistent with the objects of the EP&A Act as it represents the orderly and economic use of public land, provides essential research facilities and infrastructure and is proposed to be constructed in an ecologically sustainable manner.

2.6 Ecologically Sustainable Development

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes.

The department has considered the project in relation to the ESD principles. The Precautionary and Inter-generational Equity Principles have been applied in the decision making process via a thorough and rigorous assessment of the environmental impacts of the

project. The proposal is considered to be consistent with ESD principles as described in section 6.10 of the applicant's EIS, which has been prepared in accordance with the requirements of Schedule 2 of the Regulation.

The proposed development is located on a previously disturbed site, existing grassed drainage detention basin and existing hard stand sports court and would enable the largely under used/back-of-house area to be developed for the provision of improved teaching and research facilities. The development would not result in the loss of any threatened or vulnerable species, populations, communities or significant habitats. The site would not be impacts by changes in sea level resulting from climate change.

The development site is subject to minor overland flow drainage effects due to runoff from St Paul's College upstream, though these potential impacts would be appropriately managed by the proposed development through the construction of a new bund/retaining wall along the site's southern boundary and realignment of existing drainage infrastructure.

The applicant has also measured the development against The University of Sydney Sustainability Framework for buildings, which aims to create a method for managing, communicating and integrating sustainable development on the campus. In addition, the applicant has used additional international environmental rating systems, including the Green Building Council Australia, Green Star – Education v1 rating tool, as guidance to set project specific ESD benchmarks. The applicant proposes a number of ESD initiatives, including daylight harvesting, mixed mode ventilation, energy efficient mechanical plant and services, rainwater harvesting and water efficient services and infrastructure, to ensure that the proposed development achieves a high rating.

The department considers that the proposed development and proposed sustainability initiatives will encourage ESD in accordance with objects of the EP&A Act.

2.8 Environmental Planning and Assessment Regulation 2000

Subject to any other references to compliance with the Regulation cited in this report, the requirements for Notification (Part 6, Division 6) and Fees (Part 15, Division 1AA) have been complied with.

2.9 Strategic Context

The department considers that the development is consistent with and/or supports the following state/regional/local strategies:

- key policy commitments of NSW 2021, including improved teaching, research and education infrastructure and facilities and increased employment opportunities to assist in the stimulation of growth of critical industries that will support the growth and rebuilding of NSW;
- the guiding principles of the draft Metropolitan Strategy for Sydney to 2031, including the integration of infrastructure, transport and land use and the creation of new jobs and provision of education within the nanoscience field for the Broadway and Camperdown Education and Health Cluster of the Central Sydney Subregion;
- the proposed development will support the growth and promotion of the Sydney Education and Health and Precinct of the Sydney City Subregion through the creation of new employment opportunities, establishment of work class education and research facilities
- investment in employment generation with a CIV of $70.77 million; and
- job creation through 24 new operational jobs, 120 construction jobs and 117 new student enrolments.

2.9 Director General's Requirements

The EIS is compliant with the Director-General's Requirements and is sufficient to enable an adequate consideration and assessment of the proposed development for determination purposes.

3. EXHIBITION CONSULTATION AND SUBMISSIONS

3.1 Exhibition

In accordance with section 89F of the EP&A Act and clause 83 of the Regulation, the Director-General has made the application and accompanying information publicly available for at least 30 days (see **Table 2**).

Table 2: Exhibition Details

Exhibition/Notification	Medium
Publicly exhibited	DPI information centre, City of Sydney and on the department's website.
Newspaper notice	Sydney Morning Herald and Daily Telegraph
Written notices to	Landholders and public authorities

The department received five submissions during the exhibition of the application - four submissions from public authorities and one public submission. A summary of the issues raised in submissions is provided below.

3.2 Public Authority Consultation and Submissions

A total of four submissions were received from public authorities as summarised below.

City of Sydney Council

Council raised no objection to the proposed development, and recommended conditions should approval be granted. Council also provided the following comments for consideration:

- the department should be satisfied that the proposal exhibits design excellence with regard to the surrounding built form, landscape and heritage setting;
- the development is considered to be well located and would have limited impacts upon the setting of the existing Physics Building and respects the existing Wilkinson Axis and would have an acceptable impact on the Sydney University Conservation Area and listed items within the vicinity of the proposed development;
- the department should ensure the accessibility review meets the requirements of the BCA and Disability Discrimination Act;
- the arborist report is to be amended to include an assessment of the proposed development, not just the early works DA;
- the existing fig tree adjacent to the Edward Ford Building is to be retained and protected and compensatory planting should be proposed to replace the loss of the existing canopy;
- consideration should be given to potential noise and dust impacts arising from construction of the proposed development; and
- the proposed AIN development requires 52 bicycle parking spaces and associated bicycle lockers and end of trip amenities.

Roads and Maritime Services

The RMS raised no objection to the proposed development and provided recommended conditions of approval.

Sydney Water

Sydney Water raised no objection to the proposed development, however, did note that the proposed development was located above an existing stormwater channel, and recommended further discussions be held with Sydney Water regarding potential deviation of the channel. The following comments were also provided:

- preliminary investigations identify that there is sufficient water capacity and that there are a number of mains and a trunk wastewater mains available for connection;
- as the site is traversed by a number of wastewater mains, where works are in close proximity to Sydney Water assets, the developer will need to carry out works to protect the mains; and
- Sydney water will further assess the impact of the proposed development when an application for a Section 73 Certificate is made.

NSW Heritage Branch

The NSW Heritage Branch raised no objections to the proposed development, though provided extensive commentary on the proposed development, its relationship with the adjoining proposed student accommodation development at St Paul's College and the potential impact the developments would have on the heritage significance of existing views and vistas of the University, particularly the Wilkinson Axis. In addition to recommended conditions, the NSW Heritage Branch also requested the provision of the following information:

- provide an urban section along the Wilkinson Axis that includes accurate height of all buildings from St Paul's College to the Education Building;
- provide a physical or three dimensional computer model to examine significant views and vistas, the Wilkinson Axis and building relationships of the site;
- provide a photomontage of the proposed development from the Education Building of the Physics Building, which accurately depicts the extent of trees proposed to be removed and buildings constructed in the St Paul's student accommodation development that would form a background; and
- provide a copy of the School of Physics Conservation Management Plan 2005, prepared by Otto Cserhalmi and Partners Pty Ltd.

3.3 Public Submission – Wesley College

The public submission received from Wesley College did not object to the proposed development, but raised the following concerns:

- the AIN development will have a significant adverse impact on Wesley College, in particular the residential Purser Wing, which is undergoing a $5 million upgrade;
- the proposed new subdivision boundary has been plotted with no reference to topography or existing infrastructure improvements that exist in the area and should be amended to better relate to the existing car park that Wesley College has enjoyed the benefit of use by a sublease from St Paul's College;
- the four metre setback of the proposed 10 m high building from the western boundary is considered minimal and should be increased, with wall modulation, softening or other devises to ensure the building is a 'good neighbour' in an urban design context;
- the whole west wall facing the Purser Wing of Wesley College is a precast concrete panelled wall, with no modulation or fenestrations, reflecting a harsh façade treatment and poor urban design consideration of the college;
- there is concern that the upper level terrace will be a lifeless and windswept space due to the lack of access, and it should be amended to improve the western terrace's function;
- the submitted shadow diagrams lack detail and their accuracy is questioned with respect to the shadows detailed as being cast;
- the submitted noise study is insufficient and does not include any computerised modelling of noise expected from the AIN facility and potential impacts on Wesley College;

- there has been no pre-DA consultation with Wesley College, which is the nearest neighbouring residential land use;
- there is no consideration of potential noise or privacy impacts related to students using the passageway past the Purser Wings of Wesley College to access the AIN, which should not be encouraged, and mitigation measures must be put in place to discourage it;
- Wesley College requests the normal and standard protection measures for construction noise be conditioned as part of any consent; and
- no light spill assessment has been included in the EIS which should be undertaken to assess the impacts of the proposed development on Wesley College, and controls imposed that limits security lighting and spill to minimum levels.

The department has considered the issues raised in full in its assessment of the project.

3.4 Applicant's Response to Submissions

The University of Sydney lodged a response to submissions (RtS) report on 8 August 2013 to address the issues and comments raised during exhibition of the development. This included the submission of additional supporting documentation (including a revised ESD report, SEPP 33 review, and noise and vibration report) and the following amendments to the architectural design of the development are proposed in response to comments from NSW Heritage Branch and Wesley College:

- revised size, location and built form of the AIN Building's footprint;
- revised western wing to provide a 20 m visual opening on the Wilkinson Axis;
- southern façade setback of levels 2 – 4 increased by 18 m from southern site boundary;
- increased physical separation between AIN Building and Physics Building and associated linkages reduced to a single level;
- addition of a green roof at level 2 opposite the proposed St Paul's College development;
- eastern overhead pedestrian bridge replaced by an external stairway integrated with eastern façade of the AIN Building; and
- AIN Building internal layout and distribution of activities reconfigured by eliminating the internal courtyard and relocating the ground floor café.

Figures 7 and **8** detail the amendments to the built form of the AIN Building, including the deletion of a large two storey element at the rear of the site, adjacent to the proposed St Paul's College development.

In accordance with section 89F(4) of the EP&A Act, the amended development proposal was not re-exhibited as the proposed development does not substantially differ from that originally exhibited, noting that the purpose, function and intensity of the AIN development has not changed and that the environmental impact of the development has also been reduced. Notwithstanding, the applicant's RtS was referred to council, the NSW Heritage Branch and immediate adjoining residential colleges for review and comment.

The department received submissions from council, the NSW Heritage Branch and Wesley College following the referral of the RtS. A summary of comments received is provided below.

Figure 7: North Eastern Perspective (Original Proposal Outlined Red)

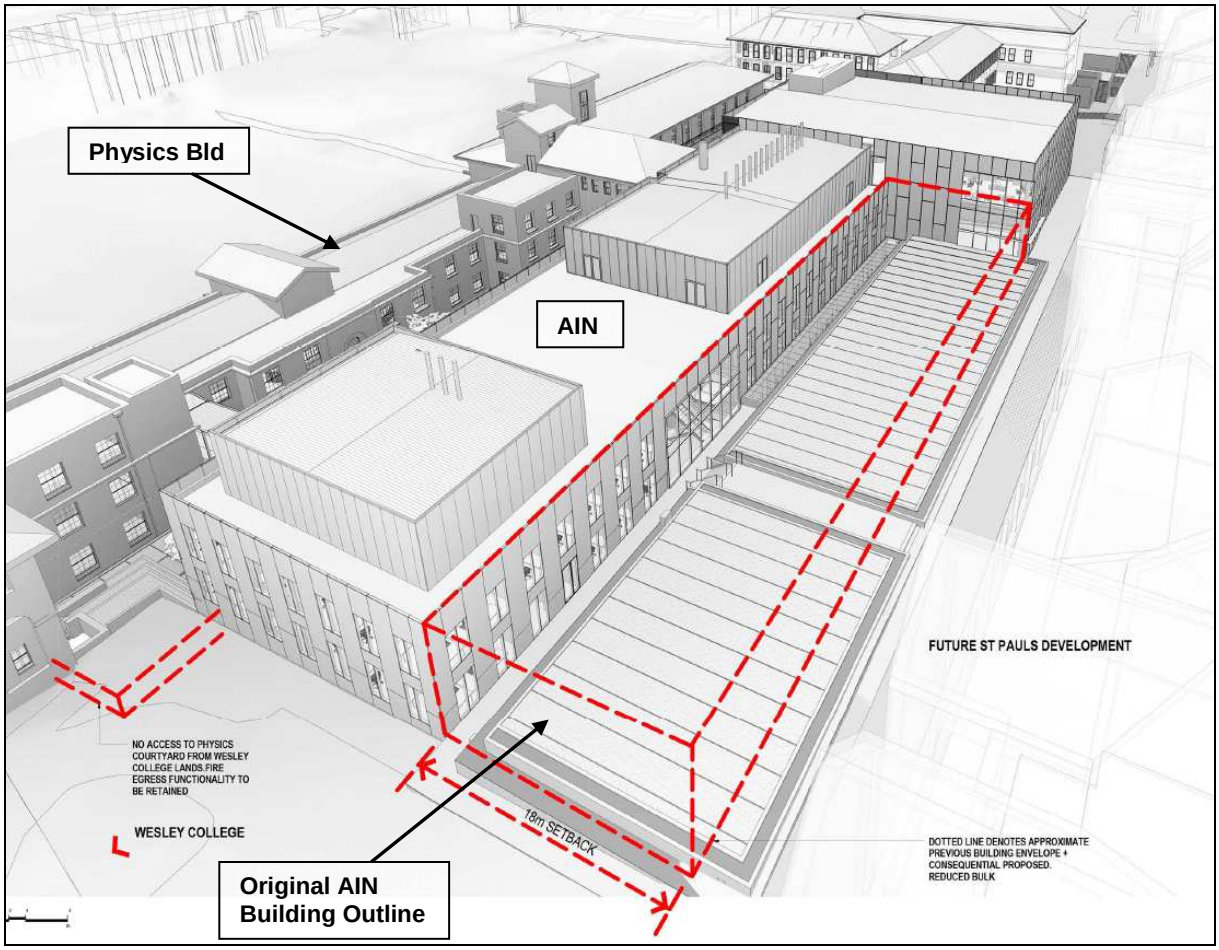
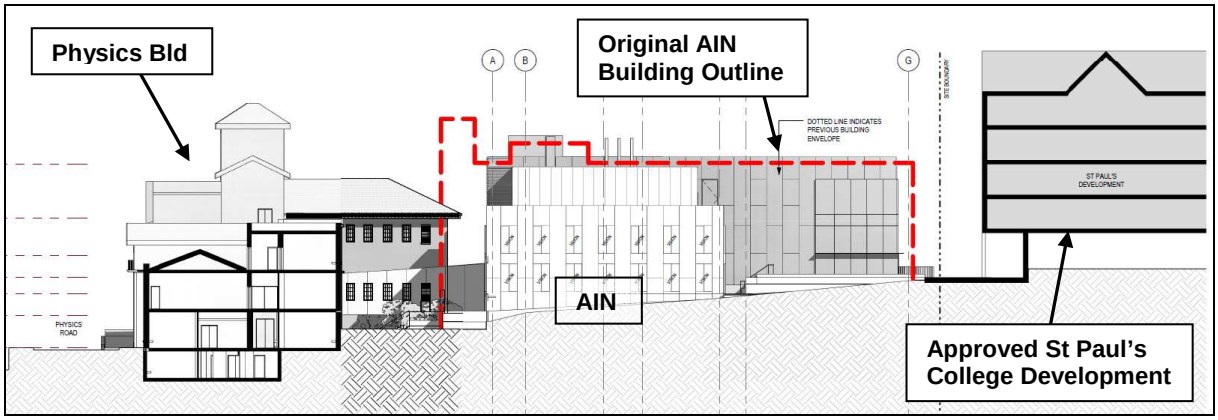


Figure 8: North-South Section (Original Proposal Outlined Red)



City of Sydney Council

Council raised no objections to the proposed amendments to the building form, noting that the amended envelope will result in noticeable improvements to the development's relationship with the approved St Paul's College student accommodation development and Wesley College.

Council advised they supported the proposed amendments and reiterated comments made in its submission lodged during exhibition of the original development.

NSW Heritage Branch

The NSW Heritage Branch advised they supported the proposed amendments and have no further concerns.

Wesley College

In response to the proposed design revisions, Wesley College provided the following comments:

- concerns in relation to the location of the western boundary and its impact on an existing St Paul's College car park used by Wesley College under a sublease arrangement are reiterated;
- the proposed western setback is still considered minimal;
- the treatment of the plant room is considered the design's weakest point and the bland metal cladding should be provided with some articulation, but not louvres or similar source of noise;
- provision of a deep root planting zone along the western boundary for the full width of the setback would be beneficial;
- the western elevation has been significantly improved by the 18 m reduction in length, however the deletion of the proposed sun blades previously shown is a negative element of to the revised design as they break down the appearance of the large bland façade;
- the revised shadow diagrams detail no impact on Wesley College;
- Wesley College remains extremely concerned about the noise levels from the AIN Building and reiterate our request that the consent authority include a strict condition that all plant equipment not exceed the background noise level at the boundary by more than 5 dB(A); and
- the adjoining Purser Wing of Wesley College is entirely residential and light spill from offices is a major concern and request a light study be undertaken and physical management controls be imposed that limits security lighting.

The department has considered the comments raised in full in its assessment of the project.

4. ASSESSMENT

4.1 Section 79C Evaluation

Table 3 identifies the matters for consideration under s. 79C that apply to State significant development, in accordance with section 89H of the EP&A Act. The table also represents a summary for which additional information and consideration is provided for in Section 4 (Key and Other Issues) and relevant appendices or other sections of this report and the EIS, referenced in the table. The EIS has been prepared by the proponent to consider these matters and those required to be considered in the DGRs and in accordance with the requirements of section 78(8A) of the EP&A Act and Schedule 2 of the Regulation.

Table 3: Section 79C(1) Matters for Consideration

s. 79C(1) Evaluation	Consideration
(a)(i) any environmental planning instrument	Consideration of relevant EPI's has been undertaken at Appendix B. The proposed development satisfactorily complies.
(a)(ii) any proposed instrument	Not applicable.
(a)(iii) any development control plan	Clause 11 of State Environmental Planning Policy (State and Regional Development) 2011 provides that development control plans do not apply to State significant development. Notwithstanding, consideration of relevant controls has been given at Appendix B.
(a)(iiia) any planning agreement	Council's Section 94 Development Contributions Plan 2006 applies to the proposed development based on additional new staff. Section 2.14 of council's plan also deals with applications that may be eligible for an exemption. Developer contributions have been

	considered in full in section 4.2.5.
(a)(iv) the regulations	The development application satisfactorily meets the relevant requirements of the Regulation, including the procedures relating to development applications (Part 6 of the Regulations), public participation procedures for SSD's and schedule 2 of the Regulation relating to environmental impact statements.
(a)(v) any coastal zone management plan	Not applicable.
(b) the likely impacts of that development	The department's assessment has given consideration to the likely impacts of the proposed development.
(c) the suitability of the site for the development	The subject site is appropriately zoned SP2 Infrastructure – Educational Establishment under Sydney LEP 2012. The proposed development will be integrated into the university campus and make use of existing underutilised vacant land.
(d) any submissions	Consideration has been given to submissions received during the exhibition of the development application. See sections 3 and 4.2 of the department's assessment. Key issues raised include: bulk and scale, heritage impacts, amenity impacts, construction impacts and noise impacts.
(e) the public interest.	The proposed development will provide the University of Sydney and NSW with internationally competitive research, laboratory and teaching facilities appropriately collocated in proximity to existing scientific and teaching research facilities. The building design incorporates ecologically sustainable design features and appropriately considers adjacent heritage items and surrounding built environment.
Biovdiversity values exempt if: (a) On biodiversity certified land? (b) Biobanking Statement exists?	 Not applicable. Not applicable.

4.2 Key and Other Issues

The department considers the key environmental issues for the application to be:

- built form and urban design;
- heritage;
- traffic and transport;
- noise and vibration; and
- developer contributions.

4.2.1 Built Form and Urban Design

The proposed development involves the construction of a new four storey education and research building, to provide students and researchers stringent vibration and temperature controlled environments for undertaking research in the field of nanoscience. The design and scale of the proposed building form has been heavily influenced by the existing scale and heritage environment of the adjacent Physics Building, existing Wilkinson Axis and character of courtyards and urban spaces located throughout the University's campus.

Built Form

The proposed development has a gross floor area of 10,540 sqm and a maximum height of 18 m to the top of the parapet and 20.15 m to the top of the cooling tower enclosure. The proposed development will be constructed on an area of vacant land behind the existing Physics Building and the adjacent proposed St Paul's College student accommodation development (see **Figure 4**). The built form of the proposed AIN Building is detailed in **Figures 9** to **12**.

The bulk of the proposed AIN Building has been sited behind the existing Physics Building. Consideration has also been given to the scale of the future St Paul's College student accommodation development, providing an appropriate transition between the existing and future built form. To ensure that the scale and form of the AIN Building does not dominate the campus locally, taller elements of the building have been sited towards the eastern end of the building behind taller elements of the existing Physics Building to minimise the visual impact of the AIN Building when viewed from the north (Physics Road, Hockey Square, Education Building and Manning House). The design of the proposal also provides a 22 m wide opening centred on the Wilkinson Axis to preserve the importance of this visual corridor (this is also discussed later in Section 4.4.2 of this report and shown in **Figures 16 and 17**).

Figure 9: Western Elevation

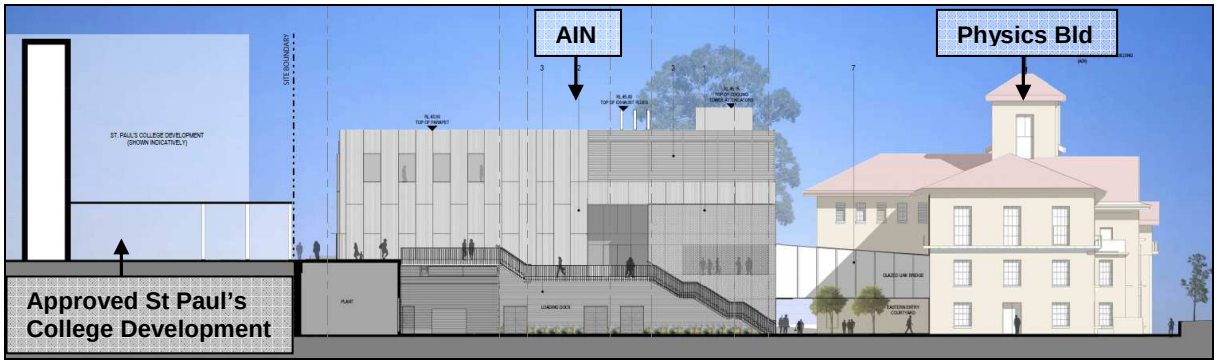


Figure 10: Eastern Elevation

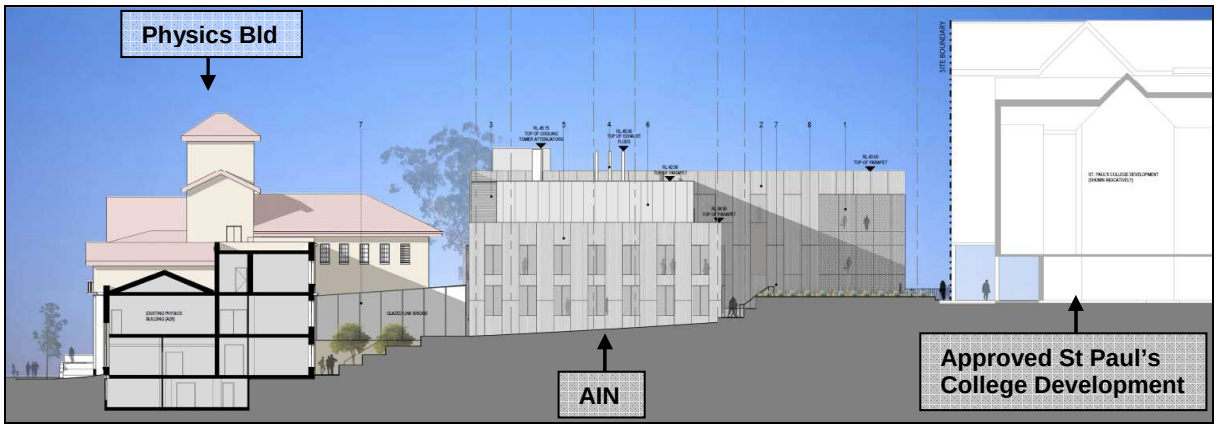


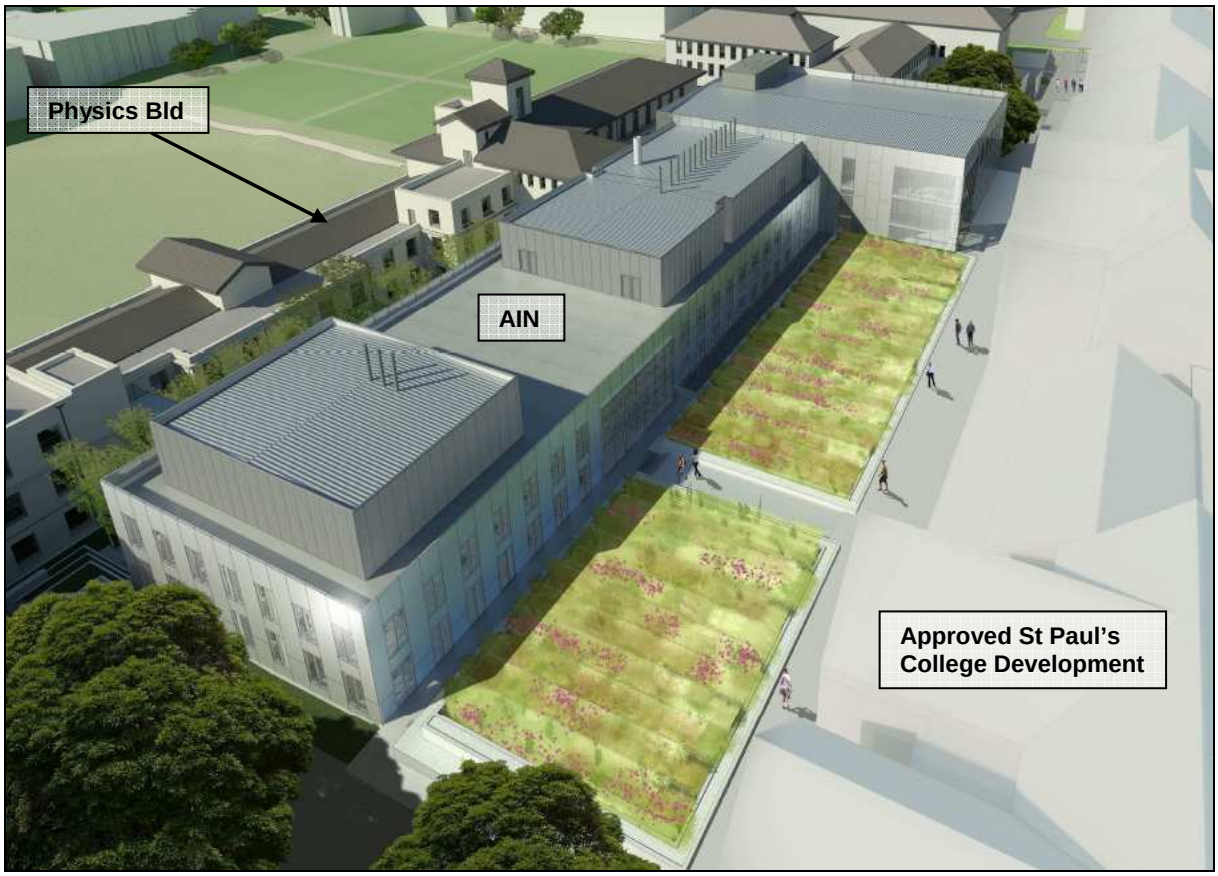
Figure 11: Northern Elevation

The internal layout of laboratories and working/teaching spaces make use of the natural fall of the site, enabling the layout of the upper levels to be setback 18 m from St Paul's College and lower ground level to be hidden by a green roof (inaccessible) (see **Figure 12**), providing a landscaped outlook for occupants of the AIN Building, Wesley and St Paul's Colleges. The setback of two thirds of the upper levels from the rear southern boundary also allows the proposed built form of the AIN Building to be satisfactorily separated from the future St Paul's College development and minimise bulk and scale impacts.

The proposed built form of the AIN Building is to be sited along the new western boundary of the development site (created through the St Paul's College and University land swap) and setback approximately 3 m. In addition, the siting of the proposed built form provides a building separation of approximately 20 m from the residential Purser Wing of Wesley College to the western elevation of the AIN Building. The revised design has also reduced the built form along this western boundary by approximately 50 per cent (see **Figure 7**), significantly reducing the built form scale to one that is more consistent with its adjacencies.

The proposed materials and finishes of the development has been selected to express a contemporary addition to the Physics precinct and reflect the scientific nature of the proposed development's educational function. The façade design makes use of composite aluminium, glazed aluminium and powder coated composite steel cladding systems to create the contemporary finish to the building, while window locations within the façade break up the modern metallic elevations.

Figure 12: North Eastern Perspective



The department is satisfied that the proposed height and scale of the AIN Building is acceptable within its setting, noting the impacts of proposed development are minimised through its location behind the existing Physics Building and appropriate siting of built form. The department is also satisfied that the contemporary building design and selection of

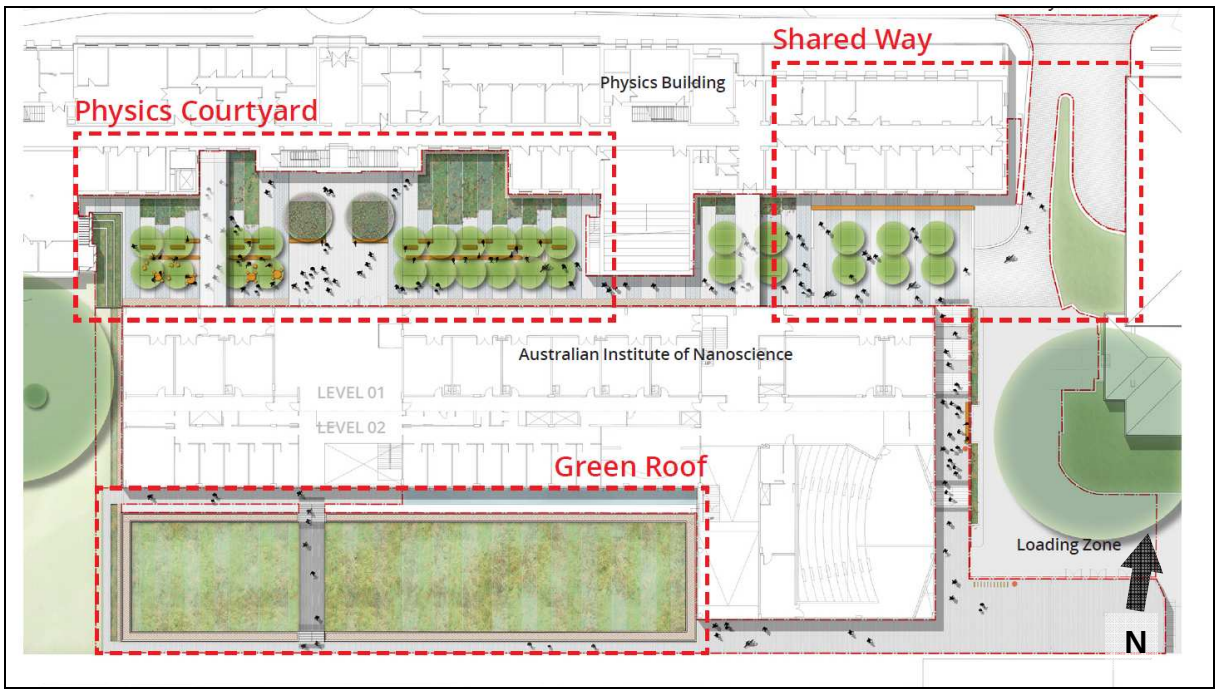
building materials of the AIN Building offers a suitable modern addition to the Physics precinct.

Public Domain and Landscaping

The location of the proposed development between the existing Physics Building and the proposed St Paul's College development necessitates that the landscape and public domain design appropriately responds to the design and function of the adjacent buildings.

The siting of the proposed AIN Building affords the creation of three courtyard spaces (see **Figure 13**), responding to the public domain character of the University. Due to the proposed location of the AIN Building behind the Physics Building, direct pedestrian access to the new development is proposed from Physics Road, via the proposed new Shared Way courtyard space. In addition, the Shared Way, as its name suggests, is also designed to retain vehicle access to the AIN Building loading dock and services area. Notwithstanding, the proposed paving materials and landscaping finishes reinforces that the Shared Way is designed to prioritise pedestrians and cyclist movements over vehicles (see **Figure 14**), which will be further reinforced through University signage.

Figure 13: AIN Landscape Plan



The proposed Physics Courtyard is located centrally between the AIN Building and the existing Physics Building, on the alignment of the Wilkinson Axis (see **Figure 15**). The design and function of the Physics Courtyard is proposed to cater for more passive recreational and social interactions for students, staff and visitors, providing circulation between the existing and proposed built forms of the Physics precinct. The space is proposed to be activated with a café, located within the ground level of the AIN Building that services the Physics Courtyard outside.

The third landscaped space, the green roof (see **Figures 12 and 13**), is proposed as an inaccessible, visual and acoustic buffer between the AIN Building and adjoining colleges, providing a landscaped, green outlook for the college residents. The green roof is proposed to have a 300 mm soil depth, allowing for the establishment of vegetation up to one metre in height at maturity that will also establish an effective green landscaped buffer. The green roof will also offer the development environmental benefits such as reducing the development's heat island effect on the campus, stormwater treatment and increased biodiversity through the appropriate selection of vegetation.

Figure 14: Shared Way Entry Courtyard

Figure 15: Physics Courtyard

The department considers the proposed public domain and landscape design of the AIN Building to be satisfactory, positively reinforcing pedestrian access and connections through the site and creating suitable environments for both passive recreation and social interaction.

4.2.2 Heritage

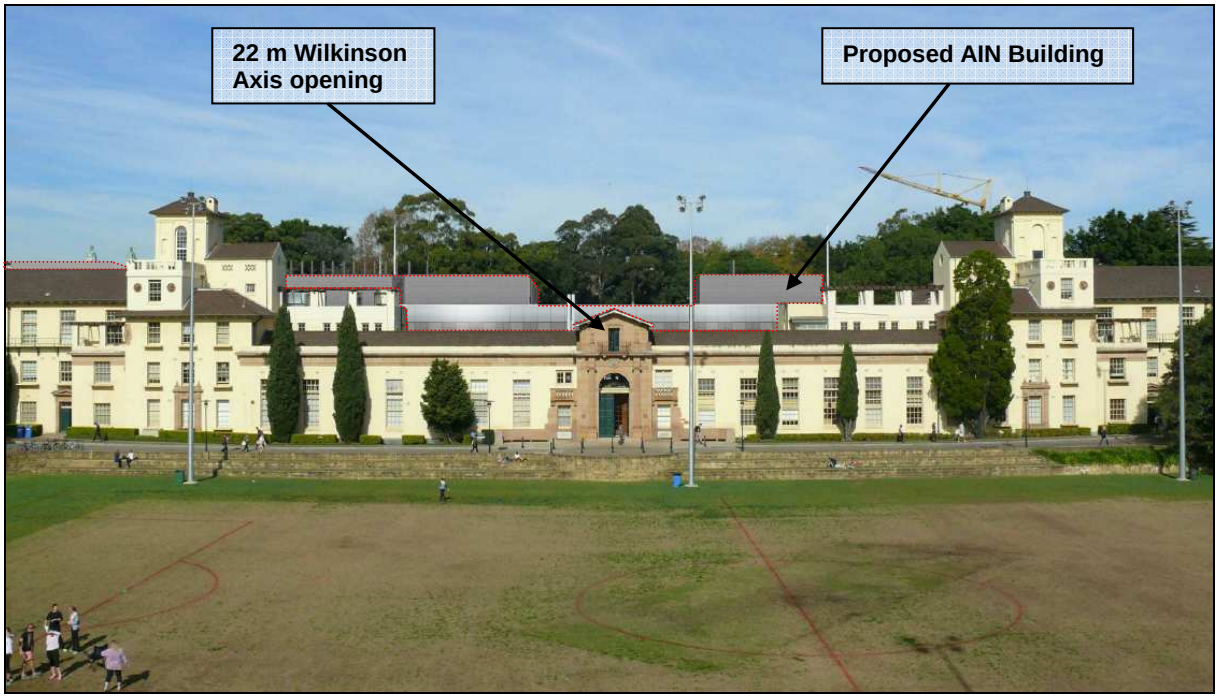
The subject development location within the University of Sydney campus requires consideration of the unique characteristics of the Sydney University Conservation Area. In addition, the proposed AIN Building is located adjacent to the existing Physics Building, and partly located within the grounds of St Paul's College, both locally listed heritage items within Schedule 5 of Sydney Local Environmental Plan 2012.

During the exhibition of the proposed development, the NSW Heritage Branch commented that the proposed development, together with the St Paul's College development and the existing Physics Building, were likely to substantially affect the significance of view lines and vistas of the Wilkinson Axis, noted as being one of the more important vistas of the University. The Wilkinson Axis originates from the early 1920s development plan for the University, designed by architect Leslie Wilkinson, which sought to create vistas from St Paul's College across Hockey Square to the Union and to the entrance of the University on Parramatta Road.

Notwithstanding the NSW Heritage Branch's comments, the applicant's statement of heritage impact details that the form of the Physics Building was influenced by Leslie Wilkinson's 1920's University grounds development plan that sought create views from the University entrance at Parramatta Road, across Hockey Square to St Paul's College. This original vista along the Wilkinson Axis has since been eroded due to development within the ground of St Paul's College and the University. In this respect, the applicant's statement of heritage impacts contends that the Wilkinson Axis is now a series of vistas from points along the alignment, rather than the single vista as originally intended.

Responding to these comments, the applicant notes that the revised design has reduced the volume, height and bulk of the proposed development, siting the tallest components of the building to the east behind the existing built form of the Physics Building. Further, the proposed roof top plant room enclosures have been symmetrically positioned to provide a 22 m wide opening along the alignment of the Wilkinson Axis (see **Figure 16**).

Figure 16: Wilkinson Axis Vista – Proposed Built Form Outlined Red (From Education Building Bridge)



Additionally, the applicant notes that the revised design of the proposed AIN Building minimises its connections and physical contact with the existing Physics Building, with the two buildings now distinctly separated by the proposed Shared Way and Physics Courtyard

spaces, with only minor works proposed to the fabric of the Physics Building. The use of glazed pedestrian link bridges at level 2 are the only proposed physical connections between the AIN Building and Physics Building, designed with lightweight materials to compliment the former bridge connection with the former Annexe Building.

The department notes that since its establishment in the 1850's, the University has evolved, expanding its campus size, built environment and architectural character. In this respect, the proposed AIN Building represents another phase in this evolution, with the design and use of contemporary materials and finishes providing an appropriate, but distinct difference to the form and finish of the Physics Building. The distinct difference of the AIN Building's contemporary design and positioning of the roof top plant room enclosures also assists in ensuring that the significance of the Physics Building and Wilkinson Axis are retained.

The department also notes the applicant's proposed mitigation measures, including archival recording, appointment of a heritage consultant and inclusion of a construction management plan and heritage protection measures, as recommended within the applicant's statement of heritage impact, will assist in ensuring that the significance of the existing local heritage is not adversely impacted on by the proposed development.

The department is satisfied that the proposed development has been designed to appropriately respond to the existing setting and heritage significance of the Physics Building, the Sydney University Conservation Area and Wilkinson Axis. The revised design and reductions to the height and bulk of the proposed development are considered to be a satisfactory response to the local setting and potential impacts on the heritage significance of the locality will be minimal.

4.2.3 Traffic and Transport

Public Transport and Pedestrian Connections

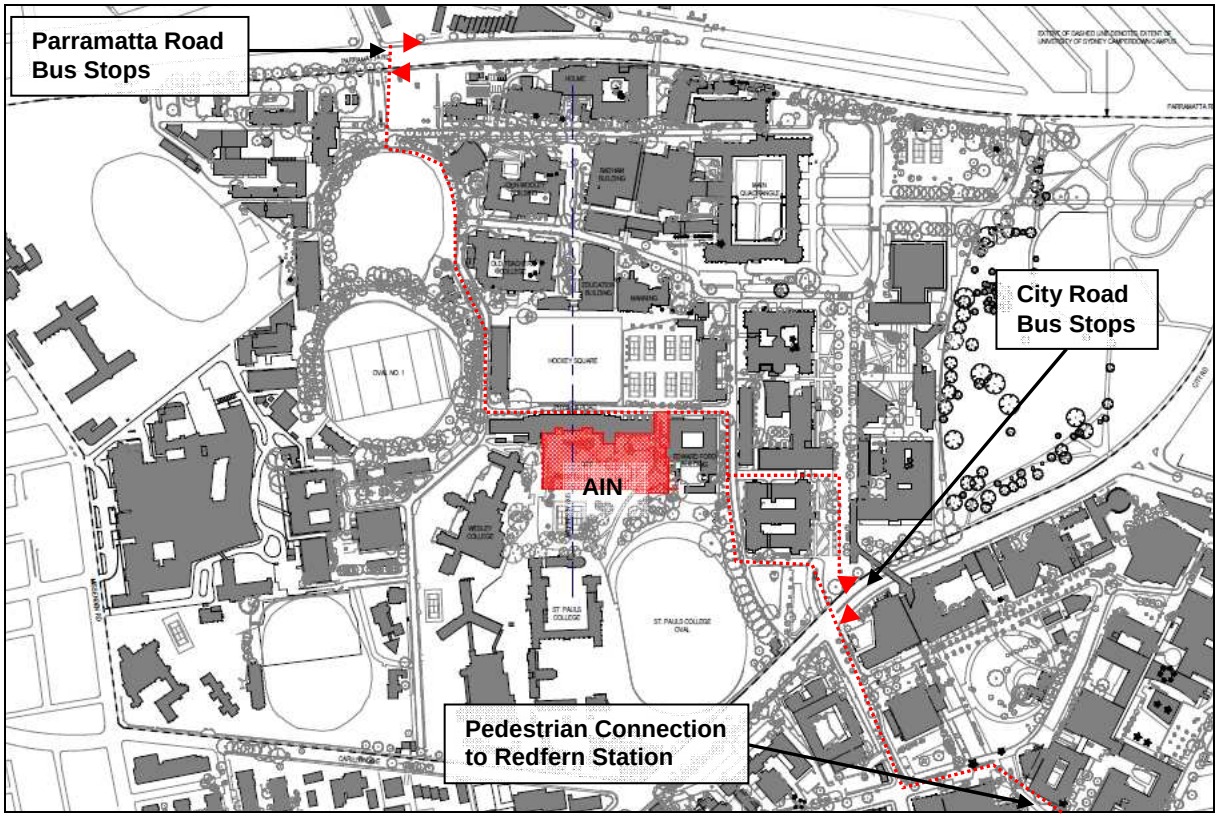
The University of Sydney is currently serviced by regular rail and bus public transport services, with the proposed development's central location within the University's Camperdown Campus providing legible connections to the existing Parramatta Road and City Road bus stops and Redfern Railway Station (see **Figure 17**).

Bus services along both Parramatta Road and City Road regularly operate along these routes, providing a number destination options and connections to other major destinations, including but not limited to Central Railway Station, Sydney CBD, Newtown (including Newtown Railway Station), Marrickville, Coogee, Bondi, University of NSW and Glebe. Similarly, regular train services provided at Redfern Railway Station are considered acceptable and provide a number of destination and connection options.

The accessible and regular public transport service connections available encourage a high pedestrian activity within the University campus. Due to this characteristic, pedestrian priority facilities are located within the campus grounds where the potential for conflict with motor vehicles exist, including a raised pedestrian priority crossing on Physics Road, located in front of the proposed development.

As previously discussed in Section 4.2.1, the design of the entrance to the proposed development caters for both pedestrians and vehicles entering and exiting off Physics Road via the proposed Shared Way courtyard. The design of the Shared Way prioritises pedestrian activity through the use of selected materials to differentiate the environment from a typical vehicle access arrangement to maximise pedestrian safety while still providing suitable vehicle access.

Figure 17: Main Public Transport Connections



Parking

A total of two car parking spaces are proposed to be provided as part of the development of the AIN Building, including one accessible parking space. The department acknowledges the parking provision proposed represents a 10 space reduction from the 12 parking spaces that previously serviced the Physics Building and former Physics Annexe Building. The department also notes the University's desire to reduce at-grade parking and vehicle movements within the campus through the promotion of perimeter underground car parking stations and the promotion of pedestrian and bicycle traffic and connections to surrounding public transport services.

The proposed reduction in car parking availability on site is considered to be acceptable as it will reduce the potential for conflict between pedestrians and vehicles and also contribute to the University's long term plan of reducing at-grade parking that is currently spread across the campus in a semi-formal manner. Furthermore, the subject site is also well connected to existing public transport, meaning that users of the AIN Building will be encouraged to use alternative and more sustainable travel modes when commuting to the university.

The proposed revisions to the AIN Building design have also provided for an increase in bicycle parking, increasing from 16 to 20 spaces. Whilst this figure is lower than the number of spaces recommended in council's submission, 20 bicycle parking spaces satisfactorily meets council's minimum requirement of 1 space per 10 staff and 1 space per 10 students for the proposed 93 additional enrolment spaces and 24 new staff proposed to be created by the AIN development.

In this respect, the department is satisfied that the proposed parking arrangements for the AIN Building are satisfactory and will not impact on its functionality.

Traffic

The proposed reduction in the number of car parking spaces available on site will minimise the traffic generated by staff and visitors to the site which will have a minimal effect on the

existing road network. Notwithstanding, the proposed development will require the delivery of chemicals and substances associated with research and learning activities undertaken on site, as well as waste services vehicle movements, however these movements are expected to be infrequent and less than one per day. In this regard, the department is satisfied that the proposed development will not have a detrimental impact on the operation of the existing road network.

4.2.4 Environmental and Residential Amenity

Construction Noise and Vibration

The submitted environmental noise and vibration impact assessment (acoustic report) identifies the adjoining residential colleges and adjoining educational buildings as sensitive receivers, susceptible to noise and vibration impacts during construction and operation of the proposed development.

The Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) (ICN Guideline) establishes construction noise management levels for surrounding sensitive residential receivers, and for surrounding non-residential sensitive receivers during construction activities (i.e. Monday to Friday, between 7:00 am to 6:00 pm). Relevant construction noise management levels for the proposal are outlined in **Table 4** below. In addition to the application of the more stringent background noise levels for residential receivers, an internal noise level of 45 dB(A) should be also be observed for educational establishments.

Table 4: ICN Construction Noise Management Levels for Adjoining Land uses

Measured RBL (L_{A90} dB(A))	Noise Management Level dB(A)L_{eq} (RBL +10 dB(A))	Highly Noise Affected dB(A)L_{eq} (dB(A))
46 dB(A)	56 dB(A)	75 dB(A)

Having regard to the established noise management levels for the proposed development and based on the noise levels of typical construction equipment and associated predicted noise emissions generated on site during construction activities, adjoining receivers would potentially be affected by noise levels that exceed the established noise management level and highly noise affected level.

Notwithstanding, to address the potential construction noise impacts, the acoustic report recommends a number of mitigation measures, including but not limited to consultation with adjoining sensitive receivers to appropriately schedule works, implementation of respite periods to limit exposure times and appropriate equipment selection.

The applicant's acoustic report also identifies the potential for construction vibration impacts in the form of ground borne noise, human discomfort and building damage, ranging from cosmetic to major structural damage. In assessing these potential impacts, consideration has been given to Assessing Vibration – A Technical Guideline (Department of Environment and Conservation NSW, 2006), the German DIN Standard 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures and British Standard 7385: Part 2 1993 Evaluation and Measurement of Vibration in Buildings and Transport for New South Wales' Construction Noise Strategy, 2010.

Based on these guidelines identified within the applicant's acoustic report, appropriate criteria for safe working distances have been established for vibration intensive ground compaction and rock breaking construction activities to minimise the effect and exposure of vibration impacts on adjoining buildings and their occupants. Notwithstanding, it is noted that potential exceedances of vibration limits may be experienced within adjoining buildings and accordingly, the applicant's acoustic report has recommended mitigation measures to reduce these instances, including vibration monitoring, works scheduling, preparation of dilapidation surveys of adjoining buildings prior to construction works commencing, consultation with affected building occupants and implementation of respite periods.

To ensure that surrounding buildings and their occupants are protected from vibration impacts associated with the development, the department has recommended a condition requiring vibration monitoring be undertaken throughout the works to ensure that the vibration levels remain below the relevant criteria established.

The department is satisfied that noise and vibration impacts associated with the proposed development can be adequately mitigated and managed by the applicant's proposed mitigation measures contained within the acoustic report and the department's recommended conditions. The department has recommended conditions requiring the applicant to prepare a construction environmental management plan that addresses construction noise and vibration management and requires compliance with relevant noise management and vibration criteria during construction. The department also recommends that during the preparation of the construction environmental management plan, consultation with the identified sensitive receivers is undertaken and that appropriate respite periods are established to ensure that construction noise impacts are satisfactorily managed.

Operational Noise

The acoustic report establishes operational noise goals for the amenity criterion and sleep disturbance criteria of surrounding sensitive receivers based on the NSW Industrial Noise Policy (Environmental Protection Authority, 2000) (INP) (see **Table 5**). In this respect, industrial noise sources are generally considered acceptable if the noise does not exceed the background noise level by more than 5 dB(A) (the Intrusive Criterion). Also, the INP states that sleep disturbance noise levels should not exceed the measured background noise level by greater than 15 dB(A).

Table 5: Operational Noise Goals for Adjoining Receivers

Residential Amenity Criteria				
Period	**Measured RBL (L_{A90} dB(A))**	**Intrusive Criterion**	**Amenity Criterion dB(A)**	**Predicted Noise Levels ($L_{Aeq, 15mins}$ dB(A))**
Day	46	51	51	48
Evening	46	51	43	41
Night	46	51	41	41

Classroom Amenity Criteria				
Location	**Measured RBL (L_{A90} dB(A))**	**Intrusive Criterion**	**Max. Criterion dB(A)**	**Predicted Noise Levels ($L_{Aeq, 15mins}$ dB(A))**
Classroom (Internal)	46	N/A	40 (Internal)	59 (External)

Sleep Disturbance		
Location	**Measured RBL (L_{A90} dB(A))**	**Screen Criterion $L_{A1(1\ min)}$ dB(A)**
Residential	46	61

In assessing the proposed development against the noise goals, potential noise impacts generated by the operation of the AIN Building were modelled based on a worst case scenario, where all predicted plant equipment operates at the same time. **Table 5** details these predicted noise levels associated with the operation of the AIN Building. While noise sources from plant equipment do not typically result in a peak noise event that would create a 'sleep disturbance', modelling undertaken suggests that start up noises associated with the plant equipment will comply with the sleep disturbance criteria at the nearest residential receiver, being the future residents of the St Paul's College development.

Further, the acoustic report details that predicted noise levels of 59 dB(A) would be experienced at the external wall of adjoining classrooms, to which a noise reduction of 20 dB(A) is accepted when noises sources travel from an external to internal environment, satisfactorily complying with the internal noise criteria for classrooms.

To ensure that the proposed operation of the AIN Building complies with the established amenity criterion, the applicant's acoustic report also recommends a range of mitigation measures, including the use of solid walls facing sensitive residential receivers and acoustic louvres within the design of roof top plant enclosures. Based on the proposed mitigation measures, the acoustic report concludes that the operational noise levels will comply with the established amenity criterion.

The department is satisfied that noise impacts associated with the operation of the proposed development can be adequately mitigated and managed. To ensure that the on-going amenity of the surrounding sensitive receivers is protected throughout the operation of the development, the department recommends a condition requiring compliance with the operational noise goals established in the acoustic report.

Overshadowing

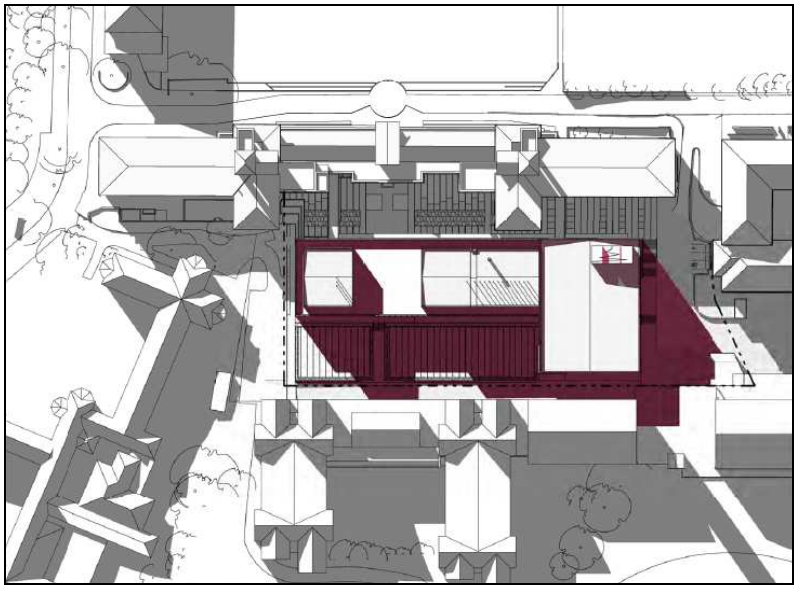
The proposed location of the AIN Building behind the existing Physics Building and its ground level relative to the adjoining residential colleges assists in minimising potential overshadowing impacts generated by the development. **Figures 18** to **20**, which illustrates the proposed development's winter solstice shadows, demonstrate that the proposed development will have minimal impact on the adjoining and future proposed residential colleges and their occupants.

It is noted that the proposed development will cast minimal shadows on Wesley College located adjacent to the west. Moreover, the revised design and reduction in built form of the AIN Building minimises potential overshadowing impact on the proposed St Paul's College development adjacent to the south. While the proposed development will result in some overshadowing of the proposed St Paul's College development at different times of the day during the Winter solstice, the impacts are considered to be minimal and acceptable.

Figure 18: Winter 9:00 am Shadow Diagram

Figure 19: Winter 12:00 noon Shadow Diagram

Figure 20: Winter 3:00 pm Shadow Diagram



Light Spill

During the exhibition of the original EIS, and restated in its submission on the applicant's revised design, Wesley College raised concerns that the proximity of the residential college to the offices located along the western elevation of the proposed development would result in unsatisfactory light spill impacts. The applicant states that the revised design of the AIN Building results in the upper levels of the development being pulled back 18 m from the southern boundary of the site, resulting in a reduction of offices and potential for light spill.

The department notes the concerns of the adjoining residential college, however considers the reduced scale of the western elevation and the minimum 20 m separation distance provided between the two buildings will minimise any potential light spill impacts.

The department also notes that automated lighting controls are proposed to be installed within the AIN development, which will be programed to turn off when rooms are unoccupied or when natural daylight is sufficient. This will ensure that no interior lights are on when not required, minimising the potential for office lighting to be left on throughout the evening,

impacting on adjoining residences. These measures recommended within the applicant's ESD report are also proposed as mitigation measures by the applicant.

Notwithstanding, to ensure any potential light spill impacts on adjoining residential colleges are minimised and satisfactorily mitigated, the department recommends a condition be imposed requiring the ongoing management of lighting during the operation of the building in accordance relevant Australian Standards and measures outlined in the applicant's ESD report.

Through the implementation of the measures discussed above, the department is satisfied that the potential impacts of light spill from the operation of the AIN building can be satisfactorily managed and mitigated.

4.2.5 Developer Contributions

The University of Sydney's Camperdown Campus, is identified as being located within the Western Precinct of the City of Sydney Council's Section 94 Contributions Plan 2006. Contribution rates applicable for the Western Precinct are based on the number of new staff. A contribution of $42,437.04 for new staff is generated by the proposal (based on council's online contributions calculator).

During exhibition, council's submission did not include a request or recommended conditions for developer contributions, subsequently stating that this was a matter for the department to consider.

In this respect, section 2.14 of council's Contributions Plan outlines types of development that may be eligible for an exemption on an individual merit, including:

- developments which provide a distinct community benefit on a not-for-profit basis (i.e. fire stations, police stations, ambulance stations and the like); and
- development by or for non-profit organisations which provide a distinct community benefit (i.e. child care centres, outreach services or the like).

Having regard to council's Contribution Plan, in particular section 2.14, the applicant has requested an exemption to the development contributions, arguing the following:

- The University of Sydney has a public charter and is open to the public as a non-gated, accessible and permeable precinct which provides access to a number of public libraries, open space and community facilities such as child care centres, sporting facilities (aquatic centre, playing fields, stadiums). Paying additional levies would be a duplication of these services.
- The University of Sydney is a not-for-profit institution that relies on grants, donations and external funding to provide new facilities for the university and wider community.
- It is unreasonable for the University to pay contributions which will effectively result in reduced facility and infrastructure spending.
- There is no nexus between components of the levy and the demand generated for facilities outside the University.
- Council has not indicated the requirement for payment of any monetary contributions in its comments on the proposal.
- Planning Circular D6 does not support the imposition of a levy relating to Crown developments.

Having regard to the nexus generated by the proposed development, the department notes that a key objective of council's Contributions Plan is to ensure that adequate community facilities are provided to address the cumulative demand generated by new development and to ensure that the existing community is not burdened by the provision of public amenities and public services required as a result of future development.

The demand generated by the additional 24 employees associated with the AIN Building would be satisfactorily accommodated by the University's existing infrastructure, which is generally open to the wider community (e.g. aquatic centre, library and child care centres). In this respect, the department concurs with the applicant's argument regarding duplication of infrastructure. Further, while the University's status as a not-for-profit organisation is not specifically acknowledged in council's contributions plan, the proposed development is reliant on external funding, and levying contributions would effectively increase the burden on external donators.

In view of the above, the department concurs with the applicant's argument and recommends that the proposed development not be levied for a development contribution under council's Contributions Plan. The University itself provides a range of accessible community facilities that will satisfactorily cater for the additional demand generated by the proposed development. Further, the proposed development will house research technologies in the nanoscience field, which are the first of their kind in Australia, providing opportunities for the growth of interdisciplinary relationships to other major on-campus research initiatives, including the Centre for Obesity, Diabetes and Cardiovascular Disease (Charles Perkins Centre), providing significant public benefit.

5. CONCLUSION AND RECOMMENDATION

The proposal seeks approval for the construction of a new four storey educational establishment, including public domain improvements and courtyard areas and sympathetic pedestrian bridge connections to the existing Physics Building at the University of Sydney, for the purpose of housing the Australian Institute of Nanoscience.

The proposed development has reviewed the submitted EIS, response to submissions and considered comments provided from council, public authorities and Wesley College. Issues raised in submissions have been duly considered and all relevant environmental issues associated with the proposal have been thoroughly assessed. The proposal is consistent with key objectives of State, regional and local planning strategies, and represents an increased investment in education and research that will provide Australia's first facilities for nanoscience research.

The proposed development will strengthen the University of Sydney's role in the growth and development of the education and health precinct. In this regard, the department considers the research, education and employment benefits generated by the proposed development to be in the public's interest.

The department considers the proposed development satisfactorily responds to the issues raised and recommends that the SSD application for the proposed Australian Institute of Nanoscience, Science Research and Education Facility be approved. The department's recommended conditions of approval will ensure that the construction and future operation of the proposed development will maintain the environmental and residential amenity of the University and adjoining residential colleges.

Heather Warton
Director
Industry, Social Projects and Key Sites

Chris Wilson
Executive Director
Development Assessment Systems and Approvals

APPENDIX A RELEVANT SUPPORTING INFORMATION

The following supporting documents and supporting information to this assessment report can be found on the Department of Planning and Infrastructure website as follows.

1. Environmental Assessment

   http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5087

2. Submissions

   http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5087

3. Proponent's Response to Submissions

   http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5087

APPENDIX B CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENT(S) (INCLUDING DRAFT) AND DCP(S)

State Environmental Planning Policy (State and Regional Development) 2011
The aims of this SEPP are to identify State significant development and State significant infrastructure and provide the necessary functions to joint regional planning panels to determine development applications.

The proposal is for SSD in accordance with section 89C of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it is development for the purpose of an educational establishment (including associated research facilities) with a capital investment value (CIV) in excess of $30 million, under clause 15 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
SEPP 33 provides clear definitions of hazardous and offensive industries and aims to facilitate development defined as such and to ensure that in determining developments of this nature, appropriate measures are employed to reduce the impact of the development and require advertisement of applications proposed to carry out such development.

The future operation of the proposed development will involve the use of classes of gases and chemicals for research and teaching purposes. Accordingly, the applicant has prepared a SEPP 33 Screening report, listing the classes and quantities of dangerous goods proposed to be stored within the development for these purposes. Based on the proposed classes and quantities of gases and chemicals proposed to be stored on site, it was found that all substances were below the hazardous thresholds, with the exception of the proposed class 2.3 toxic gases.

The applicant's SEPP 33 Screening report identifies that a proposed quantity of 326 kg of class 2.3 toxic gases are proposed to be stored within the AIN Building, therefore exceeding the threshold and triggering the requirement for the preparation of a preliminary hazardous analysis (PHA). However, the applicant's consultant recommended a review of the necessity of the proposed class 2.3 quantities to determine if this could be reduced below the 100 kg storage threshold.

In this respect, the applicant has indicated that other approved storage facilities within the University campus can provide the appropriate resources, therefore reducing the necessity

for the proposed quantity of class 2.3 toxic gases to be substantially reduced below the 100 kg threshold. Further, the applicant has recommended a mitigation measure to ensure that the quantities of gases and chemical stored within the AIN Building do not exceed the hazardous thresholds. In addition, the department recommends an operational condition be imposed limiting the storage of class 2.3 toxic gas quantities to below the 100 kg threshold.

In this respect, subject to the imposition of the recommended condition, the proposed quintiles of dangerous good to be stored within the proposed development does not exceed the hazardous thresholds and therefore SEPP 33 is not triggered and does not require the preparation of a preliminary hazard analysis assessment.

State Environmental Planning Policy No.55 – Remediation of Land
SEPP 55 aims to provide a state wide approach to the remediation of contaminated land. In particular, SEPP 55 aims to promote the remediation of contaminated land to reduce the risk of harm to human health and the environment by specifying under what circumstances consent is required, specifying certain considerations for consent to carry out remediation work and requiring that remediation works undertaken meet certain standards.

A Stage 1 and Preliminary Stage 2 Environmental Site Assessment report (contamination report) has been prepared for the proposed development, identifying that since the proposed development site's original use as agricultural land, only the construction of the Physics Building (1925), the Physics Annex Building (1963) and development associated with the construction of St Paul's College (1855), their sports courts (approximately 1950's) has occurred since. Potential contaminant sources identified include the site's former agricultural use and imported fill material.

Soil samples were taken from each of the eight site boreholes drilled across the development site, with both natural and fill materials encountered between 0.5 m and 1.9 m, below which natural silty clay soils and shale bedrock were encountered. Borehole samples collected were assessed against the adopted site assessment criteria, which indicated results below the relevant site assessment criteria (commercial/industrial exposure setting). Further, within the soil samples taken, no evidence of asbestos fibres were encountered. For the purposes of off-site disposal, the proposed development site's soil can be classified as general solid waste.

The assessment and investigation methodology undertaken is considered acceptable and accordingly, the department is satisfied that the applicant has demonstrated that the concentrations of potential contaminants are below their respective thresholds and that the subject site is considered suitable for the proposed development.

State Environmental Planning Policy (Infrastructure) 2007
The aim of the Infrastructure SEPP is to facilitate the effective state wide delivery of infrastructure by providing greater flexibility in the location of infrastructure and service facilities, allowing the development of surplus government land, identifying relevant environmental assessment categories for development and relevant matters to be considered and providing for consultation with relevant public authorities.

In accordance with Schedule 3 of the Infrastructure SEPP, clause 104 Traffic-generating development applies to the proposed development as the proposal involves more than 50 students. In this regard and in accordance with cl. 104(3) of the Infrastructure SEPP, the Roads and Maritime Services were given written notice of the SSD application and due consideration was given to comments received, including recommended conditions of consent.

Sydney Local Environmental Plan 2012

Consideration of the relevant controls contained within council's LEP is provided below.

Table 1: Sydney LEP Compliance Table

City of Sydney LEP 2012	Objectives	Department Comment/ Assessment	Yes/No
Clause 5.10 Heritage conservation	- conserve environmental heritage - conserve heritage significance of items and conservation areas - conserve archaeological sites - conserve Aboriginal objects and places of significance	The proposed development has been designed to ensure the significance of the existing heritage items and University of Sydney conservation area are protected. The submitted archaeological and Aboriginal assessment and statement of heritage impact satisfactorily consider and assess the impact of the proposed development within the setting. The NSW Heritage Council considers the proposed development to be a satisfactory response.	Yes
Clause 6.21 Design Excellence	- development consent not to granted unless consent authority considers the development exhibits design excellence	The proposed development has been designed as a modern addition to the existing heritage significant Physics precinct, making use of external finishes that will positively interpret the function and research activities undertaken within the AIN Building. The proposal has been designed with respect to the exiting Wilkinson Axis view corridor, maintaining views along its alignment. The AIN Buildings built form, urban design and heritage impact are further assessed in Sections 4.2.1 and 4.2.2 of this report.	Yes
Clause 7.9 (3) Other land uses (Car parking)	- the maximum number of car parking spaces for a building for the purposes of an education facility 1 space for every 200 sqm of GFA.	The proposed development proposes two parking spaces for the development.	Yes
Clause 7.14 Acid sulfate soils	- to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage	The development site is classified as Class 5 acid sulphate soils under the LEP. The proposed development is not within 500 m of land classed 1 to 4 or is it below 5 m AHD and will not lower the water table below 1 m AHD on adjacent classes of land. Moreover, the department notes that council have previously considered and approved an application for early works and	Yes

		bulk excavation to prepare the subject site for the proposed AIN Building development.	
Clause 7.15 Flood planning	- minimise the flood risk to life and property associated with the use of the land - to allow development compatible with the flood hazard, taking into consideration projected climate changes - to avoid significant adverse impacts on flood behavior and the environment	Drainage augmentation proposed as part of the development will ensure that the development does not result in detrimental impacts on flood impacts. Flood modelling undertaken also indicates reductions to flood impacts on the at-grade parking/loading dock area between the Physics Building and former Physics Annex Building.	Yes
Clause 7.16 Airspace operations	- to provide effective and on-going operation of Sydney Airport by ensuring it is not compromised by proposed development's penetrating the Limitation or Operations Surface	Sydney Airports Corporation Limited raised no objections provided the development did not exceed 46.3 m AHD. The maximum height of the proposed AIN Building is 45.15 m.	Yes

Sydney Development Control Plan 2012

Consideration of the relevant development controls contained within council's DCP is provided below.

Table 2: Sydney DCP Compliance Table

Sydney DCP 2012	Objectives	Department Comment/ Assessment	Yes/No
3.2.7 Reflectivity	- minimise the reflection of sunlight from buildings - ensure building materials do not lead to hazardous, undesirable or uncomfortable glare	While the proposed finishes are proposed to be reflective, it is noted that the proposed development's siting behind the existing Physics Building and location of the existing college residences further south and west of the site will minimise direct reflection of any hazardous or undesirable glare. Notwithstanding, the department will impose its standard 'reflectivity' condition, requiring preparation of a report prior to the commencement of above ground works, demonstrating that the external materials do not exceed the maximum 20% reflectivity spectrum.	Yes
3.2.8 External Lighting	- encourage external lighting that adds to the architectural character of the building - minimise light spill to the sky	The department has recommended a condition be imposed requiring the preparation of a lighting management plan to control and mitigate any potential impacts from external lighting.	Yes
3.6 Ecologically Sustainable	- apply ESD principles - reduce the environmental impact	Addressed at Section 2.6 of this	Yes

Development	and use of resources over the effective life of the development - reduce the causes and impacts of the urban heat island effect - increase development's climate change resilience - ensure reduction of greenhouse gas emissions - replace carbon power sources with low carbon and renewable energy - reduce potable water use and waste - increase use of recycled products - improve indoor environmental quality - improve the biodiversity	report.	
3.7 Water and Flood Management	- ensure an integrated approach to water management through the use of WSUD principles - encourage sustainable water use practices - assist in managing stormwater to minimise flooding and reduce the effects of stormwater pollution - ensure the development manages and mitigates flood risk, and does not exacerbate potential flood damage or hazard to existing development and the public domain - ensure the development above the flood planning level minimises the impact of stormwater and flooding	Addressed at Section 2.6 and Appendix B Table 2 of this report.	Yes
3.9 Heritage	- ensure heritage significance is considered for items, places and conservation areas - enhance the character and heritage significance of items and conservation areas and that infill development is designed to respond positively to the heritage character	Addressed at Section 4.2.2 and Appendix B Table 2 of this report.	Yes
3.11 Transport and Parking	- ensure the demand for transport generated by development is sustainably managed - bike parking and facilities are to be considered in all development - establish requirements for car share schemes - design vehicle access arrangements to maximise pedestrian safety and to create quality ground level relationships between the public domain and building - provide accessible car parking	Addressed at Section 4.2.3 of this report.	Yes

APPENDIX C GLOSSARY

Accredited Assessment under the EPBC Act.
If the project involves a "controlled action" under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the project can be assessed as an accredited assessment under the EPBC Act. This means that separate assessment processes are not required under both the EPBC Act and the EP&A Act, and the NSW assessment process has been accredited by the Commonwealth. However, the Commonwealth Minister for the Environment maintains an independent approval role, and the Commonwealth provides input to certain stages of the assessment process

Where a controlled action is involved the Department has consulted with the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) throughout the assessment process.

Ecologically Sustainable Development can be achieved through the implementation of:

(a) the precautionary principle - namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:
  (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
  (ii) an assessment of the risk-weighted consequences of various options,

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:
  (i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,
  (ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,
  (iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.(Cl.7(4) Schedule 2 of the Regulation)

Objects of the Act

(a) to encourage:
  (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,
  (ii) the promotion and co-ordination of the orderly and economic use and development of land,
  (iii) the protection, provision and co-ordination of communication and utility services,
  (iv) the provision of land for public purposes,
  (v) the provision and co-ordination of community services and facilities, and
  (vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development, and
(viii) the provision and maintenance of affordable housing, and
(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and
(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

Relevant Environmental Planning Instruments.
These are EPIs that are required to be taken into consideration in the assessment of the project under S79C. A detailed evaluation of each is provided at Appendix B.

S79C Evaluation
*(1) **Matters for consideration—general***
In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:
(a) the provisions of:
(i) any environmental planning instrument, and
(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and
(iii) any development control plan, and
(iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and
(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and
(v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979),
that apply to the land to which the development application relates,
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,
(c) the suitability of the site for the development,
(d) any submissions made in accordance with this Act or the regulations,
(e) the public interest.
***Note.** See section 75P (2) (a) for circumstances in which determination of development application to be generally consistent with approved concept plan for a project under Part 3A.*
***Note.** The consent authority is not required to take into consideration the likely impact of the development on biodiversity values if:*
(a) the development is to be carried out on biodiversity certified land (within the meaning of Part 7AA of the Threatened Species Conservation Act 1995), or
(b) a biobanking statement has been issued in respect of the development under Part 7A of the Threatened Species Conservation Act 1995.