

UNIVERSITY OF NEWCASTLE
Response to the Urban Design Consultative Group
Student Accommodation Project DA11/1063 & DA11/1065

SEPP 65 Principle	UDCG Comment 19 October 2011 (Meeting #1)	UoN Strategic Response	UON Technical Response
General	<p>Mr McLaughlin advised the Group that demand analysis in 2007 by the university indicated significant student growth and unmet demand for on-campus accommodation. The project has been in the planning process since that time.</p> <p>The project is to be debt-funded by the university and the contract for construction of all four blocks is to be let as one, although construction will be staged over several years.</p> <p>The design brief was stated to have assumed retention of the bushland character of this part of the campus, hence relatively tall buildings are proposed to be spaced apart with no linking structures at ground level. The proposed building height of 25 metres (8 Storeys) was said to permit reduced building footprint and thus reduce the need to remove major trees, in order to “promote the bushland experience”.</p> <p>The three winged building plan was said by the applicant to “emphasize the integration of building/trees, by allowing established vegetation to remain and be ‘embraced’ by building wings”.</p> <p>Parking for some 421 cars is proposed in a multi-level structure on a different site removed some distance to the north of the proposed residential accommodation blocks.</p> <p>The proponents indicated that they had visited student accommodation facilities at many universities nationally as part of the benchmarking and brief formulation process. University Village at UNSW, also designed by Architectus, was said to be a key reference.</p>	<p>The University of Newcastle aims to improve the experience of students by developing an integrated, pedestrian friendly Residential Precinct on Callaghan Campus.</p> <p>The Project objectives are to create a memorable student experience, deliver comfort and amenity, establish easy access and way finding, and provide facilities to create a sense of identity.</p> <p>The University has planned the Residential Precinct and designed the new accommodation to provide a healthy, vibrant, safe, secure residential experience, oriented towards the bushland setting.</p> <p>The land at Callaghan is a limited and precious commodity and must be used sparingly. While the University of Newcastle boasts a magnificent bushland campus, it is a fact that a large proportion of available land is constrained from development for a range of reasons, not limited to conservation areas, riparian zones and easements. In line with The University strategic plan the proposal concentrates on the rationalisation and densification of its core.</p> <p>The higher density accommodation solution will ensure that land is preserved for future expansion, while delivering enhanced security, activation, community, and energy within the new precinct.</p> <p>Parking for the new student accommodation is consistent with the Campus planning strategy of moving parking outside the Ring Road and to the periphery of the campus promoting a pedestrian friendly environment. This application proposes a large multi-deck car park on the eastern side of the Hunter Building utilising the topography of that site to provide significant car parking capacity in alignment with the campus planning strategy.</p> <p>This will enable on-site parking within the Residential Precinct to be limited to accessible, service, short-term visitor and drop-off parking spaces. The car park will be a 2.5 / 3 minute walk on well-lit pathways from the new accommodation. The location of this car park enables future expansion of the residential precinct.</p> <p>A substantial design team includes local and national experts in the field of contemporary student accommodation design who have matured the design from its initial feasibility in 2009 through masterplanning and extensive design development to achieve a unique student life and socially inclusive proposal.</p> <p>Site Options In 2009, the University commissioned a feasibility consultant to undertake a preliminary analysis on site options for student accommodation. The analysis identified a shortlist of preferable sites for the development. Subsequent studies resulted in the acceptance of the preferred site based on an extensive constraints analysis, site capability and due diligence.</p> <p>Key reasons for the selection included:</p> <ul style="list-style-type: none"> • Easy walking distance to the campus heart, spine, hubs and services • Close proximity to the existing accommodation to the south <p>Creating the opportunity for the University to regenerate the</p>	

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		<ul style="list-style-type: none"> social hub in the Hunter Building and the eastern campus In a highly accessible location between train, bus, academic and social and sporting hubs. Promotion of periphery parking and improvements to pedestrian access Size, orientation and outlook Potential to expand and grow Potential to preserve bushland Alignment with the University's strategic planning <p>The site presents a pivotal component of the University strategic planning, with the new development the initial step toward campus core densification generating and improving social hubs and connections to other areas of the Campus.</p> <p>Precinct Masterplan Supporting the early project definition exercise the residential precinct masterplan provided the following principles:</p> <ul style="list-style-type: none"> Accommodation should be oriented towards the bushland to provide a residential experience unique to the University of Newcastle. Accommodation should address and engage with the pedestrian character of the Campus Spine and other neighbouring pedestrian routes. Accommodation should be permeable, welcoming, inviting and embody a sense of community. Accommodation should be simple and cost effective to maintain and embody sustainable design principles. <p>The development proposal has adopted all these principles.</p>	
1. Context	<p>The Newcastle Teachers college was constructed on the subject site in the late 1960s. Prior to that time it had been undeveloped. While some parts of the Teachers College site had earlier been partially cleared for electricity transmission lines, the majority of this site was covered with the original dry sclerophyll forest, which is still visibly in evidence at the campus. The academic precinct of the original university campus was commenced in 1965 on an adjacent site well to the west of the Teachers College, while the university's original residential accommodation and sporting fields wrapped around the Teachers College site to its eastern and southern sides.</p> <p>The University of Newcastle came to be in control of all of the subject site in late 1989, at which time the existing Teachers College/CAE/HIHE was amalgamated with the University and the Conservatorium of Music.</p> <p>The University's current student residential accommodation is generally located to the south of the subject site across a small creek and weir, while Evatt House is located immediately adjacent to the subject site on its south-western side.</p> <p>The Group was advised by Mr McLaughlin that the University had identified considerable unmet demand for on-campus student accommodation, and the proposal which is proposed to accommodate 778 students in four colleges will almost double the current housing stock at Callaghan.</p> <p>The site is currently partially wooded with a mix predominately of the original forest, which has been augmented by supplementary planting over the period from amalgamation to 2005. A number of open air tennis courts occupy the section of the site adjacent to Oval No.1, and the Warden's residence for Evatt house is also located on the site. The courts and the residence are proposed to</p>	<p>The development proposal promotes the bushland character of the campus providing a considered balance between the busy spaces for gathering and community connectivity, transition spaces and quiet, contemplative spaces as identified during the early project definition exercise into contemporary student accommodation.</p> <p>Major trees have been preserved while special character areas have been developed and fully integrated with the planning concept.</p> <p>The existing primary pedestrian circulation and proposed universal access routes assimilate into the landscape and environment addressing issues of permeability, connectivity, social spaces, meeting nodes, passive surveillance, and activity in, around and through the precinct and ground floors of the new buildings.</p>	<p>The UDCG report infers that the proposed car park is too remote from the accommodation plus highlights a departure in character, building form and density in comparison to the existing student accommodation precinct.</p> <p>The student accommodation project is seen as the first step to transform the eastern precinct of Callaghan Campus as part of the 2008 Callaghan Masterplan which indicated a densification of the Eastern Campus 'Heart'.</p> <p>The built form of the proposed development is sensitive to the character of the campus; with taller buildings supported by proportionally large open public landscape space. It is this interlacing of spaces and strong incorporation of the bushland setting that links the proposal to the character of the existing context.</p> <p>It must be noted that the existing landscape is not pristine and that the landscape design allows the opportunity to improve the quality of the landscape.</p> <p>The UDCG report infers that the removal of the spotted gums near the proposed car park will negate screening of the unattractive industrial view.</p> <p>The building form and siting of the car park will provide screening of the Transgrid substation and associated infrastructure.</p>

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	<p>be removed as part of the development.</p> <p>One of the larger academic buildings at the campus, the Hunter Building, is located across the ring-road immediately to the west of the subject site. The original University campus which retains the majority of academic buildings at Callaghan, is located on the western side of the campus approximately one Kilometre from the subject site.</p> <p>While the subject site and its surrounds have been utilized for higher education purposes over the last 46 years, and the general precinct of the campus has been used for student accommodation for much of that time, the proposal represents a significant departure in both character and building form to what has occurred to date on the campus.</p> <p>The proposed multi level car park servicing the residences is located some distance to the north of the residential site, on a narrow ribbon of land located abutting the Hunter Water Chichester Pipeline. It is proposed to provide parking for 421 cars, including accessible spaces for people with a disability. The site is bounded on three sides by the ring road and Wirra Crescent, one of the public access roads to the campus. It currently houses two shed structures used by the grounds staff of the university which are proposed to be demolished. These buildings are presently screened from the ring road by a dense grove of spotted gum trees planted in the 1990s. This landscaping also currently screens an unattractive industrial view of the adjacent large nearby Transgrid Substation and associated structures as viewed from the ring road and the academic buildings beyond.</p>		
2. Scale	<p><i>Proposed residential accommodation buildings:</i></p> <p>The proposed residential buildings are substantially taller than any other residential buildings on campus, or in the surrounding suburbs. The buildings' location on a rise and their uniform height tend to reinforce the perception of their significant scale. They are also taller than any existing academic building on campus, with the current tallest being Medical Sciences which is of 6 storeys, and located at the foot of a substantial hill, which also reduces its apparent scale.</p> <p>While the design brief's stated objective of not unnecessarily removing "major" trees is commendable, in practice the provided documentation indicates that the open spaces between and around the proposed buildings will in any case see very substantial numbers of trees and their understorey removed. This removal is accountable to a variety of valid reasons – including reducing bushfire risk, provision of access roads, provision of accessible pathways (at very low grade for wheel chair use), provision of clear sight lines, creation of open grassed recreation areas and the like. However, in the view of the Group, the net result of this removal is that the bushland character which was sought to be retained will inevitably be severely compromised.</p> <p>In order to satisfy a brief for a substantial number of residences on the site, the Group was of the view that a more urban approach was preferable, with a formal definition of space at the ground plane level. This would take a design approach more akin to the cited University Village at UNSW, which includes buildings connected at ground level by a series of attractively landscaped courtyards, defined on each side by the surrounding building form. The active pedestrian 'street' through the series of courtyards can be protected in areas from rain and sun, and is appropriately sheltered. It was suggested that with such a form could achieve the desired accommodation with a suggested maximum height of 6 storeys, but with a variety of building heights to generate a more interesting skyline. The suggested 6 storeys maximum would also create less overshadowing of surrounding spaces (including Edwards Hall) and is more in keeping with the applicant's stated intent of restricting the building height to that of the taller existing trees on campus.</p> <p><i>Multi-level car park:</i></p> <p>While the car park structure is not particularly tall at 4 storeys, the relatively very limited size of the selected site and its very close proximity to the ring road to the</p>	<p>New Accommodation</p> <p>The proposed bulk and scale responds to the desired future character of the new residential precinct within the University campus.</p> <p>The perceived height and scale has been minimised by ensuring that the four buildings are 'read' in composition with the tall trees on site. The shape integrates with the established vegetation, embracing the landscape within the buildings 'wings' and creating social spaces. The 'Y' shaped plan form of the four buildings softens the scale by altering the common perspective of a rectilinear building.</p> <p>The site's complex topography and the eleven meter drop in level across the site provides a natural inconsistency of height across the site.</p> <p>The site topography has made universal access challenging and is woven around the already formed (and further articulated) primary circulation route resulting in an interesting separated universal alternative system that is sensitive to the landscape.</p> <p>Car Parking</p> <p>Limited trees can be planted in front of the proposed multi deck car park to screen it.</p> <p>Instead the design will incorporate a facade treatment that combines with a vehicle barrier solution to provide aesthetic interest. Planting will be provided where possible.</p> <p>The car park itself will provide screening of the Transgrid Power Utility depot to the East and will eventually become part of the extended residential and recreational precincts.</p>	<p>Building Height</p> <p>The UDCG report infers that increased scale is not appropriate because the proposed buildings are taller than existing buildings on site.</p> <p>It is acknowledged that the proposed development is of a higher density than the current residential development on site. However, this increased density has many benefits including:</p> <ul style="list-style-type: none"> • Reduced building footprint • Reduced loss of existing significant trees • Increased open landscape • Improved view corridors through the development • Improved views from the development • Increased solar access <p>The design has managed the scale by implementing the following design devices to mitigate the potential impact of increased height:</p> <ul style="list-style-type: none"> • articulated massing i.e. legible base • form (spoke form as opposed to box), provision of colour and texture to reinforce stepped massing. • use of landscaping (retention of significant trees) to provide screening and softening of perceived building mass • use of natural topography and apparent random building orientation <p>The University argues that the current context of the immediately adjacent residential structures be set aside. The existing student accommodation does not consider the future development requirements and Callaghan's 10-15 year strategic planning direction.</p> <p>More urban, structured configurations using lower buildings were tested but were considered to be inappropriate within the open, informal, natural bushland setting that exists on campus:</p> <ul style="list-style-type: none"> • Urban configurations with lower buildings resulted in a greater

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	<p>building mean that there is no useful opportunity of providing any landscape screening to the structure. In this respect the Group was of the view that the provided renderings were unachievable in terms of landscape screening in the available space. This closeness of the structure to the pedestrian path and the road exaggerate the bulk and scale of this structure.</p>		<p>loss of ground plane and open space, a loss of more trees and a reduced opportunity for view corridors and access to sunlight, etc.</p> <ul style="list-style-type: none">• The design approach carefully placed buildings within the environment to minimise tree loss and maximise amenity. <p>The urban courtyard approached suggested by the UDCG reduces opportunities for the following:</p> <ul style="list-style-type: none">• Meaningful interlacing of landscaping between buildings, whilst maintaining visual connection between spaces.• Solar access to landscape areas.• Full perimeter activation• Passive surveillance• Creation of view corridors <p>Inference that the development is not appropriate because of removal of substantial numbers of trees:</p> <ul style="list-style-type: none">• Retention of significant trees is a central driver to the proposed design outcome.• The landscape design provides opportunity for regeneration of the bush landscape to a higher quality than that which currently exists.• The landscape planning includes extensive landscape improvements with a strategy that comprises 92 new trees, over 4,000 tube stock and extensive seeding. <p>Inference that the building should not be taller than existing taller trees.</p> <ul style="list-style-type: none">• The design addresses the visual impact of the building in relation to the height of the existing tree canopy through articulation of building form by utilising stepped parapet and tonal change to reinforce massing.• The topography of the site drops by 11 meters across the site from the Ring Road providing a natural building high variation across the site.• Most of the existing trees are retained on the Ring Road adjacent to the accommodation site further softening the visual impact of the development. Similarly, the tall trees across the campus obscure the ability to see the proposed buildings until close to the site.• The buildings will be largely unseen from middle distance vantage points due to the topography of the area and the height of the existing trees. The distance of the external vantage points from the site, mitigates potential visual impact as viewed from beyond the campus boundary (see analysis provided in DA11/1065 documentation with views from the beyond the campus).• The exceedence of the tree canopy by the building form is addressed in the Urban Design Report provided as an
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			attachment to the development application (DA11/1065).
3. Built Form	<p>The Group acknowledged that the proposed three-winged layout with its central core represented an efficient floor plate by virtue of requiring only one stair and permitted a useful common area at the hub. However, this plan also determines that it is possible to provide ideal orientation to one wing, or acceptable orientation to two wings, with the third wing inevitably receiving quite poor orientation in terms of solar aspect. The Group asked a number of questions which related to the reasoning behind the proposed arrangement of the four buildings across the site, as this was not clearly evident from the documentation. The answers provided did not permit the Group to gain a greater understanding of this reasoning, and the layout appears to be haphazard and arbitrary, with the spaces generated between the buildings tending to be rather desolate.</p> <p>The built form of the buildings was considered to be unusual in a modern Australian context, and was somewhat reminiscent of the architecture that was common in the former eastern bloc countries. While a degree of interest has been achieved in the building facades by the introduction of sunshades and a variety of materials and textures, this benefit is overwhelmed by the visual dominance of the uniformity and repeated form of the four structures.</p>	<p>The proposed new buildings are designed in a clear, uncluttered, contemporary manner as a series of four independent multi-storey buildings of 8 storeys, linked by an activated ground plane and direct visual and pedestrian connections.</p> <p>Each building has been orientated to respond to the site context- the Ring Road, the sports oval and the riparian zone, to optimise the unique aspect and minimise overlooking.</p> <p>The design features that differentiate the buildings include:</p> <ul style="list-style-type: none"> • Unique ground floor functions and active zones • Landscape nodes and differentiated courtyards • External colour banding • Entry and foyer colours • Purpose designed ground floor circulation zones around and through the buildings • Natural site topography difference (11 meters across the site) • Apparent random orientation of each building • General landscape treatment variation <p>All of these items encourage a high level of orientation and building differentiation and collegiate fraternity. Courtyard spaces are used to create spatial comfort with opportunities for community, privacy and refuge as required.</p>	<p>Inference that siting is haphazard and arbitrary:</p> <p>Siting is a response to a number of constraints. These are:</p> <ul style="list-style-type: none"> • Retention of significant trees • Optimum orientation • Topography (to minimise excavation) • Existing circulation paths • Riparian buffer zone <p>The proposed building configuration is the result of extensive analysis of building configuration options, including:</p> <ul style="list-style-type: none"> • Connected podiums and 9 towers • Low rise resulting in external environment sterilisation • 6 multi-storey buildings and limited natural environment • 4 mutli-storey building and greater natural environment, separation etc <p>The preferred, latter arrangement achieves:</p> <ul style="list-style-type: none"> • Natural environment and tree retention • Commendable solar access • Limited overshadowing • Maximised building separation • Improved visual and acoustic privacy • Improved views from the buildings • A unique site specific solution that offers variety and dynamism by viewer position on the pedestrian thoroughfare <p>Inference that visual dominance and uniformity is not a positive design outcome:</p> <ul style="list-style-type: none"> • The utilisation of differing landscape treatments, ground floor functions and elevational colour treatments provides building specific detail that assists with differentiation of each block. • The spoke design and apparent random siting of each building carefully disrupts the uniformity at each nodal point through the site • The tempered uniformity reinforces the identity and residential character of this precinct.

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4. Density	<p>The design brief called for a moderately high density of accommodation, although similar densities have previously been achieved within some parts of existing campus colleges Edwards Hall and Barahinebahn. Existing residential accommodation is typically two and three storey blocks.</p> <p>While the proposed density of accommodation was considered quite acceptable by the Group, the strategy of creating four separate tall buildings spaced in an open ground plane was considered to be questionable. A more urban approach to the design was encouraged to achieve the desired density.</p>	<p>A multi-storey building approach has been taken to optimise the utilisation of the site and preserve landscape character by reducing building footprints and maximising available open space.</p> <p>Additionally, the increased density will allow the formation of defensible spaces between the built form and along the primary pedestrian spine, further securing the site, particularly at night.</p> <p>The project feasibility, definition and master planning exercises all proposed multi-storey building solutions. This approach is supported by the University's strategic direction to densify and promote a pedestrian friendly core while moving parking and vehicular traffic to the campus periphery. It is anticipated that the proposed density on the site will provide the desired activation suitable for the formation of a lively student experience.</p> <p>The University is growing toward achieving the National Tertiary Education Reform Agenda of increased tertiary education attainment by 2025. This reform agenda and the land constraints of Callaghan mean that the current low-rise solutions, although forming the current context, are inefficient.</p> <p>Alternatively, a multi-storey approach will help optimise site utilisation, minimise development footprint, preserve landscape character and maximise open space. Importantly the size of building represents a contemporary college size; mix and ideal social balance (see Principle #9 Social Dimension).</p> <p>The building context on Callaghan is mixed with low-rise structures and tall buildings such as Medical Sciences, The Forum, and The Great Hall. Other building styles include exceptionally contemporary to large inefficient and dated buildings such as the Hunter and the McMullin.</p> <p>The varying topography, tall vegetation of Callaghan and the distance from surrounding suburbs results in limited visual impact with the proposed maximum effective building heights of 25 meters.</p>	<p>Inference that the design outcome is not sufficiently urban.</p> <ul style="list-style-type: none">• This proposal provides a high density development which responds to the unique requirements of a site located within an existing university campus• This is not a typical infill development scenario• The building is not located within an existing streetscape• The site contains a number of large, significant trees• The site character is one of isolated buildings located within a bush landscape.• The design response is appropriate for the site constraints and facilitates ongoing development of the mixed urban character of the University• The design supports the future direction of densification of Callaghan's core in line with the University's strategic planning <p>Similar densities were tested with alternative building configurations all resulting in greater building footprints and associated loss of site area, access, natural environment, view corridors, privacy and were not supported by the Design Team or University Council.</p> <p>It is considered that the proposed strategy of precisely placing four buildings in an open ground plane with carefully chosen orientations within a group of significant scale trees provides a desirable outcome.</p>
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5. Resource, and Efficiency	Energy Water	<p>Mr McLaughlin indicated that it was intended to achieve a four Green Star rating for the development, which the Group supported as a worthy endeavour. However, little information was provided to outline how this benchmark would be achieved. One of the main means outlined for achieving a good environmental outcome was stated to be the use of ventilated floor slabs and cross ventilation to the apartments, which was supported by the group. It is not clear from the documentation if this inclusion limits the ceiling heights in the bedrooms to less than 2.7m, which is the minimum required by the RFDC. (The living rooms were stated to achieve the 2.7m ceiling height). Similarly, the use of gas boosted solar heated water was considered to be a positive initiative, as was the notion of allowing for future adaptation of the buildings to another use if necessary.</p> <p>Solar Access: While building orientation and solar access were stated to optimise natural light and cross ventilation, the layout does not achieve optimal orientation for solar access. A Number of living rooms face primarily to the south, as does the un-walled recreation area on the ground floor of Building C.</p> <p>Dependency on lifts: It is inevitable as building height increases that residents are more likely to use lifts in favour of using the stairs. This has an energy use implication. Furthermore, security reasons may determine that access between floors for residents will be restricted by access controls, such that one has to be given permission electronically to access a floor, and that access must be by lift. A mixture of lesser building heights if provided would better encourage the use of stairs rather than universal reliance on lifts for access.</p> <p>Water: Although the documents state that no supplementary watering will be provided to the landscaping, it is inevitable that the proposed large areas of turf and unshaded ground-cover planting which will inevitably require supplementary watering if they are to survive.</p>	<p>The University has submitted its 4 Star, Green Star application and has exceeded the minimum point requirements.</p> <p>The proposed development offers an opportunity to provide a benchmark building that demonstrates industry best practice with minimum impact on the environment and a low ecological footprint per student housed.</p> <p>If successful, the development would be the first, Class 3, Student Accommodation facility to be Four Star, Green Star certified.</p> <p>In addition to the BCA energy efficiency requirements there will be no net decrease in native vegetation cover and the ecological value of the site will be maintained.</p> <p>The following key principles and technologies are employed in the proposed development:</p> <ul style="list-style-type: none">• Cross ventilation to be provided for the majority of the dwellings• Creation of breezeways linking opposing facades thus allowing cross ventilation• Cross ventilation to all living and dining rooms via operable windows and balcony doors• Winter sun access to all living areas• Primary cross ventilation to bedrooms via operable windows and doors and secondary operable plenum duct vents which can operate when doors are closed for visual or acoustic privacy• Flexible column free structural construction allowing future adaptation and re-use• Where possible, bathrooms located at external walls enabling natural ventilation and daylighting• Bike Storage• Sunshading and weather protection to openings specific to orientation• Rainwater storage and reuse• Retained and new trees provide shade to courtyards and buildings• Highly insulated roofs• Hot water provided by solar hot water systems• Comprehensive energy metering and smart metering• Occupation sensors• Local native plants	<p>Inference that the 4 star Green Star rating target is not adequately provided for in the design;</p> <p>The following list of Green Star initiatives are proposed to be provided for in the design:</p> <ul style="list-style-type: none">• Metering of energy consumption for each apartment.• Smart meter displays to provide immediate feedback to residents on energy use and to provide an incentive for residents to adopt practices that save energy and water.• Contractually requiring comprehensive pre-commissioning, commissioning and quality management for all building services with the aid of an Independent Commissioning Agent.• Implementation of a Waste Management Plan.• Guidance from a Green Star Accredited Professional.• Provide ceiling fans to at least 95% of all apartments.• Further reduction of noise levels in dwellings from building services and other apartments.• Minimise volatile organic compound content in paints, adhesives and sealants, wall and ceiling coverings, and flooring (limits specified in Green Star Credit)• Minimise formaldehyde in engineered wood products (limits specified in Green Star Credit)• Ventilate apartments using adjustable trickle ventilators.• Kitchens ventilated with dedicated and separated extract fans.• Solar hot water with natural gas back-up.• Occupancy sensors in common areas that minimise air conditioning and lighting use when unoccupied.• Water efficient WELS rated fittings - 4 star toilets, 3 star showers and 6 star taps.• Xeriscape garden (no supplementary water use). Note that previous experience on the campus shows that lawns require no supplementary water to thrive, as rainfall for the location is adequate.• Water efficient clothes washing machines.• Encouragement of fuel-efficient transport by providing parking spaces specifically for small vehicles and motorbikes.• Provision of space for recycling waste storage and a composting facility.• Reduction in the quantity of Portland cement by substitution with fly-ash.• Purchased reinforcing steel to be produced using energy efficient processes.• At least 60% of PVC to meet the Best Practice Guidelines for PVC in the built environment.• At least 95% of all timber to be certified by a forest certification scheme or be recycled.• Concrete façade systems to be designed for disassembly. <p>The credit criteria and compliance requirements are set out in the Green Star Multi-Unit Residential v1 Technical Manual. A formal report on design for four start green star in accordance with the Green Building Council was provided as part of the DA11/1066 documentation.</p> <p>RFDC Report appended to this document provides further evidence of compliance with ceiling height best practice.</p> <p>All multi-bed apartment living areas are placed remote from the active hub of the buildings. They each have 3 way orientations and consequently all receive good solar access either all day (for wings facing north, north east or north west) or each morning and afternoon</p>
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			<p>(for wings facing south, south east or south west). They also have excellent natural cross ventilation.</p> <p>Although provision will be made for secure access between floors there is no current University operational intention to restrict or control access between upper floors within residential buildings. Access to the ground floor of each residential building will be controlled.</p> <p>Movement between floors and buildings will be encouraged in line with contemporary student life expectations as opposed to typical residential apartment living in the general community.</p> <p>In a more targeted and responsible use of limited water resources the University intends to use tank water for supplementary hand watering of unshaded turfed areas as required. Sufficient watering points are proposed to support this approach through the landscape. Plant selection will complement this requirement where possible.</p>
6. Landscape	<p>The Group indicated its positive support for the concept of retaining the existing “Bushland Campus”, and for the proponent’s stated desire to ensure this character is retained at Callaghan. However, given the documented very considerable requirement for the removal of trees and understory from the subject site for various reasons, it is evident that very little of the existing mature bushland will remain on the site. Furthermore, the quite limited proposed new planting of spotted gum (<i>Corymbia maculata</i>) trees, even when fully grown, will not substantially change a likely perception of a very open, arguably barren landscape.</p> <p>The nature and quality of the open spaces between the large blocks was considered by the Group to be poorly resolved, with large expanses of unshaded open area proposed to be finished in crushed granite material set in resin. The lack of protection from summer sun and from winter prevailing winds in these expansive open areas, coupled with the inevitable feelings of being overlooked and exposed, were considered to result in a poor landscape outcome.</p> <p>The provided renderings indicate in some areas that umbrellas will be used to provide some sun protection to seating areas on the perimeter of buildings, but the Group was of the view that well considered structural shade and weather protection was preferable to umbrellas. The use of veranda spaces, pergolas and other areas which offer a degree of shelter and protection from the elements was considered to be far preferable. Likewise, given the summer mosquito problem at the site, consideration should be given to providing some screened areas for barbeques and outdoor passive recreation</p>	<p>This proposal promotes the bushland character of the campus and provides a considered balance between the busy, civic spaces for gathering and community connectivity, transition spaces and quiet, contemplative spaces more closely related to the residential precinct. Major trees and vegetation areas have been preserved where possible whilst courtyard and special character areas have been developed and fully integrated with the planning concept.</p> <p>Active and passive recreation areas will be incorporated into the landscape design including:</p> <ul style="list-style-type: none"> • Outdoor shaded seating areas for small groups • A larger common green for group gatherings • BBQ area associated with indoor common areas • Grassed amphitheatre areas for performances <p>Selected plants will be robust and reasonably drought tolerant. Sufficient watering points will be provided throughout the landscape.</p> <p>The landscape concept design has mediated between the varied levels of the buildings to create a large central lawn and to make outdoor spaces which are interesting and promote gathering and communal life.</p> <p>The requirement to retain trees was carefully considered with retention solutions that incorporate:</p> <ul style="list-style-type: none"> • Site drainage • Accessibility • Servicing • Waste pick-up <p>Once matured, the landscape will read as an interesting open forest. Ground floors are nuanced by location: elevation, outlook, canopy cover, terrace arrangements providing additional aspect and interest to the landscape.</p>	<p>Inference that landscape principal is not embodied in design.</p> <p>The proposed scheme:</p> <ul style="list-style-type: none"> • Achieves a primarily open ground plane below a tree canopy, enhancing view corridors, personal security and breezes. • Provides new trees, low plantings and large turf areas that can be used for passive and active recreation. • Landscape design easily envelops the buildings due to minimal footprint. • Retains many of the existing major trees • Establishes a significant number of new tree plantings to supplement the natural environment which are expected to grow to maturity within a few years. <p>Landscape design principals submitted as part of the DA documentation (see DA Issued Landscape Report), include:</p> <ul style="list-style-type: none"> • Protection and restoration of the spotted gum and iron bark vegetation • Make clear but discrete interventions to facilitate campus life/student experience • Reinforce the primary access routes through the site • Provide accessible pathways and pedestrian connections between the new buildings • Provide rest, meeting spots and legibility • Facilitate vehicle shareways and site carparking • Provide communal and recreational facilities • Deep soil planting throughout the site • Improve security through the principal of ‘Safety by Design’ • Ensure environmental sustainability in choice and location of new plants, retention of existing, choice of landscape materials, improvement of net vegetation cover and quality sensitive stormwater initiatives. <p>Inference that landscaped spaces between buildings was poorly resolved.</p> <ul style="list-style-type: none"> • The landscape design provides specific nodes and sub nodes through-out the development to enhance the quality of the spaces between buildings and to reinforce individual character and wayfinding relating to specific buildings (See attachment #2 Nodal and pathway hierarchy principles).

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			<p>Inference that the site will be barren:</p> <ul style="list-style-type: none"> The landscape planning includes extensive landscape improvements with a strategy that comprises 92 new trees, over 4,000 tube stock and extensive seeding (repeat from 2. Scale above). The larger mature trees have been planted within the gravel terraces and in other considered locations. The site will be better vegetated (high quality and increased volume) than the status quo. <p>Inference that landscape is too unprotected, overviewed and insect ridden to be usable without significant modification.</p> <ul style="list-style-type: none"> Scale of development in combination with variety of location and orientation of external spaces adjacent to buildings provides a variety of choices to occupy space which is wind protected and shaded. <p>Overviewing of public outdoor space should not be considered an issue for the following reasons:</p> <ul style="list-style-type: none"> This scenario is no different from a park located within a high density residential precinct. The outdoor spaces are all public and there is no attempt to create private outdoor space on the ground plane.
7. Amenity	<p>While a number of apartments enjoy good aspect and solar access, others are less well provided. As common areas are provided on each floor, an opportunity arises for addressing the lack of winter sun to some apartments by providing an attractive common space on the same level as the apartment. However, only one of the four proposed tower blocks (building D) takes advantage of this opportunity by orientating the common room space to the north.</p> <p>Within the six bedroom units, which are the predominant typology, the floor area available in both the kitchen and living areas is quite limited for the number of residents. Only one stove and sink is provided. Similarly the outdoor deck is extremely narrow and is of limited use because of difficulty of furnishing it functionally.</p> <p>As outlined elsewhere, there is a long walk between the residents' car park and the accommodation. It is suggested that a shuttle bus will transport residents between these areas, but it is difficult to conceive how this could be practical.</p> <p>Given the common occurrence of students at the university moving into accommodation at the beginning of semester, and moving out at the end, there is a high demand generated across a short period for vehicular access close to the residences to allow the movement in and out of personal goods. The provision of only four vehicle spaces per dwelling for both visitors and residents is likely to generate conflict and difficulty during this period.</p> <p>As noted under 6. Landscape, the lack of more intimate and sheltered outdoor spaces, as well as some insect screened semi-outdoor areas is regrettable.</p>	<p>The proposed development provides high levels of amenity through careful site planning and internal layouts. Access to light, ventilation, winter sun, views and private outdoor space inform all of the planning arrangements. The internal layouts of the apartments optimise privacy to the bedroom and bathroom areas and provide flexibility to the living dining and kitchen areas.</p> <p>Larger apartments (5 and 6 bedrooms) have larger living spaces to allow comfortable occupation for a group of adults.</p> <p>All living/dining/kitchen spaces have cross ventilation and good sun access and control. All bedrooms have ventilation systems that can operate whilst bedroom doors are closed.</p> <p>Bathrooms have been located to achieve natural light and ventilation, where possible. Private balconies are provided to the living/dining areas of the large apartments with communal balconies provided for others.</p> <p>Laundry facilities are provided on site and are located within social spaces to encourage student interaction. A high level of equity exists across the development in that all apartments have high quality spaces.</p> <p>Tree density is reduced due to set back requirements identified in the University Landscape Manual, but the size of the existing angophora (retained near building B) demonstrates that trees will mediate the space between the buildings and contribute to what we believe will be a beautiful open forest landscape, but this will take time. Decomposed granite paving is provided to limit the extent of concrete paving around the buildings.</p> <p>The plan balances retention of existing trees, new planting for shade, amenity and the provision of sun to the central lawn which is essential for turf growth.</p>	<p>Inference that the six bed units are not provided with an appropriate level of amenities.</p> <ul style="list-style-type: none"> The allocation, space and number of rooms per building are a result of extensive research and expert advice into the contemporary requirements of the modern student and the associated collegiate requirements to support a unique student life experience. The proposed scheme, configuration, allocation of area and level of amenity is consistent with similar benchmark facilities throughout the country which have proven to be very successful. The RFDC Report (See Attachment #1) includes objective analysis of measurable amenities. The facilities will be fully furnished, requiring only personal items and food to be brought into the facility. <p>Inference that all apartments no not receive good solar access:</p> <ul style="list-style-type: none"> Building form maximises opportunity for majority of apartments to receive winter solar access while addressing other constraints such as topography, retention of significant trees, ecological buffers and building bulk. Apartments in the wings are dual aspect (with triple aspect living areas) Solar exposure analysis (refer to DA, ESD report) indicates solar exposure to all facades and even indicates potential to protect Southern Facades exposed to late afternoon sun. <p>Benefits of carpark location opposed to locating carpark under buildings:</p>

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			<ul style="list-style-type: none"> Prevents significant vehicle traffic through a pedestrian landscape. Locates carpark adjacent ring road and thereby minimises construction of additional roads. Promote pedestrian friendly socially interactive ground floor zones. <p><u>Car parking</u></p> <p>Inference that the proposed car park is too remote from the accommodation.</p> <ul style="list-style-type: none"> The car park is located approximately 2.5/3minutes walk from the centre of the accommodation site. The site provides accessible, visitor and service parking adjacent to each building plus a drop-off and pick up zone. All buildings have fire brigade access and this access can support excessive traffic under operational control and management conditions. <p>This additional 'on demand' parking will facilitate convenient 'move in' and 'move out' of students and is typical of student accommodation. It should be noted that students typically have a limited amount of personal objects and clothing and very limited items of furniture. The facility will be fully furnished. Lengthy removal times are not anticipated and longer "lease" agreements allow for a greater spread of this demand.</p> <p>The University and its expert advisors believes that the distance is appropriate for student accommodation for the following reasons:</p> <ul style="list-style-type: none"> Maximised deep soil planting within accommodation site Retention of existing trees Maximised building positioning flexibility Car parking located at perimeter of campus in line with Sustainable Transport Management Plan. Promotes pedestrian and bicycle friendly precinct Minimise vehicle activity adjacent to the accommodation buildings. Allows maximum open space to be landscaped, adding student amenity. Facilitates ground floor activity Considers long and medium term planning <p>We believe the proposed car parking and access strategy provides a balance of amenity and convenience without sterilising the site with carparking and is in line with student housing requirements and University Strategic Planning.</p>
8. Safety and Security	<p>The Group was of the view that the considerable distance between the residential blocks and the dedicated resident car parking was an inconvenient and potentially very unsafe approach. The notion of addressing this situation via a shuttle bus, as mentioned in the documents, was considered unworkable. The applicants mentioned in discussion that Evatt House is very popular with students because of the opportunity of residents parking their cars close to their accommodation. This has a two pronged benefit – one of convenience and personal safety in moving between vehicle and residence, the second relating to the increased safety of the vehicle itself from theft or vandalism because of casual surveillance. Other residences such as Edwards Hall have experienced ongoing problems with vehicle damage and theft from the large car park located</p>	<p>Careful consideration has been given to the elements within the project that influence safety and security of its residents, passersby and visitors.</p> <p>Clear identity of building entries, activation of the ground plane, external communal zones are well lit and appropriate site lighting is provided along pathways, roads and the main pedestrian accessway that connects the built forms in and around the student accommodation providing safe and secure access to and from buildings.</p> <p>Active and passive design elements have been incorporated which will contribute the safety of users as follows:</p>	<p>Crime risk assessments and associated “<i>Safety by Design</i>” advice was incorporated into the scheme design. Consultation in this regard included the University’s Manager, Emergency & Security and the Community Liaison Officer from Waratah Police Station.</p> <p>Inference that safety issues are grounds for rejection of remote carparking:</p> <ul style="list-style-type: none"> Site safety and mitigation measures are incorporated as per “<i>Safety by Design</i>” advice.

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	<p>immediately to the south of the Hall because it is not readily observed from the residences. The proposal for an isolated new car park would establish a situation which is considerably worse than that already identified with existing residences, as the proposed car park is far removed from the residences and any other building. This proposal is not supported by the Group.</p> <p>Secure basement parking could readily be provided underneath each residential block at a similar cost to the proposed multi-level car park, which would provide significantly greater levels of security for residents and their vehicles – not to mention much greater convenience.</p>	<ul style="list-style-type: none"> • Open wide spaces with strong visual connectiveness • Security screens on lower level opening windows and glazed doors, • Prevention of climbing access to upper level balconies • Well lit areas around apartment entrance ways pathways, roads and external communal zones • Clearly defined 'safe pedestrian routes' • Electronic locking for apartment doors with card access • CCTV coverage • Security patrols <p>Other considerations: The proposal purposefully avoids a “gated environment” and in-part uses the principles of connectiveness, social inclusion and passive activation to further mitigate security risks.</p> <p>The residential precinct landscaping and environment will provide safe and secure access to and from buildings and the pedestrian links that join the built forms in and around the student accommodation and car parking precinct.</p> <p>The other key component to ensure safety is the University's security management plan that targets safety strategies University wide and the education of residents to ensure they become individually responsible not only their own personal safety but their peers. This will be achieved through a supportive Residential Assistance programme, constant reminders and educational campaigns to make residents aware of the risks.</p>	<p>Security measures include:</p> <ul style="list-style-type: none"> • CCTV • Help Points • Security Patrols • Well lit pathways • Well articulated pathways • Site density and associated passive surveillance. <p>It is noted that an additional 778 student on this part of campus will passively activate the area and increase foot traffic to the existing recreation facilities north of the site including the Forum and swimming pool, squash courts, relocated tennis courts and ovals. This activity will be beneficial to security.</p> <p>Inference that basement carpark would be a better outcome based on the comment that remote multi deck car park are similar cost to construct.</p> <ul style="list-style-type: none"> • The University confirms that the square meter cost for a basement case park is significantly higher than an open multi deck car park. Intangible costs are mentioned under Principle #7, Amenity. <p>It should be noted that Basement car parking on the site or an adjacent site will require more access and egress roads, further limiting deep soli planting.</p>
9. Social Dimensions	<p>The four blocks are essentially repetitive, with some differentiation in external colours and finishes. It is considered that it would be far preferable if there were to be strongly distinctive and different characteristics in relation to height, form, layout, and organization which would create for residents a strong sense of identification, rather than their living in a somewhat anonymous very large development.</p> <p>The application mentions the importance of providing opportunities for residents to gather on each floor, within each college (building) and as a larger community. This consideration is supported, but it is difficult to evaluate the degree with which this intent can be translated into positive outcome under the proposal. For example, no indication was given of security measures within residential blocks – will residents of other floors have access? Will it be possible to use the stair, or will security determine that access can only be by lift? The quality of outdoor spaces for social gatherings is of concern, as mentioned elsewhere in this report.</p>	<p>For many new students, moving into university accommodation will be their first experience of life away from the family home. Being part of an apartment community provides resident students with a level of intimacy and a built in social safety net.</p> <p>Learning to interact socially with ones housemates and to successfully negotiate ones way through mundane day to day issues such as cleaning, cooking, music, TV channels and so on is a significant step on the journey to adulthood. Each building offers a unique common facility that will encourage residents of all buildings to interact – this extends to all residents throughout the Residential Precinct. The common space on each floor will encourage neighbours to form relationships.</p> <p>It is well documented that on campus accommodation plays a major social role in a positive student life experience. The design of successful student accommodation needs to understand, support and implement contemporary social needs.</p> <p>As a result of comprehensive research the development includes a range of apartment sizes and types including:</p> <ul style="list-style-type: none"> • Studio Apartments • Studio Accessible Apartments • 2 Bed Apartments • 2 Bed Accessible Apartments • 5 Bed Accessible Apartments • 6 Bed Apartments <p>24 accessible apartments have been provided in studio, 2 bed and 5 bed bedroom configurations and are equitably distributed throughout the site. The accommodation mix is purposely heavily weighted toward the large</p>	<p>Inference that blocks are not sufficiently differentiated :</p> <ul style="list-style-type: none"> • Repetition is a function of this building type e.g. staked floor plate. <p>The design features that differentiate the buildings include:</p> <ul style="list-style-type: none"> • Unique ground floor functions and active zones • Landscape nodes and differentiated courtyards • External colour banding • Entry and foyer colours • Purpose designed ground floor circulation zones around and through the buildings • Natural site topography difference (11 meters across the site) • Apparent random orientation of each building • General landscape treatment variation <p>Inference that design of residential common areas is not sufficiently resolved:</p> <ul style="list-style-type: none"> • The residential common areas are the result of extensive expert advice and benchmarking. • The project reflects the current contemporary student requirements in terms of common facilities. • The ground floors of each building will have sufficient common facilities (as per contemporary advice) plus unique common facilities and distinctive finishes that will be colour coded to provide a distinctive appearance and identity. <p>The new student accommodation will be managed on the basis of four colleges.</p> <ul style="list-style-type: none"> • While the six bed suite is predominant as an accommodation

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		multi bed apartments. Australia now leans very strongly towards self-contained apartment style accommodation. The style is well supported by students.	<p>arrangement, a variety of other apartment types provides a contemporary balance that carefully manages under and post graduates with mature mentors and social equality.</p> <p>Security access will be installed at the ground level of each building. However, residents will be able to move freely between floors within each building by lift or the stairs.</p>
10. Aesthetics	<p>The adopted building form is reminiscent of a typology that is not commonly seen in modern Australian development. The buildings will appear quite substantial in scale, and stand in a very open landscape. The stated goal of presenting the towers as standing in a bushland landscape was considered not to be realistically achievable by the design.</p> <p>The symbolic issue of the residences being the tallest buildings on the campus was not discussed and is a matter for debate at the University, but the Panel has reservations as to whether this is appropriate. It is not clear that student accommodation on this site would be consistent with the masterplan regarding the most appropriate location and activity for the tallest university buildings.</p> <p>The use of extensive areas of black concrete on the building facades was questioned in terms of contributing to heat gain (although the exterior is insulated) and in terms of the aesthetic outcome. Reliance on colour branding reflects a lack of architectural character and the generation of a quality perception of place.</p>	<p>A high quality of architectural character is proposed. Durable materials and enduring details with variation in scale and proportion ordered by site topography and perspective will provide a distinct architectural character and allow the spread of the natural bushland into the development.</p> <p>The palette of materials, colours and finishes were selected to be simple and refined, however durable and robust.</p> <p>The following materials have been used:</p> <ul style="list-style-type: none"> • Off form concrete and composite boarding • Textured off-form concrete finishes • Contrasting colour variants to off-form concrete finishes • Glazing and external louvre screens are clear anodised aluminium • Internal “teflon” insect screens to operable windows • Composite battened external screens to building entries • external grade lightweight steel framed awnings at ground level • Glazing systems to doors and windows are commercial grade with anodised framing • Alternate coloured glazing to foyer entry spaces • Horizontal aluminium framed sunhoods • Landscape elements are off form concrete, timber and reconstituted paving 	<p>The walled, lower scaled block development proposed as a UDCG alternative does not reflect the central idea of the design.</p> <ul style="list-style-type: none"> • The form proposed by the UDCG creates a separation of private and public space by using the building form to bisect space at the ground level. • This type of design will generate a larger building footprint, disrupt and reduce public outdoor space and encourage separateness of the residential functions from the rest of the university. • The formal walled/cloistered design is not successful in contemporary student accommodation, evidenced by operational and design experts, third party advice and on-campus in the form of Barahineban Student Housing. • These outcomes are not consistent with the University's direction and the project definition. <p>Inference that the scale of these buildings is not appropriate because they are the tallest buildings on campus:</p> <ul style="list-style-type: none"> • The design demonstrates that building scale is managed appropriately and that these buildings are sited to facilitate the retention of interlaced, bush landscape and the development of the residential precinct in accordance with the Masterplan. • These buildings contribute to the development and preservation of the desired character of the University. • The proposed buildings are intentionally substantial in scale to match the scale with the natural setting while minimising the total site coverage and maximizing open space, and the extent of landscape. • The scale is an intentional step toward the future proofing of Callaghan and the densification of its core/heart. • Callaghan has a vast array of building styles and sizes. One way to accurately describe the Callaghan building is a mixed form, bulk and scale context. <p>Inference that colour branding is a backstop for poor design.</p> <ul style="list-style-type: none"> • The provision of colour branding is part of an integrated package of design language used to generate identity. This is an acceptable and valid approach to achieve this outcome. <p>Inference that black coloured concrete is not an appropriate design solution.</p> <ul style="list-style-type: none"> • The use of black and off-white elevational treatments reinforces articulation in the building mass described on plan. • Although the colour is termed “black” the actual colour is a

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			<p>grey. An appropriate assessment is achieved by consideration of the entire palette of materials and colours as displayed in the perspective images provided which demonstrate a strong contemporary building image.</p> <ul style="list-style-type: none"> The significant tonal contrast is appropriate considering the scale of the proposed development and the visibility of the development from distance. (refer visual impact in Urban design DA Report)
Recommendation	<p>The Group expressed considerable reservations about the proposal, particularly in respect to the chosen building form, which is repeated across the four towers. While supporting the stated desire of the proponents to preserve the bushland character of the campus, the Group was of the view that this had not been achieved by the design. A more 'urban' or structured design response, which pays more attention to the spaces generated between buildings and which provides basement parking for residents was considered to be a more appropriate approach. Such a design would preferably be limited to six storeys.</p> <p>The Group expressed particular concern at the isolated location of the proposed dedicated car park, primarily for personal safety and property security reasons, but also because the proposal was considered to be unacceptably and unnecessarily inconvenient. The Group was also of the view that the aesthetic impact of the proposed car park would be very significant because of the lack of any useful opportunity for landscape screening the structure.</p>	<p>The University's vision for its new residential precinct evolved over many years of planning and is looking towards the future. The University's track record demonstrates its commitment to Environmentally Sensitive Design and our investment in this project shows our commitment to our students on campus accommodation and the long-term viability of this project.</p>	

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ATTACHMENT #1
NSW Residential Flat Design Code 2002

The RFDC published by the Department of Planning NSW is part of the package of measures under SEPP 65. It provides design principles and ‘rules of thumb’ standards. A degree of judgement is needed to interpret the NSW RFDC 2002 guidelines as they apply to a wide range of multi-unit development throughout NSW regardless of local area character.

The SEPP65 report submitted as part of the DA documentation included a schedule that articulated responses to each of the RFDC elements. It should be noted that Student Housing is not directly analogous to residential apartments. Industry and market standards for the provision of amenities have been developed to provide a cost effective attractive lifestyle that supports student academic performance, social interaction and recreation.

A recent (Nov 2011) NSW Government Legislative Assembly, Social Policy Committee Report 1/55, *“Inquiry into International Student Accommodation in New South Wales”* in addition to the identified lack of supply the Report, highlights the lack our current planning regulations specifically related to Student Accommodation.

Link to Report
http://www.parliament.nsw.gov.au/prod/parlment/committee.nsf/0/FC01867C1767684FCA2579520018E34D?open&refnavid=CO4_1

The following table ensured appropriate information was provided in relation to the DA design.

Element	Compliance	Comment
1. Building Use	Yes	The proposed use of the site as multi unit campus residential accommodation related to the predominant educational use and is permissible in the zone.
2. Building Height	Yes	The proposed bulk and scale responds to the desired future character of the residential precinct within the university campus. The perceived height and scale has been minimised by ensuring that the 4 buildings are read in composition with the tall existing trees on site.
3. Circulation	Yes	The existing cross campus share way for foot and bike traffic will be upgraded to provide good circulation and connectivity between the site and the remainder of the campus. The revitalisation of the existing pathways to the site allow for improved legibility and permeability. Close proximity to the University Ring Road and central pedestrian spines allows ease of access to the public transport nodes.
4. Open Space, Landform and Views	Yes	This proposal promotes the bushland character of the campus and provides a considered balance between the busy, civic spaces for gathering and community connectivity, transition spaces and quiet, contemplative spaces more closely related to the residential precinct. Major trees and vegetation areas have been preserved whilst courtyard and special character areas have been developed and fully integrated with the planning concept. <ul style="list-style-type: none">• Active and passive recreation areas will be incorporated into the landscape design including:• Outdoor shaded seating areas for small groups• A larger common green for group gatherings• BBQ area associated with indoor common areas• Grassed amphitheatre areas for performances Selected plants will be robust and reasonably drought tolerant. Groupings of plants shall have similar water requirements.
5. Building Edges	Yes	The three-pronged building form, set amongst trees of similar height, creates a dynamic and less monolith visual experience than a traditional rectangular form would offer. The siting and orientation of the development provides a highly articulated mix of built form and courtyards. The building incorporates an articulated design response to avoid blank facing walls to all elevations.
6. Landscape Response	Yes	The proposal promotes the continuation of the landscape tradition of the campus. The landscape strategy is twofold. One to protect and restore the remnant spotted gum and iron bark vegetation community which unifies the site, the other to make clear but discrete interventions within the site which facilitate campus life.
7. Access & Parking	Yes	A new open deck car parking is proposed containing 410 car spaces and 20 motorbikes. There is also provision of an additional 16 on grade parking spaces including accessible spaces located adjacent to buildings A, B, C and D. The development provides 174 bicycle parking spaces for both visitors and residents.
8. Building Performance	Yes	The narrow building footprints facilitate efficient natural cross ventilation and sunlight access. The proposal also includes bedrooms and living spaces overlooking courtyards to maximise residential amenity and allow casual surveillance of the courtyard spaces.
Site Configuration		
9. Deep Soil Zone	Yes	All open space areas contained within the courtyards will contain deep soil planting. Refer to Landscape Plans.

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Element	Compliance	Comment
10. Fences & Walls	N/A	Not applicable to this development proposal.
11. Landscape Design	Yes	The landscape design of the proposal has incorporated the objectives and provisions of the Draft Newcastle Development Control Plan. Refer to landscape plans.
12. Open Space	Yes	Common open space is provided as courtyards between the proposed buildings. The main outdoor gathering space is framed by Buildings A, B & C and is connected to the main entry. It consists of a large lawn as well as a number of paved barbeque areas with seating which front the space and also connected it to each building. This main outdoor space has a predominantly northern orientation and is located to maximise views out over the adjacent sports field.
13. Orientation	Yes	Generally living areas, bedrooms and outdoor spaces are orientated to optimise solar access. The rule of thumb standard to optimise northerly aspect for good solar access needs to be balanced with other urban design objectives of orientating the fronts of buildings with entries to the main pedestrian spine and courtyards for good casual surveillance. The proposed development effectively balances these urban design and residential objectives. The orientation of the buildings also allows for the continuation of the grid of pathways throughout the campus.
14. Planting on Structures	N/A	There will be no planting areas located on top of concrete slabs.
15. Stormwater Management	Yes	Addressed in Hydraulic Report prepared by GHD.
16. Safety	Yes	The new courtyards created by the buildings will provide casual surveillance of public areas. The layout of pathways and open space on the proposal site avoids the creation of entrapment spaces in common areas between buildings, with alternative means of access provided. Adequate levels of lighting are ensured for safety and security.
17. Visual Privacy	Yes	Setbacks and building separation provide a good degree of visual privacy which is consistent with the RFDC Rules of Thumb in regards to building separation.
18. Building Entry	Yes	Building entries are clearly defined as are pedestrian pathways throughout the site. Each residential block has separate entries from ground level.
19. Parking	Yes	A new open deck car parking is proposed containing 410 car spaces, inclusive of accessible spaces and 20 motorbike spaces. There is also provision of an additional 16 on grade parking spaces including accessible spaces located adjacent to buildings A, B, C and D. The development provides 174 bicycle parking spaces for both visitors and residents.
20. Pedestrian Access	Yes	High quality pedestrian access ways have been created throughout the site and link effectively with the existing pedestrian access ways throughout the campus. All pedestrian access ways provided allow for visual permeability.
21. Vehicular Access	Yes	Vehicular and pedestrian access throughout the site is clearly separated. Vehicular access does not dominate the site with the number of vehicular access points being limited to 2. Refer to Traffic Report.
Part 2 Building Design		
22. Dwelling Layout	Yes	Internal layout of the residential accommodation types is shown on each respective floor plan. Generally the sizes of each unit are generous. Each dwelling is laid out to ensure maximum consideration is given to the amenity of residents.
23. Dwelling Mix	Yes	The development includes a range of apartment sizes and types including; <ul style="list-style-type: none"> • Studio Apartments • Studio Accessible Apartments • 2 Bed Apartments • 2 Bed Accessible Apartments • 5 Bed Accessible Apartments • 6 Bed Apartments 24 accessible apartments have been provided in Studio, 2 bed and 5 bed bedroom configurations and are equitably. There are a total of 778 beds. Refer to DA6005 for apartment schedule.
24. Balconies	Yes	Balconies are provided to each 5 and 6 bed residential apartment, and communal balconies are provided on each level.
25. Ceiling Heights	Yes	A minimum of 2.7m floor to ceiling height is recommended in the NSW RFDC 2002. This minimum height can easily be accommodated within the 3.1 metre floor to floor height for each level within the development. The proposal will achieve at least the minimum recommended ceiling height.
26. Flexibility	Yes	The structure's flexible column free construction allows for future adaptation and uses for the buildings.
27. Ground Floor Dwellings	N/A	Not applicable as ground floor incorporates communal common areas, administration areas, service and ancillary areas and multipurpose rooms.

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Element	Compliance	Comment
28. Internal Circulation	Yes	Each building and residential unit is directly accessible from the system of pathways provided and via stairs and lifts.
29. Storage	Yes	There is adequate space across the proposal site for storage.
30. Acoustic Privacy	Yes	Acoustic privacy between units is in accordance with BCA requirements. Refer to Noise Assessment.
31. Daylight Access	Yes	The proposal achieves good daylight access due to the orientation of the buildings. Refer to ESD report.
32. Natural Ventilation	Yes	Majority of units are designed to be naturally cross-ventilated, being dual aspect.
33. Awnings & Signage	Yes	Awnings and colonnades are incorporated within the design and are associated with site linking elements.
34. Facades	Yes	Refer to the elevation drawings and finishes board. The facades are finely articulated with a satisfactory ratio of solid to void areas and incorporate useful fenestration.
35. Roof Design	Yes	The proposal incorporates flat roofs.
36. Energy Efficiency	Yes	Energy efficiency, through the achievement of Section J targets has been assessed. Refer to Section J Report.
37. Maintenance	Yes	Maintenance has been addressed. Refer to schedule of materials.
38. Waste Management	Yes	Refer to Waste Management Report.
39. Water Conservation	Yes	Water conservation has been demonstrated. Refer to ESD report.

ATTACHMENT #2

Nodal and Pathway Hierarchy

