



Ku-ring-gai Municipal Council

Knox Grammar School

Proposed Seniors Centre

Urban Design Assessment 29-03-12

Development Application DA: /0587/11

The proposal is for a Seniors Centre within the Knox Grammar School. The school is located on the Pacific Highway, Woodville Avenue and Borambil Street, Wahroonga. The eastern boundary is the north shore rail line.

The Applicant is: Epm Projects P/L

The Architects are: Jones Sonter Associates Lilyfield NSW

Drawings:

DA Issue: DA1.01 Rev1 DA3.01 Rev1 DA3.012 Rev1 DA3.03 Rev1 DA3.04 Rev1 DA3.04 Rev1 DA3.05 Rev1 DA3.07 Rev1 DA5.01 Rev1 DA6.01 Rev1 DA6.02 Rev1

Urban Design Comments on Proposed Seniors Centre

This report evaluates the design proposal for the proposed seniors centre for Knox Grammar School in urban design terms. It is set out in 2 sections. Section 1 describes the existing character of the Knox Grammar School site and the architectural resolution. From this analysis a series of principles have been established. These are designed to guide the form of any new development which is introduced to the site. Section 2 describes the proposal for the Seniors Centre and evaluates how well it meets the principles set out in Section 1.

Section 1

Knox Grammar School

The Context

The Knox Grammar School (KGS) site is located on an irregularly shaped site with a long north/south axis.

There is an extensive frontage to the Pacific Highway on the western boundary. The northern and southern boundaries have street frontages and interface with residential precincts. The eastern side of the site abuts the north shore north south rail line. This runs from the Sydney CBD to Hornsby where it joins the main northern rail line.

The site for the seniors centre is located at the entrance to the school situated on the southern boundary at the entrance from Borambil Street.

The KGS is an educational campus. It is a discrete precinct sitting in an area which is a predominately residential area. The surrounding suburb is characterised by large detached dwellings on garden lots. The school has major interfaces with the Pacific Highway [6 lanes] and the north shore rail line, located on an embankment.



Apart from the chapel building the school buildings are institutional in form and design and are sited in close proximity to each other. Many are located close to the site and street boundaries and they are organised so that they form a series of courtyards within the precinct and a “wall” at the edge of the precinct. This wall presents with a clear roof-line against the sky.

The urban model of KGS uses buildings to create a distinctly institutional precinct. This:

- ensures that the campus is read as a discrete entity from the surrounding areas
- provides variety and a point of difference in the overall suburban context
- defines an edge to campus
- creates a clear skyline thereby minimising the overall impact of the precinct

Principle 1: The Context

Any new development on the site should reinforce the established character of the school campus by ensuring that:

- the buildings are located and designed to reinforce the campus a precinct which is different and discrete from its surroundings
- the edge condition is strengthened as a wall of buildings with penetrations.
- the “edge” has a clear skyline.

Spatial Structure of the KGS

The K G S is organised in a traditional educational campus form. That is, the buildings are organised not as “object” buildings but as buildings which define a series of interrelated spaces. This urban form model frequently used in a campus situation contrasts with the detached house suburban model. The internal open spaces within the site have a hierarchical value depending on their size and shape and the role and quality of the buildings which define them. Traditionally where the buildings are formal and they define a formal space that space is usually the most important space. Where the buildings are more informal and the space they define more informal those spaces are usually the casual spaces of a campus. The Chapel building on the southern end of the site is the only building which is read as a building in the landscape.

In KGS there are a series of formal spaces such as the Memorial Quadrangle and the space related to the MacNeil house and the Boarding house and informal spaces such as the one defined by the Reid and Montgomery Buildings..

The urban model of using buildings to define a series of spaces in the Knox Grammar School:

- optimises use of land
- minimises the visual impact of buildings
- reinforces the role of the buildings in the overall context
- optimises outlook , air , light to and from buildings
- maximises the visual impact of the open space system
- provides a variety of experiences across the site .
- enables a clear reading of the topography
- intensifies the experience of light and shade.

Principle 2: Spatial Structure

Any new development on the site should reinforce the established character of the school campus by ensuring that the buildings define and reinforce the existing series of hierarchical spaces



Built Form

The built form section deals with height, alignment, setbacks, ground plane and architectural resolution

Height

The heights of the building on the school campus range from 10 metres to 21 meters. Despite the variations in the height of the buildings the RLs of the ridge lines and parapets have a strong consistency at around RL 200+. This consistency derives from the falls in the site relative to the heights of the buildings in that the taller buildings are located on the lower parts of the site.

This approach to the arrangement of height of buildings on the land:

- provides a very clear reading of the topography as a contrast to the height . In the “space defining” urban model consistency of height across the land can provide a much clearer reading of the land than a model which has buildings stepping up and / or down the site
- minimises the visual impact of buildings
- reflects the historical development of the site

Principle 3: Height

Any new development on the site should reinforce the established character of KGS by retaining this consistency of height across the site with the higher buildings on the lower parts of the site and the horizontal plane across the roofs is consistent.

Alignments

The existing buildings are organised to define a spatial system within the site. They are not always exactly parallel to the street but they align with each other along the street frontages. Generally the buildings are aligned to:

- each other or the internal and / or external street system, and/or
- so they describe a defined space

The main school building is the setting out point for the building fabric on the western and northern side of the site.

Principle 4: Alignment

Any new development on the site should reinforce the established character of KGS by ensuring that the alignments of any new buildings relate one building to another and / or buildings to the street system so that a defined spatial system is created.

Set Backs

The school has developed over many years. Because of this it reflects the tradition of building close to the street and site boundary. This is evident along the Pacific Highway and Woodville Avenue and in is it conforms to many private and public education facilities developed pre WW2 in Sydney.

The proximity to the street combined with the alignment to the street reinforces the character of the site as a discrete campus.



Principle 5: Set Backs

Any new development on the site should reinforce the established character of KGS by ensuring that the set-backs and relationships of new buildings to the street are similar to the existing buildings on the site.

Ground Plane

The existing campus site has been levelled into a series of planes. These contain buildings and / or open space and are connected by stairs and/ or ramps. This division of the ground plane into a series of platforms enable:

- a clear reading of the spatial system
- a clear reading of the topography
- an understanding of the role of the buildings

This approach to the site:

- minimises the visual impact of buildings
- maximizes the impact of the spatial system
- provides a hierarchical setting for the school buildings

Principle 6: Ground Plane

Any new development on the site should reinforce the established character of KGS by ensuring that the land is levelled into a series of ground planes organised in relation to each other, the natural topography and the proposed built form.

Architectural Resolution

The first part of this report deals with the organisation of the buildings relative to each other and the land. This part deals with the architectural style of those building.

As outlined above the spatial organisation of the site is traditional urban, buildings defining space. The architecture also with the exception of the McKenzie Library building is resolved in a traditional style. Dark to medium brick, roofs pitched etc. This consistency in the expression of the architecture is desirable and can optimise the quality of the overall site. Consistency in the choice of materials is particularly helpful however the “copying” of another period of architecture is a questionable approach.

The overall site is organised in a very clear way. New buildings should retain and reinforce this organisational approach particularly alignments, spatial definition, the terracing of the ground plane and the use of a consistent palette of materials but introduce a more contemporary approach to the architecture style. This will retain the special character of the school and result in a more successful outcome for the campus.

Principle 7: Architectural Resolution

Any new buildings on the site should reinforce the established character of KGS through the appropriate spatial organisation as outlined in Principles 1-6, however new buildings should be resolved by using similar materials to the campus buildings but in a contemporary and institutional architectural style.



Summary of Principles

Principle 1: The Context

Any new development on the site should reinforce the established character of the school campus by ensuring that:

- the buildings are located and designed to reinforce the campus a precinct which is different and discrete from its surroundings
- the edge condition is strengthened as a wall of buildings with penetrations.
- the “edge” has a clear skyline.

Principle 2: Spatial Structure

Any new development on the site should reinforce the established character of KGS school campus by ensuring that the buildings define and reinforce the existing series of hierarchical spaces

Principle 3: Height

Any new development on the site should reinforce the established character of KGS by retaining this consistency of height across the site with the higher buildings on the lower parts of the site and the horizontal plane across the roofs is consistent

Principle 4: Alignment

Any new development on the site should reinforce the established character of KGS by ensuring that the alignments of any new buildings relate one building to another and / or buildings to the street system so that a defined spatial system is created.

Principle 5: Set Backs

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Principle 6: Ground Plane

Any new development on the site should reinforce the established character of KGS by ensuring that the land is levelled into a series of ground planes organised in relation to each other, the natural topography and the proposed built form.

Principle 7: Architectural Resolution

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Section 2

Description of the Proposal for the Seniors Centre

The Site

Within the school the site for the seniors centre is located on Borambil Street adjacent to the tennis courts and the science centre.

The eastern entrance to the school is located from Borambil Street adjacent to the seniors centre. Knox 1 Oval is located on the right of the entrance road opposite the seniors centre.

The internal street within the Knox School site extends from Borambil Street around the oval and is faced with school buildings on the north and the west. The rail line and embankment is located on the east.

The buildings along this internal street all face & define the shape of the oval. Although they are not continuous they are sufficiently close and appropriately aligned to form a “wall” which defines the spatial system. The proposed site for the seniors centre is the only remaining piece of land devoid of buildings facing Knox 1 Oval. It is the only “gap” in the “wall” of buildings

The buildings facing the oval from north to the west and south are the Lawson Building, the Main School Building, the McKenzie Library Building, the Montgomery Buildings and the science building

Behind the proposed site are the tennis courts. These are located over a structure and at grade car parking. This combined with the enclosure on the courts contributes to a higher than normal visual impact for tennis courts.

On the south- east corner of Knox 1 Oval there is a boundary with an open space park bushland area related to the rail line and to Borambil Street

The Seniors Centre Building

There are two buildings proposed for the seniors centre, the main building and an associated tower building. The main building adjoins the science building and is an L shaped building forming a courtyard at the upper levels facing east to the internal street. This internal street runs around Oval 1. One arm of the L shape is a continuation of the science building. It runs east / west. The northern arm is located at right angles to this and terminates at the entrance to Borambil Street. The tower building is aligned with this wing and is sited over the entry point.

There is an informal courtyard, created by the new building adjacent to the science building. The new L shaped seniors centre forms a courtyard at the upper levels but at ground and first floor level this space fronts the street and contains a communal/ café space. The upper levels of the seniors centre surround an upper level courtyard. These two wings house the teaching functions and a lecture theatre. The building is equivalent 4 commercial storeys. The section of building which joins the science centre is approximately one storey lower

The tower structure straddles the entrance street at the junction of Borambil Street. It is one room in plan and 5 storeys high. The lower 2 levels form the entrance canopy over the street. Staff rooms are located on levels 2 and 3 and a storage room on the top level. Above the storage room there is a “tower” form and a viewing platform. This is accessed by stairs and is partially covered



by the tower structure. The tower extends approximately 18 metres above the utmost ceiling of the seniors centre.

The buildings are designed in a traditional architectural style using a dark brick and pitched roofs. Viewed in isolation they appear as a group of ecclesiastical buildings. The major contributors of the design resolution in presenting this image are the pitched roofs, the use of arches and the tower structure

Principle 1: The Context

Any new development on the site should reinforce the established character of the school campus by ensuring that:

- the buildings are located and designed to reinforce the campus a precinct which is different and discrete from its surroundings
- the edge condition is strengthened as a wall of buildings with penetrations.
- the “edge” has a clear skyline.

The Proposal

The seniors centre is located on a site within the campus which has the potential to reinforce the site as an institutional precinct. The shape and location of the building relates to the adjacent school buildings, reinforces the edge condition on Borambil Street and the edge condition around the Knox 1 Oval. It also creates a clear edge along Borambil Street. In terms of this interface as to whether it is critical to ensure the correct height and alignment Buildings within the campus should create a clear edge to the campus and the street. They should not attempt to step down and / or emulate the residential buildings around the site. The location and shape of the seniors centre achieves this.

Principle 2: Spatial Structure

Any new development on the site should reinforce the established character of KGS school campus by ensuring that the buildings define and reinforce the existing series of hierarchical spaces

The Proposal

The proposed seniors centre excluding the tower, is a space defining building in line with the type and arrangement of school buildings on the site. It defines the edge of the entrance street and the oval, a small courtyard adjacent to the science centre and a long triangular space with the tennis court edge.

There is a secondary courtyard space created on the top of the seniors centre recreation/ café space.

The tower structure is a “marker” building. It is a space defining terms of its plan form and relationship to the main seniors centre but its height and steeple form sets it apart as an object.

The introduction of the tower building is problematic.

It alters the role of this entry to the school by suggesting that this is the main entrance. The historical main entry faces the Pacific Highway and although there can be no vehicle access the overall organisation of the buildings and the main buildings are oriented this way not to Borambil Street. The characteristics of Borambil street are suburban and almost rural. The introduction of “a



tower” does not assist in changing the role of this entrance but rather confuses the logical organisation and historical development of the site.

The purpose of the tower building is mundane two staff rooms, storage and a viewing tower. It does not have a real role.

Principle 3: Height

Any new development on the site should reinforce the established character of KGS by retaining this consistency of height across the site with the higher buildings on the lower parts of the site and the horizontal plane across the roofs is consistent

The Proposal

The height of the seniors centre is compatible with the science centre and consistent with the overall organisation of height across the site. Any buildings on the site should continue the height of the science centre to form a consistent edge to the oval and to provide a definition of the edge of the site as distinct from the residential development across the street.

There are different ways of dealing with buildings of different heights. A customary response is to have buildings of an “intermediary” height. This stepping effect of buildings can be demonstrably negative. It can:

- create a confused skyline where one building is seen against another
- diffuse the intact quality of a grouping of buildings

Often a more successful way of dealing with buildings of different heights is the use of space with a clear edge or space related to length of frontage e.g. the book end buildings around Ways Terrace Pyrmont. Height is also related to footprint in terms of the impact of a building. This building is quite slim in footprint and section.

The context decrees that the school should read a “walled” precinct distinct from the surroundings. My reading of the current drawings is that the proposed seniors centre is not too high in relation to the dwellings across the street including No 2 Borambil Street. A different resolution of the roof would reduce the visual impact. I do not think that the taller element of the tower is too high but I consider it to be an inappropriate structure [see later] The model clarifies that the height of the building is appropriate.

Principle 4: Alignment

Any new development on the site should reinforce the established character of KGS by ensuring that the alignments of any new buildings relate one building to another and / or buildings to the street system so that a defined spatial system is created.

The Proposal

The proposed seniors centre is aligned with the entrance street and the seniors centre. It is not aligned with Borambil Street or the tennis court structure. To be aligned with all four competing and non-aligned edges of the site would require the seniors centre itself to be designed with an irregular plan. Given the type of uses I would question this approach as it rather denies the characteristics of and the requirements of the building. In terms of priority of alignments the highest priority is the internal street and the entry. The only other possibility would be to slightly



rotate the seniors centre building at the junction with the science building so that the new building better aligned with Borambil Street, the internal street and the tennis court structure

Principle 5: Set Backs

Any new development on the site should reinforce the established character of KGS by ensuring that the set-backs and relationships of new buildings to the street are similar to the existing buildings on the site.

The Proposal

The seniors centre locates the buildings in a similar relationship to the street as the campus buildings are to the Pacific Highway. Subject to the height and architectural resolution it is preferable to pull the buildings to the edge of the site.

Principle 6: Ground Plane

Any new development on the site should reinforce the established character of KGS by ensuring that the land is levelled into a series of ground planes organised in relation to each other, the natural topography and the proposed built form.

The Proposal

The proposed seniors centre sits on a flat plane relative to the street and the oval. This minimises the visual impact from the street, the oval and the tennis centre and is consistent with the historical development of the site.

The upper level courtyard is also consistent with this approach, defined by the wings of the new building and creating a flat plane at the second storey.

Principle 7: Architectural Resolution

Any new buildings on the site should reinforce the established character of KGS through the appropriate spatial organisation as outlined in Principles 1-6, however new buildings should be resolved by using similar materials to the campus buildings but in a contemporary architectural style.

The Proposal

The architectural resolution of the buildings is questionable. The buildings appear to be more ecclesiastical than educational. In terms of context and relating to the site the basic organisation and disposition of the buildings are successful however to capitalise on this successful start they need to read as institutional not ecclesiastical, a “down playing” of the architecture would better reflect the use and the context. It would also lessen the visual impact of the grouping while still keeping the basic organisation. These buildings should not be competing but be complementing the rest of the site.

The chapel is the one building on the site which has a separate role. It stands out as a building in a landscape setting. It does not have a large footprint. The chapel needs to remain as a point of difference on the site, to be read as the one church building. The wing facing Borambil Street of the proposed seniors centre is on the other side of the tennis court structure is too reflective of church architecture. Both have a frontage to Borambil Street. It is essential that the seniors centre does not compete architecturally with the chapel. It requires a more reserved handling and the form should better reflect its use as an educational building.



The use of the materials is appropriate.

The Views to the Site

There are two main views of the seniors centre from the street. The first is along Borambil Street looking north. The second is along Borambil Street looking west into the site.

In the view north the buildings are almost parallel to the street. This minimises their impact on the street. Although they are not quite parallel to the street they are sufficiently aligned to minimise their impact. They still relate to the alignment of the dwellings on the other side of the street and they are set back from the street with a landscaped frontage. The southern wing is proud of the rest of the building so that in the view north it will block out the view of a substantial portion of the north western wing. If the buildings were fully aligned with the street the visual impact would be further reduced.

Given the characteristics of the site I don't think that this is a particular problem providing the architecture is well resolved. Increasing the front set back will have no obvious impact on this view. If the buildings were parallel to Borambil Street there would be a marginal reduction in the impact.

From outside the site the view which will be the most dominant is the view west along Borambil Street. Borambil Street is almost perpendicular to the seniors centre but curves at different angles so that the seniors centre and not the tower will be most dominant closer to the entrance. That section of Borambil Street is only short so the view of the buildings will not be sustained for any time.

The tower is in line with the eastern wing of the Seniors Centre and located over the entrance street. The alignment of Borambil Street is such that the view west along the street does not terminate on the entrance to the school but it terminates on the proposed senior centre. For these reasons the tower is not in a highly visible location, both in the view along the street from the north and into the site from the west. This is not the customary placement of a tower form. This sets up a strange dichotomy. The tower building is introduced as a "marker" but it located in a place which from the outside of the school grounds is not a key site.

The Views within the Site

From inside the site the most dominant view of the buildings will be from the Lawson building across the oval. The next most dominant view is from the internal street looking east.

In the view across the oval the seniors centre will complete the edge of buildings around the Oval at a comparable scale to the science centre. The eastern wing provides an edge to Borambil Street and the entrance street. This eastern wing will be slightly more dominant in the view along the internal street looking east but the composition is compatible with the existing school buildings.

Entrances

The original entrance is from the Pacific Highway. Located on this major topographical ridge it historically provided a sense of entry through the Memorial Quadrangle. It focuses on the Main School building and is flanked by the John Wallis Memorial Hall and the Arts building. The role of this entrance however is lessened because it cannot provide adequate access for cars.

There is an entrance from Woodville Avenue. Woodville Avenue bends at right angles where the entrance to the school is located. It reads as if historically the avenue extended through the school



site but has been incorporated into it. If so this would have taken place some time ago. This entrance is located on the direct line of sight along Woodville Avenue from the north. The view of the Main Building is flanked by the Great Hall on the left of the entrance and the Boarders building on the right. It has large ornate gates opening onto a generous level paved plaza.

The Borambil Street entrance by contrast appears as a secondary entrance. The street is narrow and low key without any sense of importance. It is lower topographically, narrow and only opens onto the actual carriage way of the internal street.

Conclusion

- The organisation of the Seniors Centre building with the exception of the tower building is appropriate for the context; spatial system; alignment; setbacks and ground plane treatment.
- The design of the roof increases the appearance of the height. While the number of storeys is appropriate a different resolution of the roof could reduce the visual impact of the height
- The choice of materials is appropriate.
- The architectural resolution is inappropriate. The buildings are designed in a style which is too ecclesiastical and should be more in line with the other educational buildings on the site.
- The tower is an inappropriate introduction to the Seniors Centre and the school. It confuses the hierarchy of entrances to the school and its design is inappropriate for 2012.

Recommendations

- Maintain the arrangement and composition of the Seniors Centre as designed. This includes spatial relationships; height [see below]; alignment; setbacks and ground plane treatment.
- Maintain the palette of materials
- Redesign the elevations of the buildings to better reflect their use and their relationship to the buildings across the whole campus. Remove overtly ecclesiastical references.
- Complement the different resolution of the elevations with a more sympathetic roof design possibly with a less steeply pitched roof.
- Remove the tower and design an entry which better reflects the context and the hierarchy of entrances into the school.



Photo 1 – Proposed Site for Seniors Centre



Photo 2 – Proposed Site for Seniors Centre



Photo 3 – From Borambil Entrance Proposed Site for Seniors Centre on left



Photo 4 – From Borambil Street Proposed Site for Seniors Centre adjacent to the Tennis Courts



Photo 5 – Borambil Street 90 degree turn at entrance



Photo 6 – Entrance from Borambil Street



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Photo 7 – View of Entrance from Borambil Street from inside KGS



Photo 8 – Entrance to KGS from Borambil Street



Photo 9 – View along Borambil Street Proposed Site on left. No 2 Borambil Street on right



Photo 10 – Proposed Site for Seniors Centre on far side of Tennis Courts



Photo 11 – Proposed Site for Seniors Centre on far side of Tennis Courts



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Photo 12 – Science Block from Chapel Entrance



Photo 13 – Science Block from Chapel Entrance



Photo 14 – Boarders Building adjacent to entrance from Woodville Avenue



Photo 15 – Entrance from Woodville Avenue