

Daniel Keary
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

26 February 2014

Dear Mr Keary, *Dan*

**MODIFICATION REQUEST APPLICATIONS FOR CONCEPT PLAN
MP09_0216 AND PROJECT APPLICATION MP09_219
Shepherds Bay Redevelopment**

I refer to the Department of Planning and Infrastructures letter regarding the above mentioned project and proposed modifications.

The City of Ryde Council has reviewed the documentation provided and has significant concerns regarding the proposal. These concerns have been attached as a separate document.

Council does not support the proposed modifications on the basis of excessive density, poor amenity and uncertainty created by the proposed conditions. Council's objections to the proposal have been detailed in length in the enclosed attachment.

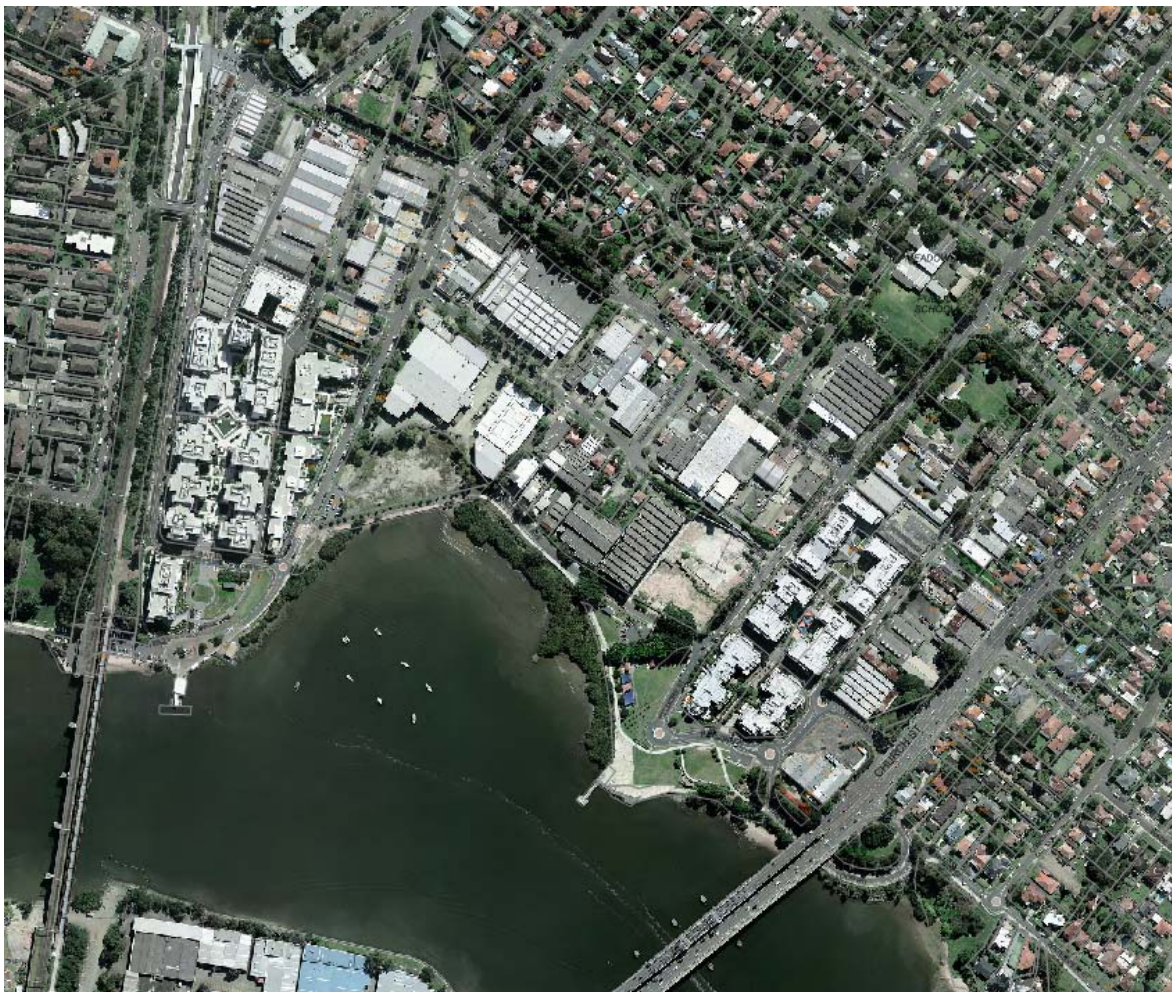
Council requests that the proposed modifications be determined by the Planning Assessment Commission and that a public hearing is held. Council would welcome the opportunity to meet with the Department of Planning and Infrastructure prior to the finalisation of the Assessment Report to discuss the proposed modifications in further detail.

Yours sincerely



Dominic Johnson
Group Manager, Environment and Planning
City of Ryde Council

Shepherds Bay Redevelopment



Modification request for Concept Plan MP 09_216
and Project Application MP09_219
Submission from City of Ryde Council

The Department should note that concurrent to the 75W Modification process, Council has held an Urban Design Review Panel (UDRP) meeting on 19 December 2013 considering the proposed stages 2-5. These stages have been designed as though the proposed Section 75W Application has been approved. These plans have not been endorsed by Council in anyway and no approval for any element or modification proposed has been given by Council.

Following on from the Urban Design Review Panel, Council had a follow-up meeting with the applicant on 28 January 2014 for the presentation of additional information. In this respect, the Urban Design Review Panel has not yet provided definitive comments on the proposal.

Determination and Consultation

Council recognises, acknowledges and thanks the Department for the notification of the modification applications which occurred at Councils request.

Given that this matter was originally considered by the Planning Assessment Commission whom was directly responsible for many of the conditions and limitations subject to modification by the proponents, Council requests that the determination of the modifications is by the PAC and that a public meeting be held.

Concept Plan

Staging

Council does not raise any objections to the modification of the proposed staging, with the exception of the proposed changes to Conditions 24 and 25. These conditions relate to the delivery of traffic infrastructure necessary to alleviate the impacts of the proposed development.

These works were attached to the original Stage 2 to ensure delivery of this infrastructure early on in the development. This ensures that the impacts of the development on the community are mitigated at an early stage.

It should be noted by the Department of Planning and Infrastructure (DoPI) that Council has received indicative plans for the proposed new road connection. Council has raised significant concerns with the design of the proposed road connection that have not yet been addressed by the applicant. In particular the following are key areas of concern:

- Addressing and provision of suitable public domain to Council Standards. This includes footpaths, shared paths and the proposed shared zone.
- Insufficient detail regarding the proposed drainage and existing overland flowpath.
- Vehicular access for surrounding stages.

- Design of the kerb blisters, left in / left out at Hamilton Crescent and Belmore Street, Raised Threshold, and Roundabout.

A copy of the letter sent to the applicants addressing the proposed road connection has been attached as **Attachment 1**.

From the attachment it can be seen that many of the issues will require detailed consideration of the building location, design, finished levels and topography in proximity to the road link. These must be considered jointly with the design of the road network. Accordingly, by delaying the full design and construction of this link to Stage 4 rather than the original Stage 2 is likely to cause further problems for the design and construction of Stages 4 and 5. As demonstrated by the proposed modifications in the 75W, the levels of the sites are complicated and difficult to effectively resolve without detailed consideration of all matters early on.

Given the above concerns, Council does not support the proposed changes to Conditions 24 and 25.

Building Heights to Constitution Road

The proposed amendment put forward by the applicant seeks to increase the height of the building footprint located at the corner of Constitution Rd and Belmore St. Part of the proponents argument is that Condition 3 which limits buildings along Constitution Road to a maximum height of 5 storeys is in contrast with the approved plan which shows a total height of 6 storeys. Councils does not believe that there is potentially contradiction inherent in the approval. This is by virtue of Condition A2 which identifies the plan in question and then goes on to include '*except for as modified by the following*' where the following consists of several conditions.

Notwithstanding the above, another component of the proponents argument is that the corner nature of the building envelope supports an increase in height as:

- *The creation of a feature element which defines the Concept Plan site, especially given this is a main entry point to the site and surrounding road network;*
- *The creation of a feature element which is supported by the existing 6 storey development on the opposite side of Belmore Street, providing an equal and balanced urban feel on both sides of Belmore Street (as demonstrated in **Figure 8** below);*
- *The 6 storey element is for a minor portion of the overall building form which allows for improved building articulation and modulation and breaks up the built form of the northern elevation of the building which has a width of approximately 65 metres. This 6 storey corner element introduces a vertical element to the building which is a positive visual asset;*
- *The proposed 6 storey element will not result in any additional overshadowing impacts given the built form is permitted to be built to a*

height of RL 41.90 and therefore will not unduly impact on the public domain or neighbouring properties; and

- *The provision of 6 storeys is capable of being provided within RL 41.90 for the corner portion of the building, as demonstrated in **Figure 8 and 9** below.*

In Council's opinion, the corner nature of the building envelope and its unique relationship to the street can be readily addressed through building articulation within the footprint and architectural treatment of the corner. This does not necessarily require an increase in building height.

Basement Levels Above Ground Levels

It is noted that the applicant has identified that **Condition 4** should be amended. Condition 4 states:

Future Development Applications shall ensure that basement parking levels do not exceed 1 metre above ground level (finished) and are located below the building footprint and do not encroach into street setback areas.

The proponent is of the opinion that this condition is unreasonable given the sloping nature of much of the area covered by the Concept Plan. In Council's opinion, the Condition is appropriate. This Condition ensures that development steps down the site in response to the peculiar topography of each stage. The proponent has used the design of Stage 1 as an argument against the Condition however these concerns and issues are addressed in the *Project Application* section of this submission.

It should be noted that as identified by the proponent in several meetings with Council, the site has significantly varied levels that are going to be significantly altered by the proposed development. As such, given the sheer extent of earthworks and that the buildings and surrounding public domain will be based on modified ground levels, it is not considered necessary to amend the condition as suggested. A key point to this condition is that the 1m is to extend from **ground level (finished)**. The key purpose of this condition is to ensure that the building steps in response to the topography of the site. This will ensure quality relationship of the buildings with surrounding spaces.

Compliance to Building Height Map

The applicant is seeking the inclusion of an additional condition to allow for additional storeys within the approved building envelopes that will read as follows (emphasis added):

Built Form

*"Future Development Applications shall satisfy the Maximum Number of Storeys Above Ground Level (Finished) Plan, **with the exception of buildings on steeply sloping topography, where additional storeys may be required to activate the ground level**, where the overall building height satisfies the maximum permitted RL."*

The applicants have argued that this is in order to improve the relationship of each stage to the surrounding areas due to the steeply sloping nature of the site. This argument is not supported by Council.

With regards to Stage 1, Council has identified significant concerns with the proposed amendment as this is achieved through the lowering and regrading of the Foreshore Link. This is discussed in depth within the *Project Application* part of this submission. It should be noted by the Department that the adoption of the design for the Foreshore Link will mean that the Central Spine connection between Rothesay and Nancarrow will need to be fully accessible as per Condition 16 of the Concept Approval. Condition 16 provides:

Future Development Applications shall include detailed landscape plans which demonstrate accessible paths of travel for all persons for at least two of the north-south routes between Constitution Road and the Foreshore with one of the routes including the Lower Riparian linear park and a second path either along the Central Spine or the public pathway associated with Stage 1. Landscape plans will also include the detailed design of at least 1 north-south cycle path linking Constitution Road through the site to the existing foreshore cycleway.

With regards to the remainder of the Concept Plan, the applicant's architect has identified to Council that the approved storey plan and building envelopes were only intended to act as a guide for the RLs and was not intended to form part of the approved plans. In Council's opinion the 75W presents an opportunity for this to be rectified through the provision of a well-considered and detailed storey plan rather than a carte blanche opportunity to vary storey heights. Furthermore, no details as to the RLs for each of the publicly accessible open space areas have been provided. This will provide multiple opportunities across the site for providing additional units to the detriment of the open space areas and the amenity of the individual units. This has been clearly shown in Stage 1 through the significant altering of the ground levels simply to provide for additional units.

The applicants have also failed to nominate which sites are considered to be 'steeply sloping' which will result in ambiguity as part of the assessment of future Development Applications but have indicated it would be the majority of them. This ambiguity further highlights the proponents desire to relax the applicable planning captures and increase the yield wherever possible to the detriment of both future and current residents. Arguably the applicant would have ready access to survey plans and RLs that would be able to readily distinguish which sites are steeply sloping. This information is basic information required to assist in the preparation of Concept Plans and must have been used to determine the RLs of the proposed building envelopes.

The proposed amendments by the proponent seeks to allow for the interpretation of the storey height plan in an open manner. This was recognised by the Departments initial assessment of the Concept Plan. The Director-Generals Report (p. 21) noted to *allow for comparison with the original scheme, the proponent has indicated the number of storeys likely to be achieved under these RLs, however, assessment of the 'Indicative Storey Plan' has shown that it is possible that additional storeys could be achieved within each of the building envelopes. This has been demonstrated with the Stage 1 project application where*

in many instances, the proposed building presents as 1 – 2 storeys greater than the indicative storey heights.

This effectively seeks to allow for the interpretation of the storey height plan as a starting point with significant additional storeys provided within the RLs. The vagueness of information provided across the site was recognised by the PAC as their Report provides that *'The Commission considers that given uncertainties in relation to the finished ground levels across the site, it is necessary for a maximum storey plan to be included in the approval. Any development application for future stages will therefore be required to comply with not only the maximum RL (AHD) but also with the maximum number of storeys above finished ground level whichever is the lower.'* (p. 6, *PAC Determination Report - Concept Plan and Stage 1 Project Application Shepherds Bay*).

Council supports the approach of the PAC and strongly encourages the Department to maintain the height and RL controls as they are at the moment. Any attempt to amend this control imposed by the PAC will represent a breaking of faith with the community and Council.

Another concern with the case by case amendment of storeys is that it fails to provide a holistic consideration of the proposal and the relationship of each building to one another. This has a range of ramifications including:

1. Potential non-compliance with the minimum building separations required under the RFDC.
2. Creation of a canyon effect between buildings adjoining publicly accessible open space areas.
3. Creation of exceedingly poor amenity for units located along the through site links and in corners of proposed building envelopes.

In respect to Building Separation, without knowing the total storeys proposed, the proposal may fail to comply with the minimum separation recommended under the RFDC. In particular it is noted that the proposed amendments to Stage 1 seek a total of 12 storeys in the north western corner of the building envelope. It must be recognised that building separation serves a variety of purposes including but not limited to:

- Privacy and overlooking,
- Access to sunlight and overshadowing,
- Visual bulk and building massing, and
- Building legibility and site transparency.

Council previously raised concerns regarding the proposed storeys and the building separation over the publicly accessible walkways. Without considering this matter early on it relies on the resolution and consideration as part of the DA process. The argument that this is something that should be resolved at DA stage relies on a limiting on potential layouts and

unit designs, often requiring a significant reduction in amenity for residents. In considering amenity it must be recognised by the Department and the proponent that it is not solely visual privacy that is considered but the visual bulk and outlook presented not only to external surrounding properties but internally towards communal open spaces, private balconies and windows. This is often difficult to address through design treatments such as highlight windows, privacy screens and blade walls. Without specific application of storey controls throughout the development it cannot be determined whether the Building Envelopes will achieve adequate separation.

Council is a strong supporter of quality design outcomes and fully understands the importance of taking a considered and open approach to the application of planning controls. Council appreciates that some applications should be dealt with on a case by case basis giving due regards to the merits of individual sites. However, due to the uncertainty created as part of the proposed amendments to storey controls and the potential ongoing ramifications for Council in assessing subsequent DAs, Council is not convinced that sufficient justification or evidence has been provided to support the variation of the condition as requested. As with all other planning controls, restrictions on heights and maximum floor space are to ensure that a reasonable amount of development is achievable on the sites that does not unacceptably reduce the amenity for surrounding residents or force poorly designed units and overcrowded areas on future residents.

Should the Department disagree with the above and consider that it is necessary to vary the condition and storey plan as proposed, this should be predicated on the following being provided to both the Department and Council for consideration:

1. A survey plan for the entirety of the concept plan affected area to identify which sites are 'steeply sloping'
2. The establishment of nominated RLs for:
 - a. critical floor levels for each building envelope depending on the sloping nature of the site i.e. at each corner and midpoint for each envelope
 - b. origin and destination points for each public domain area
 - c. adjoining road and public domain areas.

In Council's opinion it would be simpler and more appropriate to maintain the storey control.

Council is of the opinion that the height of buildings should be limited to both the RLs and the storey heights imposed by the PAC. Should the Department seek to approve the proposed amendments to the storey height controls, this will provide multiple opportunities for the proponent to provide additional storeys across the site to the disappointment of Council and the community.

In addition to the above, it should be noted that the addressing of the project application to the surrounding public domain and the presentation of blank facades are the result of insufficient information being provided at the assessment stage. Council had raised this issue previously, but was disregarded by the proponent and the Department. The proposed

design solutions and amendments in Stage 1 has resulted in a series of design, public domain and amenity issues that are not supported by Council.

Density

The proposed amendments will result in an increase in additional density on site. Unfortunately there is no maximum cap on Gross Floor Area or dwelling numbers contained within the Concept Plan approval. This increase may have ramifications for the level of amenity for future residents due to poorly designed and appointed units and an increase in traffic. No details have been provided to date with regards to potential dwelling numbers, however notwithstanding this, should the Department seek to approve the proposed amendments, a review of the apportionment for the provision of traffic infrastructure in the area should be undertaken. The additional units provided with Stage 1 are of a low quality with poor amenity and access. This should not be used as justification for the provision of additional units.

In plans submitted to Council for consideration of the UDRP, the applicant has identified that across Stages 1-5 under the current approved scheme a yield of 805 dwellings can be achieved. Under the proposed modifications, the proponent identifies a total of 991 dwellings. Across the first 5 stages of the application alone, the 75W will allow for an increase of 186 dwellings. The attempts by the applicant to allow for a further relaxing of the approval is an attempt to recapture the loss in yield enforced by the Planning Assessment Commission. The additional units provided within Stage 1 has resulted in worsened amenity for new and existing units and are likely to reduce the quality of open spaces through increased usage and poorer relationship of buildings to public domain. This is likely to be replicated across all other stages of the site.

With no maximum density or floor space imposed on the development with regards to residential floor space, there is no certainty for the community or Council as to the number, type or disposition of residential floor space across the Concept Plan area.

As such, the application in its current form should not be supported by the Department.

Basement Levels Below the Building Footprint

Council does not object to the proposed extension of the basement areas as long as it is located outside of the street setback areas and that sufficient deep soil planting is provided. It is noted that this has not been achieved in Stage 1 to date. This must allow for large trees and their canopy throughout the development. In this respect, at a minimum, the requirements of the RFDC should be applied to future development which requires:

- Minimum soil volume 150 cubic metres
- Minimum soil depth 1.3m
- Minimum soil area 10 metre x10 metre or equivalent

With regards to the rationalising of vehicular entries as a result of the extended basements, in Council's preliminary discussions with the proponent for Stages 2 to 5 Council has raised

concerns regarding the servicing of waste for these units. In Council's opinion, waste collection must take place off the street which will have ramifications for the floor to ceiling heights for basements should the proponents seek to provide reduced vehicular egress and ingress.

ESD Targets

With regards to the issues identified by the proponent in respect to the ESD issues, Council raises concerns with the use of the ambiguous term '*where relevant and feasible*'. This is likely to lead to a high degree of ambiguity in difficult in determining what is relevant and what is feasible on a case by case basis.

This is of particular concern where there will be no third party oversight to ensure that the ESD targets are abandoned unnecessarily. Furthermore, given the significant financial benefit reaped by the proponent through the Part 3A process in excess of Council's controls it is considered that simply exceeding BASIX by 10% is inappropriate. This should be exceeded by significantly more.

Condition 21 Residential Amenity

With regards to the proposed amendments to residential amenity it should be noted that in considering the submitted plans for Stage 2-5 Council's UDRP has identified significant concerns with the quality and layout of the buildings. These concerns include:

- Poor unit layout
- Overtly long corridors,
- Internalised studies,
- High number of single aspect units,
- Poor relation to the public domain and streetscape,
- Poor solar access and ventilation, and
- Excessive depth to units.

The proposed amendment is an attempt by the applicant to obtain an excuse for the delivery of poor quality apartments in order to achieve a higher yield. It should be noted that the on the subject of SEPP 65 and compliance with the RFDC, the PAC provided that *to ensure high quality design outcomes and amenity in future stages, further applications should be consistent with the requirements of SEPP 65 and the RFDC.* (p. 7, *PAC Determination Report - Concept Plan and Stage 1 Project Application Shepherds Bay*). It can be clearly seen that the PAC had significant concerns regarding the amenity of the proposed development. Accordingly, the proposed amendments are not supported.

Delivery of the Community Space

It should be recognised that this Condition is the result of concerns expressed by Council to the PAC regarding sufficient community infrastructure in Meadowbank. It was imposed with no further consultation with Council. Council is thankful that the PAC sought to resolve this significant issue through the application of this Condition.

It is noted that the applicant seeks to amend the timing of the delivery of the community space. The proposed amendment to delay to delivery of the community facility to 'the appropriate stage' raises significant concerns. This is as such an amendment significantly reduces in degree of certainty that the community space will be delivered. In Council's opinion it should be tied to a specific stage to ensure delivery. Ideally, the community facility would be located around the 3,000m² open space to encourage its use and activation and to maximise the use of the facility (i.e. within the proposed Stage 2 or 3).

Given that this condition is being reviewed by the applicant, Council would like this opportunity for the condition to be reviewed and the ambiguity inherent in the condition resolved. The general principles to be adhered to for the community facility are:

1. The potential use of the facility should be as flexible and adaptable as possible to allow for response to the changing needs and desires of the surrounding community.
2. The facility should contribute to a sense of place and be visible from the street or other public spaces. This would in part be aided by its location adjacent to the 3,000m² park at ground level.
3. Be financially sustainable in the long term. Currently the condition limits the use of the facility to 'community purposes' only. In this respect, the ongoing maintenance and running of the facility should be augmented through the inclusion of compatible commercial uses. The use should be restricted to permissible uses within the zone.
4. Be a minimum of 2,500m². Whilst Council has not defined a specific use for the facility, a facility of this size will maximise flexibility and adaptability.
5. Should be provided and fitted out at no cost to Council and in addition to Section 94 Contributions.
6. Be provided with appropriately designed, located and quantum of car parking spaces in accordance with Council's Development Control Plan 2010 Part 9.3 Car Parking.

It should be noted that the recently approved North Ryde Station Urban Activation Precinct (approx. 2300 dwellings) required the delivery of large amounts of critical infrastructure including but not limited to:

- New roads,
- Pedestrian bridge
- Bus stops / shelters

- **A 2,500m² Community Facility**
- 18,400m² of open space
- A range of local infrastructure upgrades

Accordingly, it is considered that a community facility of 2,500m² is not unreasonable.

Outcome of the Design Excellence Process

The proponents are seeking the amendment of Condition 1 Design Excellence to allow for variation the height, setbacks and storeys. Council believes that the design excellence process should not allow for increased building height or storeys above and beyond those approved under the Concept Plan.

Council does not object to the variations to the setbacks or variations in the building envelope, subject to compliance with all other applicable conditions and controls including but not limited to SEPP 65 and the RFDC, basements not extending greater than 1m above ground, and basements being located within the building footprint and not within street setbacks.

Amended Statement of Commitments

Council has the following concerns with the revised Statement of Commitment:

- **Housing Choice:** This commitment identifies that a mix of units will be provided including one bedroom units. This should be amended to include a range of unit sizes ranging from studios to 3 bedroom units. This will ensure that a true range of apartment sizes will be provided allowing for housing choice.
- **Road Verges and Footpaths:** This should be amended to include reference to Council's Public Domain Technical Manual and be required to be delivered prior to the issue of **any** occupation certificate.
- **Publicly Accessible Open Spaces:** As identified in the above sections, Council does not support the proposed amendments to the foreshore link and as such, does not support the amendments to this commitment.
- **Road Works:** in the event that the Department approves the increase in dwellings as proposed by the proponent, the road facilities and infrastructure to be delivered must also be reviewed. As such, this commitment is not supported.

Additionally the extent of works proposed under each traffic facility has been amended and reduced. This is highly questioned by Council. The proposed traffic works must be tied to the conditions contained within the approval. The potentially reduced commitments relating to traffic matters include:

- **Pedestrian signals replacing zebra crossing on Railway Road at Meadowbank railway station:** Commitment requires only the undertaking of

studies not the delivery of the intersection as required by Condition 26. Ambiguity should be deleted.

- **Signalling at Bowden and Constitution Road:** Commitment requires only the undertaking of studies not the delivery of the intersection as required by Condition 26. Ambiguity should be deleted.
 - **Hamilton Crescent local area traffic management:** Unclear what this commitment specifically relates to.
 - **Two way connection of Nancarrow Ave (Nancarrow Extension):** This has now been omitted from the Statement of Commitments. It is noted that this is specifically required in Condition 24. The only relevant section here is the dedication of the land to Council.
 - **Land Dedication:** The applicant is now seeking Section 94 offsets for the land dedication. This is not supported or agreed to by Council as this is considered necessary and consequential to the development.
 - **Rectification of Constitution Road:** This commitment is exceptionally ambiguous. Council has consistently maintained that the rectification of Constitution Road requires its lowering, with the cost of the works borne entirely by the applicant with no offsetting against Section 94. This must be clearly stated in the commitment. This is required to ensure that Conditions 12, 16, and 34 are addressed. In this respect, the lowering of Constitution Road is required to ensure provision of reasonable and acceptable access for cyclists, pedestrians and vehicles (as required by 12, 16 and the approved plans) and to address the issues associated with flooding (required by Condition 34).
- The proponents have omitted the following commitments. This omission is highly questioned by Council and is not supported as no justification has been provided. It is noted that some may be duplicated in conditions of consent.
 - Tree Management
 - Crime Prevention Through Environmental Design
 - Environmentally Sustainable Design
 - Stormwater Management
 - Noise
 - Site Contamination
 - Construction Management
 - Utilities

- Arborist Report
- Environmental Management Plan
- Flooding
- Waste Management
- Sustainable Travel Plan
- Ground Water

Voluntary Planning Agreement

It should be noted by the Department that the proponents initially re-commenced discussions with Council last year regarding a potential Voluntary Planning Agreement (VPA) for the proposal. Council reviewed the VPA and raised concerns that many of the matters proposed related specifically to items considered necessary and consequential to the development and as such could not be supported.

Other Issues

It is noted that the applicants have provided a revised Open Space diagram that identifies the amount of Publicly Accessible Open Space delivered by the proposal. A significant portion of this area is located in setback areas which is unlikely to be accessed or used by the public.

Project Application

It should be noted that construction of Stage 1 has already commenced on site.

Staging

As identified previously, Council does not object to the amendments to the timing and phasing of the open space as long as:

1. It remains in private ownership but is publicly accessible at all times, and
2. Is not offset against applicable Section 94 Contributions.

It is noted that the minimum size and access to daylight has been enforced and approved by the Department as part of Condition B1 of the Concept Approval.

Foreshore Link

The regrading of the foreshore link is of concern to Council. The lowering of the northern end adjacent to the new Road Link creates units of exceedingly poor amenity. The lowering of the link is an attempt by the applicant to capture and provide for additional units. These additional units are of exceedingly poor amenity as addressed in the following sections of this submission. The proposed regrading of the foreshore link also creates a range of public domain issues which are also addressed in subsequent sections of this submission.

Given that Council does not support the proposed amendments to the design of the foreshore link, Council cannot agree to the delaying of the foreshore link to later stages. The detailed plans of the foreshore link must be considered and supported by Council prior to the approval of the modifications as failure to consider the entire design of the foreshore link holistically will 'lock in' the design as currently proposed.

Relationship with the Public Domain

The applicant has submitted arguments stating that in order to improve the relationship of Stage 1 to the surrounding public domain, increased activation of the street must be achieved through manipulation of the ground levels to provide additional units. Whilst Council appreciates the intent of the proposed modifications, arguably this could be achieved through alternate design solutions. These include but are not limited to:

1. Landscape treatment of the exposed walls such as planters, vegetation, street furniture (along Foreshore Link),
2. Differentiation in materials and finishes along the façade of the building to provide visual interest,
3. Provision of public art on exposed facades,
4. Stepping the building down the site in response to changes in topography. Arguably, this is what is intended by Condition 4 of the Concept Plan Approval.

Foreshore Link

The introduction of the stairs at the northern end of the foreshore link creates a range of amenity and public domain issues. Given the change in levels proposed, there is approximately a total drop from Nancarrow Road to the commencement of the Foreshore Link of approximately 9m. **Figure 1** and **2** shows the extent of stairs required to address the change in levels.

As shown by **Figure 1** this change in levels is resolved through a series of switchbacks. Council's Design and Development Team and the UDRP have reviewed the stairs and do not support the proposed amendment as they are significant in length and do not provide opportunities for resting and respite. This will be daunting and will inhibit greatly the movement of pedestrians. A more inviting pedestrian friendly solution to this link is required.



Figure 1



Figure 2

The only manner in which this can be resolved is through the introduction of terraces to relieve the switchback stairs or the provision of a publicly accessible lift. This should also be supported by a terraced area suited for seating/viewing at the Nancarrow Road level. There is little space for landing zone between the Nancarrow Avenue's footpath and head of the proposed stairwell. This elevated point will have commanding views down to the Parramatta River and deserves a more appropriate design treatment.

In addition to the above, the amenity of the units adjoining the foreshore link along the western elevation of Stage 1 are likely to be highly compromised. In particular attention is drawn to units LG 24, LG 25 and UB 14 - UB 18. Below is a summary of the solar access and ventilation achieved by these units as identified in the applicants Solar Access and Ventilation Assessment:

Unit	Hours of solar access	Cross Ventilated?
LG 24	1.5hrs	No
LG 25	2hrs	No
UB 14	2hrs	No
UB 15	2hrs	No
UB 16	1.5hrs	No
UB 17	2hrs	No
UB 18	1.5hrs	No

From the above it can be seen that the units will have limited solar access. It is unlikely that the above has taken into consideration any tree planting or vegetation along the foreshore link and Nancarrow Ave. Furthermore, whilst the proponent has argued that these units will activate the foreshore link and improve the relationship with the public domain, no independent access to the public domain areas have been provided. The floor levels of these spaces will be significantly higher than the finished levels of the public domain.

This is clearly visible in **Figures 3, 4 and 5**. The entrance to these units and their height above the public domain areas are shown in red. It should be noted that for LG 24 and LG 25, access is only achieved through the car park. This results in a disconnect with between the public domain and the proposed units. It should be noted that this is an issue for existing units UB 06 and UB 04.



Figure 3

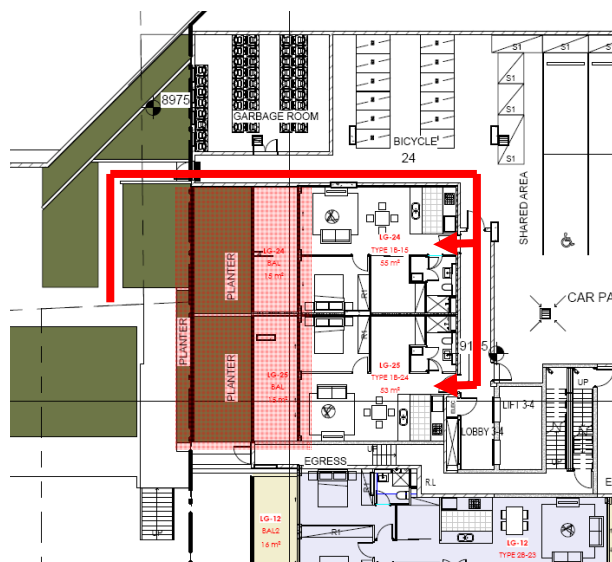


Figure 4



Figure 5

Accordingly, Council does not support the introduction of these units, especially given the outstanding issues in the design.

Should the department be of the opinion that the units are acceptable despite the above concerns, the exceedingly poor amenity of these units must be compensated for by improved design and appointment. Council would insist on the following amendments:

- generous floor to ceiling heights,
- separate direct access to the individual units. For UB 14 - UB 18 this can easily be addressed through the lowering of the ground floor achieving an improved floor to ceiling heights,
- larger private open space areas,
- increase building separation from proposed Stage 2, and
- reduction in the number of units to provide larger more well-appointed shallower units to compensate and reduce the poor amenity.

Additionally, it is noted that as a result of the Concept Plan Approval, the new road link for Nancarrow Ave must be provided. To date, insufficient information has been provided that demonstrates that the new road link can be successfully delivered. This concern is exacerbated by the proposal to allow stairs directly adjacent to the road reserve. Insufficient information has been provided to demonstrate that sufficient space is achievable between buildings to allow for:

1. Appropriate shoring / retaining walls,
2. Footpaths and shared cycleways,
3. Amendments to the road alignments to achieve necessary grades, and
4. Amendments to the road alignment should the curvature in the road not be appropriate.

The above must be resolved and adequately demonstrated before the amendments to the foreshore link are approved by the Department. Council's concerns regarding the road connection are captured in **Attachment 1**.

It is also noted that the entry to the proposed additional units LG 24 and LG25 is not shown on the submitted Landscape Plan titled Foreshore Link Upper Level. Given the concerns identified above, the proposed amended Landscape Plan for the Foreshore Link is not supported.

Belmore St

As with the units along the foreshore link, the proposed additional units along Belmore St will also suffer from poor amenity. The additional units located on Belmore St include UB 11 - UB 13. The solar access and ventilation of these units are as follows:

Unit	Hours of solar access	Cross Ventilated?
UB 11	1hr	No
UB 12	0hr	No
UB 13	0.5hr	No

These units also fail to provide direct address to the street and continue to fail to adequately address the public domain. This is clearly shown in **Figures 6 and 7** which clearly show the poor access and relationship to the street in red.

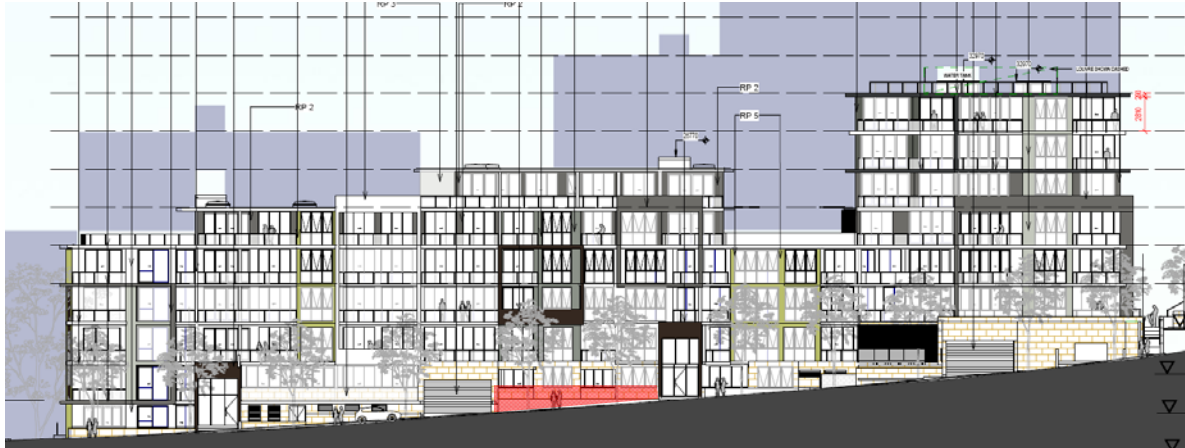


Figure 6

As per the units on the Foreshore Link, should the Department be of the opinion that the units are acceptable, the exceedingly poor amenity of these units must be compensated for by improved design and appointment. Council would insist on the following amendments:

- generous floor to ceiling levels,
- separate direct access to the individual units
- larger private open space areas,
- increase building separation from proposed Stage 2, and
- reduction in the number of units to provide larger more well-appointed shallower units to compensate for the poor amenity.



Figure 7

Hamilton Crescent

The proposed units to be introduced along Hamilton Crescent and the Foreshore Link (GF 14 and GF 15) shares many of the issues associated with the units identified above. These units (whilst having modest solar access and achieving cross ventilation in the case of GF 14 due to its corner positioning) will also have poor amenity. In the case of GF 14, the poor

amenity will occur through limited privacy as a result of its close proximity to the proposed raised stairs at the northern end of the foreshore link. In this respect, no plans have been submitted fully detailing the extent of separation between GF 14 and the stairs.

In the case of GF 15, this unit will only have 2.5hrs of solar access and is not cross ventilated. Furthermore the outlook from this unit will be to a series of raised planter boxes and Hamilton Crescent which is approximately 2.6m above the finished floor level of the unit. The solar access for this unit is dependant on no planting which will be to the significant loss of privacy for this unit. This is clearly shown in **Figure 8**.

Should the Department be of the opinion that the units are acceptable, the exceedingly poor amenity of these units must be compensated for by improved design and appointment. In the instance of these two units, GF 15 should be deleted with a significant review undertaken of the design of unit GF 14.

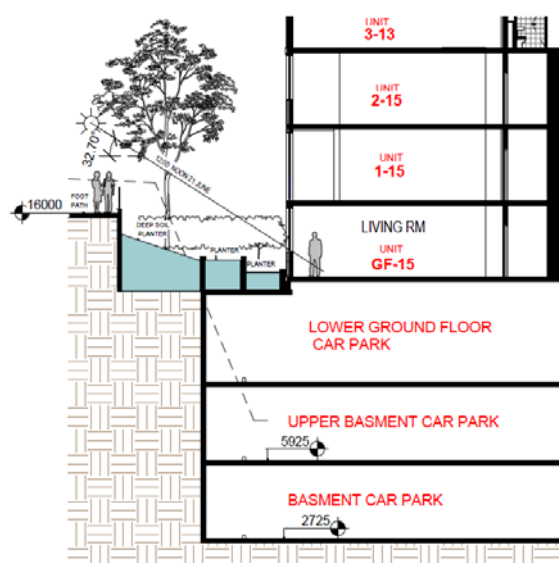


Figure 8

Modification to the Basement Setbacks and Landscaping

The proposed reduction in the extent of the setbacks to the basement is not supported by Council.

This reduction from 7.14m to 4m significantly reduces the extent of this deep soil area for landscaping. Furthermore, this deep soil will be constrained by the retaining wall along the property boundary and the planter boxes associated with the building. This also raises potential problems for the design and implementation of the new road link previously raised by Council, detailed in full in **Attachment 1**.

Dwelling Yield

Whilst it is noted that the applicant has provided arguments for the amendments to the total dwelling mix on the site, Council has significant concerns for the impacts of these amendments.

Car parking

It is noted that Council undertook a Meadowbank Traffic Needs Assessment in response to this application previously. This was based off previously submitted plans which predicated a number of car parking spaces across the Shepherds Bay Urban Renewal Project. It is noted that the final approved plans for Stage 1 allowed for a total of 246 spaces, whilst the revised proposal allows for 342 spaces. As a result, it is argued that the impacts on traffic generated by the proposal are greater than that originally envisaged. Council believes that the total apportionment for the provision of traffic infrastructure in the area should be reconsidered.

Dwelling Amenity

Council does not object to the reconfiguration of previously approved floor space within the existing building. In this respect Council acknowledges the improved ventilation and solar access of the proposed scheme against the approved. However, Council does object to the provision of additional units with exceedingly poor amenity as addressed elsewhere in this submission. Dwelling amenity should not consider simply solar access and ventilation but should also give consideration of outlook, privacy, liability of the unit and its relationship to surrounding public domain. This has not been adequately addressed by the proposed amendments to Stage 1.

Council would like it noted however, that Council does not agree with the proponent and the Departments application of a minimum 2 hour solar access on the basis that the area is a 'dense urban area'. Council maintains that the solar access benchmark should be maintained at 3 hours, as per the RFDC.

ESD Measures

With regards to the issues identified by the proponent in respect to the ESD issues, Council raises concerns with the use of the ambiguous term '*where relevant and feasible*'. This is likely to lead to a high degree of ambiguity in difficult in determining what is relevant and what is feasible on a case by case basis.

This is of particular concern where there will be no third party oversight to ensure that the ESD targets are abandoned unnecessarily. Furthermore, given the significant financial benefit reaped by the proponent through the Part 3A process in excess of Council's controls it is considered that simply exceeding BASIX by 10% is inappropriate. This should be exceeded by significantly more.

Disabled Access

Council continues to raise concerns regarding the poor disabled access achieved across the Concept Plan area. This concern was raised previously however it is noted that these matters have already been deemed acceptable by virtue of the PAC determination. Council would like it recognised by the Department that this remains to be a concern and an ongoing disappointment to Council.

Rewording of Condition B27

Council raises concerns with the proposed amendments to the wording for Condition B27. In this respect, it will rely solely on the approval of the accredited certifier as to what plans the relevant utility agency considers unacceptable. This is of particular concern where there will be no third party oversight to ensure that there is no other alternative for the location of the service infrastructure or utilities within the building footprint. Often, the location of services and utilities outside of the building footprint is desirable simply due to cost constraints. This often is at the expensive of the public domain and presentation of the building.

Furthermore, in the event that there ultimately is no other alternative solution, it leaves it up to the satisfaction of the accredited certifier that the infrastructure is screened from view.

Council does not have confidence that this will be enforced effectively or to Council standards. This proposed modification has the potential to significantly impact on the amenity of the public domain and the buildings interface to the street. As such, the proposed modification is not supported.

Amended Statement of Commitments

Due to the concerns raised above Council has the following concern with the revised Statement of Commitment:

- **Publicly Accessible Open Spaces**: The Foreshore link and associated amendments are not supported in its current form. Accordingly this commitment is not supported.
- **Waste Management Plan**: This Commitment does not include any oversight by Council that the contract vehicles will be able to service the site. It should also include reference to Conditions B17 – B20.
- **Construction Management Plan**: Council has approved a Construction Management Plan for Stage 1 and this should be referenced in this commitment.

Adam Fahim
Holdmark
Suite 2/2-4 Giffnock Avenue
MACQUARIE PARK NSW 2113

D13/81755

4 October 2013

Dear Mr Fahim

**PROPOSED ROAD CONNECTION – HAMILTON CRESCENT AND
NANCARROW AVENUE**

I refer to the previously submitted plans for the road connection of Hamilton Crescent and Nancarrow Avenue required under the Concept Plan and Project Application Approval for the Part 3A Application in Meadowbank. Council has reviewed the submitted plans and has identified the following areas of concern.

General Comments

The design of the road needs to be integrated with other components of the public domain rather than as an element that is isolated from the footpaths, street tree planting and urban geometry of building edges.

Council has some concerns regarding the clarity of the plans submitted. It is recommended that once amendments are made to the documentation to address the issues raised, separate plans demonstrating certain layers, are to be submitted. These are to include the following as a minimum:

- a) Existing Layer - All Existing features of the site location including, but not limited to; street furniture, utilities, trees, kerb lines, boundary lines and signage.
- b) Proposed Layer - All proposed changes and works including, but not limited to; street furniture, utilities, kerb lines, boundary lines and signage.
- c) Swept Path Analysis Layer - The swept path of the largest design vehicle to traverse the site around the roundabout for all approaches and departures. (12.5 metre rigid, according to conditions of consent)
- d) proposed property boundaries (ie extent of land to be dedicated to Council),

- e) sections through the road to show retaining structures and interface with new development,
- f) location of footpaths and cycleways, proposed street tree planting, rain gardens, planting areas and lighting, and
- g) paving treatments.

Public Domain

Submitted documentation must demonstrate compliance with the requirements of Council's Public Domain Technical Manual and the Concept Plan and Project Application Approval. No details of the public domain finishes or treatments have been provided to Council. Care must be taken to ensure sufficient space is provided for street tree planting, multifunction poles were required and other public domain elements. Location of street tree planting must demonstrate consideration of sight distance requirements near driveway and intersections.

Pedestrian movement along the length of the proposed connection is not adequately shown in the submitted plans. In particular, the proposed intersection of Nancarrow Avenue and Belmore Street would not facilitate pedestrian movement as the sweeping gentle curve of the left-in lane would encourage speeding vehicles. Generally, tighter curves facilitate a pedestrian environment as they force vehicles to slow down. It is noted that the Meadowbank Public Domain Technical Manual indicates a narrowing of Nancarrow Road at the entry points. The design of the "proposed slow point" needs to be integrated into the overall design, possibly incorporating a landscape treatment/tree planting.

The plans approved under Condition B1 of the Concept Plan Approval identify pedestrian and bike paths / links along Hamilton Cres West, Hamilton Cres, and Nancarrow Ave. The submitted plans do not identify these links. Location of footpaths and cycleways must be demonstrated along with corresponding gradients.

With regards to the proposed 'shared zone', it is assumed that the purpose of the shared zone is to facilitate pedestrian movement across the road at the point where the easternmost north-south pedestrian link intersects with Nancarrow Avenue. It is considered that the Shared Zone is not warranted. Accordingly, alternate mechanisms for ensuring pedestrian safety and ready crossing for the easternmost north-south pedestrian link must be demonstrated.

Drainage

Water Sensitive Urban Design needs to be an integrated component of the road design as per Council's Public Domain Technical Manual, the Shepherds Bay Concept and Public Domain Plan and the supporting WSUD Strategy.

According to available information, the overland flowpath passes along the north western side of the subject property towards the Parramatta River. The subject development is to increase the impervious area resulting in additional runoff. As a result, the existing 600mm pipeline at the existing sag point in

Nancarrow Ave adjacent to the northern corner of the property at 41-45 Belmore St is undersized and does not have the capacity to convey the additional flows to the river during the less severe storm events.

No plans demonstrating drainage within the proposed road have been provided. The following must be provided and detailed on plans were appropriate:

1. The DRAINS model must be prepared for additional storm events such as 1 in 20 year ARI and 1 in 100 year ARI. The stormwater consultant must refer the City of Ryde DCP2010 for the rainfall intensities for the hydrological model.
2. Subject to the outcome of the DRAINS model, the pipeline from the sag of Nancarrow Ave to Parramatta River (adjacent to 41 Belmore Street) must be upgraded and this must include additional grated pits to capture more water and reduce the overland flows running through the property in less severe storm events. Consideration must be given to the staging of this work given the redevelopment of land within this area.
3. Subject to the outcome of the DRAINS model, the drainage system on the east and west of the proposed roundabout in Nancarrow Avenue must be upgraded.
4. The stormwater system calculations after inclusion of additional grated pits must be prepared by a stormwater consultant and submitted to Council for concurrence prior to the approval of the road connection.
5. The existing pits in Nancarrow Avenue must be aligned along the new kerb lines.
6. The additions to Council drainage system shall be designed to convey the critical duration, 1 in 20 year ARI storm event from the contributing catchment without surcharge. Kerb inlet pits (sag and on grade) shall be cast-in-situ and conforming to Council's standard drainage pit details. Drainage pipelines shall be minimum Pipe Class 4, Rubber Ring Jointed, Reinforced Concrete with Type HS2 bedding support and conforming to AS 4058. Drainage pipelines shall be designed to have a minimum longitudinal gradient of 1%.

Prior to Council being able to support the proposed road connection, the following must be provided to address the drainage concerns detailed above:

1. Drawings including the site plan, road longitudinal section and cross sections, kerb & gutter profile with the pit locations(including type and size), longitudinal sections of the pipe system in Nancarrow Avenue and Hamilton Crescent, hydraulic grade line etc.
2. A drainage system layout plan drawn at a scale of 1:100, 1:200 or 1:250 and showing drainage pipe locations, drainage pit locations and number and road centreline chainage, size of opening and any other information necessary for the design and construction of the drainage system (i.e. utility services).

3. A drainage system longitudinal section drawn at a scale of 1:100 or 1:200 horizontally and 1:10 or 1:20 vertically and showing pipe size, class and type, pipe support type in accordance with AS 3725 or AS 2032 as appropriate, pipeline road chainages, pipeline grade, hydraulic grade line and any other information necessary for the design and construction of the drainage system (i.e. utility services).
4. Special details including non-standard pits, pit benching and transitions are to be provided on the drawings at scales appropriate to the type and complexity of the detail being shown.
5. The drainage system layout plan is to be documented on a detailed features survey base that describes all existing structures, utility services, vegetation and other relevant features.

Traffic

Vehicular Access

The plans must demonstrate the finished levels for both the road and the boundaries so that access from public to private space can be assessed for vehicles so as to avoid scraping. The longitudinal section for the Hamilton Crescent shall demonstrate the profile across the intersection of Nancarrow Avenue to the southernmost kerb at the roundabout. The plans must detail all line marking and signposting to be implemented. With regards to signposting, it is recommended that consideration be given to the overall parking management for the wider area.

It is recommended that preliminary investigations of the building footprint / layout for sites surrounding and adjacent to the road connection be undertaken to ensure that the proposed driveway crossovers are appropriate. In particular, it is noted that the driveway crossovers / intersections shown are potentially inappropriate for the anticipated level of offstreet parking on the site. This should also include consideration to ensure that the driveway grades and adjoining sections of footpath comply with Councils DCP 2010 - Part 8.3 "Driveways" (refer to section 5 in regards to design and construction standards) and the requirements of AS 2890.1 (Offstreet Parking).

These standards are to ensure the minimum levels of pedestrian amenity (including people with pram/ wheelchairs) is maintained and all private property has adequate freeboard above overland flows conveyed in road / footway areas to prevent inundation of the site. Council will not support adjustment of footpath levels which would compromise on these requirements, at the development application stage to cater for limitations of the development. Sufficient investigation into this must be demonstrated to ensure that the nominated property boundary levels are consistent with the conceptual / proposed works to be undertaken on the adjoining sites.

Also it is noted that there is up to 1.67m of fill in places. Council must be provided with an indicative/ typical detail of how the roadway is to be retained. Consideration for maintenance and access must be demonstrated.

Slow Point and Kerb Blisters

The plans identify kerb blisters on Nancarrow Avenue, west of Hamilton Crescent. The Bitzios Consulting plans and the Conditions of Consent specify a raised platform at this location. Explanation is required as to why kerb blister have been adopted into the plans rather than the raised threshold proposed by Bitzios Consulting. The design of the "proposed slow point" needs to be integrated into the overall design, possibly incorporating a landscape treatment / tree planting.

Left in/Left out at Hamilton Cres / Belmore St

The layout of the intersection of Belmore Street and Hamilton Cres / Nancarrow Ave provides only a left in/left out scenario. The median island on Nancarrow Avenue already directs the flow of traffic in the desired direction. Therefore a median strip on Belmore Street is not required. Also, any future plans are also to indicate a Swept Path Analysis is required for the design vehicle of rigid 12.5m.

The plans must demonstrate a pedestrian facility to cater to the safe crossing of pedestrians from the south kerb to the north kerb of Nancarrow Road at the intersection of Belmore Street. This may include Kerb Ramps and Pedestrian refuges incorporated into the median island.

Raised Threshold

A Swept Path Analysis is required for the design vehicle to traverse the threshold. This must allow for a 12.5 metre rigid. This threshold requires a flat surface to allow for manoeuvrability of vehicles without wheel spin. To assist in the assessment of the documentation, all provided chainage lengths shall have gradients provided for adequate analysis of the cross section. In particular, the gradient for every 10.00 chainage must be provided. A scheme must be identified to prevent pedestrians from accessing the raised threshold as a crossing point.

Roundabout

A Swept Path Analysis is required for the design vehicle (12.5 metre rigid). The approach of the roundabout requires a flat surface, equal to one design vehicle in length (12.5 metres), to allow for reduced stress on take-off of lead vehicle into roundabout circulation. To assist in the assessment of the documentation, all provided chainage lengths shall have gradients provided for adequate analysis of the cross section. In particular, the gradient for every 10.00 chainage must be provided. Splays are required on the roundabout approach and departure of Hamilton Crescent to direct traffic, as the tapered kerb is too sudden and poses a hazard for drivers. In expecting the Plans to be to scale, it is noted that the Continuation lines entering and exiting the roundabout are not in conjunction with Austroads Road Design Standards. Median islands will need to be reconfigured to comply.

The plans must be amended to accommodate for Pedestrians crossing at the intersection of Nancarrow Avenue and Hamilton Crescent. The plans must demonstrate the scheme to be implemented. These may include; Kerb ramps and pedestrian refuges incorporated into the median islands.

Waste

A Swept Path Analysis is required for the design vehicle (12.5 metre rigid) to demonstrate that the road can be reasonably accessed by Council's Waste Vehicles. It is strongly recommended that further consideration of the proposed route of Waste Vehicles be further considered. In this respect, a high level consideration of the location of the waste collection points for each stage should be identified so that assessment of waste vehicle movement through the site can be determined. The width of the road at the collection point needs to be addressed if waste is to be emptied from the street to enable unimpeded traffic flow.

For ease of interpretation of the above comments, council has undertaken a mark-up of the submitted documents. These documents have been marked up in accordance with the following key and are attached:

- **Blue** – Identifies the comments regarding the General requirements of the plans.
- **Green** – Identifies the comments regarding the Roundabout requirements of the plans.
- **Yellow** – Identifies the comments regarding the Left in/Left out intersection requirements of the plans.
- **Orange** – Identifies the comments regarding the Raised Threshold requirements of the plans.
- **Pink** – Identifies the comments regarding Public Domain, Drainage and Waste requirements of the plans.

It should be noted that the above concerns are based upon the documentation submitted to Council for review. Council reserves the right to raise further additional matters once additional information is received.

Should you have any questions about these matters, please contact Adrian Melo 9952 8238.

Yours sincerely



Meryl Bishop
Acting Group Manager, Environment and Planning



LEGEND

	PROPOSED ROAD BOUNDARY
	PROPOSED KERB AND GUTTER
	PROPOSED MOUNTABLE KERB
	PROPOSED KERB ONLY
	PROPOSED DISH DRAIN
	NEW ROAD PAVEMENT CONSTRUCTION
	EXISTING SEWER LINE
	EXISTING WATER LINE
	EXISTING ELECTRICAL LINE
	EXISTING OPTIC FIBRE LINE
	EXISTING GAS LINE

Plans unclear:-
 i) Provide layers including;
 ii) Existing Features
 iii) Proposed Features
 iv) Swept Path analysis
 v) Signage and Linemarking

Finished level required

Splays required on approach and departure to guide traffic

Continuation lines not in conjunction with Austroads standards.

Footpath and cycleways to be shown

Swept path analysis required.

Scheme required to deter pedestrian from crossing.

Conditioned as a raised threshold

No accommodation made for pedestrian activity.

longitudinal Section to extend across this region.

Swept Path analysis required

FUTURE DRIVEWAY

SK-C002 LINE



REV	DATE	DESCRIPTION	BY
E	12/01/10	REVISED FOR DA	TB
D	31/07/10	REVISED FOR DA	TB
C	22/07/10	ISSUED FOR DA	TB
B	15/01/10	PRELIMINARY ISSUE	TB
A	10/01/10	PRELIMINARY ISSUE	TB

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SHEPHERDS BAY
 MEADOWBANK

PRELIMINARY ONLY
 NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED
TB	TB	AR	

ROADWORKS PLAN
 SHEET 1 OF 2

PROJECT NO.	DRAWING NO.	REV
S10076	SK-C001	E

- PROPOSED ROAD BOUNDARY
- K&G PROPOSED KERB AND GUTTER
- MK PROPOSED MOUNTABLE KERB
- KO PROPOSED KERB ONLY
- DO PROPOSED DISH DRAIN
- NEW ROAD PAVEMENT CONSTRUCTION
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING ELECTRICAL LINE
- EXISTING OPTIC FIBRE LINE
- EXISTING GAS LINE

Not needed

Pedestrian facility required

Swept Path analysis required.

BELMORE STREET

STAGE 1

Shared Zone not warranted

WARNING
BEWARE OF UNDERGROUND SERVICES.
The location of underground cables are approximate only and their exact position should be checked on site. No guarantee is given that all existing cables and services are shown. Locate all underground cables and services before commencement of work. Refer to Worksafe Regulation 3.21.

DIAL1100
BEFORE YOU DIG

REV	DATE	DESCRIPTION	BY
F	23.04.10	ROAD ALIGNMENT AND LEVELS REVISED	TB
E	12.08.10	RE-ISSUED FOR DA	TB
D	26.03.10	RE-ISSUED FOR DA	TB
C	27.03.10	ISSUED FOR DA	TB
B	15.07.10	PRELIMINARY ISSUE	TB
A	16.07.10	PRELIMINARY ISSUE	TB

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CLIENT
HOLDMARK

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PROJECT
SHEPHERDS BAY MEADOWBANK

STATUS
PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED
TB	TB	AR	
SATUR	DATE	SCALE	BY
AHD	MGA	1:250	AT

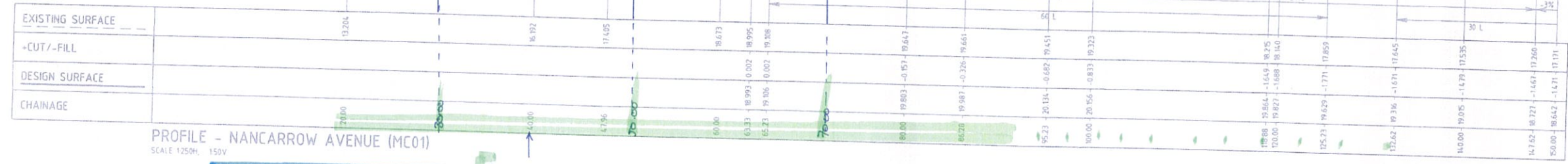
TITLE
ROADWORKS PLAN SHEET 2 OF 2

PROJECT NO.	DRAWING NO.	REV
S10076	SK-C002	F

Flat surface required to avoid vehicle wheel spin.

Flat surface required at stop line of round about entry.

HORIZONTAL GEOMETRY (RADIUS)
GRADES (%)
VERTICAL CURVE (m)
DATUM 10.000

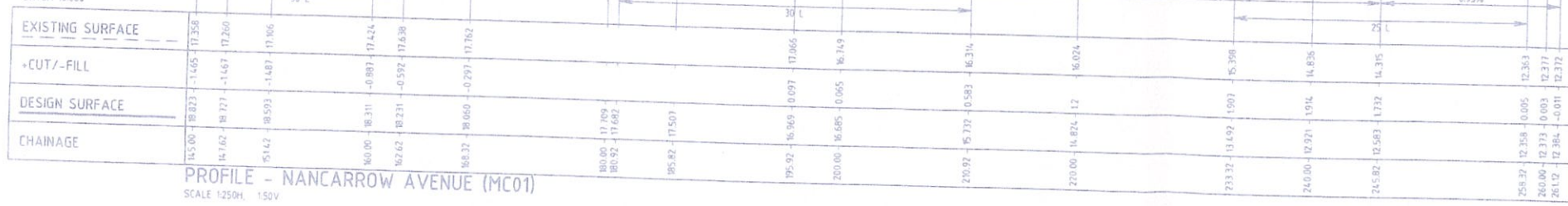


PROFILE - NANCARROW AVENUE (MC01)
SCALE 1:250H, 1:50V

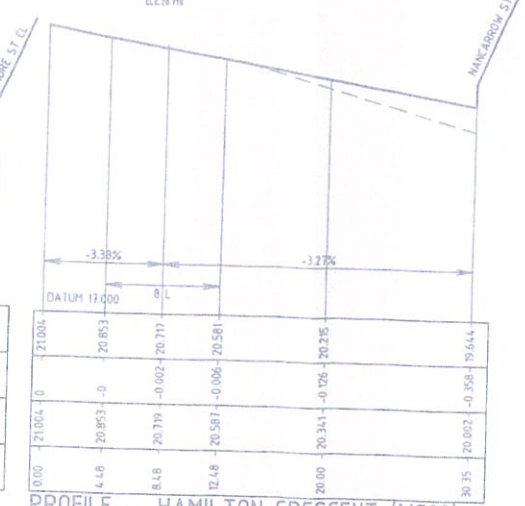
Provide all chainages (i.e. 10.00, 20.00, 30.00)

Not supported.

HORIZONTAL GEOMETRY (RADIUS)
GRADES (%)
VERTICAL CURVE (m)
DATUM 10.000



PROFILE - NANCARROW AVENUE (MC01)
SCALE 1:250H, 1:50V



PROFILE - HAMILTON CRESCENT (MC20)
SCALE 1:250H, 1:50V

E 12.06.13		RE-ISSUED FOR DA	TS
D 21.01.13		RE-ISSUED FOR DA	TS
C 22.01.13		ISSUED FOR DA	TS
B 16.01.13		PRELIMINARY ISSUE	TS
A 16.01.13		PRELIMINARY ISSUE	TS
REV	DATE	DESCRIPTION	RVD

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BG & E

SHEPHERDS BAY MEADOWBANK

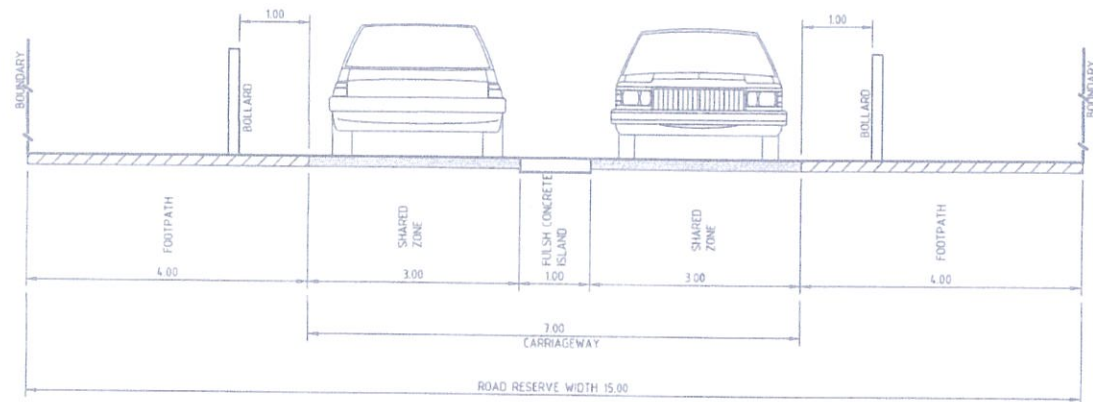
STATUS: **PRELIMINARY ONLY**
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED
TS	TS	AR	

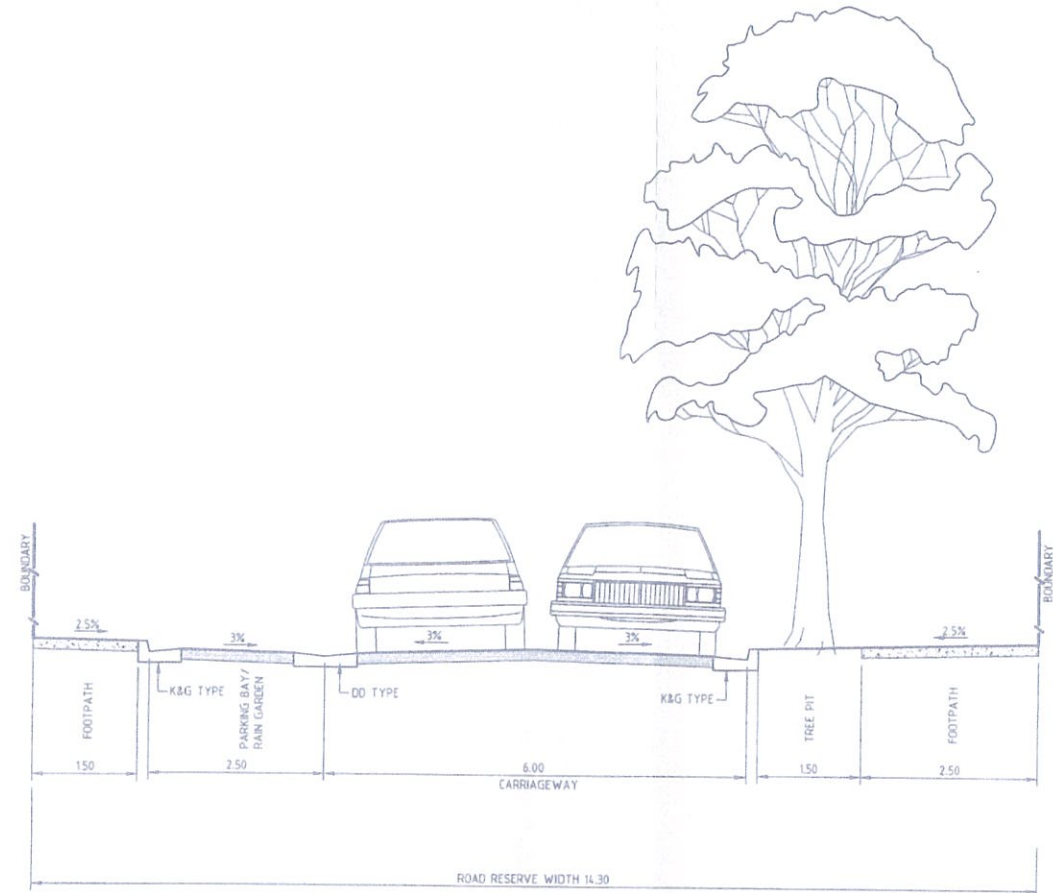
DATUM: AHD
SCALE: 1:250 1:50
AT: A1 SIZE

TITLE: **LONGITUDINAL SECTIONS SHEET**

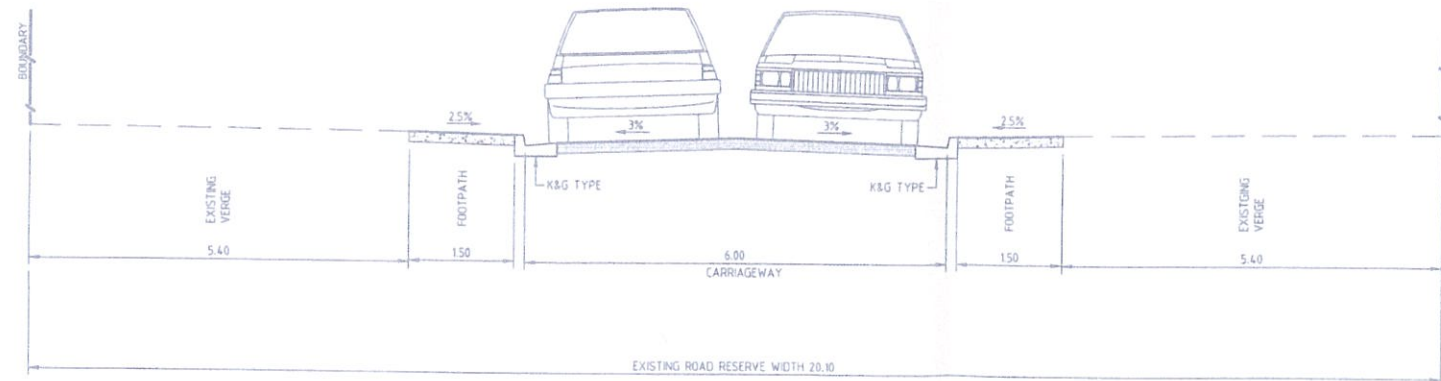
PROJECT NO: **S10076**
DRAWING NO: **SK-C003**
REV: **E**



SECTION 1
SCALE 1:50
SK-C002



SECTION 2
SCALE 1:50
SK-C002



SECTION 3
SCALE 1:50
SK-C001

REV	DATE	DESCRIPTION	BY
D	12.05.13	RE-ISSUED FOR DA	TB
C	22.07.13	ISSUED FOR E&E	TB
B	16.07.13	PRELIMINARY ISSUE	TB
A	10.07.13	PRELIMINARY ISSUE	TB

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PROJECT

SHEPHERDS BAY
MEADOWBANK

STATUS
PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED
TB	TB	AR	

TITLE
TYPICAL ROAD SECTION

PROJECT NO.	DRAWING NO.	REV.
S10076	SK-C004	D