

27 January 2015

Regional Panel Secretariat
JRPP East
23-33 Bridge Street
SYDNEY NSW 2022

Attn: Angela Rossi, Andrew O'Connor, Waverley Council.

Dear Sir/Madam,

**DEVELOPMENT APPLICATION NUMBER 417/2014 (2014SYE115), 10-14 HALL STREET,
BONDI BEACH: ADDITIONAL DETAIL FOR THE JOINT REGIONAL PLANNING PANEL.**

I write on behalf of the applicant and owners (G.J.D Pty Ltd) of 10-14 Hall Street, Bondi Beach, to provide additional documentation to the Joint Regional Planning Panel (JRPP) prior to the scheduled determination meeting on Thursday 29 January, 2015. Having read Council's recommendation, we strongly request that the application be deferred, allowing the applicant to further address Council concerns and provide additional information to the JRPP.

1 PROJECT HISTORY

The sequence of events from lodgement to present for DA417/2014 is detailed below:

- **5 September, 2014:** DA417/2014 was submitted to Waverley Council.
- **13 October, 2014:** Application was issued to the Waverley Design Review Panel (WDRP).
- **11 December, 2014:** At the request of the applicant, a copy of WDRP meeting minutes was provided.
- **11 December, 2014:** At the request of the applicant, a copy of submissions received by Council was provided.
- **17 December, 2014:** Council met with and briefed the JRPP, scheduling the application to a determination meeting on 29 January, 2015. Council recommended the application be withdrawn.
- **15 January, 2015:** Council's final assessment report was forwarded to the JRPP. At no time did Council issue a letter of preliminary issues to discuss with the applicant.
- **16 January, 2015:** A copy of Council's assessment report was placed on the JRPP website.

2 COUNCIL ASSESSMENT REPORT

The applicant and project team have reviewed Council's assessment report and believe it is most unreasonable that no opportunity to respond to these concerns or amend the design has been provided, prior to the assessment report being forwarded to the JRPP. In the applicant's opinion, ordinary matters which could be satisfactorily addressed through negotiations have therefore become unresolvable, unless the application is deferred by the JRPP.

To assist the panel with a balanced view and to support our request for deferral we have outlined a brief summary to demonstrate that several issues raised by Council could be addressed within a short timeframe, whilst further justifying the proposed bulk and scale which appears to be Council's primary objection.

2.1 BULK AND SCALE

Council's assessment report contains comments throughout on the proposals "*compatibility with the height, bulk and scale of the existing character of locality*" regarding the 26.4 height and 3.45:1 FSR proposed, without providing a detailed assessment of anticipated impacts associated with this. These comments also contradict several comments made by Council's own independent Design Review Panel report (WDRP) as follows:

- *"If well detailed and properly documented the proposed building has the potential to be realised as a handsome addition to this popular location."*
- *"It is the Panel's opinion that in the broader context the proposed building might not be excessive but, as noted above, it is also unclear whether the localised effects would be acceptable."*
- *"The proposed building at 26.4 metres would be considerable higher than the height limit of 15 metres and would be greater than the buildings in its immediate context, however in the broader townscape of Bondi Beach, it would not be particularly prominent"*

The above comments support the argument provided in the SEE that large scale developments such as the Swiss Grand, the Boheme and the Bondi Motel collectively contribute and form prominent components of Bondi Beach's streetscape, character and built form, regardless of their compliance with the Waverley Local Environmental Plan 2012, or their approvals history. The proposal would therefore be viable in the context of Bondi Beach's quite varied building height and form which contribute to the character of the area. It is encouraged that this be taken into consideration by the JRPP.

In light of the above, the assessment report has seemingly ignored the merit arguments detailed in the Clause 4.6 exception's lodged with the application, whilst also stating that *height controls are subjective, as is the interpretation of bulk and scale*. Given Council's comments on views and shadow analysis, derived from the proposed bulk and scale in their opinion, it is only reasonable that an opportunity to respond to these be provided. The applicants approach to this is detailed in Section 2.4 and 2.5 on the following pages.

2.2 ARCHITECTURAL DESIGN

Council's assessment report has identified a number of areas of concerns regarding architectural matters such as ventilation, lobby designs, acoustic privacy and building design/articulation, which on an item by item basis, can be readily addressed in the applicants opinion. During the conceptual design phases, a number of different options were tested, including re-orientating the serviced apartment component so that they face towards 2 Jacques Avenue. Essentially a variety of schemes were analysed and as such the design is flexible to amendments as a way of addressing both Council's and the DRP's comments. In response to several of Council's comments regarding the existing design, the following response from Kann Finch has been provided:

- *The lobbies to the serviced apartments and residential are currently 1.75m clear width. They can be increased in width and planned to avoid corners in line with the commentary.*
- *The typical floor lobbies, levels 1, 2 and 3 to both the residential and serviced apartment components have both natural ventilation and natural light. This can be further enhanced for lobbies for levels 4,5 and 6.*

- *The serviced apartment wing is well separated from the adjoining residential building fronting Jacques Street. The dimension is in excess of 9 metres from the boundary to the glazing of the serviced apartments.*
- *The building design and articulation has been thoughtfully assembled and considered and responded to input for the heritage architect Stephen Davies. The materiality of the facades includes prefinished aluminium, veneered timber cladding, pre-finished pre-cast concrete panels and glazed balustrading. These materials have been selected for their quality, longevity and minimal ongoing maintenance and are consistent with more recent quality developments in Bondi Beach.*

In addition to the above, Council raised several subjective opinions relating to bulk, scale and form, which Council has framed as “non-compliant” as opposed to assessing on a merit basis. The applicant and the project team, including both the architectural and heritage consultant have contrary views on some of these points and are open to alternative approaches on others if given the time to proceed.

It is also important to note that Council’s report contains a number of incorrect statements as follows:

1. *‘the built form negatively impacts on solar access to the public domain’*

This cannot be possible. The building is on the southern side of Hall Street and does not overshadow any public domain.

2. *“the proposal results in unreasonable view loss from existing developments and fails to promote the concept of the view sharing”*

We cannot find a location from where it is can be reasonably established that the proposal is creating a significant view loss. It is our opinion an image from an objector from the Boheme apartments shows how insignificant the additional height is when viewed from that location. Comprehensive view analysis will be undertaken if the application is deferred.

An indicative display of the proposed form when viewed from apartment’s 508 and 702 at 61-79 Hall Street (The Boheme) can be seen below (**Figures 1 and 2**). The image taken from unit 508 was lodged within a submission prepared by Robinson Planning. It is unknown whether this image is an accurate representation of the proposed scale, given it appears to be zoomed in from the balcony of the unit and fails to showcase the surrounding scale. An indicative view analysis from unit 702 has therefore been prepared, demonstrating that the proposed scale is compatible and consistent with the existing form of Bondi Beach. Given the location of the Boheme and the expansive ocean views available from the site, it is anticipated that no significant view loss is likely to occur. Detailed view analysis involving surveyor analysis will be undertaken if the application is deferred.

Figure 1: Indicative View Analysis: Unit 508, 61-79 Hall Street, Bondi Beach



Figure 2: Indicative View Analysis, Unit 702, 61-79 Hall Street, Bondi Beach



Views have been further addressed in Section 2.4. As highlighted above, it is the applicants opinion that the concerns raised by Council and the WDRP regarding architectural details and SEPP65/RFDC requirements can be readily addressed through minor amendments.

2.3 WAVERLEY COUNCIL'S PLANNING AGREEMENT POLICY 2014

Waverley Councils Planning Agreement Policy 2014 came into effect in October, 2014. The policy specifically identifies Bondi Beach as a location for potential merit based uplift for developments which propose up to 15% additional floor space. It is important to note that this is a new policy and reflects Council views that it encourages proposals in Bondi to explore the potential to vary LEP controls if the merits are supportable.

As detailed in the SEE submitted with the DA, the applicant identified intent to enter into a VPA with Council. The applicant has commenced preparation of a draft VPA and the required valuation; however this has been put on hold given Council's stance and recommendation for refusal. It is also important to note that under S79C of the Environmental Planning and Assessment Act, 1979, any planning agreement should be a matter for consideration, which coupled with the proposals consistency with Council's VPA criteria, warrants further consideration.

The applicant still wishes to enter into a VPA with Council to provide public domain improvements to Bondi Beach. Should the panel grant a short deferral of the matter, a Draft VPA would be issued for consideration.

2.4 VIEWS

Council raised concerns with the proposed development in accordance with NSWLEC Tenacity Consulting V Warringah Council (NSWLEC140), regarding view sharing and the view impacts of the proposed application. Their assessment report states the following:

"During the notification period, numerous submissions were received that raised concern for the view impacts of the proposal. Given the topography of the site within the Bondi Basin, it is anticipated that given the significant bulk and scale proposed, that there are view implications as a result of the proposal. In this regard, the applicant has not submitted a view analysis nor provided sufficient justification to address the issue."

A comprehensive visual analysis of the development from the public domain was undertaken and submitted with the DA to Council. In response to residential submissions on view loss, the applicant spoke with Kyeema Doyle from Robinson Urban Planning (who submitted an objection on behalf of multiply owners on levels 3-7 of 61-79 Hall Street, Bondi Beach), regarding arranging a time to undertake a site visit/visual analysis of the properties in early 2015. Following on from Council's recommended refusal (17 December, 2014) and scheduled DA determination date (29 January, 2015), inadequate time is available to comprehensively undertake such an analysis.

As requested in this letter, if the application is deferred, a comprehensive view analysis will be undertaken with particular regards to anticipated view impacts from the Boheme development, 61-79 Hall Street, Bondi Beach.

It is also important to note that throughout the assessment report Council makes several requests for further analysis of envisaged impacts, including the following:

- *"It is recommended that solar access studies and view analysis studies in regards to non-compliant built form and impact on neighbouring buildings occur" and*

- *“ The applicant should be requested to provide sufficient information on the location of nearby windows that would lose solar access currently enjoyed, privacy, undesirable shadow or view loss that might be caused by any non-conforming parts of the proposal”*

Such matters would ordinarily be dealt with during the assessment period; however with the absence of an opportunity to provide additional information to Council, the applicant has had no ability to respond. These requests cannot reasonably be addressed without a deferral and as such, a reasonable assessment of the proposal cannot be completed.

2.5 SHADOW ANALYSIS

Council has raised concerns regarding the solar impacts of the proposal on adjoining properties to the southwest and southeast of the site, including window openings along the eastern elevation of 16-18 Hall Street and a boundary window at 2 Jacques Avenue.

If the application is deferred by the JRPP, updated shadow diagrams will be prepared, focusing on anticipated shadow implications to the aforementioned sites, maintaining consistency with SEPP 65 and the Residential Flat Design Code. Given Council's commentary requesting updated shadow diagrams, it is the applicants opinion that a deferral to provide this information be granted, particularly given such an opportunity has not yet been provided by Council.

2.6 WASTE MANAGEMENT

Council's assessment raised concerns with the proposal waste management arrangement in regards to bin collections from Jacques Avenue. Elephants Foot Waste Compactors Pty Ltd were engaged to provide commentary on Council's comments who recommended alternative options be considered as part of design changes to ensure Council's preferred option for the collection of bins from the property is satisfied. The applicants preferred option is as follows:

- *Employ private waste services provider with suitable small rear lift vehicle (2.2 metre operating height) able to access and egress the current waste room located on basement Level 1. A suitable reversing or turning area should be designed within B1 to allow the vehicle to leave the building in a forward motion.*

A copy of the advice provided by Elephants Foot can be found at **Attachment A**.

2.7 STORMWATER/FLOODING

Mott Macdonald who prepared the Stormwater Management Plans and report submitted with the DA have been engaged to respond to Council's concerns regarding stormwater management and flooding impacts associated with the proposal.

Council has stated that inadequate information was submitted with the DA to determine the appropriateness of the stormwater facilities, including flood mitigation measures which led to a deemed refusal as opposed to an opportunity to provide additional information, allowing the applicant to respond accordingly.

Mott Macdonald have provided a response to Council's concerns relating to flood planning, stormwater management and habitable floor levels, essentially concluded that appropriate detail has been provided addressing several of Council's concerns along with alternative strategies to be dealt with prior to CC to meet other queries raised by Council. In regards to flood levels, consideration was given during the proposed conceptual design phase. The finished floor level fronting Hall Street has been maximised at 15.53m AHD and high bottomed windows and sealed entryways included to address the risk associated with the freeboard whilst simultaneously providing suitable access to the site. An

alternative design for the driveway has been proposed to meet Council's controls relating to basement flooding.

A full copy of the letter response can be found at **Attachment B**. It is the applicant opinion that concerns relating to stormwater/flooding can be adequately met with additional time and detailed discussions with Council's flooding engineers prior to CC. A deferral from the JRPP is therefore requested.

3 CONCLUSION

We urge the JRPP to accept our request to defer determination and are comfortable that within a short space of time the project team could positively respond to the reasons for refusal identified by Council. This would allow Council to provide a more thorough assessment of the application and the give the panel an opportunity to determine an application with a more appropriate level of detail.

Yours sincerely,



Mark Thompson
Planning Consultant
Urbis

Attachment A: Waste Management Response
Attachment B: Stormwater Management Response



20 January 2015

Mark Thompson
Planning Consultant – Urban Planning
Level 23, Darling Park Tower 2
201 Sussex Street
Sydney NSW 2000
mthompson@urbis.com.au

Dear Mark,

Waste Management Collection Arrangements: 10 – 14 Hall Street, Bondi

In response to the concerns regarding waste bin collections from Jacques Avenue for the above property and the three options proposed by Council, we recommend the following be considered as part of a design change to ensure that the preferred Council option of collections of mobile bins from the property:

Option 1 – redesign of a driveway and entrance to comply with Councils requirement to allow access and egress in a forward motion at all times compliant to BCA, Australian Standards and Councils Development Control Annexure B1-3, 2012.

Option 2 – design of a lockable street level storage area with a council compatible key system to allow access for Councils collection staff in association with the development building management. The appointed cleaner will ensure that bins are removed from B1 by hoist to the collection area prior to the scheduled collection and removed to the B1 waste room soon after.

Option 3 – employ private waste services provider with suitable small rear lift vehicle (2.2m operating height) able to access and egress the current waste room located on basement level 1. A suitable reversing or turning area should be designed within B1 to allow the vehicle to leave the building in a forward motion.

There are private waste service providers working in the area with suitable vehicles available.

Please feel free to contact me if you have any queries regarding these recommendations.

Kind Regards,
Natalie Beattie
Business Development Manager - National Construction
Elephants Foot Recycling Solutions
M: 0438 044 494 | F: 61+ 02 9707 2588 | Free Call: 1800 025 073
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Your ref 10-14 Hall Street, Bondi Beach

Urbis
Level 23
Darling Park Tower 2
201 Sussex Street
Sydney NSW 2000

23 January 2015

Attn: Mark Thompson

Dear Mark

RE: 10-14 Hall Street, Bondi Beach, DA-417/2014
Response to Waverley Council Comments – Stormwater

We refer to the Waverley Council Report to the Joint Regional Planning Panel regarding the proposed development at 10-14 Hall Street, Bondi Beach, which included comments pertaining to stormwater plans submitted by Mott MacDonald as part of the Development Application documentation. We understand from this report that additional information is required in order to satisfactorily address each of the matters raised.

Please find below comments in response to matters raised by Waverley Council.

WAVERLEY LEP 2012 COMPLIANCE TABLE

6.3 Flood planning

Clause 6.3 Flood planning applies to all land identified as “flood planning area”. The subject site is identified as being within a flood planning area in the flood planning map, and accordingly the provision of clause 6.3 is applicable to the application.

The proposed development has failed to incorporate design elements to address the impacts from the flood planning area. The proposal is unacceptable with regards to clause 6.3 Flood planning in the WLEP 2012.

It is our understanding that flooding issues both (a) on site; and (b) in the local catchment are not dictated by onsite drainage issues, but instead by localised ponding resulting from existing trapped low points and undersized stormwater system in the region. As such, the proposed development works will likely have negligible impact on the overall flooding of the area. Flooding constraints aimed at minimising risks associated with both property and life are to be managed by on-site measures (as proposed by KannFinch).

As the land has been identified as being below the flood planning level, it is understood that the project Architect has maximised the finished level of the ground floor (RL15.53m AHD) while maintaining compliant pedestrian access from the road to the development. The requested floor level of RL15.82m AHD would result in a ground floor level approximately 0.8m above the footpath levels in Hall Street and approximately 1.4m above the footpath levels in Jaques Avenue, which may not provide the development with a feasible access arrangement.

As the proposed finished floor level is above the 1 in 100 year flood level provided by Council, but below the 300mm freeboard requirement, the Architect is proposing the provision of high-bottomed windows and sealed entryways to address the risk associated with the freeboard whilst providing suitable access in Hall Street and Jaques Avenue. Further details may be provided during the detailed design phase prior to Construction Certificate. Note that this will only affect the ground floor which is commercial/retail habitable floor and will not affect residential floors which are above the flood level plus freeboard. It is further noted that the survey indicates that the ground floor of the existing commercial tenancies on the site have floor levels ranging between RL15.20m and RL15.31; as such the proposed finished floor level of RL15.53m AHD is an improvement on the existing configuration.

During the design a crest was documented in the driveway at a level as high as practical within the constraints of existing levels in the road reserve and maintaining a trafficable driveway grade for waste collection, in order to minimise nuisance flooding to the basement, with a flood gate proposed for larger storms. Following further discussions with the planner and consideration of waste collection methods, it is now proposed to raise the crest level to the 100 year flood level plus freeboard (RL15.82m AHD). This would address Waverley Council's flooding requirements for the basement.

As documented in the Stormwater Management Report by Mott MacDonald, on-site detention (OSD) storage has been proposed to limit the 100 year ARI post-development flows to the maximum discharge

from the site during a 5 year ARI storm event under the existing site conditions. This results in no increase in post-developed flows, therefore causing no detrimental impact on downstream flood levels/velocities due to runoff from the site. This may even improve the localised drainage situation as the rate of discharge from the site is significantly reduced during a 100 year ARI storm from pre- to post-development.

In addition, it is noted that Council's Ponding Areas Map (Annexure C to the Water Management Technical Manual) from which the flood planning level is derived is dated August 2007 and is a high-level analysis. There is potential to undertake a local flood study which may provide a more current and detailed flood level and extent applicable to the site.

The combination of maximising floor level, providing protective building elements, and providing OSD storage is provided to address the impacts from developing on a site within the localised flood planning area.

WAVERLEY DEVELOPMENT CONTROL PLAN (WDCP) 2012

6. Stormwater Management and Flooding

The application is accompanied by a Stormwater Management Plan and the application was internally referred to Council's Creating Waverley Sub Program for comment.

The advice received indicates the proposal fails to address Part B6 of the DCP objectives and controls, and inadequate information has been submitted to determine the appropriateness of the stormwater facilities including flood mitigation measures given the site's location within a flood area. Refer to 'Referrals' section of this report for detailed discussion.

The proposal as documented on Mott MacDonald DA plans and the associated Stormwater Management Report addresses WDCP Part 6.1 through the provision of a pit and pipe network, on-site detention tank and water quality management devices, designed generally in accordance with Waverley Council's Water Management Technical Guidelines (now Water Management Technical Manual). For discussion relating to WDCP Part 6.2 Flooding refer to the response to LEP Item 6.3 above. Additional details of flood mitigating measures should be sought from the project Architect.

REFERRALS

Item 1: Habitable Floor Level

The drawings do not comply with the Waverley Development Control Plan 2012 and the Waverley Council Water Management Technical Manual with respect to:

- *The proposed development location is in Flood Prone Area (Catchment 8 under the Waverley Council Drainage System Map). According to the Waverley Council Water Management Technical Manual and Stormwater Drainage System Planning, water management concept plan should be designed considering the following guidelines:*
 - (i) 1 in 100 years Water Level is RL 15.52m AHD*
 - (ii) Minimum Free Board should be 300mm.*
 - (iii) Habitable floor level should be RL +15.82m AHD or above.*

For discussion regarding floor levels refer to the response to LEP Item 6.3 above.

Item 2: Stormwater Connection Detail

The connection details of new stormwater pipe are also required as per section 2.2.1 of Waverley Council's Water Management Technical Manual.

Each of the items under section 2.2.1 of Waverley Council's *Water Management Technical Manual* have been addressed in the DA documentation as follows:

- a) It is understood that the existing 375mm diameter stormwater pipe within Hall Street to which it is proposed to connect the OSD outlet is owned by Council. As such, item a) of section 2.2.1 regarding Sydney Water approval is not applicable.
- b) As there is no existing Council stormwater pit located near the connection point, the proposal (Mott MacDonald drawing 0130) documents the construction of a new stormwater pit to Council requirements within the road reserve to enable connection from the site to the existing 375mm diameter pipe in Hall Street. This is in accordance with Waverley Council's *Water Management Technical Manual* which states that "If no such pit exists adjacent to the site then a new grated gully pit will need to be installed over the existing Council pipeline at the applicant's expense."
- c) As per item (b)

Note that the proposed secondary connection in Jaques Avenue does not exceed 25L/sec and as such the manual permits it to be connected to the kerb.

From our experience, construction details of the connections would normally be provided during the detailed design phase. In addition, details of Council's existing stormwater system in Hall Street were also requested from Council but were not made available at this stage.

Item 3: Stormwater Connection Detail

An engineering design of the proposed stormwater line is required including a Hydraulic Grade Line (HGL) analysis of pipe between the On-site Stormwater Detention (OSD) tank to existing Council's Stormwater Drainage pit. The long section information to include existing services crossing, existing surface levels, pipe invert and obvert levels.

For the purpose of Development Application, drainage calculations for the site have been undertaken using DRAINS software (confirmed by Council's Technical Services during design that this was acceptable). As described in section 4 of Mott MacDonald's Stormwater Management Report, the model incorporates a tailwater level of RL 15.52m AHD at the connection to Council's existing stormwater system in Hall Street for the 1 in 100 year ARI storm. This level has been specified to simulate a charged system downstream and to verify the capacity of the internal piped network for stormwater flows generated for the design storm event. The piped outlet from the OSD tank to the existing stormwater system in Hall Street has been sized to accommodate 100 year ARI flows with a blockage factor of 50%. The OSD tank has been located above the 100 year ARI flood level to enable free drainage to the pit and pipe network in the street. Details and results can be found within the report.

We would expect the degree of detail requested in the long section to typically be conditioned in the Development Approval consent conditions and provided as part of the Construction Certificate engineering documentation, when details such as accurate depth of existing services can be made available. Details of Council's existing stormwater system in Hall Street were also requested from Council but were not made available at this stage.

Item 4: Building Stormwater

It is unclear from the drawings how stormwater is collected to the OSD tank.

Stormwater is proposed to be collected from building roof and awning areas. During the detailed design phase of the project, a Hydraulic Engineer will need to be engaged to undertake design of the building stormwater. From our experience it is understood that details other than trunk/ in-ground drainage are not required for the purpose of Development Application.

Item 5: OSD Checklist

An updated Water Management Plan including OSD and details along with checklist as set out in page 22 of Waverley Council's Water Management Technical Manual is required.

At the time of undertaking the design, Waverley Council's *Water Management Technical Guidelines 2007* was the current document in practise. The OSD checklist is a new requirement introduced in Waverley Council's *Water Management Technical Manual 2014*, and as such was not completed with the original submission. OSD calculation details required by the checklist have already been provided in the Stormwater Management Report and stormwater drawings submitted with the Development Application. Please refer to the attached checklist reiterating this information.

Item 6: Sewer Main

Note: Since a sewer main runs through the property, plans must also be presented to a Sydney Water Quick Check Agent for their approval.

Extensive consideration of the two existing sewer mains within the site has been undertaken during the design as follows:

- A Dial Before You Dig (DBYD) enquiry was undertaken.
- A Sydney Water Feasibility Application was submitted and a Feasibility Letter received.
- This process identified an existing 300mm diameter sewer main and an existing 225mm diameter sewer main traversing the site.
- A Services Protection Report ("peg-out" survey) was obtained to more accurately locate the existing sewer mains within the site including their depth, for design purposes.
- Preliminary concept options for protecting, avoiding or diverting the mains were assessed in conjunction with Mott MacDonald's Sydney Water approved Water Services Coordinator (WSC).
- Recommendations were provided to the Architect for their incorporation into the Development Application design, in particular the basement alignment and levels.
- The dialogue with Sydney Water may be further progressed by submitting a Section 73 Application with the project DA number.

Should you require any additional information please do not hesitate to contact the undersigned.

Yours faithfully,



James Gilligan
Civil Engineer
Mott MacDonald
BE (Civil) MIEAust

WAVERLEY COUNCIL DEVELOPMENT APPLICATION - STORMWATER ON-SITE DETENTION CHECK LIST

DEVELOPMENT APPLICATION NUMBER IF KNOWN: DA-417/2014
PROPERTY ADDRESS: 10-14 Hall Street, Bondi Beach

STORMWATER PLANS DESIGNED BY: Mott MacDonald Australia
CONTACT DETAILS (NAME & PHONE No.): James Gilligan, 02 9098 6800

TOTAL SITE AREA: 910 m²
TOTAL IMPERVIOUS AREA - PRE DEVELOPMENT: 910 m²
TOTAL IMPERVIOUS AREA - POST DEVELOPMENT: 910
CALCULATED PERMISSIBLE SITE DISCHARGE: 43 l/s

METHOD OF STORMWATER DISPOSAL



Gravity



Pump (Basement only)



Infiltration



Charged Line

VOLUME OF RAINWATER TANK WITH PROVIDED: 10 m³

UNCONTROLLED DISCHARGE-

TOTAL AREA NOT DRAINING TO OSD TANK: 160 m²
TOTAL IMPERVIOUS AREA NOT DRAINING TO OSD TANK: 160 m²
IS UNCONTROLLED FLOW DIRECTED TO THE STREET YES / NO

OSD TANK DETAILS-

TOTAL AREA DRAINING TO OSD TANK: 750 m²
TOTAL IMPERVIOUS AREA DRAINING TO OSD TANK: 750 m²
PROPOSED VOLUME: 25 m³
IS OVERFLOW FLOW DIRECTED TO THE STREET YES / NO

However, overflow unlikely as system is sized to accommodate 100 year ARI with 50% blockage.

FOR GRAVITY / CHARGED SYSTEMS-

ORIFICE PLATE DIAMETER: 130 mm
DEPTH FROM TOP WATER LEVEL TO CENTRE OF ORIFICE: 880 mm

FOR PUMP SYSTEMS-

PUMP CAPACITY (per Pump): Incidental flows only to basement, pumps to be sized by project Hydraulic Engineer during detailed design phase. l/s

INFILTRATION SYSTEM-

IS LOCATION FOUND WITHIN THE INFILTRATION ZONE:
(ANNEXURE B WATER MANAGEMENT TECHNICAL GUIDELINES) YES / NO
INFILTRATION RATE OF THE SOIL N/A l/s
(AS CONFIRMED BY CURRENT GEOTECHNICAL REPORT)
VOLUME OF INFILTRATION PIT: N/A m³

CALCULATED TOTAL SITE DISCHARGE RATE: 43 l/s
(CONTROLLED + UNCONTROLLED FLOW RATE)