Our Ref: BE200223-RFI Response
Enquiries to: Fraser Lucas

1 August 2022

Council of City of Gold Coast
PO Box 5042
GCMC QLD 9726

Dear Sir/Madam

Re: 2 Karingal Drive, Pimpama
Information Request Response (City of Gold Coast)
MCU/2021/144

We refer to the Council of the City of Gold Coast Information Response dated 7 May 2021 regarding the above project. Please find below appropriate responses below to the issues raised concerning civil and stormwater engineering for the proposed development.

Item	Information Requested	Response
4.	Retaining Walls	
	The applicant's 'Civil Engineering Report' by Burchills Engineering Solutions provides a brief overview of proposed bulk earthworks and a single Bulk Earthworks Layout Plan. This does not provide adequate detail to demonstrate compliance with Acceptable outcome AO9 and Performance outcome PO9 of the General development provisions code and City Plan Policy – Land development guidelines. The applicant is requested to provide cross sections through the subject site that clearly illustrate the heights of proposed retaining wall heights and/or batters, and the interfaces with roadways, open space, the waterway corridor and adjacent lots, to demonstrate compliance with the above City Plan provisions. In addition, the applicant is requested to provide a retaining wall plan showing the location and heights of retaining walls. Concerns relating to retaining walls are discussed further below under Landscape Assessment and Open Space Assessment.	We confirm that the earthworks associated with the development has been preliminarily designed generally in accordance with AO9 of City Plan Policy – Land Development Guidelines – Section 3 Change to Ground Level Standards. As such, we request that Council Conditions this additional requirement, where further details/plans will be provided at under OPW Applications for Change to Ground Level Approval.
10.	Servicing	
	To comply with Acceptable outcomes AO5, AO6.1 and AO6.2 of the Transport Code as proposed, the applicant is requested to provide long sections demonstrating that the circulation roads will be suitably graded for a MRV pursuant with the requirements given in section 3.3.3 of AS2890.2: 2018. In this regard the maximum permitted	We confirm that the road grading of the internal development roadways has been preliminarily designed generally in accordance with AO5, AO6.1 & AO6.2 of City Plan Policy – Transport Code; and AS2890.2.

	grade and change in grade is 1 in 6.5 (15.4%) and 1 in 16 (6.25%) in 7m of travel respectively. Any change in grade of 1 in 50 (2%) or less may take place instantaneously. Alternatively, the applicant may propose a solution which can be reasonably tested against the requirements of Performance outcomes PO5 and PO6.	As such, we request that Council Conditions this additional requirement, where further details and longitudinal sections will be provided at under OPW Applications for Change to Ground Level Approval.
11.	Bicycle Parking Supply	
	Review of the proposed dwelling floor plans shows limited space to accommodate resident and visitor bicycle parking as proposed. To comply with Acceptable outcome PO10 of the Transport Code, the applicant is therefore requested to identify areas of a suitable size within each proposed dwelling which can accommodate bicycle parking generally in accordance with the minimum dimensions given in AS2890.3:2015.	It is requested that Council Conditions this additional requirement for an amended site plan depicting resident and visitor bicycle parking. This requirement can then be addressed and approved by Council prior to future OPW Applications being lodged.
12.	Pedestrian Access	
	The provision of a 1.0 metre wide footpath behind dwelling garages, as shown on the submitted site plan drawing, is not considered to be separated from vehicle movements and is therefore not supported. To comply with Acceptable outcome AO11.3 of the Transport Code, the applicant is requested to submit amended drawings showing at least one (1) continuous pedestrian pathway from the Karingal Drive and Imelda Way frontages which is separated from vehicle movements.	It is requested that Council Conditions this additional requirement for an amended site plan depicting one continuous pedestrian pathway. This requirement can then be addressed and approved by Council prior to future OPW Applications being lodged.
13.	Ingress and Egress	
	To assist in demonstrating compliance with Acceptable outcome AO19 of the Transport code, the applicant is requested to confirm if any gates are proposed at either or both vehicular access points within the site. Should this be the case, the applicant is requested to set these back to ensure queuing is accommodated entirely within the site and a turnaround area suitable for a B99 vehicle is provided before the gate locations, within the site.	It is confirmed that no gates are proposed at either vehicular access points to the site.
14.	Car Parking Design	
	To comply with Acceptable outcome AO25.1 of the Transport code, the applicant is requested to submit amended drawings making the following changes:	
a)	Pursuant to section 2.5.3(e)(iv) of AS2890.1:2004, provide a driveway long section and check grade changes using the method in Appendix C where there is any departure from the requirements specified in section 2.5.3. Additionally, the applicant is to ensure that the driveway grade behind garages and visitor car parking spaces does not exceed 1 in 16 (6.25%).	We confirm that the road grading of the internal development roadways has been preliminarily designed generally in accordance with AS2890.1. As such, we request that Council Conditions this additional requirement, where further details and longitudinal sections will be provided at under OPW Applications for Change to Ground Level Approval.
b)	Pursuant to section 3.2.4(b) of AS2890.1:2004, provide a pedestrian sight triangle on the departure side of the	We confirm that the road grading of the internal development roadways has

	vehicle crossings to Karingal Drive and Imelda Way within the boundaries of the site. Additionally, include a notation which reads "Pedestrian sight triangle to be kept clear of obstructions to visibility. Landscaping up to 500mm in height is permitted within this area."	been preliminarily designed generally in accordance with AS2890.1. As such, we request that Council Conditions this requirement, where further details surrounding pedestrian sight triangles will be provided at under OPW Applications for site access (OPV).
c)	Pursuant to section 4.9(a) of AS2890.1:2004, provide type 1 road humps spaced at a minimum of 30m on the long straight aisle running parallel to the railway line.	We request that Council Conditions this requirement, where further details will be provided at under OPW Applications for the development.
	Alternatively, the applicant may propose a solution which can be reasonably tested against the requirements of PO25.	
15.	Tandem Car Parking	
	To comply with Acceptable outcome AO26.3 of the Transport code, the applicant is requested to submit amended drawings increasing the length of all proposed tandem garages to a minimum of 11 metres. Alternatively, the applicant may propose a solution which can be reasonably tested against the requirements of PO26.	It is requested that Council Conditions this requirement for an amended site plan increasing length of tandem garages. This requirement can then be addressed and approved by Council prior to future OPW Applications being lodged.
	Advice note - Karingal Drive road upgrade	
	As mentioned during the pre-lodgement meeting, if the application is recommended for approval, a condition will be imposed to achieve compliance with AO15.1 of the Transport code, requiring the upgrade of Karingal Drive to a residential collector street along the full frontage of the site. This will include provision of a cul-de-sac and 1.5m wide footpath along the frontage of the site.	
16.	Hydraulic Assessment	
	The applicant has submitted a hydraulic impact assessment report, being "2 Karingal Drive, Pimpama – Hydraulic Impact Assessment, Revision 00" dated 7 January 2021, prepared by Burchills Engineering Solutions. However, to respond to Council Officers' concerns, the applicant is requested to submit a revised report addressing the following (but not limited to) issues:	
a)	The report shows an increase of flood level from 10-15mm within an external property which is not acceptable to Council. Therefore, the applicant is requested to redesign the development to achieve no adverse hydraulic impact external to the site. Alternatively, the applicant is requested to submit consent letters from affected property owners accepting such impacts into their properties.	It is noted that the Hydraulic Impact Assessment depicts an increase in flood level from 10-15mm within an external property. Given this impact is of low magnitude, we request that Council imposes a Condition stating that either Landowner's Consent is to be submitted accepting these impacts, or an amended Hydraulic Impact Assessment is submitted demonstrating compliance with Council's maximum afflux requirements.

b)	Remove the proposed on-line detention basin from the waterways to be dedicated as a drainage reserve.	It is noted that considerable discussions and negotiations surrounding this matter have occurred with both Council and State (SARA). It is understood that this area is no longer considered a formal waterway, and as such we propose for the detention basin to remain in its current location within the overland flow path.
17.	Revised Stormwater Management Plan	
	The applicant has submitted a stormwater management report, being "2 Karingal Drive, Pimpama – Conceptual Stormwater Management Plan, Revision 00" dated 7 January 2021, prepared by Burchills Engineering Solutions. However, to respond to Council Officers' concerns, the applicant is requested to submit a revised report addressing the following (but not limited to) issues:	
a)	The report has compared pre- and post development stormwater discharges for peak flow mitigation purposes incorporating external flow which is many times greater than that of the subject site. The applicant is advised that the above approach is not acceptable to Council. Pre- and post development stormwater discharges of the development site only are to be compared to demonstrate no increase of peak flow rates due to the proposed development. Therefore, the applicant is requested to include comparison figures of the pre- and post development stormwater runoff from the subject development site to demonstrate no increase of peak flow rates due to the proposed development for all events up to and including 1% AEP storms.	Given an on-line detention basin/bund is proposed within the flow path that this external catchment flows through, this method of comparing pre and post development discharge is necessary and is generally in line with QUDM and industry practice.
b)	The applicant has proposed an on-line stormwater detention basin within a waterway that conveys stormwater runoff from a large external catchment (approximately 142 hectares). The applicant is advised that Council is not supportive of an on-line stormwater detention system due to the on-going maintenance and liability issues. Therefore, the applicant is requested to remove the proposed on-line stormwater detention basin from the waterway.	This proposed on-line stormwater detention basin is designed to be free draining and presents minimal maintenance burden. Furthermore, the detention basin will be a privately owned asset, and can be owned, operated and maintained by the Body Corporate of the proposed development.
c)	Two stormwater detention basins have been proposed under timber decks. Council Officers have concerns regarding the ongoing maintenance and functionality of such detention basins. Therefore, the applicant is requested to redesign the development relocating the basins or removing the decks from over the basins.	These basins will be privately owned assets, and is to be owned, operated and maintained by the Body Corporate of the proposed development. Given the timber deck support is proposed to be positioned within the turfed area of the basin, there is still ample room for maintenance activities to occur.

d)	The applicant is requested to include a stormwater drainage layout plan identifying all minor (pipe) and major (overland) stormwater drainage systems for the proposed development.	It is requested that Council Conditions this requirement for a Stormwater Drainage Layout Plan. This requirement can then be addressed and approved by Council prior to future OPW Applications being lodged.
e)	The applicant is requested to demonstrate that the proposed area for the stormwater treatment and detention basin(s) are adequate with respect to their design and construction in accordance with the City Plan policy – Land development guidelines and the Queensland Urban Drainage Manual. In particular, demonstrate that maintenance access to the basin perimeter and to inlet and silt collection zones, batters, setbacks from private property, inlet/outlet details, sediment fore bay, aprons in front of headwalls (to prevent underscouring) etc. are designed in accordance with the City Plan policy – Land development guidelines and with reference to the Water by Design document.	It is requested that Council Conditions this requirement as per response to Item (d) above, as these concerns can be addressed via submission of a Stormwater Drainage Layout Plan. This requirement can then be addressed and approved by Council prior to future OPW Applications being lodged.
18.	Erosion and Sediment Control Plan	
	The applicant is requested to submit an Erosion and Sediment Control Plan (ESCP) prepared in accordance with the City Plan policy – Land development guidelines, and the Best Practice Erosion & Sediment Control (IECA Australasia, November 2008) and consistent with the State Planning Policy (SPP 2017). The plan must, in particular (without limitation):	It is requested that Council Conditions this requirement for an ESCP, which can be lodged in the future OPW Application for Change to Ground Level.
a)	Ensure that all reasonable and practicable measures are implemented to minimise short and long-term erosion and adverse effects of sediment transport. Also, ensure that the proposed control measures will achieve 80% hydraulic effectiveness as required by the SPP (Refer to SPP 2017, Appendix 2, Table A).	As above.
b)	Be prepared by a suitably qualified professional (Certified Practitioner in Erosion and Sediment Control or Registered Professional Engineer Queensland with experience and training in erosion and sediment control).	As above.
c)	Relate to each phase of works (including clearing, earthworks, civil construction, services installation, and landscaping/rehabilitation) and detail the type, location, sequence and timing of measures and action to effectively minimise erosion, manage flows and capture sediment.	As above.
d)	Include the results of all soil investigations undertaken for the site and on which the ESCP is based.	As above.
e)	Be consistent with current best practice standards, taking into account all environmental constraints including erosion hazard, season, climate, soil and proximity to waterways.	As above.
f)	Include monitoring requirements, and clearly outline the need to adjust or maintain erosion and sediment control	As above.

	and site management practices to achieve the above requirements.	
g)	Contingency measures in case of failure to achieve the water quality objectives.	As above.
19.	Modelling Files	
	Submit all XP-RAFTS, TUFLOW and MUSIC modelling files to Council for review and record purposes.	Relevant modelling files can be provided to Council following their preliminary review and assessment of this RFI Response Letter.
LANDSCAPE ASSESSMENT		
26.	Retaining Walls	
	It is noted that the submitted plans indicate the presence of retaining walls. In order to facilitate assessment against PO9/AO9 of the General development provisions code, the applicant is requested to provide plans that identify the location, height, type, colours and finishes of the proposed retaining walls. It is requested that where they are proposed adjacent landscape planting areas, wall types are vertical, narrow types with discrete footings (e.g. concrete sleeper) as opposed to boulder walls which occupy significant space (displacing landscaping) and blockwork walls (which have a significant, continuous footing that displaces landscaping). It is also requested that walls which will be visible in the long term are dark coloured (e.g. charcoal) and textured (e.g. wood pattern or split face).	We confirm that the earthworks associated with the development has been preliminarily designed generally in accordance with AO9 of City Plan Policy – Land Development Guidelines – Section 3 Change to Ground Level Standards. As such, we request that Council Conditions this requirement, where further details/plans will be provided at under OPW Applications for Change to Ground Level Approval.
WATER AND WASTE		
30.	Survey Information – Sewerage Infrastructure	
	The applicant has provided a survey plan, being “Contour and Detail Survey over Lot 19 RP152380” depicting the existing sewerage infrastructure traversing the property boundaries. The ‘Site Layout’ plan shows some of the existing manholes and the existing sewerage easements, however there are concerns relating to this as outlined below: • The large “detention basin” separating the two sides of the development and the smaller “detention basin under deck” (near dwelling 1 and 2) are proposed over existing sewerage infrastructure. There is also another ‘detention basin under deck’ near dwellings 47-49. • It is assumed that the applicant is proposing to cut earthworks for these detention basins and, as such, they will be reducing the existing cover over the existing sewer pipes and the existing manholes may require lowering / raising.	

a)	The applicant is required to provide cross sections demonstrating the impacts that the proposed basins will have on the existing sewer infrastructure (manholes and pipes). This is required to ensure that the detention basins will not adversely impact Council's existing sewerage infrastructure.	We confirm that the earthworks associated with the development has been preliminarily designed with consideration made to the existing sewer infrastructure, so not to impact existing manholes and pipework. As such, we request that Council Conditions this requirement, where further details/plans will be provided at under OPW Applications for Change to Ground Level Approval.
b)	The existing sewerage infrastructure easement as shown on the 'Contour and Detail Survey over Lot 19 RP152380' must be superimposed onto the site plan and include a notation to the effect "Existing sewerage easement superimposed as per Survey Plan 'Contour and Detail Survey over Lot 19 RP152380' by Stewart McIntyre & Associates dated 19/05/2017".	It is requested that Council Conditions this requirement for an amended site plan superimposing the existing sewer easement from the Survey Plan prepared by the Project's Surveyor. This requirement can then be addressed and approved by Council prior to future OPW Applications being lodged.
31.	Sewer Servicing Strategy	
	It is noted that the development proposes to connect to Council's existing sewerage network via a private gravity main internal to the site. Burchills report also stating there is a plan called "The Sewage Plan" by Brian Johnson Plan Design - This plan was not included.	
a)	Provide the sewage plan mentioned in Burchills report	It is requested that Council Conditions this requirement for a sewer reticulation layout plan, given the site is readily serviceable. This requirement can then be addressed and approved by Council prior to future OPW Applications being lodged.
b)	Provide a sewer reticulation connection plan demonstrating how the proposal the intends to connect to Council's existing infrastructure.	As above.
c)	It is noted that there is a water way traversing the middle of the site and essentially 'splitting' the development into a north and south side.	
i.	Provide clarification as to how each side of the development intends to connect to Council's existing sewerage infrastructure.	Given the depth of the existing trunk sewer traversing the site, the development can be serviced via one sewer house connection to Council's main.

ii.	If the proposal includes a sewer pipe traversing the waterway, this may require approval from Council's waterways assessment team as well as Plumbing and Drainage) – Submit confirmation to Water and Waste as part of the response to information request that Council does not object to this.	Given the depth of the existing trunk sewer traversing the site, the development can be serviced via one sewer house connection to Council's main. In this instance, the private reticulation would traverse under the waterway. Alternatively, the development could eb serviced via 2 x separate private gravity reticulation networks in order to avoid traversing under the waterway. Whichever option is of Council's preference can be adopted and conditioned.
d)	The plans provided do not show the location of the proposed sewer property connection in relation to any proposed structures, buildings, or footings. The applicant is required to provide amended detailed plans, drawn to scale, indicating all the items list below:	
i.	The location of the proposed sewer property connection and demonstrate that all proposed buildings, structures, footings and landscaping with extensive root systems are outside of the sewerage easements, and a minimum of 1m clear of the sewer connection up to and including its inspection opening (IO).	We request that Council Conditions this requirement, for a sewer reticulation layout plan being submitted which will demonstrate compliance with this item.
e)	It is unclear if the proposal will require raising / lowering of any existing sewer maintenance structures.	This requirement can be addressed and approved by Council under future OPW application for Change to Ground Level.
i.	Provide a plan showing which manholes require raising and lowering and state by how much (approximately).	This requirement can be addressed and approved by Council under future OPW application for Change to Ground Level. We note that the existing trunk sewer main is situated within proposed community title land, so access shall not be hindered.
	Further Advice: It should be noted that Water and Waste generally does not approve buildings or structures over or within the 6m easement for a 375mm trunk sewer as impacts this development site. Water and Waste suggest redesigning the development to ensure access is maintained to repair the trunk sewer in future should this be required without impact on proposed dwellings. Repair works may involve excavation to access the sewer main and this excavation typically requires the full easement width to be available.	
32.	Water meter Location/Easement & Servicing Strategy	
	As per the Prelodgement meeting minutes, the DA plans require showing the location of the developments master meter including easement with dimensions – This information has not been provided. It is noted that the development proposes to connect to Councils existing water network from Imelda Way. Burchills report also stating there is a plan called "The	

	Water Main Plan" by Brian Johnson Plan Design - This plan was not included. Be advised that all water meters 50mm in diameter or larger require an above ground on lot water meter configuration and an associated easement in accordance with Council's Standard Water Meter Drawings (available on Council's website). Note: If a stacked arrangement is required, the potable water meter is typically mechanical and subsequently a longer easement/assembly is required. Please consider this when allocating space for the water meter(s). The size of the easement and space required for the water meter assembly is based on the size of the water meter(s) required.	
a)	Provide the "water main plan" mentioned in Burchills report	It is requested that Council Conditions this requirement for the amended plan depicting the master meter including easement, as this change can be captured with various other requests highlighted above.
b)	Provide a water connection plan demonstrating how the proposal the intends to connect to Council's existing infrastructure.	It is requested that Council Conditions this requirement, as service connections are readily available at the site boundaries.
c)	It is noted that there is a water way traversing the middle of the site and essentially 'splitting' the development into a north and south side.	
d)	Provide clarification as to how each side of the development intends to connect to Council's existing water infrastructure.	The development will be serviced via internal private water main that connects each side of the development (ie. Crosses the waterway).
i.	If the proposal includes a water pipe traversing the waterway, this may require approval from Council's waterways assessment team (as well as Plumbing and Drainage) – Submit confirmation to Water and Waste as part of the response to information request that Council does not object to this.	Confirmation has not been obtained at this stage – we request GCW review and confirm.
e)	Council requests the applicant to seek advice and confirmation from a hydraulic consultant on the size of the required potable water and (if applicable) fire meters required for the proposal. Once the size of the water meters is determined, the required easement size and location of the water meters can be incorporated into the design plans. Note: if advice is not obtained regarding the required meter size, and subsequently the required easement size based on the size of the meters, then the application may require a Minor Change should the layout of the design not provide sufficient room for the meter assembly.	As per response to item (a) above, we request that Council Conditions this requirement.
f)	Provide a Ground Floor / Site Plan showing the location and dimensions of the easement for any above ground on lot water meters, based on advice from a hydraulic consultant. This information must be on a DA plan.	As per response to item (a) above, we request that Council Conditions this requirement.

g)	Amended architectural plans displaying no buildings, structures, footings or landscaping within the proposed easement.	As per response to item (a) above, we request that Council Conditions this requirement.

If additional information is needed or you require clarification on any of the issues addressed, please do not hesitate to contact myself on (07) 5509 6400.

Yours faithfully



FRASER LUCAS
Civil Engineer