

JOHN ROMANOUS & ASSOCIATES

CONSULTING CIVIL & STRUCTURAL ENGINEERS

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Flood Impact Assessment Report

For

Proposed Development

At

46 Long Street

Strathfield NSW 2135

Prepared by

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Dated

Monday 31st January 2022

Report Reference

2293/R1

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1.0 Introduction

At the property located at 46 Long Street, Strathfield. It is proposed to demolish the existing house and to construct a two-storey single dwelling.

The subject property is identified by Strathfield Council Cooks River and Cox's Creek Flood Study as being affected by mainstream flooding.

Strathfield Council has adopted the Interim Flood Prone Lands Policy. Therefore, a Flood Risk Assessment Report must be provided for this development in accordance with this policy.

The intent of this Flood Impact Assessment Report is to ensure that:

- Site specific conditions are taken into consideration of the development with respect to flooding impacts,
- The objectives and controls of Council's Interim Flood Prone Lands Policy are appropriately addressed.
- The report is to provide recommendations to be implemented during the detailed design and construction phase, as well as during ongoing operation of the development.

This Flood Impact Assessment report is based on the information provided by the following documents:

1. Architectural plans prepared by Blu Print Design.
2. Survey plan prepared by G & R Surveying Services Pty. Ltd. Job No: 1733 dated 10-04-2021.
3. "Item 4. Stormwater & Flooding" of Council Pre-DA letter dated 3rd September 2021. Ref. Pre-DA-2021/17.
4. Strathfield Council "Interim Flood Prone Lands Policy".
5. Stormwater drainage plans prepared by John Romanous & Associates Pty. Ltd. drawing No. 2293-S1/3 to 2293-S3/3 dated 30-01-2022 Rev. "B".

This Flood Impact Assessment report has been prepared specifically in accordance with the requirements of "Item 4. Stormwater & Flooding" of Council Pre-DA letter dated 3rd September 2021. Ref. Pre-DA-2021/17 and Strathfield Council "Interim Flood Prone Lands Policy" and NSW Floodplain Development Manual.

The aim of this Flood Impact Assessment report is to provide an acceptable flood planning solution for the proposed development.

2.0 Site Specific Flood Planning Information

Strathfield Council policy requires that all development proposals to be carried out in accordance with the Interim Flood Prone Lands Policy". In addition, Strathfield Council has provided site specific flood planning information in council issued Pre-DA letter dated 3rd September 2021. Ref Pre-DA-2021/17. **(Refer Appendix A)**. And council has also issued specific flood levels for the property in an email dated 15th June 2021 **(Refer Appendix B)**.

3.0 Determining Flood Risk.

The proposed development is residential. In addition, according to council Flood Information email dated 15th June 2021. The subject site is located in a medium risk flood area. Refer the Appendix B for the flood levels.

4.0 Description of the flood Regime.

The flood map provided by council shows that the site is affected by mainstream flooding. The flood level at the front boundary is at **RL 22.19AHD** at a depth of water of 300mm. The flood level at the rear boundary is at **RL 21.60** at a depth of water at 300mm at the 1 in 100 year flood. The flood planning level adopted for the proposed development is **500mm** above the 1 in 100 year flood level. The flood protection crest to the proposed underground parking has been provided at 500mm above the 1 in 100 year flood level.

5.0 Development Description.

The existing property contains a residential dwelling and a detached garage which are to be both demolished.

The plans prepared by Blu Print Designs shows that it is proposed to construct a new dwelling with an underground car parking at the front of the property and an in-ground swimming pool and cabana at the rear of the property.

6.0 Mandatory Requirements

6.1 Floor Level.

Requirements: *All developments must be designed so that habitable floors are at least 500mm above the 1 in 100 year flood level and non-habitable floors are no lower than the 1 in 100 year flood level. However, the fact that a development is designed to comply with the floor levels does not guarantee approval unless it can be demonstrated that there will be no adverse impact on overland flow paths.*

In this case, the habitable floor area has been set at **RL 24.27 & RL 22.65** at the front of the proposed dwelling which is more than 500mm above the 1 in 100 year ARI estimated flood level adjacent to that location of the building.

The proposed cabana at the rear of the property is set **RL22.23** which is set at more than 500mm above the 1 in 100 year ARI flood level which is at **RL 21.60**

Therefore, this item is considered to be satisfied.

7.0 Guidelines

7.1 Building Work.

Requirements: *Where an existing dwelling is demolished and a new dwelling proposed, the following shall apply:*

- (a) *Where the overland flow path is along the block (from front to rear or rear to front) the building shall be set back at least 3m from the boundary on the low side of the block to allow an overland flow path. The new building should have a footprint no bigger than the building it replaces.*
- (b) *Where the overland flow path is across the block (from side to side) the new building shall be no bigger than the footprint of the existing building.*

In this case, the mainstream flooding flows across the block from side to side parallel to Long Street. The majority of flood water travels along Long Street, which is not affected by the proposed development.

In addition, for the flow of water that travels across the rear yard. The area provided for water flow in the rear yard is considered similar in width to what was available in the pre-development case with the existing dwelling and garage in place. Therefore, it could be considered that the space available for the flow of water is similar for both the pre-development and the post development case. This is consistent with the requirements of item (b) above.

Therefore, this item is considered to be satisfied.

7.2 Garages and Carports.

Requirements: *Garages may be incorporated in the front of the dwelling house where the floor level of the garage is not more than 500mm above ground level measured on the street frontage.*

- (1) Any ramp giving access to the garage must be at a minimum slope of 1 in 5 and be not longer than 50% of the building setback distance.*
- (2) No alterations of the ground levels shall be permitted outside the ramp*
- (3) The ramp shall be piped at ground level to facilitate overland flow path.*

In this case, the crest for the proposed ramp is set at **RL22.69** which is 500mm above the 1 in 100 year flood level located at the front boundary at **RL22.19**. No filling is proposed outside the ramp area.

Therefore, this item is considered to be satisfied.

8.0 Swimming Pools.

Requirements: *Swimming pools must be located where possible out of the direct line of the overland flow path and to be not more than 200mm above the ground level. Swimming pool pumps should be located in an existing outbuilding so that the pump and all electrical connections are above the 1 in 100 year flood level.*

In this case, it is proposed to provide a swimming pool at the rear of the property. The top of the pool is located at 200mm above the ground level. The pool pumps, equipment and electrical connections will be provided at the rear of the proposed cabana at **RL21.70** which is 100mm above the 1 in 100 year flood level located at the rear of the property which is at **RL21.60**.

Therefore, this item is considered to be satisfied.

9.0 Fencing.

Requirements: *All fencing and gates across driveways shall be designed so as not to impede the overland flow path. As a guide, fences should be of an open type at least from ground level to the flood height. Consideration may be given to fencing being hinged providing the hinge opens in the direction of water flow and there are no structures, including plants, trees or garden beds, which would impede such opening.*

In this case, all gates or fences that are proposed to be located perpendicular to the flow path which is running from side to side of the subject property are to be open type bar fence from the ground level to the 1 in 100 year ARI flood level.

Any existing fencing along the rear boundary that are running parallel to the flow of water could stay as is, as the rear fence is not located against the direction of the water flow.

Therefore, this item is considered to be satisfied.

10.0 Building Components & Structural Soundness.

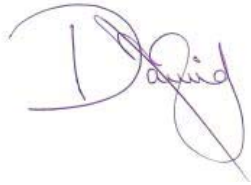
The proposed habitable floors are set to be 500mm above the 1 in 100 year ARI flood level. All building components below this level are to be all weather materials comprising of bricks and concrete to structural engineering details. In addition, the proposed buildings are subject to a structural engineer design to ensure it could withstand the force of flood water.

It is also likely that council will provide DA consent conditions for this item to be included in the CC documentation. It is also required that all electrical installations (eg: air-conditioning, hot water units) and gas meters to be located above the 1 in 100 year ARI flood level plus 500mm freeboard.

11.0 Conclusion

It is concluded from the above assessment that the proposed developments on 46 Long Street., Strathfield generally comply with the requirements provided in council Interim Flood Prone Lands Policy and Council Pre-DA letter dated 3rd September 2021.

Provided on behalf of
John Romanous & Associates Pty. Ltd.



David M. Romanous
B.E. MIEAust. CPEng. NER.
Registered Civil Engineering Certifier BDC 0805

Appendix A: Council Pre-DA letter



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3 September 2021

File No: Pre-DA 2021/17
Contact: Gary Choice

Blu Print Designs Pty Ltd
C/- Anthony Charbel
Unit 15 / 43-53 Bridge Road
STANMORE NSW 2048

Dear Sir/Madam,

RE: Pre-development Application Meeting
Pre-DA Reference: Pre-DA 2021/17

ADDRESS: 46 Long Street STRATHFIELD
TITLE: Lot: 109 DP: 746
PROPOSAL: Demolition of existing structures, to construct a two storey dwelling over basement with swimming pool and outbuilding.

This letter provides a record of the pre-development application meeting held by Strathfield Council (online via Microsoft Teams) with regard to the above proposal for a low density residential development at No.46 Long Street, Strathfield.

Attendees for Applicant	Attendees for Council
Anthony Charbel – Blu Print Design (AC) David Romanous – Hydraulic Engineer (DR) Peter Zalloua – Client (PZ) Benny Li – Client (BL)	Louise Gibson – Senior Planner (LG) Gary Choice – Planner (GC)

Points of Discussion

1. Introduction

GC mentioned that Council's pre-DA process did not provide an authoritative statement as to the likely outcome of an application. A decision can only be made following the lodgment of a Development Application (DA) and completion of the assessment process.

The purpose of the pre-DA process and this advisory letter is to provide a summary of the primary issues discussed at the meeting as well as information that will assist you (The Applicant) in completing a DA. Any future DA will need to be supported by a Statement of Environmental Effects addressing all relevant planning considerations under the *Environmental Planning and Assessment Act 1979* (the 'Act'). This includes provisions under the relevant Environmental Planning Instruments and detailed planning requirements and controls contained under Council policy, including the Strathfield Local Environmental Plan 2012 (SLEP 2012) and Strathfield Consolidated Development Control Plan 2005 (SCDCP 2005).

2. Site Description

The subject site comprises a single rectangular-shaped allotment, legally described as Lot: 109 in DP: 746. The site is located on the southern side of a Long Street (east of Homebush Road). The site has a total frontage of 15.24m, a maximum depth of 50.8m and an area of 774.2m². Existing development of the subject site comprises a single-storey brick dwelling and single detached brick garage. The dwelling occupies much of the northern bounds of the site, however the majority of the site is landscaped including more than 250 metres of deep soil lawn in the rear yard.

Development in the immediate context comprises a mix of single-storey and two-storey brick dwellings. Pitched and hipped roofs are a prevailing feature of the Long Street streetscape, as are low set masonry fences and open construction fences with a variety of decorative metalwork features. There is a small number of modern flat-roof dwellings in the street of a similar design to the proposed dwelling.

Comments on the Proposal:

The following comments are provided with respect to the concept plans and documentation provided as part of your pre-development application.

3. Assessment Methodology

Any future DA will be assessed against any applicable provisions of the following environmental planning instruments, development control plans and codes, in particular:

- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55);
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
- State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017
- Strathfield Local Environmental Plan 2012 (SLEP 2012);
- Strathfield Consolidated Development Control Plan 2005 (SCDCP 2005):
 - Part A - Dwelling Houses and Ancillary Structures;
 - Part H – Waste Minimisation and Management;
 - Part I - Provision of Off-street Parking;

- Part O - Tree Management; and
- Strathfield Stormwater Management Code.

It is noted in the Applicant's covering letter identifies the following matters for discussion at the Pre-DA meeting:

- i. *To confirm the northern underground council stormwater main (that transverses the site from east to west) is inactive and can be removed.*
- ii. *To confirm the connection point for stormwater from the building, into either the western or southern underground council stormwater main.*
- iii. *To confirm the Flood Planning Levels for the site.*
- iv. *To confirm a 300mm flood freeboard level to the basement driveway ramp above the Flood Planning level.*
- v. *To confirm the general planning non-compliance that are a direct result due to compliance with the Flood Planning Level; floor space ratio, parapet wall height, external wall, storey height control, and outbuilding height controls.*

4. Stormwater and Flooding

Council records indicate a stormwater drainage easements along the western boundary and crossing the rear yard of the site, which may be affected by the proposal.

The subject application was referred to Council's Development Engineer whom provided the following comments:

'...in accordance with section 4.7 of Council stormwater management code, stormwater drainage concept plan will be required when lodging development application demonstrating feasibility of the proposed drainage system within the site and connection to Council's system. Concept plan is also to show surface flow path treatment, extent of roof and paved areas, any easements required, on-site detention storages as well as existing and proposed piped systems. Subject is affected by overland flow of stormwater of the 1 in 100yr ARI storm event in accordance with Cooks River and Cocks Creek flood study. Flood impact assessment report in accordance with Council Interim Flood Prone Land Policy will be required.'

GC noted that the submitted *Stormwater and Sewer Location Report* mentioned links to CCTV footage of the asset. GC also acknowledged that the Applicant had made clear that pre-

lodgement advice on the northern underground Council stormwater main (that transverses the site from east to west) was one of the key motivations for lodging a formal Pre-DA application. It was recommended that the CCTV footage be provided to the Assessing Officer (GC) and efforts would be made to provide more information on the Council asset prior to lodgement of any DA.

It is noted that AC has since submitted the said CCTV footage files via e-mail to GC (3 September 2021), and this information has been forwarded to Council's Development Engineer and Manager of Construction and Maintenance to help with assessing the condition of the asset to assist to inform any required amendments to the proposed development design.

NOTE: Due to NSW government Health Order following the COVID-19 outbreak in greater Sydney, travel restrictions may prevent Council Officers from visiting the site and/or providing additional comments immediately. Should you wish to lodge a Development Application before receiving any additional comments from the Council team, all information including the subject CCTV footage should be lodged with the application, and amendments to the development design may be required following a preliminary assessment of the said DA.

Strathfield Local Environmental Plan 2012

5. Permissibility

The site is within the R2 – Low Density Residential, pursuant of the provisions contained in the SLEP 2012. **Dwelling Houses** are a permissible form of development within this zone, with development consent from Council.

The proposal is defined by the Applicant as a Dwelling House which constitutes a permissible development only with development consent, however, an assessment of the proposed cabana with gym, sauna, bathroom, lounge area and kitchenette is capable of being utilised as a self-contained secondary dwelling.

To support this claim, the following comments are provided:

The SLEP 2012 defines secondary dwelling as a self-contained dwelling that:

- (a) *is established in conjunction with another dwelling (the principal dwelling), and*
- (b) *is on the same lot of land as the principal dwelling, and*
- (c) *is located within, or is attached to, or is separate from, the principal dwelling.*

With regard to the notion of 'self-contained', it is noted that the Macquarie Dictionary (2021) defines self-contained as:

1. *containing in oneself or itself all that is necessary; independent.*

2. *(of a flat or house) having its own kitchen, bathroom, and lavatory; not necessitating sharing.*

Reference: Macquarie Dictionary Publishers (2021)

Based on the abovementioned definition, the floor plan of the proposed cabana is such that this combined area can be utilised independently.

Any DA for a proposed development as such must seek consent for a secondary dwelling or consent cannot be granted as per Section 4.12 of the EP&A Act 1979.

6. Floor Space Ratio (FSR)

Clause 4.4C of the SLEP 2012 provides a maximum floor space ratio (FSR) for the 774.2 m² site of 0.575:1 (445.2m²). You are advised that the gross floor area (GFA) and FSR are calculated using the following definition:

“Gross floor area” means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor, and includes:

- (a) the area of a mezzanine, and*
- (b) habitable rooms in a basement or an attic, and*
- (c) any shop, auditorium, cinema, and the like, in a basement or attic,*

but excludes:

- (d) any area for common vertical circulation, such as lifts and stairs, and*
- (e) any basement:*
 - (i) storage, and*
 - (ii) vehicular access, loading areas, garbage and services, and*
- (f) plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and*
- (g) car parking to meet any requirements of the consent authority (including access to that car parking), and*

- (h) any space used for the loading or unloading of goods (including access to it), and*
- (i) terraces and balconies with outer walls less than 1.4 metres high, and*
- (j) voids above a floor at the level of a storey or storey above.”*

According to Part A Section 8.2.3 of the SCDP 2005, where the maximum height of the basement exceeds 1m above natural ground level (NGL) it will be considered a storey and included in the FSR calculation of the dwelling. The proposal seeks a maximum basement height of 1.2m above NGL, subsequently the basement area excluding floor area needed to satisfy car parking requirements has been included in the GFA calculation resulting in a non-compliant FSR of 0.64:1 (63.3%) (489.7m).

GC commented that an amended design must demonstrate compliance with Clause 4.4C and – given basements are discretionary in flood affected areas - the removal of the basement ‘Cinema’ and ‘Bath’ areas should achieve a more appropriate design and compliant FSR. It is advisable that GFA and FSR compliance diagrams are submitted as part of the DA package.

Strathfield Consolidated Development Control Plan 2005

7. Part A – Dwelling Houses and Ancillary Structures

(a) Building Design

- i. The maximum height to the top of parapet for flat roofed dwelling houses is to be 7.8m. The proposed non-compliant parapet height for the new dwelling is a minimum 8.6m and does not comply. A DA proposal for such a building height shall be assessed on its merits.
- ii. The maximum height of the parapet wall for flat roofed dwellings is to be 0.6m above the uppermost ceiling levels. A DA proposal for such a non-compliant height of 1.3m shall be assessed on its merits.

(b) Landscaping and Tree Protection

- i. The proposed development requires a minimum landscaped area of 43% (332.9m²) of the total 774.2m² site area. An assessment of calculable landscaping area totals 224.7m² or 41.5%. Given the size of the site, it is considered the minimum 43% can be achieved with an amended design.
- ii. Aerial photographic images of the subject site show significant vegetation on adjoining properties. An Arboricultural Impact Assessment Report prepared by an

AQF Level 5 Arborist may be required pending a preliminary assessment of any future DA by Council's Tree Coordinator.

- iii. Additional deep soil area should be considered to create opportunities for planting new canopy trees within the front setback
- iv. At least one (1) canopy tree should be provided in the rear yard.

(c) Fencing

- i. Fencing forward of the front building line shall not exceed 1.5m. Solid components shall not exceed 0.7m above NGL with the exception of brick piers. Consideration should also be given to appropriate fencing design to manage overland surface flows on the flood affected site.

(d) Visual Privacy

- i. The elevated alfresco area will require privacy screening measures to prevent overlooking into adjoining properties.
- ii. SCDCP controls require rear balconies to be no more than 1m (depth) x 2m (length) if the balcony does not unreasonably impact on adjoining premises. Given the size of the dwelling, the approximate 6 metre balcony length as proposed may require a reduction to prevent significant overlooking into adjoining properties.

(e) Outbuildings

- i. The gross floor area of the proposed cabana is calculated at 54m and should be reduced to comply with the maximum 40m² for new garden sheds, studios, cabanas and the like.

Any future DA must address the above matters raised.

(f) Additional Advice

- The proposal must comply with the provisions, development standards and requirements under the SLEP 2012, SCDCP 2005, the National Construction Code and Council's Stormwater Management Code.
- Council's controls and policies may be viewed at:
<http://www.strathfield.nsw.gov.au/page/planning-and-development/controls-and-policies/>

- Plans shall be prepared to an appropriate scale of 1:100 or 1:200 based on Australian Height Datum (AHD) and clearly identify natural ground level (NGL).
- Reference should be made to the checklist within the Development Application Form available from <http://www.strathfield.nsw.gov.au/page/planning-and-development/application-forms---planning---development/> in order to ensure that all plans and documentation required for submission have been prepared.

Council supports quality, well considered development and the comments provided above are intended to help you work toward this outcome. Council cannot support the proposal in its current form as it fails to demonstrate planning merit against critical considerations under the “Act” and further information and re-design is required to address the above matters and issues raised.

Please note that no Pre-DA meeting can provide an authoritative statement as to the likely outcome of an application. A determination can only be made following the lodgement of a Development Application and the completion of the assessment process.

Relevant documentation including Development Application forms are available from Council’s website www.strathfield.nsw.gov.au or the Customer Service Unit on 9748 9999. Please provide a copy of this letter upon lodgement of a Development Application for the proposal.

Please do not hesitate to contact me should you wish to discuss the contents of this letter or if you require any further clarification.

Yours faithfully,



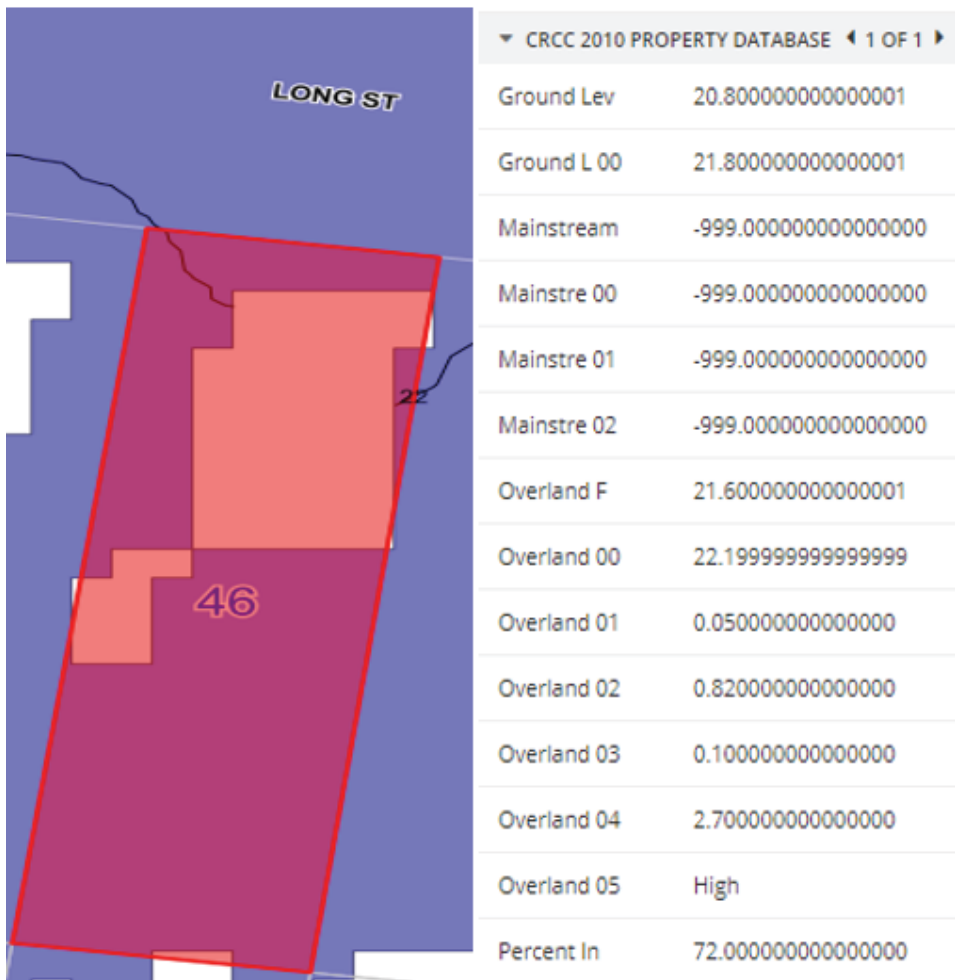
Gary Choice
Planner

Appendix B: Council 1 in 100 Year Flood Plan and Levels

Subject: RE: 46 Long Street, Strathfield (Flood Level)
Date: Tuesday, 15 June 2021 at 5:52:37 pm Australian Eastern Standard Time
From: Samuel Lujang
To: david@jra.net.au
CC: 'peter zalloua', Anthony Charbel
Attachments: image001.png, image002.jpg, image003.png, image005.png, image006.jpg, image007.jpg, image008.jpg

Hi David,

Contours on the plan are the 1 in 100yrs ARI flood levels. Flood plan below.



Front boundary is 22.19 AHDm and rear boundary is 21.6 AHDm.

You can interpolate between two contours for other levels in between.

Kind regards,



Samuel Lujang | Development Engineer
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www.strathfield.nsw.gov.au