CAR

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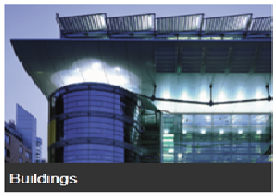
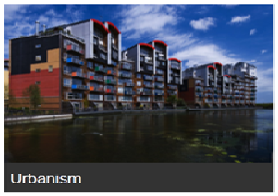
Basement Impact Assessment

6 Glenmore Road

London

NW3 4DB





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Report Contents

1.0 Introduction

The purpose of this report is to assess the potential impact of the basement proposals on neighbouring properties and the natural environment of the site.
The report is set out in accordance with the guidelines given in Camden Planning Guidance CPG4 - Basements and Lightwells.

Relevant maps and other figurative information given in Camden Geological, Hydrogeological and Hydrological Study have been referred to in this report.

2.0 Stage 1 - Screening

The following sections summarises the outcome of the screening review as identified in CPG4. The results are documented below.

2.01 The site

No 6 Glenmore Road is a mid-terrace Victorian property of traditional construction arranged over 3 storeys with partial basement located under the front portion of the building.

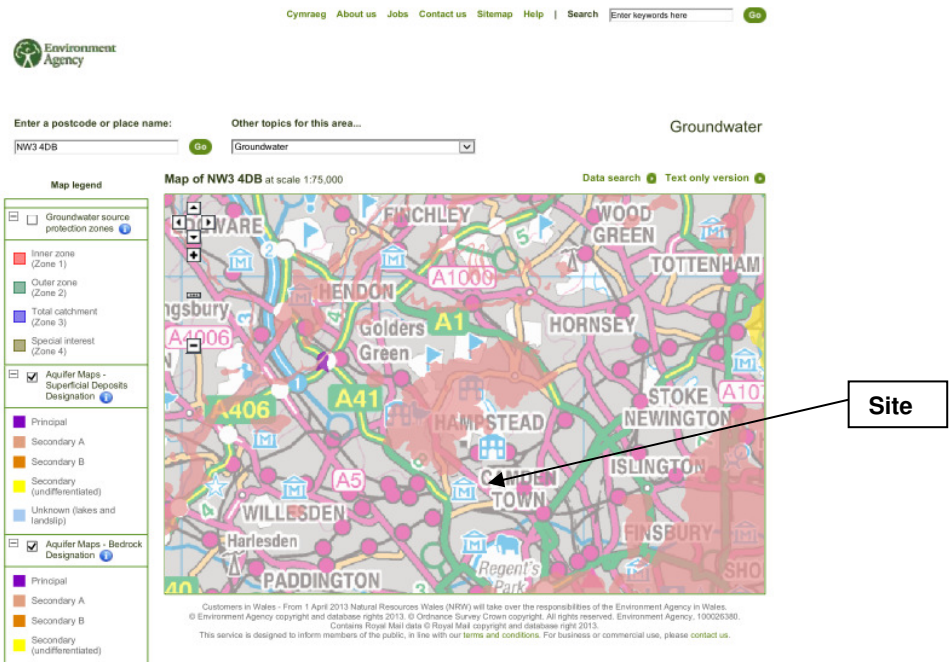
The building appears to be in reasonably good structural condition for its age.

There are a number of extended basements under neighbouring properties on the same side of the street.

2.02 SUBTERRANEAN (GROUND WATER) FLOW SCREENING FLOWCHART

Q1a: *Is the site located directly above an aquifer?*

A: No. The site is in London Clay which is classified as an unproductive aquifer. See extract from Environment Agency map below.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Environment Agency
Enter a postcode or place name:
NW3 4DB
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Other topics for this area...
Groundwater
Groundwater
Map legend
Map of NW3 4DB at scale 1:75,000
Data search
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Groundwater source protection zones
Inner zone (Zone 1)
Outer zone (Zone 2)
Total catchment (Zone 3)
Special interest (Zone 4)
Aquifer Maps - Superficial Deposits Designation
Principal
Secondary A
Secondary B
Secondary (undifferentiated)
Unknown (lakes and landslip)
Aquifer Maps - Bedrock Designation
Principal
Secondary A
Secondary B
Secondary (undifferentiated)
FINCHLEY
WOOD GREEN
TOTTENHAM
HENDON
Golders Green
HORNSEY
STOKE NEWINGTON
HAMPSTEAD
ISLINGTON
WILLESDEN
FINSBURY
Harlesden
PADDINGTON
Regent's Park
A1
A41
A5
A406
A1000
A10
Site
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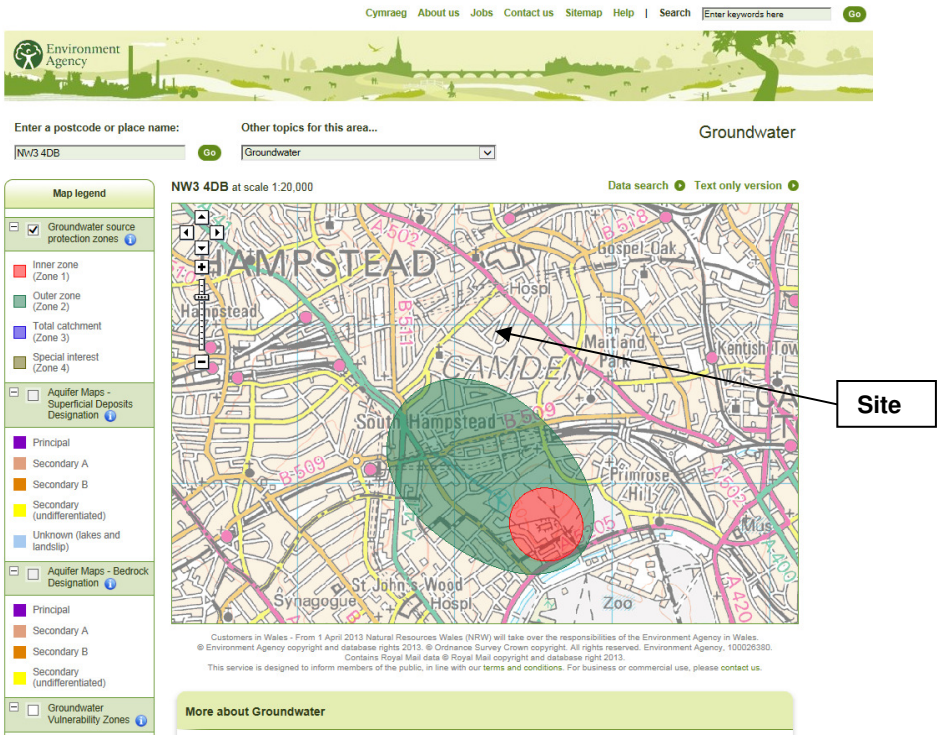
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Groundwater Vulnerability Zones
HAMPSTEAD
Gospel Oak
Hampstead
Hospl
Maitland Park
Kentish Tow
CAMDEN
South Hampstead
Primrose Hill
St John's Wood Hospl
Synagogue
Zoo
B509
A502
A420
Site
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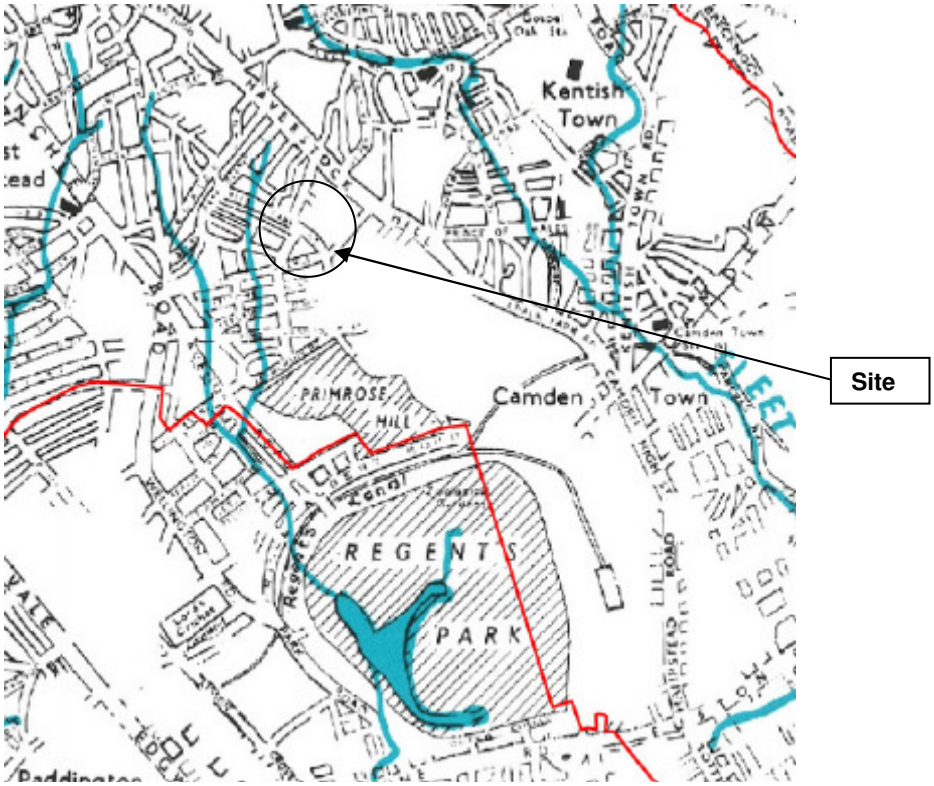
More about Groundwater

Q1b: *Will the proposed basement extend beneath the water table surface?*

A: No. A site specific borehole investigation was carried out. Minor seepage was encountered and classified as localise seepage within the Clay.

Q2: *Is the site within 100m of a watercourse, well (used / discussed) or potential spring line?*

A: No. See extract from Figure 11 below.



Extract from Figure 11 - Lost Rivers of London by Nicolas Barton

Q3: *Is the site within the catchment of the pond chains on Hampstead heath?*

A: No

Q4: *Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?*

A: No. The proposed basement is directly below an existing building.

Q5: *As part of the site drainage, will more surface water (e.g. rainfall and run-off) than present be discharged to the ground (e.g. via soakaways and/or SUDS)?*

A: No.

Q6: *Is the lowest point of the excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath) or spring line.*

A: No

Non-technical summary - Subterranean (ground water) Flowchart

The result of the screening flowchart answers confirms that the proposed development will not alter the subterranean ground water flow.

2.03 SLOPE STABILITY SCREENING FLOWCHART

Q1: *Does the existing site includes slopes, natural or manmade, greater than 7° (approximately 1 in 8)?*

A: No. The site is sloping but the gradient of the slope is less than 7°. Reference has been made to Figure 16 of the Camden Geological, Hydrogeological and Hydrological Study

Q2: *Will the proposed re-profiling of landscaping at site change slopes at the property boundary more than 7° (approximately 1 in 8)?*

A: No

Q3: *Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7° (approximately 1 in 8)?*

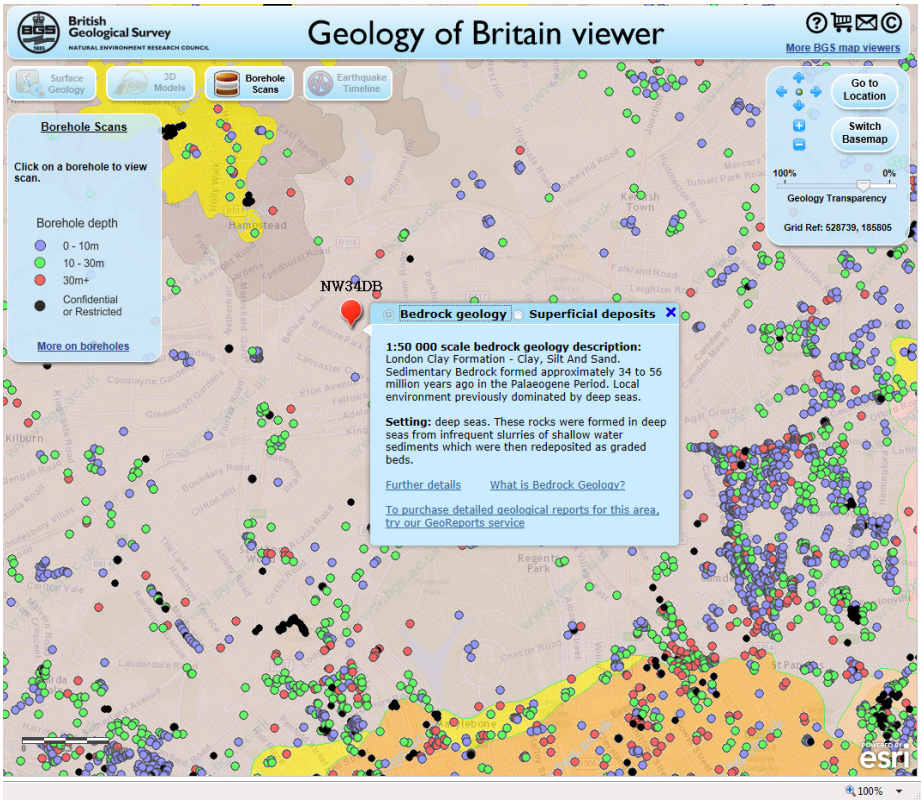
A: No

Q4: *Is the site within a wider hillside setting in which the general slope is greater than 7° (approximately 1 in 8)?*

A: No

Q5: *Is the London Clay the shallowest strata at the site?*

A: Yes. See extract from British Geological Survey maps. Also a site specific borehole confirms London Clay strata.



Extract from British Geological Survey Database

Q6: *Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?*

A: No.

Q7: *Is there a history of seasonal shrink-swell subsidence in the local area, and /or evidence of such effects at the site?*

A: No

Q8: *Is the site within 100m of a watercourse or potential spring line?*

A: No

Q9: *Is the site within an area of previously worked ground?*

A: No. A review of historic maps did not indicate previous pits or workings.

Q10: *Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?*

A: No.

Q11: *Is the site within 50m of the Hampstead Heath ponds?*

A: No

Q12: *Is the site within 5m of a highway or pedestrian right of way?*

A: Yes. The wall of the proposed light well will be designed as a retaining wall to the pedestrian footpath.

Q13: *Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?*

A: Yes.

Q14: *Is the site over (or within the exclusion zone of) any tunnels or railway lines?*

A: No.

Non-technical summary - Slope Stability Screening Flowchart

The results of the slope stability flowchart confirm that the ground is susceptible to shrink swell movement. It also identified that the front wall of the light well is within 5m of a highway, and the depth of foundations to neighbouring properties will be increased.

2.04 SURFACE FLOW AND FLOODING SCREENING FLOWCHART

Q1: *Is the site within the catchment of the pond chains on Hampstead Heath?*

A: No

Q2: *As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?*

A: No.

Q3: *Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?*

A: No

Q4: *Will the proposed basement development result in changes to the profile of inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourses?*

A: No. There will be no change to the existing inflows of surface water being received by adjacent properties.

Q5: *Will the proposed basement development result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?*

A: No. Materials used are inert in their nature and will not affect surface water quality.

Q6: *Is the site in an area identified to have surface water flood risk according to either the Local Flood Risk management Strategy or the Strategic Flood Risk Assessment or is it at risk from flooding, for example because the proposed basement is below the static water level of nearby surface water feature?*

A: No. see Figure below. Also Glenmore Road is not listed in the list of Streets at risk of surface water flooding included in CPG4.

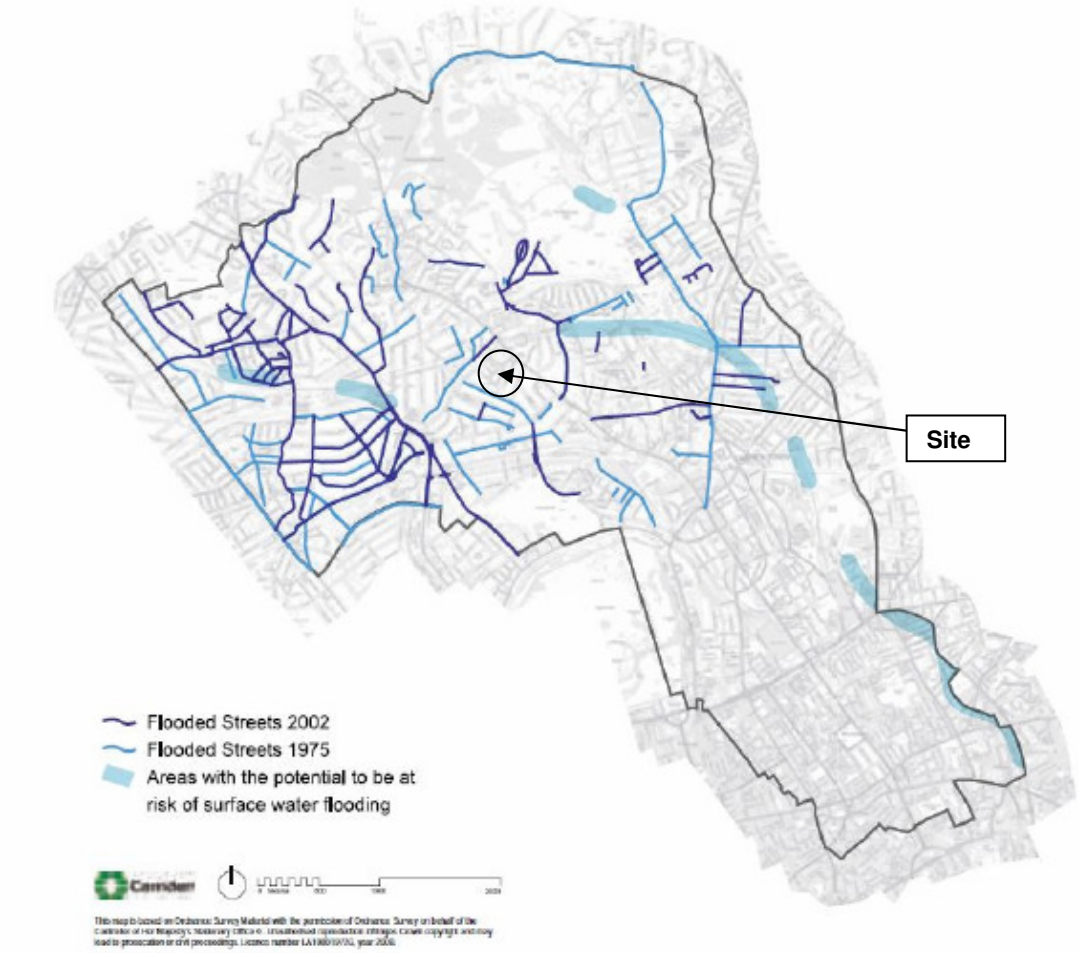


Figure 5 from Core Strategy, London Borough of Camden

Camden Geological, Hydrogeological and Hydrological Study
Flood Map

213923 FIGURE **15**

Non-technical summary - Surface Flow and Flooding Screening Flowchart

Based on the above flowchart answers, there is no adverse effect or change to existing surface flow or flooding conditions.

3.0 Stage 2 - Scoping

The screening stage (Stage 1) identified the following issues that need to be assessed.

3.01 SUBTERRANEAN (GROUND WATER) FLOW SCREENING FLOWCHART

A site specific borehole was excavated to verify ground and groundwater conditions. A minor groundwater strike was recorded in the London Clay at a depth below the level of the proposed basement.

3.02 SLOPE STABILITY SCREENING FLOWCHART

Screening identified the following items that need to be assessed.

Q5: *Is the London Clay the shallowest strata at the site?*

A: Yes. See extract from British Geological Survey maps. Also a site specific borehole confirms London Clay strata. Refer to data included in the report prepared by Chartered Geologist - Brown 2 Green Associates Ltd.

Q7: *Is there a history of seasonal shrink-swell subsidence in the local area, and /or evidence of such effects at the site?*

A: No

Q12: *Is the site within 5m of a highway or pedestrian right of way?*

A: Yes. The wall of the proposed light well extends to the back of the pavement and is less than 0.5m away from the public highway.

The wall will be designed as a retaining wall subject to the required surcharge loads from Highway Loading.

The front wall of the main basement is approx. 1m away from the public highway.

Q13: *Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?*

A: Yes. The walls on all sides of the building will need to be underpinned to suit the proposed levels of the basement extension.

The thickness of reinforced underpinning will be designed to provide the required capacity for the imposed vertical loads, lateral earth pressures and to suit allowable ground bearing pressures.

Refer to Jampel Davidson & Bell Basement Impact Structural Assessment for an assessment of the effects of ground movement on the adjoining buildings. This anticipates slight damage Category 2 in accordance with Burland et al.

3.03 SURFACE FLOW AND FLOODING SCREENING FLOWCHART

No items were identified that require further assessment as part of the screening stage.

4.0 Stage 3 - Site Investigation and study

A site specific ground investigation was undertaken under the guidance of Chartered Geologist from Brown 2 Green Associates Ltd.

The investigation consisted of a single borehole to a depth of 5.0m bgl. Details of the borehole and laboratory tests undertaken are included in the SI report.

In summary, the ground conditions consist of a layer of Made Ground over firm to stiff London Clay.

4.01 Existing sub-structure and Foundations

From our experience of other similar buildings on the street we would expect that the existing foundations will consist of corbelled brick footing bearing directly onto the Clay strata.

The existing ground floor is a suspended timber floor supported on a series of brickwork sleeper walls.

The existing cellar has solid brickwork walls and a concrete ground bearing slab.

4.02 Proposed Development

Details of the proposed basement development are illustrated on Patrick Minns Architects drawings and Jampel Davidson & Bell drawings, report and calculations.

The development of the basement in terms of ground works will consist of the following:

- Slight lowering of the existing basement level under the front portion of the building,
- A single storey extension to the basement beneath the rear portion of the building

The assumed sequence of construction is indicated on the structural drawings included in Appendix 3.

4.03 Topography

The site is located on a sloping site and is in the middle of a row of terrace houses. There is a partial basement under the property on the downward section of the slope.

The proposed basement extension is under the footprint of the building and therefore will not affect the surrounding topography.

4.04 Drainage - surface water

The proposed basement development is within the footprint of the building or existing hard landscaping. Therefore there the surface water runoff from the property will not be increased.

4.05 Flooding

Based on the appropriate checks as part of the Stage 1 screening, there is no perceived risk of flooding of the site.

4.06 Geology
The geology on the site consists of Made Ground over firm to stiff Clay.

Ground Investigation was undertaken by Brown 2 Green Associates Ltd.

5.0 Conclusions

Based on the existing site conditions and our assessment of the likely building damage, it is concluded that the proposed basement development will not adversely impact on neighbouring properties and the natural environment of the site.

The key items assessed within this report are summarised as follows:

- Subterranean (ground water) flows - no adverse effect
- Slope stability - no adverse effect
- Flooding - no perceived risk of either localised flooding or within the surrounding area.
- Geology - a site specific investigation was undertaken. The underlying stratum is firm to stiff Clay which is suitable for basement developments of this size.
- Anticipated extent of structural damage - this has been categorised as category '2' - Slight in accordance with Burland et al.

The relevant geotechnical information contained within this report has been prepared by Mr Philip Miles BSc,MSc, FGS, CGeol who is a Chartered Geologist and Director of Brown 2 Green Associates Ltd.

Tyrone Bowen MEng CEng MIStructE
Director - Structural Engineering
CAR Ltd