TEMPLAR HOUSE

BASEMENT IMPACT SCREENING ASSESSMENT

JULY 2015

NORTHWOOD INVESTORS

ASTUDIO

Northwood Investors

Templar House

Basement Impact Assessment Screening Report

REP/237116/G003

Rev A | 15 July 2015

Job number 237116

Ove Arup & Partners Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

Document Verification

ARUP

Job title		Templar House		**Job number** 237116
Document title		Basement Impact Assessment Screening Report		**File reference** 60-1
Document ref		REP/237116/G003		
Revision	**Date**	**Filename**		
Draft 1	9 Jul 2015	**Description**	First draft	
			Prepared by	Checked by	Approved by
		Name	Sarah Glover	Dinesh Patel	Dinesh Patel
		Signature			
Issue	14 Jul 2015	**Filename**	BIA-Report-Issue.docx	
		Description	Issue	
			Prepared by	Checked by	Approved by
		Name	Sarah Glover	Sarah Glover	Dinesh Patel
		Signature			
Rev A	15 Jul 2015	**Filename**	BIA-Report-RevA.docx	
		Description	Minor comments from project team incorporated.	
			Prepared by	Checked by	Approved by
		Name	Sarah Glover	Sarah Glover	Dinesh Patel
		Signature	S Glover	S Glover	Dinesh Patel
		Filename		
		Description		
			Prepared by	Checked by	Approved by
		Name			
		Signature			
				Issue Document Verification with Document	✓

Contents

1 Introduction

Northwood Investors are proposing to redevelop the site of Templar House, on High Holborn in the south of the London Borough of Camden. Ove Arup and Partners Ltd (Arup) has been commissioned by Northwood Investors to provide multi-disciplinary design services to facilitate the redevelopment.

The redevelopment comprises demolition of a 1950s building, the existing 9-storey Templar House. It is proposed to replace the building with two new buildings, one with a residential end use and one with a commercial end use. The existing single story basement will be deepened by a maximum of 2m.

The objectives of this report are to demonstrate through a desktop screening exercise why in our opinion a full Basement Impact Assessment is not required to support a planning application for the proposed development. It has been produced with reference to the Camden Planning Guidance CPG4 and the associated Arup reports referenced therein.

This report has been prepared for the use of Northwood Investors in connection with the redevelopment of the site at 81-87 High Holborn and 24-27 Eagle Street, and takes account of their particular instructions and requirements. It is not intended for and should not be relied upon by any third party. Accordingly, any third party using this information for any purpose does so at their own risk and no responsibility is undertaken to any third party.

2 Origins and aims of Basement Impact Assessment

In order to address the increasing popularity of basements beneath residential properties and the associated risk to neighbouring properties, in 2010 the London Borough of Camden (Camden) introduced the need to carry out impact assessments for selected new developments with basements. The scope of a Basement Impact Assessment (BIA) is set out in Camden Planning Guidance Note CPG4. The CPG4 guidance is based on a 2010 study of the geology, hydrogeology and hydrology of the Camden area commissioned by Camden and carried out by Arup.

The Arup report's principal focus is the Hampstead Heath area of the borough which, over recent years, has seen a substantial increase in planning applications for residential basements and has had a high number of issues associated with those applications. The topography and geology of that area of the borough give rise to sensitive environmental and landscape features such as the Highgate and Hampstead pond chains, and also create a potential for land instability and local flooding to occur if the natural conditions are adversely disturbed. Smaller scale developments may not adequately consider the potential effects of basements and therefore CPG4 was developed to address that risk.

The BIA process requires developers to consider the potential impacts of their project on the surrounding environment in terms of changes to surface and sub-surface groundwater flow (flooding risk) and land stability. It also requires the developer to detail how the basement will be constructed and demonstrate that damage to any neighbouring buildings, structures and/or utilities will be reduced to an acceptable level. These processes would normally occur during the design development of larger schemes but may not be so thoroughly considered for smaller schemes.

CPG4 was also intended to apply to smaller developments where the design team in place at planning stage, may have lacked the necessary skills and technical knowledge to consider the impact of basements on neighbours; for larger schemes the developer already has a "quality" design team who would automatically consider the technical issues embodied in CPG4, but post planning.

For the reasons articulated later in this report, we do not believe it is appropriate for a basement impact assessment to be undertaken for the proposed redevelopment of Templar House.

3 Proposed Templar House redevelopment

3.1 Proposed development

Located on High Holborn, in the south of the borough, the existing Templar House is a 9-storey office building with a single level site wide basement. Construction of the building was completed in 1959. The proposed redevelopment comprises demolition of the existing building and construction of a new mixed use development. The existing basement will be deepened by a modest amount of up to 2m.

Proposed new basement levels are +20.430mOD beneath the residential building and +19.300 beneath the commercial building. The basement slab is expected to be 500mm thick.

The site is currently covered in hard landscaping over a site wide, single level basement. Landscaping and drainage proposals for the new development are intended to update and improve but not to materially alter the current provision.

3.2 Topography and ground conditions

A desk study has been carried out, pre-planning to understand the ground risks from basement construction (Arup, December 2014).

The site topography comprises a very gentle slope from north to south, with the ground level on Eagle Street being approximately 1m higher than on High Holborn. The risk of a modest increase in basement depth causing slope stability issues is therefore considered negligible.

Ground conditions for the site have been assessed using borehole information for nearby sites including a borehole for the Crossrail scheme located close to the site in Eagle Street. This shows the site geology to comprise of 6.5m of made ground and river terrace deposits underlain by London Clay. The groundwater level at the site is expected to lie within the river terrace deposits, at 4-5m below ground level. A site specific ground investigation will be carried out for the site post-planning, however, it is considered there is sufficient information from nearby sites to adequately assess the ground conditions for planning purposes.

At its maximum level of approximately +19mOD, the proposed basement will penetrate the groundwater table by no more than 1m. Additionally, the basement is not expected to penetrate the London Clay stratum. Based on the anticipated ground and groundwater conditions, this modest increase in basement depth would not be expected to materially change the subterranean groundwater conditions at the site and in the surrounding areas.

3.3 Neighbouring buildings and structures

Templar House is bounded by 4 No. neighbouring buildings:

- to the west: 90 High Holborn constructed in 2000s;
- to the East: 79-80 High Holborn and 72-75 Red Lion Street (both pre-WWII buildings) and 38-34 Eagle Street (constructed post WWII).

To the north and south, the site is bounded by highways, Eagle Street and High Holborn respectively.

Additionally, twin tunnels of the London Underground Central Line are located beneath High Holborn, within 5m of the site on plan. Consultation with LUL is in progress to demonstrate that the development works will have an acceptable impact on LUL's assets.

Design and construction of the redevelopment works will take due consideration of the neighbouring buildings. Construction methods will be planned with the objective of not exceeding Category 2 "slight" damage as defined by Burland and as referred to in CPG4.

It is envisaged the basement excavation will take place within an embedded piled retaining wall (contiguous or secant, as appropriate) with propping as required to limit wall deflections to an acceptable level. Ground movement assessments will be carried out and a monitoring regime will be developed to ensure the construction works are adequately controlled. The limits on ground movements and building damage will be captured within the construction specifications and drawings to ensure an appropriate level of care is taken by the contractor.

Liaison with third parties will be formalised through the party wall approvals process for the four neighbouring buildings and through the planning process for the LUL Central Line tunnels.

4 Screening: Opinion on need for Basement Impact Assessment

The BIA process was introduced primarily to ensure responsible basement development in the northern areas of the borough, where the cumulative effects of small scale residential basement construction, by inappropriately experienced design and construction teams, could potentially have a damaging effect on the sensitive ground conditions in the area. The proposed Templar House redevelopment is located in the least sensitive southern area of the borough and, as such, is considered very unlikely to have a detrimental effect on the existing ground and groundwater conditions.

Construction of the modest depth basement will utilise an embedded retaining wall and will be propped as necessary to minimise damage to neighbouring buildings. This will be carefully controlled and captured in the construction documents for the development. Control of construction and its potential impact on neighbouring buildings will be formalised via the party wall approvals process. Liaison with LUL is already underway to ensure acceptable impact on the LUL tunnels in the vicinity.

A high quality architectural and multiple design consultancy team has been appointed by the client for this project.

With reference to the screening criteria presented in CPG4, the redevelopment is considered to be at very low risk of impact for the three criteria considered:

- *Groundwater flow:* Even at its lowest level, the basement will be founded within the Terrace Gravel stratum and may penetrate the groundwater table, but by no more than 1m. This small increase in basement depth is considered very unlikely to cause a significant change in groundwater flow in the surrounding areas.
- *Land stability:* There are no significant slopes either on the site or in the surrounding areas. Design and construction of the modest depth basement excavation will provide adequate support to the neighbouring buildings and highways, as described above.
- *Surface water flow and flooding:* The proposed development will not materially change the existing surface water flows or drainage of the site.

Based on the above, it is not considered that further assessment, or submission of a formal BIA is required for this development. This is because it is very low risk in terms of potential for damage to the subterranean environment and there are already adequate controls in place to ensure responsible basement design and construction to manage the impacts on third party structures.

5 Conclusion

The proposed redevelopment of Templar House will involve deepening the existing basement by a modest amount of up to 2m. The need for a Basement Impact Assessment to support a planning application for the redevelopment has been considered with reference to the Camden Planning Guidance CPG4 and is not in our professional opinion necessary for this development.

With reference to the screening criteria presented in CPG4, the redevelopment is considered to be at very low risk of impact for the three key criteria considered:

- *Groundwater flow:* Even at its lowest level, the basement will be founded within the Terrace Gravel stratum and may penetrate the groundwater table, but by no more than 1m. This small increase in basement depth is considered very unlikely to cause a significant change in groundwater flow in the surrounding areas.
- *Land stability:* There are no significant slopes either on the site or in the surrounding areas. Design and construction of the modest depth basement excavation will provide adequate support to the neighbouring buildings and highways.
- *Surface water flow and flooding:* The proposed development will not materially change the existing surface water flows or drainage of the site.

In our professional opinion, and as authors of the report on which the CPG4 guidance is based, the Templar House redevelopment does not require a BIA to support a planning application. It is located in the least sensitive area of the borough in terms of topography, geology and groundwater conditions and involves a modest basement depth increase of no more than 2m. Construction methods are being developed under the party wall and LU approvals processes to ensure that impacts on third party structures are responsibly managed.

6 References

[1] Arup, “Camden geological, hydrogeological and hydrological study. Guidance for subterranean development”, November 2010.

[2] Arup, “Templar House. Geotechnical Desk Study”, December 2014.

[3] London Borough of Camden, “Camden Planning Guidance 4. Basements and Lightwells”, September 2013.

[4] London Borough of Camden, “Camden Development Policies 2010-2025”.