

**6-10 Cambridge Terrace &
1-2 Chester Gate
London NW1**

**Basement Impact Assessment
Audit**

For

London Borough of Camden

Project Number: 12066-08

Rev: F1

July 2015

Campbell Reith Hill LLP
Friars Bridge Court
41-45 Blackfriars Road
London
SE1 8NZ

T: +44 (0)20 7340 1700
F: +44 (0)20 7340 1777
E: london@campbellreith.com
W: www.campbellreith.com

Document History and Status

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
D1	July 2015	Comment	AJMt12066-08-080715-D1.doc	A Marlow	A Marlow	E Brown
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F1	July 2015	Final for planning	AJMt12066-08-310715-F1.doc	A Marlow	A Marlow	E Brown

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Document Details

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Path	AJMt12066-08-310715-F1.doc
Author	A J Marlow, BSc CEng MStructE FConSE
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	12066-08
Project Name	6-10 Cambridge Terrace & 1-2 Chester Gate, London NW1
Planning Reference	2015/1340/P

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1.0 NON-TECHNICAL SUMMARY

- 1.1. Although the BIA summary document has been produced by an individual not possessing an acceptable qualification, the supporting technical documents have been produced by individuals who do possess suitable qualifications.
- 1.2. The documents have confirmed that the proposed basement will be located within the London Clay and that the surrounding slopes are stable.
- 1.3. The proposed basement is unlikely to further obstruct any potential superficial water flow across the site.
- 1.4. The proposals will not significantly alter the area of hard surfaces and paved areas and hence the quantity of local rainfall entering the existing sewer system.
- 1.5. Although Environment Agency surface water maps indicate that the Outer Circle and its adjacent access road may flood, the development property appears safe from flooding due to the ground sloping up to the front of the main house. Measures may be necessary to protect the rear of the property.
- 1.6. A ground movement assessment suggested that very slight damage may be caused to No. 5 Cambridge Terrace with negligible damage caused to No. 1 Cambridge Terrace Mews, although clarification of the assumptions was sought as described in Section 4 and Appendix 2. These clarifications were received and confirm the damage assessment to be reasonable. Monitoring proposals to surrounding walls during excavation and construction have been presented.
- 1.7. It is anticipated that perched water within the Made Ground, above the London Clay, may require sump pumping during construction and care should be taken to ensure that fine soils are not removed with the groundwater.
- 1.8. The proposed basement development will not affect the hydrogeology of the area.
- 1.9. There are no outstanding queries with respect to the BIA.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 14 May 2015 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Nos. 6-10 Cambridge Terrace and 1-2 Chester Gate, Camden Reference 2015/1340/P.
- 2.2. The Audit was carried out in accordance with the Terms of Reference set by LBC. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.
- 2.3. A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within
- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
 - Camden Planning Guidance (CPG) 4: Basements and Lightwells.
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water
- 2.4. The BIA should demonstrate that schemes:
- a) maintain the structural stability of the building and neighbouring properties;
 - b) avoid adversely affecting drainage and run off or causing other damage to the water environment; and,
 - c) avoid cumulative impacts upon structural stability or the water environment in the local area.

and evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.

- 2.5. LBC's Audit Instruction described the planning proposal as "*Change of use of 6-10 Cambridge Terrace and 1-2 Chester Gate from offices (Class B1) to 3 x dwelling houses (Class C3), excavation of basement, alterations at roof level, including rebuilding part of roof and installation of glazed sliding roof, lift overrun and rooflight to 6-10 Cambridge Terrace, rooflights on 1-2 Chester Gate and associated landscaping works to forecourt. Granted 07/09/10 (N.B. Permission granted prior to existing policies relating to basement excavation).*"

and confirmed that the basement proposals involved listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 12 June 2015 and gained access to the following relevant documents for audit purposes:

- BIA Appendix 2 – Structural Design and Methodology Statement (SDMS)
- BIA Appendix 3 – Hydrogeological Report (HR)
- BIA Appendix 4 – Ground Movements Report (GMR)
- BIA Appendix 5 – Ground Investigation Report (GIR)
- BIA Appendix 8 – Addendum to the Approved Construction Management Plan (CMP)

2.7. It was apparent that these documents were produced for the previous successful planning submission of 2010 and did not follow the guidelines for Basement Impact Assessments identified in section 2.3. Contact was made with the developer's team and additional information was made available on 24 and 30 June as follows:

- Basement Impact Assessment (BIA)
- Non-technical Summary of the BIA
- Desk Study Report (DSR)
- Screening Flowcharts

2.8. Supplementary information was received during July 2015 in response to clarification requested. This information is presented in Appendix 3.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	No/Yes	See 4.1.
Is data required by Cl.233 of the GSD presented?	Yes	BIA, DSR & CMP
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	BIA, DSR, SDMS & HR
Are suitable plan/maps included?	Yes	HR
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 3.0
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 3.0
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA Section 3.0
Is a conceptual model presented?	Yes	BIA Section 4.0
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.0
Hydrogeology Scoping Provided?	Yes	BIA Section 4.0

Item	Yes/No/NA	Comment
Is scoping consistent with screening outcome?		
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA Section 4.0
Is factual ground investigation data provided?	Yes	BIA & GIR
Is monitoring data presented?	Yes	GIR Section 5.3
Is the ground investigation informed by a desk study?	Yes	GIR Section 3
Has a site walkover been undertaken?	Yes	GIR Section 4
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	GIR Section 6
Is a geotechnical interpretation presented?	Yes	GIR Section 5
Does the geotechnical interpretation include information on retaining wall design?	Yes	SDMS Section 6.1
Are reports on other investigations required by screening and scoping presented?	NA	
Are baseline conditions described, based on the GSD?	Yes	
Do the base line conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	BIA Section 6.0
Are estimates of ground movement and structural impact presented?	Yes	GMR
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	Yes	

Item	Yes/No/NA	Comment
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	HR & GMR
Has the need for monitoring during construction been considered?	Yes	SDMS Section 7.1
Have the residual (after mitigation) impacts been clearly identified?	Yes	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties maintained?	Yes	
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	
Does report state that damage to surrounding buildings will be no worse than Burland Category 2?	Yes	Burland Category Damage 1
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1. The original documents submitted with the Planning Submission seem to have used documents provided for the previously successful Planning Approval granted in 2010, updated with additional information where necessary. It was apparent that although these reports covered the various topics of a current Basement Impact Assessment (BIA), they did not follow the guidelines identified within CPG4. Accordingly, additional information was made available including an overriding document called Basement Impact Assessment, which then identified the already produced reports as appendices to the BIA. The appendices have been produced by Chartered Engineers with suitable qualifications. However the BIA document summarising the findings of the reports have been produced by a Chartered Architect, which is not an acceptable qualification based upon CPG4 criteria.
- 4.2. The documents have identified that the proposed basement is expected to be founded within the London Clay and is unlikely to exacerbate any existing groundwater flow.
- 4.3. It is accepted that there are no slope stability concerns regarding the proposed development.
- 4.4. The Structural Design and Methodology Statement (SDMS) has indicated that the basement will be constructed using a mix of conventional underpinning techniques and contiguous piled retaining walls. The Ground Movements Report has identified that potential damage to adjoining properties will be Burland Category 1 – very slight to No. 5 Cambridge Terrace. The report predicts Burland Category 0 – negligible to No. 1 Cambridge Terrace and it is assumed this should read No. 1 Cambridge Terrace Mews. The SDMS identified an acceptable monitoring proposal of surrounding walls during excavation and construction, to be agreed in due course during the Party Wall Approvals process.
- 4.5. The ground movement assessment has been undertaken using an empirical approach and referring largely to CIRIA C580 *Embedded Retaining Walls*. The following clarifications on the assumptions made were sought to fully assess the adequacy of analysis:
- Further clarification is required as to which walls will be underpinned and which will be supported by piled foundations (para 5.2.1)
 - It is suggested that settlement due to underpinning could be 10mm, however the contour plot in Figure 7 indicates lower settlement values
 - The contours in Figure 7 equate to approximately 0.1% of the excavation depth. It should be confirmed whether they include likely settlement due to pile installation.
 - The geometry of the buildings considered in the damage assessment should be confirmed.

Information received by email (refer to Appendix 3) addresses these queries.

- 4.6. The Ground Investigation Report indicated that although no groundwater inflows were observed within the London Clay deposits, perched water within granular Made Ground was encountered in many of the exploratory excavations. It is possible that sump pumping may be required during construction and care should be taken to ensure that fine soils are not removed with the groundwater.
- 4.7. The Desk Study Report (DSR) has identified that the Environment Agency surface water flood maps indicate the Outer Circle and the access road at its rear have potential susceptibility to surface water flooding. However, it is stated that at the front of the site the ground slopes up to the house and lifts the front of the main house out of the flood risk zone. At the rear of the property, measures may be required to avoid the possibility of water entering the property due to surface water flooding from natural or man-made sources. No details are provided of any necessary measures.
- 4.8. It is accepted that no known ponds, springlines or wells are in close vicinity to the site and that the site is outside the Hampstead pond chain catchment area.
- 4.9. The proposed basement will be created under the existing buildings and, at the front, the area above the basement roof will be landscaped. It is accepted that the proposal will not alter significantly the existing proportion of hard surfaces and paved areas and hence the quantity of local rainfall entering the existing sewer system.

5.0 CONCLUSIONS

- 5.1. Although the BIA summary document has been produced by an individual not possessing an acceptable qualification, the supporting technical documents have been produced by individuals who do possess suitable qualifications.
- 5.2. The documents have confirmed that the proposed basement will be located within the London Clay and that the surrounding slopes are stable.
- 5.3. The proposed basement is unlikely to further obstruct any potential superficial water flow across the site.
- 5.4. The proposals will not significantly alter the area of hard surfaces and paved areas and hence the quantity of local rainfall entering the existing sewer system.
- 5.5. Although Environment Agency surface water maps indicate that the Outer Circle and its adjacent access road may flood, the development property appears safe from flooding due to the ground sloping up to the front of the main house. Measures may be necessary to protect the rear of the property.
- 5.6. A ground movement assessment suggested that very slight damage may be caused to No. 5 Cambridge Terrace with negligible damage caused to No. 1 Cambridge Terrace Mews. Clarification of the assumptions was sought as described in Section 4 and Appendix 2. These were received by email (presented in Appendix 3) and confirm that the building damage assessment is reasonable. Monitoring proposals to surrounding walls during excavation and construction have been presented.
- 5.7. It is anticipated that perched water within the Made Ground, above the London Clay, may require sump pumping during construction and care should be taken to ensure that fine soils are not removed with the groundwater.
- 5.8. The proposed basement development will not affect the hydrogeology of the area.
- 5.9. There are no outstanding queries with respect to the BIA.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Confirmation whether reference to No 1 Cambridge Terrace should be Cambridge Terrace Mews	Confirmed by email 15/7/15. Refer App 3.	15/7/15
2	Stability	Lay out of proposed underpinning and new piled foundations to be clarified	Confirmed by email and drawing 10/7/15. Refer App 3.	10/7/15
3	Stability	Confirmation that contour plot of vertical ground movements includes ground movements due to underpinning and pile installation as appropriate	Confirmed by email 10/7/15. Refer App 3.	10/7/15
4	Stability	Confirmation of building geometries used in damage assessment.	Confirmed by email 15/7/15. Refer App 3.	15/7/15

Appendix 3: Supplementary Supporting Documents



RE: 6-10 Cambridge Terrace & 1-2 Chester Gate
 Apollonia Gasparre
 to:
 AndrewMarlow@campbellreith.com
 06/07/2015 13:59
 Cc:
 Paul Straupmanis
 Hide Details
 From: Apollonia Gasparre <a.gasparre@gcg.co.uk>
 To: "AndrewMarlow@campbellreith.com" <AndrewMarlow@campbellreith.com>
 Cc: Paul Straupmanis <pauls@moxley.co.uk>

Dear Andrew

Please find below details of authors and reviewers of the GCG documents:

Hydrogeological report:

Author : Dr A. Gasparre Dott. Ing. PhD DIC CEng MICE

Reviewer: H. Scholes BSc MSc DIC CGeol FGS EurGeol

Ground movement report:

Author : Dr A. Gasparre Dott Ing. PhD DIC CEng MICE

Reviewer: M. Crilly - BSc MSc DIC

From: AndrewMarlow@campbellreith.com [<mailto:AndrewMarlow@campbellreith.com>]
Sent: 06 July 2015 12:23
To: Paul Straupmanis; Apollonia Gasparre
Subject: Re: 6-10 Cambridge Terrace & 1-2 Chester Gate

Dear Paul / Apollonia,

A minor point but could you please provide me with author and reviewer details and qualifications for Moxley and GCG.

I don't need MBP's details because they are contained within their Desk Study Report.

thanks

Andrew Marlow
 Partner

CampbellReith

Friars Bridge Court,
 41-45 Blackfriars Road,
 London
 SE1 8NZ

Tel +44 (0)20 7340 1700
www.campbellreith.com

From: Paul Straupmanis <pauls@moxley.co.uk>
 To: AndrewMarlow@campbellreith.com, "LizBrown@campbellreith.com" <LizBrown@campbellreith.com>
 Cc: Apollonia Gasparre <a.gasparre@gcg.co.uk>, Nick Sharpe <nick.sharpe@montagu-evans.co.uk>, MOXLEY - QUAD <quad@moxley.co.uk>, Tim Simpson <TSimpson@cpcldn.com>, "Thibaut L 'Hopital'" <thopital@candyandcandy.com>
 Date: 30/06/2015 12:27
 Subject: Re: 6-10 Cambridge Terrace & 1-2 Chester Gate

Dear Andrew,

The amended BIA is now complete and we will formally re-issue the updated information to Camden today.

I understand that you are not in the office until Thursday, but in the meantime and to expedite this matter, we have issued the documentation directly to you as well.

To get the information to you we have an in-house system called DDS that transfers large documents to recipients that would otherwise bounce back due to file size.

I have set out below how you can get to the new document.

1. Access our website www.moxley.co.uk
2. Along the top heading there is a tag called DDS - click on this.
3. Enter your user name and password (these are below)

Username: andrew.marlow

Password: password (you can change your password once in the system)

4. Access and download the document(s).

Please ring me if you feel that you need anything further to get this one signed off.

Kind regards,

Paul.

Paul Straupmanis Director Moxley Architects Ltd 47 Clapham High Street London SW4 7TL

T: +44 (0)20 7720 8968 M: +44 (0)7768 890 317 E: pauls@moxley.co.uk W: www.moxley.co.uk

Registered Number 02247305 England



On 24 Jun 2015, at 14:30, AndrewMarlow@campbellreith.com wrote:

Dear Apollonia,

Thank you for the screening flowcharts, missing from the planning submission documentation.

Regarding additional information required, my understanding based upon other BIA's received for audit, is that the BIA document should summate the findings of each individual report already submitted, and they would then form appendices to the BIA document. In essence, the additional document would follow the questionnaire "Section B : BIA components for Audit (to be completed by Applicant) which forms part of our BIA Audit Instruction. Each question, nos 1 to 22, would form a specific item within the BIA document. Each Section B response would then be revised to show "see BIA section xxx rather than referring to all the documentation generally.

As discussed in our recent phone conversation, I attach the Section B response which has been supplied to date by someone within your team, to assist in the BIA document preparation.

I hope this assists.

As I mentioned previously, it would assist greatly if you could identify a likely completion date for the information.

regards

Andrew Marlow
Partner

<Mail Attachment.jpeg>

Friars Bridge Court,
41-45 Blackfriars Road,
London
SE1 8NZ

Tel +44 (0)20 7340 1700

www.campbellreith.com

From: Apollonia Gasparre <a.gasparre@gcg.co.uk>

To: "AndrewMarlow@campbellreith.com" <AndrewMarlow@campbellreith.com>

Cc: "LizBrown@campbellreith.com" <LizBrown@campbellreith.com>, Nick Sharpe <nick.sharpe@montagu-evans.co.uk>, Tim Simpson <TSimpson@cpcldn.com>, MOXLEY - QUAD <quad@moxley.co.uk>, Paul Straupmanis <pauls@moxley.co.uk>
Date: 24/06/2015 12:35
Subject: RE: 6-10 Cambridge Terrace & 1-2 Chester Gate

Dear Andrew
Please find attached the screening flowcharts that I understand were missing in the planning submission.
I will call you to discuss additional information that might be required.
Regards
Apollonia

Dr Apollonia Gasparre
Geotechnical Consulting Group
52A Cromwell Road
London SW7 5BE
Tel: +44 (0)20 75818348
Direct: +44(0)2075906379
Fax: +44(0)2075840157
Web: www.qcg.co.uk

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Click [here](#) to report this email as spam.[attachment "Screening flowcharts -Project Quad.docx" deleted by Andrew Marlow/CRH]

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Re: 6-10 Cambridge Terrace & 1-2 Chester Gate

Paul Straupmanis

to:

AndrewMarlow@campbellreith.com

06/07/2015 14:54

Cc:

Apollonia Gasparre, MOXLEY - QUAD, "Thibaut L 'Hopital", Tim Simpson

Hide Details

From: Paul Straupmanis <pauls@moxley.co.uk>

To: "AndrewMarlow@campbellreith.com" <AndrewMarlow@campbellreith.com>

Cc: Apollonia Gasparre <a.gasparre@gcg.co.uk>, MOXLEY - QUAD <quad@moxley.co.uk>, "Thibaut L 'Hopital" <TLHopital@cpcldn.com>, Tim Simpson <TSimpson@cpcldn.com>

Dear Andrew,

From our side the production of this BIA document is really no more than a compilation exercise of the other consultants input (refer the list of appendices). So in this type of document, we do not have authors and reviewers as such.

That said, I of course proof read and check everything to ensure that the consultants work is fully co-ordinated. Basically, my graphics team put the document together and I check it and sign it off for issue.

My qualifications are given below.

Paul Straupmanis BA Dip Arch ARB RIBA

I hope that this is sufficient for your current needs.

Kind regards,

Paul.

Paul Straupmanis Director Moxley Architects Ltd 47 Clapham High Street London SW4 7TL

T: +44 (0)20 7720 8968 M: +44 (0)7768 890 317 E: pauls@moxley.co.uk W: www.moxley.co.uk

Registered Number 02247305 England



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Cc: Apollonia Gasparre <a_gasparre@gca.co.uk>, Nick Sharpe <nick.sharpe@montagu-evans.co.uk>, MOXLEY - QUAD <quad@moxley.co.uk>, Tim Simpson <TSimpson@cpcldn.com>, "Thibaut L 'Hopital'" <lhospital@candyandcandy.com>
Date: 30/06/2015 12:27
Subject: Re: 6-10 Cambridge Terrace & 1-2 Chester Gate

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Password: password (you can change your password once in the system)

4. Access and download the document(s).

Please ring me if you feel that you need anything further to get this one signed off.

Kind regards,

Paul.

Paul Straupmanis Director Moxley Architects Ltd 47 Clapham High Street London SW4 7TL

T: +44 (0)20 7720 8968 M: +44 (0)7768 890 317 E: pauls@moxley.co.uk W: www.moxley.co.uk

Registered Number 02247305 England

<image002.jpg>

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As discussed in our recent phone conversation, I attach the Section B response which has been supplied to date by someone within your team, to assist in the BIA document preparation.

I hope this assists.

As I mentioned previously, it would assist greatly if you could identify a likely completion date for the information.

regards

Andrew Marlow
Partner

REPLY TO BIA ASSESSMENT ENQUIRY

Further clarification is required as to which walls will be underpinned and which will be supported by piled foundations (para 5.2.1)

The extent of underpinning is described in Section 5.2.1 and is shown in Figure 3a of the GCG Ground movement report: *'Underpinning will be carried out along the perimeter walls of No. 8, 9 and 10 and the façades of No. 6 and 7.* Reference is made to the MBP structural drawing 6108/102.

It is suggested that settlement due to underpinning could be 10mm, however the contour plot in Figure 7 indicates lower settlement values

As stated 5.2.3 paragraph 6, Figure 7 only shows the *'contour plots of the predicted ground movements due to the combined effect of excavation and bored pile installation'*. The movements due to underpinning are not shown in this plot because they would be expected to be settlements localised under the underpinned walls only. Provided that the underpinning works are carried out with good workmanship, the predicted 10mm settlements of the underpinned walls are an upper bound figure. Their effects on the surrounding buildings (i.e. cracks at the wall junctions) are discussed in sections 5.2.1 and 6.2.

The contours in Figure 7 equate to approximately 0.1% of the excavation depth. It should be confirmed whether they include likely settlement due to pile installation.

The contour plot in Figure 7 includes the combined effects of excavation and bored pile installation (see section 5.2.3 paragraph 6). As stated in section 5.2.2 the wall is conservatively assumed to be 15m long.

The geometry of the buildings considered in the damage assessment should be confirmed.

The geometry of the buildings and their foundation details, which have been used for the damage assessment, are described in section 3.



RE: Cambridge terrace
Apollonia Gasparre to: LizBrown@campbellreith.com

15/07/2015 12:42

History: This message has been replied to.

Hi Liz

We did not describe the mews houses on Terrace Mews because, from the contour plots in Figures 8 and 9, we noted that the predicted movements hardly extend to these structures. Movements in the order of 3mm maximum are predicted at the corner of No. 1 and the 0mm contour line crossed this house. However, the effective movements on No. 1 Terrace Mews are likely to be even lower as the predictions are a conservative estimate of the expected movements. This is because they are an upper bound of the database in CIRIA C580 and because the database refers to greenfield movements, which ignore the stiffness of structures. The corner of No. 1 Terrace Mews would actually be very stiff and likely to resist the ground movements induced by the basement construction. Furthermore, No. 1 is close to a corner of the proposed basement, which is likely to restrain the predicted movements even more.

However, if we used the predicted values, the distortion of the mews house could be only a small tilt towards the excavation, with maximum settlements at the corner of 3mm. This conservatively assumes that the house has no basement and its foundations are no deeper than 0.5m below ground level. Assuming that No. 1 Cambridge Terrace mews is about 12m x 8m in plan, its maximum tensile strains are in the order of 0.0375%. A deflection ratio is not strictly applicable, but, if we considered an equivalent ratio due to the tilt, this would be, at the maximum, about 0.018%. These values would not exceed the boundary of 'negligible' damage. In practice, given the stiffness of the structure, the predicted movements could only produce shearing of the walls (particularly around the corner) with the potential consequence of hairline cracks forming around the openings and the wall junctions.

I hope this responds to your query. Please call me if you want to discuss further.

Regards
Apollonia

From: LizBrown@campbellreith.com [mailto:LizBrown@campbellreith.com]
Sent: 14 July 2015 21:20
To: Apollonia Gasparre
Subject: Re: Cambridge terrace

Hi Apollonia

Thanks for your email. Yes, that does make it clearer.

Just one last question concerning Cambridge Terrace Mews - they are not mentioned in Section 3 where you discuss the surrounding structures. As they are not in the same ownership or supported on piled foundations (I assume), they are the properties that are most significant in terms of the BIAs purpose of 'maintaining the structural stability of the neighbouring properties'. Can you provide your assumptions with respect to geometry and foundations?

Thanks, Liz

Elizabeth Brown
Partner

CampbellReith
consulting engineers

Friars Bridge Court,
41-45 Blackfriars Road,
London
SE1 8NZ

Tel +44 (0)20 7340 1700

www.campbellreith.com

From: Apollonia Gasparre <a.gasparre@gcg.co.uk>
To: "LizBrown@campbellreith.com" <LizBrown@campbellreith.com>
Date: 14/07/2015 16:11
Subject: Cambridge terrace

Dear Liz

I have been thinking about our conversation on no. 1 Chester square and I am not sure I managed to explain well what I meant. Our assumption is that the ground movements due to underpinning will not extend behind the wall, so that the ground under a perpendicular wall will not be dragged down - or not as much as the ground under the underpinned wall. This is why cracks are typically observed at the junctions with underpinned walls. For this reason the settlement curve behind the underpinned wall is unaffected by the underpinning and, if the movements due to underpinning of this wall were added, they will simply have the effect of dragging down the initial point of the curve. At this site, where 6mm max are predicted, the addition of the underpinning movements would alter the curve making it look as if no.1 is simply tilting towards the new basement, which is unrealistic because in reality the structure will distort as shown in our figure.

I hope this is clearer. Please call me if you need to discuss further.

Regards
Apollonia

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London

Friars Bridge Court
41-45 Blackfriars Road
London
SE1 8NZ

T: +44 (0)20 7340 1700
F: +44 (0)20 7340 1777
E: london@campbellreith.com

Birmingham

Chantry House
High Street
Coleshill
Birmingham B46 3BP

T: +44 (0)1675 467 484
F: +44 (0)1675 467 502
E: birmingham@campbellreith.com

Surrey

Raven House
29 Linkfield Lane
Redhill
Surrey RH1 1SS

T: +44 (0)1737 784 500
F: +44 (0)1737 784 501
E: surrey@campbellreith.com

Manchester

The Lexicon
10-12 Mount Street
Manchester
M2 5NT

T: +44 (0)161 819 3060
F: +44 (0)161 819 3090
E: manchester@campbellreith.com

Bristol

Wessex House
Pixash Lane
Keynsham
Bristol BS31 1TP

T: +44 (0)117 916 1066
F: +44 (0)117 916 1069
E: bristol@campbellreith.com

UAE

Office 705, Warsan Building
Hessa Street (East)
PO Box 28064
Dubai, UAE

T: +971 4 453 4735
F: +971 4 453 4731
E: uae@campbellreith.com