GD Partnership Ltd

BASEMENT CONSTRUCTION PLAN

FOR

TRIBECA LONDON

2-6 ST PANCRAS WAY, LONDON NW1 0TB

- PLOTS B & C-

Document ID	BASEMENT CONSTRUCTION PLAN
Document Title	BASEMENT CONSTRUCTION PLAN FOR TRIBECA LONDON – PLOTS B & C
Classification	
Version	1
Status	FOR REVIEW
Author	RUDY DJAJASAPUTRA BSc(Hons), CEng, MIStructE.
Date	04.03.23

BASEMENT CONSTRUCTION PLAN
FOR
TRIBECA LONDON
2-6 ST PANCRAS WAY, LONDON NW1 0TB
- PLOTS B & C -

Issuing Record

Issue	Date	Description	status
Version 1	04.03.23	First issue	Preliminary

CONTENTS:

1 Planning S106 Requirements.

This report covers S106 the Town and Country Planning Act 1990 (as amended) requirements on schedule 4, paragraph 4 in relation to the basement construction plan for the Plot B & C of the Ugly Brown (Tribeca London) Building at 2-6 St Pancras Way, the London Borough of Camden.

The planning S106 requirements as follows:

Prior to the construction implementation date to provide the Council for approval a draft basement construction plan.

The construction of the development should not commence until such time that the Council has approved the final basement construction plan.

2 Basement Construction Plan

The information below addresses each point within the S106 agreement schedule 4 paragraphs 4.

2.1 To incorporate the recommendations and conclusions within the revised Basement Impact Assessment (BIA) report rev. G carried by GD Partnership Ltd. dated Feb. 2023 as shown in Appendix B.

Refer to section 3 for information on how these recommendations and conclusions are included.

2.2 Method statement detailing the proposed method ensuring the safety and stability of the neighbouring properties throughout the construction phase including temporary works sequence drawings and assumptions.

The proposed preliminary basement construction drawings are as shown on Appendix A:

Plot B.

TRI-GDP-PB-F0-DR-S-1590-P04, 1600 -P05, 1990-P04, TRI-GDP-PB-LM1-DR-S-1995-P01, TRI-GDP-PB-00-DR-S-2000-P04, 2010-P04, 2020-P02, 2030-P02, 2090-P02, TRI-GDP-PB-XX-DR-S-2401-P04, 2402-P03, 2403-P03, 2404-P03, 2501-P01, 2502-P01, 2900-P02 and 2900-P02.

Plot C.

TRI-GDP-PC-ZZ-M3-S-0001, TRI-GDP-PC-ZZ-SK-S-3070-P01, 3071-P01, 3072-P01, 3073-P01, 3080-P01, 3090-P01, 3095-P01, 3100P01, 3120-P01 and 3250-P01.

Proposed preliminary sequence of construction to form the basement including piling mat and any temporary propping where required are shown on drawings GDP-PB-ZZ-SK-S-3010-P02, 3011-P02, 3012-P01, 3020-P01 and 3021-P02, GDP-PC-ZZ-SK-S-3010-P01, 3011-P01, 3020-P01 and 3021-P01 as in Appendix C.

Final construction sequences for both plots to be provided by the appointed main contractor, but proposed summary is as follow:

PLOT B Sequence of Construction

Sequence 01.

1. Provide high-level and low-level piling mats at 22.500 AOD along the Canal and 21.300 AOD along the St. Pancras Way respectively.
2. Following the demolition of part of Plot C to the existing structural movement joint provide formation level at the junction of Plots B & C at level 22.500 AOD.
3. Provide a temporary sheet piled wall along St. Pancras Way with top of piles to match existing levels.
4. Install high level 900mm diameter contiguous piled walls adjacent to the Canal including 10nos. 900mm dia. temporary buttress piles as required.
5. Install low level 750mm diameter contiguous piled walls adjacent to the St. Pancras Way including 9nos. 900mm dia. temporary buttress piles as required.

Sequence 02.

1. Construct the high and low level RC capping beams along the Canal and St. Pancras Way including the temporary RC buttress beams / walls.

Sequence 03.

1. Carry out bulk dig to basement formation level @ 18.000m from the Southeast towards the North.
2. Install 750mm diameter bearing piles within the basement footprint following the bulk dig.

Sequence 04.

1. Carry out bulk dig to the remainder of the basement area to formation level of 18.000m AOD.
2. Install the remainder of the 750mm diameter bearing piles within the basement footprint including piles for the crane base (location to be confirmed by the main contractor).
3. Provide a new ramp into Plot C in the Southwestern side to allow for the piling rig to start piling within the Plot C.

Sequence 05.

1. Provide temporary sheet piled wall with temporary props to construct the pumping chamber adjacent to the Plot B.
2. Construct the pumping chamber ground beams and base slab including the walls.
3. Construct all pile cap foundations including lift core bases.
4. Construct the basement slab, columns and the perimeter liner wall.
5. Construct the ground floor slab, columns and lift shaft walls.

PLOT C Sequence of Construction.

Sequence 01.

a) Install low level 750mm diameter bearing piles within the Plot C lower-level piling mat of 18.000.
b) Provide high-level and low-level piling mats at 22.200m and 19.800m AOD respectively.
c) Provide temporary steel sheet piled wall adjacent to Canal, Granary Street and St. Pancras Way with top of piles to match existing levels.
d) Install 900mm and 750mm diameter contiguous piled walls adjacent to the Canal, Granary Street and St. Pancras Way including 15nos. of 900mm diameter temporary buttress piles.

Sequence 02.

e) Construct the high and low levels RC capping beams adjacent to the Canal, Granary Street and St. Pancras Way including the temporary buttress beams/walls.

Sequence 03.

f) Carry out bulk dig to basement formation levels at 18.000m and 15.600m AOD from the Southeast towards the North.
g) Install 750mm diameter bearing piles within the basement footprint including piles for the crane base (location to be confirmed by the main Contractor).
h) Note that Piling Contractor to confirm whether they can install 750mm diameter bearing piles at formation level at 15.600 AOD to the required design depths within the basement B2 area. If not, provide a lower piling platform level so that these piles can be installed accordingly.

Sequence 04.

i) Install temporary props at the Southeast corner at Granary Street at level of 22.600 AOD.
j) Install temporary props at the Southwest corner at Granary Street at levels of 20.600 and 16.200 AOD.
k) Carry out bulk dig to the remainder of the basement area to formation.
l) Provide temporary sheet piled walls with temporary props to construct the pumping chambers.
m) Construct the pumping chamber ground beams and base slab including the walls.
n) Construct all pile cap foundations including lift core bases.
o) Construct the basement slab, columns and the perimeter liner walls.
p) Construct the ground floor slab, columns and lift shaft walls.

2.3 Proposed detail monitoring throughout the construction stage.

Following demolition works and prior to any main construction works, monitoring systems will be installed and provide live reporting during the construction works together with the trigger limits. Regular reporting of the movements over time and relative to one another along each elevation will be carried by the sub-contractor.

Should movement of the ground and walls be above the specified trigger limits, an immediate investigation to be carried out. Temporary supports will be installed where necessary and the excavation backfilled in the affected areas until a permanent solution has been developed and implemented.

Inclinometers with 3D survey points will be positioned along the wall at approximately 15m centres to monitor the movements. Refer to Appendix D.

2.4 Certified Engineers.

The proposed basement is designed and detailed by experienced and qualified chartered geotechnical and structural engineers. CVs are included within this document. Refer to Appendix H.

For all temporary works during the construction stage are to be designed and detailed by the main contractor and their CVs will submitted when they have been appointed.

2.5 Risk Assessment.

Final Risk Assessment will be submitted when the main contractor has been appointed, but preliminary risk assessment has been included in Appendix E.

3 Basement Impact Assessment

Basement Impact Assessment report was issued by GD Partnership Ltd dated 11th. May 2021 version F has now been updated due to the revised scheme to provide a single basement within the Plots B & C. However, there is a small area of a double basement under plot C at the Southwest corner of the site to accommodate plant room. The BIA report has now been updated to take into account of the revised scheme as dated 4th. March 2023 version G as shown in Appendix B.

Within the BIA report clause 2.3.6, Precondition surveys for the all the surrounding structures are to be carried out prior to any works starts on site.

Within the report of clause 7 on conclusion of impact assessment for land stability there are recommendations of safe practices to reduce the potential for any movement over and above that expected. These will be implemented within the design and construction methodology as follow.

3.1 Impact assessment for land stability

Table below shows combines the movements predicted for contiguous piled wall installation and excavation in front of the wall with predicted vertical movements from elastic heave. These calculated cumulative ground movements to the adjacent structures are extracted from CGL report on Ground Movement and Building Damage Assessment ref. CGL/0751A rev. 0 dated 22nd. Dec. 2022 tables 11, 12 and 13 as shown on Appendix F.

Separate CGL reports on impact assessment for the Canal & Rivers Trust canal wall and Thames Water sewer are also included in the Appendix F.

Table 11. Plot B - Pile Wall Vertical and Horizontal movements Summary

Continue wall Boundary	*Pile Wall Vertical Movement uz – Plot B Excavation Stage (mm)*	*Pile Wall Deflection u3 – PlotB Excavation Stage (mm)*	*Pile Wall Vertical Movement uz – Plot B Short Term Construction (mm)*	*Pile Wall Deflection u3 – PlotB Short Term Construction (mm)*	*Pile Wall Vertical Movement uz – PlotB Long Term Construction (mm)*	*Pile Wall Deflection u3 – PlotB Long Term Construction (mm)*
North (Plot A)	+8.0	**11.0**	-3.0	10.0	+5.0	5.0
East (Canal)	+12.0	20.0	-8.0	**23.0**	+5.0/-4.0	22.0
West (highway)	+11.0	15.0	-10.0	**20.0**	-3.0	18.0

Table 12. Plot C - Pile Wall Vertical and Horizontal movements Summary

Continue wall Boundary	*Pile Wall Vertical Movement uz – PlotC B2 Excavation Stage (mm)*	*Pile Wall Deflection u3 – PlotC B2 Excavation Stage (mm)*	*Pile Wall Vertical Movement uz – PlotC Short Term Construction (mm)*	*Pile Wall Deflection u3 – PlotC Short Term Construction (mm)*	*Pile Wall Vertical Movement uz – PlotC Long Term Construction (mm)*	*Pile Wall Deflection u3 – PlotC Long Term Construction (mm)*
East (Canal)	+6.0	**27.0**	-9.0	26.0	-7.0	25.0
South (Granary Street)	+6.0	22.0	-7.0	**23.0**	-10.0	20.0
West (highway)	+7.0	21.0	-4.0	**23.0**	-4.0/+3.0	23.0

Table 13. Historical Masonry Brick Canal Wall And Sheet Pile Wall - Vertical and Horizontal movements Summary (-ve Horizontal = toward the basement, -ve Vertical= Settlements)

Canal River Trust Walls	*Wall Vertical Movement uz – B2 Excavation Stage (mm)*	*Wall lateral movements u3 – B2 Excavation Stage (mm)*	*Wall Vertical Movement uz – Short Term Construction (mm)*	*Wall lateral movements u3 – Short Term Construction (mm)*	*Wall Vertical Movement uz – Long Term Construction (mm)*	*Wall lateral movements u3 – Long Term Construction (mm)*
Canal Sheet Pile Wall	-9.0	22.0	**-9.0**	**21.0**	-3.0	21.0
Masonry Historical Wall	-9.0	21.0	**-10.0**	**20.0**	-5.0	20

Conclusions from the analysis.

At Plot B, the maximum basement wall deflection is predicted to be some ~ 11mm to 23mm.

At Plot C, the maximum basement wall deflection is predicted to be some ~ 23mm to 27mm.

The impact assessment undertaken for the canal wall, and the results predict that with good construction control and high level of workmanship, impact on the canal will be low and within acceptable limits.

The results of the assessment indicate that the displacement of the Thames Water sewers is relatively low and within 10 to 15mm, with corresponding strains within the limiting Thames Water assessment criteria.

A Building Impact Assessment for the neighbouring buildings, Plot A, and adjacent Highways, St Pancras Way and Granary Street. The assessment results of the detailed ground movement analysis and displacement profiles indicated that, with good construction control and high level of workmanship, the movements predicted at Plot A building can be restricted to damage category 0 which indicate negligible damage.

The impact of the proposed development on both St Pancras Way and Granary Street highways is considered to be within acceptable limits and of low risk.

Control Ground Movements.

3.1.1 Good workmanship will be required to ensure that pile installation induced settlements are kept to a minimum. It will be essential to ensure that the made ground is not allowed to collapse prior to casting of the contiguous piled wall.

Refer to Ardmore Basement Construction Plan & Piling Method Statement on Appendix G.

Final piling method statement will be provided once the piling contractor has been appointed.

3.1.2 The contiguous piled wall should be installed to a suitable depth and have adequate embedment in stiff strata for satisfactory vertical and lateral stability.

Refer to CGL report on Ground Movement Analysis and Highway & Building Damage Assessment ref. CGL/0751A rev. 0 dated December 2022 tables 11 and 12 as shown on Appendix F provide predicted maximum basement wall deflection to be some ~11mm to ~23mm for Plot B and ~23mm to ~27mm for Plot C.

Final pile designs will be provided by the piling specialist sub-contractor and will be submitted when available.

3.1.3 It should be ensured that basement slab is cast as early as possible and tight to the piled retaining wall. Sufficient time should be given for the slab to cure and gain strength prior to continuation of excavation below.

The proposed construction programme for this works will be submitted once the main contractor has been appointed.

3.1.4 Where temporary props are required, they should be designed to provide adequate restraint to limit lateral ground movements. Walings should be tied in so they do not rely on friction or adhesion between the prop end and waling to be held in place.

CGL report on Preliminary Temporary Work Design to Enable Basement Excavation and Construction ref. CGL/09751D rev. 0 dated 23rd. Feb. 2023 shown on Appendix F have been designed with temporary props to corners of the walls including buttress walls at approximately 6m centres to minimise any movement during the construction stage until the basement and ground floor slabs have been constructed. Refer to Appendix C.

3.1.5 The first stage of excavation should be minimised and the first (stiff) support should be installed as early as possible in the construction sequence.

As discussed above that all perimeter contiguous piled walls are to be designed with temporary buttress walls at approximately 6.0m centres including temporary props at corners as proposed on the construction sequence shown on Appendices C and F.

3.1.6 The construction of the wall and its support systems should not be delayed.

Construction programme to be provided when the main contractor has been appointed.

3.1.7 Over-excavation should be avoided.

Main contractor construction method statements to be provided once they have been appointed.

3.1.8 Monitoring both above and below ground should be carried out to ensure that the expected displacements are not exceeded. Limits of lateral and vertical displacement should be set beyond which the method of construction should be re assessed.

Refer to monitoring strategy as shown on Appendix D. Inclinometers are positioned along the piled wall at approximately 15m centres to monitor movements.

4 Appendices:

Appendix A – Proposed Basement Drawings.

Appendix B – Basement Impact Assessment.

Appendix C – Preliminary Construction Sequence.

Appendix D – Monitoring Strategy.

Appendix E – Preliminary Risk Assessment.

Appendix F – CGL and RSK Reports

- CGL_09751_Tribeca Camden PlotC_GGFIR_Feb23 – Geotechnical, geoenvironmental Factual and Interpretive Report.
- CGL0751A_TribecaCamden-PlotC_Ground Movement Analysis and Highway & Building Damage Assessment _Dec. 2022.
- CGL0751A_TribecaCamden-PlotC_ Ground Movement Analysis and Canal Impact Assessment Dec. 2022.
- CGL09571A_TribecaCamden-PlotC_ Ground Movement Analysis and Sewer Impact Assessment _Dec. 2022.
- CGL09751D_Tribeca_Plot B & C_PTWD_Feb23 - Preliminary Temporary Work Design to Enable Basement Excavation and Construction.
- RSK Geo-environmental and Geotechnical Assessment SI Report 371654-01 (01) Aug 2019
- RSK Retaining Wall Assessment – Ugly Brown Building ref. 371654-L01(00) 19th. May 2020.

Appendix G – Ardmore Basement Construction Plan & Piling Method Statement.

Appendix H – Author's qualifications

Appendix I – Thames Water Survey Report

Appendix J - HAIP