38 Chester Terrace, London NW1 4ND







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Form

STAGE 2 PLANNING REPORT

Signed:

Date:

ROM

18/12/2020

Signed:

Date:

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18/12/20

Preamble

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ABOUT FORM SD

Form has undertaken over 300 projects involving Listed Buildings, using numerous techniques and sequences of construction. This extensive design, site and local geology/hydrology experience has positioned the practice as one of London's leading subterranean engineering design consultants.

Many of our projects are in the London Boroughs of RBKC, Westminster, Camden, Hammersmith & Fulham and Wandsworth, making us familiar with the most recent planning requirements.

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1. Site Information

1.1 The Site, Location, and Existing Building

The site is located in the London Borough of Camden, adjacent to Regent's Park. The building is situated on the Crown Estate.

The existing building, 38 Chester Terrace, is currently comprises a five storey terraced residential building including a lower ground level. Three vaults are present on site at the lower ground level. They are located under the pathway with access from the front courtyard. To rear of the property a courtyard is present, this is slightly below street level leading to Chester Place.

The property is Grade 1 Listed. As are all the Grand palace-style terrace houses and semi-detached houses on Chester Terrace.



Figure 1: Site Location Map



Figure 2: Front View of Site

1.2 Site History

The site is occupied by a residential building in a row of terraced, residential style buildings running north-south since before 1870's. No changes occur until 1968, where the smaller attached buildings to the east (the rear of Chester Terrace) are no longer present.

The surrounding area is predominantly residential

As can be seen from the bomb map in no bombs were dropped on the site during WW2. However, bombs did drop near the site.



Figure 3 World War 2 Bomb Map

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0

A

2 Structural Design

2.1 Existing Structural Arrangement

The building has solid load-bearing masonry walls to the front, rear and either side. The wall on either side make up party walls to No.39 Chester Terrace to the North and No.37 Chester Terrace to the South. A masonry wall along with a large masonry lift shaft providing stability for the property. Floors generally spanning front to back, are timber joist supported on steel beams which are then supported on the masonry perimeter walls or onto the lift shaft. Most of the internal walls are timber stud and are non-load bearing. However, a number of the timber stud partition wall on the upper floors do bear load.

There are three existing vaults beneath the front Georgian terrace. These are constructed with masonry vaulted walls and concrete floors. These vaults extend out from the front courtyard beneath the public pavement.

2.2 Proposed Structural Overview

The proposed development for this site will comprise lowering of the existing lower ground floor by approximately 300mm across the majority of the footprint and into the rear courtyard. This is dependant on the final trial pit information to be obtained. See Figure 4. In two of the front vaults, it is proposed to lower the existing floor in a similar fashion to the internal lower ground floor slab. See Figure 5.

At the rear elevation of the lower ground floor, it is proposed to enlarge the existing window opening to create a double door to allow direct access to the rear courtyard.

A number of partition walls are to be removed and / or replaced on the upper floors. At roof level the central area is to be removed and replaced with a terrace with access via a new stair from the third floor landing. The main front and rear mansard are to remain.



Figure 4 Proposed Lower Ground Floor Slab Interaction with Existing Footings



Figure 5 Proposed Vault Slab Interaction with Existing Footings

2.3 Proposed Lower Ground Floor Level

The allowable depth for reducing the level of the ground floor slab will be based on the trial pits carried out on site. The proposed new slab level allows for the ground bearing slab to be founded at the level of the existing foundation. The level of this will be confirmed once the final trial pit is formed. The necessary build-up will be designed to ensure that no underpinning or cutting of the existing corbel foundation or disruption to party walls or the historic corbelled foundation below is required.

The permanent lower ground floor slab will act as a prop to the base of the wall's footings. In the temporary case adequate propping will be in place for the full duration of the construction.

It is proposed that the new lower ground floor slab will not be placed below the level of the existing footings. The act of lower the slab will not affect the ground water flows or local soil stability. This proposed works is not considered a basement or basement extension, because no underpinning of subterranean works will be carried out. However, to satisfy Camden Council planning policy the relevant initial screening process has been carried out to show the proposed works will not have a significant impact on the local environment.

As is the requirement in Camden Council an independent Geo-environmental Desk-Based Study and Basement Screening Assessment was carried out by Jomas Associates Ltd (November 2020). The outcome of their desk study agreed with our initial screening. The lowering of the lower ground slab will not impact on the local environment.

2.4 Subterranean flow Screening

2.5 Slope stability screening

Q 1a: Is the site located directly above an aquifer?	No	Q 1: Does the existing site include slopes, N natural or manmade, greater than 7°?	10	previously worked ground?	No
Q 1b: Will the proposed basement extend beneath the water table surface?	No	Q 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°? (approximately 1 in 8)	lo	Q 10: 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?	No
Q 2: Is the site within 100m of a water course, well (used / disused) or potential spring line?	No	Q 3: Does the development neighbour N land, including railway cuttings and the like, with a slope greater than 7°? (approximately 1 in 8)	lo	Q 11: Is the site within 50m of the Hampstead Heath ponds?	No
Q 3: is the site within the catchment of the pond Chains on Hampstead Heath?	No	Q 4: Is the site within a wider hillside		Q 12: Is the site within 5m of a highway or pedestrian right of way?	Yes Pedestrian footpath or highway will not be
Q 4: Wil the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No	greater than 7°? (approximately 1 in 8)		Q 13: Will the proposed basement significantly increase the differential depth of foundation relative to neighbouring	affected by the proposed works.
Q5 5: As part of the site drainage, will more surface water (e.g. rainfall and run-off than at present be discharged to the ground (e.g. via soakaways and/o SUDS	No	Q 5: Is the London Clay the shallowest strata at the site? Y Q 6: Will any tree/s be felled as part of N	Yes London Clay was found in all trial pits.	Q 14: Is the site over (or within the exclusion zone of) any tunnels e.g.	No
Q 6: IS the lowest point of the proposed	No	the proposed development and/or are any works proposed within any tree zones where are to be retained?		railway lines?	
foundation space under the basement floor) close to, or lower than the mean water level in the local pond (not just ponds chains on Hampstead Heath) or spring line?		Q 7: Is there a history of seasonal shrink- swell subsidence in the local are, and/or evidence of such effect at the site?	Given site was found on site, clay heave measures will need to be adopted for the proposed works		
		Q 8: Is the site within 100m of a watercourse or a potential spring line?	lo		
		Q 9: Is the site within an area of			

2.6 Surface flow and flooding screening

Q 1: Is the site within the catchment of the No ponds on Hampstead Heath? Q 2: As part of the proposed site drainage, will surface water flow (e.g. volume of No rainfall and peak run-off) be materially changed from the existing route? Q 3: Will the proposed basement No development result in a change in the proportion of the hard surface / paved external areas? Q 4: Will the proposed basement result in changes to the profile of the inflows No (instantaneous and long-term) of the surface water being received by adjacent properties or downstream watercourses? Q 5: Will the proposed basement result in changes to the quality of surface water No being received by adjacent properties or downstream watercourses? Q 6: Is the site in an area known to be at No risk from Surface water flooding, such as South Hampstead, West Hampstead, Gospel Oak and King's Cross or is it at risk from flooding, of example because the proposed basement is below water level of a nearly surface water feature?

2.7 Proposed Superstructure

2.7.1 Lateral Stability

Lateral stability of the existing structure will continue to be provided by the perimeter masonry walls, to the rear, to the front of the terrace as well as the flank party walls.

In the centre of the property the masonry brick lift shaft contributes to the lateral stability of the property.

The existing timber floor are made up of double layer of plywood fixed to the top of the timber joists. This helps the timber floor act as a diaphragm transferring any horizontal load back to the masonry structural elements.

The proposed box frame on the lower ground floor at the rear elevation will replace the existing brick work. This rigid box frame will take any lateral loads and transfer them via the steel columns to the proposed concrete foundation. This frame will ensure the lateral stability of the rear elevation is maintained for the proposed development.

2.7.2 Opening at Lower Ground Floor Rear Elevation

A new opening will be created in the rear elevation. This requires a new steel frame to be installed at lower ground floor level to support the structure over. The beam will sit on steel columns. These columns will transfer the vertical load to the proposed concrete foundation placed just below lower ground floor level. The new frame foundation will not surcharge the existing footings and will consist of steel beams encased in concrete.

2.7.3 Opening at Ground Floor

A new opening will be formed through the existing load bearing stair well wall abutting the rear elevation. This structure above will be supported by inserting two precast concrete lintels. These will match the existing thickness of the wall. The proposed brick pier to the centre of this opening has been checked and is sufficiently sized to bear the load from above.

2.7.4 New partitions

On several of the upper floors non loading bearing stud partition wall be removed. As many of these are currently supported on the existing floor joists which are to be retained no structural work is required in these areas. However, on second in the master bedroom a load bearing timber stud wall is proposed to be removed. As the wall above on third will require support new steel beams will be implemented to support wall and a small area of existing flooring.

2.7.5 Roof terrace

An accessible roof terrace will be formed at the centre of the property along the line for the existing ridge of the roof. The front and rear mansard areas of roof will be retained and be supported by the new structure. The build-up of this terrace is to be timber decking. The timber decking will be supported on timber joists. In turn these joists will be supported by steel beams trimming around roof light and the stair well. The main steel beam span across the site and are support on the party walls by way of concrete padstones.

3 Design Criteria

Loading 3.1

The loads on the structure are to be confirmed for detailed design intent at Stage 3. However, initial assumptions of loading are:

acui time:	2	DE NUMBER / FILE	CALCULATI	ON NUMBER:		Form
38 Chester Terrace						1 6111
CALCULATION:	0	ALCULATION BY:	DATE:		CH4/CNED BY	
Loading		MOR			BR	
			1			1
CALCULATIONS:			DI	11	SIS	ULS
Tiled Boof 27 *			DL		565	020
Clay Tiles			0.70 kN/m ²			
Felt / battens			0.10 kN/m ²			
Ceiling			0.15 kN/m ²			
Insulation			0.05 kN/m ²			
Bafters			0.10 kN/m ²			
Snow				0.60 kN/m ²		
De	ad (COS 27		1.23 kN/m ²	0.60 kN/m ²	1.8 kN/m ²	27 kN/m ²
Timber Floor (Consultan Floor)						
Timber Floor (Separation Floor)						
22mm Boarding			0.14 kN/m ²			
2No 19mm Gyproc Boarding			0.32 kN/m ²			
50x275Joists @3500/c			0.18 kN/m*			
Insulation			0.20 kN/m*			
12.5mm Plaster and Skim			0.16 KWm*			
Imposed (domestic)			4.00 LAN 8	1.50 kN/m*	25 144 2	20111/2
			1.02 KWm*	1.50 KIWM*	2.5 KN/m*	3.0 KNVM*
Timber Floor (Separation Floor, Tradit	(lenoi)					
22mm Boarding	aorrar)		0.14 kN/m ²			
50x275.loists @350c/c			0.18 kN/m ²			
Pupping Boards & Fill			0.50 kN/m ²			
Lath and Plaster			0.20 kN/m ²			
Imposed (domestic)				1.50 kN/m ²		
			1.02 kN/m ²	1.50 kN/m ²	2.5 kN/m ²	3.8 kN/m ²
Flat Roof -paving slab						
Paving slab 0.05	m 24 N/m3	3	1.20 kN/m ²			
Insulation			0.10 kN/m ²			
2No Ply			0.30 kN/m ²			
Ceiling			0.30 kN/m ²			
Joists			0.10 kN/m ²			
Accessible terrace				3.00 kN/m ²		
			2.00 kN/m ²	3.00 kN/m ²	5.0 kN/m ²	7.6 kN/m ²
Internal Stud Wall						
Plasterboard & Skim			0.40 kN/m ²			
Timber studs			0.15 kN/m ²			
			0.55 kN/m ²	0.00 kN/m ²	0.6 kN/m ²	0.8 kN/m ²
Internal Brick Wall ####	thk					
0.22 Brick 20 kl	Wm3		4.30 kN/m ²			
Plaster x 2			0.40 kN/m ²		S. A	
			4.70 kN/m ²	0.00 kN/m ²	4.7 kN/m ²	6.6 kN/m ²
External Brick Wall 450	thk					
450 Brick	20 × 4		9.00 kN/m ²			
Plaster			0.20 kN/m ²			
			9.20 haller?	0.00 LAU	9.2 LAU	12.9 LAUm?

2.2.1 Snow Loading

Snow loading shall be designed in accordance with BS EN 1991-1-3.

2.2.2 Wind and Notional Loading

Wind loading shall be designed to BS EN 1991-1-4. Notional Loading shall be determined as 3% of the vertical load applied horizontally to the structure. Load combinations shall be in accordance with BS EN 1990 2002.

Design Performance 3.2

3.2.1 Deflections

Vertical deflections of existing timber floors and supporting beams will be limited to the following:

- Deflection under dead & live loads = Span/250. •
- Deflection under live load Span/360 or 20mm, whichever is the ٠ lesser.
- Deflection under live load for brittle finishes Span/500 ٠

New elements which will provide support to existing masonry will have deflections limited to 10 mm.

3.2.2 Disproportionate Collapse

38 Chester Terrace is classed as Consequence Class 1, in line with BS EN 1991-1-7:2006. It is a 4 storey resident house.

3.3 Design Guides

The following Codes of Practice and design guides will be used to assist in the design:

Code of Practice / Design Guidance	Version
BS EN 1990:2002 +A1:2005	Eurocode – Basis of structural design
BS EN 1991-1-1	Eurocode 1: Actions on Structures – Part 1-1.: Densities, self-weight, imposed loads for building
BS EN 1991-1- 2:2002	Eurocode 1: Actions on Structures – Part 1-2: General actions — Actions on structures exposed to
BS EN 1991-1-3	Eurocode 1: Actions on Structures – Part 1-3: General actions – Snow loads
BS EN 1991-1-4	Eurocode 1: Actions on Structures – Part 1-4: General actions– Wind actions
BS EN 1991-1-7	Eurocode 1: Actions on Structures – Part 1-7: General actions – Accidental actions

BS EN 1997-1	Eurocode 7: Geotechnical design - Part 1
BS EN 1993-1- 1:2005	Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings
BS EN 1993-1- 2:2005	Eurocode 3: Design of steel structures – Part 1-2: Structural fire design
BS 8500-1-2006	Concrete – Complementary British Standard to BS EN 206-1 – Part 1: Method of specifying and
BS EN 1995-1-1	Design of timber structures – General – Common rules and rules for buildings
BS EN 1996-1-1	Eurocode 6: Design of Masonry Structures – Part 1- 1: General rules for reinforces and unreinforced
BS EN 1996-1-2	Eurocode 6: Design of Masonry Structures – Part 1- 2: General rules of structural fire design
BS EN 1996-2	Eurocode 6: Design of Masonry Structures – Part 2: Design considerations, selection of materials and
BS EN 1996-3	Eurocode 6: Design of Masonry Structures – Part 3: Simplified calculation of unreinforced masonry
The Building Regulations 2000	Approved Document A: Structure

3.4 Material Selection & Specification

following:

- Economic use of material no over specification of applicable loads or structural material grades
- Use of recycled materials •
- ٠
- Minimised site waste •

3.4.1 Structural Steel Framing

Although steel production uses a large amount of energy and structural steelwork contains significant embodied carbon, it is also highly recyclable, and it is possible to design efficiently in steelwork to minimise the quantity of material specified and minimise waste generated.

Additionally, structural steel frames are relatively lightweight in comparison to concrete frames and consequently lead to less heavy foundation solutions. This is especially important when constructing new structure within an existing building so as not to overload the foundations.

Material has been selected and will be specified with a focus on the

- Compatibility with existing historic materials where required
- Use of locally sourced material

Structural steelwork in the UK typically contains 40-45% recycled material, however, enhancing specifications to improve the recycled content of steelwork has questionable environmental benefits.

Global consumption of steel continues to rise, mainly as a consequence of industrialisation in the developing world and demand for new steel exceeds the supply of scrap steel by a factor of around two, therefore, it is not currently possible for all new steel to be produced entirely from scrap. While this remains the case, there is no net environmental benefit in specifying recycled steel in preference to primary steel with a lower recycled content. Instead, we consider that a more sustainable approach is to specify steel products that are readily recoverable and recyclable. Structural steelwork used in buildings is typically over 94 per cent recoverable and 99 per cent recyclable. Table 1: Re-Use and Recycling of Steel (from SCI)

	Structural Sections	Purlins and Rails	Cladding	Composite Floor Decking	Reinforcement	Internal Non- Structural Steel
Recycling %	86	89	79	79	91	85
Re-use %	13	10	15	6	1	2
Total %	99	99	94	85	92	87

2.2.3 Responsible Sourcing

Steelwork will be specified to be sourced in accordance with BES6001 or equivalent.

Appendix A



---- 600mm -----









	Drawn	Approved	si	igned	
Job Titl 38 C	F	orm			
Sketch	Title				
Exist up W	wing Openin	g			
Date	S	Scale	Drawn	Check	ed
03/12/2	20	N/A	ROM	BR	
Job No	. Dr	awing	Rev	vision	
20338	0 PI	SK001	-		









Rev. xx.10.2020 Issued for Planning



Date October 2020 Scale Project 1:50 @ A1 / 1:100 @ A3 38 Chester Terrace NW1 4ND Drawing Title: Demolition Upper Ground Floor Plan Drawing No. Rev. P0600 -

Approved



Job No. 203380 Drawing PL.SK001

Revision

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Drawing Title: Drawing No. Drawing No. Drawn Approved Signed

				P0001	-	
Drawn		Approved		Signed		
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38 Chester	r Terrace	!				
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203380	PL.	SK001		-		







NW1 4ND Drawing Title: Demolition Second Floor Plan Drawing No. Rev. P0602 -Drawn Signed Approved Form Job Title 38 Chester Terrace Sketch Title Existing Structural Arrangement Following Opening up Works Checked Date Scale Drawn ROM 03/12/20 N/A BR Job No. Revision Drawing 203380 PL.SK001

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20338	0 PL.	SK001		-		

P0700_Demolition Front (West) Street Elevation	P0701_Demolition Front (West) Light P0800_Demolition Section A-A	
	twell Eleva	
P0801_Demolition Section BB	ation	
CHESTER TERRACE		
P0802_Demolition Section CC	P0701_Demolition Front (West) Lightwell Elevation P0800_Demolition Section A-A	







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Project No. 20056 Client Nathan Harley (Resource Buildings & Interiors Ltd) Date October 2020 Scale Project 1:50 @ A1 / 1:100 @ A3 38 Chester Terrace NW1 4ND Drawing Title: Demolition Roof Plan Drawing No. Rev. P0605 -Drawn Signed Approved

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Job Titl	e			F	orm
38 C	hester Terrace	•			
Sketch	Title				
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Job No.	. Drav	wing	Revision		
20338	0 PL.	SK001	-		

Appendix B





EXISTING FFL TO BE LOWERED BY 300mm. ALLOW FOR A NEW 250mm THK RC SLAB & SURROUNDING WALLS.. NO UNDERPINNING REQUIRED TO PARTY WALLS OR EXTERNAL WALLS AND COLUMNS MAY. CONFIRMED ON SIT THROUGH THE EXISTING FOOTING LEVEL.



EXISTING FFL TO BE LOWERED BY 750mm. ALLOW FOR A NEW 250mm THK RC SLAB & SURROUNDING WALLS. NO UNDERPINNING REQUIRED TO ANY OF THE VAULT WALLS. CONFIRMED ON SITE FROM TRAIL PITS.

PROPOSED LOWER GROUND FLOOR





PROPOSED GROUND FLOOR





PROPOSED FIRST FLOOR

Job Title		Form	
38 Chester Terrace			
Sketch Title			
Proposed Structural Layout			
Date	Scale	Drawn	Checked
03/12/20	N/A	ROM	BR
Job No.	Drawing	Revisi	on
203380	PL.SK002	Rev	А
	Job Title 38 Chester Sketch Title Proposed S Date 03/12/20 Job No. 203380	Job Title 38 Chester Terrace Sketch Title Proposed Structural Layout Date 03/12/20 N/A Job No. Drawing 203380 PL.SK002	Job Title 38 Chester Terrace Sketch Title Proposed Structural Layout Date Scale Drawn 03/12/20 N/A ROM Job No. Drawing Revisi 203380 PL.SK002 Rev



PROPOSED SECOND FLOOR No structural alterations





PROPOSED THIRD FLOOR



BEAM	SCHEDULE
	COLLEDOLE

3-1	152 x 152 UC
3-2	203 x 203 UC

~

EXISTING BEAM SCHEDULE

EX 3-1	254x102 UB
EX 3-2	Timber beam. Size TBC

Existing Joists

50x275dp @ 275 c/c

Job Title			Form
38 Chester	Terrace		
Sketch Title			
Proposed \$	Structural Layout		
Date	Scale	Drawn	Checked
03/12/20	N/A	ROM	BR
Job No.	Drawing	Revisi	on
203380	PL.SK002	Rev	A



PROPOSED ROOF



50x200dp C24 joists @ 300mm c/c



BEAM SCHEDULE

R-1	203 x 203 UC
R-2	203 x 203 UC
R-3	203 x 203 UC
R-4	203 x 203 UC
R-5	203 x 203 UC
R-6	203 x 203 UC
R-6	203 x 203 UC
R-7	203 x 203 UC
R-8	406 x 178 UB
R-9	406 x 178 UB



Appendix C





































































































