mason navarro pledge

TECHNICAL NOTE: SUSTAINABLE DRAINAGE SYSTEM

FOR STEPHENSON WAY STUDENT ACCOMMODATION DEVELOPMENT

REF: 221074 – R02-02

August 2023

mason navarro pledge

CONTENTS

APPENDICES

Report prepared by:

Chris O'Regan

BEng(Hons) CEng FIStructE FICE

Report reviewed by:

Richard James

MEng CEng MICE

Technical Note **Date:** 02/08/23 **Rev:** A	**Project:** Stephenson Way Development **No.** 221074	The Foundry, 5 Baldwin Terrace London N1 7RU	mnp mason navarro pledge

TECHNICAL NOTE: SUSTAINABLE DRAINAGE SYSTEM FOR STEPHENSON WAY STUDENT ACCOMMODATION DEVELOPMENT

1.0 Description of Proposed Development

It is proposed to build a new student accommodation development, which contains residential 76 units and is 7 storeys, that includes a single storey basement and exposed roof terrace. The super-structure will consist of either a flat-slab reinforced concrete frame with a transfer structure at first floor level to allow for the passage of a ramp. This is an access ramp to an existing carpark that serves 222 Euston Road, that must be maintained during the construction and in the permanent configuration of the proposed development.

Accessible drainage is located on Stephenson Way and a pre-development application will need to be made with Thames Water in the form of a Section 106. Surface water attenuation will be required, which will be achieved via buried tanks beneath the basement sub-structure.

2.0 Description of Proposed Below Ground Drainage System

Surface water drainage

It is currently proposed that the site is to be served by its own dedicated below ground surface water drainage network. As described in the drainage strategy report by Lanmor Consulting 181023/DS/MK/RS/01 Rev A of November 2018, the hierarchy of drainage systems indicates that the only viable means to discharge both surface and foul water is into the existing combined sewer that is located in Stephenson Way.

The selected location of discharge is in to the 305mm diameter public surface water sewer to the north in Stephenson Way and connects to Thames Water reference manhole 441D. This is the current location where the site discharges surface water in to. Given the onsite existing surface water infrastructure comprises of a shallow construction, the existing outfall cannot be reutilised and it is proposed to establish a new connection in to the public manhole.

Foul Water Drainage

It is proposed to serve the development with a new below ground gravity fed foul water network and discharge flows in to the existing foul water outfall to Stephenson Way. A new outfall is to be constructed that connects to the existing 305mm diameter drainage pipe.

It is projected that the peak flow rate from the 72no. units within the Stephenson Way development will be approximately 11l/s, which is based on the current above ground drainage design.

A pre-development enquiry was submitted to the local water authority on 2nd July 2018, where they confirmed they had sufficient capacity in the adjacent foul network to serve the development at the time of writing.

3.0 Description of Sustainable Drainage System (SuDS)

In line with the London Borough of Camden's guidance and policy it is proposed to restrict surface water runoff rates for all events up to and including the 1 in 100 year event plus 40% allowance for climate change at a rate of 2.00l/s. A rate of 2.00l/s is a significant improvement on the existing runoff rates from the site.

To achieve this the drainage strategy that is to be adopted comprises of a gravity fed on site below ground piped system that drains to below ground attenuation tanks with a storage capacity of 15m^3, which then discharge temporarily stored water into the combined sewer. By adopting such a strategy the flow is restricted to 2.00l/s prior to out-falling into the public sewer. The attenuation tanks and pumps shall be maintained on a regular basis to ensure that they remain functioning.

The outfall from the attenuation tanks is to be pumped to an elevated position into the street level sewer. There is to be redundancy within the pump system to allow for the possibility of failure of part of the mechanical water extract equipment. The pump system will need to be regularly monitored and maintained to ensure it functions as intended.

4.0 Maintenance Plan for SuDS

As explained in Section 3.0 of this technical note, for the SuDS to function as intended, a robust maintenance regime needs to be put into place. This regime will form part of the Stephenson Way development's operation and maintenance (O&M). manual.

Maintenance of the SuDS will include the inspection, monitoring, removal of debris, and material repairs. A description of the maintenance regime for the SuDS is described in *Table 1*.

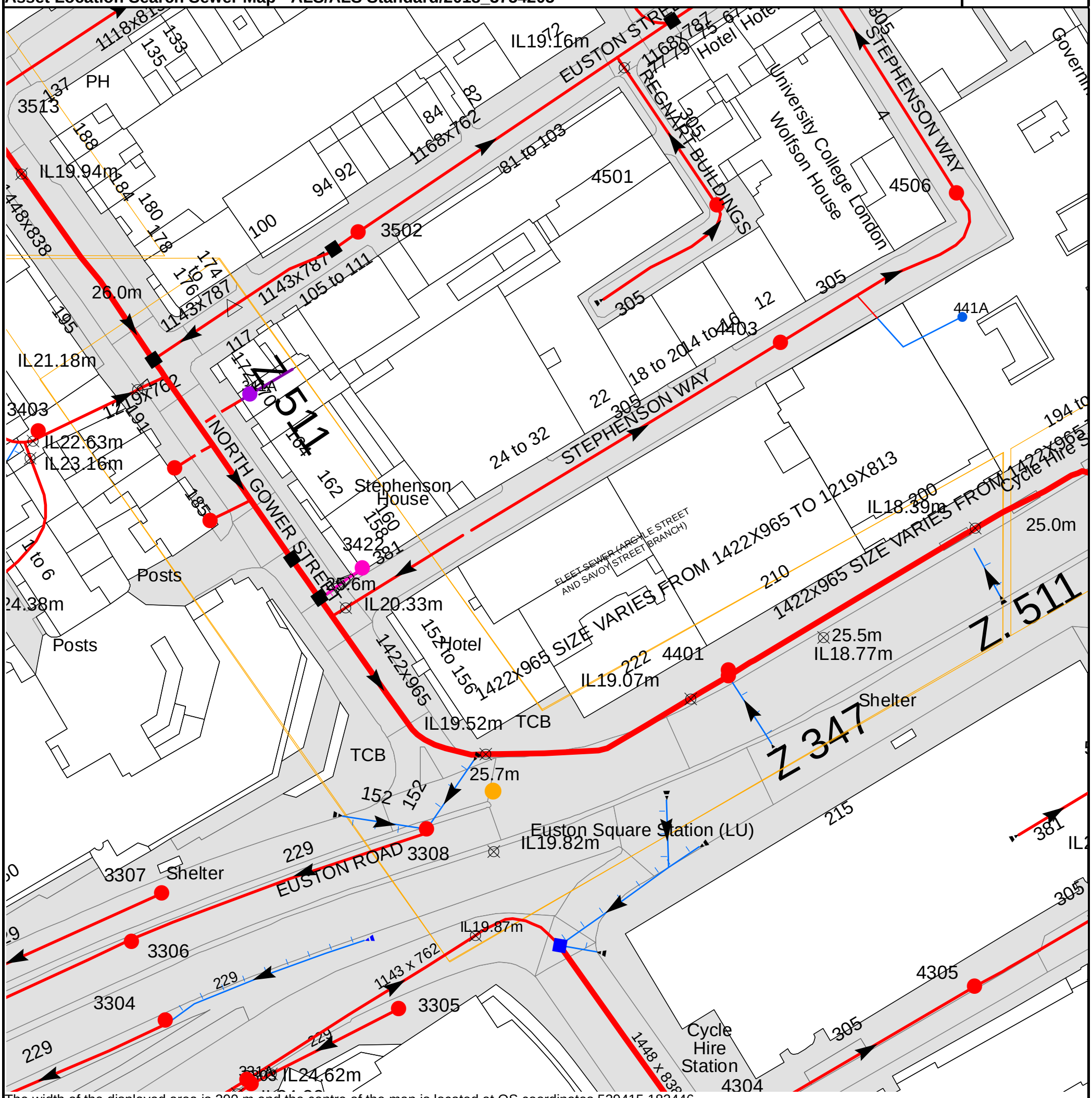
This maintenance regime will be revised depending on the outcome of the initial cycle of the occupation of the development. This is because it may be discovered that an alteration of the frequency of actions described in *Table 1* may be justified as trends of issues are determined to match site conditions.

SuDS Maintenance Regime Schedule		
Type of Maintenance	Action	Frequency
Regular Maintenance	Inspection and identify any components of the drainage system that are not functioning as intended, including the pumping system.	Monthly for 3 months following commencement of building occupation, then once every 12 months
	Removal of debris within drainage system, including attenuation tanks.	Monthly
	Cleaning of filters by removing biological and sediment material	Annually
Repair	Repair inlets, outlets, filters, outflows, pumps, and vents.	As required
Monitoring	Inspection of inlets, filters, outflows, pumps, and vents.	Annually
	Survey drainage system, including attenuation tanks and ancillary components such as the pumping system.	5 years

Table 1 – Maintenance Regime for SuDS

Appendix A – Existing Sewer Location

Asset Location Search Sewer Map - ALS/ALS Standard/2018_3754205

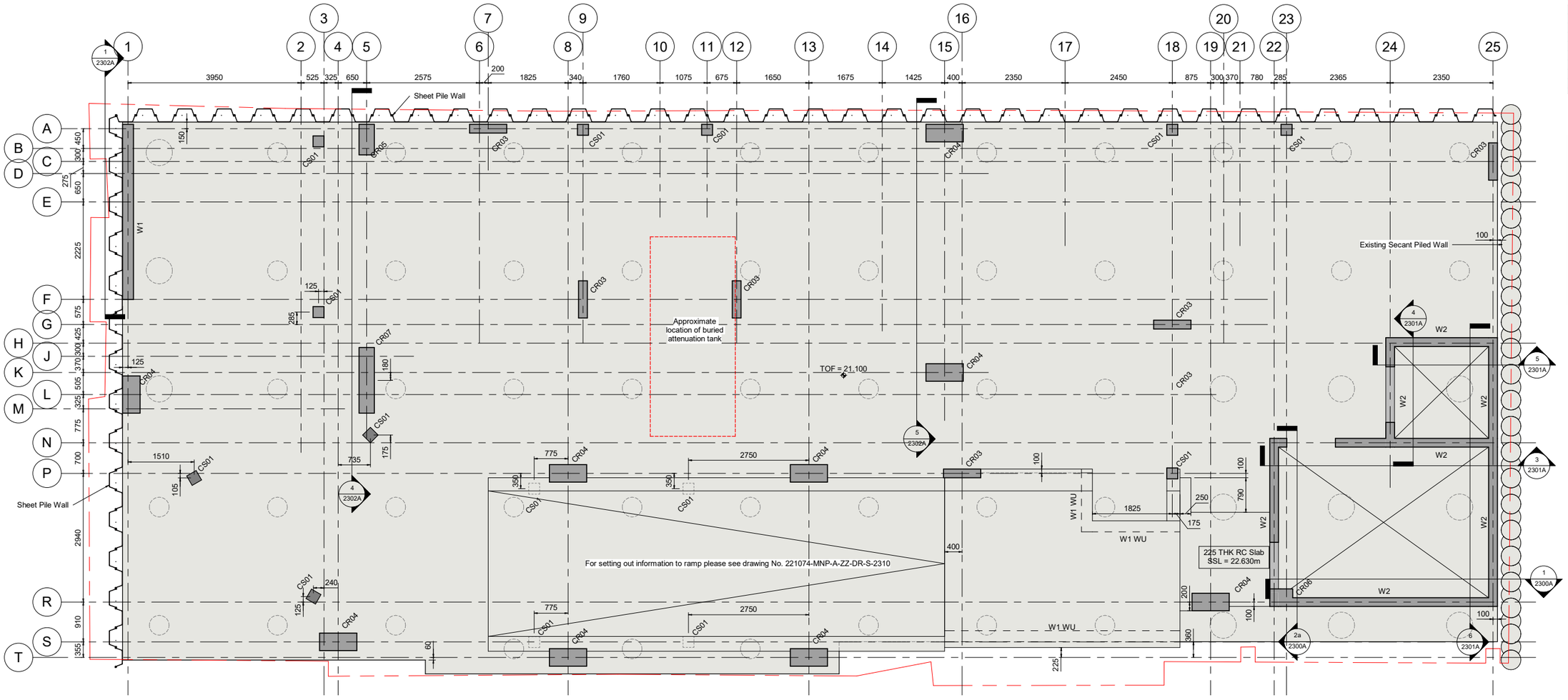


The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 529415,182446

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

Appendix B – Attenuation Tank Location

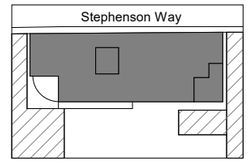


Basement

1 : 50

RC Column Key	
Column Ref.	**Column Size**
CS01	(250) RC SQ COL
CR03	200x850 RC COL
CR05	350x700 RC COL
CR07	350x1500 RC COL
CR06	400x525 RC COL
CR04	400x850 RC COL

RC Wall Key	
Wall Ref.	**Wall Size**
W1	250mm Thick RC Wall
W2	200mm Thick RC Wall



Notes:

1. MNP drawings are to be read in conjunction with:
   - General notes drawing: 221074-MNP-A-XX-DR-S-1000
   - Relevant documents, Specifications, Architectural and Services drawings, including approved building work drawings.
2. All dimensions are in mm except levels which are in metres and relate to [ordnance datum].
3. Do not scale from this drawing. Work to figured dimensions only.
4. The contractor should notify CA of any discrepancies between the structural drawings and specifications or other drawings before work commences.

REV	COMMENTS	DATE	CHKD
P01	Stage 3 Issue	10.02.2023	MLL

STATUS

Stage 3

mnp
mason navarro pledge
Consulting Civil and Structural Engineers
HITCHIN · MANCHESTER · LONDON
01462 632012 · 0161 8701197 · 0203 9265613
office@mnp.co.uk
www.mnp.co.uk

CLIENT

Oakwood International Investment Corp

PROJECT

Stephenson Way

DRAWING TITLE

Basement GA
Option A

SCALE @ A1	DRAWN BY	DATE
1 : 50	MLL	04.01.2023

MNP No.	STATUS CODE	REV
221074	S4	**P01**

REF No.

221074- MNP - A - B1 - DR - S - 1012A

\\fs01\redirect\matt.lovelady\Documents\Stephenson Way_R22_mllNANA6.rvt