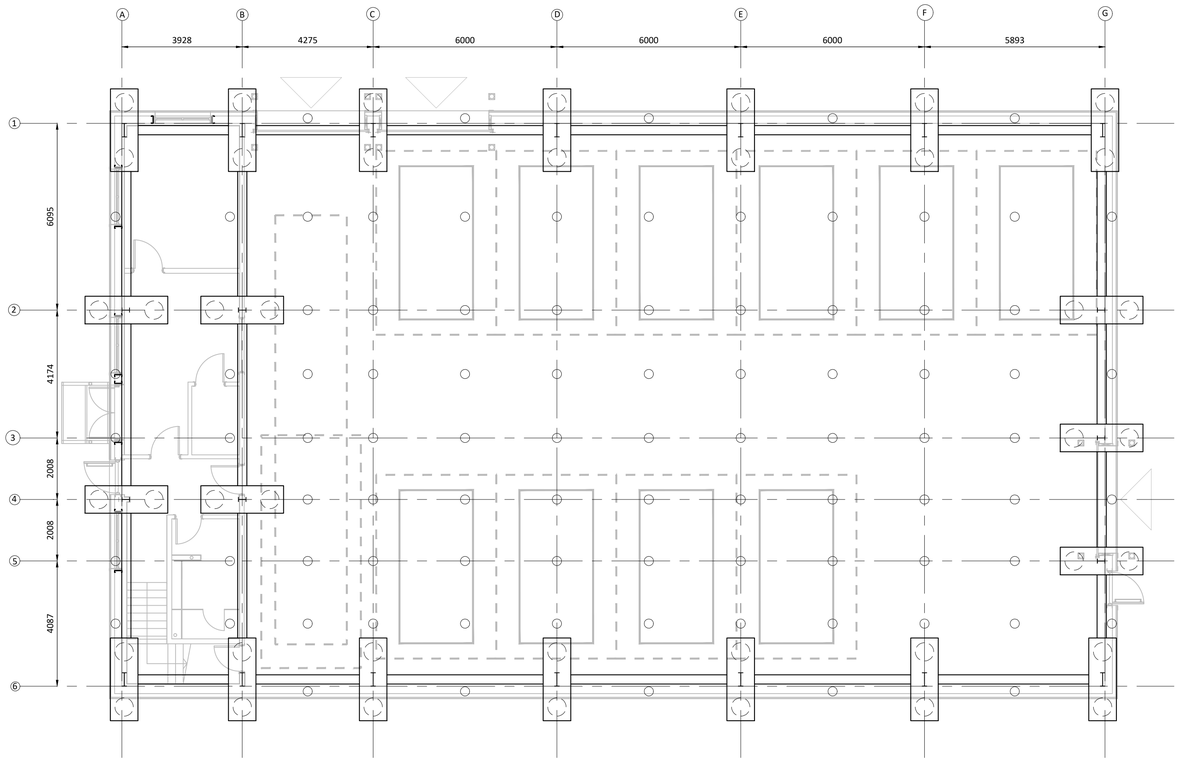
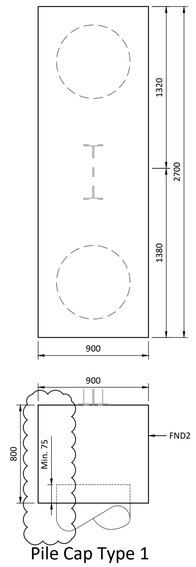


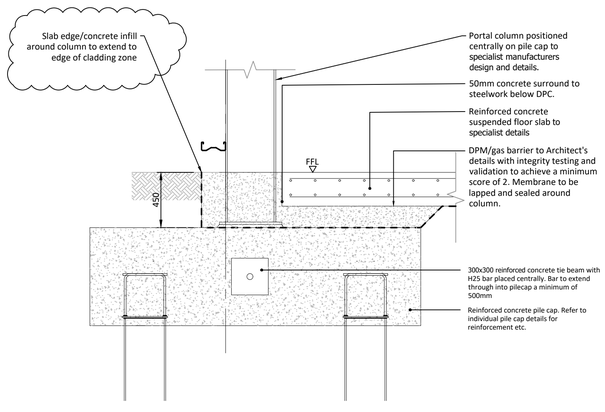
General Arrangement Plan

Scale 1:100



Pile Cap Type 1

Scale 1:25



Typical Section at Portal Column

Scale 1:25

Design Assumptions

- Pile caps have been sized using estimated loadings and are to be confirmed by the superstructure design package
- A column fixity of 10% has been assumed
- A fire boundary has been taken along gridline 1 and 6
- It has been assumed all trimming around doors is performed by the cold rolled cladding and does not require foundations
- No perimeter masonry is present as confirmed by Architect
- All internal walls are either non-loadbearing or capable of being supported off the slab.
- A concrete grade of FND2 has been assumed, and is to be confirmed

Provisional ULS Pile Loadings

Pile Cap	Maximum Vertical Load (kN)	Minimum Vertical Load (kN)	Horizontal Shear (± kN)
1	164	-132	38
Floor Slab	535	123	0

General

Do not scale from this drawing.

All dimensions are in millimetres and levels in metres unless noted otherwise.

Overall setting out information shall be taken from architect's drawings.

This drawing shall be used in conjunction with all relevant drawings, specifications and details, in particular JPP general notes drawing.

This drawing is based on 4443/301/REV P1, supplied by pHp Architects.

PILING

Design liability

The design liability for the piling works shall rest with the piling contractor. The piling contractor shall also be responsible for the connection of the pile to the cap above the piles. An indicative connection system is shown on the pile cap drawings

Design calculations drawings and method statements shall be issued to the Engineer by the piling contractor for review and comment a minimum of five working days prior to commencement of works on site. Comments made by the Engineer shall not affect the design liability of the piling contractor.

Ground conditions

A ground investigation report for the site has been produced by Ian Farmer Associates. The method and design of piling shall be determined by the piling contractor with reference to ground conditions described in the report. The piling contractor shall confirm their chosen method of pile installation is appropriate for ground conditions at the site as described in the report.

The Engineer reserves the right to request alternative methods of pile installation if the proposed method is deemed inappropriate.

Extent

Piling shall be completed to levels determined by the piling contractor but sufficient to allow construction of foundations and formation levels of such foundations shown on the attached drawing.

Piling

Piling works shall be designed, specified and completed by the piling contractor.

Piling works shall comply with and meet with the requirements of the publication 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination; Guidance on Pollution Prevention' (report NC/99/73).

Piling works shall be carried out in accordance with the latest edition of the Institution of Civil Engineers publication 'Specification for Piling and Embedded Sheet Walls.'

Piling shall be carried out so as not to cause any damage to existing buildings or subsurface statutory undertakers equipment or private services both within and outside the immediate area of the works. Any damage as a result of the piling works shall be repaired to an approved standard of workmanship at no additional cost to the contract.

The piling contractor shall select and adopt the most appropriate means applicable to the site and site conditions. The piling contractor is deemed to have visited the site prior to tender and commencement of works on site to familiarise himself with prevailing conditions.

Design Criteria

Piled foundations shall be designed and installed to accommodate loads defined on the Structural Engineer's drawings, together with any requirements to resist heave.

Records/certification

The piling contractor shall provide certification that the proposed and completed works shall meet the specified design criteria.

The piling contractor shall issue two sets of fully detailed drawings and calculations to the Engineer a minimum of 5 working days prior to commencement of works on site. These shall be amended to suit comments of the Engineer and amended (if appropriate) to suit actual site conditions.

On completion of the works the piling contractor shall issue two sets of as built drawings and final calculations/details to the Client.

Construction (Design and Management) Regulations 2015

A minimum of 5 working days prior to commencement of works on the site the piling contractor shall issue risk assessments and method statements to the Principal Designer, sufficient to satisfy the Construction (Design and Management) Regulations 2015. On completion of the works the piling contractor shall issue two copies of as built drawings, details and final calculations to the Principal Designer for incorporation in the project health and safety file.

Testing

The piling contractor shall carry out testing sufficient to demonstrate to all interested parties (including the Client, Main Contractor, the Engineer and third party regulators such as building control) that the completed piling works complies with his design criteria.

The type and scope of testing shall be selected and implemented by the piling contractor with associated costs included in the tender submission. The Engineer shall be given the opportunity to witness the testing. Two copies of the test results shall be provided within 2 working days of completion of the tests.

Insurances

The piling contractor shall maintain a public liability insurance and professional indemnity insurance to a value as agreed with the client to cover the design element of the works.

Collateral Warranty

The piling contractor shall be in a position to complete a collateral warranty for the completed piling works which shall be to the benefit of the employer.

Piling mat

The piling contractor shall provide the employer and the structural engineer details of the piling plant which will be used sufficient to allow the design of the piling mat in accordance with the BRE publication 'Working platforms for tracked plant; Good practice guide to the design, installation, maintenance and repair of ground supported working platforms'.

Temporary Works

All temporary works designs shall be carried out by a competent person, in accordance with the requirements of the Construction (Design and Management) Regulations 2015 and BS 5975:2008.

It is the responsibility of the Contractor to ensure that the installation of the temporary works is carried out correctly, using components which comply with the requirements of the design and are otherwise fit for purpose.

- All concrete elements shall achieve full strength prior to being loaded. High early strength mixes may be required to accommodate construction programme constraints.

Health, Safety and the Environment

In accordance with the Construction (Design and Management) Regulations 2015, designs and details on this drawing have been the subject of a designers risk assessment, to identify risks in construction, use, and demolition of the scheme.

It is not considered necessary for designers to highlight obvious and/or common risks (such as deep excavations, manual handling and working around heavy plant), which contractors should be familiar with.

So as far as is reasonably practicable, risks inherent in the design have been eliminated. Where it has been considered that elimination of a risk (or part of a risk) is not reasonably practicable, it has been reduced.

Significant unusual residual risks are identified below, beside the measures which have been adopted to eliminate and/or reduce them:

- None identified

Rev	P4	Details amended.	By MTL	Checked BSA	31.03.2020
Rev	P3	Floors slab piles revised on Gridline B.	By MTL	Checked BSA	20.03.2020
Rev	P2	Pile size revised.	By MTL	Checked BSA	19.03.2020
Rev	P1	Preliminary issue.	By MF	Checked LF	28.02.2020

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- Infrastructure Design
- Structural Engineering
- Planning Services
- Geotechnical & Environmental
- Surveying
- Professional Advice

Drawn By:	MF	**Client**	Jarvis Group LTD
Chkd By:	LF	**Project**	Coldharbour Lane Harpenden
Scale @ A1:	As Shown	**Title**	General Arrangement Plan & Details
Date:	February 2020		
Status:	**PRELIMINARY**		
Project No.:	20450	**Drawing No:** B01	**Rev:** P4