

Load Description	Value
DEAD LOADS	
Self Weight	By Specialist
Finishes	1.80 kN/m ²
Services	0.30 kN/m ²
LIVE LOADS	
Typical	1.50 kN/m ²
Partitions	0.50 kN/m ²
Common Areas	3.00 kN/m ²
Book Store	3.00 kN/m ²
Big Store	3.00 kN/m ²
Plant Room	7.50 kN/m ²
PRIVATE STAIR LOADING	
Live Load	1.50 kN/m ²
Add. Dead Load	0.50 kN/m ²
BLOCK WALLS	
140 Thick	2.50 kN/m ²
215 Thick	4.00 kN/m ²
Brick Block Cavity Wall	3.85 kN/m ²
Brick Metsec Cavity Wall	3.30 kN/m ²

NO SETTING OUT INFORMATION IS SHOWN ON THIS DRAWING. FOUNDATION LOCATIONS ARE BASED ON ARCHITECTURAL HOUSETYPE LAYOUTS AT THE TIME OF DESIGN. FOR SETTING OUT OF FOUNDATIONS IN RELATION TO THE WALLS REFER TO ARCHITECTS HOUSETYPE DRAWINGS.

Key	Description
	Indicates span of Beam and Block/PCC Floor.
	Denotes Masonry Sub-Structure. Refer to Architects drawings for details. Substructure Block strengths to be min 7.3N/mm² or to match Ground Floor to First Floor strengths if higher. Mortar below DPC to be M6 and sulphate resisting for design chem class > DS2
	Denotes Step in underside of Foundation.
	Denotes Step in top of Foundation.
900dp	Denotes minimum depth of foundation below E.G.L. U.N.O., Foundation depth to be a minimum of 900mm.
*	External wall to be fully tied to internal wall at 225mm centres.
	Allow 3kN/m on the beam and block floor for Bracing Walls.
	Denotes location of Screen wall. Refer to drawing LN41-RJL-00-FN-DR-S-5001 for details.
+47.000	Existing Ground Level
	Denotes Pilecap reference.
	Denotes Heaveguard to inner face of external beams, see sections for detail and thickness.
	Hatch indicates Cellcore is required to this beam and/or Pile Cap. Refer to drawing number LN41-RJL-00-FN-DR-S-4002 for details.
P01	Denotes Pile number
TB	All Tie Beams to be 300 x 300dp U.N.O.
	Denotes soft joint between screen wall and house footings. Refer to drawing LN41-RJL-00-FN-DR-S-5001 for details.

A Soils Investigation Report has been carried out on 27th OCT. 2022 by LEAP ENVIRONMENTAL LTD.

2. Concrete to be in accordance with BSEN206-1, BS8500-1 and BS8500-2 and should be at minimum the following grades:

Location	Designated Concrete	Design Chem Class	Consistency Class
Blinding	GEN1	D5-1 AC-1	S3
Piling	RC30/37	D5-1 AC-1	S4
Ground Beams	RC32/40	D5-1 AC-1	S3
Pilecaps	RC32/40	D5-1 AC-1	S3
Substructure Mortar	AC-5	D5-1 AC-1	
CFA piling not suitable for	RC-5	Design Chemical Class	

3. Pile loads shown are un-factored in Kilonewtons (kN). Piles shall be designed by the piling specialist in accordance with the requirements of the project specification and associated documents using recognised empirical formula and to the satisfaction of the checking authority. Design to include for 10kN lateral load/pile and to overcome the risk of ground heave.

4. Maximum pile diameter to be 300mm and to be positioned centrally about ground beams; unless noted otherwise, any variation from this diameter is to be notified to the Engineer immediately. Nursery & Apartments piles to be 400mm Dia.

5. Bottoms of all foundation excavations shall be trimmed, levelled and protected from inclement weather and kept free of water. Bottoms of excavations to receive reinforced concrete, shall be blinded with not less than 50mm of designated concrete in accordance with the table above.

6. The Contractor is responsible and liable for ensuring the stability of the works and services at all stages of construction. Unless shown on the project drawings, we have no knowledge of existing underground services or obstructions.

7. All ground beams to be shuttered using MAX FRANK PCEAFIX or equivalent permanent formwork unless ground conditions provide good stability of trench sides. Where foundations are cast against an earth face, increase foundation widths to achieve minimum 75mm cover.

8. Reinforced concrete shall be compacted by means of a mechanical vibrating poker and the workability shall be such that, when compacted, a dense concrete, free from voids shall be produced.

9. Construction joints in ground beams shall be formed against a vertical groud (tight shutter and shall be located in the middle third of any beam span between piles, subject to being a minimum of 1.5m from any junction with other ground beams.

10. Piles are to be left in a sound condition with the reinforcement projecting 40 x bar diameter above the stated cut off level. Pile reinforcement to be turned into ground beams caps and lapped with top reinforcement as shown on the drawings. Use a minimum of 6H16 bars having an anchorage length of 650mm into the pile concrete and a minimum lap length of 650mm with the top layer of ground beam reinforcement.

11. Piles have been designed on a maximum deviation position of 75mm. Any piles out of position greater than 75mm to be reported to the Engineer immediately.

12. Pile Head to have a minimum embedment of 50mm into ground beams and 75mm into Pile Caps.

13. All Piles are to be cast a maximum of 300mm above their cut off level and then broken down to the levels indicated on the Pile Table.

14. All piles to be 100% integrity tested. Provide one static load test to 1.5 x working pile load with F.O.S. of 2.5 or alternatively design for a F.O.S. of 3.0 with no static load test required subject to Local Authority and NHBC approval. Test pile to be nominated upon receipt of daily piling logs, by Engineer. Piling Contractor to include for the construction of all anchor piles for the static load test.

15. The maximum vertical settlement of the pile is not to exceed 10mm, unless noted otherwise in the specification.

16. For all crane base foundations, refer to crane suppliers drawings and details for links and stirrups to be cast into foundations.

Foundation depths shown on the drawings should be a minimum of **900 mm** below existing or proposed ground level whichever gives the greatest depth and should penetrate all soft spots, made up or disturbed soils, to a minimum of 150mm of 150mm of undisturbed **RIVER TERRACE DEPOSITS WITH UNDERLYING WEALD CLAY** at depth with an allowable bearing pressure of **85 kN/m²**. A suitably qualified Engineer and/or Building Contractor/warranty provider is recommended to be consulted to ensure that the correct bearing strata is achieved prior to casting foundation. Should the additional depth of foundation required to penetrate the founding strata exceed 500mm, the Engineer should be consulted before proceeding.

3. Foundation depths are based on the greater of:
Depth to suit trees to remain as shown on the drawings.
Depth to suit trees to be removed as shown on the drawings.
Depths shown are to be measured from existing or final ground level whichever gives the lowest level, unless otherwise shown on the drawings.

4. Foundation depths shall be increased as required to penetrate a minimum of 500mm below any root activity. Depths determined by this requirement shall not be less than those shown on the drawings.

5. To ensure compliance by the Contractor with note 4, an appropriately qualified Engineer shall be employed to inspect excavated soil during the final 500mm of any excavation. This Engineer should break open clumps of soil excavated to examine the soil for roots. If in doubt, the design Engineer should be consulted before proceeding further with construction of the foundations.

6. All foundations shall be constructed with a vertical face and without the presence of any over break or concrete overspill. The Engineer is to be informed if such criteria are not met to agree appropriate remedial action.

7. Foundation depths shown apply only to the location of buildings accounting for the presence of trees & shrubs shown on the drawings. Report to the Engineer if site conditions or details of trees / shrubs vary from information shown.

8. All foundation depths have been derived in accordance with all existing trees indicated on the Arboricultural Report. All proposed planting and for all future tree planting on the site, the Client/Employer shall ensure that new tree or shrub planting is in compliance with the following requirements for **MEDIUM** volume change potential soil:
Water demand of tree
See NHBC Standards, Ch 4.2: Table 3 for minimum foundation depth

Soil volume change (See note 8)	High Moderate Low
High	1.25 x mature height (m)
Moderate	0.75 x mature height (m)
Low	0.50 x mature height (m)
	No Shrub Zone (m)
High	3.0 m
Moderate	2.5 m
Low	2.0 m

9. Foundations to each plot, or group of units shall bear onto consistent ground conditions throughout.

10. Where foundations bear into non-shrinkable soils (such as sands and gravels) which are underlain by shrinkable clay, foundation depths may be varied to suit site conditions subject to the receipt of prior written approval of the Engineer and Local Authority.

11. Where non-shrinkable soils (such as sands and gravels) underlie shrinkable clays, foundation depths may be varied to suit site conditions subject to the receipt of prior written approval of the Engineer and Local Authority.

12. Sleeves / lintels etc. to allow drains and services to pass through foundations and subsurface walls shall allow for the following potential ground heave:
Volume change potential (See note 3)

High Medium Low	Potential Ground Heave
High	150 mm
Medium	100 mm
Low	50mm

13. The Contractor is to ensure, so far as reasonably practical, that the claims has obtained any necessary Building Regulations and/or similar approval before he commences work on site.

14. The Contractor is responsible and liable for ensuring the stability of the works and services at all stages of construction. Unless shown on the project drawings, we have no knowledge of existing underground services or obstructions.

15. Heaveguard should be provided to the inside face of perimeter trenchfill foundations when deeper than 1500mm to a depth of 500mm above founding level when the heave potential is HIGH or MEDIUM (See note 8 above). See 4000 series drawings for details.

1. All design packages used for pre-cast concrete floor units shall be B.S.1, or agrément approved. Copies of relevant documentation shall be supplied to the Engineer on request.
2. The pre-cast unit manufacturer shall supply the Engineer with 2 copies of all design calculations, drawings etc. (including reinforcement drawings for R.C. elements), and shall not proceed with manufacture until comments are received from the Engineer. Allow 5 working days for comments and programme works to comply with main contractors programme.
3. All structural concrete design shall comply with BS 8110 and shall allow for the unfactored loadings listed below.

Self weight of floor units for ground floor construction to be not more than 300 kg/m². Self weight of floor units for upper floor construction to be not less than 300 kg/m² and not more than 340 kg/m².
Screed and finishes load – refer to Architects drawings for floor construction (allow screed weight 2400kg/m³).

Timber floating floor and finishes load :- 1.80kN/m².

Imposed loads
Garages 2.50kN/m², Houses 1.50kN/m².

Partitions
UDL 5.0kN/m²
Line load for non-loadbearing partitions: Timber 2.00 kN/m
Masonry 3.00 kN/m run.
4. Where beam and block floor systems are used, air bricks to ventilate the under floor voids shall not be located under beam bearings.
5. All concrete units to have nominal 90mm (min. 75mm) bearings on structural steelwork sections and nominal 100mm (min. 90mm) bearings on masonry except where shown otherwise on the drawings.
6. Where the sides of precast units are built into walls, pin up hard between the wall and underside of unit with 1:3 cement:sand mortar to ensure structural continuity.
7. All concrete infill between hollow plank units and for closing up of holes, minimum strength, not to be less than grade C28/35 max 6mm aggregate, S3 slump to BS EN 206-1, BS 8500-1 and BS 8500-2.
8. Grouting of units shall be in strict accordance with manufacturer's instructions.
9. External and party walls parallel with beam spans shall be restrained at top of upper floor levels with galvanised 30x5.0mm straps having a size not less than 100x1000 and at no more than 2.0m centres in housing and 1.25 centres in flats.
10. PCC planks to be designed to suit holes and notches as detailed on the drawings. Floor supplier to include for trimming around service holes, except as detailed on the drawings.
11. Contractor/PCC Plank Supplier to submit erection sequence of planks prior to erection. When using Simlitor, ASB, beams with web angles or web bottom plates to support PCC, steelwork should always be loaded evenly on both sides during construction.

1. The drawings, design and all information contained therein are the sole copyright of Richard Jackson Ltd and reproduction in any form is forbidden unless permission is obtained in writing.
2. All drawings shall be read in conjunction with all relevant Civil / Structural Engineers drawings, the project specification and Architects, Services Engineers & Landscape Architects drawings.
3. For all setting out information, D.P.M., D.P.C., Finishes and waterproofing details refer to the Architects drawings and details.
4. The Contractor shall verify all site and setting out dimensions before putting work in hand. Where dimensions are shown on the Engineers drawings, any discrepancies shall be reported to him.
5. Dimensions must not be scaled from the Engineers drawings.
6. All dimensions are in millimetres unless noted otherwise.
7. Dimensions marked * are subject to confirmation by site measurement before construction proceeds.
8. All dimensions are given to structural surfaces unless noted otherwise.
9. All lightning connectors to be fixed in accordance with specialist details.
10. No holes, chases, cut-outs, existing or proposed services or the like may be formed in or pass through any beam, column, or load bearing wall unless written permission is obtained from the Engineer.
11. Holes smaller than 225 x 225mm through slabs are not necessarily shown on the Engineers drawings.
12. For size and location of all services refer to the Service Engineers and Architects drawings.
13. Inspections made by the Local Authority, NHBC or other Statutory bodies, shall be arranged by the Contractor to suit his programme. Any costs arising out of failing to carry out the work to the satisfaction of the Checking Authority will be the sole responsibility of the Contractor.
14. Non-structural fixings are generally not shown on the Engineers drawings and if any such detail is indicated it must be confirmed by cross-reference to other specialists before construction.
15. All drawing specifications are given in accordance with NBS (National Building Specification) e.g. E10/130 which refers to NBS Section E10, Clause 130.
16. Abbreviations:

CRS	Centres	T0C	Top of concrete
T&C	To be confirmed	B0C	Bottom of concrete
UNO	Unless noted otherwise	SSL	Structural slab level
DIA	Diameter	T0S	Top of steel
EGL	Existing Ground Level	FFL	Finished Floor Level
FGL	Finished Ground Level	SOP	Setting Out point

ALL PILED FOUNDATIONS TO BE **450w x 450dp** AND CENTRALLY LOCATED BENEATH WALLS UNO. ALL TIE BEAMS TO BE **300w x 300dp** UNO

REVISIONS

This drawing is to be read in conjunction with all other Engineer's drawings and all other project information. Any discrepancy between the Engineer's drawings and other project information is to be reported to the Engineer immediately.

Drawing Title
FOUNDATION GA
SHEET 13

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Project Manager	Checked	Approved	Security Code
L. GREENAWAY	PC	PC	ST4
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A4	AUTHORISED & ACCEPTED (CONSTRUCTION)		

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