GENERAL NOTES

1. STRUCTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH STRUCTURAL SPECIFICATIONS , ALL ARCHITECTS AND SERVICES DRAWINGS AND SPECIFICATIONS .
2. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE . THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION . THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION . SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING OF LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. BEFORE RELATED WORK COMMENCES THE CONTRACTOR SHALL SUBMIT A METHOD STATEMENT AND SEQUENCE OF WORK TO THE ENGINEER AND ARCHITECT.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION . ALL DISCREPANCIES TO BE NOTIFIED, IN WRITING TO ENGINEERS AND ARCHITECTS FOR RESOLUTION . ALL SETTING-OUT TO BE TAKEN FROM THE ARCHITECTS DRAWINGS .
4. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF, IN SUCH A MANNER THAT THE STRUCTURE IS NOT OVERLOADED IN EITHER THE PERMANENT OR TEMPORARY CONDITION .
5. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS , SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM . OTHER STANDARDS MAY BE CONSIDERED BUT ONLY WITH PRIOR APPROVAL BY THE ENGINEER .
6. CONTRACTOR TO ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL , MECHANICAL AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTOR PRIOR TO CONSTRUCTION .
7. OPTIONS ARE FOR CONTRACTORS CONVENIENCE . HE SHALL BE RESPONSIBLE FOR ALL CHANGES NECESSARY IF HE CHOOSES AN OPTION AND HE SHALL CO-ORDINATE ALL DETAILS.
8. ALL DIMENSIONS ON DRAWINGS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS ONLY APPLY. DRAWINGS ARE NOT TO BE SCALED . ALL LEVELS ARE IN METRES UNO.
9. FOR CLARITY, ALL ROOF AND FLOOR OPENINGS MAY NOT BE SHOWN ON FRAMING PLANS. FOR EXACT SIZE, NUMBER AND LOCATION FOR OPENING , SEE ARCHITECTURAL , MECHANICAL , ELECTRICAL AND PLUMBING DRAWINGS . WHERE OPENINGS ARE INDICATED ON THE STRUCTURAL DRAWINGS , THESE ARE TO BE CHECKED BY THE CONTRACTOR AGAINST RELEVANT SERVICE ENGINEERS OR SUBCONTRACTORS DRAWINGS PRIOR TO CONSTRUCTION .
10. ALL LEVELS ARE RELATED TO THE ORDINANCE DATUM (OD)
11. FOR LOCATION AND DETAILS OF ELECTRICAL EARTHING OF STRUCTURE REFER TO ELECTRICAL DRAWINGS AND DETAILS.
12. FOR FIRE PROOFING REQUIREMENTS REFER TO RELEVANT ARCHITECTS DRAWINGS . iF IN DOUBT ASSUME A MINIMUM OF ONE HOUR FIRE RATING THROUGHOUT
13. THE CONTRACTOR SHALL NOTE, AND MAKE ALLOWANCES FOR, THE MEASURES NECESSARY TO COMPLY WITH THE WASTE MINIMISATION AND RECYCLING TARGETS SET OUT IN SPECIFICATION .
14. FOR DETAILS AND SETTING OUT OF RWP, SVP, WVP AND ALL OPENINGS SEE THE RELEVANT ARCHITECTS DRAWINGS .
15. FOR INSULATION DETAILS REFER TO ARCHITECTS DRAWINGS .

REINFORCED CONCRETE NOTES

1. CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH BS 8110. CEMENT SHALL BE ORDINARY PORTLAND CEMENT COMPLYING WITH BS12 UNLESS OTHERWISE APPROVED . REINFORCEMENT SHALL BE HOT ROLLED DEFORMED BARS COMPLYING WITH BS 4449:2005 . ALL HIGH YIELD BARS SHALL BE DEFORMED BARS TYPE 2. STEEL FABRIC SHALL COMPLY WITH BS 4483:2005 .
2. ALL CONCRETE SHALL BE IN ACCORDANCE WITH BS 5328 .
3. NOMINAL COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON DRAWINGS:

   SURFACE POURED AGAINST EARTH - 75mm

   SURFACE POURED AGAINST FORMWORK BUT IN CONTACT WITH EARTH OR C12/15N BLINDING - 50mm

   BEAMS, COLUMNS - 30mm

   SLABS - 30mm
4. CONCRETE BLINDING SHALL BE C12/15N/mm2
5. FOR CONCRETING IN COLD WEATHER REFER TO THE CONCRETE SPECIFICATION AND TO THE PROVISIONS OF BS 8110.
6. THE POSITION AND TREATMENT OF CONSTRUCTION JOINTS SHALL BE TO THE APPROVAL OF THE ENGINEER .
7. MOVEMENT JOINT FILLER SHALL BE A COMPRESSIBLE FIBRE BOARD SUCH AS HYDROCELL XL BY FOSROC INTERNATIONAL OR SIMILAR APPROVED .
8. MOVEMENT JOINT SEALANT SHALL BE A TWO PART POLYSULPHIDE SEALANT SUCH AS THIOFLEX 600 BY FOSROC INTERNATIONAL OR AN APPROVED EQUAL , UNLESS NOTED OTHERWISE .
9. CONCRETE VERTICAL SURFACES ADJOINING MASONRY WALLS SHALL BE CAST WITH A CONTINUOUS STAINLESS STEEL PROPRIETARY CHANNEL BY ANCON CCL OR SIMILAR APPROVED .
10. PROVIDE A MINIMUM OF 24 HOURS NOTICE TO THE ENGINEER FOR INSPECTION OF ALL REINFORCING STEEL PRIOR TO PLACING CONCRETE .
11. CONCRETE CUBES SHALL BE TAKEN AT A RATE OF ONE SET ON 3 THREE CUBES PER 20m ³ OR FRACTION THEREOF, WITH A MINIMUM OF ONE SET PER DAY PER CLASS OF CONCRETE . CUBES SHALL BE TESTED AT 7 AND 28 DAYS. ALL RESULTS SHALL BE FORWARDED TO THE ENGINEER .
12. ALL SAMPLING AND TESTING OF CONCRETE TO COMPLY WITH BS 1881.
13. CORE DRILLING OF ANY REINFORCED CONCRETE ELEMENTS OF THE WORK SHALL NOT BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER .

MASONRY NOTES

1. MASONRY CONSTRUCTION SHALL CONFORM WITH BS 5628. BLOCKS SHALL BE CONCRETE MASONRY UNITS CONFORMING TO BS 6073. SAND FOR MORTAR SHALL BE ORDINARY PORTLAND CEMENT TO BS12.
2. BLOCKS FOR RISING WALLS SHALL BE SOLID UNITS. BLOCK SIZES FOR OTHER AREAS SHALL BE AS INDICATED ON DRAWINGS OR SPECIFICATIONS . JOINT THICKNESS SHALL BE 10mm.
3. THE CHARACTERISTIC COMPRESSIVE STRENGTH OF THE BLOCKS SHALL BE 5.0 N/mm ² UNLESS NOTED OTHERWISE ON DRAWINGS . BLOCKS SHALL BE TESTED AT A RATE OF 5 PER 1000 BY AN INDEPENDENT TESTING AGENCY.
4. MORTAR SHALL COMPLY WITH THE MIX DESIGNATED FOR GRADE (III) GIVEN IN TABLE 1, IS325, PART 1 UNLESS OTHERWISE STATED ON DRAWINGS. MORTAR TESTING SHALL BE IN ACCORDANCE WITH BS 5628, APPENDIX A.1.
5. BED JOINT REINFORCEMENT SHALL BE "BRICKFORCE REINFORCEMENT" BY BRC BUILDING PRODUCTS OR SIMILAR APPROVED . BED JOINT REINFORCEMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE TYPE, SIZE AND SPACING INDICATED ON THE DRAWINGS . IT SHALL BE IN STAINLESS STEEL GRADE 304, UNLESS NOTED OTHERWISE ON THE DRAWINGS .
6. RISING WALL INTERSECTIONS SHALL BE TIED TOGETHER IN A MASONRY BOND. OTHER WALLS SHALL BE TIED IN MASONRY BOND AT CORNERS UNLESS NOTED OTHERWISE ON DRAWINGS.
7. CAVITY WALL TIES SHALL BE STAINLESS STEEL TYPE 1 TIES IN ACCORDANCE WITH BS DD140 UNLESS OTHERWISE NOTED ON DRAWINGS. TIES SHALL BE SPACED IN ACCORDANCE WITH THE SPECIFICATION AND IS325, PART 1.
8. FOR MASONRY CONSTRUCTION DURING COLD WEATHER REFER TO THE SPECIFICATIONS AND THE PROVISIONS OF BS 5628.
9. ALL RISING WALLS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BRACING OF ALL MASONRY WALLS AS NECESSARY TO ENSURE STABILITY DURING CONSTRUCTION . SUCH SHORING AND BRACING SHALL BE MAINTAINED IN POSITION UNTIL THE MASONRY HAS ATTAINED ITS DESIGN STRENGTH AND THE RESTRAINING/SUPPORT STRUCTURE IS IN PLACE.
11. BACK FILL SHALL NOT BE PLACED AGAINST WALLS WITHIN 10 DAYS OF COMPLETION OF THE WALL. THE MAXIMUM LEVEL DIFFERENCE BETWEEN BACK FILL ON EITHER SIDE OF A MASONRY WALL SHALL BE 225mm. HEAVY EQUIPMENT USED IN BACK FILLING SHALL NOT OPERATE CLOSER TO THE WALL THAN A DISTANCE EQUAL TO THE HEIGHT OF THE BACK FILL ABOVE THE FOOTINGS .
12. REQUIREMENTS FOR REINFORCED MASONRY:

(A) CONCRETE FOR FILLING CORES OR EMBEDDED REINFORCING BARS SHALL BE C28/35 UNLESS NOTED OTHERWISE ON DRAWINGS . MAXIMUM AGGREGATE SIZE 10mm.

(B) VERTICAL BAR REINFORCEMENT SHALL BE SECURED IN POSITION. CAVITIES CONTAINING REINFORCEMENTS SHALL BE COMPLETELY FILLED WITH CONCRETE AND CLEAN OUT OPENINGS SHALL BE PROVIDED AT THE BASE OF VERTICAL CORES.

13. FOR LINTEL DETAILS REFER TO PROJECT DETAIL DRAWINGS AND MASONRY SPECIFICATION .
14. REFER TO ARCHITECTS DRAWINGS FOR DETAILS OF SETTING OUT TO MASONRY SPECIFICATION .
15. REINFORCED U-BLOCK TO BE PROVIDED AT CILL LEVEL OF ALL WINDOW OPES .
16. * DENOTES 'UBLOCK'/P.C. BUILDERS LINTEL OVER FOR ALL STANDARD BLOCKWORK OPENINGS . ALTERNATIVELY KEYSTONE ANGLE LINTELS FOR STANDARD BRICKWORK OPENINGS .
17. CONTROL JOINTS TO BE PROVIDED IN BLOCKWORK AT 6m Crs. WALL TIES SHALL BE PLACED AT 450 Crs. ACROSS CONTROL JOINTS ON INTERNAL LEAVES. WALL TIES TO BE DOBONDED AT ONE END.

PRECAST CONCRETE NOTES

1. CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH BS 8110. CEMENT SHALL BE ORDINARY PORTLAND CEMENT COMPLYING WITH IS1 OR BS12 UNLESS OTHERWISE APPROVED . REINFORCEMENT SHALL BE HOT ROLLED DEFORMED BARS COMPLYING WITH BS 4449:2005 . ALL HIGH YIELD BARS SHALL BE DEFORMED BARS TYPE 2. STEEL FABRIC SHALL COMPLY WITH BS 4483:2005 .
2. ALL CONCRETE SHALL BE IN ACCORDANCE WITH BS 5328.
3. UNITS ARE TO BE ERECTED BY COMPETENT CONTRACTORS AS APPROVED BY PRECAST SUPPLIER / MANUFACTURER , AND THE ENGINEER .
4. OPENINGS - NO OPES, NOTCHES OR ALTERATIONS ARE TO BE MADE TO UNITS WITHOUT PRIOR CONSULTATION WITH PRECAST SUPPLIER / MANUFACTURER .
5. MORTAR FOR BEDDING SHALL COMPLY WITH THE MIX DESIGNATION FOR GRADE (III) GIVEN IN TABLE 1, IS325, PART 1 UNLESS OTHERWISE STATED ON DRAWINGS . MORTAR TESTING SHALL BE IN ACCORDANCE WITH BS 5628, APPENDIX A.1. SAND FOR MORTAR SHALL COMPLY WITH BS 1200.
6. THE CONTRACTOR SHALL SUBMIT FULLY DETAILED FABRICATION DRAWINGS TO THE ENGINEER FOR APPROVAL A MINIMUM OF 10 WORKING DAYS BEFORE FABRICATION IS DUE TO COMMENCE . NO FABRICATION SHALL COMMENCE UNTIL APPROVAL OF THE SHOP DRAWINGS IS RECEIVED AND UNTIL ALL COMMENTS HAVE BEEN INCORPORATED .
7. APPROVAL BY THE ENGINEER IN NO WAY RELIEVES THE CONTRACTOR FOR ANY RESPONSIBILITY FOR THE ACCURACY, CORRECTNESS AND ADEQUACY OF CALCULATIONS , DESIGN, DETAILS AND DIMENSIONS .
8. PROVIDE A MINIMUM OF 24 HOURS NOTICE TO THE ENGINEER FOR INSPECTION OF ALL REINFORCING STEEL PRIOR TO PLACING CONCRETE .
9. CONCRETE CUBES SHALL BE TAKEN AT A RATE OF ONE SET OF THREE CUBES PER 20m ³ OR FRACTION THEREOF, WITH A MINIMUM OF ONE SET PER DAY PER CLASS OF CONCRETE . CUBES SHALL BE TESTED AT 7 AND 28 DAYS. ALL THE RESULTS SHALL BE FORWARDED DIRECTLY TO THE ENGINEER.
10. ALL SAMPLING AND TESTING OF CONCRETE TO COMPLY WITH BS 1881.

STRUCTURAL STEELWORK AND COLD FORMED PURLINS/SHEET RAILS

1. ALL STRUCTURAL STEELWORK SHALL BE CARRIED OUT IN ACCORDANCE WITH BS 5950 .
2. STEEL GRADES :

UB/UC	: S275 TO BS EN 10025, U.N.O.
CHANNELS/PLATES	: S275 TO BS EN 10025, U.N.O.
CHS/SHS/RHS	: S775 TO BS EN 10210, U.N.O.
EQUAL/UNEQUAL ANGLES	: S275 TO BS EN 10056, U.N.O.
KICK FLATS/BARS	: S275 TO BS EN 10025, U.N.O.

3. ALL STEEL SHALL BE SAW CUT.
4. ANCHOR BOLTS SHALL BE GRADE 8.8 MATERIAL UNLESS STATED OTHERWISE ON THE DRAWINGS . GROUT UNDER BASE PLATES SHALL BE SBO FIVE STAR NON SHRINK GROUT MIXED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS . HOLDING DOWN BOLTS AND LEVELLING PACKS SHALL BE TOTALLY ENCLOSED BY GROUT.
5. |ALL STEEL TO BE BLAST CLEAN STEEL TO SA 2 1/2. FINISH TO BE GALVANISED AND FIRE PROTECTED TO A ONE HOUR RATING . PAINT FINISHES TO BE AS INDICATED ON THE ARCHITECTURAL G.A. DRAWINGS OR SPECIFICATIONS .
6. COLD FORMED PURLINS AND SHEETING RAILS SHALL BE DESIGNED TO BS 5950 PART 5 AND SHALL BE MANUFACTURED FROM HOT DIPPED GALVANISED STEEL TO BS EN 10147: 1992. STEEL SHALL BE GRADE E350 WITH A Z225 ZINC COATING UNLESS NOTED OTHERWISE .
7. ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR . CALCULATIONS SHALL BE SUBMITTED FOR APPROVAL WITH THE FABRICATIONS DRAWINGS .
8. THE CONTRACTOR SHALL SUBMIT FULLY DETAILED FABRICATION DRAWINGS TO THE ENGINEER FOR APPROVAL A MINIMUM OF 10 WORKING DAYS BEFORE FABRICATION IS DUE TO COMMENCE . NO FABRICATION SHALL COMMENCE UNTIL APPROVAL OF THE SHOP DRAWINGS IS RECEIVED AND UNTIL ALL COMMENTS HAVE BEEN INCORPORATED .
9. APPROVAL BY THE ENGINEER IN NO WAY RELIEVES THE CONTRACTOR FOR ANY RESPONSIBILITY FOR THE ACCURACY, CORRECTNESS AND ADEQUACY OF CALCULATIONS , DESIGN, DETAILS AND DIMENSIONS .
10. ANY STEELWORK BELOW GROUND TO BE ENCASED IN CONCRETE . MINIMUM COVER TO STEEL TO BE 75mm.
11. ALL CONTACT SURFACES IN FRICTION GRIP BOLTED CONNECTIONS TO BE LEFT UNPAINTED .
12. ALL STEEL BEAMS TO BEAR ON PLATES/ BRICKWORK 100MM MINIMUM UNLESS NOTED OTHERWISE . PLATES TO BE BEDDED ON 10MM THICK MORTAR. REINSTATE BRICKWORK AROUND BEAM ENDS AND PACK VOIDS WITH MORTAR .
13. WHERE BEAMS ARE SUPPORTED ON WALLS/PIERS USE 2 NO. M12 BOLTS THROUGH BOTTOM FLANGE AND CAST INTO PADSTONES .

FOUNDATION NOTES

1. CONCRETE BLINDING SHALL BE PROVIDED UNDER ALL FOUNDATIONS TO A MINIMUM THICKNESS OF 50mm. EXCAVATED SURFACES SHALL BE FREE OF LOOSE MATERIAL , DRY AND BLINDING AS SOON AS POSSIBLE AFTER INSPECTION OF BEARING SURFACES BY THE ENGINEER .
2. FOUNDATIONS TO BE CENTERED UNDER COLUMNS AND WALLS UNLESS NOTED OTHERWISE ON THE DRAWINGS .
3. ALL INSULATION AND DPC'S TO ARCHITECTS DETAILS .
4. FINAL FORMATION LEVELS AND FOUNDATION LAYOUT TO BE AGREED ON SITE WITH ENGINEER DURING EXCAVATION AND PRIOR TO CONSTRUCTION / CASTING
5. ALL CONCRETE IN FOUNDATIONS TO BE GRADE C10P SRC.
6. DEPTH TO BE IN ACCORDANCE WITH NHBC STANDARDS CHAPTER 4.2.
7. IF PLANT ROOTS AND/OR SOIL DESICCATION IS DISCOVERED DURING EXCAVATION FOUNDATION DEPTHS MAY HAVE TO BE INCREASED .
8. REFER TO SERVICES LAYOUT FOR UNDERGROUND DRAINAGE AND DUCTING , ETC. USE PRECAST CONCRETE LINTELS OVER ALL SERVICE PIPES, ETC.

TIMBER NOTES

1.
2. TIMBER GRADES AND SIZES TO BE IN ACCORDANCE WITH BS 4978 & BS 4417 RESPECTIVELY
3.
4. WANE NOT PERMITTED
5. WHERE TIMBERS ARE INDICATED AS BOLTED TOGETHER, USE 51MM DIAMETER DOUBLE SIDED ROUND TOOTHED PLATE CONNECTORS AND M12, GRADE 4.6 BOLTS AT 600MM CENTRES MAX.
6. ROOF JOISTS TO BE DOUBLED UP EITHER SIDE OF ROOF LIGHTS, UNLESS NOTED OTHERWISE .

CONCRETE FLOOR MIXTURE

INGREDIENTS (kg/m ³)	MIX
20mm CHIP	700
10mm CHIP	460
SAND	770
CEMENT	350
WATER	140
*ADMIXTURE (kg)	1.86
**ADMIXTURE (ltr)	2.5
FREE W/C RATIO	0.4
WORKABILITY (mm)	75

* RP1, A STANDARD PLASTICISER
** GLENIUM C315, A SUPERPLASTICISER

TYP. REINF. QUANTITIES:

ELEMENT:	QUANTITIES:
SLABS	100 kg/m ³
RC PAD FOOTINGS	150 kg/m ³
TRANSFER SLABS	200 kg/m ³
PILE CAPS/RAFTS	150 kg/m ³
COLUMNS	450 kg/m ³
GROUND BEAMS	230 kg/m ³
BEAMS	220 kg/m ³
RET. WALLS	175 kg/m ³
STAIRS	135 kg/m ³
WALLS	65 kg/m ³
BASEMENT SLABS	150 kg/m ³
LIFT PITS	200 kg/m ³
75 SCREED	10 kg/m ³

LOADINGS:

ELEMENT:	DL	IL
FLAT ROOF	1.00 kN/m²	0.90 kN/m²
PITCHED ROOF	1.0 kN/m²	0.75 kN/m²
FLOOR	0.8 kN/m²	1.50 kN/m²
PARTITIONS/WALLS:		
INTERNAL	-	0.60 kN/m²
EXTERNAL	-	-

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Title: STRUCTURAL NOTES

Revision	Date	Made by	Amendments

Date	Drawn by	Checked	
30/09/16	RR		
Scales	**Job No.**	**Drawing No.**	**Revision**
NA	2705	800	