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STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF STILT+5 STOREYS RESIDENTIAL APARTMENT PLOT NO.2,3,4 IN THE LAYOUT "ROYAL WINDGATES PHASE-II" IN T.S.NO: 1/1A, BLOCK: 5 & WARD: AB, K.ABHISEKAPURAM VILLAGE, GOLDEN ROCK ZONE, TIRUCHIRAPPALLI CORPORATION.

30.04.2024	Design Basis Report	OK	KALARANI	PARIMALA	RAVICHANDRAN
DATE	**DESCRIPTION**	**STATUS**	**PREPARED BY**	**REVIEWED BY**	**APPRVD. BY**

STRUCTURAL CONSULTANT

P. Ravichandran ,

Structural Engineer,

SE/Gr.I/TLPA/MAY 2019/053

ARCHITECTS PLUS

 # D-27, 2ND FLOOR, JP TOWER,

7TH CROSS EAST, THILLAINAGAR – 600 018.

PHONE: 0431-2742466

CLIENT

M/s. ROYAL SHELTER

TIRUCHIRAPPALLI.

For ROYAL SHELTER

Managing Partner
Power Agent

P.RAVICHANDRAN,M.E.,A.I.I.A.,A.I.V.,
Regd. Architect / Structural Engineer
CA/98/23109 AM 77839/5
SE/Gr.1/TLPA/MAY 2019/053
"ARCHITECTS PLUS", D-27, 2nd Floor
J.P. Tower, 7th Cross (East)
Thillainagar, Trichy-620 018

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2.2. The Building

The proposed construction of a Residential development is situated at T.S.No: 1/1A, Block :5, Ward:AB, Golden Rock Zone, K.Abhisekapuram Village, Tiruchirappalli Corporation. It has only one Block consisting of Stilt floor +5 upper stories + Terrace. Stilt Floor accommodate car parks whereas the 1st Floor to 5th Floors are designed to accommodate Residential units which are configured with 2 & 3BHK.

Architecturally, The Block is close to Rectangular shape with offsets. The Block has plan dimension of 56.73m x 21.87m (186'1½"x71'9") designed to accommodate 2 & 3 BHK units. It has been designed adequately with lift, together with Staircase with a common lobby enables easy & smooth vertical transportation between the floors. The vertical access positioned close to the centre of the building which ensures easy circulation of occupants. Toilets are a designed with the conventional sunk of 125mm(5") with the floor buried trap concept and the balcony is designed with 2" sunk to accommodate the floor trap to drain the water. Terrace is designed as RCC roof with the loadings to cater the 75mm thickness of weathering course and equipment like A/C outdoor units, solar panel etc. Above Terrace, staircase head rooms and Over Head Tanks are provided.

Structurally, the building is essentially a R.C.C. framed structure with columns and the floor framing system is conceptualized with a conventional system of Beams with slabs. The columns are connected to each other with a network of R.C.C beams and RC slabs with the slabs acting as in-plane rigid diaphragms for each of the floors & Roof. The Beams are assigned as frame elements in the 3D model and it is designed as non-ductile Frames. The structural elements are designed with adequate sizes proportion to its span &loads with the Column sizes 300/230x375mm, 300/230x450mm, 300/230x525&300/230x600 and the Beam sizes of width 230mm and 300mm and depth varies from 300mm to 600mm etc .The slab thickness varies from 125mm to150mm.

2.3. Architectural/Structural Configuration

Table: Architectural Floor heights/Structural& Details:

BUILDING CONFIGURATION	
Building Dimension in Plan	56.73m x 21.87m (186'1½"x71'9")
No. Of Floors	**Stilt+5**
Stilt floor height	2.80m
1st Floor height to 5th Floor	3.10m each floor
LMR Slab	4.34m
Head Room Slab	2.40m
Grade of concrete for RC beams / RC slabs	M25
Non-Structural Grade Slab	M20

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1. FOREWORD

The intent of this document is to identify and record all the pertinent input requirements, analysis & design criteria for structural design of the building. It is aimed at formulating the basis of the structural analysis, design & detailing work that the Structural Engineer is planning in delivering the structural scheme of the building. The scheme will be compatible with the architectural theme, satisfy the functional needs, at the same time conforming to the Indian Standards and other applicable building norms to achieve safe, stable, strong and yet optimally economical structures.

The parameters adopted in this report are going to be the basis of the structural design calculations. This report covers the minimum design requirement to establish the unified design basis that will form the overall design philosophy to be adopted in the structural design of the proposed building.

The design will aim to achieve

- Structural & functional integrity.
- Desirable Structural performance under characteristic service design loads.
- Structural durability & maintainability.

2. PROJECT DESCRIPTION

The Proposed Construction of Residential Apartment in Plot No.2,3,4 in the Layout "ROYAL WINDGATES PHASE-II" in T.S.No: 1/1a, Block: 5 & Ward AB, Golden Rock Zone, K.Abhisekapuram village, Tiruchirappalli Corporation.

2.1. Agencies

Client: M/s. ROYAL SHELTER.

Architect: P. Ravichandran.

Structural Consultant: P. Ravichandran ,
Structural Engineer,
SE/Gr.I/TLPA/MAY 2019/053
Architects Plus,
D-27, 2nd Floor, JP Tower,
7th cross east, Thillainagar
Trichy.– 600 018.
Phone: 0431-2742466

Services Consultants:
Electrical: -
Plumbing: -
HVAC: -
Project Consultant: -
Landscape consultants: -

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3.4 Design of Concrete Elements

IS Code	Description
IS 456: 2000	Plain and Reinforced Concrete - Code of practice
IS 1904	Indian Standard Code of practice for design & construction foundations in Soil: General Requirements
IS 2911-(Part1- Sec2)	Indian Standard Code of Practice for Design and Construction of Pile Foundation-Bored Cast In situ Piles
IS 2974	Code of practice for design & construction of machine foundation
SP 16	Structural use of concrete. Design charts for singly reinforced beams, doubly reinforced beams and columns.
SP 34	Handbook on Concrete Reinforcement & Detailing
SP 7(Part IV)	National Building code of India
IS 1786-2008	Specification for high strength deformed bars and wires for concrete Reinforcement.
IS 3370 (part I)	Code of practice for concrete structure for the storage of liquids

4. DESIGN PARAMETERS

4.1 Materials of Construction

The building is predominantly RCC frame structure with columns connected by beams & floor slabs being used as diaphragms in redistribution of lateral forces.

4.1.1 Concrete Grade

Concrete grade shall be M30 & M25 with minimum 28 day strength of 30 & 25 N/mm^2 respectively. Grade M30 concrete is used for design of Isolated Footings & vertical elements like RC columns whereas M25 grade is used for RC beam & RC Slab. Concrete Mix M10 has been used in filling, plum concrete, leveling courses (PCC) and other non-structural items. Density of reinforced concrete is assumed as 25.00 kN/cu.m.

Minimum cement content, water cement ratio etc. shall conform to IS 456:2000 code provisions for durability and strength criteria. The cementitious content shall be in the range of 400 kg/m^3 for M30 grade concrete and 325 kg/m^3 for M25 grade concrete. However trial mix shall be carried out and the cube tests are to be conducted in order to establish its design compressive strength. The design mix shall be approved by the Structural Engineer based on the trial mix results before adopt in to the construction. The slump shall not be less than 100 and it shall be in the range of 120 for pumbable concrete.

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Foundation System	Isolated Footing
Grade of concrete for Foundation	M30
Grade of concrete for Columns	M30
Grade of concrete for RC beams / RC slabs	M25
Non-Structural Grade Slab	M20
Grade of Steel	Fe500 / Fe550

3. LIST OF CODES

In the analysis, design and detailing of the building, the following Indian Standard codes will be used.

3.1 Design Loads (Other Than Earthquake Loads)

ISCode	Description
IS875 (Part 1): 1987	Dead Loads (Unit Weight of Building Material and Stored Material)
IS875 (Part 2): 1987	Imposed Load
IS875 (Part 3):2015	Wind Load

3.2 Design for Earthquake Resistance

IS Code	Description
IS 1893: 2016	Criteria for Earthquake Resistance design of structures.
IS 4326: 1993	Earthquake Resistant Design and Construction of Buildings – Code of Practice
IS 13920: 2016	Ductile Detailing of Reinforced Concrete Structures subject to Seismic Forces - Code of Practice.

3.3 Design of Steel Structural Elements

IS Code	Description
IS 800: 2007	Code of Practice for General Construction in Steel
IS 2062	Steel for General structural purposes

4.1.9 Soil Parameters

The Soil Investigation Report No. TIME/49/ SOIL TEST/ JUNE 2023 dated 23.06.2023 carried out by Time Institute for Materials Testing, Tiruchirappalli. Based on the soil report made available to us, there are two (2) bore holes are drilled for carry out field testing and to collect the soil samples. Standard penetration tests were conducted at change of soil layers and at specified intervals, commencing the test at 0.25m below the existing ground level. The relative density of different soil layers obtained from the N-Values. Disturbed and un-disturbed soil samples were collected from all the layers for visual observation, classification tests and strength characteristics of the soil layers. The sub-soil stratigraphy is relatively uniform i.e. difference between depth of occurrence and thickness of different layers are within normal range. The bore holes are drilled from the said EGL for soil investigation. From the bore log data at the bore hole 1 the top layer upto 0.25m is Clay. From 0.25m to 1.0m it is clay with sand mixed. From 1.0m to 1.5m is gravel and from 1.50m to 4.50m is Soft rock exist with « N » value 60. The Ground water table report is 4. 5m during the investigation period.

4.2 LoadingStandards

Table: Unit Weight of Materials:

Material	**Floor Heights**
Plain Cement Concrete	25.00 kN/Cu.m
Solid Concrete Block Work	20.0 kN/Cu.m
Mortar Finishing	20.00 kN/Cu.m
Drysoil	18.00 kN/Cu.m
Saturated soil	10.00 kN/Cu.m
Glass	33.00 kN/Cu.m
water	09.81 kN/Cu.m

4.2.1a Table: Gravity Load Calculations:

Floor Slab:	
Self weight of 125 mm thick Slab	0.125x25 =3.125 kN/Sq.mt.
Self weight of 150 mm thick Slab	0.150x25 =3.750 kN/Sq.mt.
Self weight of 175mm thick slab	0.175x25 =4.375 kN/Sq.mt.
External /Internal Wall Load:	
For 230mm Thick. Wall	
Stilt Floor	= (0.23x2.43x7) = 3.91kN/m
1st Floor to 5th Floor	= (0.23x2.43x7)=3.91kN/m
Head Room	= (0.23x2.40x7)= 3.86kN/m
For 115 mm thick wall	
Stilt Floor	= (0.115x2.58x7) = 2.08kN/m
1st Floor to 5th Floor	= (0.115x2.98x7) =2.40kN/m

4.1.2 Cement

Ordinary Portland Cement of grade 43 or higher confirming to IS 8112 and IS 12269 is specified for concrete M30 & M25 with cement content appropriate to the grade.

4.1.3 Aggregates

The sizes of coarse aggregates confirm to IS 383. Nominal maximum size of coarse aggregate to be 20 mm, suitably graded as per the requirement of mix design. The fine aggregates confirm to the specifications of IS 383.

4.1.4 Water

Water used for construction shall complied with stipulations given in IS 456: 2000.

4.1.5 Reinforcement

High yield strength deformed bars conforming to IS 1786-2008 with f_y = 500 N/ sq.mm has been used.

4.1.6 Structural Steel

MS steel with yield strength f_y = 250 N/ sq.mm has been used for Structural steel work shall conform to IS 226 and IS 2062 for Indian steel sections.

4.1.7 Concrete Cover

Following clear cover to all reinforcement is used in the design

a. Isolated Footing = 50mm
b. Column = 40mm
c. Beam = 30mm (Bottom and sides)
d. Slab = 25mm (Top and Bottom)
e. Water tanks / Sump tank
   On water face = 50mm
   On other face = 30mm

4.1.8 Development Length

Unless otherwise specified in the construction drawing, the Development length of 50 times diameter of bar is to be considered in the BBS & Facbrication.

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4.2.1 Imposed Loads on Slab

The following are the imposed loads in the structural slabs, in addition to the self-weight and the floor finishes. *(Self-weight of slab will be as per the thickness mentioned in the respective drawings and the Floor finishes of 50 mm thickness have been considered on all floors).*

Structural steel work shall conform to IS 226 and IS 2062 for Indian steel sections.

Table 4.2.1.1 CarParks

LoadComponent	Thickness (mm)	Load	Units
Floor Finishes		1.5	kN/m2
LiveLoad		5.0	kN/m2

Table 4. 2.1.2 Rooms

LoadComponent	Thickness (mm)	Load	Units
Floor Finishes		1.5	kN/m2
LiveLoad		2.0	kN/m2

Table 4. 2.1.3 Toilets

LoadComponent	Thickness (mm)	Load	Units
Finishes		1.50	kN/m2
Sunk &Filled	100 mm	2.50	kN/m2
LiveLoad		2.00	kN/m2

Table 4. 2.1.4 Terrace

LoadComponent	Thickness (mm)	Load	Units
Weathering course with Water-Proofing		2.5	kN/m2
LiveLoad		1.5	kN/m2

Table 4. 2.1.5 Corridors, Passage, Lobbies, balcony

LoadComponent	Thickness (mm)	Load	Units
Finishes		1.5	kN/m2
LiveLoad		2.0	kN/m2

Table 4. 2.1.6 Staircases

LoadComponent	Thickness (mm)	Load	Units
Steps	150 (Riser) Assuming 75mm Avg thickness	1.8	kN/m2
Finishes	-	1.2	kN/m2
LiveLoad	-	3.0	kN/m2

4.2.2 Expansion Joints

Expansion joints are normally provided when the structure is more than 45m length as per IS-456-2000, clause 27.2. The width of expansion joint shall be calculated as per IS-1893-2002, clause 7.11.3. In this case, no expansion joint has been provided considering the fact that the building length is only 30m which falls within the limit prescribed in the said clause and there is no exposed slab in the building except Terrace. The stresses developed by expansive forces caused due to temperature variation has been taken care by providing additional re-bars on the slabs at re-entrant corners and on the exposed Terrace appropriately.

5. PROPOSED APPROACH OF STRUCTURAL ANALYSIS

The building is a R.C.C columns connected by beams as frame structure. Slabs acting as rigid in- plane diaphragms have been considered. After preliminary sizing of various structural members, a computer model of the structural frame of the building is generated for carrying out computer analysis for the effects of vertical and lateral loads that are likely to be imposed on the structure.

The building structure has been analyzed using the STAAD-Pro software for the following computer models of the building floor analysis of all floors - for vertical loads with the entire building space frame. STAAD-Pro have been thoroughly tested, validated and recognized internationally by several organizations and are well suited for the analysis of building systems.

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Area Load & Application: Applied as area load with intensity proportionate to its usage as mentioned in the Loading clause in the DBR.

Line (Wall) Load & Application: Filler wall loads are calculated appropriately and Applied as uniformly distributed load are calculated as follows,

6. LOAD COMBINATION

The various loads shall be combined in accordance with the stipulations in IS 875 (Part 5) 1987 and IS 456: 2000. The structural elements shall be designed for the combination that produces most unfavorable effect out of the following combinations.

The results obtained from the computer analysis in the form of member forces and reactions will be used for design the structural members. Following load combinations of the member forces will be considered for arriving at the design forces. The analysis considered load factor is as follows,

Combination of Load : (D.L x1.5) + (L.L x 1.5)

7. DESIGN OF STRUCTURAL ELEMENTS

For the design of R.C.C. elements, the Limit State Method will be used as per IS 456-2000.

Materials of construction will be predominantly concrete with consideration for strength and durability. The grade of concrete is suggested as M30 for Foundation (Isolated Footing) & columns, whereas for RC Beam & RC Slab grade of concrete has to be M25 and for other structural elements considering the level of stresses to be borne by the members both in compression as well as flexure. High Yield Strength Deformed bars conforming to IS: 1786 with F_y = 500 MPa will be used as reinforcement. Structural steel, if any with Fy = 250 Grade shall be used.

Covers to reinforcement shall be in accordance with IS: 456:2000 corresponding to **moderate exposure conditions** for the super-structure or severe exposure conditions for the sub-structure and to satisfy a fire rating of 2 hrs as per National building code of India- SP7 (part IV).

8. FOUNDATION FOR THE BUILDING

The proposed Residential development comprises single Stilt+5 Storey + Roof structure. The vertical elements like Columns are moderately loaded. The structure is provided with columns are adequately spreaded across in order to satisfy the structural requirements for both gravity and lateral loads. Based on the sub soil condition presented in the Soil Investigation Report No. TIME/49/ SOIL TEST/ JUNE 2023 Isolated Footings are adopted for Foundation system.

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Geometrical dimensions, member properties and member-node connectivity, including eccentricities will be modeled in the analysis problem. Variation in material grades, if present, will also be considered.

The permissible values of the load factors and stresses will be utilized within the purview of the Indian Standards.

The computer analysis will produce accurate individual member forces, reactions at foundation level and deflection pattern of the entire structure as well as individual members. This data will then be used to confirm/review the member sizes and arrive at the most appropriate design of the structural members. Some re-runs of the analysis program might be required for arriving at the optimum structural space frame characteristics that satisfy the strength and stability criteria in all respects.

Design of different structural elements will be carried out using In-house developed spreadsheets and packages.

The STAAD-Pro analysis model summary report and views are presented in **Annexure B.**

The following methods of modeling are adopted in creating STAAD-Pro 3D model,

- The STAAD-Pro model generated based on the shuttering drawing prepared using preliminary sizes.
- Sectional properties are assigned to all the structural elements as per the preliminary shuttering drawing.
- External & Internal filler wall loads are assigned as uniformly distributed line load on beams and as area load if the wall is intend to distribute on slab directly. These loads are assigned under SIDL type load case.
- Live Load reduction is considered in the design of Foundation and Column as per the Code: IS 875-1987 (Part-II), clause.3.2.1.
- Area design load i.e. Live load/SIDL or any other load is applied at floor relevant to its usage.
- All lateral loads & parameters are assigned as per Codes IS 1893-2016 & IS 875-2015.
- Temperature loads are applied on to the terraces which are directly exposed to sun includes podium, Roof etc.
- Beams under Torsion is required to maintain Equilibrium will be designed for Torsion in accordance with IS 456-2000, clause 41.1 to 41.4 and for all other beams torsional stiffness is neglected in the analysis by applying stiffness modifier as 0.01 to torsional constant "J". Hence no specific design for Torsion is required for these beams.
- Trichy falls in seismic zone-II. Hence ductile detailing is not followed in the design and detailing of structural elements.
- Concrete cover to reinforcement complied accordance with IS 456-2000, Tabl.16 & 16A.

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Based on the sub soil condition presented in the Soil Investigation Report No. TIME/49/ SOIL TEST/ JUNE 2023 dated 2306.2023 carried out by Time Institute for Materials Testing, Tiruchirappalli, Isolated Footings are adopted for Foundation system. As per the soil test report recommandation, isolated footing are designed as foundation system using the recommended SBC of 350 kN/m^2 at a depth of 1.8m below the NGL. The Footings are rest over the Hard strata with « N » value is more than 50 at **3.0m depth** from measured from NGL

9. STABILITY OF STRUCTURES

1. For the purpose of stability of the structure as a whole against overturning, the restoring moment shall not be less than 1.2 times the maximum overturning moments due to dead load plus 1.4 times the maximum overturning moments due to imposed loads. In case where dead load provides the restoring moments only 0.9 times in dead load shall be considered. The restoring moments due to imposed loads shall be ignored.
2. The factor of safety against sliding shall not be less than 1.40.
3. Factor of safety against buoyancy shall be not less than 1.20 ignoring the superimposed loading.
4. Structural Stability certificate with design calculations with words structurally is safe and sound.

10. OTHER DATA

Specific requirements of floor and wall cutouts for services, sinking (extent & depth) of floors in services, kitchen, utility and toilet areas, external architectural features, and entrance canopies are provided as required by Architects and Service Consultants. The relevant information is obtained from them in the form of drawings.

Lift loads and lift machine room equipment and cut out layouts will be obtained from the lift manufacturers. An impact factor of 100% will be considered in the lift supporting structures.

11.R.C Design

The structures are analyzed for the various load combinations as per IS: 456-2000. In house spread sheet is being used for the structural element like slab, beam, column etc for the forces extracted from the STAAD-Pro analysis output. For the design of the R.C.C structures the recommandations of IS: 456-2000 is followed. Limit State design is adopted with appropriate load factors with the various load combinations for the different structural elements as follows. The General arrangement drawing is given in **Annexure A.**

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11.1 Design of Foundation

Based on the sub soil condition presented in the Soil Investigation Report No. TIME/49/ SOIL TEST/ JUNE 2023 dated 2306.2023 carried out by Time Institute for Materials Testing, Tiruchirappalli, Isolated Footings are adopted for Foundation system. As per the soil test report recommandation, isolated footing are designed as foundation system using the recommended SBC of 350kN/m^2 at a depth of 3.0m below the NGL. The Footings are rest over the Hard strata with « N » value is 50 at **3.0m depth** from measured from NGL. The Isolated Foundation Layout drawing is given in **Annexure C.**

11.2 Design of Columns

R.C Columns will be designed for uni-axial/bi-axial bending for the forces of critical load combination depends upon the nature of behavior. The designs are made using STAAD-Pro /in-house spread sheet as per the guide lines of IS: 456-2000 adopting limit state method. The RC design of Column design is given in **Annexure D.**

11.3 Design of Beams

Beams will be designed for the results of critical load combination as per IS: 456-2000 using STAAD-Pro /in-house spread sheet. The design procedure takes in to account all the member forces like axial, shear, torsion and bending and lists out the area of the reinforcement required for all the members. The RC design of Beam design is given in **Annexure E.**

11.4 Design of Suspended floor/Roof Slabs

Slab elements will be designed Manually. Wall load on slab is taken as uniformly distributed over entire area. Based on yield line theory, slab loads are transferred on to supporting beams. The RC design of Slab design is given in **Annexure F.**

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ANNEXURE-A

STRUCTURAL DRAWINGS

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ANNEXURE-B

STAAD.Pro SUMMARY REPORT & MODEL PLOTS

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```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 28-Sep-23
ENGINEER NAME P.Ravichandran
CHECKER NAME P.Ravichandran
APPROVED NAME P.Ravichandran
JOB NAME Royal Windgates PH-II
JOB CLIENT Royal Shelter
END JOB INFORMATION
INPUT WIDTH 79
UNIT METER KN
JOINT COORDINATES
1 0 0 0; 37 0 0 -3.28; 39 0 0 -10.77; 40 0 0 -14.54; 41 0 0 -21.64;
44 8.42 0 -21.64; 45 11.97 0 -21.64; 46 15.09 0 -21.64; 52 29.26 0 -21.64;
57 4.88 0 0; 58 4.88 0 -3.28; 62 4.88 0 -9.86; 65 4.88 0 -14.54;
67 8.42 0 -15.95; 68 11.97 0 -15.95; 74 11.97 0 -10.77; 80 7.43 0 -9.86;
82 7.43 0 -13.13; 84 9.07 0 -3.64; 85 11.97 0 0; 86 11.97 0 -3.64;
87 15.09 0 0; 88 15.09 0 -3.17; 89 21.03 0 -3.17; 92 21.03 0 -9.44;
95 15.09 0 -9.44; 97 15.09 0 -12.1; 99 15.09 0 -15.45; 101 20 0 -12.1;
103 20 0 -15.95; 105 20 0 -21.64; 107 21.03 0 0; 109 26.55 0 -9.44;
110 26.55 0 -12.1; 115 26.55 0 0; 116 26.55 0 -3.64; 122 22.21 0 -15.18;
127 23.43 0 -21.64; 128 24 0 -16.41; 129 29.26 0 -16.41; 131 29.26 0 -12.1;
132 31.81 0 -9.44; 133 35.43 0 -9.44; 137 41.7 0 -9.44; 139 50.35 0 -9.44;
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ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

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ROYAL SHELTER * TRICHY-18 *
* ARCHITECTS PLUS * TRICHY

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MEMBER INCIDENCES

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ROYAL SHELTER ★ TRICHY-18 ★

ARCHITECTS PLUS ★ TRICHY ★

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3835 3839 3842 TO 3846 3864 3865 3869 3870 3872 3877 3878 3884 3886 3889 -
3890 3901 3902 3904 3906 TO 3908 3916 3917 3919 3922 3926 3938 3944 3945 -
3951 3952 3956 3964 3966 3968 3982 3983 3986 3987 3989 3993 3994 -
3999 TO 4002 4004 4007 4009 4019 4020 4033 4114 4117 4120 4123 4126 4129 -
4132 4135 4138 4215 4247 4249 4251 4284 4286 4288 4290 4292 -
4294 PRIS YD 0.38 ZD 0.23
212 228 238 239 241 267 312 328 338 339 341 367 412 438 439 441 467 512 538 -
539 541 567 612 638 639 641 667 2003 2011 2013 2019 2025 2030 2035 2037 2041 -
2060 2062 2078 2082 2085 TO 2087 2170 2184 TO 2190 2192 TO 2195 2234 TO 2239 -
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2241 2242 2246 2247 2251 TO 2253 2260 2265 2266 2268 2276 2277 2283 TO 2285 -
2288 2289 2345 TO 2349 2353 2357 2370 2372 2375 2405 2406 2419 2420 2422 -
2423 2425 2426 2428 2503 2516 TO 2521 2523 TO 2526 2565 TO 2570 2572 2573 -
2577 2578 2582 TO 2584 2591 2596 2597 2599 2607 2608 2614 TO 2616 2619 2675 -
2676 TO 2679 2683 2687 2695 2697 2700 2727 2728 2741 2742 2744 2745 2747 2748 -
2824 2837 TO 2842 2844 TO 2847 2886 TO 2891 2893 2894 2898 2899 2903 TO 2905 -
2912 2917 2918 2920 2928 2929 2935 TO 2937 2940 2996 TO 3000 3004 3008 3016 -
3018 3021 3048 3049 3062 3063 3065 3066 3068 3069 3145 3158 TO 3163 3165 -
3166 TO 3168 3207 TO 3212 3214 3215 3219 3220 3224 TO 3226 3233 3238 3239 -
3241 3249 3250 3256 TO 3258 3261 3317 TO 3321 3325 3329 3337 3339 3342 3390 -
3479 TO 3484 3533 3535 3536 3559 3560 3577 TO 3579 3582 3638 TO 3642 3646 -
3650 3658 3660 3663 3711 3800 TO 3805 3811 TO 3813 3854 3856 3857 3880 3881 -
3898 TO 3900 3903 3959 TO 3963 3967 3971 3979 3981 3984 4032 4184 4187 4205 -
4211 4214 4220 4240 4254 4262 PRIS YD 0.46 ZD 0.23
259 359 428 459 528 559 628 659 3369 3370 3383 3384 3386 3387 3389 3466 3486 -
3487 TO 3489 3528 TO 3532 3540 3541 3545 PRIS YD 0.46 ZD 0.23
206 209 306 309 406 409 506 509 606 609 2016 2206 2296 2298 TO 2300 2304 2306 -
2307 2309 TO 2311 2318 TO 2322 2537 2626 2628 TO 2630 2634 2636 2637 2639 -
2640 TO 2641 2648 TO 2652 2858 2947 2949 TO 2951 2955 2957 2958 2960 TO 2962 -
2969 TO 2973 3017 3179 3268 3270 TO 3272 3276 3278 3279 3281 TO 3283 3290 -
3291 TO 3294 3338 3500 3546 3547 3554 3562 3570 3571 3589 3591 TO 3593 3597 -
3599 3600 3602 TO 3604 3611 TO 3615 3659 3690 3691 3704 3705 3707 3708 3710 -
3787 3807 TO 3810 3821 3849 3853 3861 3862 3866 TO 3868 3875 3883 3891 3892 -
3910 3912 TO 3914 3918 3920 3921 3923 TO 3925 3932 TO 3936 3980 4011 4012 -
4025 4026 4028 4029 4031 PRIS YD 0.46 ZD 0.23
46 47 55 62 146 147 155 162 246 247 255 262 346 347 355 362 446 447 455 462 -
546 547 555 562 646 647 655 662 PRIS YD 0.23 ZD 0.3
45 48 2009 2010 2017 2020 2024 2026 TO 2028 2034 2036 2038 2046 2055 2056 -
2058 2064 2065 2071 TO 2076 2079 2081 2168 2179 2180 2207 2209 2211 2219 -
2221 TO 2223 2225 2226 2233 2243 2244 2248 2258 2261 2264 2267 2273 2278 -
2282 2291 2295 2317 2334 2336 2339 2359 TO 2363 2376 2380 2382 TO 2385 2404 -
2409 2412 2415 2421 2424 2502 2512 2538 2540 2542 2550 2552 TO 2554 2556 -
2557 2564 2574 2575 2579 2589 2592 2595 2598 2604 2609 2613 2621 2625 2647 -
2664 2666 2669 2689 TO 2691 2704 2706 TO 2708 2726 2731 2734 2737 2743 2746 -
2823 2833 2859 2861 2863 2871 2873 TO 2875 2877 2878 2885 2895 2896 2900 -
2910 2913 2916 2919 2925 2930 2934 2942 2946 2968 2985 2987 2990 -
3010 TO 3012 3025 3027 TO 3029 3047 3052 3055 3058 3059 3064 3067 3144 3154 -
3180 3182 3184 3192 3194 TO 3196 3198 3199 3206 3216 3217 3221 3231 3234 -
3237 3240 3246 3251 3255 3263 3267 3289 3306 3308 3311 3331 TO 3333 3346 -
3348 TO 3350 3368 3373 3376 3379 3380 3385 3388 3465 3475 3501 3503 3505 -
3537 3538 3697 3700 3701 3858 3859 4018 4021 4022 4271 4273 4275 4277 4279 -
4281 PRIS YD 0.3 ZD 0.23
145 148 245 248 345 348 445 448 545 548 645 648 3513 3515 TO 3517 3519 3520 -
4185 4190 4191 4195 4196 4202 TO 4204 4208 TO 4210 4213 4218 4219 -
4221 PRIS YD 0.3 ZD 0.23
4106 4109 4112 4115 4125 4128 4131 4134 PRIS YD 0.3 ZD 0.23
2205 2210 2279 2536 2541 2610 2857 2862 2931 3178 3183 3252 3499 3504 3527 -
3542 3552 3555 3558 3561 3567 3572 3573 3576 3584 3588 3610 3627 3629 3632 -
3652 TO 3654 3667 3669 TO 3671 3689 3694 3706 3709 3786 3796 3820 3822 3824 -
3825 TO 3826 3834 3836 TO 3838 3840 3841 3863 3876 3879 3882 3888 3893 3894 -
3897 3905 3909 3931 3948 3950 3953 3973 TO 3975 3988 3990 TO 3992 4010 4015 -
4027 4030 4118 4121 4137 4140 PRIS YD 0.3 ZD 0.23
MEMBER PROPERTY AMERICAN
224 236 242 243 257 324 336 342 343 357 424 436 442 443 457 524 536 542 543 -
557 624 636 642 643 657 2005 2023 2033 2051 2053 2172 2173 2181 2214 2215 -
2232 2245 2256 2335 2343 2344 2368 2389 2505 2506 2513 2545 2546 2563 2576 -
2587 2665 2673 2674 2693 2696 2712 2826 2827 2834 2866 2867 2884 2897 2908 -
2986 2994 2995 3014 3033 3147 3148 3155 3187 3188 3205 3218 3229 3307 3315 -
3316 3335 3354 3468 3469 3476 3508 3509 3526 3539 3550 3628 3636 3637 3656 -
3675 3789 3790 3797 3829 3830 3847 3850 TO 3852 3860 3871 3949 3957 3958 -
3977 3996 4186 4189 4192 4194 4198 PRIS YD 0.53 ZD 0.23
229 272 329 372 429 472 529 572 629 672 2007 2084 2175 2199 TO 2201 2371 2410 -
2411 2508 2530 TO 2532 2732 2733 2829 2851 TO 2853 3053 3054 3150 -
3172 TO 3174 3374 3375 3471 3493 TO 3495 3695 3696 3792 3814 TO 3816 4016 -
4017 4199 4206 4212 PRIS YD 0.53 ZD 0.23
2049 2054 2057 2059 2066 TO 2068 2083 2176 TO 2178 2313 TO 2316 2323 2325 -
2326 TO 2328 2340 2341 2351 2356 2358 2366 2367 2369 2390 2391 2396 2398 2407 -
2408 2509 TO 2511 2643 TO 2646 2653 2655 TO 2658 2670 2671 2681 2686 2688 -
2692 2694 2713 2714 2719 2721 2729 2730 2830 TO 2832 2964 TO 2967 2974 2976 -
2977 TO 2979 2991 2992 3002 3007 3009 3013 3015 3034 3035 3040 3042 3050 3051 -
3151 TO 3153 3285 TO 3288 3295 3297 TO 3300 3312 3313 3323 3328 3330 3334 -
3336 3355 3356 3361 3363 3371 3372 3472 TO 3474 3606 TO 3609 3616 -
3618 TO 3621 3633 3634 3644 3649 3651 3655 3657 3676 3677 3682 3684 3692 -
3693 3793 TO 3795 3927 TO 3930 3937 3939 TO 3942 3954 3955 3965 3970 3972 -
3976 3978 3997 3998 4003 4005 4013 4014 4207 4216 -
4217 PRIS YD 0.61 ZD 0.23
2002 2070 2077 2169 2280 2281 2377 2399 2611 2612 2701 2722 2932 2933 3022 -
3043 3253 3254 3343 3364 3574 3575 3664 3685 3895 3896 3985 4006 4107 4110 -
4113 4116 4119 4122 PRIS YD 0.23 ZD 0.23
MEMBER PROPERTY AMERICAN
1 3 TO 5 20 34 51 71 101 103 TO 105 120 134 151 171 4283 -
4285 PRIS YD 0.3 ZD 0.38
79 179 PRIS YD 0.3 ZD 0.3
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ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

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2 63 102 163 PRIS YD 0.38 ZD 0.3
7 8 18 21 TO 23 27 37 40 44 52 TO 54 56 58 60 61 64 68 70 74 TO 78 107 108 -
118 121 TO 123 127 137 140 144 152 TO 154 156 158 160 161 164 168 170 174 -
175 TO 178 PRIS YD 0.3 ZD 0.46
6 9 12 19 28 38 39 41 59 67 106 109 112 119 128 138 139 141 159 167 219 319 -
419 519 619 PRIS YD 0.46 ZD 0.3
249 250 349 350 449 450 549 550 649 650 PRIS YD 0.23 ZD 0.53
13 16 33 35 49 50 69 113 116 133 135 149 150 169 213 216 233 235 269 313 316 -
333 335 369 413 416 433 435 469 513 516 533 535 569 613 616 633 635 669 716 -
733 735 PRIS YD 0.3 ZD 0.53
17 24 26 29 31 32 36 42 43 57 72 117 124 126 129 131 132 136 142 143 157 172 -
217 226 231 232 317 326 331 332 417 426 431 432 517 526 531 532 617 626 631 -
632 717 PRIS YD 0.53 ZD 0.3
MEMBER PROPERTY AMERICAN
10 11 25 30 73 110 111 125 130 173 230 273 330 373 430 473 530 573 630 673 -
4201 PRIS YD 0.61 ZD 0.3
210 211 225 310 311 325 410 411 425 510 511 525 610 611 625 2008 2332 2333 -
2662 2663 2983 2984 3304 3305 3625 3626 3946 3947 4200 4253 4265 TO 4268 -
4269 PRIS YD 0.61 ZD 0.23
MEMBER PROPERTY AMERICAN
2047 2048 2063 4226 TO 4230 4232 TO 4237 4282 PRIS YD 0.68 ZD 0.23
MEMBER PROPERTY AMERICAN
14 15 114 115 214 215 314 315 414 415 514 515 614 615 PRIS YD 0.3 ZD 0.61
CONSTANTS
MATERIAL CONCRETE ALL
SUPPORTS
2068 2070 TO 2082 2084 TO 2091 2093 TO 2135 2137 TO 2145 2147 2150 2151 3273 -
3281 3309 PINNED
MEMBER RELEASE
2173 2177 2178 2182 TO 2186 2188 TO 2190 2193 TO 2195 2197 2198 2200 2204 -
2205 2210 TO 2215 2217 TO 2224 2226 2227 2236 2237 2239 2242 2244 2247 2248 -
2250 2252 2256 2257 2259 2260 2263 TO 2266 2269 TO 2274 2277 2278 2280 2281 -
2283 2287 2289 2291 2293 2294 2298 2299 2307 TO 2316 2319 TO 2323 -
2326 TO 2328 2330 2332 TO 2339 2341 2342 2344 2346 2348 2350 2352 2353 2358 -
2359 2362 2365 TO 2369 2373 TO 2376 2379 2386 2387 2389 2391 2392 2394 2396 -
2397 TO 2398 2406 2408 TO 2414 2416 2419 TO 2425 2506 2510 2511 2514 TO 2521 -
2524 TO 2526 2528 2529 2531 2535 2536 2541 TO 2546 2548 TO 2555 2557 2558 -
2567 2568 2570 2573 2575 2578 2579 2581 2583 2587 2588 2590 2591 -
2594 TO 2597 2600 TO 2605 2608 2609 2611 2612 2614 2618 2619 2621 2623 2624 -
2628 2629 2637 TO 2646 2649 TO 2653 2656 TO 2658 2660 2662 TO 2669 2671 2672 -
2674 2676 2678 2680 2682 2683 2688 2689 2692 TO 2694 2698 2699 2703 2709 -
2710 2712 2714 2715 2717 2719 2720 2728 2730 TO 2736 2738 2741 TO 2747 2827 -
2831 2832 2835 TO 2842 2845 TO 2847 2849 2850 2852 2856 2857 2862 2863 2899 -
2900 2902 2922 2924 2926 2932 2933 2935 2965 2981 2995 3033 3056 3158 3160 -
3183 3220 3221 3223 3243 3245 3247 3253 3254 3256 3286 3302 3316 3354 3377 -
3479 3481 3504 3541 3577 3675 3898 3996 START MX
3542 3544 3564 3566 3568 3574 3575 3607 3623 3637 3698 3800 3802 3825 3862 -
3863 3865 3885 3887 3889 3895 3896 3928 3944 3958 4019 START MX
2864 TO 2867 2869 TO 2876 2878 2879 2888 2889 2891 2894 2896 2904 2908 2909 -
2911 2912 2915 TO 2918 2921 2923 2925 2929 2930 2939 2940 2942 2944 2945 -
2949 2950 2958 TO 2964 2966 2967 2970 TO 2974 2977 TO 2979 2983 TO 2990 2992 -
2993 2997 2999 3001 3003 3004 3009 3010 3013 TO 3015 3019 3020 3024 3030 -
3031 3035 3036 3038 3040 3041 3049 3051 TO 3055 3057 3059 3062 TO 3068 3148 -
3152 3153 3156 3157 3159 3161 TO 3163 3166 TO 3168 3170 3171 3173 3177 3178 -
3184 TO 3188 3190 TO 3197 3199 3200 3209 3210 3212 3215 3217 3225 3229 3230 -
3232 3233 3236 TO 3239 3242 3244 3246 3250 3251 3260 3261 3263 3265 3266 -
3270 3271 3279 TO 3285 3287 3288 3291 TO 3295 3298 TO 3300 3304 TO 3311 3313 -
3314 3318 3320 3322 3324 3325 3330 3331 3334 TO 3336 3340 3341 3345 3351 -
3352 3356 3357 3359 3361 3362 3370 3372 TO 3376 3378 3380 3383 TO 3389 3469 -
3473 3474 3477 3478 3480 3482 TO 3484 3487 TO 3489 3491 3492 3494 3498 3499 -
3505 TO 3509 3511 TO 3518 3520 3521 3530 3531 3533 3536 3538 3546 3550 3551 -
3553 3554 3557 TO 3560 3563 3565 3567 3571 3572 3581 3582 3584 3586 3587 -
3591 3592 3600 TO 3606 3608 3609 3612 TO 3616 3619 TO 3621 3625 TO 3632 3634 -
3635 3639 3641 3643 3645 3646 3651 3652 3655 TO 3657 3661 3662 3666 3672 -
3673 3677 3678 3680 3682 3683 3691 3693 TO 3697 3699 3701 4232 -
4233 START MX
4234 START MX
4235 START MX
4236 START MX
4237 START MX
3704 TO 3710 3790 3794 3795 3798 3799 3801 3803 TO 3805 3808 TO 3810 3813 -
3815 3819 3820 3826 TO 3830 3832 TO 3839 3841 3842 3851 3852 3854 3857 3859 -
3867 3871 3872 3874 3875 3878 TO 3881 3884 3886 3888 3892 3893 3902 3903 -
3905 3907 3908 3912 3913 3921 TO 3927 3929 3930 3933 TO 3937 3940 TO 3942 -
3946 TO 3953 3955 3956 3960 3962 3964 3966 3967 3972 3973 3976 TO 3978 3982 -
3983 3987 3993 3994 3998 3999 4001 4003 4004 4012 4014 TO 4018 4020 4022 -
4025 TO 4031 4105 TO 4123 4125 4126 4128 4129 4131 4132 4135 4137 4138 -
4140 START MX
2172 2176 2177 2181 TO 2185 2188 TO 2190 2192 TO 2194 2196 2197 2199 TO 2202 -
2204 2205 2209 2211 TO 2214 2216 2218 TO 2223 2226 2228 2230 2232 -
2234 TO 2236 2238 2241 2243 2245 2246 2249 2251 2253 2255 2257 2259 2262 -
2263 TO 2265 2268 2270 TO 2273 2275 2276 2278 2279 2282 2285 2286 -
2288 TO 2290 2296 2298 2306 2308 TO 2315 2318 TO 2323 2325 TO 2327 2329 2332 -
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2334 TO 2338 2340 TO 2343 2345 2347 2349 TO 2354 2356 2357 2361 2364 TO 2366 -
2368 2370 2372 2373 2375 2376 2378 2381 2384 2390 2391 2393 TO 2395 2398 -
2399 2401 2402 2405 2407 2409 2411 TO 2413 2415 2416 2420 TO 2426 2428 2505 -
2509 2510 2513 TO 2517 2519 TO 2521 2523 TO 2525 2527 2528 2530 TO 2533 2535 -
2536 2540 2542 TO 2545 2547 2549 TO 2554 2557 2559 2561 2563 2565 TO 2567 -
2569 2572 2574 2576 2577 2580 2582 2584 2586 2588 2590 2593 TO 2596 2599 -
2601 TO 2604 2606 2607 2609 2610 2613 2616 2617 2619 2620 2626 2628 2636 -
2638 TO 2645 2648 TO 2653 2655 2659 2684 2710 2724 2729 2743 2745 2826 2834 -
2837 2846 2873 TO 2875 2905 2914 2930 2931 2980 3005 3031 3045 3050 3064 -
3066 3147 3155 3158 3167 3194 TO 3196 3226 3235 3251 3252 3301 3326 3352 -
3366 3371 3385 3387 3468 3476 3479 3488 3515 TO 3517 3547 3556 3572 3573 -
3622 3647 3673 3687 3692 4266 TO 4269 END MX
3706 3708 3789 3797 3800 3809 3836 TO 3838 3868 3877 3893 3894 3943 3968 3994 -
4008 4013 4027 4029 4228 4229 4232 4233 4236 4237 END MX
2656 2657 2662 2664 TO 2668 2670 TO 2673 2675 2677 2679 TO 2683 2686 2687 -
2693 2695 2697 2698 2700 2702 2705 2713 2714 2716 TO 2718 2721 2722 2725 -
2727 2731 2733 TO 2735 2737 2738 2742 2744 2746 TO 2748 2830 2831 2835 2836 -
2838 2840 TO 2842 2844 2845 2848 2849 2851 TO 2854 2856 2857 2861 -
2863 TO 2866 2868 2870 TO 2872 2878 2880 2882 2884 2886 TO 2888 2890 2893 -
2895 2897 2898 2901 2903 2907 2909 2911 2915 TO 2917 2920 2922 TO 2925 2927 -
2928 2934 2937 2938 2940 2941 2947 2949 2957 2959 TO 2966 2969 TO 2974 2976 -
2977 TO 2978 2983 2985 TO 2989 2991 TO 2994 2996 2998 3000 TO 3004 3007 3008 -
3014 3016 3018 3019 3021 3023 3026 3034 3035 3037 TO 3039 3042 3043 3046 -
3048 3052 3054 TO 3056 3058 3059 3063 3065 3067 TO 3069 3151 3152 3156 3157 -
3159 3161 TO 3163 3165 3166 3169 3170 3172 TO 3175 3177 3178 3182 -
3184 TO 3187 3189 3191 TO 3193 3199 3201 3203 3205 3207 TO 3209 3211 3214 -
3216 3218 3219 3222 3224 3228 3230 3232 3236 TO 3238 3241 3243 TO 3246 3248 -
3249 3255 3258 3259 3261 3262 3268 3270 3278 3280 TO 3287 3290 TO 3295 3297 -
3298 TO 3299 3304 3306 TO 3310 3312 TO 3315 3317 3319 3321 TO 3325 3328 3329 -
3335 3337 3339 3340 3342 3344 3347 3355 3356 3358 TO 3360 3363 3364 3367 -
3369 3373 3375 TO 3377 3379 3380 3384 3386 3388 TO 3390 3472 3473 3477 3478 -
3480 3482 TO 3484 3486 3487 3490 3491 3493 TO 3496 3498 3499 3503 END MX
3505 TO 3508 3510 3512 TO 3514 3520 3522 3524 3526 3528 TO 3530 3532 3535 -
3537 3539 3540 3543 3545 3549 3551 3553 3557 TO 3559 3562 3564 TO 3567 3569 -
3570 3576 3579 3580 3582 3583 3589 3591 3599 3601 TO 3608 3611 TO 3616 3618 -
3619 TO 3620 3625 3627 TO 3631 3633 TO 3636 3638 3640 3642 TO 3646 3649 3650 -
3656 3658 3660 3661 3663 3665 3668 3676 3677 3679 TO 3681 3684 3685 3688 -
3690 3694 3696 TO 3698 3700 3701 3705 3707 3709 TO 3711 3793 3794 3798 3799 -
3801 3803 TO 3805 3807 3808 3812 3814 TO 3817 3819 3820 3824 3826 TO 3829 -
3831 3833 TO 3835 3841 3843 3845 3847 3849 TO 3851 3853 3856 3858 3860 3861 -
3864 3866 3870 3872 3874 3878 TO 3880 3883 3885 TO 3888 3890 3891 3897 3900 -
3901 3903 3904 3910 3912 3920 3922 TO 3929 3932 TO 3937 3939 TO 3941 3946 -
3948 TO 3952 3954 TO 3957 3959 3961 3963 TO 3967 3970 3971 3977 3979 3981 -
3982 3984 3986 3989 3997 3998 4000 TO 4002 4005 4006 4009 4011 4015 4017 -
4018 TO 4019 4021 4022 4026 4028 4030 TO 4032 4105 4107 4108 4110 4111 4113 -
4114 4116 4117 4119 4120 4122 END MX
4251 END MX
4249 END MX
4247 END MX
4245 END MX
4243 END MX
4241 END MX
4253 END MX
4134 START MX
4265 END MX
LOAD 1 LOADTYPE Dead  TITLE LOAD CASE 1 SELF WEIGHT
SELFWEIGHT Y -1
LOAD 2 LOADTYPE Dead  TITLE LOAD CASE 2 DEAD LOAD
FLOOR LOAD
YRANGE 3.05 15.25 FLOAD -5 GY
YRANGE 18.3 18.3 FLOAD -6 GY
LOAD 3 LOADTYPE Dead  TITLE LOAD CASE 3 DEAD LOAD CUTOUT
FLOOR LOAD
YRANGE 3.05 15.25 FLOAD 5 XRANGE 4.88 7.43  ZRANGE -11.68 -9.86  GY
YRANGE 3.05 15.25 FLOAD 5 XRANGE 20 22.21  ZRANGE -13.85 -12.1  GY
YRANGE 3.05 15.25 FLOAD 5 XRANGE 31.43 33.49  ZRANGE -16.41 -13.66  GY
YRANGE 3.05 15.25 FLOAD 5 XRANGE 33.49 36.15  ZRANGE -17.52 -13.66  GY
YRANGE 3.05 15.25 FLOAD 5 XRANGE 36.15 38.2  ZRANGE -15.49 -13.66  GY
YRANGE 3.05 15.25 FLOAD 5 XRANGE 37.86 39.34  ZRANGE -9.44 -7.69  GY
YRANGE 3.05 15.25 FLOAD 5 XRANGE 40.63 42.69  ZRANGE -7.69 -4.23  GY
YRANGE 3.05 15.25 FLOAD 5 XRANGE 47.53 50.35  ZRANGE -9.44 -7.69  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 4.88 7.43  ZRANGE -11.68 -9.86  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 20 22.21  ZRANGE -13.85 -12.1  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 31.43 33.49  ZRANGE -16.41 -13.66  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 33.49 36.15  ZRANGE -17.52 -13.66  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 36.15 38.2  ZRANGE -15.49 -13.66  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 37.86 39.34  ZRANGE -9.44 -7.69  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 40.63 42.69  ZRANGE -7.69 -4.23  GY
YRANGE 18.3 18.3 FLOAD 6 XRANGE 47.53 50.35  ZRANGE -9.44 -7.69  GY
LOAD 4 LOADTYPE Live  TITLE LOAD CASE 4 LIVE LOAD
FLOOR LOAD
YRANGE 3.05 15.25 FLOAD -2 GY
YRANGE 18.3 18.3 FLOAD -1.5 GY
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ROYAL SHELTER ★ TRICHY-18 ★

ARCHITECTS PLUS ★TRICHY★

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LOAD 5 LOADTYPE Live  TITLE LOAD CASE 5 LIVE LOAD CUTOUT
FLOOR LOAD
YRANGE 3.05 15.25 FLOAD 2 XRANGE 4.88 7.43  ZRANGE -11.68 -9.86  GY
YRANGE 3.05 15.25 FLOAD 2 XRANGE 20 22.21  ZRANGE -13.85 -12.1  GY
YRANGE 3.05 15.25 FLOAD 2 XRANGE 31.43 33.49  ZRANGE -16.41 -13.66  GY
YRANGE 3.05 15.25 FLOAD 2 XRANGE 33.49 36.15  ZRANGE -17.52 -13.66  GY
YRANGE 3.05 15.25 FLOAD 2 XRANGE 36.15 38.2  ZRANGE -15.49 -13.66  GY
YRANGE 3.05 15.25 FLOAD 2 XRANGE 37.86 39.34  ZRANGE -9.44 -7.69  GY
YRANGE 3.05 15.25 FLOAD 2 XRANGE 40.63 42.69  ZRANGE -7.69 -4.23  GY
YRANGE 3.05 15.25 FLOAD 2 XRANGE 47.53 50.35  ZRANGE -9.44 -7.69  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 4.88 7.43  ZRANGE -11.68 -9.86  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 20 22.21  ZRANGE -13.85 -12.1  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 31.43 33.49  ZRANGE -16.41 -13.66  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 33.49 36.15  ZRANGE -17.52 -13.66  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 36.15 38.2  ZRANGE -15.49 -13.66  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 37.86 39.34  ZRANGE -9.44 -7.69  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 40.63 42.69  ZRANGE -7.69 -4.23  GY
YRANGE 18.3 18.3 FLOAD 1.5 XRANGE 47.53 50.35  ZRANGE -9.44 -7.69  GY
LOAD 6 LOADTYPE Dead  TITLE LOAD CASE 6 WALL LOAD
MEMBER LOAD
2166 TO 2168 2170 TO 2177 2179 2181 2182 2184 TO 2186 2188 TO 2190 2196 2197 -
2202 2208 2209 2214 TO 2217 2224 TO 2228 2231 TO 2233 2238 2239 2241 TO 2247 -
2249 2252 2253 2256 2260 2262 2263 2266 TO 2269 2272 TO 2280 2284 2285 2288 -
2292 2293 2295 2296 2298 TO 2300 2302 TO 2304 2310 TO 2316 2320 2322 TO 2324 -
2331 2333 TO 2336 2338 2339 2344 2346 TO 2349 2351 TO 2354 2356 2357 2359 -
2366 2367 2370 2375 2385 TO 2387 2396 2398 2400 2404 2406 TO 2409 -
2412 TO 2416 2420 2422 2426 2500 TO 2510 2512 TO 2514 2516 TO 2521 2527 2528 -
2533 2539 2540 2545 TO 2548 2555 TO 2559 2562 TO 2564 2569 2570 2572 TO 2578 -
2580 2583 2584 2587 2591 2593 2594 2597 TO 2600 2603 TO 2611 2615 2616 2622 -
2623 2625 2626 2628 TO 2630 2632 TO 2634 2640 TO 2646 2650 2652 TO 2654 2661 -
2663 TO 2666 2668 2669 2674 2676 TO 2679 2681 TO 2684 2686 2687 2689 2692 -
2695 2700 2708 TO 2710 2719 2721 2723 2726 2728 TO 2731 2734 TO 2738 2742 -
2744 2748 2821 TO 2831 2833 TO 2835 2837 TO 2842 2848 2849 2854 2860 2861 -
2866 TO 2869 2876 TO 2880 2883 TO 2885 2890 2891 2893 TO 2899 2901 2904 2905 -
2908 2912 2914 2915 2918 TO 2921 2924 TO 2932 2936 2937 2943 2944 2946 2947 -
2949 TO 2951 2953 TO 2955 2961 TO 2967 2971 2973 TO 2975 2982 2984 TO 2987 -
2989 2990 2995 2997 TO 3000 3002 TO 3005 3007 3008 3010 3013 3016 3021 3029 -
3030 TO 3031 UNI GY -7
3040 3042 3044 3047 3049 TO 3052 3055 4284 4286 4288 UNI GY -7
3056 TO 3059 3063 3065 3069 3142 UNI GY -7
3143 TO 3152 3154 UNI GY -7
3155 3156 3158 TO 3163 3169 3170 3175 3181 3182 3187 TO 3190 3197 TO 3201 -
3204 TO 3206 3211 3212 3214 TO 3220 3222 3225 3226 3229 3233 3235 3236 3239 -
3240 TO 3242 3245 TO 3253 3257 3258 3264 3265 3267 3268 3270 TO 3272 3274 -
3275 TO 3276 3282 TO 3288 3292 3294 TO 3296 3303 3305 TO 3308 3310 3311 3316 -
3318 TO 3321 3323 TO 3326 3328 3329 3331 3334 3337 3342 3350 TO 3352 3361 -
3363 3365 3368 3370 TO 3373 3376 TO 3380 3384 3386 3390 3463 TO 3473 3475 -
3476 TO 3477 3479 TO 3484 3490 3491 3496 3502 3503 3508 TO 3511 3518 TO 3522 -
3525 TO 3527 3532 3533 3535 TO 3541 3543 3546 3547 3550 3554 3556 3557 3560 -
3561 TO 3563 3566 TO 3574 3578 3579 3585 3586 3588 3589 3591 TO 3593 3595 -
3596 TO 3597 3603 TO 3609 3613 3615 TO 3617 3624 3626 TO 3629 3631 3632 3637 -
3639 TO 3642 3644 TO 3647 3649 3650 3652 3655 3658 3663 3671 TO 3673 3682 -
3684 3686 3689 3691 TO 3694 3697 TO 3701 3705 3707 3711 4106 4107 4109 4110 -
4112 4113 4115 4116 4118 4119 4290 4292 UNI GY -7
2191 TO 2193 2195 2198 TO 2201 2203 TO 2207 2210 TO 2213 2219 TO 2223 2229 -
2230 2234 TO 2237 2250 2251 2255 2257 2258 2264 2265 2270 2271 2279 2280 -
2283 2286 2287 2289 2305 TO 2309 2317 2325 TO 2327 2330 2341 2342 2350 2368 -
2369 2371 TO 2374 2389 TO 2391 2393 TO 2395 2397 2401 2409 TO 2411 2419 2421 -
2423 2424 2427 2522 TO 2524 2526 2529 TO 2532 2534 TO 2538 2541 TO 2544 2550 -
2551 TO 2554 2560 2561 2565 TO 2568 2581 2582 2586 2588 2589 2595 2596 2601 -
2602 2610 2611 2614 2617 TO 2619 2635 TO 2639 2647 2655 TO 2657 2660 2671 -
2672 2680 2693 2694 2696 TO 2699 2712 TO 2714 2716 TO 2718 2720 2724 2731 -
2732 TO 2733 2741 2743 2745 2746 2749 2843 TO 2845 2847 2850 TO 2853 2855 -
2856 TO 2859 2862 TO 2865 2871 TO 2875 2881 2882 2886 TO 2889 2902 2903 2907 -
2909 2910 2916 2917 2922 2923 2931 2932 2935 2938 TO 2940 2956 TO 2960 2968 -
2976 TO 2978 2981 2992 2993 3001 3014 3015 3017 TO 3020 3033 TO 3035 3037 -
3038 TO 3039 3041 3045 3052 TO 3054 3062 3064 3066 3067 3070 3164 TO 3166 -
3168 3171 TO 3174 3176 TO 3180 3183 TO 3186 3192 TO 3196 3202 3203 -
3207 TO 3210 3223 3224 3228 3230 3231 3237 3238 3243 3244 3252 3253 3256 -
3259 TO 3261 3277 TO 3281 3289 3297 TO 3299 3302 3313 3314 3322 3335 3336 -
3338 TO 3341 3354 TO 3356 3358 TO 3360 3362 3366 3373 TO 3375 3383 3385 3387 -
3388 3391 3485 TO 3487 3489 3492 TO 3495 3497 UNI GY -4
3498 TO 3501 3504 TO 3507 3513 TO 3517 3523 3524 3528 TO 3531 3544 3545 3549 -
3551 3552 3558 3559 3564 3565 3573 3574 3577 3580 TO 3582 3598 TO 3602 3610 -
3618 TO 3620 3623 3634 3635 3643 3656 3657 3659 TO 3662 3675 TO 3677 3679 -
3680 TO 3681 3683 3687 3694 TO 3696 3704 3706 3708 3709 3712 4105 4106 4108 -
4109 4111 4112 4114 4115 4117 4118 4241 4243 4245 4247 4249 UNI GY -4
4226 TO 4230 4232 TO 4237 UNI GY -8.74
2178 2183 2343 2345 2402 2405 2511 2515 2673 2675 2725 2727 2832 2836 2994 -
2996 3046 3048 3153 3157 3315 3317 3367 3369 3474 3478 3636 3638 3688 3690 -
3784 TO 3805 3811 3812 3823 3829 3832 3840 3841 3843 3846 TO 3848 3853 3859 -
3860 3864 3871 3875 3881 TO 3884 3891 3893 3904 3906 3908 3912 3917 3918 -
3924 TO 3926 3929 3930 3934 3936 3937 3945 3948 TO 3950 3953 3957 TO 3963 -
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3965 3968 3976 3984 3994 4005 4007 4009 TO 4014 4018 4019 4022 4028 4032 -
4122 4294 UNI GY -3
2360 2363 2377 TO 2379 2381 TO 2383 2399 2690 2691 2701 TO 2703 2705 TO 2707 -
2722 3011 3012 3022 TO 3024 3026 TO 3028 3043 3332 3333 3343 TO 3345 3347 -
3348 TO 3349 3364 3653 3654 3664 TO 3666 3668 TO 3670 3685 3972 TO 3975 3985 -
3986 TO 3992 4006 4123 4125 4126 4128 4129 4131 4132 4134 4135 4137 4138 -
4140 UNI GY -12.97
LOAD 7 LOADTYPE Dead  TITLE LOAD CASE 7 SLAB LOAD
FLOOR LOAD
YRANGE 19.8 19.8 FLOAD -18.5 XRANGE 0 4.88  ZRANGE -10.77 -3.28  GY
MEMBER LOAD
2065 2363 2380 2691 2704 3012 3025 3333 3346 3654 3667 UNI GY -21.23
3988 UNI GY -21.23 1.33 2.66
LOAD COMB 8 COMBINATION LOAD CASE 8
2 1.5 3 1.5 4 1.5 5 1.5 6 1.5 7 1.5 1 1.0
PERFORM ANALYSIS
LOAD LIST 8
START CONCRETE DESIGN
CODE INDIAN
CLEAR 0.03 MEMB 2001 TO 2087 2160 2166 TO 2239 2241 TO 2296 2298 TO 2300 2302 -
2303 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 2500 TO 2570 2572 TO 2626 -
2628 TO 2630 2632 TO 2684 2686 TO 2710 2712 TO 2738 2741 TO 2749 -
2821 TO 2891 2893 TO 2947 2949 TO 2951 2953 TO 3005 3007 TO 3031 -
3033 TO 3059 3062 TO 3070 3142 TO 3212 3214 TO 3268 3270 TO 3272 -
3274 TO 3326 3328 TO 3352 3354 TO 3380 3383 TO 3391 3463 TO 3533 -
3535 TO 3589 3591 TO 3593 3595 TO 3647 3649 TO 3673 3675 TO 3701 -
3704 TO 3712 3784 TO 3854 3856 TO 3910 3912 TO 3914 3916 TO 3968 -
3970 TO 3994 3996 TO 4022 4025 TO 4033 4105 TO 4123 4125 4126 4128 4129 4131 -
4132 4134 4135 4137 4138 4140 4183 TO 4196 4198 TO 4221 4226 TO 4230 4232 -
4233 TO 4237 4240 4241 4243 4245 4247 4249 4251 4253 4254 4262 TO 4269 4282 -
4284 4286 4288 4290 4292 4294
CLEAR 0.04 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 -
501 TO 578 601 TO 678 716 717 733 735 4223 4283 4285 4287 4289 4291 4293 -
4295
ELY 0.7 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
601 TO 678 716 717 733 735 4223 4283 4285 4287 4289 4291 4293 4295
ELZ 0.7 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
601 TO 678 716 717 733 735 4223 4283 4285 4287 4289 4291 4293 4295
ENSH 1 MEMB 2001 TO 2087 2160 2166 TO 2239 2241 TO 2296 2298 TO 2300 2302 -
2303 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 2500 TO 2570 2572 TO 2626 -
2628 TO 2630 2632 TO 2684 2686 TO 2710 2712 TO 2738 2741 TO 2749 -
2821 TO 2891 2893 TO 2947 2949 TO 2951 2953 TO 3005 3007 TO 3031 -
3033 TO 3059 3062 TO 3070 3142 TO 3212 3214 TO 3268 3270 TO 3272 -
3274 TO 3326 3328 TO 3352 3354 TO 3380 3383 TO 3391 3463 TO 3533 -
3535 TO 3589 3591 TO 3593 3595 TO 3647 3649 TO 3673 3675 TO 3701 -
3704 TO 3712 3784 TO 3854 3856 TO 3910 3912 TO 3914 3916 TO 3968 -
3970 TO 3994 3996 TO 4022 4025 TO 4033 4105 TO 4123 4125 4126 4128 4129 4131 -
4132 4134 4135 4137 4138 4140 4183 TO 4196 4198 TO 4221 4226 TO 4230 4232 -
4233 TO 4237 4240 4241 4243 4245 4247 4249 4251 4253 4254 4262 TO 4269 4282 -
4284 4286 4288 4290 4292 4294
FC 25000 MEMB 2001 TO 2087 2160 2166 TO 2239 2241 TO 2296 2298 TO 2300 2302 -
2303 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 2500 TO 2570 2572 TO 2626 -
2628 TO 2630 2632 TO 2684 2686 TO 2710 2712 TO 2738 2741 TO 2749 -
2821 TO 2891 2893 TO 2947 2949 TO 2951 2953 TO 3005 3007 TO 3031 -
3033 TO 3059 3062 TO 3070 3142 TO 3212 3214 TO 3268 3270 TO 3272 -
3274 TO 3326 3328 TO 3352 3354 TO 3380 3383 TO 3391 3463 TO 3533 -
3535 TO 3589 3591 TO 3593 3595 TO 3647 3649 TO 3673 3675 TO 3701 -
3704 TO 3712 3784 TO 3854 3856 TO 3910 3912 TO 3914 3916 TO 3968 -
3970 TO 3994 3996 TO 4022 4025 TO 4033 4105 TO 4123 4125 4126 4128 4129 4131 -
4132 4134 4135 4137 4138 4140 4183 TO 4196 4198 TO 4221 4240 4241 4243 4245 -
4247 4249 4251 4253 4254 4262 TO 4269 4282 4284 4286 4288 4290 4292 4294
FC 30000 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
601 TO 678 716 717 733 735 4223 4226 TO 4230 4232 TO 4237 4283 4285 4287 -
4289 4291 4293 4295
FYMAIN 500000 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 -
502 TO 578 601 TO 678 716 717 733 735 2001 TO 2087 2160 2166 TO 2239 2241 -
2242 TO 2296 2298 TO 2300 2302 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 -
2500 TO 2570 2572 TO 2626 2628 TO 2630 2632 TO 2684 2686 TO 2710 -
2712 TO 2738 2741 TO 2749 2821 TO 2891 2893 TO 2947 2949 TO 2951 -
2953 TO 3005 3007 TO 3031 3033 TO 3059 3062 TO 3070 3142 TO 3212 -
3214 TO 3268 3270 TO 3272 3274 TO 3326 3328 TO 3352 3354 TO 3380 -
3383 TO 3391 3463 TO 3533 3535 TO 3589 3591 TO 3593 3595 TO 3647 -
3649 TO 3673 3675 TO 3701 3704 TO 3712 3784 TO 3854 3856 TO 3910 -
3912 TO 3914 3916 TO 3968 3970 TO 3994 3996 TO 4022 4025 TO 4033 -
4105 TO 4123 4125 4126 4128 4129 4131 4132 4134 4135 4137 4138 4140 4183 -
4184 TO 4196 4198 TO 4221 4223 4226 TO 4230 4232 TO 4237 4240 4241 4243 4245 -
4247 4249 4251 4253 4254 4262 TO 4269 4282 TO 4295
FYSEC 500000 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 -
502 TO 578 601 TO 678 716 717 733 735 2001 TO 2087 2160 2166 TO 2239 2241 -
2242 TO 2296 2298 TO 2300 2302 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 -
2500 TO 2570 2572 TO 2626 2628 TO 2630 2632 TO 2684 2686 TO 2710 -
2712 TO 2738 2741 TO 2749 2821 TO 2891 2893 TO 2947 2949 TO 2951 -
2953 TO 3005 3007 TO 3031 3033 TO 3059 3062 TO 3070 3142 TO 3212 -
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ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

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3214 TO 3268 3270 TO 3272 3274 TO 3326 3328 TO 3352 3354 TO 3380 -
3383 TO 3391 3463 TO 3533 3535 TO 3589 3591 TO 3593 3595 TO 3647 -
3649 TO 3673 3675 TO 3701 3704 TO 3712 3784 TO 3854 3856 TO 3910 -
3912 TO 3914 3916 TO 3968 3970 TO 3994 3996 TO 4022 4025 TO 4033 -
4105 TO 4123 4125 4126 4128 4129 4131 4132 4134 4135 4137 4138 4140 4183 -
4184 TO 4196 4198 TO 4221 4223 4226 TO 4230 4232 TO 4237 4240 4241 4243 4245 -
4247 4249 4251 4253 4254 4262 TO 4269 4282 TO 4295
MAXMAIN 25 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 -
501 TO 578 601 TO 678 716 717 733 735 2001 TO 2087 2160 2166 TO 2239 2241 -
2242 TO 2296 2298 TO 2300 2302 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 -
2500 TO 2570 2572 TO 2626 2628 TO 2630 2632 TO 2684 2686 TO 2710 -
2712 TO 2738 2741 TO 2749 2821 TO 2891 2893 TO 2947 2949 TO 2951 -
2953 TO 3005 3007 TO 3031 3033 TO 3059 3062 TO 3070 3142 TO 3212 -
3214 TO 3268 3270 TO 3272 3274 TO 3326 3328 TO 3352 3354 TO 3380 -
3383 TO 3391 3463 TO 3533 3535 TO 3589 3591 TO 3593 3595 TO 3647 -
3649 TO 3673 3675 TO 3701 3704 TO 3712 3784 TO 3854 3856 TO 3910 -
3912 TO 3914 3916 TO 3968 3970 TO 3994 3996 TO 4022 4025 TO 4033 -
4105 TO 4123 4125 4126 4128 4129 4131 4132 4134 4135 4137 4138 4140 4183 -
4184 TO 4196 4198 TO 4221 4223 4226 TO 4230 4232 TO 4237 4240 4241 4243 4245 -
4247 4249 4251 4253 4254 4262 TO 4269 4282 TO 4295
MAXSEC 12 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 -
501 TO 578 601 TO 678 716 717 733 735 2001 TO 2087 2160 2166 TO 2239 2241 -
2242 TO 2296 2298 TO 2300 2302 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 -
2500 TO 2570 2572 TO 2626 2628 TO 2630 2632 TO 2684 2686 TO 2710 -
2712 TO 2738 2741 TO 2749 2821 TO 2891 2893 TO 2947 2949 TO 2951 -
2953 TO 3005 3007 TO 3031 3033 TO 3059 3062 TO 3070 3142 TO 3212 -
3214 TO 3268 3270 TO 3272 3274 TO 3326 3328 TO 3352 3354 TO 3380 -
3383 TO 3391 3463 TO 3533 3535 TO 3589 3591 TO 3593 3595 TO 3647 -
3649 TO 3673 3675 TO 3701 3704 TO 3712 3784 TO 3854 3856 TO 3910 -
3912 TO 3914 3916 TO 3968 3970 TO 3994 3996 TO 4022 4025 TO 4033 -
4105 TO 4123 4125 4126 4128 4129 4131 4132 4134 4135 4137 4138 4140 4183 -
4184 TO 4196 4198 TO 4221 4223 4226 TO 4230 4232 TO 4237 4240 4241 4243 4245 -
4247 4249 4251 4253 4254 4262 TO 4269 4282 TO 4295
MINMAIN 12 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 -
501 TO 578 601 TO 678 716 717 733 735 2001 TO 2087 2160 2166 TO 2239 2241 -
2242 TO 2296 2298 TO 2300 2302 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 -
2500 TO 2570 2572 TO 2626 2628 TO 2630 2632 TO 2684 2686 TO 2710 -
2712 TO 2738 2741 TO 2749 2821 TO 2891 2893 TO 2947 2949 TO 2951 -
2953 TO 3005 3007 TO 3031 3033 TO 3059 3062 TO 3070 3142 TO 3212 -
3214 TO 3268 3270 TO 3272 3274 TO 3326 3328 TO 3352 3354 TO 3380 -
3383 TO 3391 3463 TO 3533 3535 TO 3589 3591 TO 3593 3595 TO 3647 -
3649 TO 3673 3675 TO 3701 3704 TO 3712 3784 TO 3854 3856 TO 3910 -
3912 TO 3914 3916 TO 3968 3970 TO 3994 3996 TO 4022 4025 TO 4033 -
4105 TO 4123 4125 4126 4128 4129 4131 4132 4134 4135 4137 4138 4140 4183 -
4184 TO 4196 4198 TO 4221 4223 4226 TO 4230 4232 TO 4237 4240 4241 4243 4245 -
4247 4249 4251 4253 4254 4262 TO 4269 4282 TO 4295
MINSEC 8 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
601 TO 678 716 717 733 735 2001 TO 2087 2160 2166 TO 2239 2241 TO 2296 2298 -
2299 TO 2300 2302 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 2500 TO 2570 -
2572 TO 2626 2628 TO 2630 2632 TO 2684 2686 TO 2710 2712 TO 2738 -
2741 TO 2749 2821 TO 2891 2893 TO 2947 2949 TO 2951 2953 TO 3005 -
3007 TO 3031 3033 TO 3059 3062 TO 3070 3142 TO 3212 3214 TO 3268 -
3270 TO 3272 3274 TO 3326 3328 TO 3352 3354 TO 3380 3383 TO 3391 -
3463 TO 3533 3535 TO 3589 3591 TO 3593 3595 TO 3647 3649 TO 3673 -
3675 TO 3701 3704 TO 3712 3784 TO 3854 3856 TO 3910 3912 TO 3914 -
3916 TO 3968 3970 TO 3994 3996 TO 4022 4025 TO 4033 4105 TO 4123 4125 4126 -
4128 4129 4131 4132 4134 4135 4137 4138 4140 4183 TO 4196 4198 TO 4221 4223 -
4226 TO 4230 4232 TO 4237 4240 4241 4243 4245 4247 4249 4251 4253 4254 4262 -
4263 TO 4269 4282 TO 4295
RATIO 4 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
601 TO 678 716 717 733 735 4223 4283 4285 4287 4289 4291 4293 4295
TRACK 2 MEMB 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
601 TO 678 716 717 733 735 2001 TO 2087 2160 2166 TO 2239 2241 TO 2296 2298 -
2299 TO 2300 2302 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 2500 TO 2570 -
2572 TO 2626 2628 TO 2630 2632 TO 2684 2686 TO 2710 2712 TO 2738 -
2741 TO 2749 2821 TO 2891 2893 TO 2947 2949 TO 2951 2953 TO 3005 -
3007 TO 3031 3033 TO 3059 3062 TO 3070 3142 TO 3212 3214 TO 3268 -
3270 TO 3272 3274 TO 3326 3328 TO 3352 3354 TO 3380 3383 TO 3391 -
3463 TO 3533 3535 TO 3589 3591 TO 3593 3595 TO 3647 3649 TO 3673 -
3675 TO 3701 3704 TO 3712 3784 TO 3854 3856 TO 3910 3912 TO 3914 -
3916 TO 3968 3970 TO 3994 3996 TO 4022 4025 TO 4033 4105 TO 4123 4125 4126 -
4128 4129 4131 4132 4134 4135 4137 4138 4140 4183 TO 4196 4198 TO 4221 4223 -
4226 TO 4230 4232 TO 4237 4240 4241 4243 4245 4247 4249 4251 4253 4254 4262 -
4263 TO 4264 4282 TO 4295
DESIGN BEAM 2001 TO 2087 2160 2166 TO 2239 2241 TO 2296 2298 TO 2300 2302 -
2303 TO 2354 2356 TO 2387 2389 TO 2416 2419 TO 2428 2500 TO 2570 2572 TO 2626 -
2628 TO 2630 2632 TO 2684 2686 TO 2710 2712 TO 2738 2741 TO 2749 -
2821 TO 2891 2893 TO 2947 2949 TO 2951 2953 TO 3005 3007 TO 3031 -
3033 TO 3059 3062 TO 3070 3142 TO 3212 3214 TO 3268 3270 TO 3272 -
3274 TO 3326 3328 TO 3352 3354 TO 3380 3383 TO 3391 3463 TO 3533 -
3535 TO 3589 3591 TO 3593 3595 TO 3647 3649 TO 3673 3675 TO 3701 -
3704 TO 3712 3784 TO 3854 3856 TO 3910 3912 TO 3914 3916 TO 3968 -
3970 TO 3994 3996 TO 4022 4025 TO 4033 4105 TO 4123 4125 4126 4128 4129 4131 -
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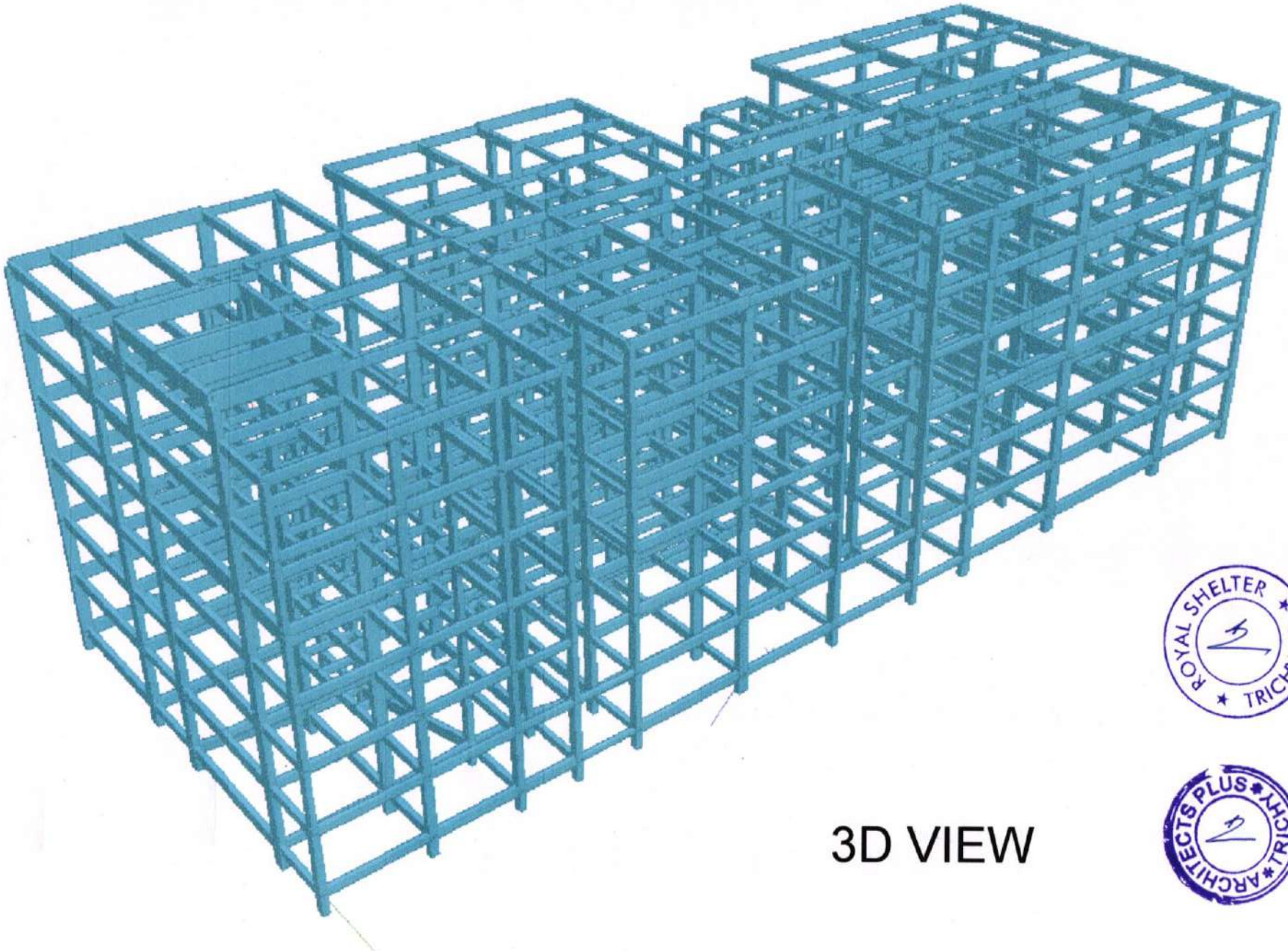
ROYAL SHELTER ★ TRICHY-18 ★

ARCHITECTS PLUS *TRICHY*

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4132 4134 4135 4137 4138 4140 4183 TO 4196 4198 TO 4221 4226 TO 4230 4232 -
4233 TO 4237 4240 4241 4243 4245 4247 4249 4251 4253 4254 4262 TO 4269 4282 -
4284 4286 4288 4290 4292 4294
DESIGN COLUMN 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
601 TO 678 716 717 733 735 4223 4283 4285 4287 4289 4291 4293 4295
CONCRETE TAKE
END CONCRETE DESIGN
FINISH
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ROYAL SHELTER TRICHY-18

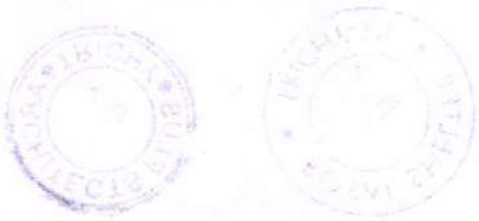
ARCHITECTS PLUS TRICHY

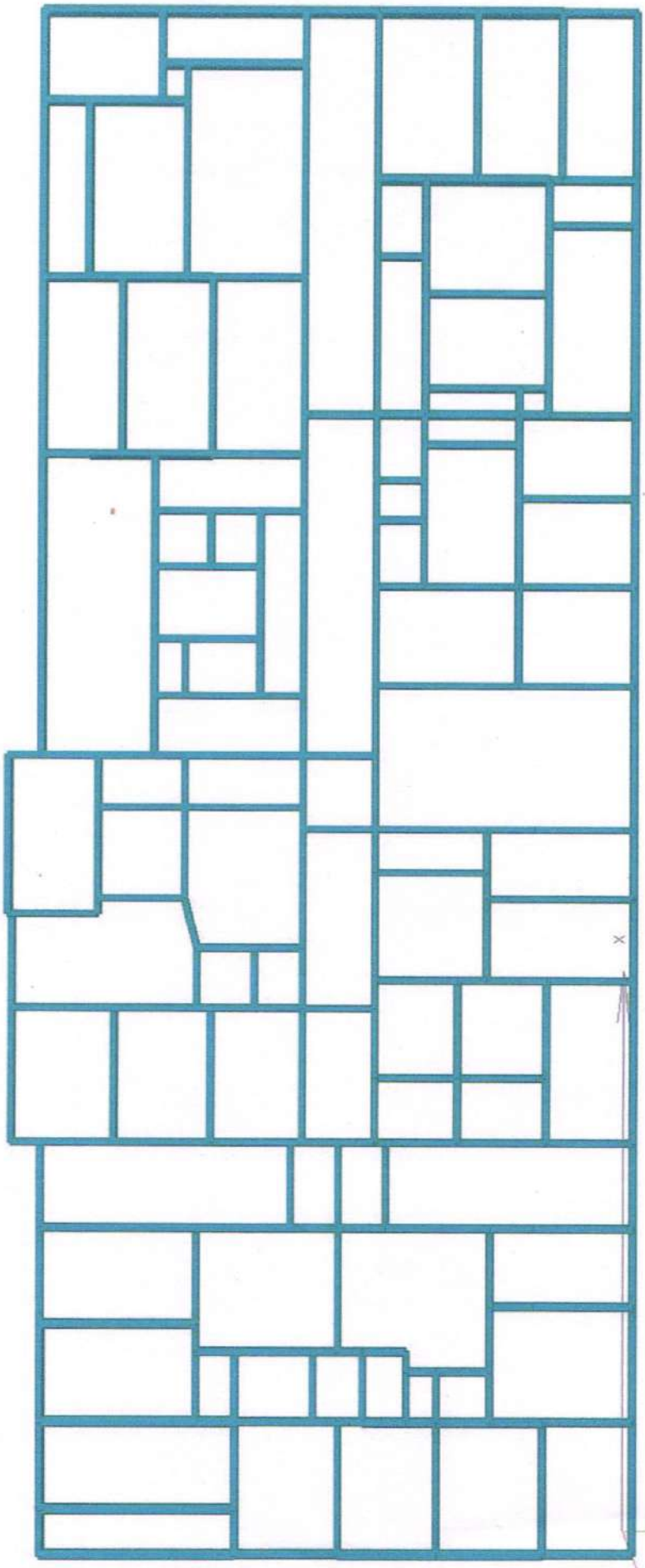


3D VIEW

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY





ARCHITECTS PLUS * TRICHY

ROYAL SHELTER * TRICHY-18

ANNEXURE-C

RC DESIGN OF ISOLATD FOOTING

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Royal Windgates PH-II, Trichy.

Footing Design

Footing data:

Axial Load	=	1083 kN
SBC	=	250 kN/m^2
Grade of conc.	=	M25
Grade of Steel	=	Fe500
Column size	=	380mm x 230mm

Design of footing:

Area of Footing	=	108/250 = 4.32 m^2
Size of Footing	=	2.08m x 2.08m
Net pressure	=	1083*1.5*2.08*2.08 = ----kN/m^2
Bending Moment Mu	=	434*1.025^2/2 = 228 kN m
Effective depth req.	=	228*10^6 / 3.33*1000 = 262mm
Provide Overall Depth	=	800mm
Effective depth	=	744mm

Tension Reinforcement:

Mu	=	228kN m
Mu/bd^2	=	0.412
Pt	=	0.10%
Ast	=	720mm^2
Provide	=	T12 @ 150mm c/c
Pro.Pt	=	0.11%

Check one way shear

Vu_1	=	434*(1.025-0.744)	= 122N
tv	=	122*10^3/1000*744	= 0.164N/mm^2
tc	=	0.290 N/mm^2	

tc = 0.290 > tv = 0.164 Hence safe

ROYAL SHELTER ★ TRICHY-18 ★

ARCHITECTS PLUS ★ TRICHY ★

Check two way shear

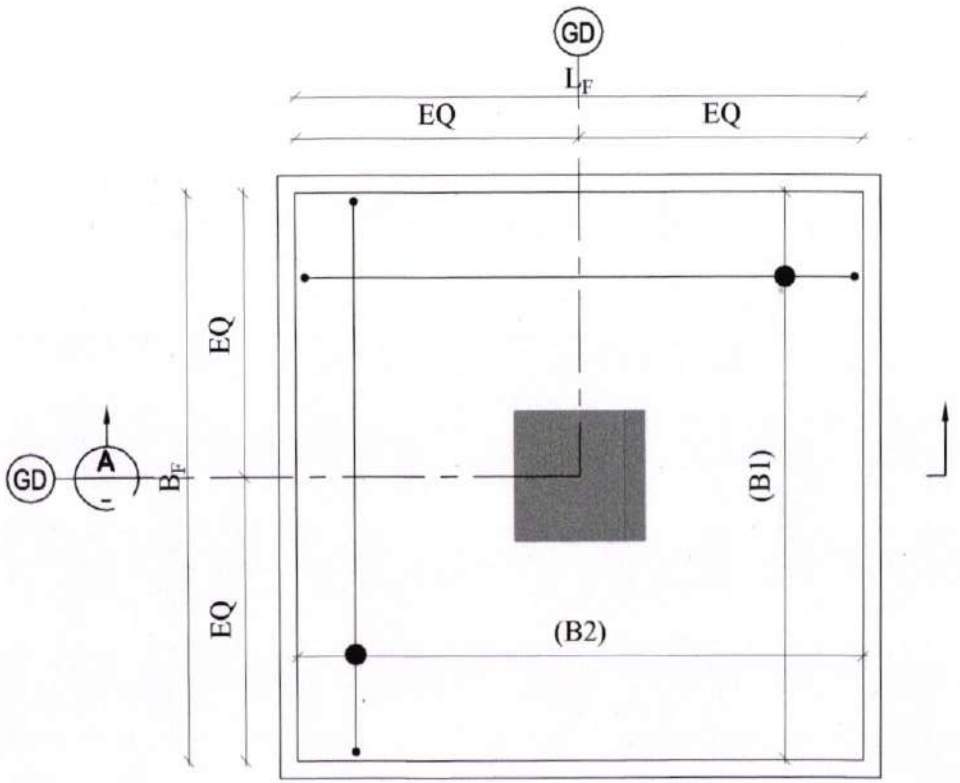
Vu_2	=	$434*(2.575^2 - 1.269^2)$	=	2178 N	
tvz	=	$2178*10^3/2.575*1269*744$	=	0.895 N/mm^2	
ks	=	1 N/mm^2			
ks = 1 > tvz	=	0.895 Hence safe			

Result

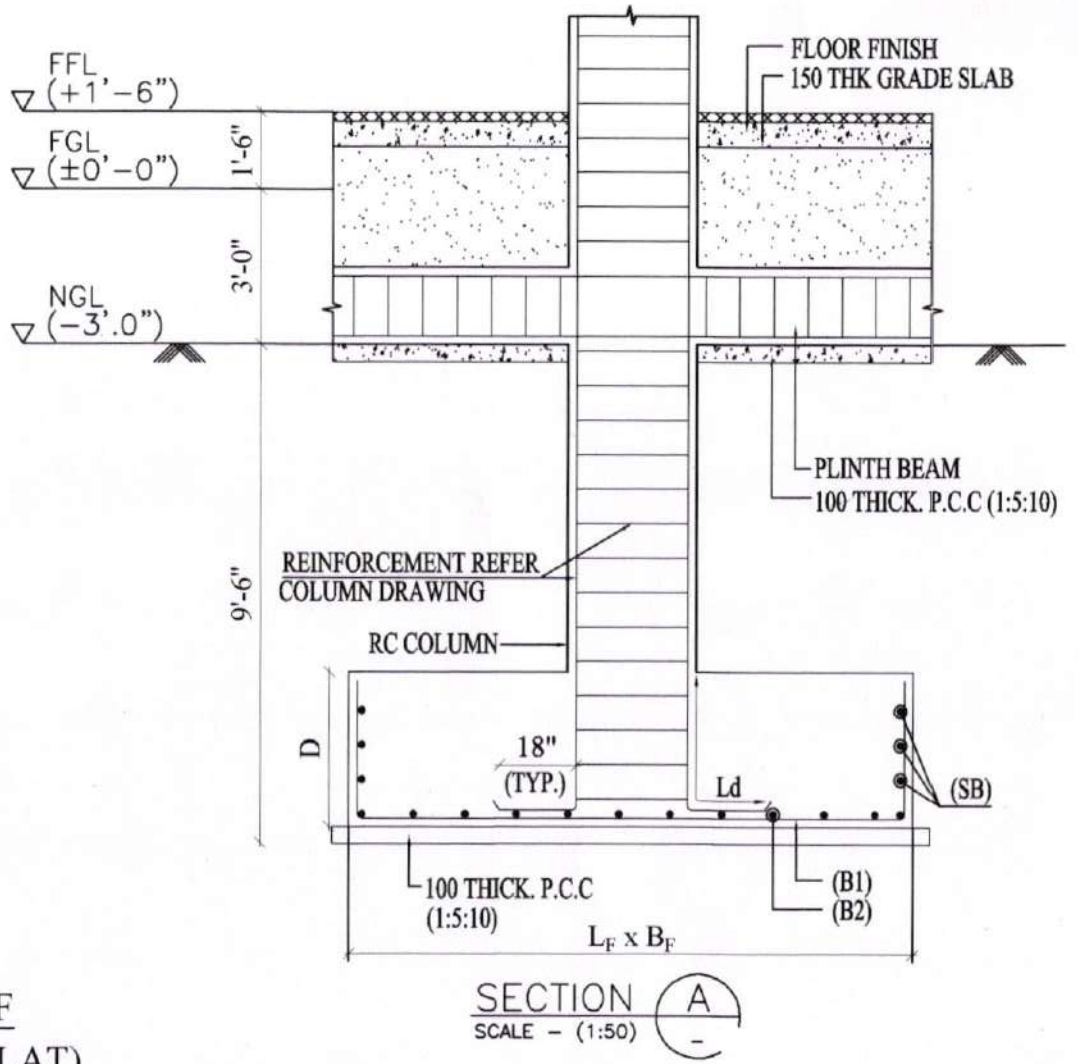
Footing size	=	2575mm x 2350 mm
Footing depth	=	800mm
Reinforcement	=	T12@150mm c/c

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY



PLAN



SECTION A
SCALE - (1:50)

TYPICAL DETAIL OF ISOLATED FOOTING (FLAT)

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT PLOT NO.2,3,4 IN THE LAYOUT "ROYAL WINDGATES PHASE-II", IN T.S.NO: 1/1A, BLOCK: 5 & WARD: AB, GOLDEN ROCK ZONE, K.ABISHEKAPURAM VILLAGE, TIRUCHIRAPPALLI CORPORATION.

ANNEXURE-D

RC DESIGN OF COLUMN





**********END OF BEAM DESIGN RESULTS**********

1415. DESIGN COLUMN 1 TO 79 101 TO 179 201 TO 278 301 TO 378 401 TO 478 501 TO 578 -
1416. 601 TO 678 716 717 733 735 4223 4283 4285 4287 4289 4291 4293 4295

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C O L U M N N O. 1 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2068 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	558.40	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	11.17	11.17
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	11.17	11.17

REQD. STEEL AREA : 333.87 Sq.mm.
REQD. CONCRETE AREA: 41733.90 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.40%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1659.69 Muz1 : 62.60 Muy1 : 80.70

INTERACTION RATIO: 0.21 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 1 Puz : 1702.54 Muz : 71.27 Muy : 92.97 IR: 0.18

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C O L U M N N O. 2 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 300.0 mm X 380.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2077 SHORT COLUMN

REQD. CONCRETE AREA: 51891.75 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.40%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1689.07 Muz1 : 66.29 Muy1 : 86.10

INTERACTION RATIO: 0.21 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 3273 Puz : 1702.54 Muz : 71.96 Muy : 94.54 IR: 0.18

C O L U M N N O. 4 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2086 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 423.92

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	8.48	8.48
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	8.48	8.48

REQD. STEEL AREA : 253.46 Sq.mm.
REQD. CONCRETE AREA: 31682.79 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.40%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1630.63 Muz1 : 54.49 Muy1 : 69.98

INTERACTION RATIO: 0.23 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 85 Puz : 1702.54 Muz : 64.73 Muy : 84.75 IR: 0.19

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 878.46

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	17.57	17.57
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	17.57	17.57

REQD. STEEL AREA : 525.24 Sq.mm.
REQD. CONCRETE AREA: 65654.76 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 16 dia. (0.71%, 804.25 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 255 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1728.87 Muz1 : 85.88 Muy1 : 66.18

INTERACTION RATIO: 0.22 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2077 Puz : 1829.74 Muz : 104.86 Muy : 79.02 IR: 0.18

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C O L U M N N O. 3 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 3273 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 694.31

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	13.89	13.89
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	13.89	13.89

REQD. STEEL AREA : 415.13 Sq.mm.





C O L U M N N O. 5 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2088 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 648.50

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	12.97	12.97
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	12.97	12.97

REQD. STEEL AREA : 387.74 Sq.mm.
REQD. CONCRETE AREA: 48467.70 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.40%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1679.17 Muz1 : 65.63 Muy1 : 84.87

INTERACTION RATIO: 0.20 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2088 Puz : 1702.54 Muz : 72.53 Muy : 95.03 IR: 0.18

C O L U M N N O. 6 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 300.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2098 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 1193.42

	About Z	About Y

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	23.87	23.87
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	23.87	23.87

REQD. STEEL AREA : 713.55 Sq.mm.
REQD. CONCRETE AREA: 89194.34 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.66%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 2120.95 Muz1 : 124.16 Muy1 : 77.86

INTERACTION RATIO: 0.22 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2098 Puz : 2190.08 Muz : 134.58 Muy : 83.24 IR: 0.21

COLUMN NO. 7 DESIGN RESULTS

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 460.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2100 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 838.45

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	16.77	16.77
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	16.77	16.77

REQD. STEEL AREA : 501.31 Sq.mm.
REQD. CONCRETE AREA: 62664.07 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.66%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

Puz : 2044.22 Muz1 : 80.17 Muy1 : 127.91

INTERACTION RATIO: 0.19 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2100 Puz : 2190.08 Muz : 92.27 Muy : 151.53 IR: 0.16

C O L U M N N O. 8 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 460.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2131 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 627.33

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	12.55	12.55
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	12.55	12.55

REQD. STEEL AREA : 375.09 Sq.mm.
REQD. CONCRETE AREA: 46885.69 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.66%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1998.59 Muz1 : 73.36 Muy1 : 115.53

INTERACTION RATIO: 0.19 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 141 Puz : 2190.08 Muz : 90.79 Muy : 147.38 IR: 0.16

C O L U M N N O. 9 D E S I G N R E S U L T S

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

LENGTH: 1000.0 mm CROSS SECTION: 300.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2111 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	1072.79	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	21.46	21.46
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	21.46	21.46

REQD. STEEL AREA : 641.43 Sq.mm.
REQD. CONCRETE AREA: 80178.77 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.66%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 2094.88 Muz1 : 127.60 Muy1 : 79.94

INTERACTION RATIO: 0.20 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2111 Puz : 2190.08 Muz : 141.71 Muy : 87.24 IR: 0.19

C O L U M N N O. 10 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 300.0 mm X 610.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2113 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	1624.87	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	36.29	32.50
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

ADDITION MOMENTS (Maz and May) : - -

TOTAL DESIGN MOMENTS : 36.29 32.50

REQD. STEEL AREA : 971.52 Sq.mm.
REQD. CONCRETE AREA: 121440.42 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 12 dia. (0.74%, 1357.17 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 2821.71 Muz1 : 219.83 Muy1 : 102.07

INTERACTION RATIO: 0.21 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2113 Puz : 2961.12 Muz : 245.81 Muy : 111.44 IR: 0.19

COLUMN NO. 11 DESIGN RESULTS

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 300.0 mm X 610.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2128 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 1586.20

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	35.43	31.72
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	35.43	31.72

REQD. STEEL AREA : 948.40 Sq.mm.
REQD. CONCRETE AREA: 118549.72 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 12 dia. (0.74%, 1357.17 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 2813.35 Muz1 : 221.91 Muy1 : 103.03

INTERACTION RATIO: 0.20 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

WORST LOAD CASE: 8
END JOINT: 2128 Puz : 2961.12 Muz : 249.36 Muy : 112.88 IR: 0.19

C O L U M N N O. 12 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 300.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2116 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	595.25	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	11.90	11.90
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	11.90	11.90

REQD. STEEL AREA : 355.90 Sq.mm.
REQD. CONCRETE AREA: 44487.75 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.66%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1991.66 Muz1 : 112.50 Muy1 : 71.53

INTERACTION RATIO: 0.20 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 167 Puz : 2190.08 Muz : 145.88 Muy : 89.73 IR: 0.16

C O L U M N N O. 13 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 530.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2115 SHORT COLUMN

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	1644.50	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	32.89	32.89
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	32.89	32.89

REQD. STEEL AREA : 983.26 Sq.mm.
REQD. CONCRETE AREA: 158016.73 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 12 dia. (0.85%, 1357.17 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 2501.95 Muz1 : 80.62 Muy1 : 149.61

INTERACTION RATIO: 0.28 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2115 Puz : 2637.12 Muz : 90.65 Muy : 171.83 IR: 0.24

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C O L U M N N O. 14 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 610.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2114 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	3257.24	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	65.14	72.74
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	65.14	72.74

REQD. STEEL AREA : 4134.99 Sq.mm.
REQD. CONCRETE AREA: 178865.02 Sq.mm.

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

MAIN REINFORCEMENT : Provide 16 - 20 dia. (2.75%, 5026.55 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 300 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 3965.30 Muz1 : 75.81 Muy1 : 180.80

INTERACTION RATIO: 0.90 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2114 Puz : 4287.60 Muz : 109.12 Muy : 260.88 IR: 0.45

C O L U M N N O. 15 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 610.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2132 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 2861.56

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	57.23	63.91
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	57.23	63.91

REQD. STEEL AREA : 2781.60 Sq.mm.
REQD. CONCRETE AREA: 180218.41 Sq.mm.
MAIN REINFORCEMENT : Provide 16 - 16 dia. (1.76%, 3216.99 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 255 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 3476.05 Muz1 : 65.33 Muy1 : 150.66

INTERACTION RATIO: 0.95 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 2132 Puz : 3633.44 Muz : 82.95 Muy : 189.68 IR: 0.60

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

ANNEXURE-E

RC DESIGN OF BEAM

ROYAL SHELTER ★ TRICHY-18 ★

ARCHITECTS PLUS TRICHY

B E A M N O. 2020 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2550.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	1.96	-0.22	8	-0.48	-0.22	8
	0.00	0.00	0.00	8			
212.5	0.00	1.82	-0.22	8	-0.82	-0.22	8
	0.00	0.00	0.00	8			
425.0	0.00	1.61	-0.22	8	-1.17	-0.22	8
	0.00	0.00	0.00	8			
637.5	0.00	1.33	-0.22	8	-1.51	-0.22	8
	0.00	0.00	0.00	8			
850.0	0.00	0.97	-0.22	8	-1.86	-0.22	8
	0.00	0.00	0.00	8			
1062.5	0.00	0.54	-0.22	8	-2.20	-0.22	8
	0.00	0.00	0.00	8			
1275.0	0.00	0.03	-0.22	8	-2.55	-0.22	8
	0.00	0.00	0.00	8			
1487.5	0.00	-0.55	-0.22	8	-2.90	-0.22	8
	0.00	0.00	0.00	8			
1700.0	0.00	0.00	0.00	8	-3.24	-0.22	8
	0.00	-1.20	-0.22	8			
1912.5	0.00	0.00	0.00	8	-3.59	-0.22	8
	0.00	-1.93	-0.22	8			
2125.0	0.00	0.00	0.00	8	-3.93	-0.22	8
	0.00	-2.72	-0.22	8			
2337.5	0.00	0.00	0.00	8	-4.28	-0.22	8
	0.00	-3.60	-0.22	8			
2550.0	0.00	0.00	0.00	8	-4.62	-0.22	8
	0.00	-4.54	-0.22	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
212.5	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
425.0	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
637.5	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
850.0	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1062.5	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1275.0	103.22/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1487.5	103.22/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1700.0	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

	0.00	0.00	0.00	8				
431.7	0.00	6.15	-0.02	8		1.24	-0.02	8
	0.00	0.00	0.00	8				
863.3	0.00	6.46	-0.02	8		0.17	-0.02	8
	0.00	0.00	0.00	8				
1295.0	0.00	6.30	-0.02	8		-0.91	-0.02	8
	0.00	0.00	0.00	8				
1726.7	0.00	5.67	-0.02	8		-1.99	-0.02	8
	0.00	0.00	0.00	8				
2158.3	0.00	4.58	-0.02	8		-3.06	-0.02	8
	0.00	0.00	0.00	8				
2590.0	0.00	3.03	-0.02	8		-4.14	-0.02	8
	0.00	0.00	0.00	8				
3021.7	0.00	1.01	-0.02	8		-5.21	-0.02	8
	0.00	0.00	0.00	8				
3453.3	0.00	0.00	0.00	8		-6.29	-0.02	8
	0.00	-1.47	-0.02	8				
3885.0	0.00	0.00	0.00	8		-7.37	-0.02	8
	0.00	-4.42	-0.02	8				
4316.7	0.00	0.00	0.00	8		-8.44	-0.02	8
	0.00	-7.83	-0.02	8				
4748.3	0.00	0.00	0.00	8		-9.52	-0.02	8
	0.00	-11.71	-0.02	8				
5180.0	0.00	0.00	0.00	8		-10.59	-0.02	8
	0.00	-16.05	-0.02	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
431.7	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
863.3	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
1295.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
1726.7	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
2158.3	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
2590.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
3021.7	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
3453.3	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
3885.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
4316.7	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
4748.3	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
5180.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM START SUPPORT
VY = 0.90 MX = -0.02 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

SHEAR DESIGN RESULTS AT 654.0 mm AWAY FROM END SUPPORT
VY = -8.97 MX = -0.02 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

	0.00	-3.94	0.03	8				
4741.7	0.00	0.00	0.00	8		-6.52	0.03	8
	0.00	-6.80	0.03	8				
5215.8	0.00	0.00	0.00	8		-7.50	0.03	8
	0.00	-10.12	0.03	8				
5690.0	0.00	0.00	0.00	8		-8.48	0.03	8
	0.00	-13.91	0.03	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
474.2	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
948.3	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
1422.5	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
1896.7	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
2370.8	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
2845.0	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
3319.2	0.00/ 226.19(2-12í)|	134.50/ 226.19(2-12í)|	8í @ 125 mm
3793.3	134.50/ 226.19(2-12í)|	0.00/ 226.19(2-12í)|	8í @ 125 mm
4267.5	134.50/ 226.19(2-12í)|	0.00/ 226.19(2-12í)|	8í @ 125 mm
4741.7	134.50/ 226.19(2-12í)|	0.00/ 226.19(2-12í)|	8í @ 125 mm
5215.8	134.50/ 226.19(2-12í)|	0.00/ 226.19(2-12í)|	8í @ 125 mm
5690.0	134.50/ 226.19(2-12í)|	0.00/ 226.19(2-12í)|	8í @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM START SUPPORT
VY = 2.07 MX = 0.03 LD= 8
Provide 2 Legged 8í @ 125 mm c/c

SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM END SUPPORT
VY = -7.30 MX = 0.03 LD= 8
Provide 2 Legged 8í @ 125 mm c/c

B E A M N O. 2019 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5180.0 mm SIZE: 230.0 mm X 460.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	M2	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	5.38	-0.02	8	2.32	-0.02	8

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

295.8	103.22/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
591.7	103.22/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
887.5	103.22/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1183.3	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1479.2	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1775.0	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
2070.8	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
2366.7	103.22/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
2662.5	103.22/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
2958.3	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm
3254.2	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm
3550.0	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 529.0 mm AWAY FROM START SUPPORT
VY = 1.66 MX = 0.29 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 414.0 mm AWAY FROM END SUPPORT
VY = -2.59 MX = 0.29 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 2018 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5690.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.98	0.03	8	3.24	0.03	8
	0.00	0.00	0.00	8			
474.2	0.00	2.29	0.03	8	2.26	0.03	8
	0.00	0.00	0.00	8			
948.3	0.00	3.13	0.03	8	1.29	0.03	8
	0.00	0.00	0.00	8			
1422.5	0.00	3.51	0.03	8	0.31	0.03	8
	0.00	0.00	0.00	8			
1896.7	0.00	3.43	0.03	8	-0.66	0.03	8
	0.00	0.00	0.00	8			
2370.8	0.00	2.88	0.03	8	-1.64	0.03	8
	0.00	0.00	0.00	8			
2845.0	0.00	1.87	0.03	8	-2.62	0.03	8
	0.00	0.00	0.00	8			
3319.2	0.00	0.40	0.03	8	-3.59	0.03	8
	0.00	0.00	0.00	8			
3793.3	0.00	0.00	0.00	8	-4.57	0.03	8
	0.00	-1.54	0.03	8			
4267.5	0.00	0.00	0.00	8	-5.55	0.03	8





SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM START SUPPORT
VY = 3.44 MX = -0.26 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM END SUPPORT
VY = -7.90 MX = -0.26 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

B E A M N O. 2017 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3550.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	2.52	0.29	8
	0.00	-1.27	0.29	8			
295.8	0.00	-0.60	0.29	8	2.03	0.29	8
	0.00	0.00	0.00	8			
591.7	0.00	0.00	0.00	8	1.55	0.29	8
	0.00	-0.07	0.29	8			
887.5	0.00	0.32	0.29	8	1.07	0.29	8
	0.00	0.00	0.00	8			
1183.3	0.00	0.56	0.29	8	0.59	0.29	8
	0.00	0.00	0.00	8			
1479.2	0.00	0.67	0.29	8	0.11	0.29	8
	0.00	0.00	0.00	8			
1775.0	0.00	0.63	0.29	8	-0.37	0.29	8
	0.00	0.00	0.00	8			
2070.8	0.00	0.45	0.29	8	-0.85	0.29	8
	0.00	0.00	0.00	8			
2366.7	0.00	0.13	0.29	8	-1.33	0.29	8
	0.00	0.00	0.00	8			
2662.5	0.00	0.00	0.00	8	-1.81	0.29	8
	0.00	-0.34	0.29	8			
2958.3	0.00	0.00	0.00	8	-2.29	0.29	8
	0.00	-0.95	0.29	8			
3254.2	0.00	0.00	0.00	8	-2.78	0.29	8
	0.00	-1.70	0.29	8			
3550.0	0.00	0.00	0.00	8	-3.26	0.29	8
	0.00	-2.59	0.29	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	103.22/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 105 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE P	(Maxm. Sagging/Hogging moments) MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	4.86	-0.26	8
	0.00	-2.74	-0.26	8			
474.2	0.00	0.00	0.00	8	3.68	-0.26	8
	0.00	-0.71	-0.26	8			
948.3	0.00	0.75	-0.26	8	2.49	-0.26	8
	0.00	0.00	0.00	8			
1422.5	0.00	1.65	-0.26	8	1.31	-0.26	8
	0.00	0.00	0.00	8			
1896.7	0.00	1.99	-0.26	8	0.13	-0.26	8
	0.00	0.00	0.00	8			
2370.8	0.00	1.78	-0.26	8	-1.05	-0.26	8
	0.00	0.00	0.00	8			
2845.0	0.00	1.00	-0.26	8	-2.23	-0.26	8
	0.00	0.00	0.00	8			
3319.2	0.00	0.00	0.00	8	-3.42	-0.26	8
	0.00	-0.34	-0.26	8			
3793.3	0.00	0.00	0.00	8	-4.60	-0.26	8
	0.00	-2.24	-0.26	8			
4267.5	0.00	0.00	0.00	8	-5.78	-0.26	8
	0.00	-4.70	-0.26	8			
4741.7	0.00	0.00	0.00	8	-6.96	-0.26	8
	0.00	-7.72	-0.26	8			
5215.8	0.00	0.00	0.00	8	-8.14	-0.26	8
	0.00	-11.30	-0.26	8			
5690.0	0.00	0.00	0.00	8	-9.33	-0.26	8
	0.00	-15.44	-0.26	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 145 mm
474.2	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 145 mm
948.3	0.00/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 145 mm
1422.5	0.00/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 145 mm
1896.7	0.00/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 145 mm
2370.8	0.00/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 145 mm
2845.0	0.00/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 145 mm
3319.2	165.78/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 145 mm
3793.3	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 145 mm
4267.5	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 145 mm
4741.7	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 145 mm
5215.8	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 145 mm
5690.0	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 145 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

	0.00	0.00	0.00	8				
2440.0	0.00	1.36	-0.33	8	-0.04	-0.33	8	
	0.00	0.00	0.00	8				
2846.7	0.00	1.18	-0.33	8	-0.87	-0.33	8	
	0.00	0.00	0.00	8				
3253.3	0.00	0.65	-0.33	8	-1.71	-0.33	8	
	0.00	0.00	0.00	8				
3660.0	0.00	0.00	0.00	8	-2.55	-0.33	8	
	0.00	-0.21	-0.33	8				
4066.7	0.00	0.00	0.00	8	-3.38	-0.33	8	
	0.00	-1.42	-0.33	8				
4473.3	0.00	0.00	0.00	8	-4.22	-0.33	8	
	0.00	-2.96	-0.33	8				
4880.0	0.00	0.00	0.00	8	-5.06	-0.33	8	
	0.00	-4.85	-0.33	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.50/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 125 mm
406.7	134.50/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 125 mm
813.3	134.50/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
1220.0	134.50/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
1626.7	0.00/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
2033.3	0.00/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
2440.0	0.00/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
2846.7	0.00/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
3253.3	0.00/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
3660.0	134.50/ 226.19(2-12i)	134.50/ 226.19(2-12i)	8i @ 125 mm
4066.7	134.50/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 125 mm
4473.3	134.50/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 125 mm
4880.0	134.50/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 494.0 mm AWAY FROM START SUPPORT
VY = 3.98 MX = -0.33 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 609.0 mm AWAY FROM END SUPPORT
VY = -3.81 MX = -0.33 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 2016 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5690.0 mm SIZE: 230.0 mm X 460.0 mm COVER: 30.0 mm

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.50/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
390.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
780.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1170.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1560.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1950.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
2340.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
2730.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
3120.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
3510.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
3900.0	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
4290.0	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
4680.0	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 609.0 mm AWAY FROM START SUPPORT
VY = 2.72 MX = -0.25 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 609.0 mm AWAY FROM END SUPPORT
VY = -4.43 MX = -0.25 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 2015 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 4880.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	4.99	-0.33	8
	0.00	-4.68	-0.33	8			
406.7	0.00	0.00	0.00	8	4.15	-0.33	8
	0.00	-2.82	-0.33	8			
813.3	0.00	-1.30	-0.33	8	3.31	-0.33	8
	0.00	0.00	0.00	8			
1220.0	0.00	0.00	0.00	8	2.48	-0.33	8
	0.00	-0.13	-0.33	8			
1626.7	0.00	0.71	-0.33	8	1.64	-0.33	8
	0.00	0.00	0.00	8			
2033.3	0.00	1.21	-0.33	8	0.80	-0.33	8

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

6031.7	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
6580.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM START SUPPORT
VY = 6.12 MX = 0.22 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

SHEAR DESIGN RESULTS AT 689.0 mm AWAY FROM END SUPPORT
VY = -7.15 MX = 0.22 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

B E A M N O. 2014 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 4680.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	3.96	-0.25	8
	0.00	-0.37	-0.25	8			
390.0	0.00	1.02	-0.25	8	3.16	-0.25	8
	0.00	0.00	0.00	8			
780.0	0.00	2.09	-0.25	8	2.36	-0.25	8
	0.00	0.00	0.00	8			
1170.0	0.00	2.86	-0.25	8	1.55	-0.25	8
	0.00	0.00	0.00	8			
1560.0	0.00	3.31	-0.25	8	0.75	-0.25	8
	0.00	0.00	0.00	8			
1950.0	0.00	3.44	-0.25	8	-0.05	-0.25	8
	0.00	0.00	0.00	8			
2340.0	0.00	3.27	-0.25	8	-0.85	-0.25	8
	0.00	0.00	0.00	8			
2730.0	0.00	2.78	-0.25	8	-1.66	-0.25	8
	0.00	0.00	0.00	8			
3120.0	0.00	1.97	-0.25	8	-2.46	-0.25	8
	0.00	0.00	0.00	8			
3510.0	0.00	0.86	-0.25	8	-3.26	-0.25	8
	0.00	0.00	0.00	8			
3900.0	0.00	0.00	0.00	8	-4.07	-0.25	8
	0.00	-0.57	-0.25	8			
4290.0	0.00	0.00	0.00	8	-4.87	-0.25	8
	0.00	-2.32	-0.25	8			
4680.0	0.00	0.00	0.00	8	-5.67	-0.25	8
	0.00	-4.37	-0.25	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

B E A M N O. 2013 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 6580.0 mm SIZE: 230.0 mm X 460.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	7.55	0.22	8
	0.00	-8.50	0.22	8			
548.3	0.00	0.00	0.00	8	6.18	0.22	8
	0.00	-4.73	0.22	8			
1096.7	0.00	0.00	0.00	8	4.81	0.22	8
	0.00	-1.72	0.22	8			
1645.0	0.00	0.54	0.22	8	3.44	0.22	8
	0.00	0.00	0.00	8			
2193.3	0.00	2.06	0.22	8	2.08	0.22	8
	0.00	0.00	0.00	8			
2741.7	0.00	2.82	0.22	8	0.71	0.22	8
	0.00	0.00	0.00	8			
3290.0	0.00	2.84	0.22	8	-0.66	0.22	8
	0.00	0.00	0.00	8			
3838.3	0.00	2.10	0.22	8	-2.02	0.22	8
	0.00	0.00	0.00	8			
4386.7	0.00	0.62	0.22	8	-3.39	0.22	8
	0.00	0.00	0.00	8			
4935.0	0.00	0.00	0.00	8	-4.76	0.22	8
	0.00	-1.61	0.22	8			
5483.3	0.00	0.00	0.00	8	-6.12	0.22	8
	0.00	-4.60	0.22	8			
6031.7	0.00	0.00	0.00	8	-7.49	0.22	8
	0.00	-8.33	0.22	8			
6580.0	0.00	0.00	0.00	8	-8.86	0.22	8
	0.00	-12.81	0.22	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
548.3	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
1096.7	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
1645.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
2193.3	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
2741.7	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
3290.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
3838.3	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
4386.7	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
4935.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
5483.3	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

	0.00	0.00	0.00	8			
546.7	0.00	-1.37	-0.14	8	4.34	-0.14	8
	0.00	0.00	0.00	8			
820.0	0.00	0.00	0.00	8	3.78	-0.14	8
	0.00	-0.26	-0.14	8			
1093.3	0.00	0.70	-0.14	8	3.22	-0.14	8
	0.00	0.00	0.00	8			
1366.7	0.00	1.50	-0.14	8	2.65	-0.14	8
	0.00	0.00	0.00	8			
1640.0	0.00	2.15	-0.14	8	2.09	-0.14	8
	0.00	0.00	0.00	8			
1913.3	0.00	2.65	-0.14	8	1.53	-0.14	8
	0.00	0.00	0.00	8			
2186.7	0.00	2.99	-0.14	8	0.97	-0.14	8
	0.00	0.00	0.00	8			
2460.0	0.00	3.17	-0.14	8	0.40	-0.14	8
	0.00	0.00	0.00	8			
2733.3	0.00	3.21	-0.14	8	-0.16	-0.14	8
	0.00	0.00	0.00	8			
3006.7	0.00	3.08	-0.14	8	-0.72	-0.14	8
	0.00	0.00	0.00	8			
3280.0	0.00	2.81	-0.14	8	-1.29	-0.14	8
	0.00	0.00	0.00	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
273.3	134.50/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
546.7	134.50/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
820.0	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
1093.3	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1366.7	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1640.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1913.3	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
2186.7	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
2460.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
2733.3	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
3006.7	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
3280.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 494.0 mm AWAY FROM START SUPPORT
VY = 4.46 MX = -0.14 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 494.0 mm AWAY FROM END SUPPORT
VY = -0.28 MX = -0.14 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

	0.00	-2.24	-0.39	8				
5023.3	0.00	0.00	0.00	8		-6.07	-0.39	8
	0.00	-4.76	-0.39	8				
5480.0	0.00	0.00	0.00	8		-7.21	-0.39	8
	0.00	-7.79	-0.39	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
456.7	165.78/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
913.3	165.78/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
1370.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
1826.7	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
2283.3	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
2740.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
3196.7	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
3653.3	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
4110.0	165.78/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 145 mm
4566.7	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
5023.3	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm
5480.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 145 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM START SUPPORT
VY = 5.03 MX = -0.39 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

SHEAR DESIGN RESULTS AT 574.0 mm AWAY FROM END SUPPORT
VY = -5.79 MX = -0.39 LD= 8
Provide 2 Legged 8i @ 145 mm c/c

B E A M N O. 2012 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3280.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	5.47	-0.14	8
	0.00	-4.05	-0.14	8			

780.0	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
1040.0	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
1300.0	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
1560.0	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
1820.0	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
2080.0	103.22/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
2340.0	103.22/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
2600.0	103.22/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 105 mm
2860.0	103.22/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 105 mm
3120.0	103.22/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 414.0 mm AWAY FROM START SUPPORT
VY = 1.60 MX = -0.17 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 414.0 mm AWAY FROM END SUPPORT
VY = -2.14 MX = -0.17 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 2011 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5480.0 mm SIZE: 230.0 mm X 460.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	6.45	-0.39	8
	0.00	-5.70	-0.39	8			
456.7	0.00	-3.02	-0.39	8	5.31	-0.39	8
	0.00	0.00	0.00	8			
913.3	0.00	-0.85	-0.39	8	4.17	-0.39	8
	0.00	0.00	0.00	8			
1370.0	0.00	0.79	-0.39	8	3.03	-0.39	8
	0.00	0.00	0.00	8			
1826.7	0.00	1.92	-0.39	8	1.90	-0.39	8
	0.00	0.00	0.00	8			
2283.3	0.00	2.53	-0.39	8	0.76	-0.39	8
	0.00	0.00	0.00	8			
2740.0	0.00	2.61	-0.39	8	-0.38	-0.39	8
	0.00	0.00	0.00	8			
3196.7	0.00	2.18	-0.39	8	-1.52	-0.39	8
	0.00	0.00	0.00	8			
3653.3	0.00	1.22	-0.39	8	-2.66	-0.39	8
	0.00	0.00	0.00	8			
4110.0	0.00	0.00	0.00	8	-3.80	-0.39	8
	0.00	-0.25	-0.39	8			
4566.7	0.00	0.00	0.00	8	-4.93	-0.39	8

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

VY = 0.35 MX = 0.11 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 414.0 mm AWAY FROM END SUPPORT
VY = -3.83 MX = 0.11 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

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B E A M N O. 2010 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3120.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	2.27	-0.17	8
	0.00	-1.02	-0.17	8			
260.0	0.00	-0.48	-0.17	8	1.84	-0.17	8
	0.00	0.00	0.00	8			
520.0	0.00	-0.06	-0.17	8	1.42	-0.17	8
	0.00	0.00	0.00	8			
780.0	0.00	0.26	-0.17	8	1.00	-0.17	8
	0.00	0.00	0.00	8			
1040.0	0.00	0.46	-0.17	8	0.58	-0.17	8
	0.00	0.00	0.00	8			
1300.0	0.00	0.56	-0.17	8	0.15	-0.17	8
	0.00	0.00	0.00	8			
1560.0	0.00	0.54	-0.17	8	-0.27	-0.17	8
	0.00	0.00	0.00	8			
1820.0	0.00	0.42	-0.17	8	-0.69	-0.17	8
	0.00	0.00	0.00	8			
2080.0	0.00	0.18	-0.17	8	-1.11	-0.17	8
	0.00	0.00	0.00	8			
2340.0	0.00	0.00	0.00	8	-1.54	-0.17	8
	0.00	-0.16	-0.17	8			
2600.0	0.00	0.00	0.00	8	-1.96	-0.17	8
	0.00	-0.62	-0.17	8			
2860.0	0.00	0.00	0.00	8	-2.38	-0.17	8
	0.00	-1.18	-0.17	8			
3120.0	0.00	0.00	0.00	8	-2.81	-0.17	8
	0.00	-1.86	-0.17	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	103.22/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 105 mm
260.0	103.22/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm
520.0	103.22/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 105 mm

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	1.38	0.11	8	1.27	0.11	8
	0.00	0.00	0.00	8			
295.8	0.00	1.68	0.11	8	0.79	0.11	8
	0.00	0.00	0.00	8			
591.7	0.00	1.84	0.11	8	0.31	0.11	8
	0.00	0.00	0.00	8			
887.5	0.00	1.86	0.11	8	-0.17	0.11	8
	0.00	0.00	0.00	8			
1183.3	0.00	1.74	0.11	8	-0.65	0.11	8
	0.00	0.00	0.00	8			
1479.2	0.00	1.48	0.11	8	-1.13	0.11	8
	0.00	0.00	0.00	8			
1775.0	0.00	1.07	0.11	8	-1.61	0.11	8
	0.00	0.00	0.00	8			
2070.8	0.00	0.52	0.11	8	-2.10	0.11	8
	0.00	0.00	0.00	8			
2366.7	0.00	0.00	0.00	8	-2.58	0.11	8
	0.00	-0.17	0.11	8			
2662.5	0.00	0.00	0.00	8	-3.06	0.11	8
	0.00	-1.00	0.11	8			
2958.3	0.00	0.00	0.00	8	-3.54	0.11	8
	0.00	-1.98	0.11	8			
3254.2	0.00	0.00	0.00	8	-4.02	0.11	8
	0.00	-3.09	0.11	8			
3550.0	0.00	0.00	0.00	8	-4.50	0.11	8
	0.00	-4.35	0.11	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
295.8	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
591.7	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
887.5	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1183.3	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1479.2	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
1775.0	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
2070.8	0.00/ 226.19(2-12i)|	103.22/ 226.19(2-12i)|	8i @ 105 mm
2366.7	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm
2662.5	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm
2958.3	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm
3254.2	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm
3550.0	103.22/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 569.0 mm AWAY FROM START SUPPORT

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	0.00	0.00	0.00	8				
4911.7	0.00	5.89	0.20	8		-2.15	0.20	8
	0.00	0.00	0.00	8				
5613.3	0.00	3.57	0.20	8		-4.47	0.20	8
	0.00	0.00	0.00	8				
6315.0	0.00	0.00	0.00	8		-6.79	0.20	8
	0.00	-0.39	0.20	8				
7016.7	0.00	0.00	0.00	8		-9.11	0.20	8
	0.00	-5.97	0.20	8				
7718.3	0.00	0.00	0.00	8		-11.43	0.20	8
	0.00	-13.17	0.20	8				
8420.0	0.00	0.00	0.00	8		-13.75	0.20	8
	0.00	-22.01	0.20	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	224.43/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 175 mm
701.7	224.43/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 175 mm
1403.3	224.43/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 175 mm
2105.0	224.43/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 175 mm
2806.7	0.00/ 226.19(2-12i)	224.43/ 226.19(2-12i)	8i @ 175 mm
3508.3	0.00/ 226.19(2-12i)	224.43/ 226.19(2-12i)	8i @ 175 mm
4210.0	0.00/ 226.19(2-12i)	224.43/ 226.19(2-12i)	8i @ 175 mm
4911.7	0.00/ 226.19(2-12i)	224.43/ 226.19(2-12i)	8i @ 175 mm
5613.3	0.00/ 226.19(2-12i)	224.43/ 226.19(2-12i)	8i @ 175 mm
6315.0	224.43/ 226.19(2-12i)	224.43/ 226.19(2-12i)	8i @ 175 mm
7016.7	224.43/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 175 mm
7718.3	224.43/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 175 mm
8420.0	224.43/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 175 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 839.0 mm AWAY FROM START SUPPORT
VY = 11.32 MX = 0.20 LD= 8
Provide 2 Legged 8i @ 175 mm c/c

SHEAR DESIGN RESULTS AT 879.0 mm AWAY FROM END SUPPORT
VY = -10.86 MX = 0.20 LD= 8
Provide 2 Legged 8i @ 175 mm c/c

B E A M N O. 2009 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3550.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	193.15/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
591.7	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
1183.3	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
1775.0	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
2366.7	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
2958.3	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
3550.0	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
4141.7	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
4733.3	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
5325.0	193.15/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
5916.7	193.15/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
6508.3	193.15/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
7100.0	193.15/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 759.0 mm AWAY FROM START SUPPORT
VY = 5.16 MX = 0.07 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

SHEAR DESIGN RESULTS AT 644.0 mm AWAY FROM END SUPPORT
VY = -11.23 MX = 0.07 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

B E A M N O. 2008 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 8420.0 mm SIZE: 230.0 mm X 610.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	14.08	0.20	8
	0.00	-23.41	0.20	8			
701.7	0.00	0.00	0.00	8	11.76	0.20	8
	0.00	-14.34	0.20	8			
1403.3	0.00	0.00	0.00	8	9.44	0.20	8
	0.00	-6.90	0.20	8			
2105.0	0.00	0.00	0.00	8	7.12	0.20	8
	0.00	-1.09	0.20	8			
2806.7	0.00	3.10	0.20	8	4.81	0.20	8
	0.00	0.00	0.00	8			
3508.3	0.00	5.66	0.20	8	2.49	0.20	8
	0.00	0.00	0.00	8			
4210.0	0.00	6.59	0.20	8	0.17	0.20	8

ROYAL SHELTER TRICHY-18

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SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 609.0 mm AWAY FROM START SUPPORT
VY = -1.65 MX = -0.04 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 609.0 mm AWAY FROM END SUPPORT
VY = -6.92 MX = -0.04 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 2007 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 7100.0 mm SIZE: 230.0 mm X 530.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	7.32	0.07	8
	0.00	-2.46	0.07	8			
591.7	0.00	1.37	0.07	8	5.62	0.07	8
	0.00	0.00	0.00	8			
1183.3	0.00	4.20	0.07	8	3.93	0.07	8
	0.00	0.00	0.00	8			
1775.0	0.00	6.02	0.07	8	2.23	0.07	8
	0.00	0.00	0.00	8			
2366.7	0.00	6.83	0.07	8	0.53	0.07	8
	0.00	0.00	0.00	8			
2958.3	0.00	6.64	0.07	8	-1.17	0.07	8
	0.00	0.00	0.00	8			
3550.0	0.00	5.45	0.07	8	-2.87	0.07	8
	0.00	0.00	0.00	8			
4141.7	0.00	3.24	0.07	8	-4.57	0.07	8
	0.00	0.00	0.00	8			
4733.3	0.00	0.04	0.07	8	-6.27	0.07	8
	0.00	0.00	0.00	8			
5325.0	0.00	0.00	0.00	8	-7.97	0.07	8
	0.00	-4.18	0.07	8			
5916.7	0.00	0.00	0.00	8	-9.67	0.07	8
	0.00	-9.39	0.07	8			
6508.3	0.00	0.00	0.00	8	-11.37	0.07	8
	0.00	-15.62	0.07	8			
7100.0	0.00	0.00	0.00	8	-13.07	0.07	8
	0.00	-22.85	0.07	8			

SUMMARY OF REINF. AREA (Sq.mm)

B E A M N O. 2006 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3770.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	6.01	-0.04	8	-0.41	-0.04	8
	0.00	0.00	0.00	8			
314.2	0.00	5.78	-0.04	8	-1.05	-0.04	8
	0.00	0.00	0.00	8			
628.3	0.00	5.35	-0.04	8	-1.70	-0.04	8
	0.00	0.00	0.00	8			
942.5	0.00	4.72	-0.04	8	-2.35	-0.04	8
	0.00	0.00	0.00	8			
1256.7	0.00	3.88	-0.04	8	-2.99	-0.04	8
	0.00	0.00	0.00	8			
1570.8	0.00	2.83	-0.04	8	-3.64	-0.04	8
	0.00	0.00	0.00	8			
1885.0	0.00	1.59	-0.04	8	-4.29	-0.04	8
	0.00	0.00	0.00	8			
2199.2	0.00	0.14	-0.04	8	-4.93	-0.04	8
	0.00	0.00	0.00	8			
2513.3	0.00	0.00	0.00	8	-5.58	-0.04	8
	0.00	-1.51	-0.04	8			
2827.5	0.00	0.00	0.00	8	-6.23	-0.04	8
	0.00	-3.37	-0.04	8			
3141.7	0.00	0.00	0.00	8	-6.88	-0.04	8
	0.00	-5.43	-0.04	8			
3455.8	0.00	0.00	0.00	8	-7.52	-0.04	8
	0.00	-7.69	-0.04	8			
3770.0	0.00	0.00	0.00	8	-8.17	-0.04	8
	0.00	-10.15	-0.04	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
314.2	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
628.3	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
942.5	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1256.7	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1570.8	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
1885.0	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
2199.2	0.00/ 226.19(2-12i)|	134.50/ 226.19(2-12i)|	8i @ 125 mm
2513.3	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
2827.5	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
3141.7	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
3455.8	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm
3770.0	134.50/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 125 mm





ANNEXURE-F

RC DESIGN OF SLAB

ROYAL SHELTER ★ TRICHY-18 ★

ARCHITECTS PLUS ★ TRICHY ★

Two way slab design

ARCHITECT PLUS
TRICHY

Slab no: 1

1 Panel size

Lx	3.23
Ly	4.34

2 Slab type

Ly/Lx <2 — 1.343653251 TWO WAY SLAB

3 Depth

IF

a	s.s slab	28
b	continious	32

4 Depth

Lx/d

d=Lx/a (or) b — 0.1009375 — 100.9375 mm — 96 mm

5 Over all depth

D= d+c.c+Ø/2 — 120 — 4.72440945 inches

6 Load calculation

1	Self weight	DX25(M25)	3 Kn/m^2
2	Live load	As per is 875 part 2	2 Kn/m^2
3	Floor Finish	As per is 875 part 2	2 Kn/m^2
4	Total load	1+2+3	7 Kn/m^2
5	ultimate load	1.5x(4) =	10.5 Kn/m^2

7 Moment

Mux(+ve)=αx.Wu.Lx^2	4.05318165 KN.m
Mux(-ve)=αx.Wu.Lx^2	9.6909162 KN.m
Muy=αy.Wu.Lx^2	3.83409075 KN.m

8 Req.depth

Mu=0.138fckbd^2

dreq=(Mu/0.138fckb)$^{1/2}$ — 2808.961217 — 52.9996341 mm

9 Depth Check

if d > dreq

SAFE OK

10 Reinforcement detail

Grade of steel= 500 N/mm2

dia of main rod = 8 mm — 163.2

Mu/bd^2= 1.05153171 N/mm^2

P_t=table 3 — 0.255 — **Min Rein=** 0.85*b*d/f_y — **163.2**

Ast= $P_t$bd/100 — 244.8 — 250 mm^2 — **Max.spac=300mm**

dia of rod= 8 mm — **Min.spac=75mm**

Area of rod= 50.24 — 50.24 mm^2

Spacing= 200.96 — 200 — 7.87401575 inches

11 Distribution Rod

.12%of cross sectional area

144 — 200 mm^2

dia of rod= 8 mm

Area of rod= 50.24 mm^2

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Spacing= 251.2 9.88976378 inches

12 Check for shear

V_u=WuLx/2 16.9575 Kn

T_v=Vu/bd 0.17664063 N/mm^2

P_t=100Ast/bd 0.255

T_c =Table 19 fri 0.36 N/mm^2

k= pg. 72 is 456 1.3

T_c= 0.468 N/mm^2

$T_c > T_v$

SAFE OK

13 Deflection check

$(L/d)_{bsc}$=36 36

$L/d_{Max}=(L/d)_{bsc} \times K_t \times K_c \times K_f$ 72 K_t=fig 4

L/d(act)= 33.6458333

$(L/d)_{max} > (L/d)_{act}$

SAFE OK

f_s=	283.968
K_t=	2
K_c=	1
K_f=	1

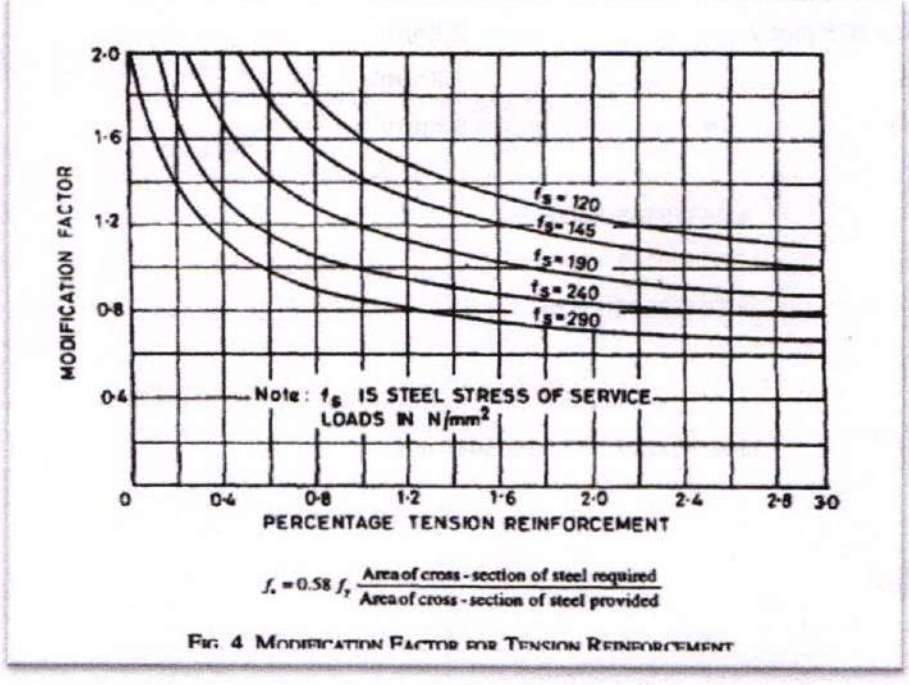


FIG. 4 MODIFICATION FACTOR FOR TENSION REINFORCEMENT

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ROYAL SHELTER TRICHY-18

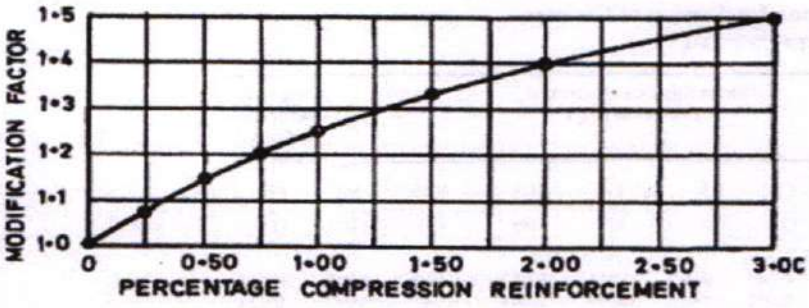


FIG. 5 MODIFICATION FACTOR FOR COMPRESSION REINFORCEMENT

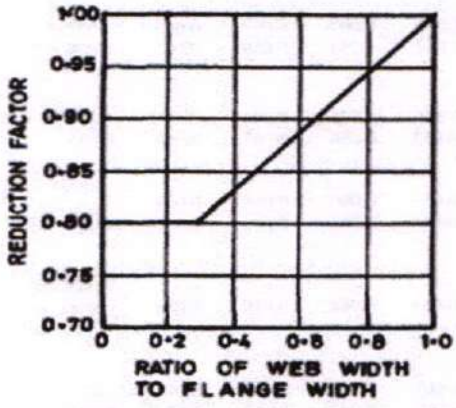


FIG. 6 REDUCTION FACTORS FOR RATIOS OF SPAN TO EFFECTIVE DEPTH FOR FLANGED BEAMS

2.5 CONTROL OF DEFLECTION

2.5.1 The deflection of beams and slabs would generally be within permissible limits if the ratio of span to effective depth of the *member does not exceed the values obtained* in accordance with *22.2.1* of the Code. The following basic values of span to effective depth are given:

Simply supported	20
Continuous	26
Cantilever	7

40.2.1.1 For solid slabs, the design shear strength for concrete shall be $\tau_c k$, where k has the values given below:

Overall Depth of Slab, mm	300 or more	275	250	225	200	175	150 or less
k	1.00	1.05	1.10	1.15	1.20	1.25	1.30

NOTE — This provision shall not apply to flat slabs for which 31.6 shall apply.

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ROYAL SHELTER TRICHY-18

Table 26 Bending Moment Coefficients for Rectangular Panels Supported on Four Sides with Provision for Torsion at Corners

(*Clauses* D-1.1 *and* 24.4.1)

Case No.	Type of Panel and Moments Considered	Short Span Coefficients α_x (Values of l_y/l_x)								Long Span Coefficients α_y for All Values of l_y/l_x
		1.0	1.1	1.2	1.3	1.4	1.5	1.75	2.0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	*Interior Panels*:									
	Negative moment at continuous edge	0.032	0.037	0.043	0.047	0.051	0.053	0.060	0.065	0.032
	Positive moment at mid-span	0.024	0.028	0.032	0.036	0.039	0.041	0.045	0.049	0.024
2	*One Short Edge Continuous*:									
	Negative moment at continuous edge	0.037	0.043	0.048	0.051	0.055	0.057	0.064	0.068	0.037
	Positive moment at mid-span	0.028	0.032	0.036	0.039	0.041	0.044	0.048	0.052	0.028
3	*One Long Edge Discontinuous*:									
	Negative moment at continuous edge	0.037	0.044	0.052	0.057	0.063	0.067	0.077	0.085	0.037
	Positive moment at mid-span	0.028	0.033	0.039	0.044	0.047	0.051	0.059	0.065	0.028
4	*Two Adjacent Edges Discontinuous*:									
	Negative moment at continuous edge	0.047	0.053	0.060	0.065	0.071	0.075	0.084	0.091	0.047
	Positive moment at mid-span	0.035	0.040	0.045	0.049	0.053	0.056	0.063	0.069	0.035
5	*Two Short Edges Discontinuous*:									
	Negative moment at continuous edge	0.045	0.049	0.052	0.056	0.059	0.060	0.065	0.069	—
	Positive moment at mid-span	0.035	0.037	0.040	0.043	0.044	0.045	0.049	0.052	0.035
6	*Two Long Edges Discontinuous*:									
	Negative moment at continuous edge	—	—	—	—	—	—	—	—	0.045
	Positive moment at mid-span	0.035	0.043	0.051	0.057	0.063	0.068	0.080	0.088	0.035
7	*Three Edges Discontinuous (One Long Edge Continuous)*:									
	Negative moment at continuous edge	0.057	0.064	0.071	0.076	0.080	0.084	0.091	0.097	—
	Positive moment at mid-span	0.043	0.048	0.053	0.057	0.060	0.064	0.069	0.073	0.043
8	*Three Edges Discontinuous (One Short Edge Continuous)*:									
	Negative moment at continuous edge	—	—	—	—	—	—	—	—	0.057
	Positive moment at mid-span	0.043	0.051	0.059	0.065	0.071	0.076	0.087	0.096	0.043
9	*Four Edges Discontinuous*:									
	Positive moment at mid-span	0.056	0.064	0.072	0.079	0.085	0.089	0.100	0.107	0.056

TABLE 3 FLEXURE — REINFORCEMENT PERCENTAGE, p_t FOR SINGLY REINFORCED SECTIONS

480
500
f_{ck}
25

f_{ck} = 25 N/mm²

M_u/bd^2, N/mm²	f_y N/mm² 240	250	415	480	500	M_u/bd^2, N/mm²	f_y N/mm² 240	250	415	480	500
0·30	0·146	0·140	0·084	0·073	0·070	2·55	1·415	1·358	0·818	0·708	0·679
0·35	0·171	0·164	0·099	0·085	0·082	2·60	1·448	1·390	0·837	0·724	0·695
0·40	0·193	0·188	0·113	0·098	0·094	2·65	1·482	1·422	0·857	0·741	0·711
0·45	0·220	0·211	0·127	0·110	0·106	2·70	1·515	1·455	0·876	0·758	0·727
0·50	0·245	0·236	0·142	0·123	0·118	2·75	1·549	1·487	0·896	0·775	0·744
0·55	0·271	0·260	0·156	0·135	0·130	2·80	1·584	1·520	0·916	0·792	0·760
0·60	0·296	0·284	0·171	0·148	0·142	2·85	1·618	1·554	0·936	0·809	0·777
0·65	0·321	0·309	0·186	0·161	0·154	2·90	1·653	1·587	0·956	0·827	0·794
0·70	0·347	0·333	0·201	0·174	0·167	2·95	1·689	1·621	0·977	0·844	0·811
0·75	0·373	0·358	0·216	0·186	0·179	3·00	1·724	1·655	0·997	0·862	0·828
0·80	0·399	0·383	0·231	0·199	0·191	3·05	1·760	1·690	1·018	0·880	0·845
0·85	0·425	0·408	0·246	0·212	0·204	3·10	1·797	1·725	1·039	0·898	0·863
0·90	0·451	0·433	0·261	0·225	0·216	3·15	1·834	1·760	1·061	0·917	0·880
0·95	0·477	0·458	0·276	0·239	0·229	3·20	1·871	1·796	1·082	0·936	0·898
1·00	0·504	0·483	0·291	0·252	0·242	3·25	1·909	1·832	1·104	0·954	0·916
1·05	0·530	0·509	0·307	0·265	0·255	3·30	1·947	1·869	1·126	0·973	0·935
1·10	0·557	0·535	0·322	0·279	0·267	3·32	1·962	1·884	1·135	0·981	0·942
1·15	0·584	0·561	0·338	0·292	0·280	3·34	1·978	1·899	1·144	0·989	
1·20	0·611	0·587	0·353	0·306	0·293	3·36	1·993	1·914	1·153		
1·25	0·638	0·613	0·369	0·319	0·306	3·38	2·009	1·929	1·162		
1·30	0·666	0·639	0·385	0·333	0·320	3·40	2·025	1·944	1·171		
1·35	0·693	0·666	0·401	0·347	0·333	3·42	2·040	1·959	1·180		
1·40	0·721	0·692	0·417	0·360	0·346	3·44	2·056	1·974	1·189		
1·45	0·749	0·719	0·433	0·374	0·359	3·46	2·072	1·989			
1·50	0·777	0·746	0·449	0·388	0·373	3·48	2·088	2·005			
1·55	0·805	0·773	0·466	0·403	0·387	3·50	2·104	2·020			
1·60	0·834	0·800	0·482	0·417	0·400	3·52	2·120	2·036			
1·65	0·862	0·828	0·499	0·431	0·414	3·54	2·137	2·051			
1·70	0·891	0·856	0·515	0·446	0·428	3·56	2·153	2·067			
1·75	0·920	0·883	0·532	0·460	0·442	3·58	2·170	2·083			
1·80	0·949	0·911	0·549	0·475	0·456	3·60	2·186	2·099			
1·85	0·979	0·940	0·566	0·489	0·470	3·62	2·203	2·115			
1·90	1·009	0·968	0·583	0·504	0·484	3·64	2·219	2·131			
1·95	1·038	0·997	0·601	0·519	0·498	3·66	2·236	2·147			
2·00	1·068	1·026	0·618	0·534	0·513	3·68	2·253	2·163			
2·05	1·099	1·055	0·635	0·549	0·527	3·70	2·270	2·179			
2·10	1·129	1·084	0·653	0·565	0·542	3·72	2·287	2·196			
2·15	1·160	1·114	0·671	0·580	0·557	3·74	2·304				
2·20	1·191	1·143	0·689	0·596	0·572						
2·25	1·222	1·173	0·707	0·611	0·587						
2·30	1·254	1·204	0·725	0·627	0·602						
2·35	1·285	1·234	0·743	0·643	0·617						
2·40	1·317	1·265	0·762	0·659	0·632						
2·45	1·350	1·296	0·781	0·675	0·648						
2·50	1·382	1·327	0·799	0·691	0·663						

NOTE — Blanks indicate inadmissible reinforcement percentage (*see* Table 61).

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

Table 19 Design Shear Strength of Concrete, τ_c, N/mm²

(*Clauses* 40.2.1, 40.2.2, 40.3, 40.4, 40.5.3, 41.3.2, 41.3.3 *and* 41.4.3)

$100\frac{A_s}{bd}$	Concrete Grade					
	M 15	M 20	M 25	M 30	M 35	M 40 and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)
≤ 0.15	0.28	0.28	0.29	0.29	0.29	0.30
0.25	0.35	0.36	0.36	0.37	0.37	0.38
0.50	0.46	0.48	0.49	0.50	0.50	0.51
0.75	0.54	0.56	0.57	0.59	0.59	0.60
1.00	0.60	0.62	0.64	0.66	0.67	0.68
1.25	0.64	0.67	0.70	0.71	0.73	0.74
1.50	0.68	0.72	0.74	0.76	0.78	0.79
1.75	0.71	0.75	0.78	0.80	0.82	0.84
2.00	0.71	0.79	0.82	0.84	0.86	0.88
2.25	0.71	0.81	0.85	0.88	0.90	0.92
2.50	0.71	0.82	0.88	0.91	0.93	0.95
2.75	0.71	0.82	0.90	0.94	0.96	0.98
3.00 and above	0.71	0.82	0.92	0.96	0.99	1.01

NOTE — The term A_s is the area of longitudinal tension reinforcement which continues at least one effective depth beyond the section being considered except at support where the full area of tension reinforcement may be used provided the detailing conforms to 26.2.2 and 26.2.3







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