PORTFOLIO

STRUCTURAL DESIGN & CIVIL WORKS

Pramod Rai

CORE AREA OF EXPERIENCE AND EXPERTISE:

1

Structural Analysis and Design

1. Reinforced Concrete structures
2. Posttension and composite slabs
3. Steel structures

2

Quantity Estimation, Cost/Rate Analysis, and BoQ Preparation

1. Various types of buildings
2. Based in Nepalese rate

3

Construction Site Supervision and Site Survey

1. Buildings and Hydropower

HIGHLIGHTS:

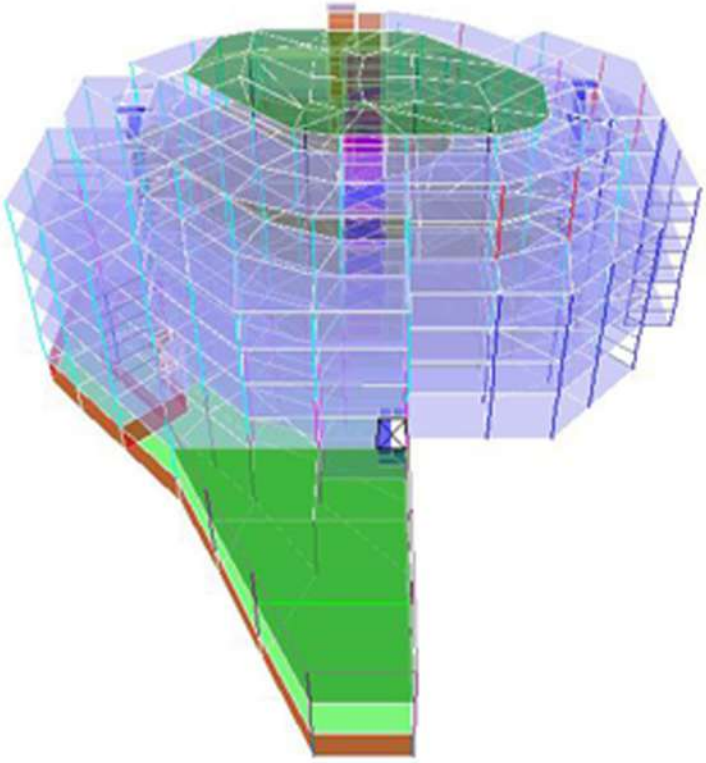
1 **SHREWBURRY INTERNATIONAL.**
SCHOOL, Bangkok, Thailand

2 **EMERGENCY RESPONSE**
SCHOOL RECONSTRUCTION PROJECT, JICA, Nepal

3 **OTHER PROJECTS.**

PROJECT: SHREWBURRY INTERNATIONAL SCHOOL BANGKOK, THAILAND

1.0



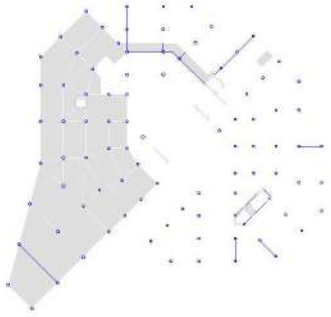
Major Responsibities:

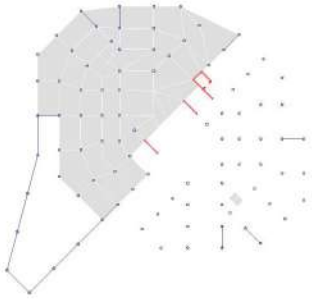
1. Global Analysis and Design Response Spectrum Analysis, Equivalent Lateral Force Analysis, and Time History Analysis.

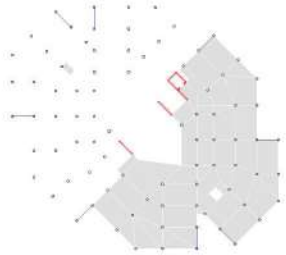
2. Analysis and Design of reinforced and posttension slabs

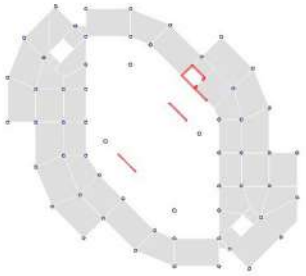
3. Structural desing of various structural components: columns, beams, slabs, staircase, pile caps, corbel, etc.

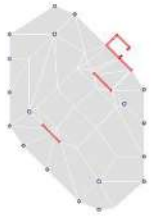
4. Structural detailing of various structural components during the construction phase





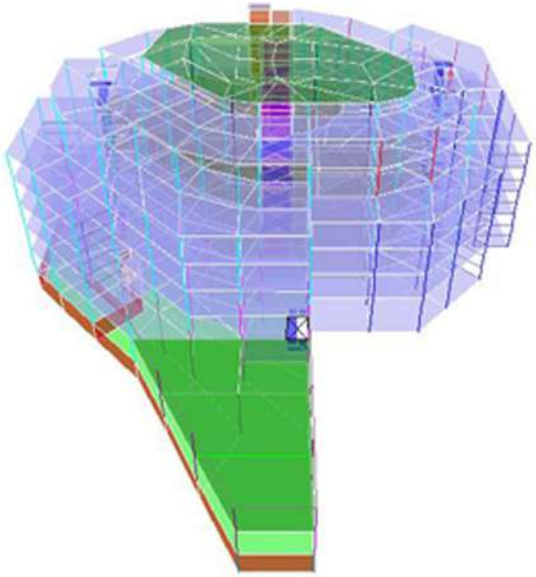


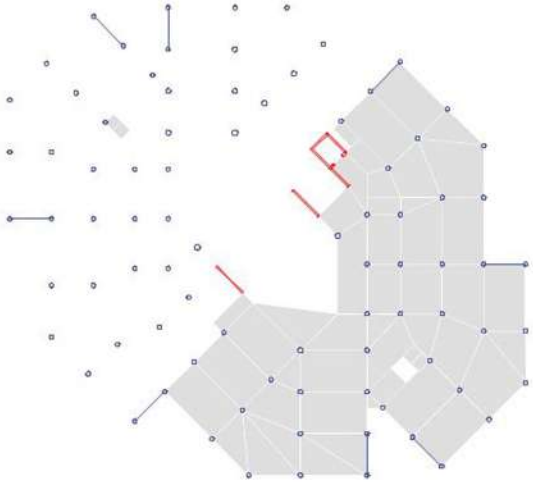




PROJECT: SHREWBURRY INTERNATIONAL SCHOOL BANGKOK, THAILAND

1.1





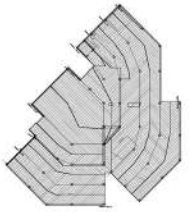
Major Responsibities:

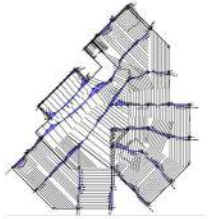
Analysis and Design of reinforced and posttension slabs

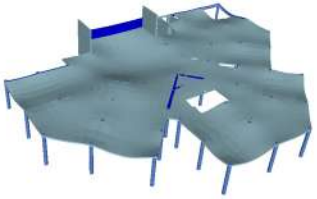
- The analysis of design of posttension flat slabs were done using finite element based software: Adapt-PT/RC

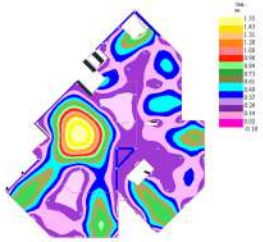
- The design for shear keys, punching shear, drop panels, and various structural components were performed by using hand calcuation adopting ACI 318-14 standard.

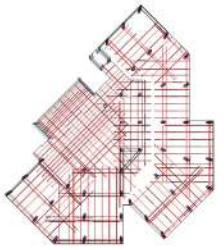
- The structural detailing of various regions were performed by using hand calcuations



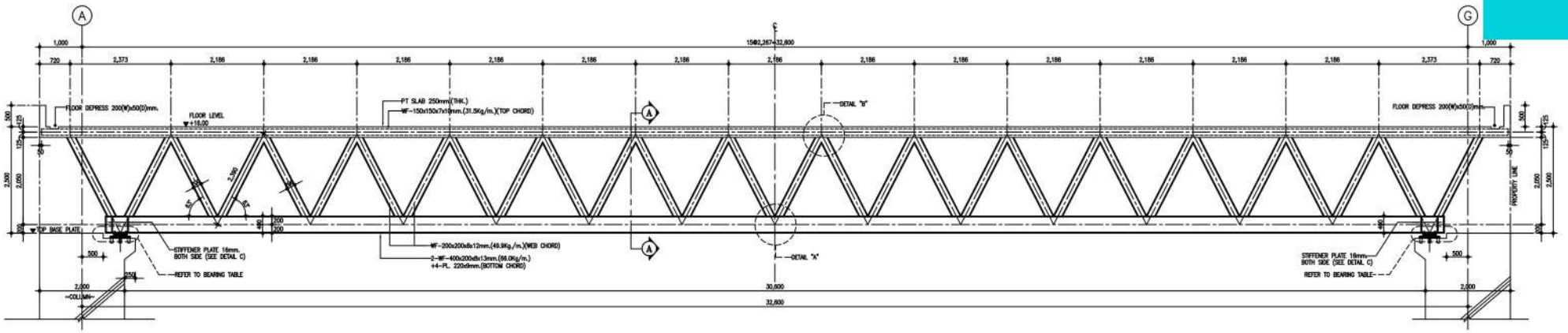




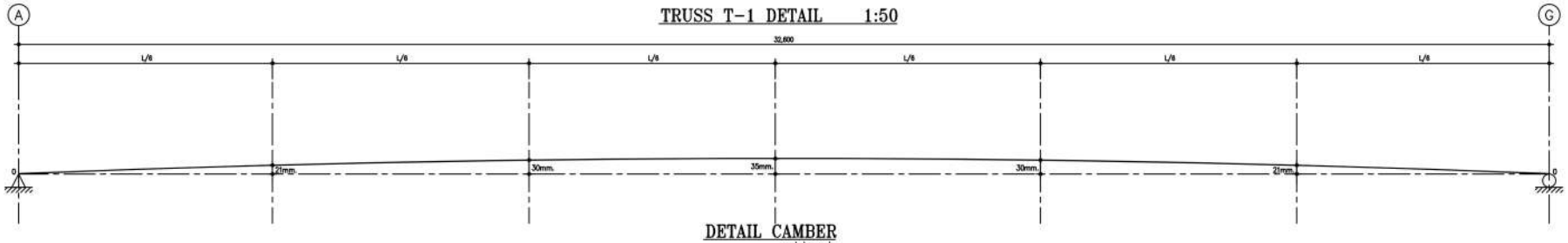




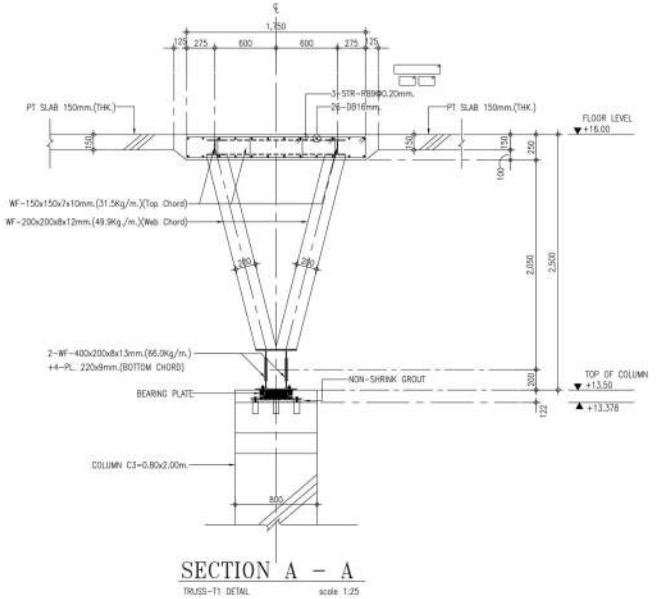
PROJECT: SHREWBURRY INTERNATIONAL SCHOOL BANGKOK, THAILAND



TRUSS T-1 DETAIL 1:50



DETAIL CAMBER
not to scale

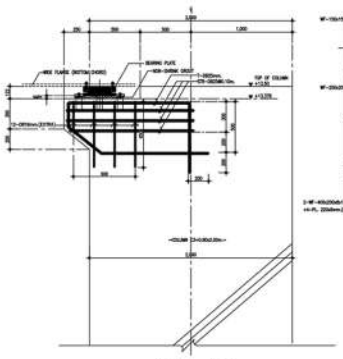


SECTION A – A
TRUSS-T1 DETAIL scale 1:25

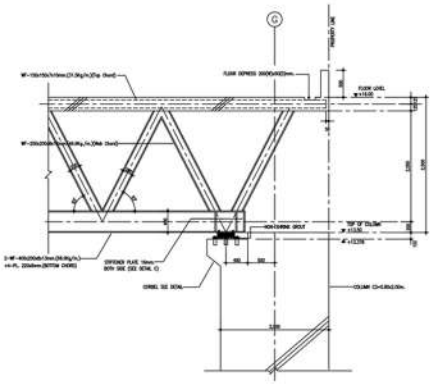
Analysis and Design of Composite Slab:

1. This special composite was designed by considering the composite action of steel sections and concrete.
2. The concrete slab, on the top-chord, was was used as the compression member.
3. The WF sections in the bottom cord were used as the tension member.
4. The inclined bracings were used to withstand the tension and compression forces, alternately.

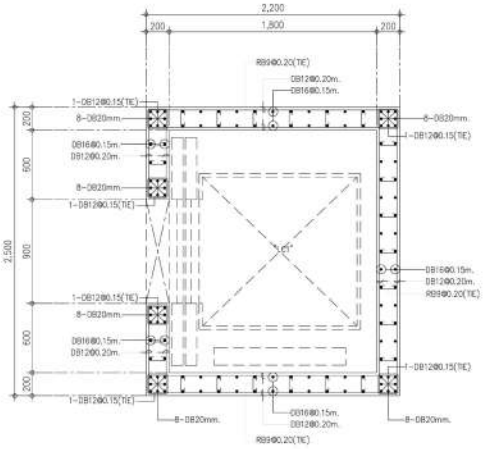
PROJECT: SHREWBURRY INTERNATIONAL SCHOOL
BANGKOK, THAILAND



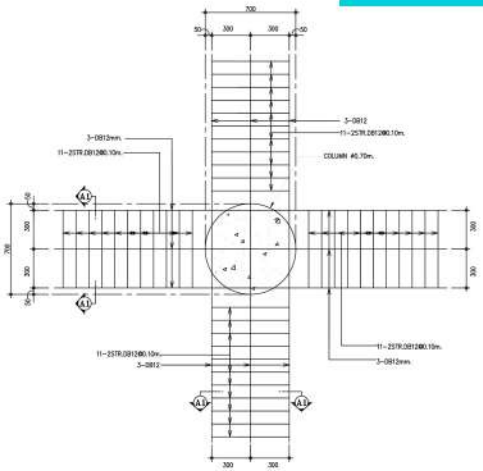
CORBEL 1:15



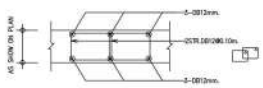
TRUSS T-1 DETAIL 1:25



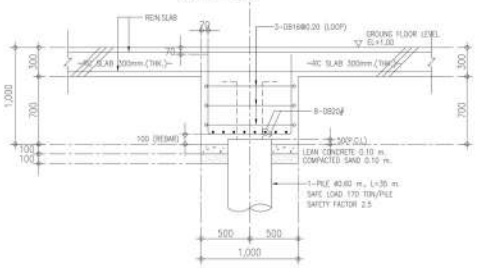
1ST. FLOOR TO 3RD. FLOOR
LC-1 DETAIL
scale 1:25



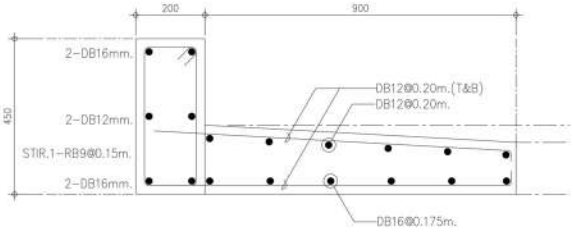
PLAN

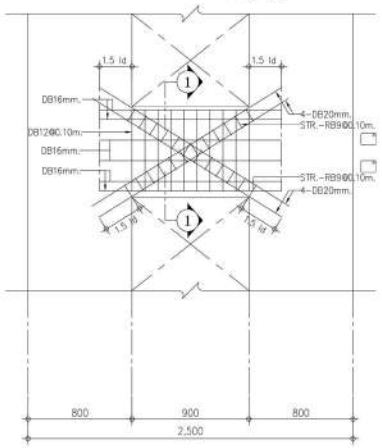


SECTION (A1) - (A1)



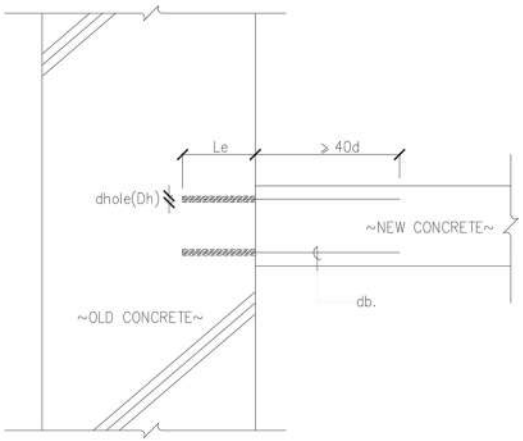
F1 DETAIL
scale 1:25





SPANDREL BEAM
scale 1:25

RC BEAM 1:10



SHEAR HEAD TYPE "A"
(COLUMN ø0.70m.) SCALE 1:25

Structural Detailing of:

1. Corbel
2. Steel Connections
3. Drop Panel
4. Spandrel Beams
5. Lift core
6. Shear Key and Punching Shear
7. Cantilever structures
8. Anchorage and embedment lengths, etc.

EMERGENCY RESPONSE
SCHOOL RECONSTRUCTION PROJECT

2.0

DESCRIPTION OF PROJECT:

Project: Emergency Response School Reconstruction Project (ESRP)
CLient: Ministry of Education, Central Level Project Implementation Unit (CLPIU), Government of Nepal
Projects funded by: Japan International Cooperation Agency (JICA).
Local Consultant: East West Engineering Service Pvt. Ltd., Kathmandu, Nepal.

Roles of the company:
1. Rapid visual assessment
2. Detailed inspection of structural system
3. Site survey
4. Soil and geotechnical investigations
5. Design, Estimation, and Preparation of Bidding documents.

6
DISTRICTS

120
ASSESED SCHOOLS

83
SELECTED SCHOOLS

16
PACKAGES

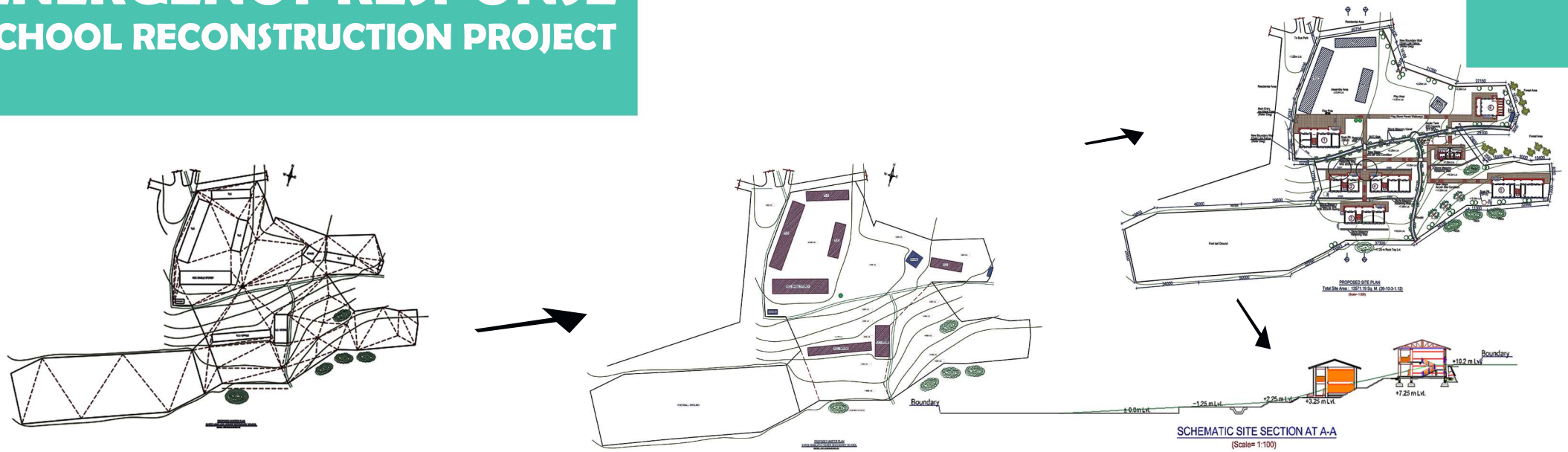
Fig. Six earthquake affected districts highlighted in map of Nepal

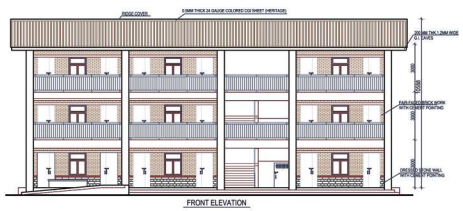
33
TYPE DESIGNS

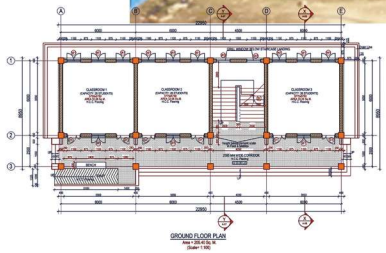
NRs. 48 Billion
TOTAL PROJECTED COST

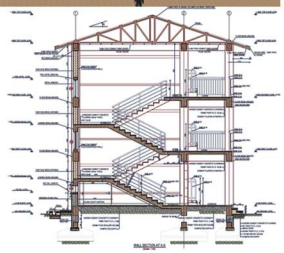
ENERGENCY RESPONSE
SCHOOL RECONSTRUCTION PROJECT

2.1



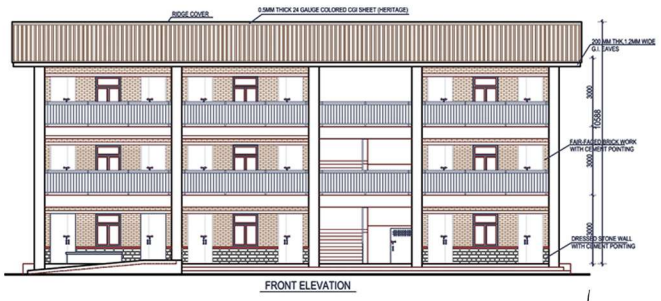


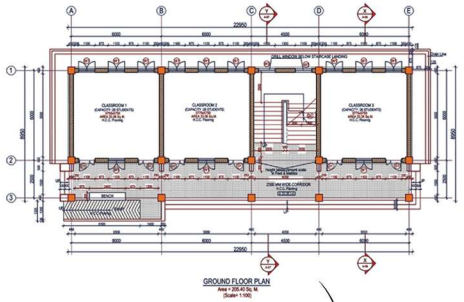


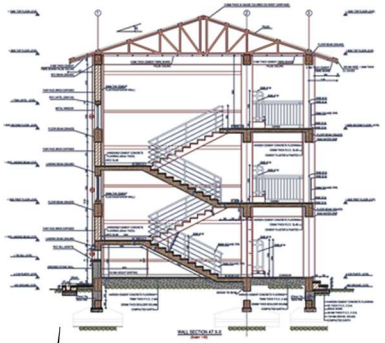


ENERGENCY RESPONSE
SCHOOL RECONSTRUCTION PROJECT

2.2

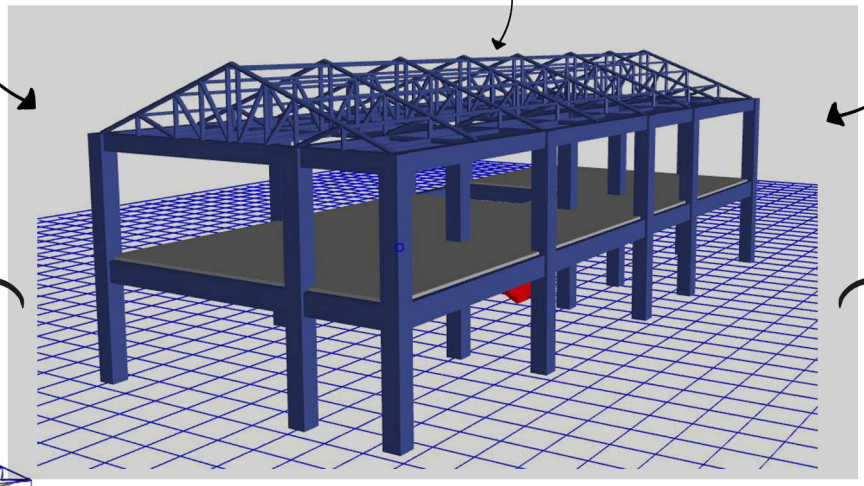






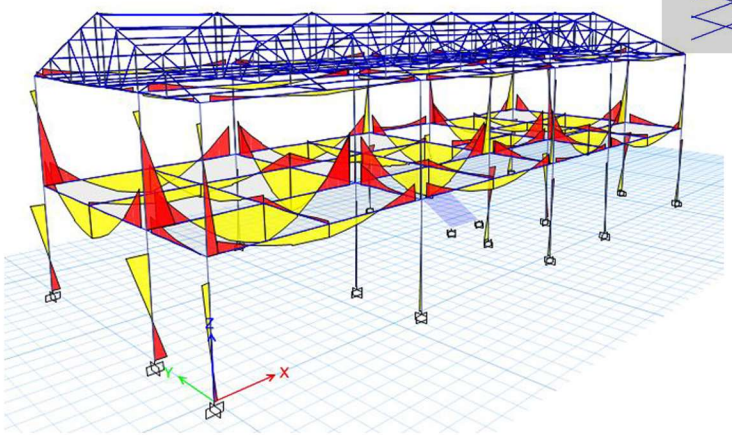
Key Responsibilities:

1. Structural Analysis and Design using ETABS, SAP2000.
2. Foundation Design using STAAD.Pro.

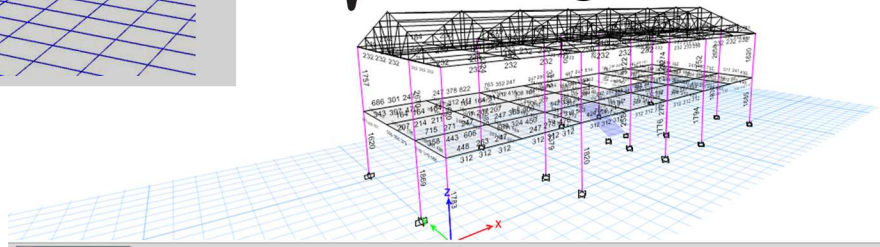


3D Model in ETABS

Analysis



Design



Base reactions for **Foundation Design**

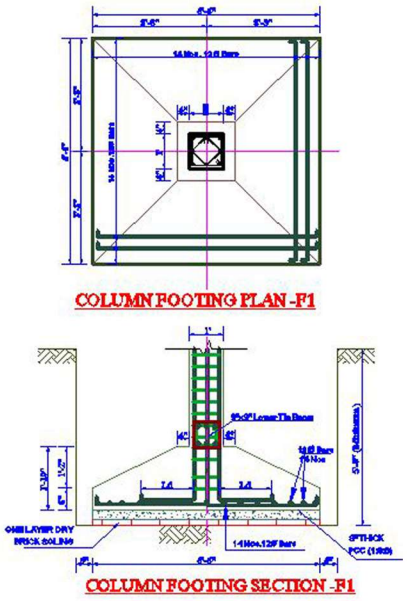
Joint Reactions

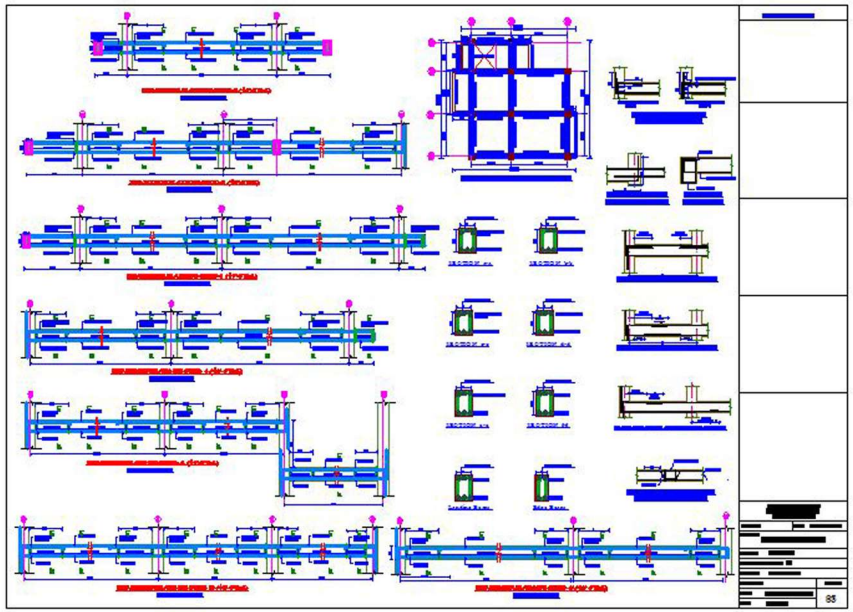
1 of 17 | Reload | Apply | Joint Reactions

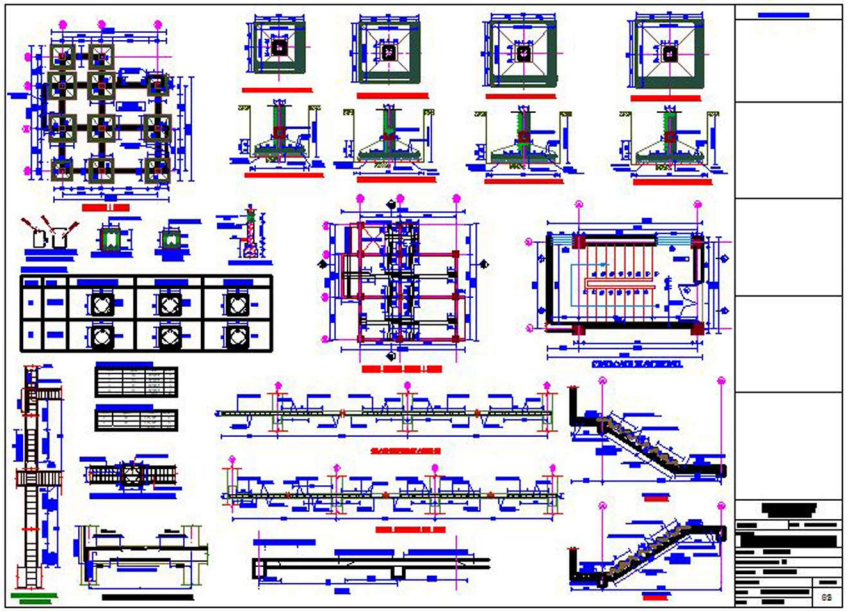
Story	Joint Label	Unique Name	Load Case/Combo	FX kN	FY kN	FZ kN	MX kN-m	MY kN-m	MZ kN-m
Base	1	1	UDCon2	9.5329	0.7264	98.973	-1.2168	6.9546	-0.0661
Base	2	3	UDCon2	34.1404	22.3792	381.8116	-22.168	30.9213	-0.0661
Base	3	5	UDCon2	25.8279	-32.9387	294.1163	31.3575	23.2536	-0.0661
Base	4	10	UDCon2	-3.9256	1.4331	168.9156	-1.5251	-6.0679	-0.0661
Base	5	12	UDCon2	-4.365	34.4779	681.233	-33.4993	-6.3366	-0.0661
Base	6	14	UDCon2	-3.7451	-53.2534	510.8722	51.3895	-5.3613	-0.0661
Base	7	49	UDCon2	8.116	-86.4419	371.0364	73.0954	-0.5891	-0.3683
Base	8	20	UDCon2	-24.8851	25.8717	497.6256	-24.7964	-26.1918	-0.0661
Base	9	22	UDCon2	-10.3934	0.1498	130.8167	0.0921	-12.3261	-0.0661
Base	10	50	UDCon2	-17.6321	-62.0196	388.7516	54.2119	-10.7147	0.9058

Key Responsibilities:

1. Municipality Permit drawings (structure)







OTHER PROJECTS

Besides school/commerical buildings

Residential Buildings

University Buildings

Hospital Buildings

OFFICE WORKS

1. BHATBHATENI APARTMENT

3.1

INTRODUCTION

The project site is centrally located at Naxal. the heart of Kathmandu Valley. It is a residential apartment building having ten storey and basement. The first eight floor have general features as in a flat system while in the last top floors are pent houses with lavish features. The external looks of the apartment is maintained in order to provide Nepal looks. Brick facing. slope roof. struts(Tudal). Mixture of Plaster and other claddings are some of the item of works for maintaing nepali looks.

Year: 2014 A.D.

Client: Road Show Real Estate Pvt. Ltd.

Building Typology: Residential building. Apartment

Responsibilities:

Cost estimation and Site supervision