



جامعة الأمير محمد بن فهد
PRINCE MOHAMMAD BIN FAHD UNIVERSITY

Senior Project
By
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Talal Al-Binali

Supervised by: Dr. Husain M. Cekirge

Project: *GCC Train Station*



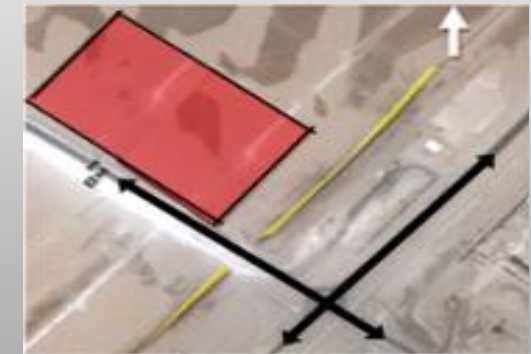
GCC Train Station

Proposal:

The main objective of this project is to conduct a preliminary design of GCC train stations that is proposed by a student architect from KFUPM. The design included foundation system, framing using reinforced concrete structures. A commercial software SAP2000 was used to check the deformation responses and dimensions of structural frames such as beams and columns. It was obtained that our preliminary design are within acceptable limit with respect to the Saudi Building Code.



• Site Location & Analysis:



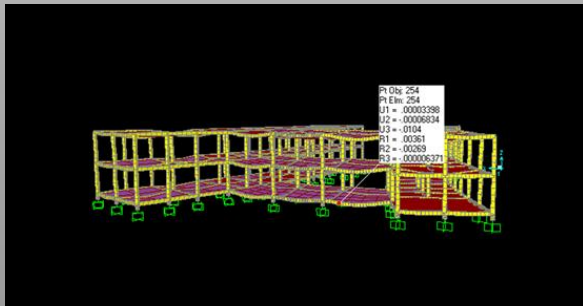
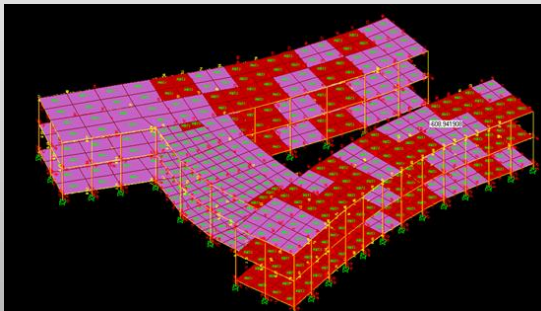
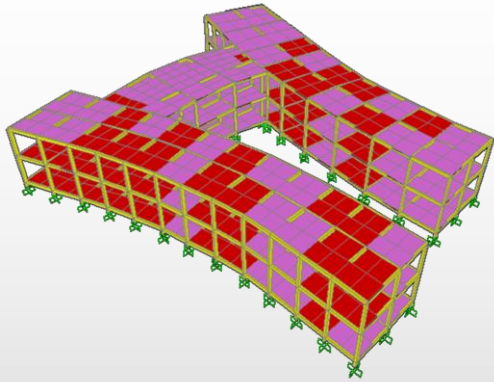
Site dimension;

(440)x(260) = 114400 meter square
Total Area of the building = 6000 meter s square.

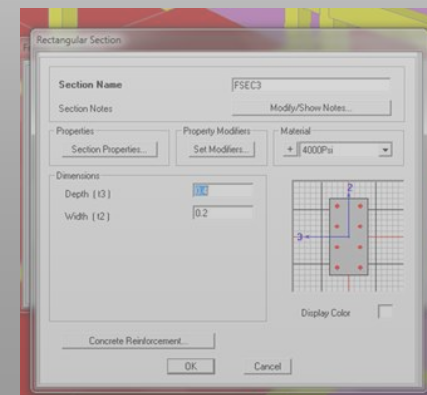
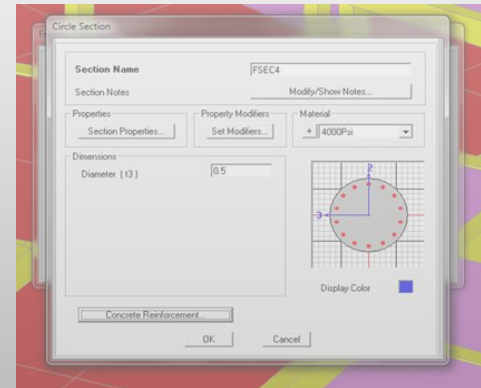
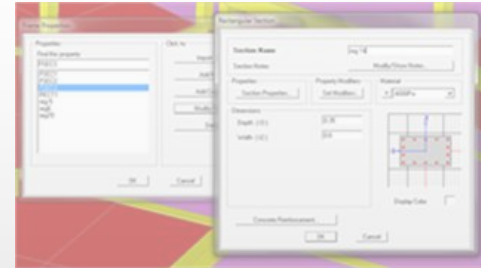
Vehicles Movement;

Two ways with medium capacity of Vehicles.

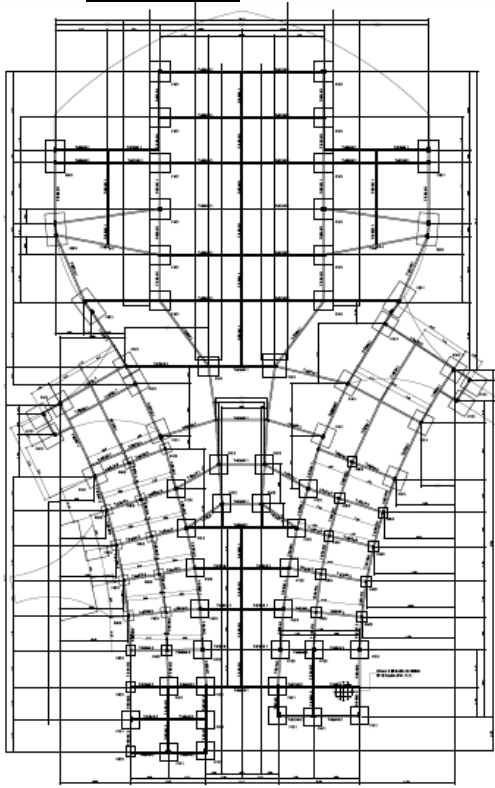
Structural analysis using Sap2000 finite element:



Design of columns & beams:



• **Structural:**



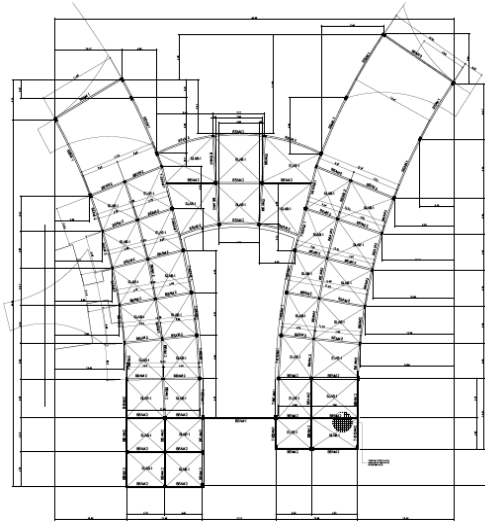
1 FOUNDATION PLAN

SCHEDULE OF FOUNDATION

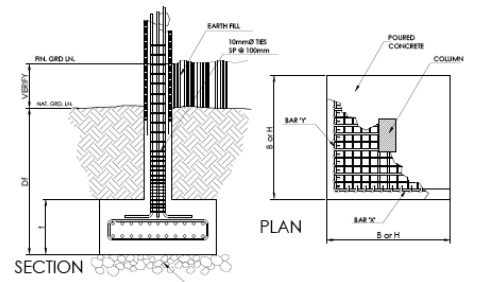
MARK	SIZE (CM)		I	REINFORCEMENT		DF	REMARKS
	B	H		BAR "C"	BAR "Y"		
F1	2.70	2.70	.60	12-16mm	12-16mm	2.40	FROM S.M.E. (S.D. SHEET)
F2	2.70	5.00	.60	12-16mm	24-16mm	2.40	FROM S.M.E. (S.D. SHEET)
F3	1.50	1.50	.40	8-16mm	8-16mm	1.50	FROM S.M.E. (S.D. SHEET)

SCHEDULE OF COLUMNS

MARK LEVEL	C1	C2	C3	C4
	14-16mm D.B. WITH 10mm AS TIES	14-16mm D.B. WITH 10mm AS TIES	8-16mm D.B. WITH 10mm AS TIES	8-16mm D.B. WITH 10mm AS TIES



1 1ST FLR. FRAMING PLAN



1 FIC1 DETAIL

• **Soil investigation:**
Safe allowable bearing capacity

Project Bearing Capacity

= 1.838 Kg/Cm Square

• **Acknowledgment:**



Abdullah R. Al-Dossary & Partner Co.



Merkaz For Consult Engineering

• **For more information:**

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