# Abstract

The purpose of this report is to propose a scenario which required a design of the gravity system and earthquake resistance of residential buildings in Ramallah.

Reinforced concrete structure are one of the most popular structure systems in our country, this project addresses the analysis and design of a reinforced concrete structural system that is located in Ramallah, Consists of buildings which The building consists of three apartments on each floor with total area of floor 455m2.Where the first two floors of the project is parking and apartment for children's games under the street level and then are residential apartments and also contains an elevator.

           The framing arrangement and column locations of the building were provided based on architectural and structural requirements and covers the design process in the following order: the calculation of the expected loads on the structure, the design of the beam reinforcement for both flexural and shear, the calculation to check beam deflections, the estimation of the column sizes and finally the design of the column reinforcement.

The project outline will be as follows: Firstly, introduction about the project including details about the architectural design. Secondly, preliminary design according to ACI 318-14 code will be performed. Thirdly, a 3D model and design it using ETABS16 program will be constructed. Finally, fully detailed steel reinforcements plans & drawings will be done using AutoCAD program.

The main methodology is to make comparison between 1D and 3D model to check the correctness of the program analysis under the same assumptions. In this project, we are looking forward to fulfill analysis laws and design requirements. Also, this in turn will give us an experience to design an efficient building versus gravity loads and seismic loads.

## ملخص مشروع التخرج

مشروع تخرجي هو تحليل و تصميم عمارة النور الموجوده في رام الله تصميم مقاوم للاحمال الراسيه والى احمال الزلازل.

تتكون العماره من 10 طوابق اول طابقين هما مواقف للسيارات ومخازن وشقه لالعاب الاطفال والطوابق الاخري هي شقق سكنيه ويتكون كل طابق من 3 شقق وبمساحة للطابق الواحد 455 متر مربع.

مساحات الطوابق وترتيبها واماكن الاعمده تم اخذها من التصميم المعماري بينما قمنا بالتصميم الانشائي للاعمده والجسور والاسقف وذلك بعد حساب الاحمال مثل البلاط والسمسم والمواسير .....الخ واخذ الاحمال الحيه من الكود الامريكي

قمنا بتصميم حجم الاعمده وتسليحها بالاعتماد على القوى الراسيه الاكسيال بينما الجسور والاسقف بالاعتماد على قوى الشير والمومنت على ان تكون ضمن الهبوط ضمن المسموح به بالكود الامريكي .

للتصميم. aci 318-14 لاخذ الاحمال منه واعتمد الكود الامريكي asce تم اعتماد الكود

) للتصميم بينما استخدام برنامج الاوتوكاد لرسم تفاصيل الحديد ومواقع الاعمده وجدران القصetabs/safeاستخدمنا البرامج (