

3D Printing Design Comparison of Manual and Staadpro of G+3 Residential Building

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Abstract: Design in civil engineering is related to structures and the civil structural engineers does the structure analysis of the proposed structural building. The software's used for designing and modelling the building are STAADPRO, 3DS MAX. The building area being designed is having area of approximately 187.73m² (15.697m x 11.96m) each floor and total plot area is 426.42m² (23.15m x 18.42m). By using STAADPRO results and MANUAL results we compared the steel reinforcement of beams, columns and footings. In this project, a small prototype has been created by using Fused Deposition Modelling (FDM) technology through 3D printers (CREALITY CR-X 10-MAX), where the design of the building is taken from the 3DS MAX software in STL format. The dimension of the prototype is (18.6cm x 14.1cm). This project includes 3D printing design, comparison of STAADPRO and manual results of (G+3) residential building.

Keywords: STAADPRO, AUTOCAD, 3DS MAX, V-RAY, 3D printing

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