DESIGN MODIFICATION OF SURABAYA EAST COAST RESIDENCE APARTEMENT BUILDING USING STEEL CONCRETE COMPOSITE STRUCTURE

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Abstract

East Coast Residence Apartments is a building that consisted of 18 floors which was originally designed using reinforced concrete structures. In this study the building design was modified into composite steel-concrete. The advantage of the composite design are reduced weight composite steel, reduced steel beam cross section and the weight of steel component, increases the floor stiffness, the span length for are particular beam can be larger, increasing the load bearing capacity.

In this final project the re design using steel-concrete composite structure is discussed; the design Including slab, stairs, concrete roof, secondary beam, primary beam, column and foundation. Composite beam is a mixture of concrete with steel profiles, where the reinforced concrete tensile forces experienced by a structural element carried by steel bars, but in this composite concrete tensile forces that occur in a structural element carried by the steel profile.

The purpose of this final project is to make a rationally composite building structure that fulfill safety factor by SNI 03-2847-2002, SNI 03-1729-2002, SNI 03-1726-2002, and PPIUG 1983.

Keyword: building, steel-concrete, composite