

# UNIVERSITAS INTERNASIONAL BATAM

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Faculty of Civil Engineering and Planning  
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## **EVALUATION OF KALIBAN SCHOOL 5-FLOOR PROJECT STRUCTURE CALCULATION WITH ETABS**

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### **ABSTRACT**

*Structural planning that is not in accordance with regulations and theories can result in construction failure. As for one of the factors that influence planning errors is to take into account the burden on the building. The aim of this study is to evaluate the level of structural strength at Kaliban School and also to design solutions for structural strengthening.*

*This study has 5 stages namely, structural design modeling, loading analysis, structural analysis, design, and design control. Structural analysis used ETABS application assistance and manual calculations in accordance with PPIUG, 1983; SNI 1727, 2013; SNI 2847, 2013.*

*The results of ETABS analysis show that the structure of the Kaliban School plan is not resilient so it needs to be re-planned with ETABS method. For existing structures, it is necessary to strengthen the structure because the condition of the building is in the construction phase. The redesigning is done by changing the dimensions of the structural components, calculating the number of reinforcement and add joist to reducing the span of the floor plate. Structural reinforcement was done by adding joists (WF steel profiles 400 x 200 x 8 x 13 BJ 37) to reduce the floor plate span and calculate of BJ 37 steel plate requirements for structural components based on the necessary load from the ETABS analysis results.*

**Keywords:** *Structure, Concrete, ETABS, Reinforcement, Existing*