ABSTRACT

A construction of a low cost apartment should calculate the costs that will occur in the future or during the estimated age of low cost apartment in its planning because it affects the government in estimating the annual budget expenditure for the cost of the low cost apartment life cycle per year until the last year of the estimated age of the building and demolition of the building at the age of the buildings runs out. The efforts to reduce building life cycle costs are carried out by replacing wood roof truss materials with the innovation of lightweight steel materials, as a roof truss that has begun to be used a lot today, later this change of material usage will also affect the overall cost of carrying out roof truss work.

A calculation for roof truss design made using SAP 2000 software and analysis related to life cycle costs using Ms. Excel. All of the cost that occurred in the past were changed to to the condition of the zero point in 2018 with currency inflation rate by 5.04%. Price provisions taken for the data analysis data analysis of the implementation of roof truss work are material seller manufacturer and services in 2019.

The results of the research showed that the implementation of roof truss work was Rp93,573,000,- and for wood was Rp100,263,997.- then for the comparison of the overall life cycle costs is Rp46,518,176,506,- for building that use lightweight steel roof truss and Rp44,070,449,541.- for building that use wood roof truss, it means that lightweight steel is cheaper 5.55% than wood.

Keyword: *Life Cycle Cost, Roof Truss, Lightweight Steel*