Inventory planning is one of the most important parts of a construction project. This is because the material requirements absorb most of the total cost of the project. The delay and material stock-outs due to unfavorable planning result in work delays and will indirectly influence implementation time and project costs. This final project aims to analyze the material inventory in the High Point Apartments project. The method of material inventory analysis is Material Requirement Planning (MRP). The data in the form of material demand, setup costs, holding costs, and lead times were analyzed through several steps: net demand analysis (netting), analysis of the number of orders (lotting), and determination of ordering time (offsetting) to obtain the most optimum order and minimum inventory cost. Lot size techniques used in lotting steps include Lot for Lot, Economic Order Quantity, Period Order Quantity, Fixed Period Requirements, and Part Period Balancing. The analysis process result shows that the material multylek 12 mm, Order Quantity Period and Fixed Period Requirements lot sizing techniques resulted in minimum inventory costs, while for the bar D19, the Period Order Quantity and Part Period Balancing techniques were used. For meranti 5 / 7 and bar Ø13, the Period Order Quantity technique resulted in minimum inventory costs. Lot sizing techniques with minimum cost
of bar Ø8, Ø10 and Ø12 is Part Period Balancing technique. As of the bar material D22 and D25, the minimum inventory cost is resulted by using the technique Lot for Lot.

Keywords: Apartement, Material Requirement Planing, inventory, lot sizing