The concept of Vertical Farm invented by Dr Dickson Despommier aimed to resolve food deprivation and to reduce the actual field area for farming. Not only producing food, but the building will also utilize the waste product from the city as its energy. However, such building can hardly be built in Bangkok metropolitan area due to the price of the land. Therefore, this research is aiming to apply this concept to the 1.2 million square-meter unused spaces in the rental buildings in Bangkok.

The goal of this research is to find the appropriate agricultural system to Vertical Farm in Thailand, studying the physical possibility of planting in the building and analyzing the value of investment in farming of the case study building. The research includes investigation of hydroponics system in Thailand and case study from abroad, to propose the design of system for planting in building, choosing the appropriate building for case study, design layouts, cost estimation and lastly analyzing the profit of the end products.

The result shows that NFT (Nutrient Film Technique) system is the most suitable system of planting in the building, producing 16 times outcome more than normal farming. This is mainly because of multi-level allocation. The system and environment could support planting in the building. The result also shows that with the area of 1,116 square-meter, vegetable can be produced up to 7,000 kg. per week. The project of urban farm, with retail option low marketing risk. Its net profit is 13.8 million baht per year or 21.8% , invested 16.5 million baht , breakeven point at 36.5% and the payback period is at one year and one month, which is appropriate for investment.

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Student's signature	Advisor's signature	