The focus of my graduation topic has been twofold: the redevelopment of empty office buildings, in combination with the technical research question how urban farming can be integrated into (existing) buildings. Nowadays in the Netherlands office surface vacancy is a growing issue, which needs a solution to prevent devaluation of the built/urban environment. More globally seen, population growth, city growth (decrease in agricultural space) and lack of green in cities are crucial problems. This, combined with the problem of large-scale food scarcity versus waste of food, makes the question if urban farming can be a solution highly relevant: urban spaces get used more efficiently, it meets the increasing demand for local, organic (healthier) products and it can create more social cohesion and safety in neighborhoods. Besides that, it can promote a more active gardening lifestyle (which results in better mental and physical health conditions for users), it can provide education in the fields of biology and food management, it can create new job opportunities, it can contribute to climate change mitigation and adaptation strategies and it can restore the relationship between people and food, by creating more accessibility and awareness, eventually resulting in less waste.

The goal of the project has been to test if urban farming can help in empty office redevelopment; if it can have an added social, architectural and functional value. The main test object was the existing Q-Port-building in the west of Amsterdam (50% empty at the moment). During the process, architectural aspects like space, form, composition, routing and program (Q-Port is redeveloped into a mixed-use building) have met technical aspects like redesign, construction, materialization, adaptability and food production. Because of this strong fusion of architecture and technique, the project seems to fit perfectly within the Architectural Engineering studio. In this studio the first semester was reserved to explore and research the technical urban farming-topic. In this way specialized background knowledge was generated for the second semester, in which design and engineering was the central issue. This was very useful. For this research a framework of different typologies of urban farming-integrated buildings has been built up and existing case studies have been put into this framework. These case studies have been analyzed and evaluated in a detailed way, using the research methods of literature study and reference analysis.

The output of this research has influenced the design in different ways, on different levels. First, there was the technical/functional knowledge regarding construction materials, installations, climate conditions, food types and food production numbers. Second, there was the social knowledge. Knowledge about which people like to have an urban farm, how they are activated and can be connected to each other, how allotment gardens are organized, how buildings with a food producing roof, facade or greenhouse are organized, which functions support or may support urban farming, what can be done with the harvest and what can be a food producing building's role within its street, its neighborhood or its city. These types of knowledge, combined with context analysis and the research by design methodology in the design phase, have helped to develop a substantive design. Research in the field of redevelopment of existing buildings would have accelerated the design process a bit more, but researching two large topics would have taken too much time.