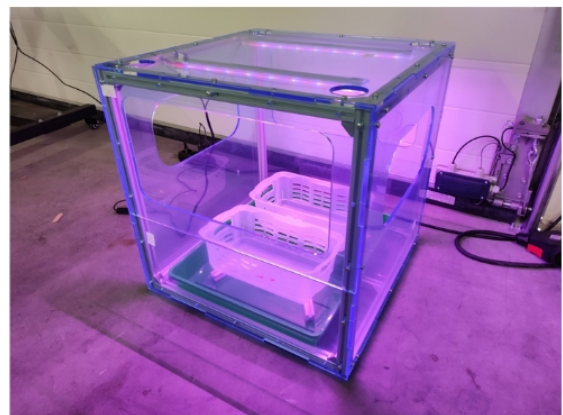


# Vertical Farming

Vertical farming is an approach for growing plants and crops in stacked layers. It is often associated with highly complex, controlled-environment indoor farms that produce food on a commercial scale. These indoor farms aim to optimize plant growth with artificial lights while minimizing the demand for space, water, and fertilizer compared to conventional open-field farms. Most vertical farms use one of three soilless farming techniques, such as hydroponics, aeroponics, or aquaponics. Though, more traditional approaches using soil also do exist, especially in private, DIY-type outdoor systems. In general, vertical farming enables a space-saving way to grow plants and produce food locally. This seems particularly interesting to city dwellers who often do not have the space to grow their own vegetables conventionally and are, therefore, entirely dependent on the food supply chain.

Two prototypes were developed and constructed as part of a workshop on “Vertical Farming” conducted by the Arab-German Young Academy for Sciences and Humanities (AGYA). The aim was to demonstrate that creating a vertical farming system is neither complex nor requires a lot of material or equipment. These two systems can also easily be set up on your balcony, in your garden, or even in your kitchen. The outdoor version aims to present a way of how everyday materials that you will likely find around your home can be reused for constructing a vertical farming system, such as rain gutters and wood. In contrast, the indoor version illustrates a more technical option when using the facilities of a makerspace or fablab.



A complete documentation including CAD files, BOM and a detailed construction manual will be added soon.

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