

Successful application of

Vertical Farming

the Hybrid model



**bosman
van zaal**

INSIGHT. MOVEMENT. GROWTH.

Vertical Farming and the Hybrid model

Vertical farming is a promising development. Many types of vertical farming applications are being researched or already applied commercially. The balance between the advantages and disadvantages at input and output level differs for each application, and is still developing. The benefits of vertical farming are being enhanced, while its disadvantages are being mitigated as much as possible. The hybrid model is a proven, successful application of vertical farming.

WHAT IS THE HYBRID MODEL

In the hybrid model, the vertical farming component is (just) one integrated part of the entire production process of a crop.

The vertical farm does not deliver a harvestable product, but instead a crop that has completed a certain growing phase and is transferred to another site to finish growing (usually a conventional greenhouse).



**bosman
van zaal**

INSIGHT. MOVEMENT. GROWTH.



The hybrid model:

Added value

In the hybrid model, the vertical farming component is (just) one integrated part of the entire production process of a crop. This offers multiple advantages.

CLIMATE AND HYGIENE

In the closed environment of a vertical farm, the ideal climate and hygiene conditions can be consistently achieved to a level that is impossible in conventional horticultural practice. External weather conditions, or risks to hygiene in the shape of pests and diseases, have no impact on the production processes in a vertical farm. An ultra-clean growing environment is a huge advantage during cultivation as minimum crop losses and maximum uniformity are essential in further growth phases. This boosts productivity and profitability and reduces the operational risks.

HIGH DEGREE OF PLANNING

Control over the growing process can be exercised to the maximum degree in a vertical farm. In other words: a high number of plants per m² or even per m³. This makes vertical farming ideal for initial growth phases in which the plant is most vulnerable. The fact that the precision-controlled conditions enable accurate planning is an invaluable advantage of a vertical farming phase.

Consequently, the propagation phase is a perfect candidate for a vertical farming environment. Propagation can be seamlessly matched to conventional growing environments.

LOW ENERGY COSTS

A general criticism aimed at vertical farming is its high electricity consumption, mainly due to lighting and dehumidification. In a hybrid model, residual flows from energy generation, such as heat and CO₂, can be put to good use in a conventional environment in a similar way to common practice in greenhouse horticulture for decades. This minimises the downsides of vertical farming.



**bosman
van zaal**

INSIGHT. MOVEMENT. GROWTH.



The hybrid model: Crops

Entrepreneurs who are searching for an integrated system capable of delivering plants in the right condition to the next cultivation phase, can reap the many benefits of the hybrid model.

SUITABLE CROPS

The hybrid model is ideally suited for crops that proceed through different phases, crops with a longer cultivation cycle or crops that reach a relatively large or high size in the final phase. This includes transferring plants to larger pots, spacing the pots and/or the flowering stage, for example during propagation, potted plant growing, cannabis growing and with conventionally grown greenhouse vegetables.

LESS SUITABLE CROPS

The hybrid model is less suitable for crops such as baby leaves or herbs, which grow into a final product after sowing in just a few weeks. Other forms of vertical farming with a focus on hygiene and labour saving are more suitable for these crops. Read our white paper “Successful vertical farming applications: ready-to-eat”.



**bosman
van zaal**

INSIGHT. MOVEMENT. GROWTH.



The hybrid model:

Proven success

SUMMARY OF BENEFITS

- Maximum control of climate conditions suitable for the specific growth phase
- Improved hygiene: automated, fewer pests and diseases, consistent, stable conditions
- Low energy costs per unit of product
- High uniformity
- Low crop losses
- High degree of planning

THE BOSMAN VAN ZAAL APPROACH

Bosman Van Zaal can rely on decades of experience in installing hybrid applications of vertical farming within a total production facility. The proven internal logistics systems enable maximum, seamless integration of the various phases: from seeding line to packing robot. This approach has already been successfully applied in various projects. One of these projects is highlighted below:

*View a
business case*



**bosman
van zaal**

INSIGHT. MOVEMENT. GROWTH.

The hybrid model of

Bosman

Van Zaal

is vertical farming within a total production
facility

*Discover more
here!*



*Our vertical
farm experts!*

Making your business excel with the **hybrid model** as well? Contact us!

bosmanvanzaal.com

T +31 297 344 344 E sales@bosmanvanzaal.com



**bosman
van zaal**

INSIGHT. MOVEMENT. GROWTH.