

# Co-designed Sustainable Broiler Production Systems

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## Introduction

Achieving sustainability in animal production is a multi-dimensional challenge. Any new system for growing poultry has to meet very different requirements, ranging from animal welfare and economics, to citizen preferences, landscape, local and global environment.

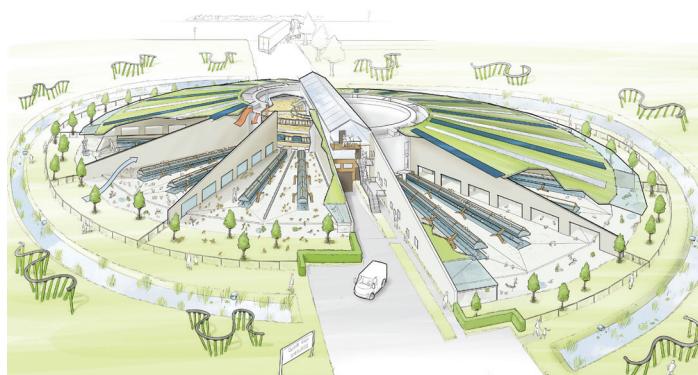
## Interactive design approach

An interactive and structured co-design process was followed\* with participants from both the broiler production chain and wider society.

The brief of requirements for the designs are based on the needs of a set of key actors. Functions rather than solutions are the primary unit of analysis. In this way, the participants in the project were able to unify a wide range of seemingly conflicting requirements.

## Key Design Elements

- Slower growing broiler
- More space per broiler and separate functional areas
- Frequent removal of manure and litter cleaning
- Multiple-age system for space and energy efficiency (concept 1)
- Natural ventilation and plants for dust reduction
- Locally produced protein sources in feed (field beans, meat-and-bone meal, refined grassproducts)
- Solar energy and energy storage
- Separate insulated space for hatching and rearing during first weeks



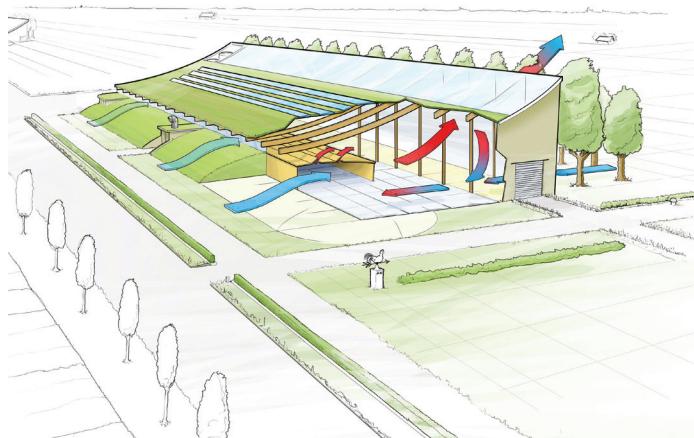
Concept 1: Som der Delen / Synergy (working title).

## Future prospects

- Consortium of actors for further R&D poultry equipment (Public-Private Partnership)
- Realization of housing system in the eastern part of the Netherlands

## Project aim

To develop sustainable designs for broiler production systems together with stakeholders, thereby creating opportunities to realise (parts of) the concepts in practice.



Concept 2: Windstreek / Cardinal Point (working title).

## Sustainability Performance of Designs compared to conventional systems

- Production cost about 30% higher
- Environmental impact equal (globally) or lower (locally)
- Very good animal welfare - all needs of broiler satisfied
- Higher health status of broilers – negligible use of antibiotics
- Positive qualities for landscapes
- Enhanced transparency for production chain and consumers

## Consumer product lines

Valorization of all parts of the chicken is crucial for the economic viability of sustainably raised chicken. Therefore new product concepts, combining intrinsic and extrinsic attributes, have been developed.



Wereldelen: Ready meals inspired by ethnic cuisine, consisting of sustainably produced chicken parts, carbohydrates and vegetables.

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\* Groot Koerkamp, P.W.G. and Bos, A.P. (2008).

Designing complex and sustainable agricultural production systems; an integrated and reflexive approach for the case of table egg production in the Netherlands. *NJAS*, 55: 113-138

