

A stylized blue silhouette of a pig, facing right, composed of several geometric shapes. It is positioned on the left side of the slide, partially overlapping a blue background element.

VIV MEA 2016

FEBRUARY 16-18, ABU DHABI, U.A.E

**INTERNATIONAL PLATFORM
FROM FEED TO FOOD**

The best practice of climate needs for pigs – and how to fulfil it

VIV Master Class Vietnam

Mr Carsten Bo Pedersen & Mr Jørgen Møller Andersen,
Climate Expert from SKOV Asia

WWW.VIV.NET



The best practice of climate needs for pigs – and how to fulfil it

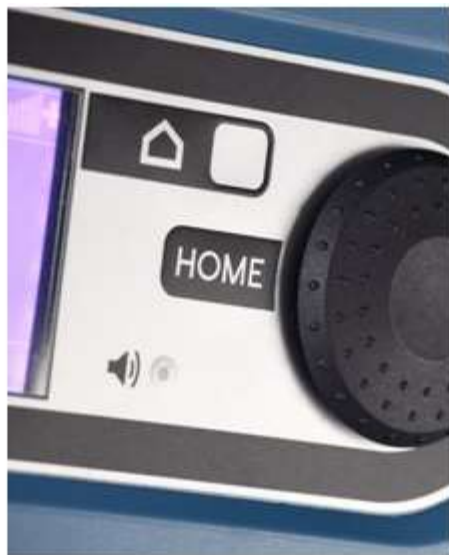
Carsten Bo Pedersen & Jørgen Møller Andersen,
Climate Expert from SKOV Asia





SKOV VNU Vietnam





The best practice of climate needs for pigs and how to fulfill it.

By Carsten Bo Pedersen and Joergen Moeller Andersen

Area sales managers Skov Asia Bangkok.



When we close the houses we take responsibility...



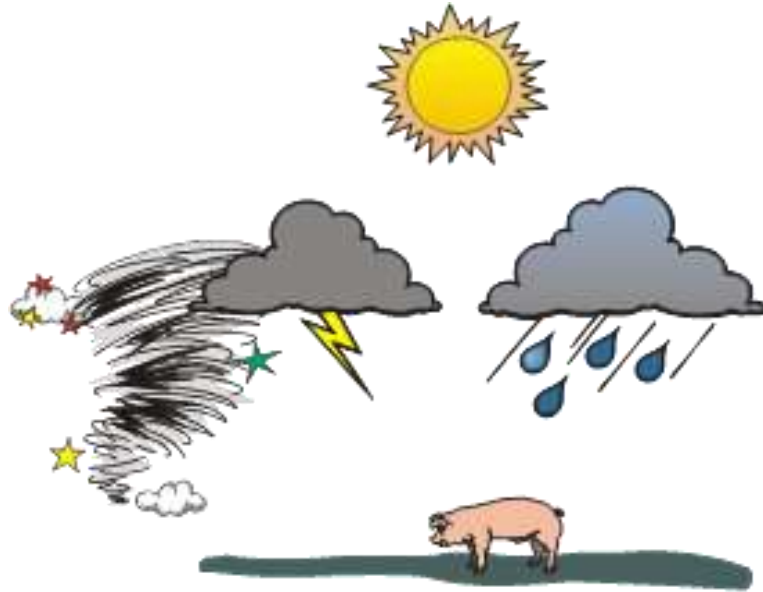
Different behave for different age and size



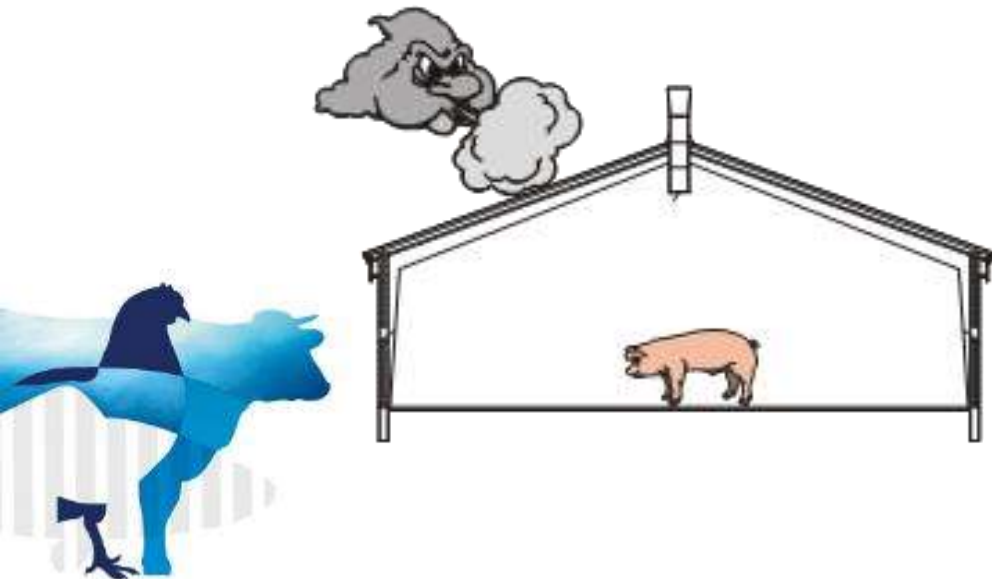
There are a lot of different ways to grow pigs . There is also a lot of different systems to keep the pigs in there houses.



Why ventilate?



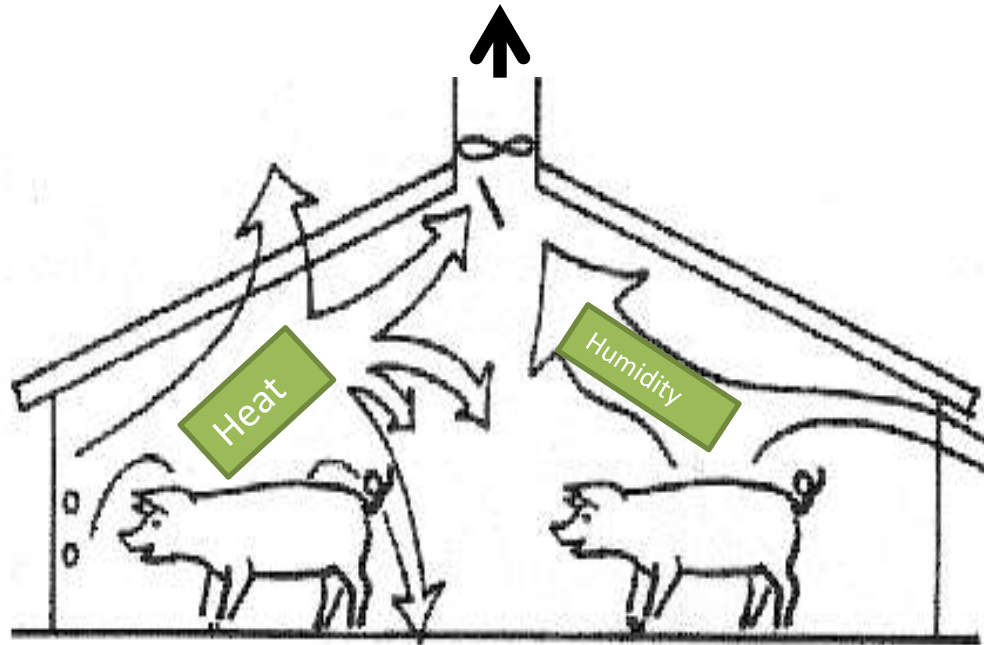
- To control the climate
 - High daily gain
 - Low feed conversion rate (FCR)
 - High state of health
 - Low mortality
- Ensure right behaviour in the pen
- Ensure good air quality
 - CO_2 , NH_3 , H_2S , dust etc.
 - Minimum ventilation m^3/h



Why ventilate



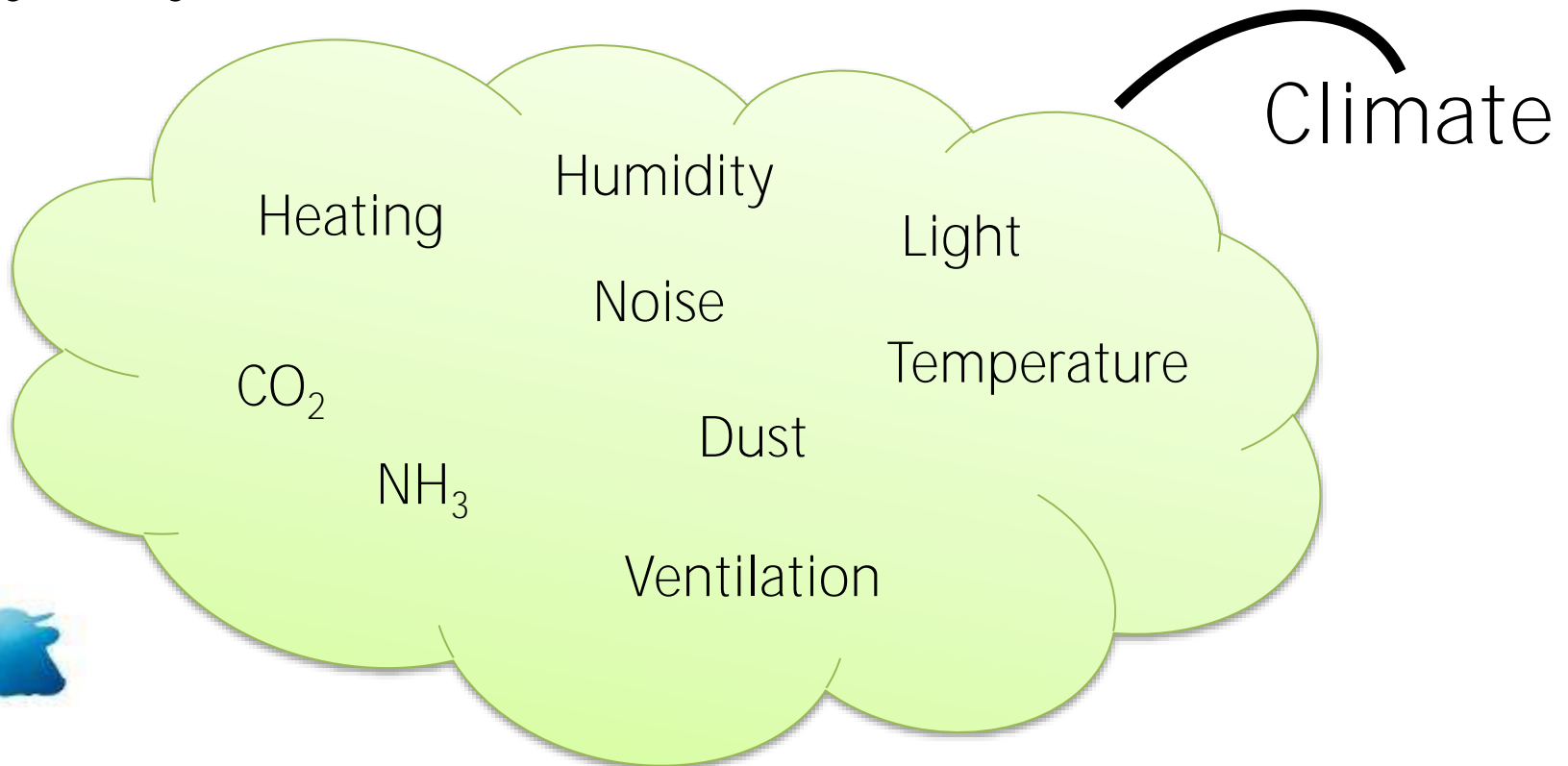
- Temperature °C
- CO₂
- Humidity
- Heat
- NH₃

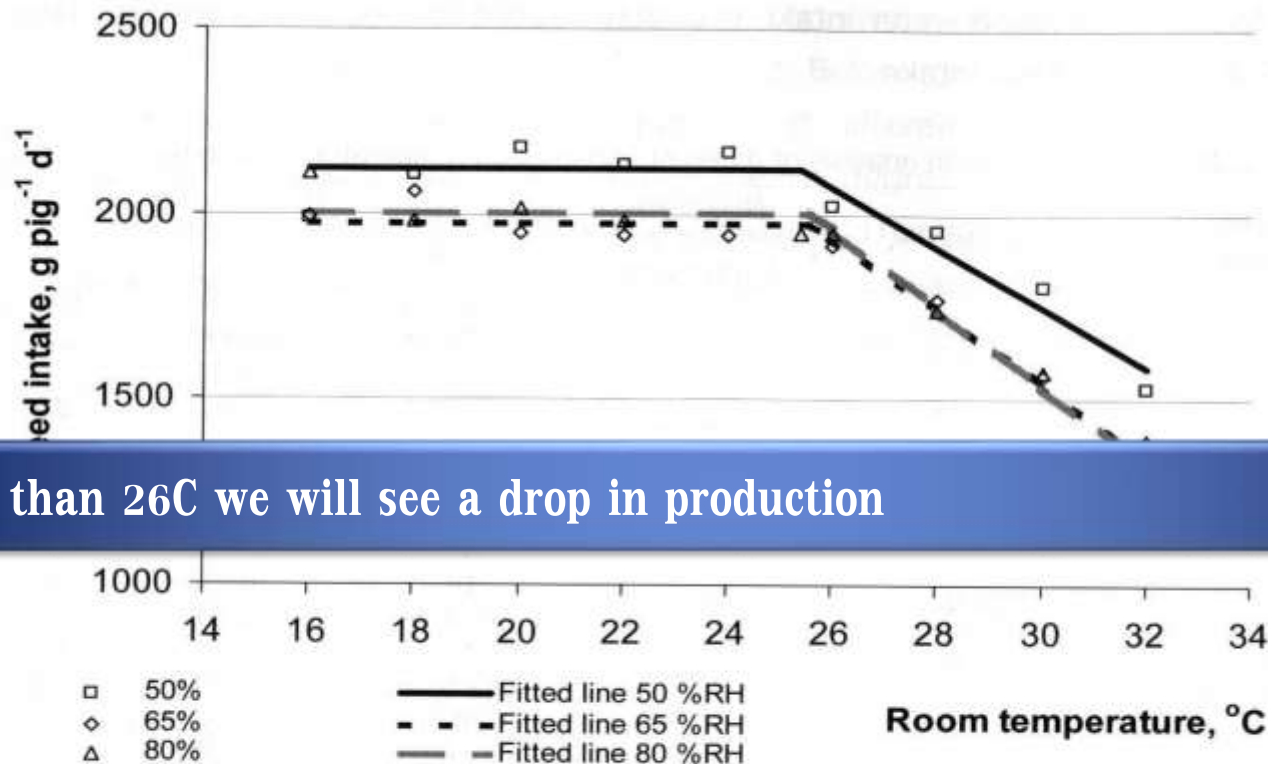


Climate vs. ventilation



->Why worry about the climate?





At more than 26°C we will see a drop in production

Figure 3. Broken line relationship between ambient temperature and voluntary feed intake; \square \diamond Δ are means of measured data.





Remove excess heat





Max 3000 ppm



Sensitivity to climatic stress*

*) Climatic stress:
Temperature fluctuations
High CO₂
High NH₃
Chill – turing into draft



Very sensitive

Less sensitive



Behaviour - comfort



- Control of body temperature
 - Build nests
 - Slushing for cooling
 - Resting behaviour
 - Important indicator for the well being of the pigs



Behavior – social relations



Ranking

Normal behavior



Stress related

Abnormal behavior



SKOV A/S – in Glyngoere – approx. 11,000 m²

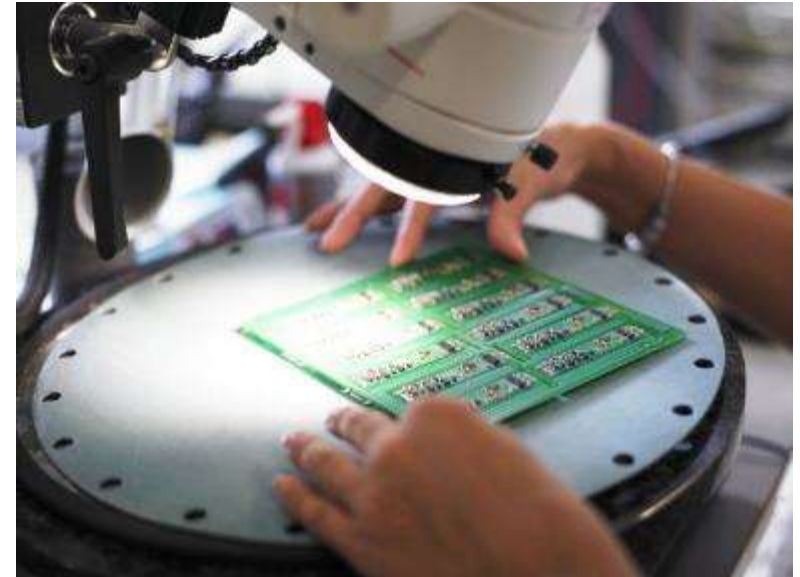




SKOV – a complete Company



- Development of systems
- Mechanical construction
- Development of hardware
- Development of software
- 56 employees
- 8-10% of turnover is spent on development and research
- Cooperation with universities and agricultural research centres



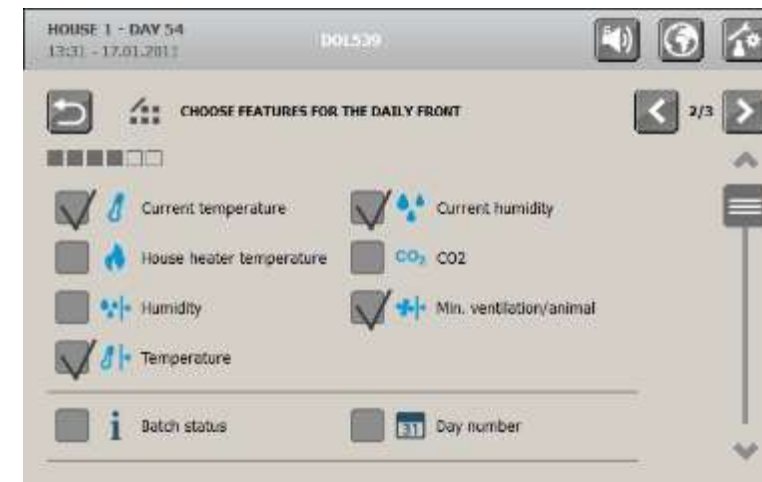
Technologies – Air Physics, own Test Centre



Technologies - mechanical Construction



Technologies – Software Development



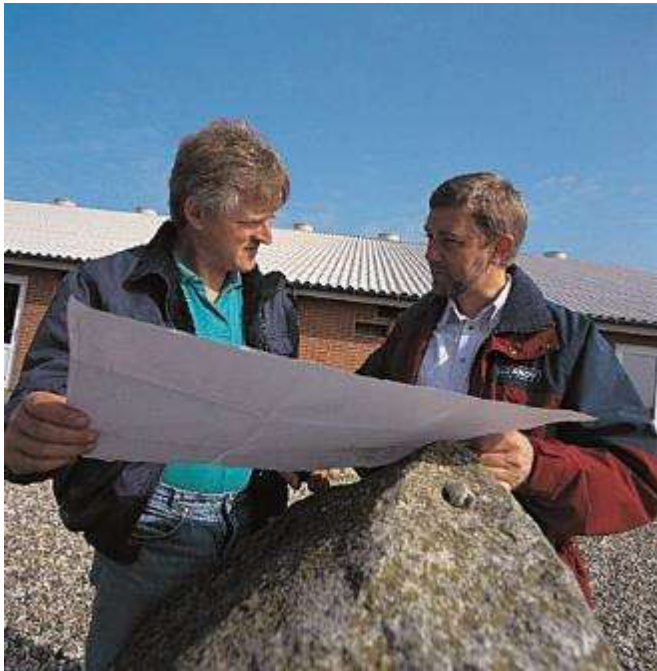
SKOV Global Support



SKOV – Your Partner: Advising



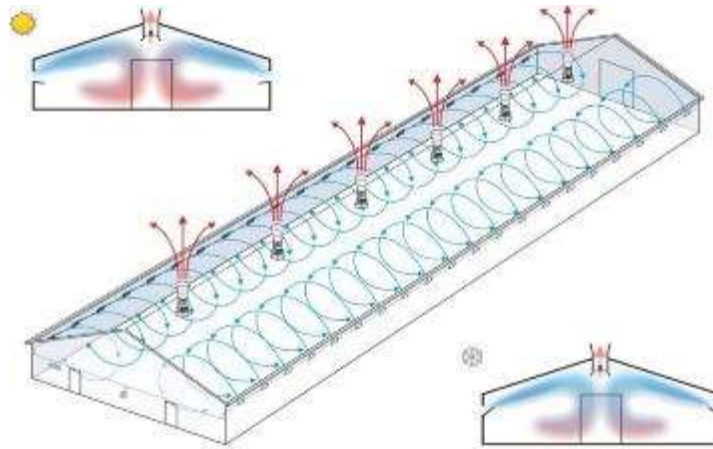
- We make a dedicated solution that fits you and your animals' requirements



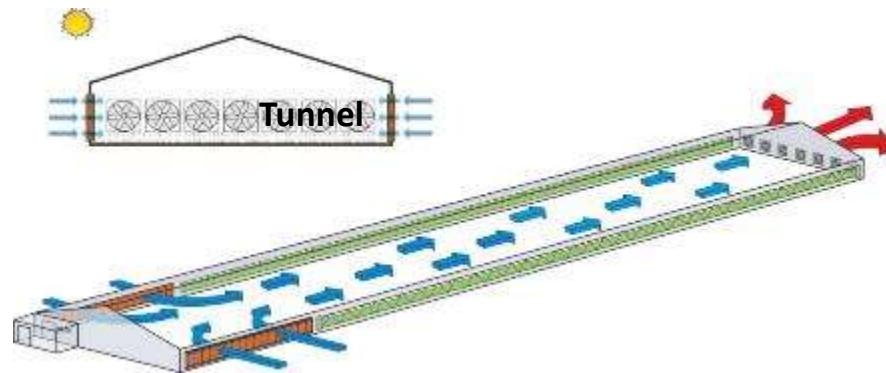
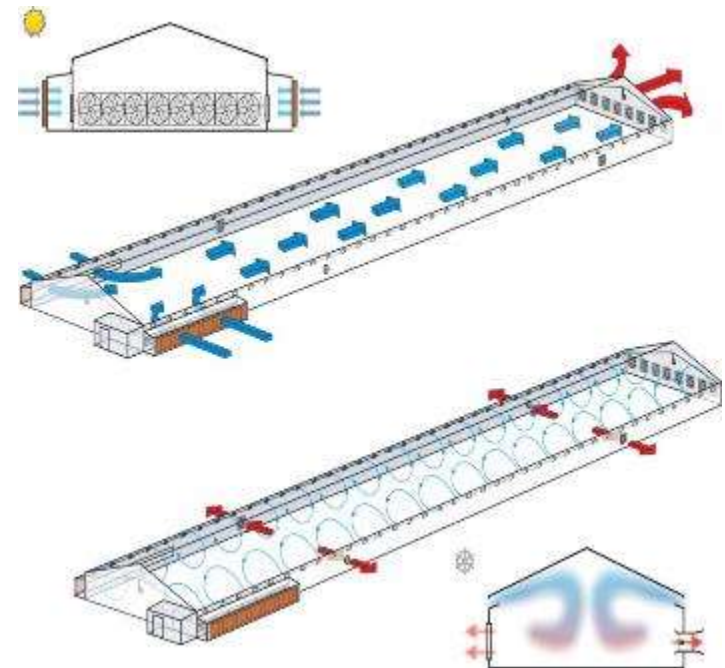
Different type of ventilation systems



Low Power Ventilation (LPV)

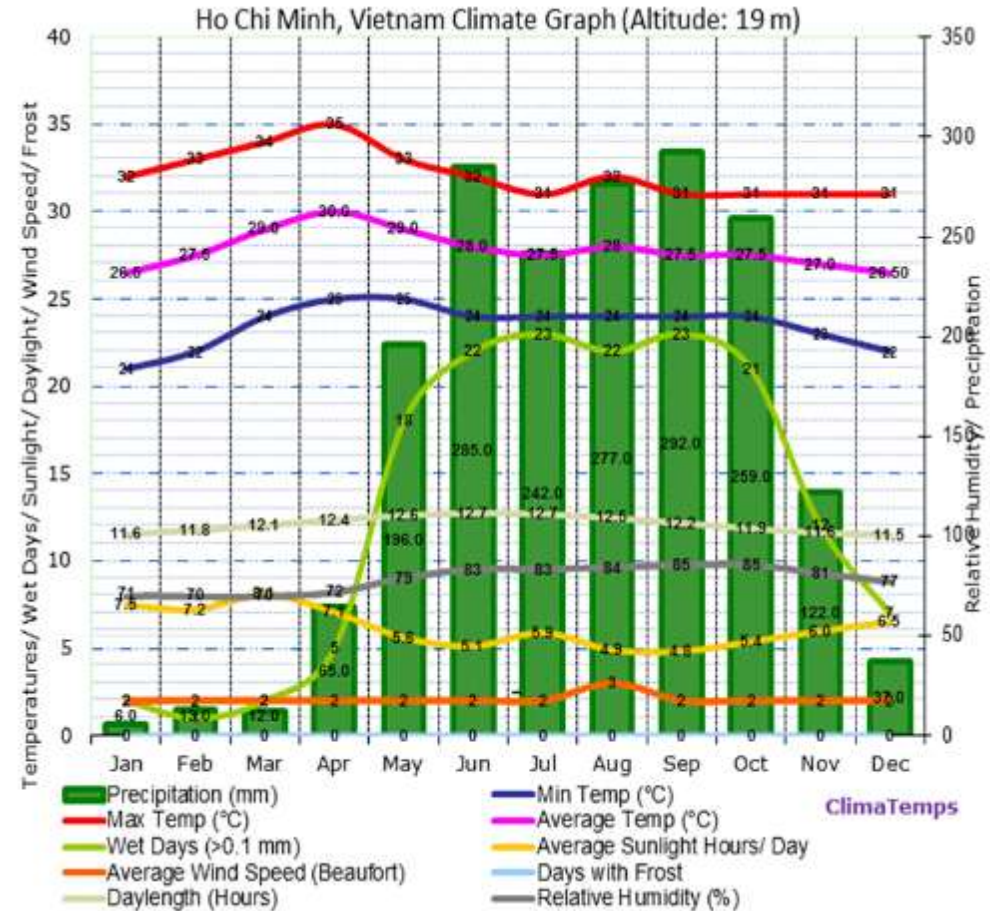
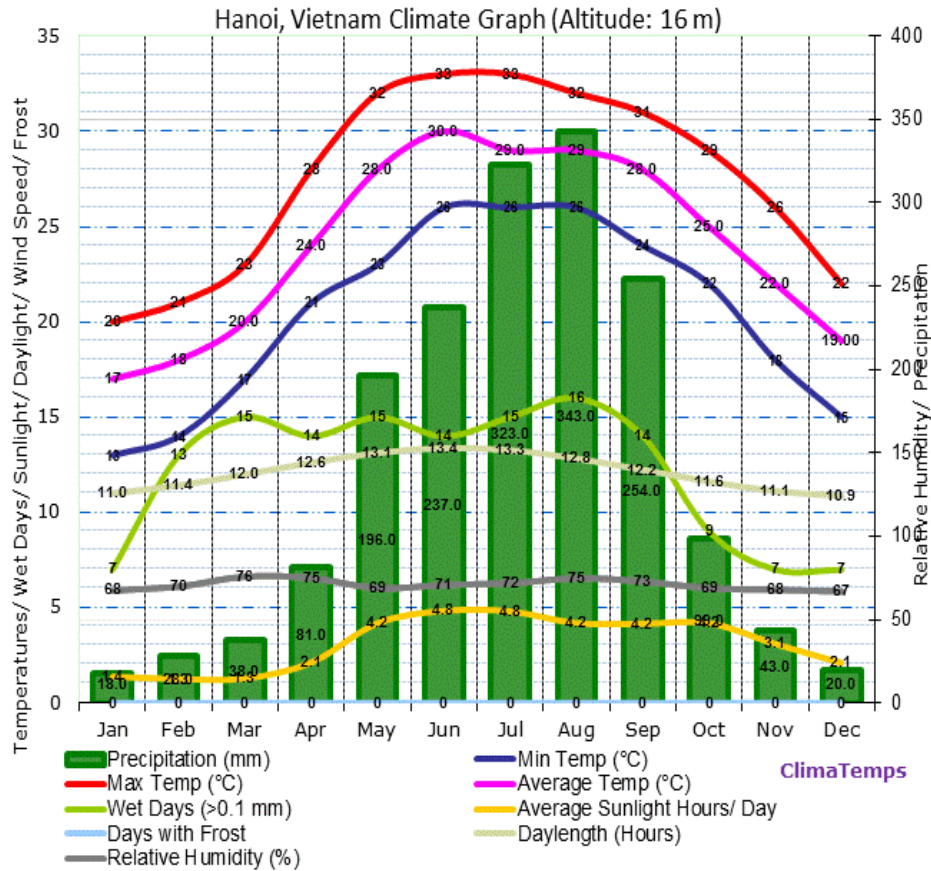


Combi Tunnel





Climate data from Vietnam Hanoi and Ho Chi Minh



Local climate: Hanoi

Local climate:

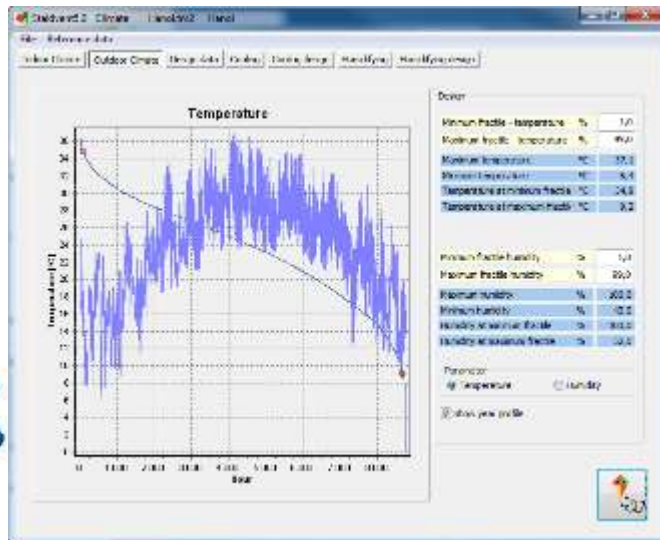


MeteoNorm – Climate database



- Access to climate data's from more than 15.000 locations around the world.
- Hourly based information's on temperature, humidity etc. from every single location.
- Data's are collected over a number of years and statistically treated (meaning no single day peaks from last summer ☺)

Hanoi:

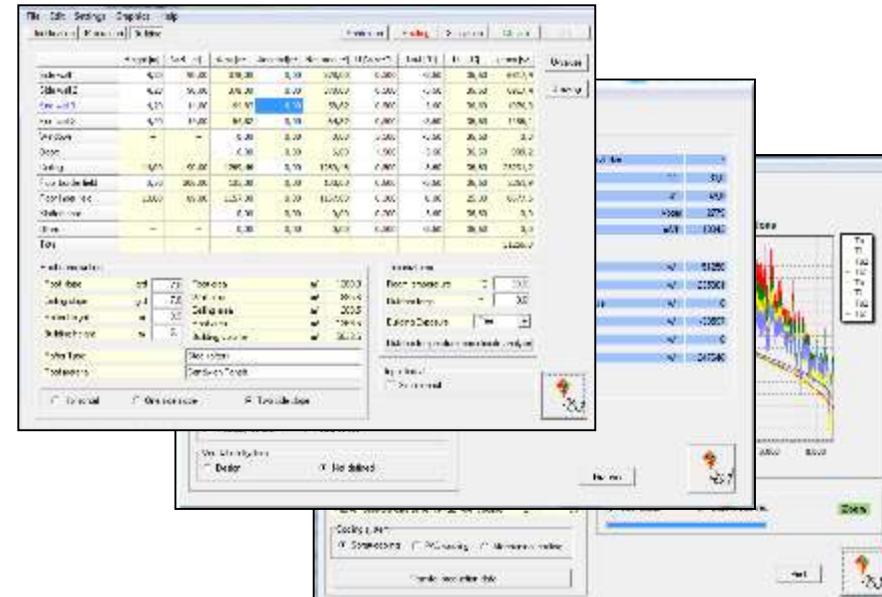


Temperature profile

Calculation based on StaldVent with special Skov module



Calculations :



House and Production figures :

- Number and size of animal.
- Production form and batch length
- Temperature, humidity and CO₂ strategy
- How are the animals kept inside the house
- Size of house and insulation values
- Kind of ventilation and cooling system
-

Different calculations :

- Climate conditions in LPV mode
- Climate conditions in tunnel mode
- Heating requirements
- Effect of cooling
- Yearly electricity consumption
-



6413 House 10mx38mx2.4m(Weaner)

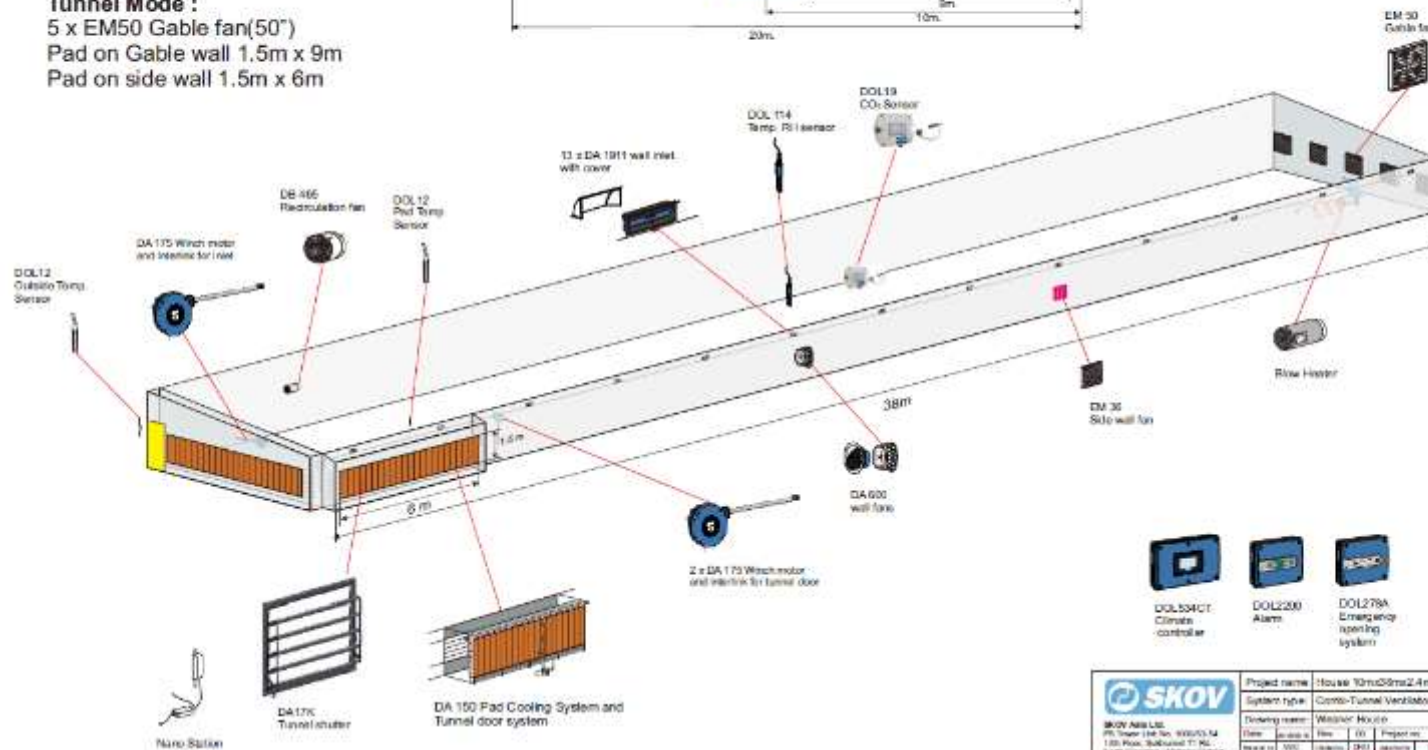
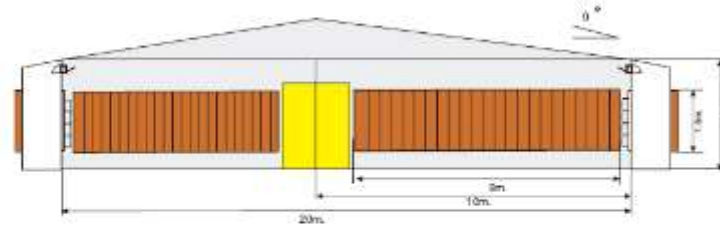


6413 House 10mx38mx2.4m(Weaner) Ver.1

Animal :
Weaner : 650Pcs.@30Kg

Side Mode :
13 x DA1911 Side wall inlet with cover
1 x DA600 Stepless fan
1 x EM36 Side wall fan(36")

Tunnel Mode :
5 x EM50 Gable fan(50")
Pad on Gable wall 1.5m x 9m
Pad on side wall 1.5m x 6m



DOL504CT Climate controller



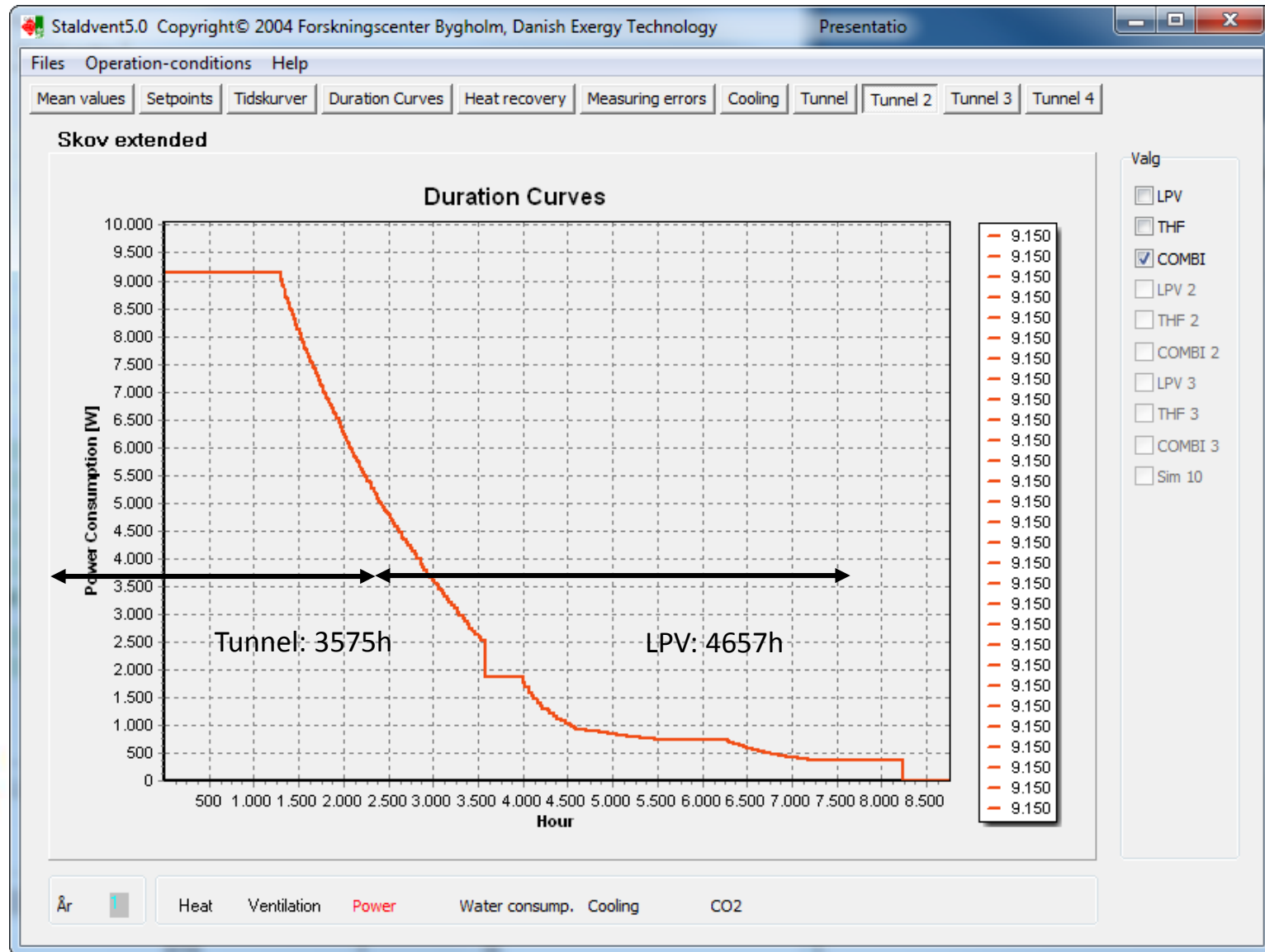
DOL230 Alarm



DOL278A Emergency opening system

<p>SKOOV Skoov Asia Ltd. 110, Tower 1, 11th Floor, 110000, Kuala Lumpur, Malaysia Tel: +603-2011 1111 Email: info@skoov.com</p>	Project name	House 10mx38mx2.4m	Customer	
	System type	Control-Tunnel Ventilation System	Version	1.0
	Design name	Weaner House	Drawn by	CSH/CSH
	Date	2023-03-10	Project no.	001
	Status	FOR PRELIMINARY	Drawn by	CSH/CSH

Power consumption and running hours , Weaners



6413 House 14.6mx60mx2.4m(Gestation)

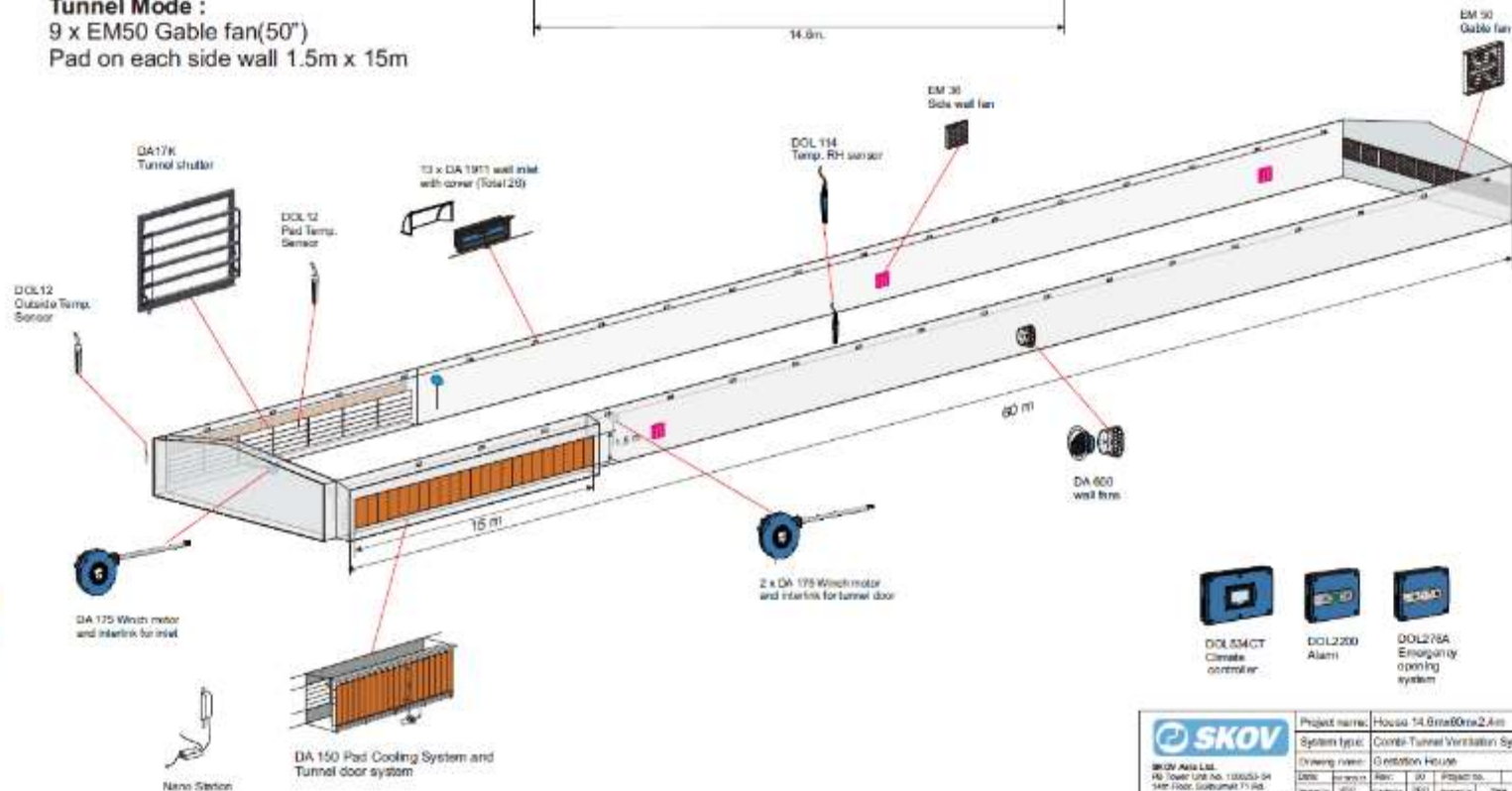
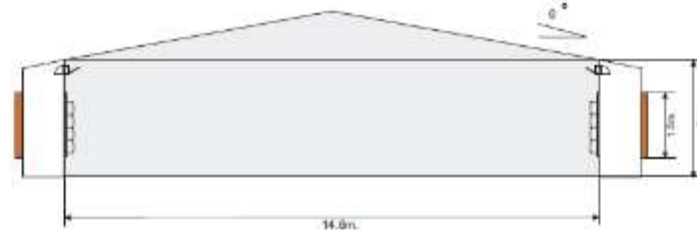


6413 House 14.6mx60mx2.4m(Gestation) Ver.1

Animal :
Gestation : 348 Pcs.

Side Mode :
26 x DA1911 Side wall inlet with cover
1 x DA600 Stepless fan
3 x EM36 Side wall fan(36")

Tunnel Mode :
9 x EM50 Gable fan(50")
Pad on each side wall 1.5m x 15m



DOL534CT
Climate
controller



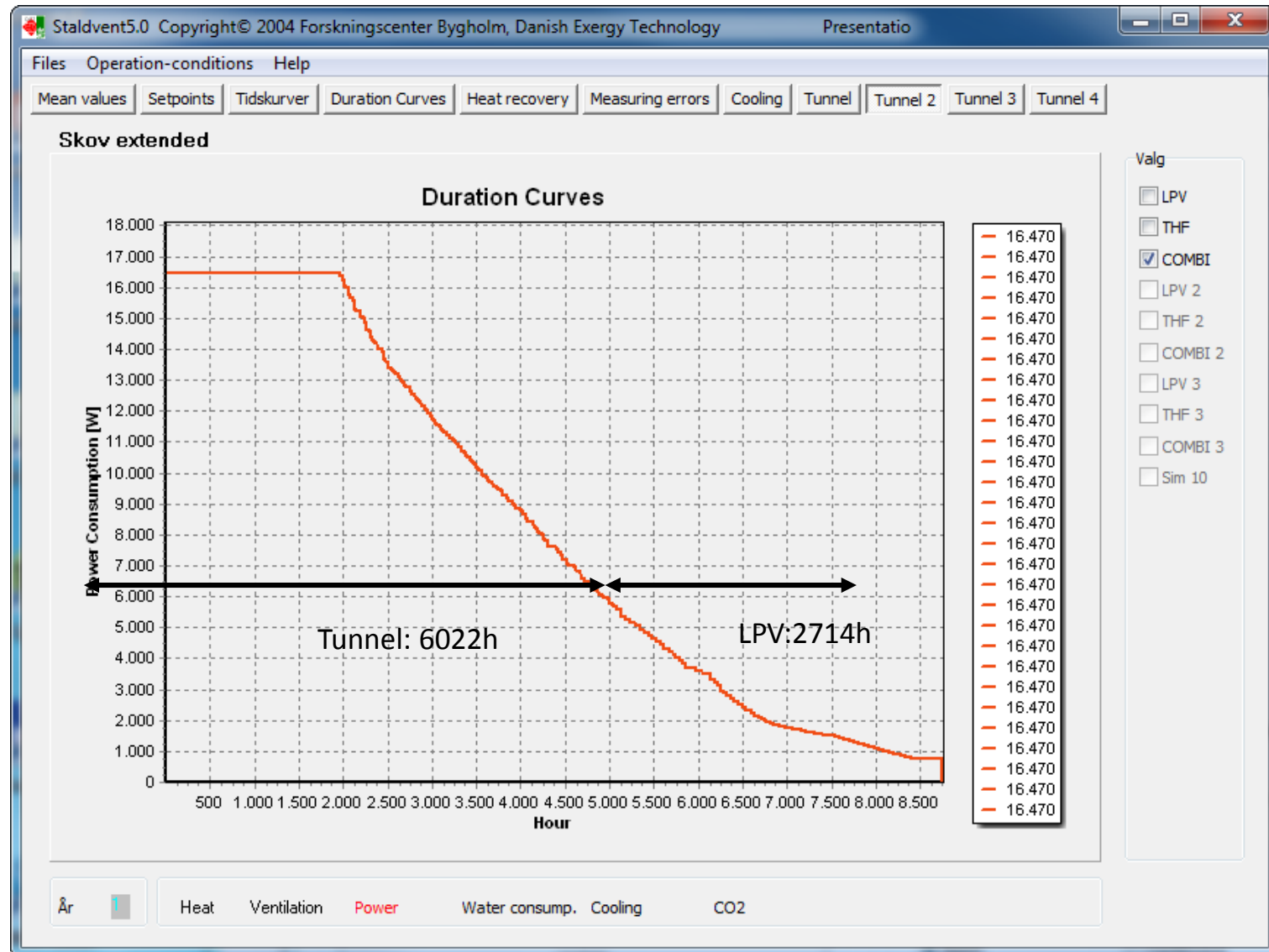
DOL2200
Alarm



DOL276A
Emergency
opening
system

<p>SKOV A/S 46 Tønder Limb. 108000 54 1400 Tønder, Sønderjylland 71 100 North Jutland, Skovhøjvej 11 Denmark 6400 Tel: +45 73 11 11 11</p>	Project name: House 14.6mx60mx2.4m		Customer:
	System type: Climate-Tunnel Ventilation System		Location:
	Drawing name: Gestation House		Project No:
	Date: 2020-05-10 Version: 01 Drawn by: [Signature] Checked by: [Signature]	Project No: 6413 Date: 2020-05-10	Status: FOR PRELIMINARY Drawn by: [Signature]

Power consumption and running hours , gestation



Yearly energy consumption



Section	kWh/year	Temperature, setpoint, C°	
Gestation	77803	22°	
Weaners	27507	30° -> 22°	



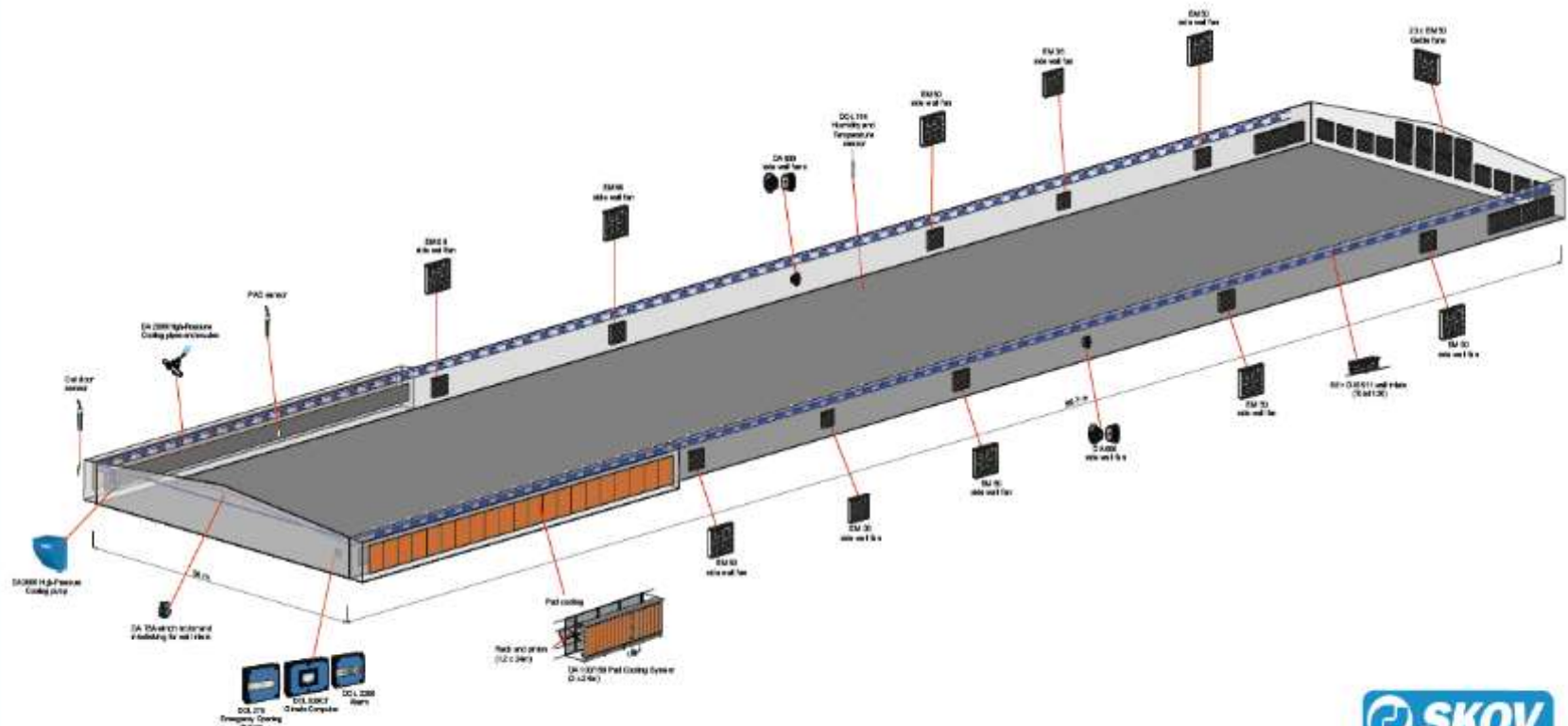
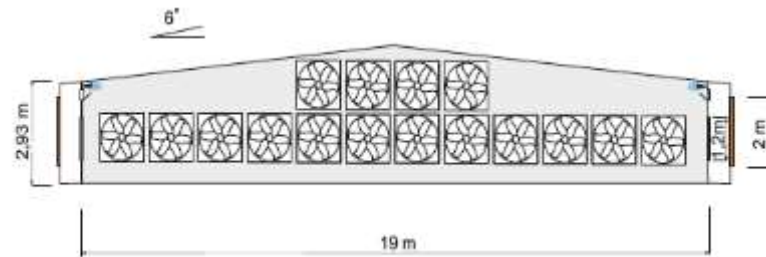
LPV systems: DA 1200 and DA 1540



Tunnel ventilation pig houses

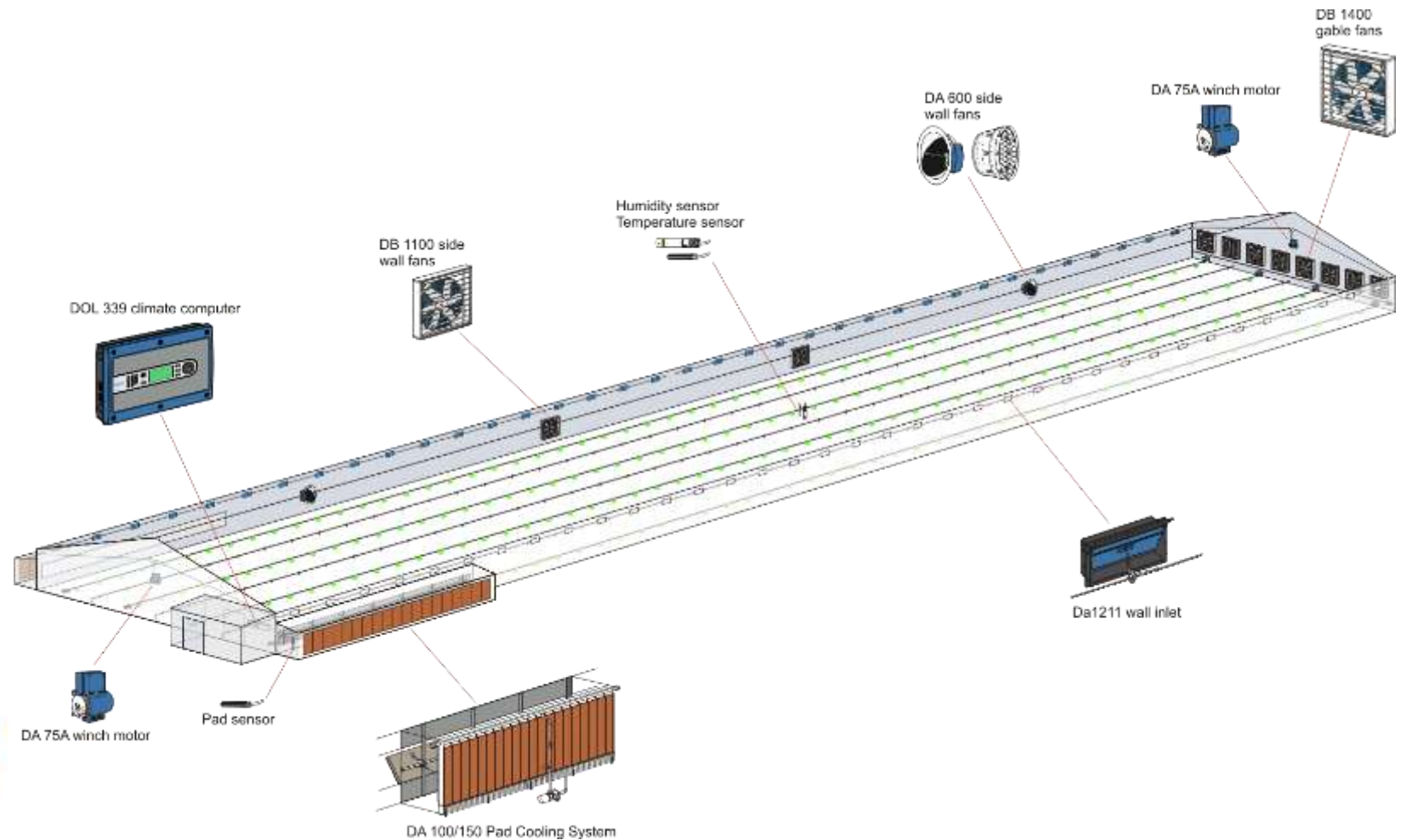


Combi tunnel systems for hot / cold areas

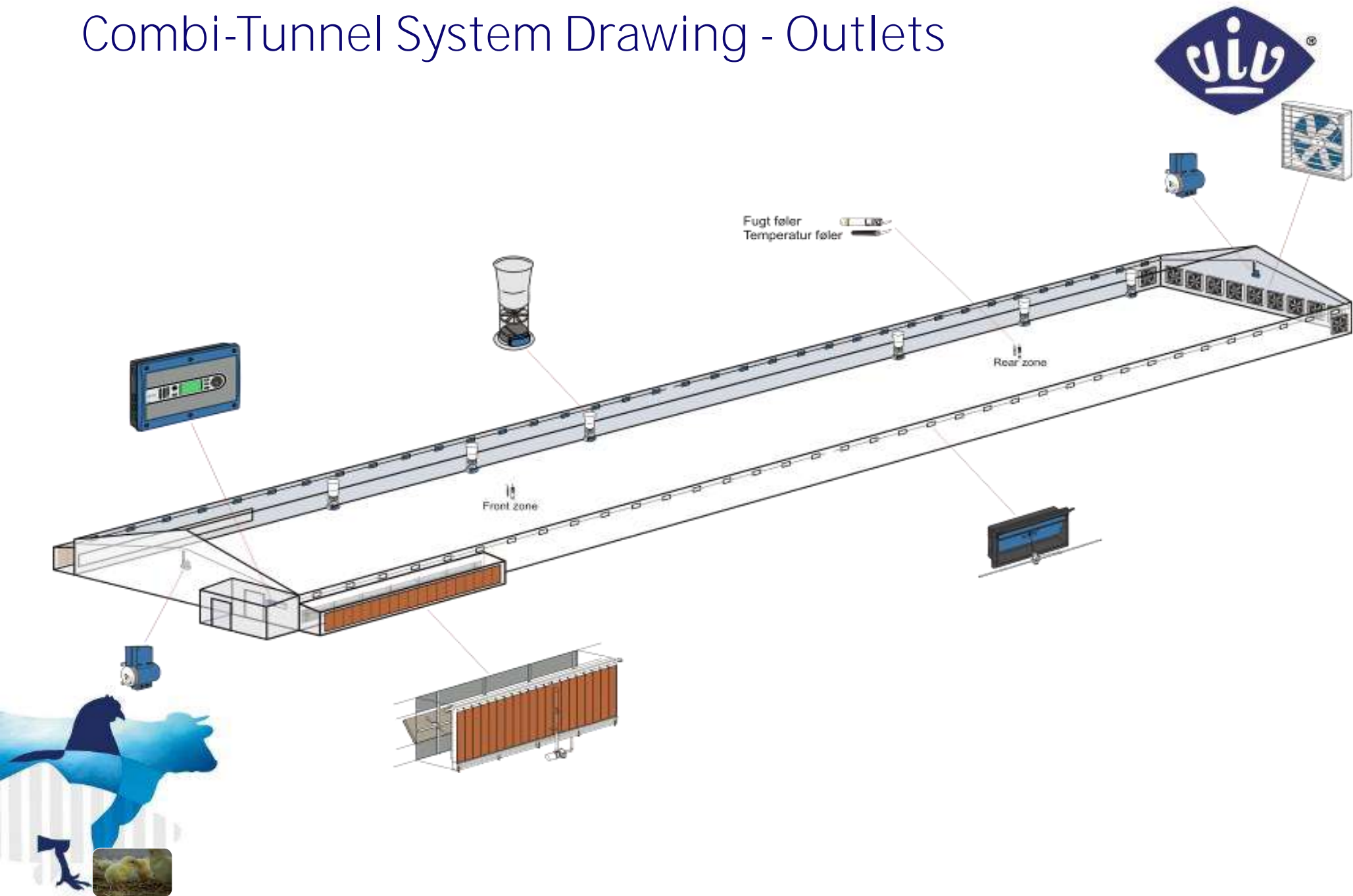


Only Internal Use. Copyright Skov A/S Denmark, 2005

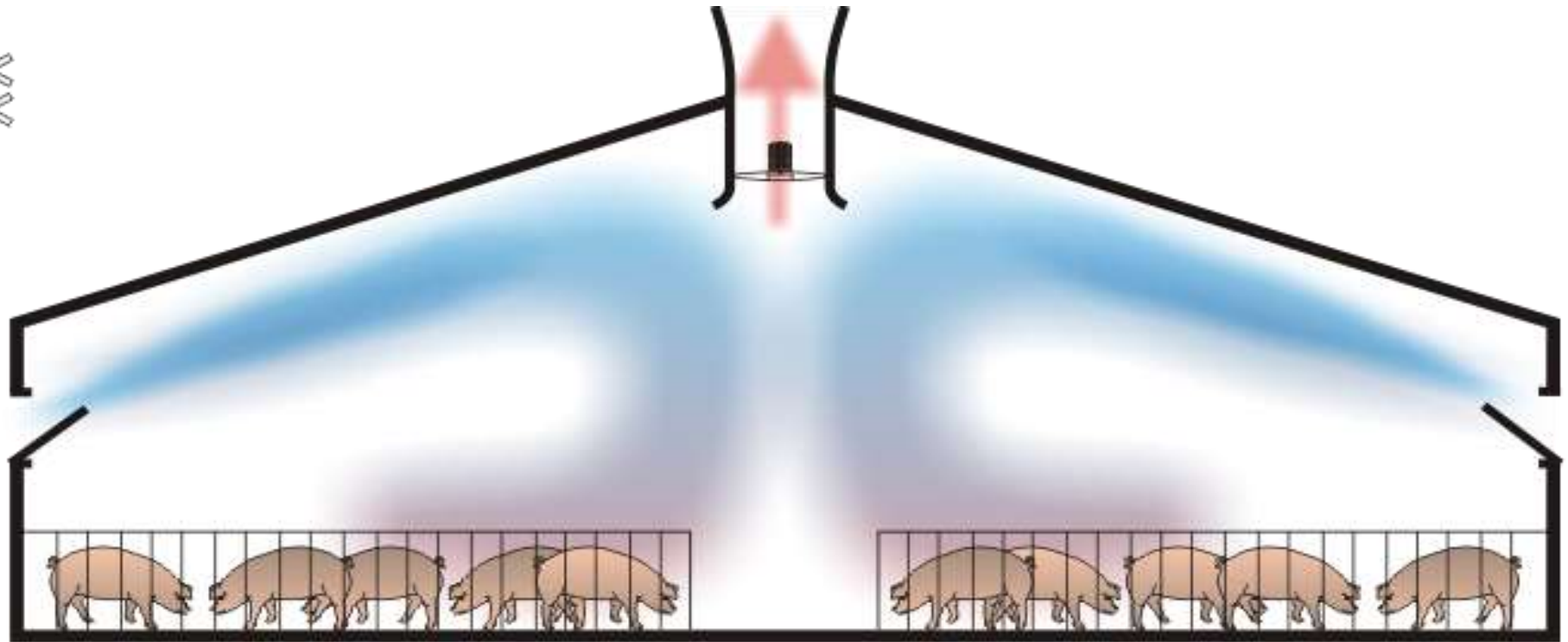
Combi-Tunnel System Drawing - Wall Fans



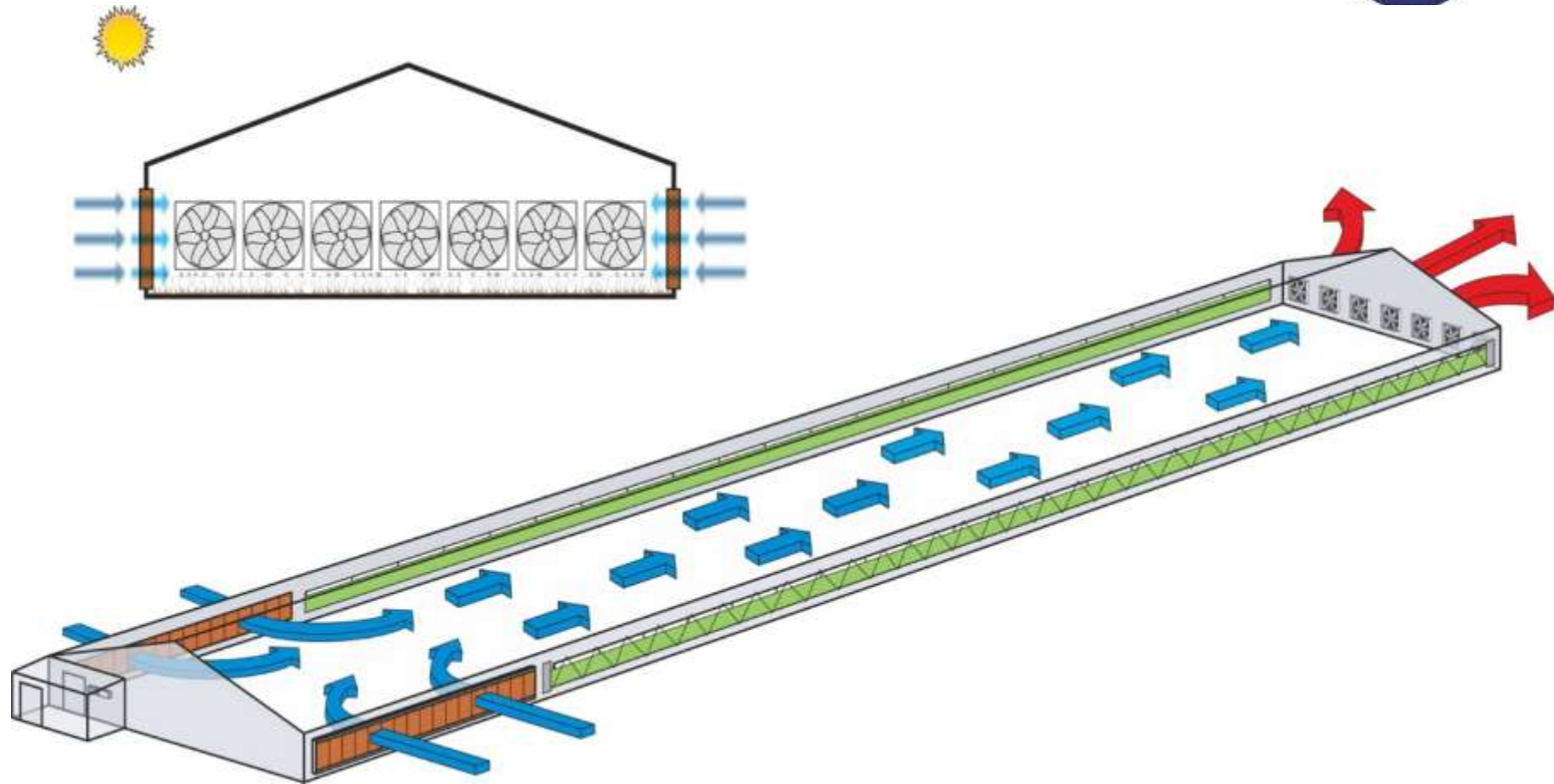
Combi-Tunnel System Drawing - Outlets



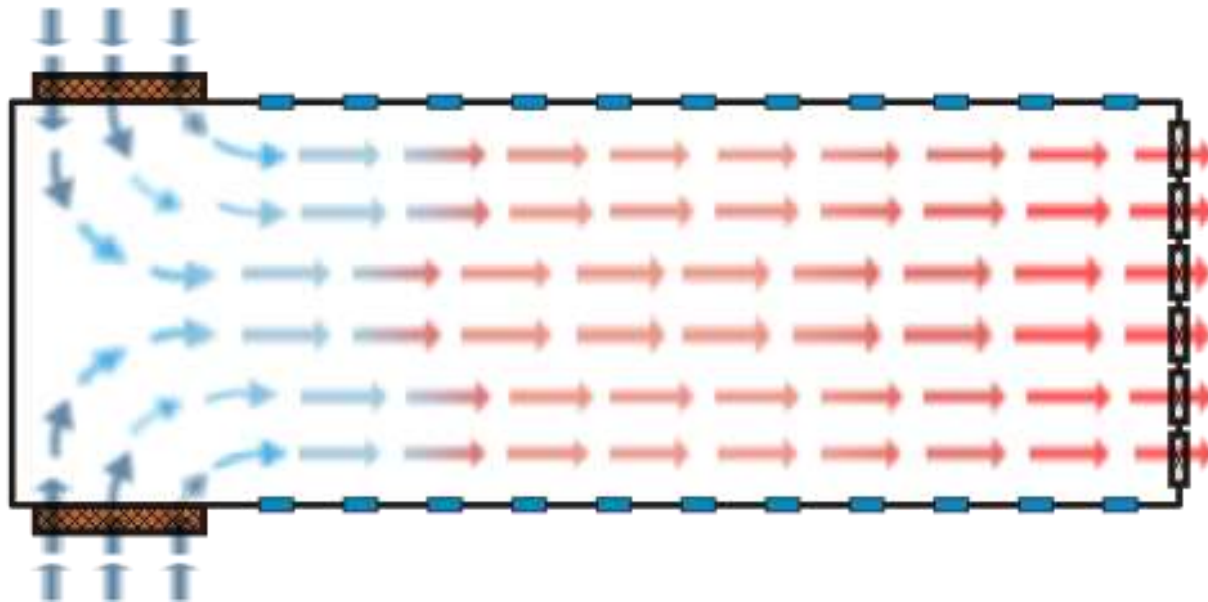
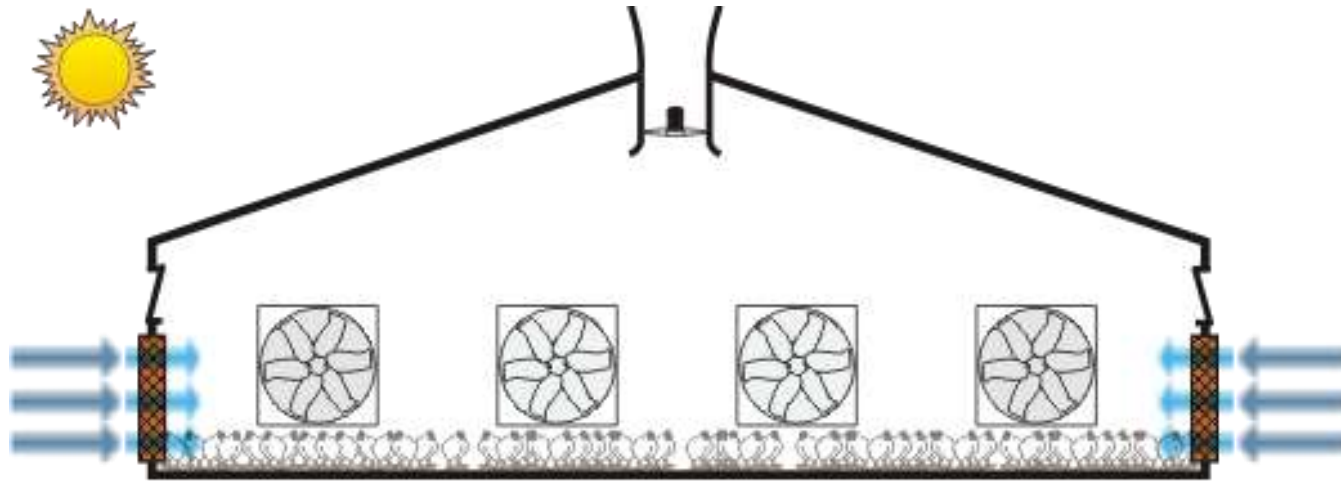
Air distribution in cold periods



Tunnel Ventilation



Airflow during hot weater0



Dol 534 / Dol 539 Climate Controller




Climate functions

- PID regulation technology
- MultiStep® fan control
- Two-zone control
- Cycle-time control of the ventilation
- Control according to outside temperature
- CO₂ and NH₃ recording
- Cooling control
- RST (roof - side - tunnel) ventilation
- Trend and batch curves
- Comprehensive alarm functions



Language on the controller in Viet and many more





Pigs can always perform –
the trick is to make sure the performance is optimal.