

# What came first, the Chicken or the egg?

**STULZ**

CLIMATE. CUSTOMIZED.

Transferring data center design from  
the USA to Europe and the issues that  
can be experienced



# Robert Turkeš

Head of Sales Europe and CIS

**STULZ** GmbH – Germany

44 years

married, 3 kids

- Master electrical engineering
- since 1999 at STULZ and in the DC Industry

Mail: [turkes@stulz.de](mailto:turkes@stulz.de)

Phone: +49 40 5585 527

Mobile: +49 163 859 2937

---

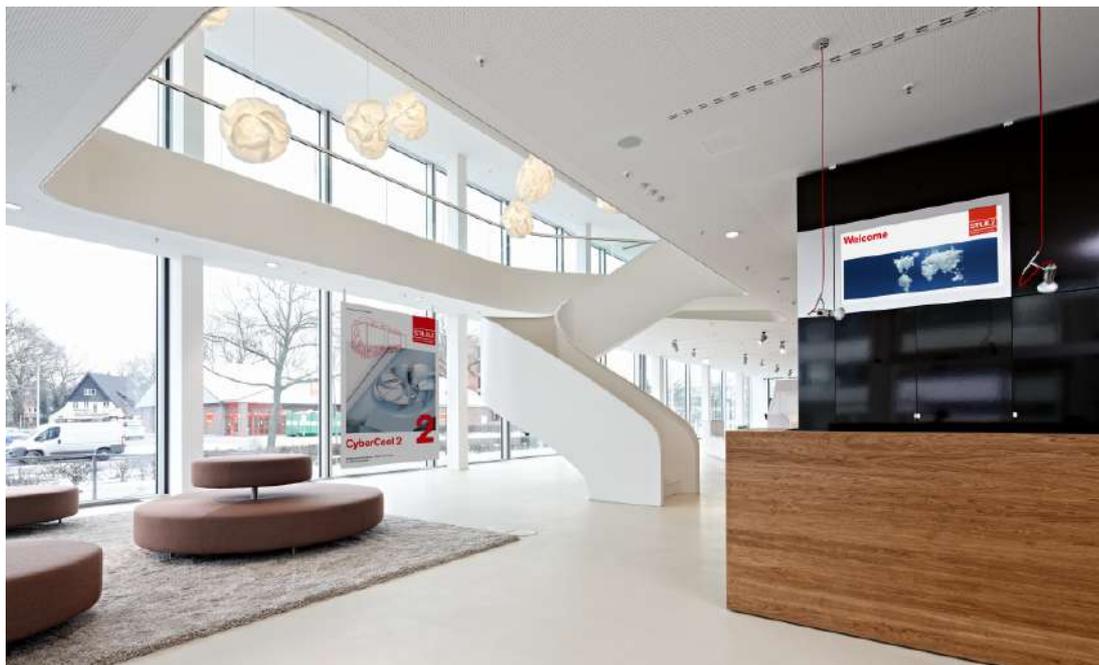
The STULZ logo is located in the top right corner of the slide. It consists of the word "STULZ" in a bold, white, sans-serif font, centered within a red rectangular box. The box has a thin white border.

# Stulz Nordics AB

Sweden, Finland, Norway, Denmark

**STULZ**

CLIMATE. CUSTOMIZED.



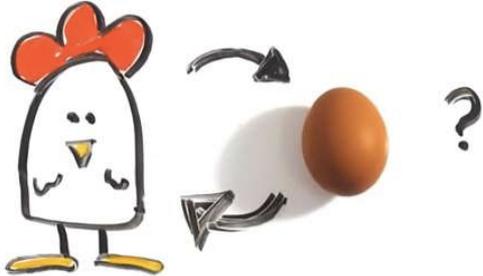
# Stulz Nordics AB

Based in Stockholm

- Pre sales
  - Design assistance
  - Aftersales support
  - Commissioning
  - Service support
- 



# Agenda



What is important during the

**Data Center construction**

from customer point of view..?

---



...to receive the

Scope according to the specified **quality**  
within the budgeted **cost** and **time** frame...

In other Words:



## Scope : Quality, Cost & Time

- Specification
- Response (global / local)
- Production capacity / time to market
- Stock / supply chain
- Project management
- Flexibility
- Installation / Service capability & capacity





What is important for the  
**Data Center operation**  
from customers point of view...?



...to have an  
**uninterruptible**  
operation of the  
Data Center at  
**minimum costs** ...

In other Words:  
**minimum risk & minimum cost**





Every customer has it's own definition what minimum **risk** means



Every customer has it's  
own definition what  
minimum **cost** means

# Minimum risk & minimum cost

**STULZ**



# Minimum risk & minimum cost



Options:

Driver Airbag 2.451,- DM

Driver and passenger Airbag 4.708,- DM

## Minimum risk

safety & security level

cooling concept , system design

best possible operation conditions @ the specific location

Product / component specifications

SoO

Spare part availability

Speed of response & Aftersales Service

Manufactures competence (global and local)

Service capabilities



## Minimum cost

safety & security level

cooling concept , system design

best possible operation conditions @ the specific location

Product / component specifications

SoO

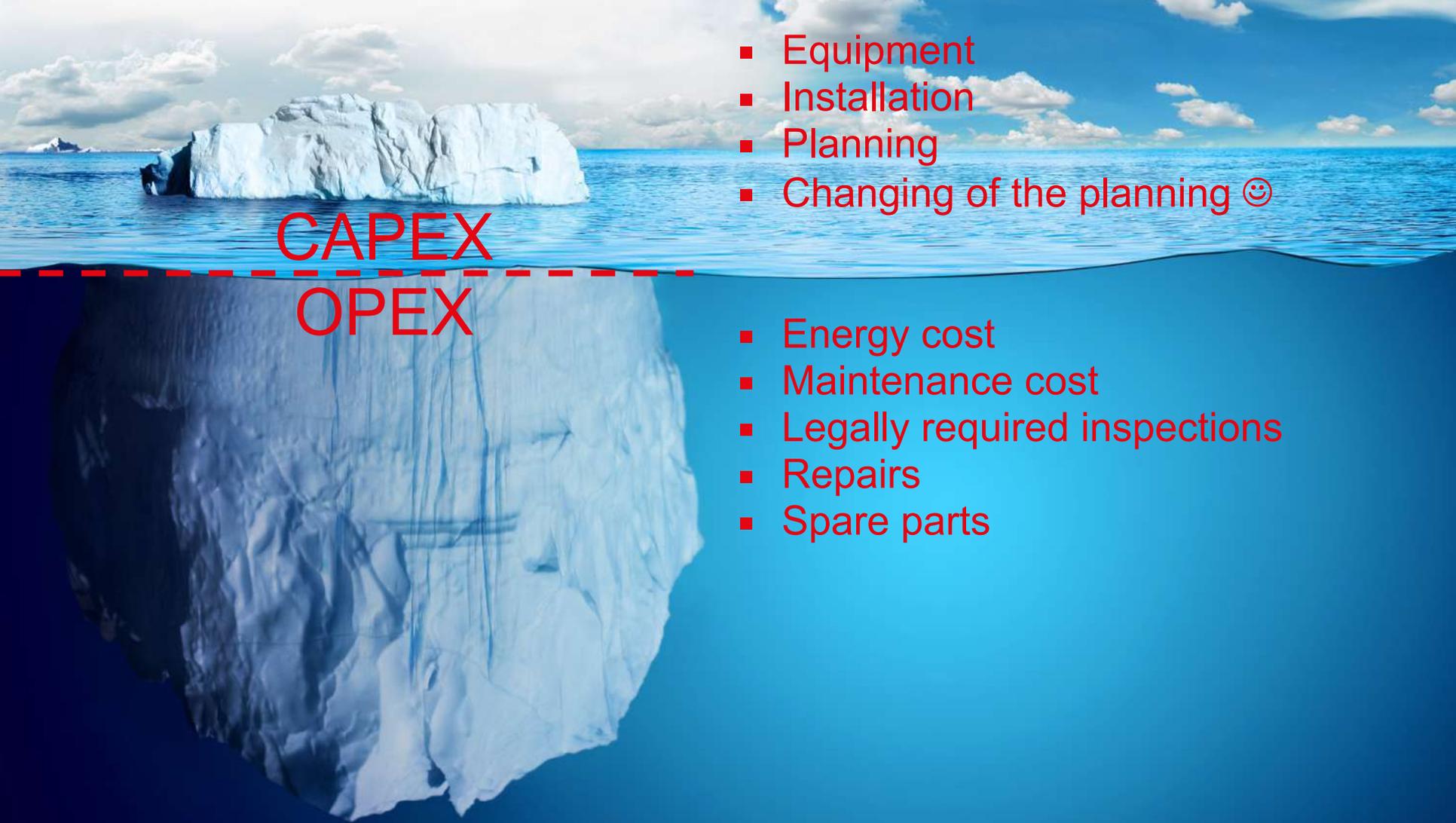
Spare part availability

Speed of response & Aftersales Service

Manufactures competence (global and local)

Service capabilities



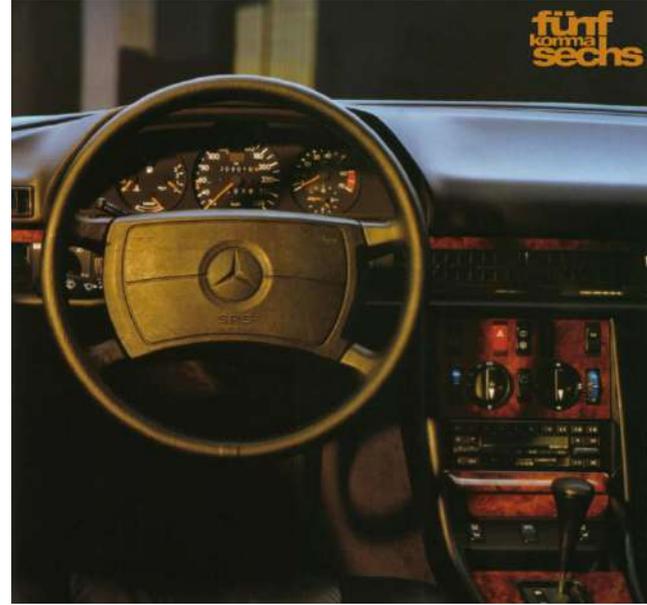


CAPEX

OPEX

- Equipment
- Installation
- Planning
- Changing of the planning 😊

- Energy cost
- Maintenance cost
- Legally required inspections
- Repairs
- Spare parts



Minimum risk & minimum cost = **customers choice**

---

# project story



How the customer explained it



How the project leader understood it



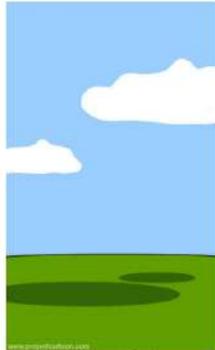
How the analyst designed it



How the programmer wrote it



How the business consultant described it



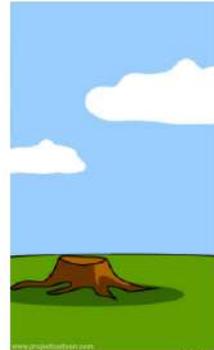
How the project was documented



What operations installed



How the customer was billed



How it was supported



What the customer really needed

# US customer swapping over to Europe

6 Locations in 5 countries in Europe – approx. 1.000 MW

US design / condition used 1-to-1 for Europe

- XXL Down flow CRAH units
    - 400 kW
    - 108.000 m<sup>3</sup>/h
    - max. dimensions 6 x 2 meters shipped and delivered in sections
    - 1 x pipe connection
    - 1 x PICV Valve
    - 1 x controller (Carel)
    - etc.
-



● 6 Locations (5 countries)

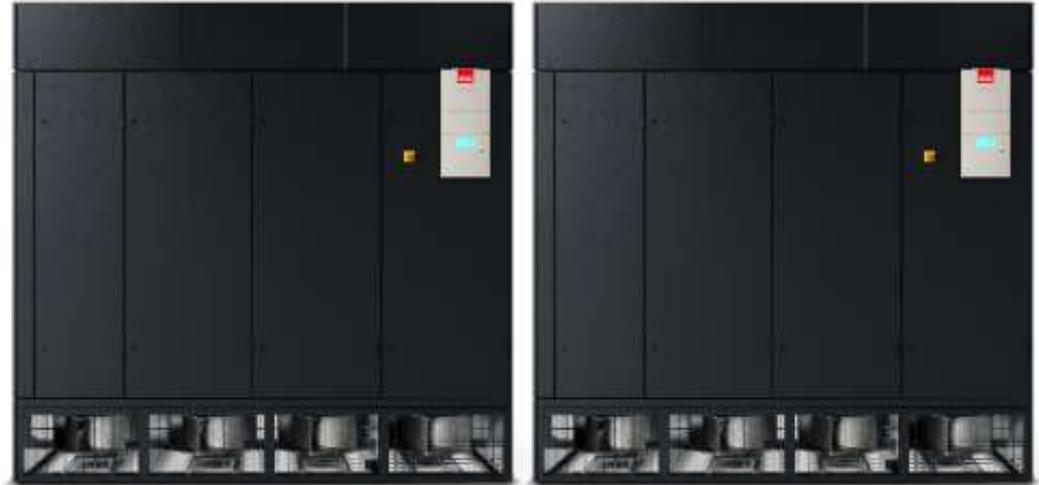
## Version 1 - best suitable version

STULZ

2 x ASH 2060 CW

+ meet all technical data

- Total length 6,22 meter
- 2 x PICV Valve
- 2 x Stulz controller
- 2 x Piping connection



Unit size 7 (3.110mm)

Unit size 7 (3.110mm)

## Version 2

STULZ

2 x ABH 1750 CW

+/- meet all technical data

- More power consumption
- Special coil

+ Total length 5,10 meter

- 2 x PICV Valve
- 2 x Stulz controller
- 2 x Piping connection



Unit size 5 (2.550mm)



Unit size 5 (2.550mm)

2 x ASH2060CW

- + meet all technical data
- +/- Total length 6,22 meter
- + 1 x PICV Valve
- +/- 1 x Stulz controller
- + 1 x Piping connection



# Tender phase – a few assumptions....

- Customer was opening up the design criteria during the tender phase
- We offered a special unit with special piping, 1 x large PICV (later in the Stage 2 valves)
- The customer was looking for a two or three supplier strategy.
- Only one bidder fulfilled their criteria's and was awarded for the first phases

## **Main focus:**

- low cost + quick delivery
-



● 6 Locations (5 countries)

The selected supplier is not in all the countries present with its service network

● Stulz Offices  
5 Stulz Subsidiaries  
1 Partner

A grayscale world map with numerous small white dots and squares scattered across the continents, representing global locations. The text is overlaid on the left side of the map.

22 subsidiaries  
More than 140 partners worldwide  
2,400 employees

---

# Minimum risk & minimum cost

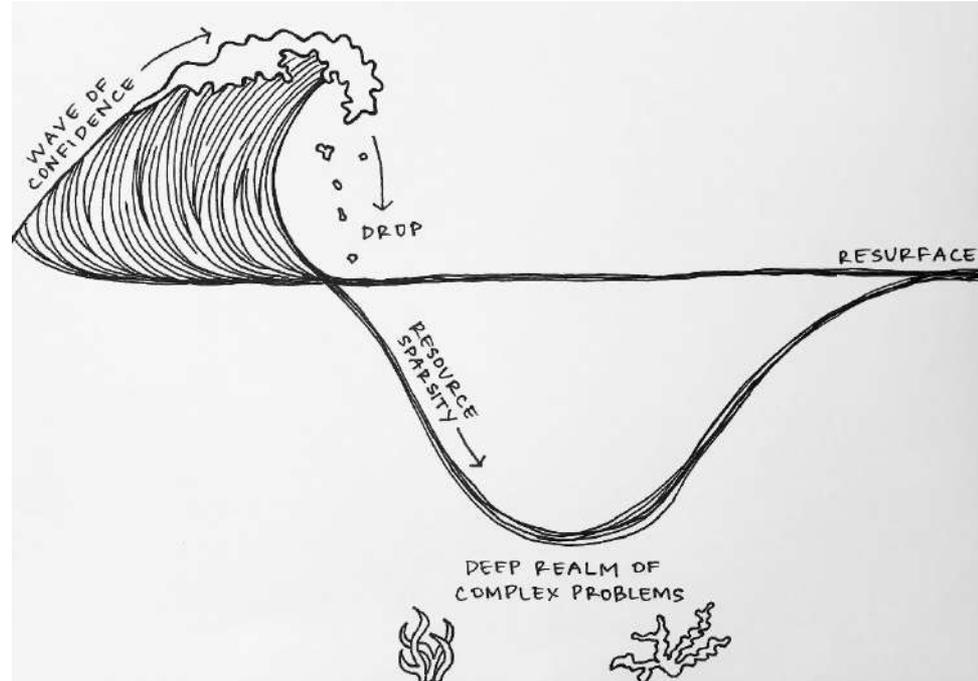
RISK		COST
OK	safety & security level	OK
OK	cooling concept , system design	OK
OK	best possible operation conditions @ the specific location	?
OK	Product / component specifications	?
?	SoO	?
?	Spare part availability	\$
?	Speed of response & Aftersales Service	\$
?	Manufacturers competence (global and local)	???\$
?	Service capabilities	\$\$\$

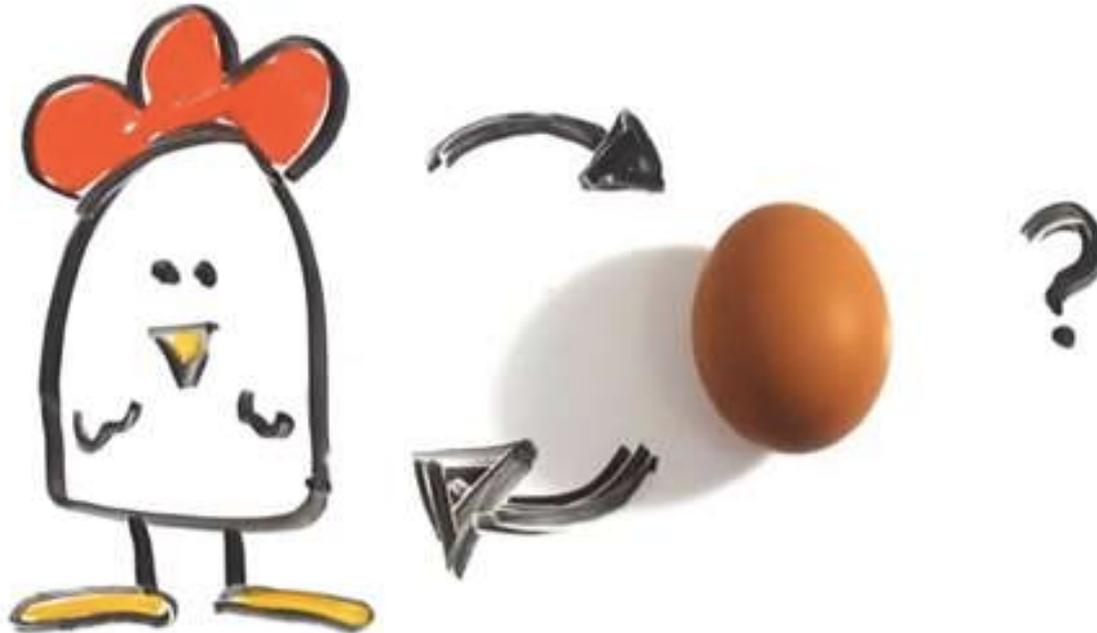
# Learning curve....

NOWADAYS, the customer is realising Projects with us.

## Main focus:

- Time to market
- Response time
- Reliable information
- Project management
- Flexibility
- ...and cost 😊



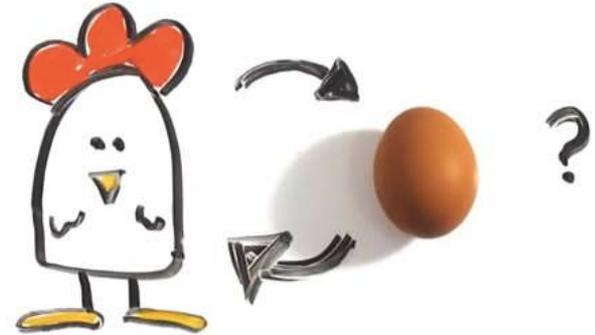


**Chicken - Egg dilemma** - what comes first the design or the product?

---

# Chicken - Egg dilemma

- During the design stage a **strategic choice** will be made
- Whatever will be decided on availability, technology, budget, time line etc., has a direct impact on what the customer will get.
- Risk and Cost factors have a inversely proportional impact on each other
- Deep and detailed **competence** can reduce both



# Competence

STULZ



# Product competence – CRAH / CRAC

**STULZ**



# Product competence - Chiller

**STULZ**



# Product competence – Air Handling

STULZ



# Product competence – shelter & cabinet cooling

**STULZ**



# Product competence – options & customizing

The logo for STULZ, consisting of the word "STULZ" in white, bold, uppercase letters on a red rectangular background.

## Operational safety/transparency options:

- Dual power supply
- Water/Fire/Smoke sensors
- UPS-buffered controller
- Differential pressure control
- Supply air and delta T control
- Calculation/display of airflow, cooling capacity and EER
- Connection to BMS systems

## Hydraulic options:

- Pressure independent control valves
- Different possibilities of pipework connections

## Free Cooling options:

- FCP (FreeCool Plenum) for Direct Free Cooling
- DFC (Indirect Dynamic Free Cooling) for CW2

## Customized Options:

- Custom Coils, valves, piping, hydraulic components
  - Custom unit sizes
  - Custom Controls, electrical options
-

# Global & Local know-how

STULZ

**11 production plants**

22 subsidiaries

More than 140 partners worldwide

**2,400 employees**

Turnover 450 million euros

---

# Global Production plants

**STULZ**

STULZ Air Technology  
Systems INC.  
Frederick/MD, USA

STULZ Technology  
Integration Ltd.  
Oxford, England

STULZ GmbH  
Headquarters  
und Production  
Hamburg, Germany

STULZ Digitronic Software GmbH  
Hünstetten-Wallbach, Germany

STULZ Air Technology and  
Services Shanghai CO. LTD  
Shanghai, China

STULZ Air Technology  
Systems INC.  
Dayton/TN, USA

STULZ Tecnivel S.L.  
Madrid, Spain

STULZ S.p.A.,  
Valeggio s. M. (VR), Italy

Stulz Cooling & Heating  
Engineering Hangzhou Co., Ltd.  
Hangzhou, China

STULZ Brasil  
Arcondicionado Ltda  
São Paulo-SP, Brazil

STULZ CHSPL (India) P.Ltd.  
Mumbai, India

# Global & Local know-how

The logo for STULZ, consisting of the word "STULZ" in white, bold, uppercase letters on a red rectangular background.

- Global Production plants
  - reduced shipping, local / redundant supply chains
- Stulz KAM Team
  - global coordination, customer specific requirements
- Stulz Cloud application team
  - Cooling concepts, special designs
- Business unit chiller
  - Chiller / hydraulic concepts
- Stulz network 11/22/140
  - worldwide country specific knowledge
- Service
  - worldwide factory certified technicians

## TIME TO MARKET

---

# Global & Local know-how

- planning – implementation –
  - commissioning – support –
  - service – callouts – experience –
-

# Global & Local know-how

RISK		COST
	safety & security level	
	cooling concept , system design	
	best possible operation conditions @ the specific location	
	Product / component specifications	
	SoO	
	Spare part availability	
	Speed of response & Aftersales Service	
	Manufactures competence (global and local)	
	Service capabilities	

---



**STULZ**



**THE WHOLE RANGE OF COOLING. FROM ONE SINGLE SOURCE.**

---