



HUBER Solstice®

General presentation

www.huber.de

www.youtube.com/user/HuberTechnology

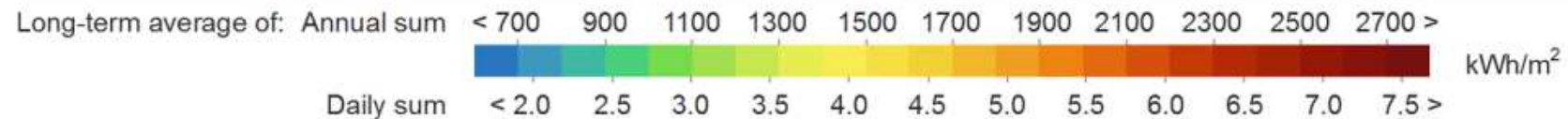
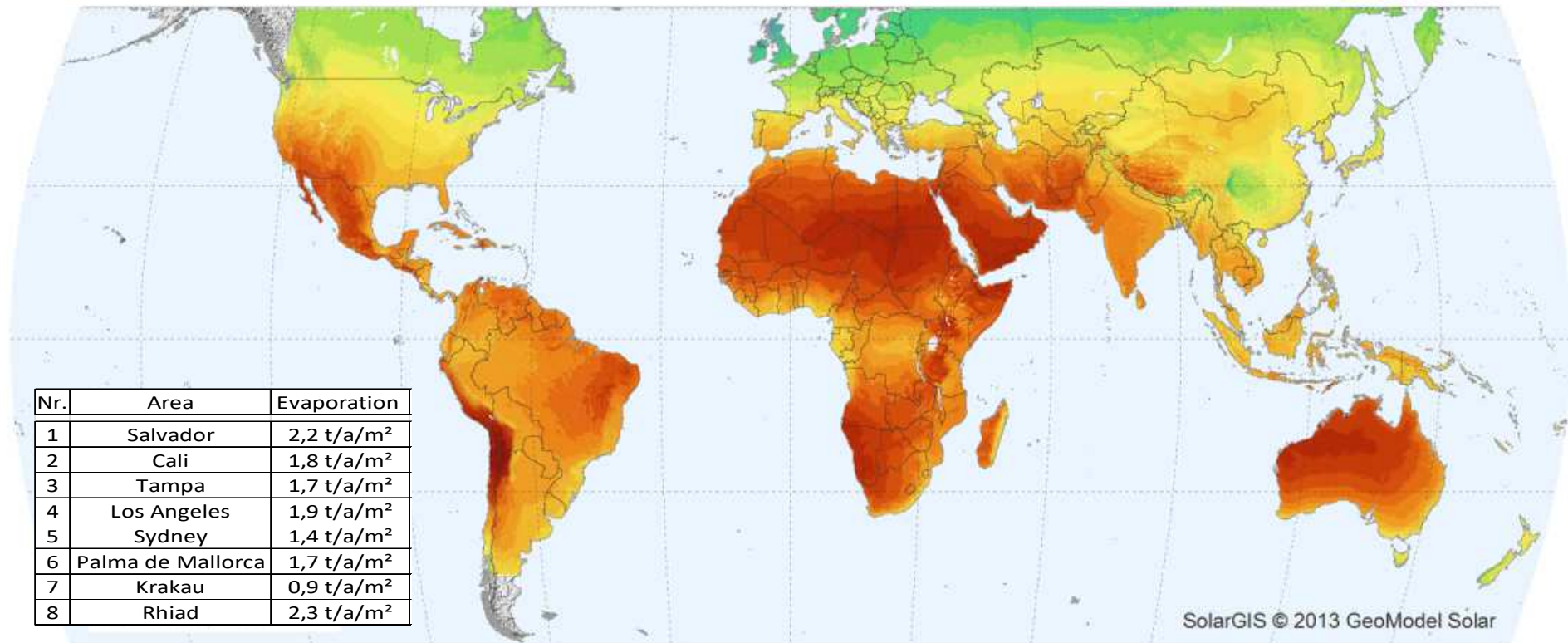
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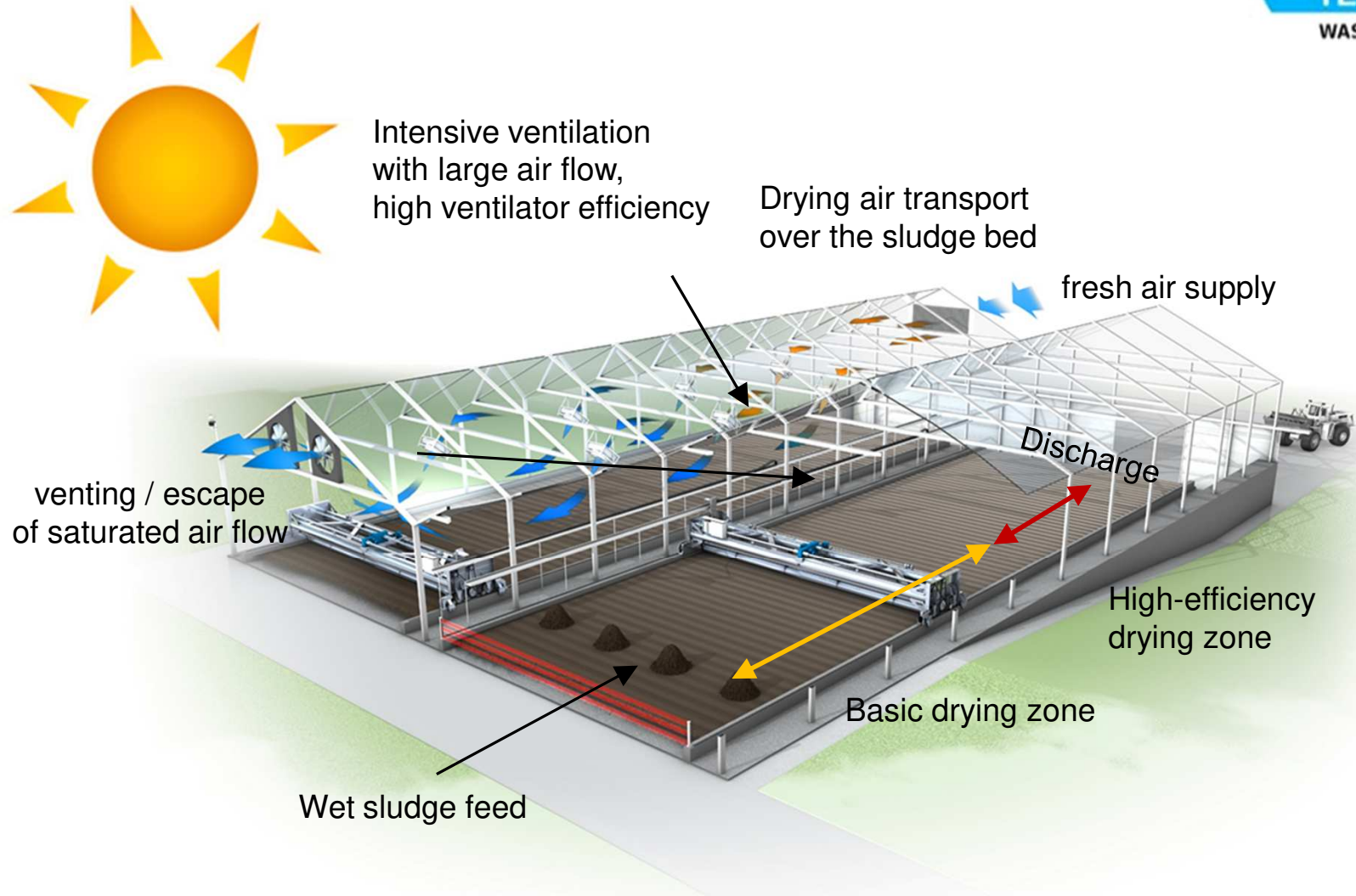
August 2020

WORLD MAP OF GLOBAL HORIZONTAL IRRADIATION

GeoModel
SOLAR



Sewage sludge drying with solar energy

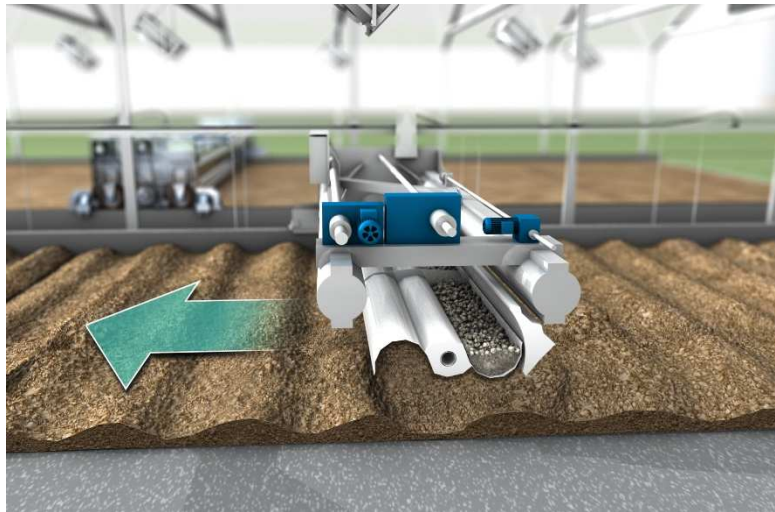


Animation video: <https://www.youtube.com/watch?v=gOkKQhmA4uM&feature=youtu.be>

Best mixing and aeration of the sludge

- ⇒ High sludge aeration and mixing capacity of 1000 m³/h (volume of sludge moved)
- ⇒ Intensive sludge turning – each individual sludge grain is moved over a distance of 1.5 m during one sludge turnover cycle
- ⇒ 99% of the sludge bed is moved





Transport without turning – possible transport of dry sludge to the start position

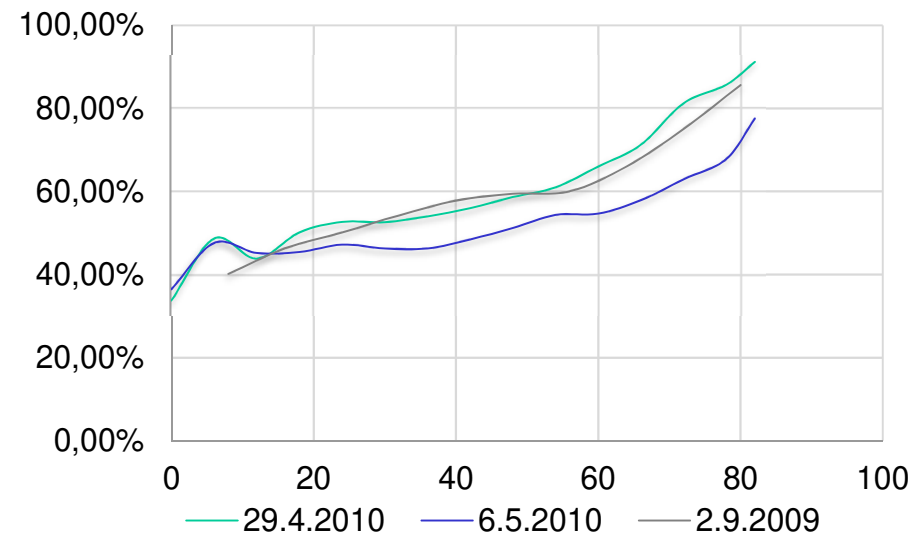


*Back mixing: quick transfer
Into a stable condition due to the higher drying degree*

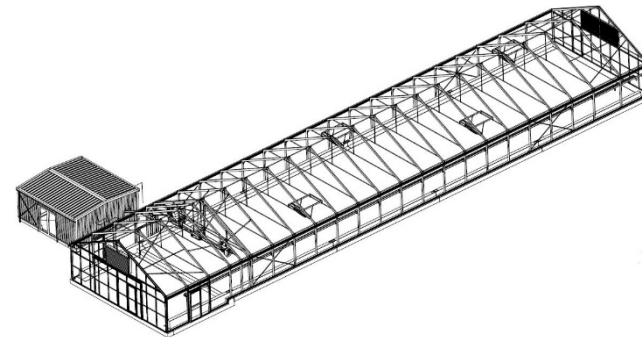
Backmixing

- ➔ No problems with “pasty or sticky” sludge
- ➔ Creates granular sludge structure
- ➔ Prevent big sludge agglomerates

Dry residue in greenhouse



Feeding and discharge from one gable side



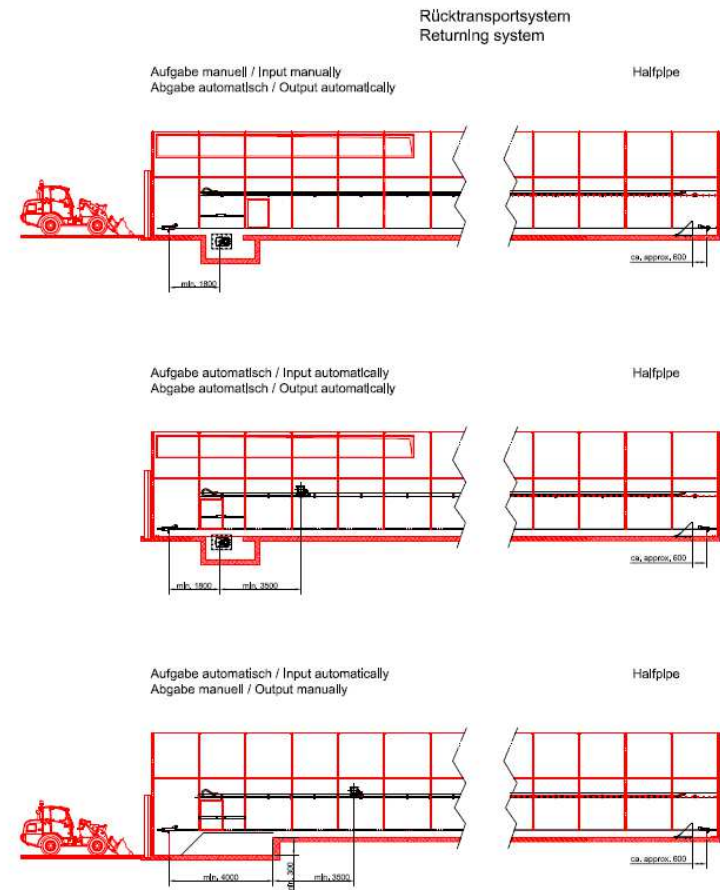
Example Freystadt – only one entrance needed

Optional: Feeding and discharge from one gable side

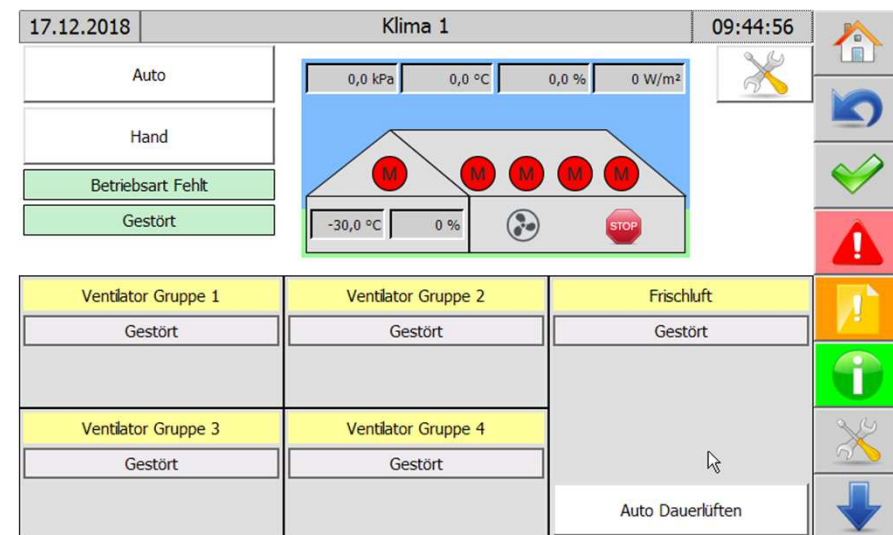
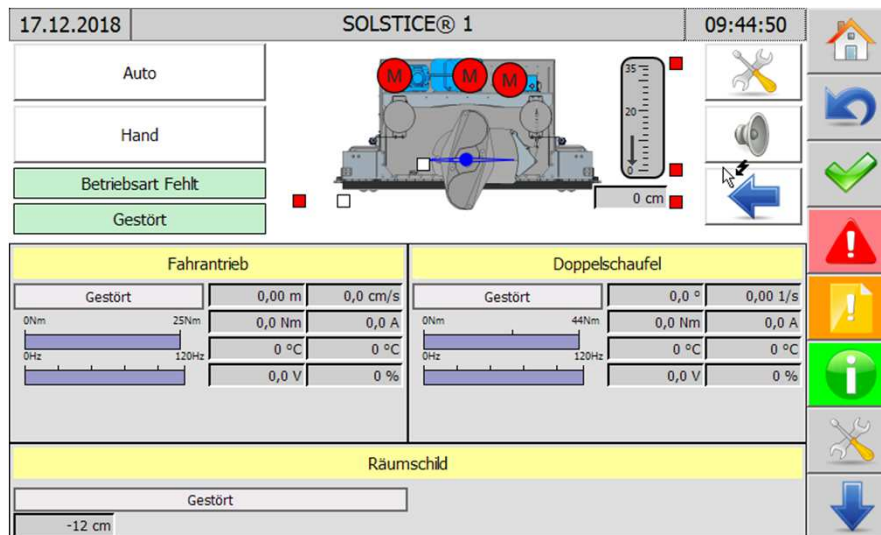
- Solstice sludge turning device brings the dry granulate with its shovel back
- Only one entrance to the drying hall needed
- Less infrastructure, less area

Unique applications for feeding and discharge

Options by wheel loader of screws in various kind of set-ups



- ➔ **Easy monitoring** of all parameter
- ➔ **Best Visualization** of the Operating Program
- ➔ **Easy and simple adjustments** of all values
- ➔ Provides **rapid feedback** of critical adjustments
- ➔ **Online connection** via internet



Designs & constructions for the greenhouse



Solar Sewage Sludge Drying System

Bahr El-Baqar Treatment plant



Important Values for SRT Layout



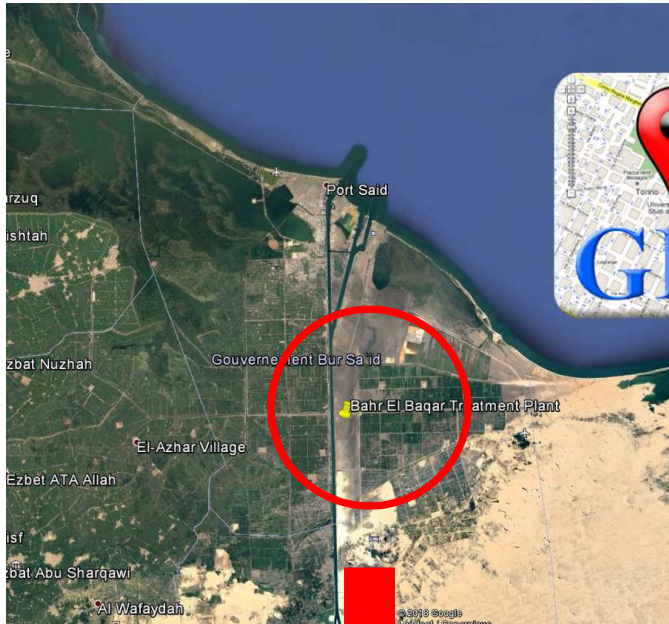
Given parameters for SRT lay-out

	Bahr El-Baqar
$Q_{\text{wet sludge}}$ [m ³ /anno]	475,000 t/anno*
DR content _{in} [%]	≥ 24 %
DR content _{out} [%]	≥ 75 % (annual average)*
Geographic location	Latitude 31°00'28.9"N Longitude 32°19'28.8"E
Additional heat power [kW]	No

*Depending on weather conditions, operator performance, maintenance, etc.

World Wide Biggest Solar drying facility

➔ Bahr El-Baqar Treatment Plant – 5,000,000 m³/day



Design data Solar drying:

Sludge amount max: 475,000 t/a

Sludge type: water treatment sludge

DS output: ≥ 75 % (annual average)

Type of dryer: 128 pc. HUBER Sludge turner SOLSTICE® 11

Length of Dryer: 100 m

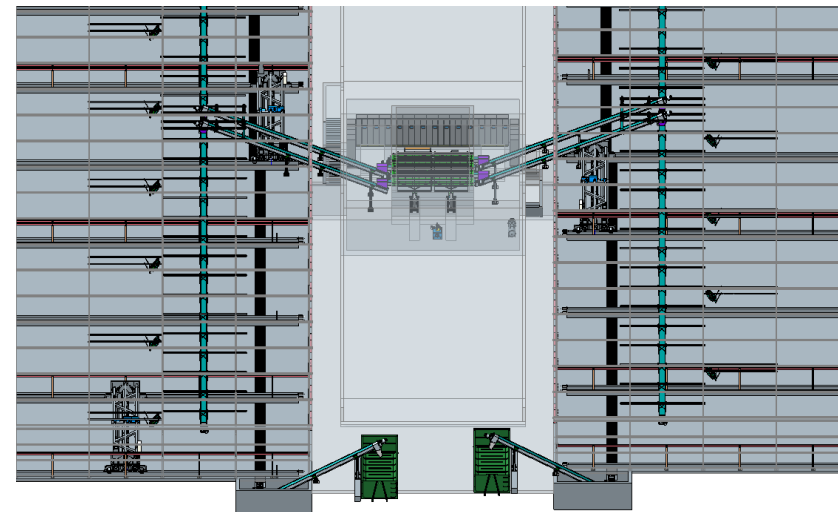
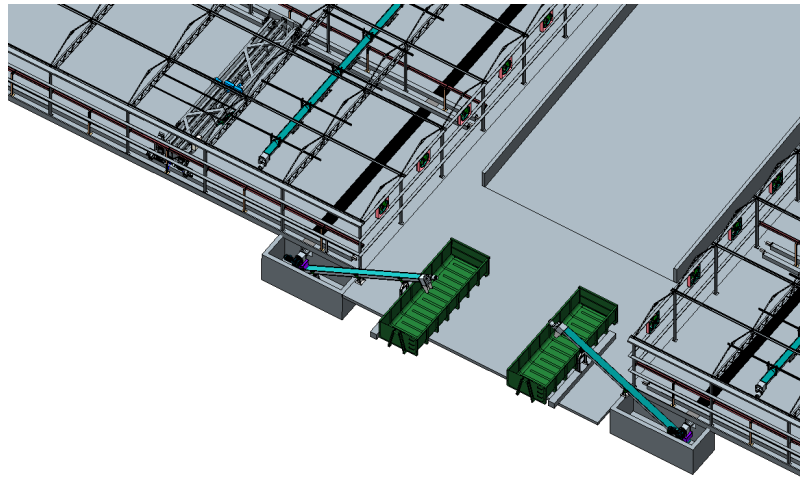
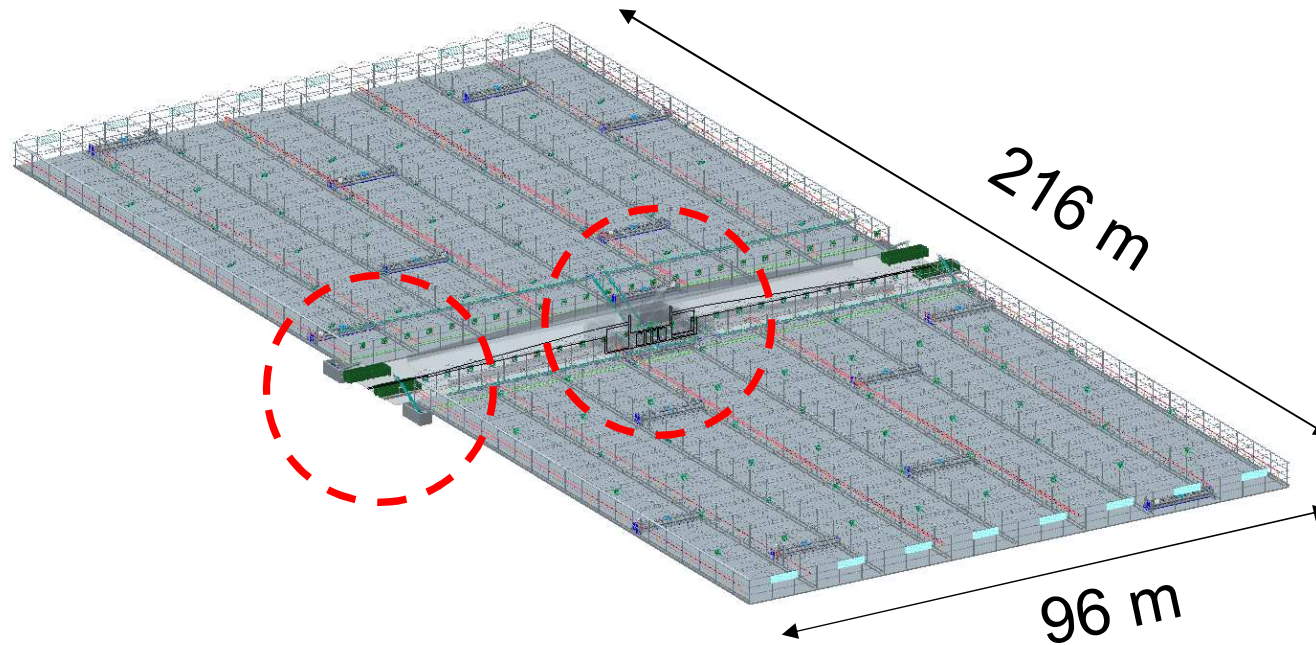
Loading: fully automated feeding & disposal

Total drying surface: **approx. 16 hectare**



Overall Concept – FINAL RESULT

(1) Train – 16 x single sludge lines (approx. 2 hectare) – (1) feeding bunker



Fully automated loading & disposal

- 
- ➔ More than 15 years of experience
 - ➔ 72 Projects
 - ➔ More than 115 Machines worldwide in operation
 - ➔ More than 200.000 t/a sludge is treated by the HUBER SRT

Thank you for your attention

