

# **Innovative Precast Technologies**

## **Machinery, Software & Services - Hollow Core Slab Design**

By

Daniel Breitbach (Director of Sales International)  
Mallory Vervloet (Area Sales Manager)

**PEPSCON**  
2022

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**270 Mio. €**  
Turnover 2021



**700** employees  
in the group



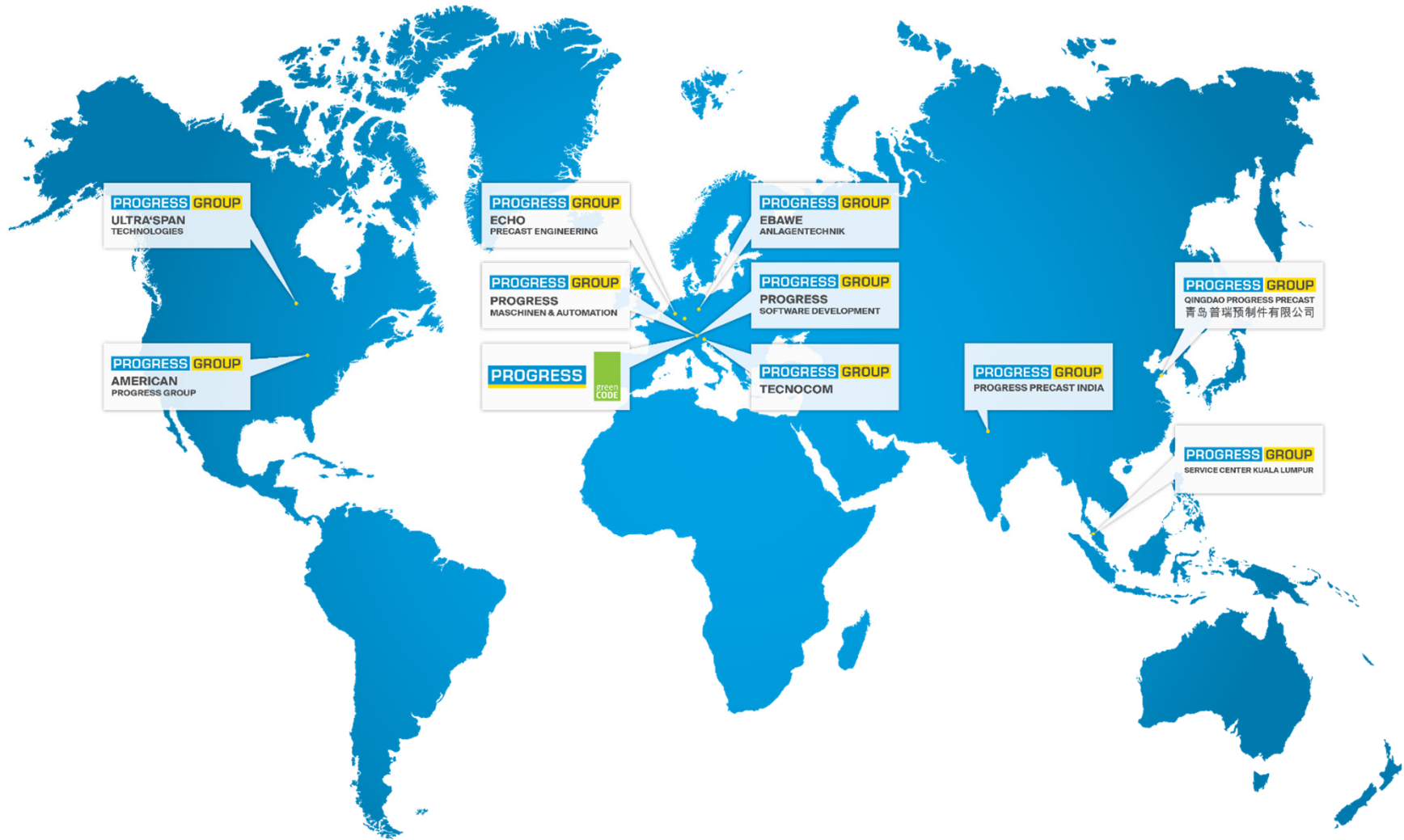
**80** countries  
with customer relations



**1** partner  
for precast concrete plants

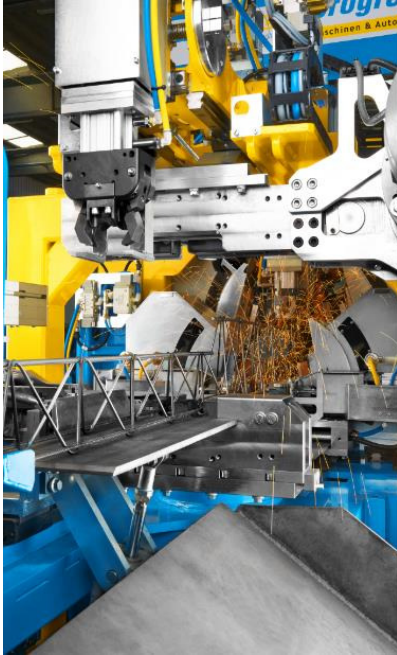
————— COMPLETE —————  
**PRECAST TECHNOLOGY**  
————— WORLDWIDE —————

# PROGRESS GROUP



## Business Segments

**PROGRESS GROUP**



### **Mechanical Engineering**

Technology supplier for the precast and rebar industry



### **Software Development**

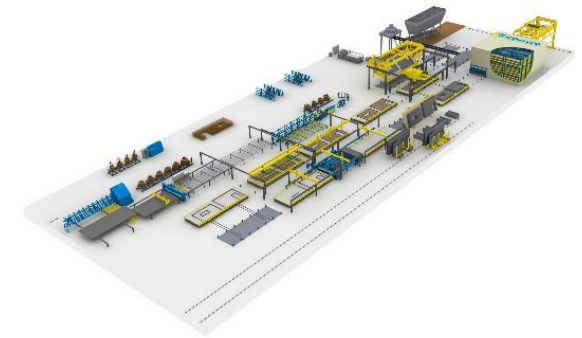
Development of software solutions for the precast and rebar industry



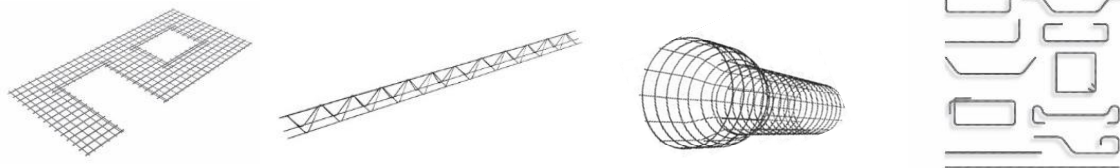
### **Building Industry**

Planning and production of precast concrete

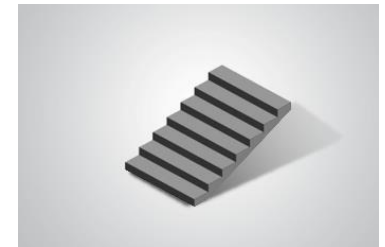
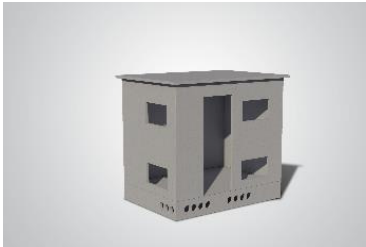
Carousel plants with automated transport of the pallets from one working station to the other.



Automated full-range solutions for the production of tailor-made reinforcement.



Machinery and equipment for the stationary production to achieve an extreme flexibility even on very limited production areas.



Machinery and plants for pre-stressed concrete products, especially hollow core slabs

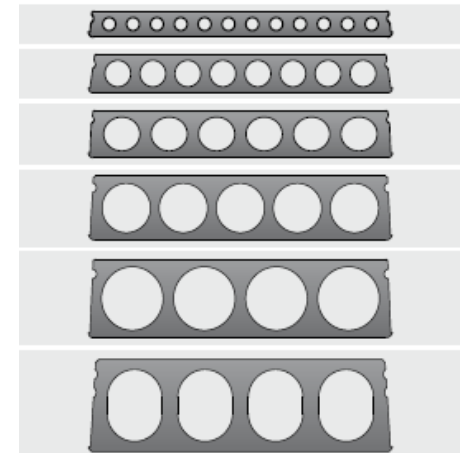




# UltraSpan Technologies

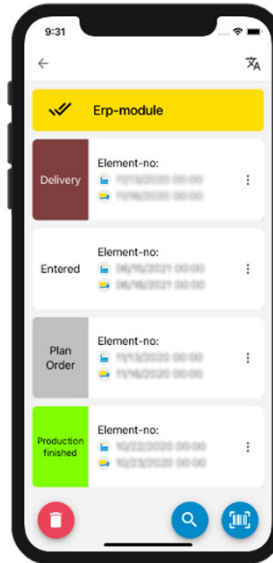
**PROGRESS GROUP**

Machinery & plants for pre-stressed concrete products, including long bed wall panel & double tee



# Progress Software Development

Software solutions for the precast concrete and rebar industry



# Progress Software Development

**PROGRESS GROUP**

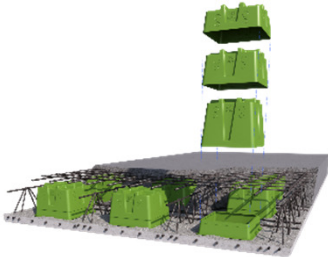
Software solutions for the precast concrete and rebar industry

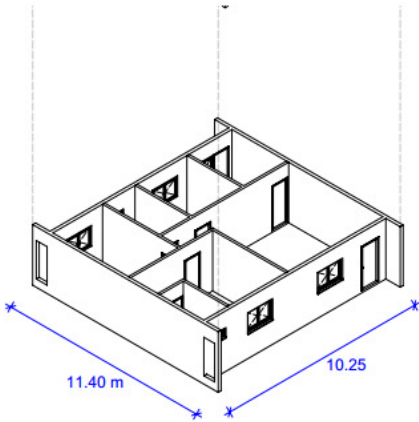
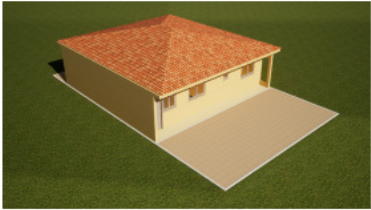


# Building Systems

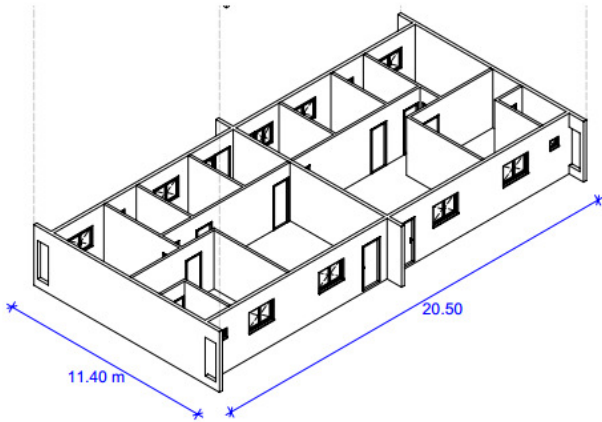
## PROGRESS

Production of precast elements and erection of buildings.





SINGLE HOUSE - 80 sqm



DOUBLE HOUSE - 80 + 80 sqm

## QUANTITIES PRECAST WALLS

Material	Description	Thickness [mm]	Quantity	Unit
	Ext. Precast Concrete (18.300*2.910*0.100)	10,0	4,685	m <sup>2</sup>
	Ext. Precast Concrete (4.940*2.910*0.100)	10,0	4,628	m <sup>2</sup>
	Ext. Precast Concrete (18.300*2.910*0.100)	10,0	4,796	m <sup>2</sup>
	Ext. Precast Concrete (18.300*2.910*0.100)	10,0	4,796	m <sup>2</sup>
<b>Total Ext. Precast Concrete</b>			<b>18,885</b>	<b>m<sup>2</sup></b>
	Int. Precast Concrete (7.180*2.910*0.100)	10,0	2,267	m <sup>2</sup>
	Int. Precast Concrete (4.960*2.910*0.100)	10,0	1,582	m <sup>2</sup>

Material	Description	Thickness [mm]	Quantity	Unit
	Int. Precast Concrete (3.030*2.910*0.100)	10,0	1,958	m <sup>2</sup>
	Int. Precast Concrete (4.190*2.910*0.100)	10,0	1,463	m <sup>2</sup>
	Int. Precast Concrete (2.910*1.430*0.100)	10,0	8,696	m <sup>2</sup>
	Int. Precast Concrete (2.910*1.430*0.100)	10,0	8,852	m <sup>2</sup>
	Int. Precast Concrete (1.421)	10,0	1,421	m <sup>2</sup>
	Int. Precast Concrete (3.030*2.910*0.100)	10,0	1,958	m <sup>2</sup>
<b>Total Int. Precast Concrete</b>			<b>10,447</b>	<b>m<sup>2</sup></b>
<b>Total m<sup>2</sup></b>			<b>29,332</b>	<b>m<sup>2</sup></b>

## QUANTITIES PRECAST SLABS

Material	Width	No. [m]	Quantity	Unit
	11.30 m x 0.2 m	205	3,630	m <sup>2</sup>
	11.30 m x 0.2 m	205	3,630	m <sup>2</sup>
	11.30 m x 0.2 m	205	3,630	m <sup>2</sup>
	11.30 m x 0.2 m	205	3,630	m <sup>2</sup>
	11.30 m x 0.2 m	205	3,630	m <sup>2</sup>
<b>Total Precast Slab</b>			<b>18,150</b>	<b>m<sup>2</sup></b>

## FLOORS

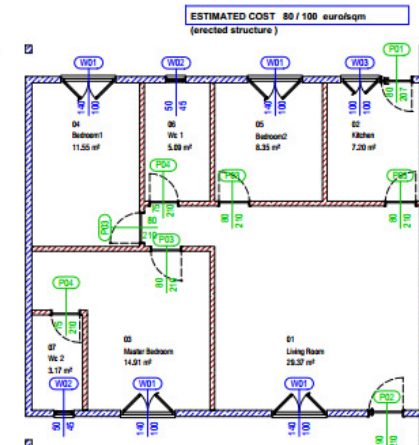
Apartment B1			
01	Living Room	29.37 m <sup>2</sup>	
02	Kitchen	7.20 m <sup>2</sup>	
03	Master Bedroom	14.91 m <sup>2</sup>	
04	Bedroom1	11.55 m <sup>2</sup>	
05	Bedroom2	8.35 m <sup>2</sup>	
06	Wc 1	5.09 m <sup>2</sup>	
07	Wc 2	3.17 m <sup>2</sup>	79.64 m <sup>2</sup>

## WINDOWS

	4 * W01	140.0 x 100.0
	2 * W02	50.0 x 45.0
	1 * W03	100.0 x 100.0

## DOORS

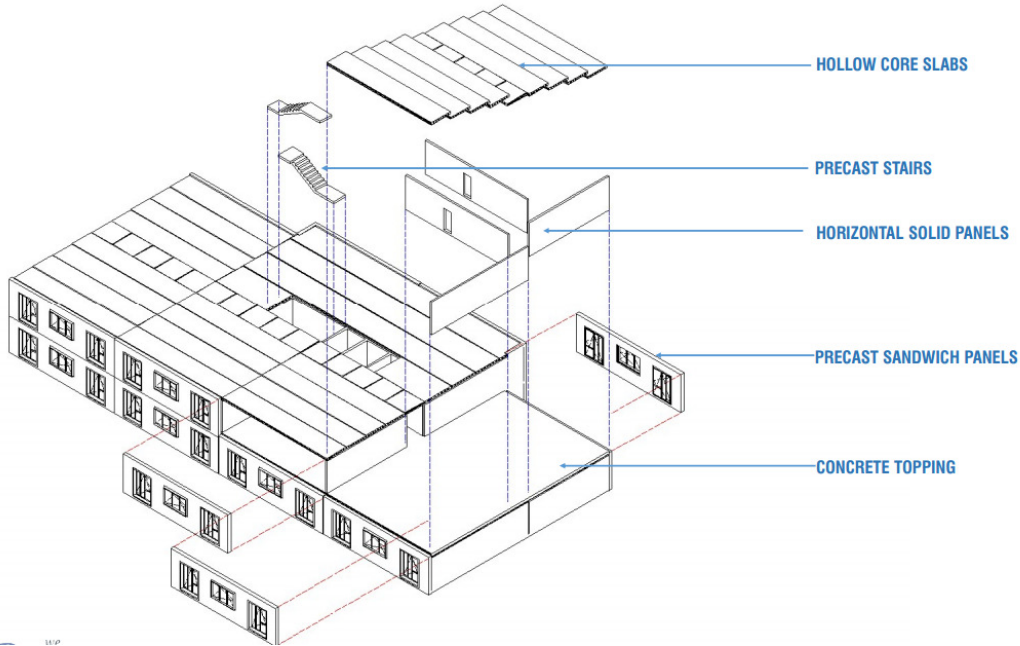
	1 * P01	80.0 x 207.0
	1 * P02	90.0 x 210.0
	4 * P03	80.0 x 210.0
	2 * P04	75.0 x 210.0



# Building Systems: Bearing Wall Systems



AXONOMETRIC VIEW - EXAMPLE 1



## CUSTOMIZED MATERIALS



WOOD

CONCRETE

PAINTED

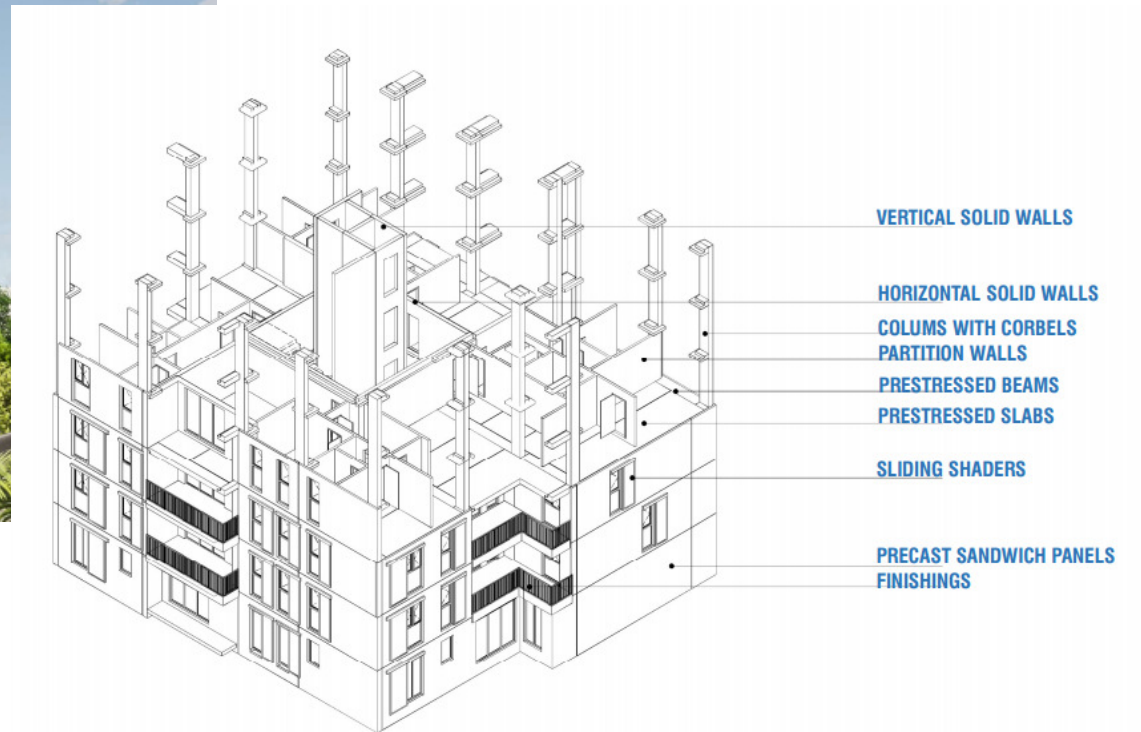
BRICK

CERAMIC

METAL



# Building Systems: Columns & Beams Structure



# Building Systems: Columns & Beams Structure

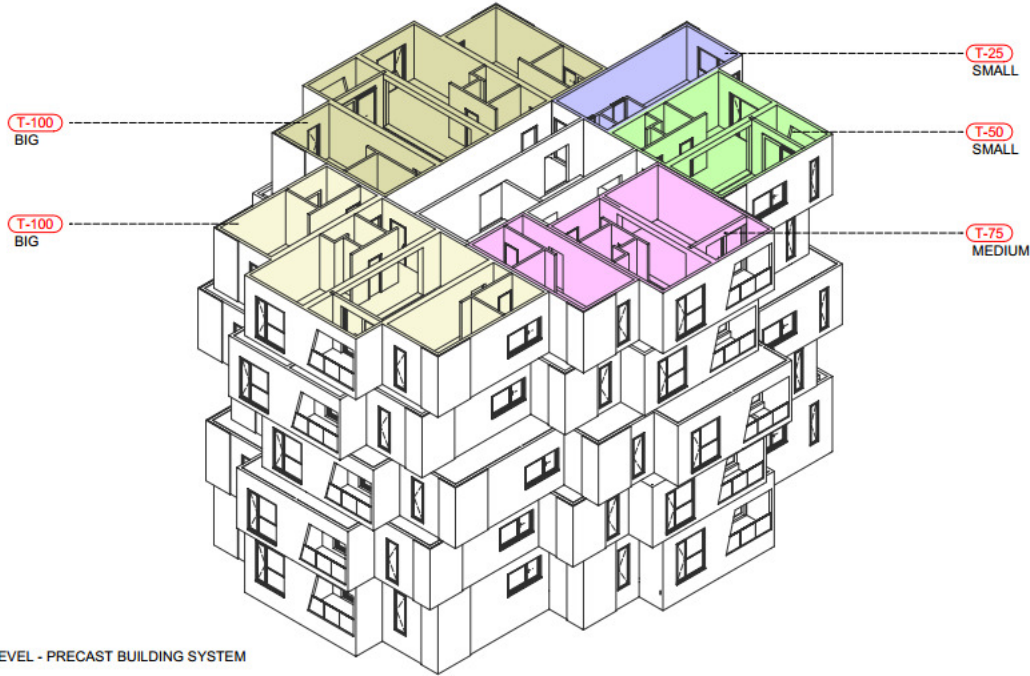
View 1: structure

View 2: facade panels

View 3: finishings



# Building Systems: Modular Housing

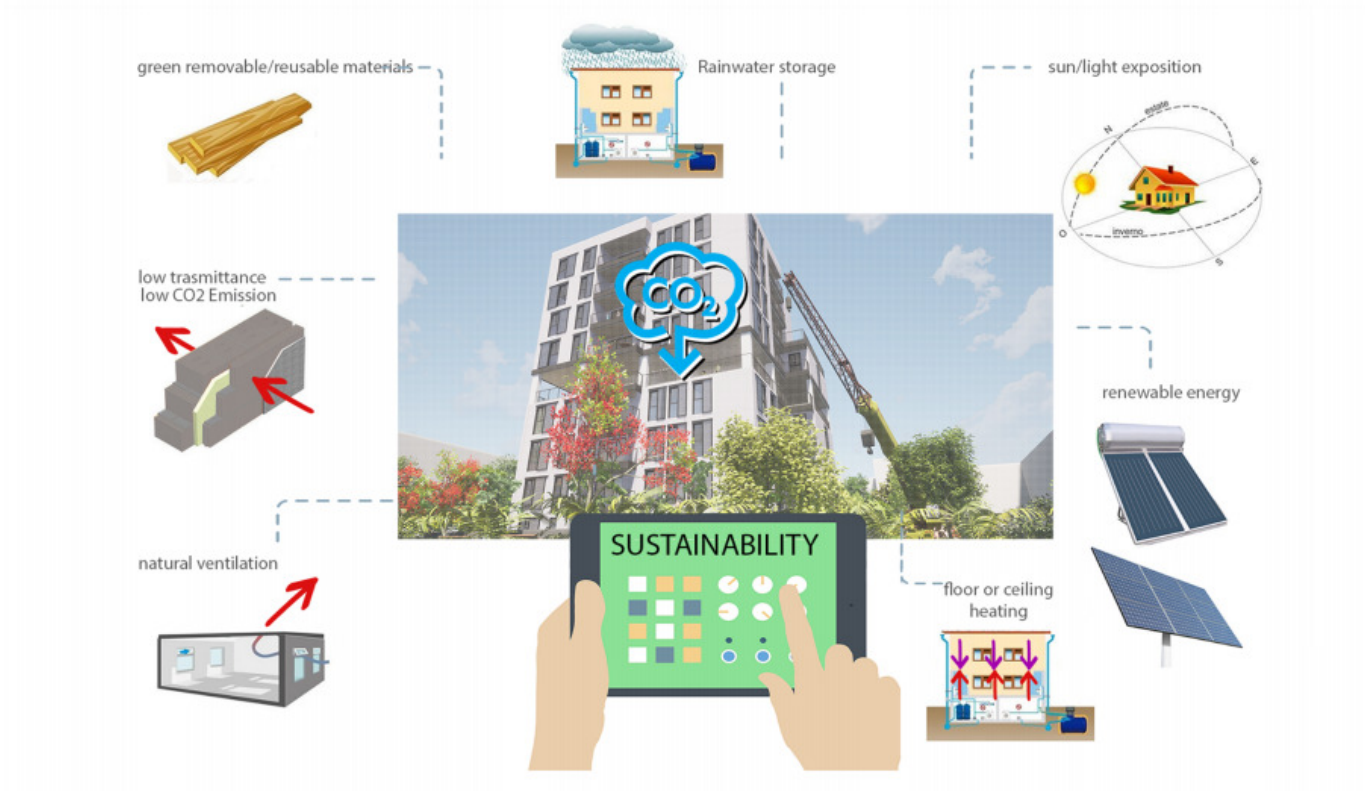


MULTI LEVEL - PRECAST BUILDING SYSTEM

# Building Systems: Modular Housing



## SUSTAINABILITY CONCEPT



# Building Systems: Clever Houses

## SMART HOME CONCEPT



# Building Systems: Environmentally Friendly



Brigade



Tata Housing

## Building Systems: Environmentally Friendly

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**PROGRESS GROUP**



Precast India – Mr. Bhat



# Building Systems: Environmentally Friendly



BG SHIRKE

## Benefits of Building with Precast Concrete

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*„Our mission is to create sustainably better living conditions for people.“*

### COSTS

- Short construction time
- Less worker
- Optimal material consumption
- Industrialization in construction

### QUALITY

- Controlled quality and production processes
- Construction independent from weather conditions
- Improved surfaces

### DESIGN

- Structural efficiency
- Architectonic freedom
- Thermic and acustic isolation

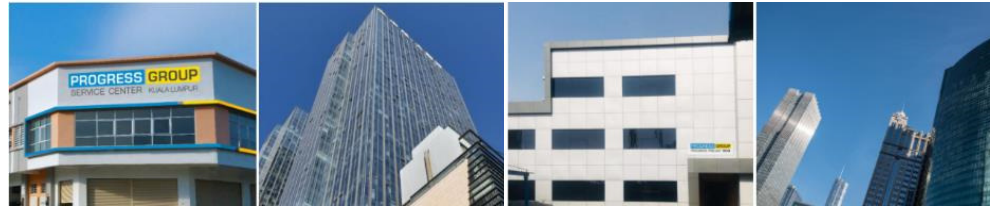
### SUSTAINABILITY

- Less waste products
- Efficient use of raw materials
- Concrete precast structures fully recyclable

## Service Center

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**PROGRESS GROUP**



Service Center in China, Malaysia, India, and the US provide a secure, fast and reliable help center for the customer and their needs.



## Progress in India: Progress Precast India (PPI)

- Progress Precast India Pvt. Ltd. was founded in 2019
- Based in Ahmedabad
- Precast Technology Production Facilities
- Numerous Projects in India have been successfully implemented
- **The aim of PPI is to provide top precast concrete solutions adapted to the needs of the Indian market and conditions.**

*It would be our pleasure to discuss your individual precast project and needs!*



Michael Schöpp  
Managing Director PPI



Kushal Jani  
Managing Director PPI



## Our Keys to Success

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**PROGRESS GROUP**



Full-range supplier due to the synergies within the group



Customized all-in-one solutions



In-house software solutions



High-quality references all over the world



Professional service worldwide

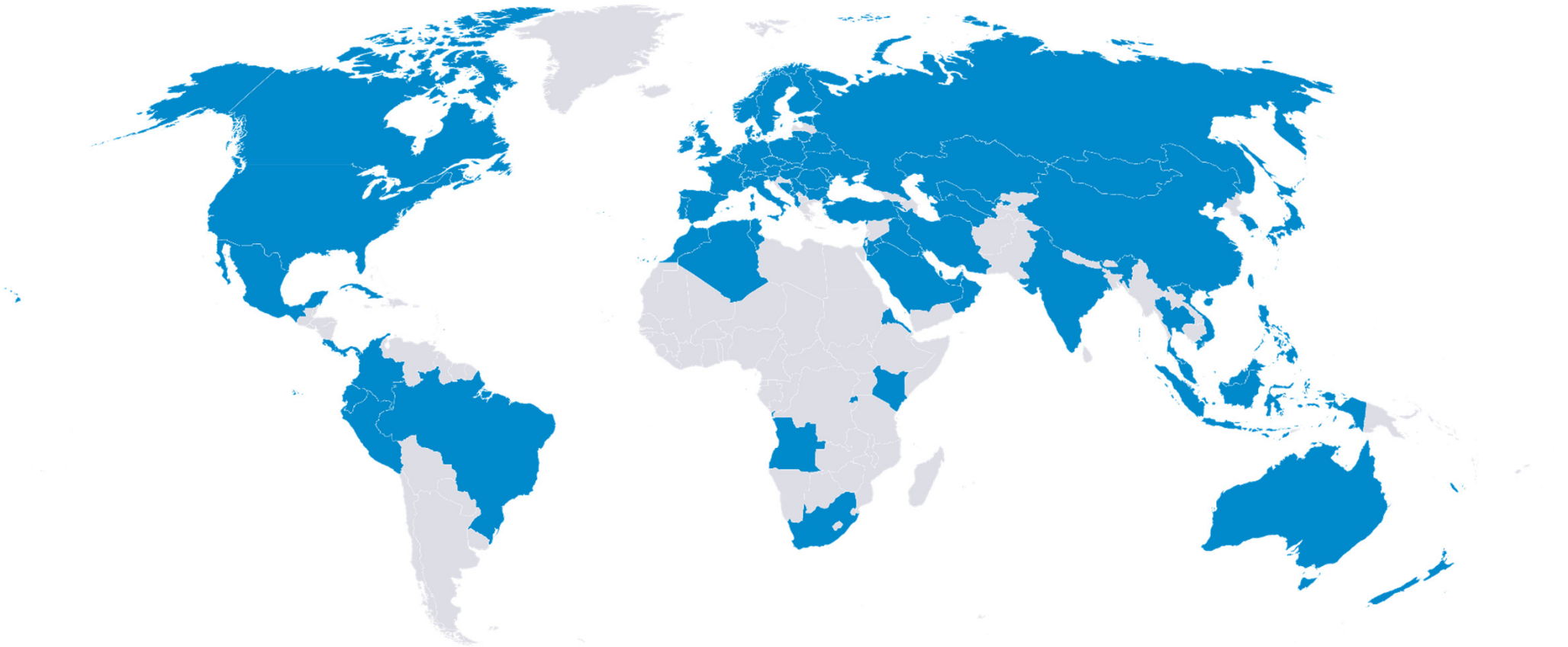


In-house precast concrete production plant

# Worldwide Markets

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■ Countries served by PROGRESS GROUP

Thank you very much for your Attention!

# Why Hollow Core?

Because of its simplicity - easy to fabricate and easy to install





## Why Hollow Core?

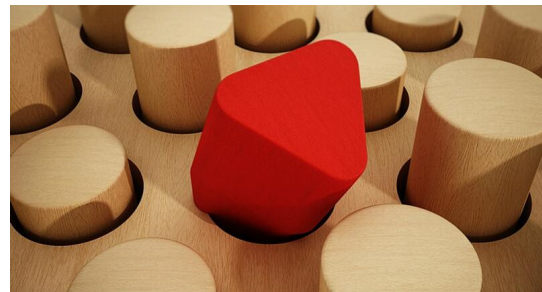
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Efficient use of raw materials with exact consumptions needs known



Exact manpower needs known



Simplicity on and off jobsite

# Why Hollow Core?

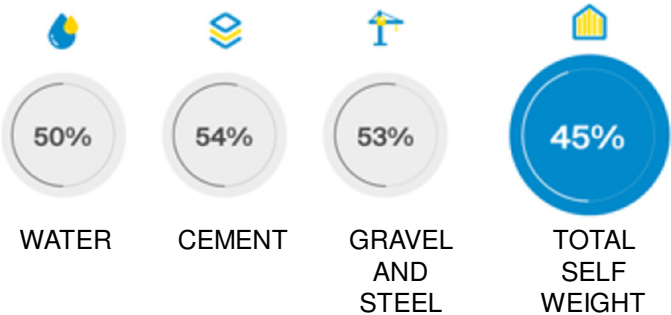
## TOTAL MATERIAL SAVING COMPARISON

Cast In-Situ floors

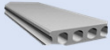



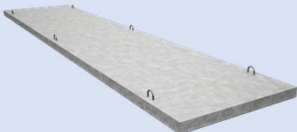
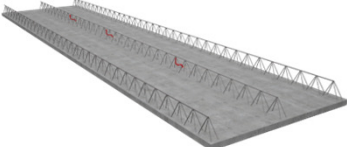
Hollow Core Slabs



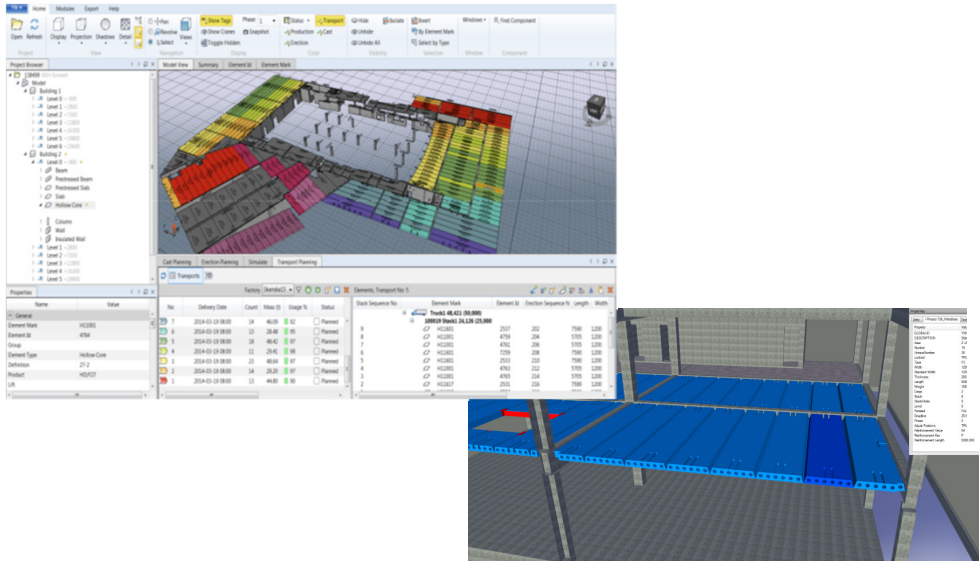
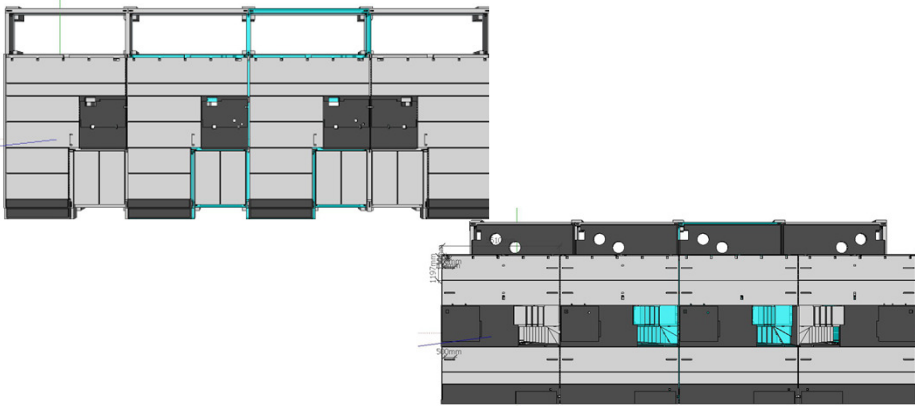
## % SAVINGS EACH MATERIAL WITH HOLLOW CORE SLABS



## Why Hollow Core?

Floor type	Max. span m	Floor thickness mm	Product width M	Product weight kN/m <sup>2</sup>
	7	120 - 180	0.3 - 0.6	2.1-3.2
	20	120 - 500	0.6 - 1.2 - 1.5 - 2.4	2.2 - 5.2
	12	175 - 355	2.4	1.2 - 1.8
	24	200 - 800	2.4 - 3.0	2.0 - 5.0
	6	100 - 250	0.3 - 0.6	0.7 - 3.0
	7	100-200	0.6 - 2.4	2.4 - 4.8

# Design



**PROGRESS GROUP**  
ECHO PRECAST ENGINEERING

**Tekla**  
A Trimble Solution

**AUTODESK**  
**AUTOCAD**

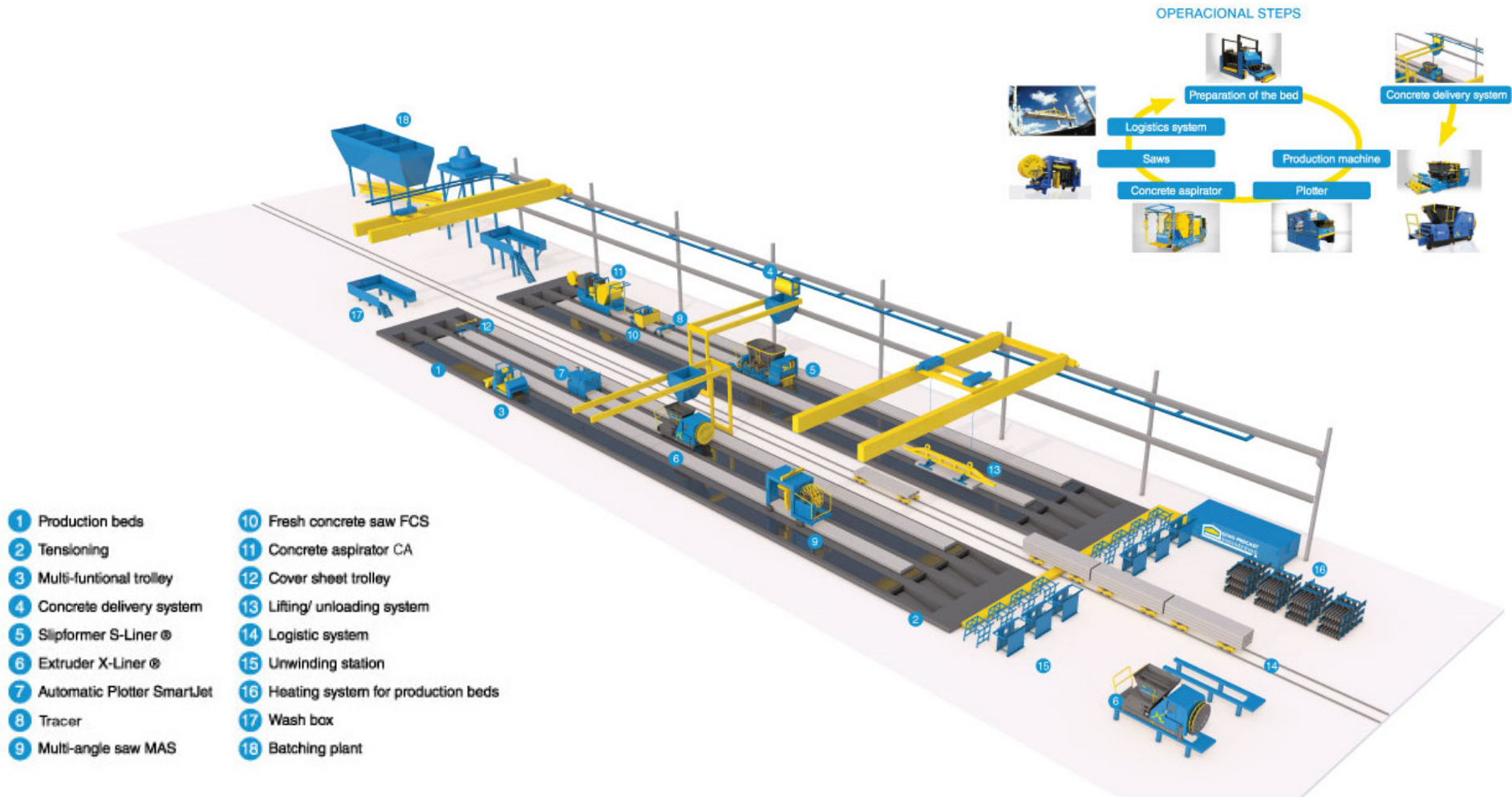
**StruSoft**

**AUTODESK**  
**REVIT**

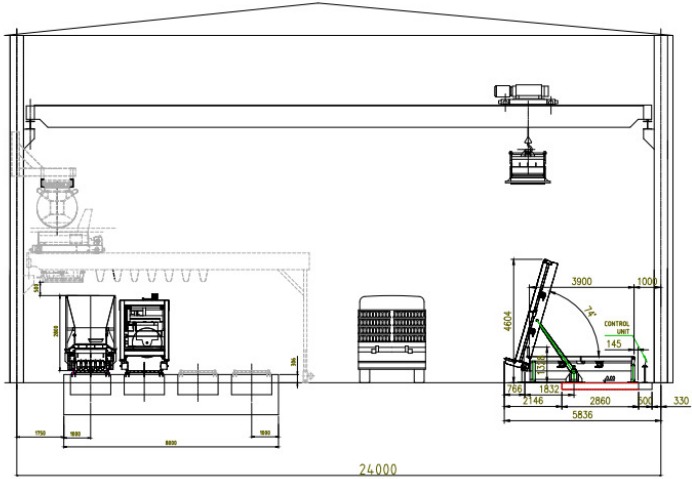
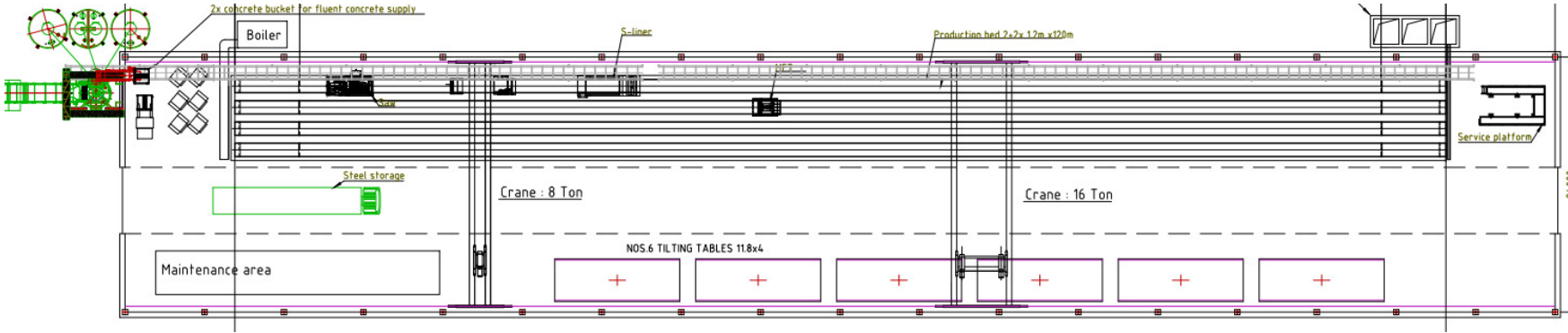
**ALLPLAN**  
**PRECAST**

**iTheses**

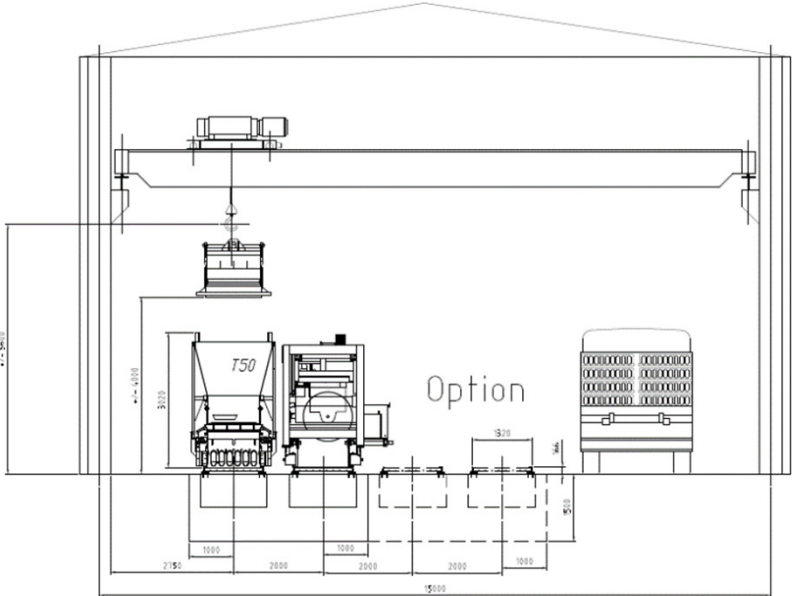
# Manufacturing



# Manufacturing

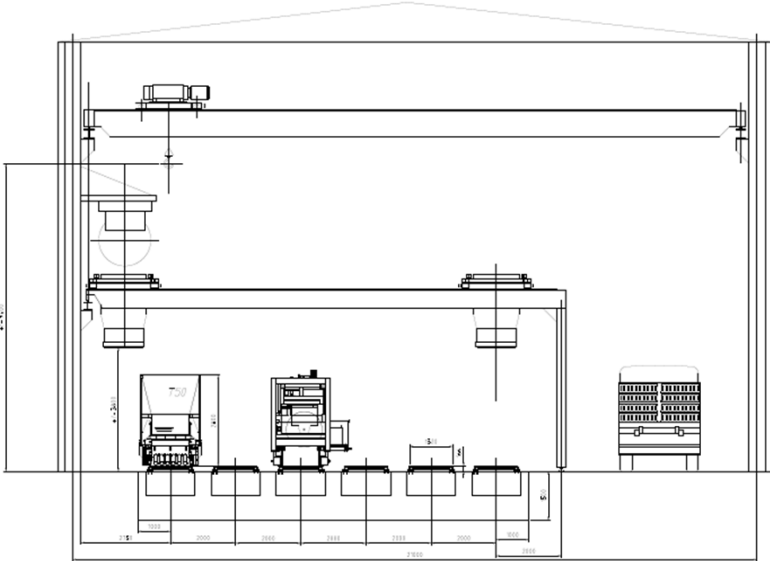


# Manufacturing



2 beds - 120 m - 1 Production machine

2 beds	from	until
m <sup>2</sup> /day	+/- 280	+/- 480

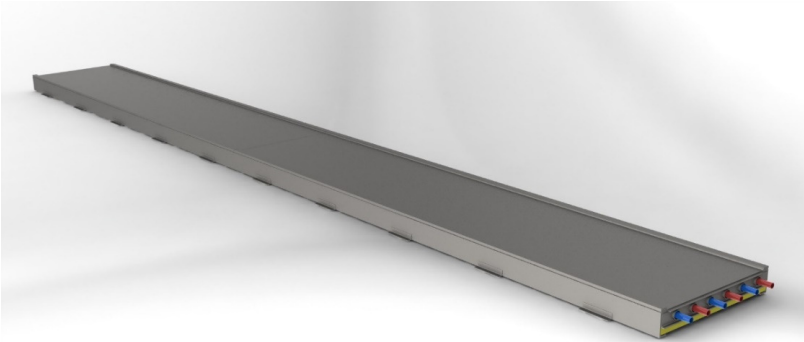


6 beds - 120 m - 1-2 Production machines

6 beds	from	until
m <sup>2</sup> /day	+/- 700	+/- 1250

# Manufacturing

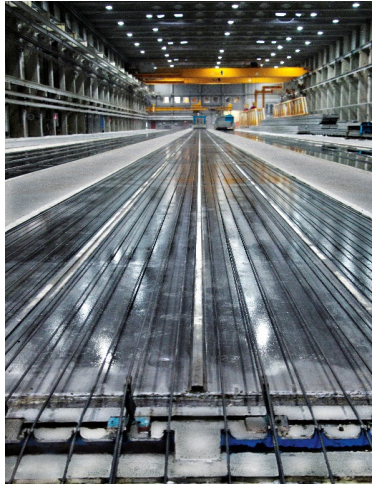
## Production beds



Cassette beds



Echo beds





# Manufacturing

## Slipformer S-Liner®

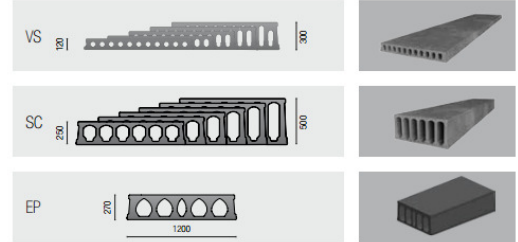
- Highly versatile – different products can be produced
- Low total cost of ownership



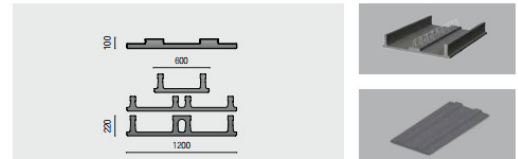
**PROGRESS GROUP**  
ECHO PRECAST ENGINEERING

### Hollow core slabs

VS • SC • EP

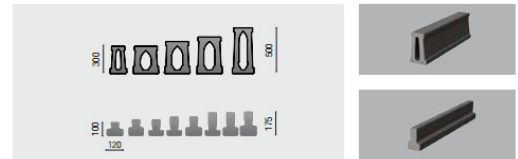


### Lattice girder floors

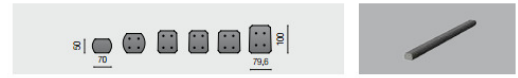


### Beams

EP, T-Beams



### Vine stakes



### Window lintels

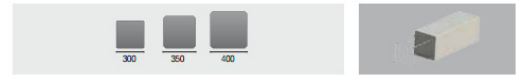


### Guttering



### Foundation piles

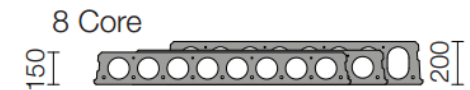
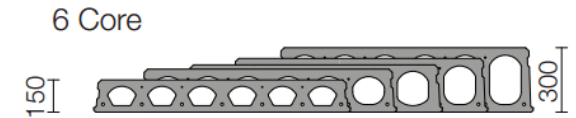
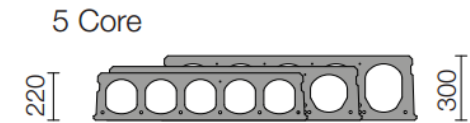
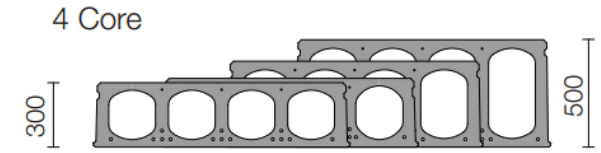
300x300 • 350x350 • 400x400



# Manufacturing

## Extruder X-Liner® FC

- Flow compaction – latest shear compaction technology
- Shark screws for better compaction and less wear
- Slabs from 15 up to 50 cm in height
- Very few maintenance parts compared to others
- Automaton – Automatic start/stop



# Manufacturing

## Sawing machines



Multi Angle Sawing Machine



# Manufacturing

## Sawing machines



Right Angle Sawing Machine



Fresh Concrete Saw



Multi Angle Sawing Machine



Cross cut saw

# Manufacturing

## SmartJet Plotter



## Manufacturing



- Making of cut-outs in non-cured concrete
- Ergonomic operation



# Manufacturing



## Manufacturing

### Concrete Delivery System – Fully automatic



Automatic ordering of concrete

Automatic unloading of concrete in the production machine



Where is automation applicable in our business?

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## Production Machine– Fully automatic

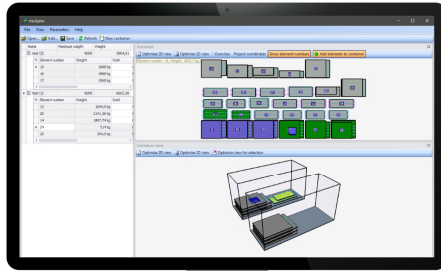


Automatic running of the production machine

# Where is automation applicable in our business?

## Software

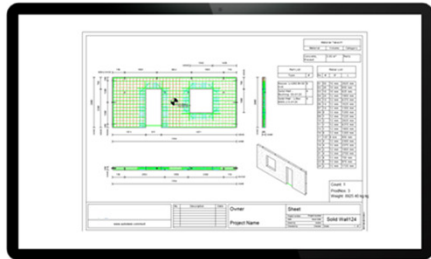
**ebosHC**



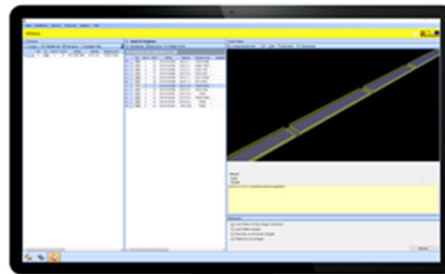
Stack planning



Storage control

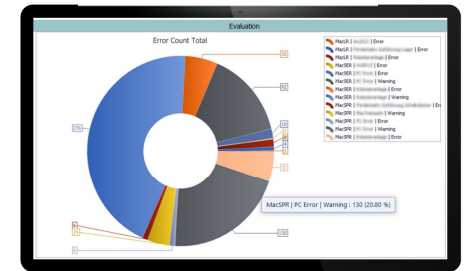


Design planning



Bed planning

**stabos**



Productivity reports

**“There is no automation without software”**

# Projects

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# Installation of hollow core



Bathroom Pods Installed

# Get in touch with us!

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**Mallory Vervloet**

Area Sales Manager

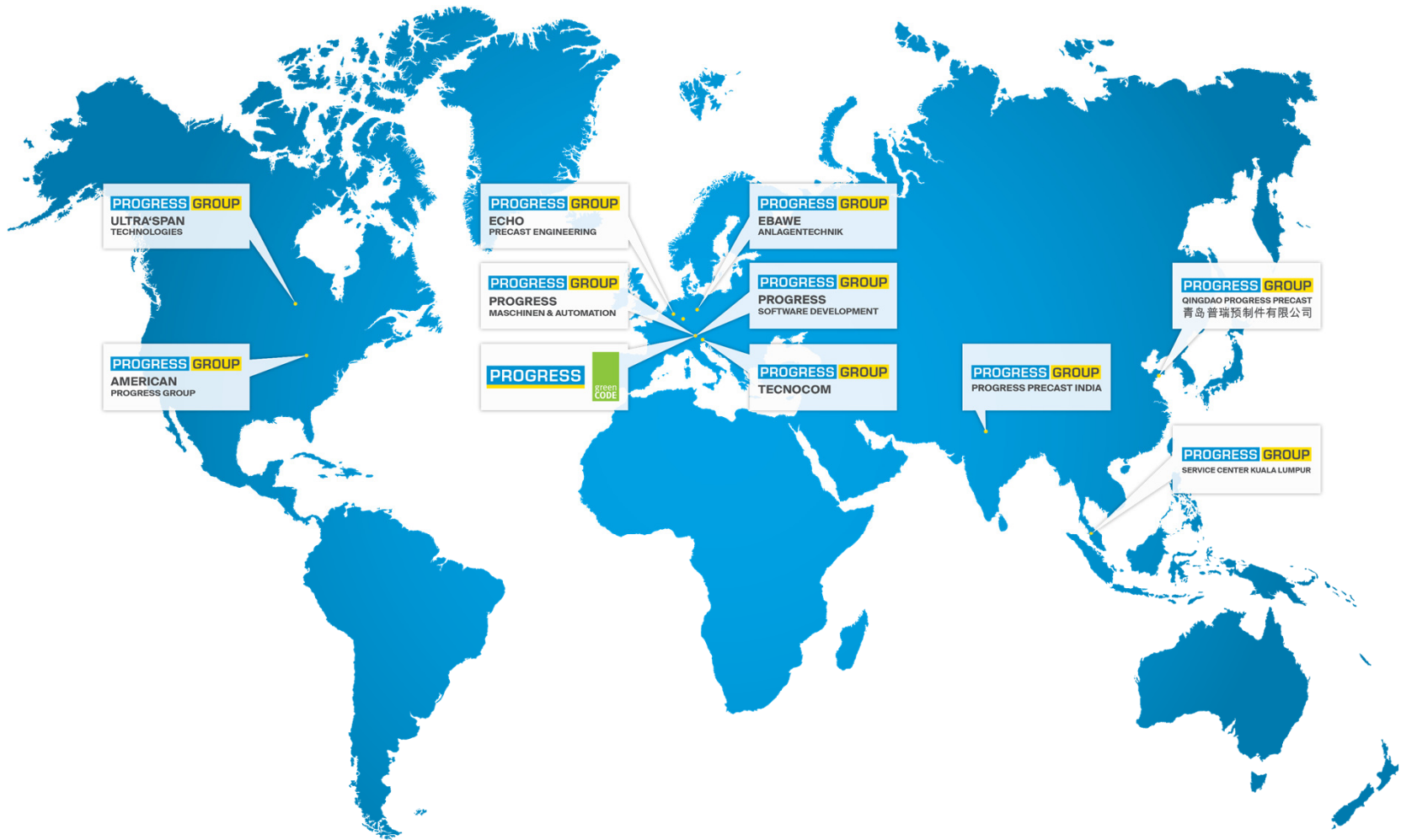
Mobile: +32 497 584 367

[vervloet@echoprecast.com](mailto:vervloet@echoprecast.com)



WeChat

# PROGRESS GROUP



**PROGRESS GROUP**  
ULTRA'SPAN  
TECHNOLOGIES

**PROGRESS GROUP**  
AMERICAN  
PROGRESS GROUP

**PROGRESS GROUP**  
ECHO  
PRECAST ENGINEERING

**PROGRESS GROUP**  
PROGRESS  
MASCHINEN & AUTOMATION

**PROGRESS**  
PRECAST  
CODE

**PROGRESS GROUP**  
EBAAWE  
ANLAGENTECHNIK

**PROGRESS GROUP**  
PROGRESS  
SOFTWARE DEVELOPMENT

**PROGRESS GROUP**  
TECNOCOM

**PROGRESS GROUP**  
QINGDAO PROGRESS PRECAST  
青島普瑞預制件有限公司

**PROGRESS GROUP**  
PROGRESS PRECAST INDIA

**PROGRESS GROUP**  
SERVICE CENTER KUALA LUMPUR

# Get in touch with us!

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