



# Covestro

Inclusive Business  
#PushingBoundaries



# Forward-looking statements

This presentation may contain forward-looking statements based on current assumptions and forecasts made by Covestro AG.

Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Covestro's public reports, which are available on the Covestro website at [www.covestro.com](http://www.covestro.com).

The company assumes no liability whatsoever to update these forward-looking statements or to adjust them to future events or developments.

# Covestro – Global polymer leader from Germany

## 20% of our business is to the Construction Sector



- €14 bn in sales
- 16,200 employees<sup>1</sup>
- Listed on the DAX stock exchange



### Large portfolio

- Products and solutions for many industries



### Global player

- 30 sites worldwide
- Close to markets, customers and suppliers



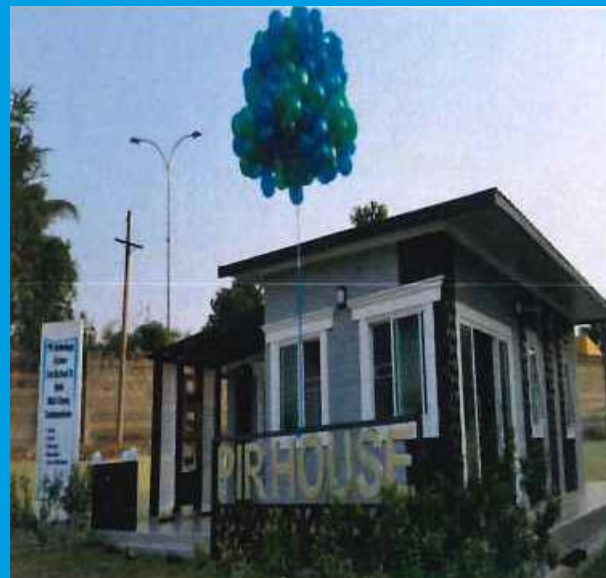
### Highly innovative

- 1,000 employees in research and development
- 80 years of ideas and inventions



# Covestro's Solution(s) for Construction Industry

a **BMTPC, Govt. of India certified technology**



Sustainable Social Transformation



# Covestro's Solution(s) for Construction Industry



Technology

Polyisocyanurate (PIR) Technology

Solution

PIR based pre-fab dry wall system panels to be used for construction of internal/external partitions and roofing solutions in housing structures.

WHY THIS?

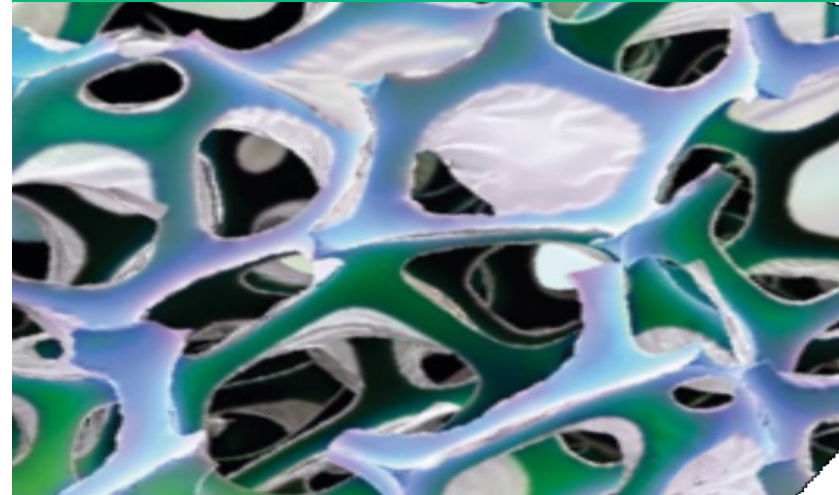
- Reduced load bearing requirement of whole structure.
- **Speedy** Construction- Savings on time and labor involved.
- Reduced cement and sand for foundation work: **light weighted** pre-fab panels.
- Comfortable and Safe to use: **Thermal Insulation, Sound Insulation and Fire retardant.**
- Increased carpet area.
- Easy transportation and installation.
- Electrical conduit can be in-situ produced inside pre-fab PIR panels.





- Sandwiched Panel(s) with Cement fiber board/PPGI on either sides of PIR Foam.
- Superstructure of toilet is made with pre-fab PIR panels.
- Strong, Durable and long life
- Thermal & Sound Insulation
- Fire Resistance
- Reduced Carbon Foot-print

## The Material



The ring structure creating strong 3D molecules network

## The Components



The board (skin material) can be sheet metal or oriented strand board(OSB), magnesium board, and fiber cement.

**Foam:** PIR Foam

**Framing system:** Steel/  
Galvanized Iron/ Aluminium

[INTERNAL](#)



# PIR Panels Joints (An overview)

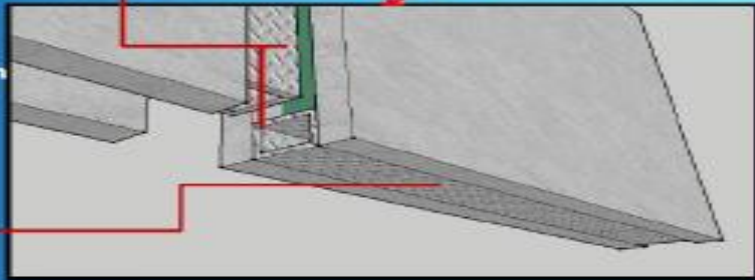


## Bottom Rail



Square Hollow Section (SHS) Tube

As Bottom Rail



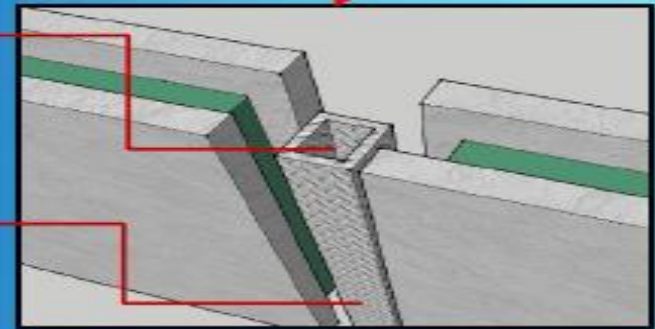
## Vertical Joint



As Vertical Structure



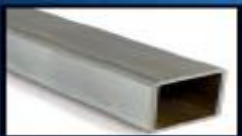
Square Hollow Section (SHS) Tube



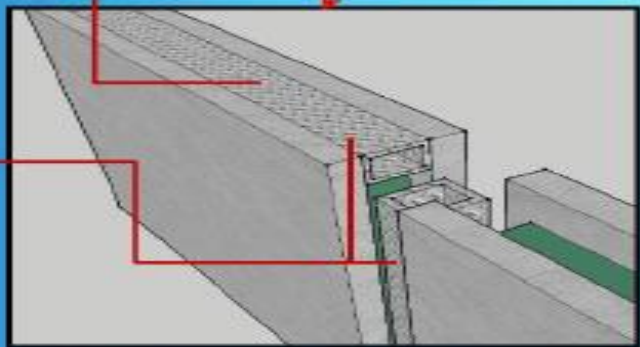
## Top Rail



As Top Rail



Square Hollow Section (SHS) Tube



# Case Study: G+3 L.I.G House, Jaipur



Item	Revised Design (with PIR)	RHB Design
Number of Columns	26	34
Number of Beam in Typical floor	59 nos. of beam in typical floor	64 nos. an typical floor layout
Column Sizes (mm)	(230x450 of 12 Nos), (230x380 of 14 nos.)	230x450 all
Beam Sizes (mm)	230x450	230x450
Slab Thickness (mm)	(125mm thick. 8 nos. of slabs) & (100mm thick 19 nos. of slabs)	All 125mm thick
Grade of Concrete of Building	M25	M20
Reinforcement (MT)	17	27
Concrete (m3)	244cum of concrete (1950 cement bags)	283cum of concrete (2000 cement bags)
Carpet Area (m2)	506 Sqft/ flat (PIR Wall)	468 Sqft/ flat (Convention system)
Time for Completion	Approximately 6 month	Approximately 9 month

**37% Savings**

**13% Savings**

**~8% Increase**





## Images from field (India)



### Jaipur: L.I.G. Housing



- G+3 House
- Built-up Area: 510 sq. ft.

9

### Kanchipuram: Model Street



- G+0 House
- Built-up Area: 350 sq. ft.
- A model street with 7 Green Houses (all solar powered)

INTERNAL



## Kelantan: Flood Rehabilitation



- G+0 House
- Built-up Area: 812.48 sq. ft.

## Langkawi: Employee Quarters



- G+4 House
- Top 2 floors are installed with PIR Technology for speedy construction



# Images from field (Malaysia)



## Langkawi: Baron Resort



# Covestro's Sanitation Solution(s)

*To provide access to better sanitation facilities to underserved communities.*



Sustainable Social Transformation

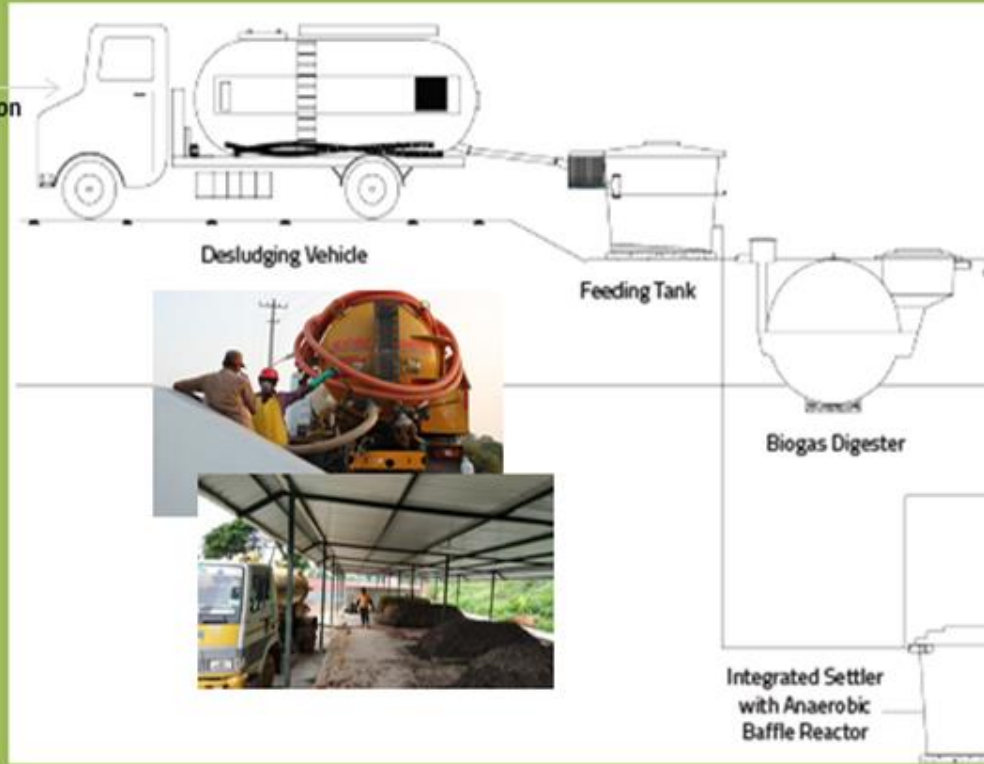
INTERNAL

# Faecal Sludge Management Process

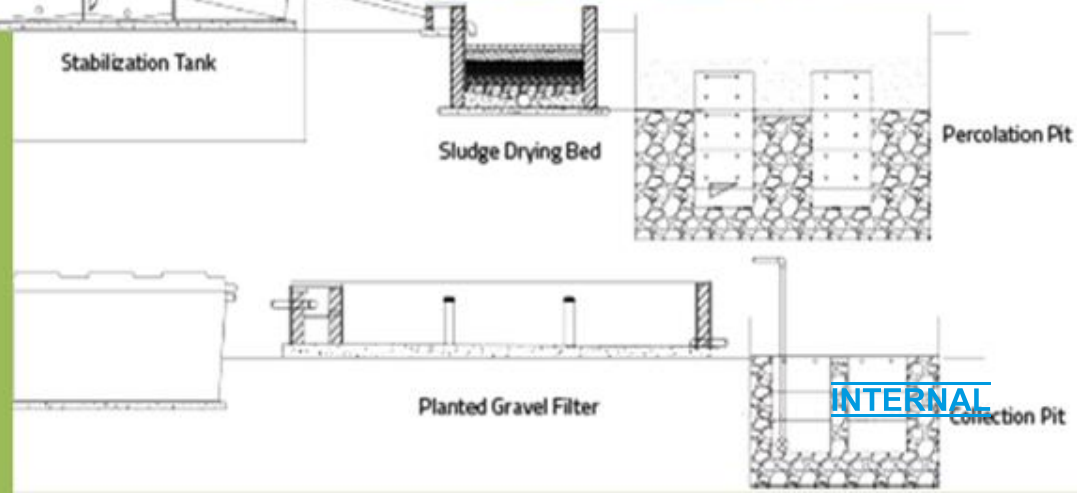


Pre-fab PIR Toilet  
(from Covestro)

Sludge collection



Solar Greenhouse  
PC Dryer  
(from Covestro)



INTERNAL



# How This Solution Supports Environment Safety?



**EARLIER**

**NOW**

- ✗ Faecal matter was either going to mother earth or dumped into sea/water body.
- ✗ Soil Pollution
- ✗ Water Pollution – disturbed aquatic life
- ✗ Health hazards – Cholera, Diarrhoea, Typhoid, Malaria etc.

- ✓ Faecal matter is collected to be processed in FSM plant.
- ✓ Dried and processed into economic product – organic manure.
- ✓ Organic manure from FSM – economic as compared to chemical fertilizers.
- ✓ Healthy Soil for farming
- ✓ Reduced Pollution
- ✓ Happy Environment, Happy People



# Images from field – Sanitation Units





# Thank You

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