

# Environmentally Conscious Wind Towers

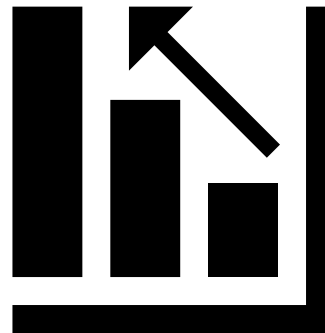


**60%**  
**CO<sub>2</sub>**  
**SAVINGS**

**70%**  
**COST**  
**SAVINGS**

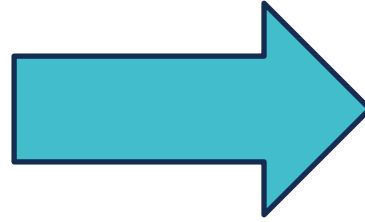
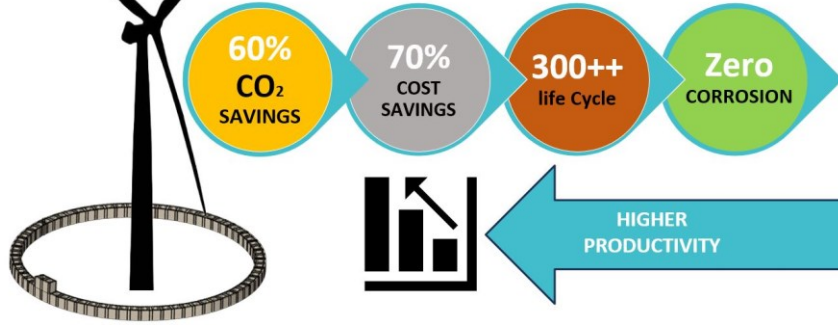
**300++**  
**life Cycle**

**Zero**  
**CORROSION**

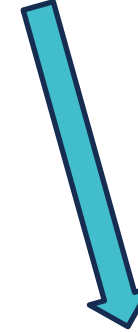
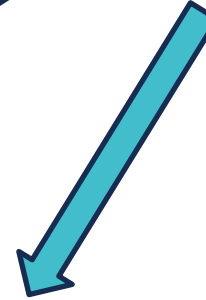
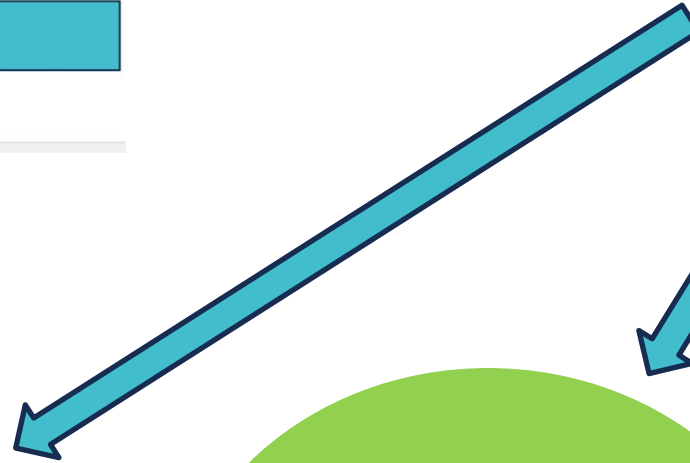


**HIGHER**  
**PRODUCTIVITY**

Environmentally Conscious  
Wind Towers



# ACHIEVED THROUGH THE OPTIMIZATION OF THE FOLLOWING KEY FACTORS



## AUTOMATION

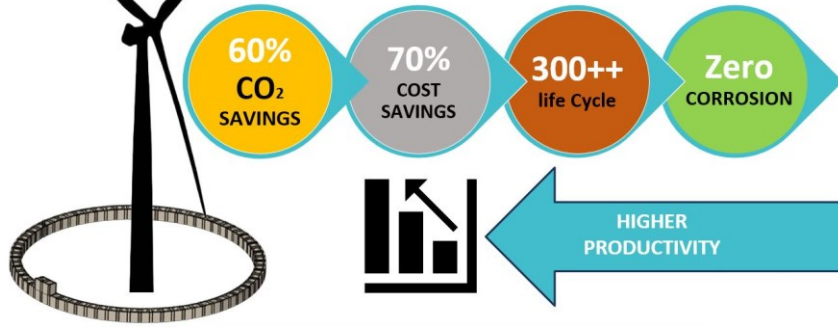
- Production
- Transport
- Installation

## INNOVATION

- The FSC Reinforcing Tech

## MATERIALS

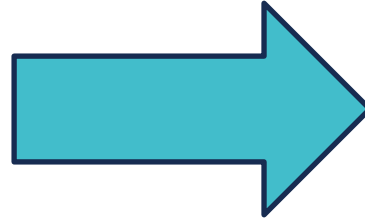
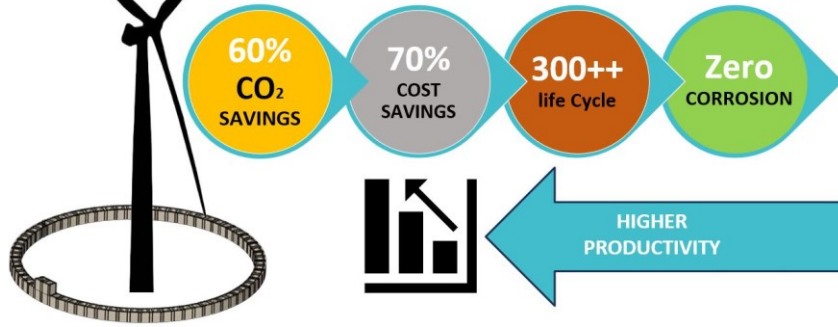
- Cost Effective
- Corrosion Free
- Low Carbon Footprint
- Widely Available
- Well Known Properties

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# MATERIALS

## THE KEY MATERIAL IS CONCRETE BLOCKS

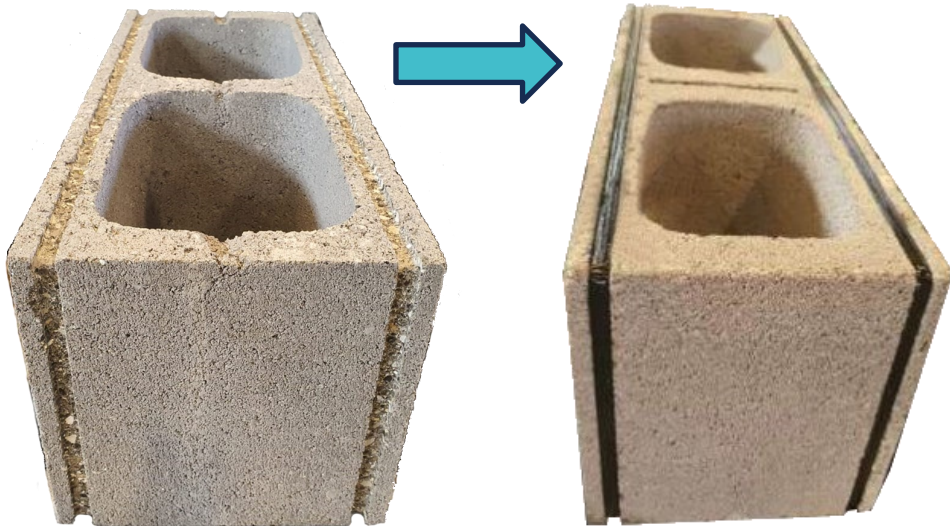
- Extremely low cost
- Very low cement content, due to the dry cast production process
- Widely available everywhere
- The Block Factories are highly automated, and have a very large production capacity, for example in one day they are able to produce blocks for about two wind towers 100 mt tall
- **Very Low Carbon Footprint**

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## INNOVATION

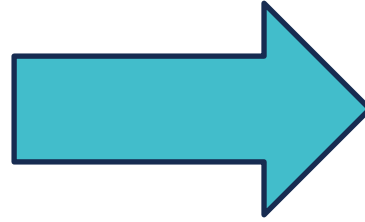
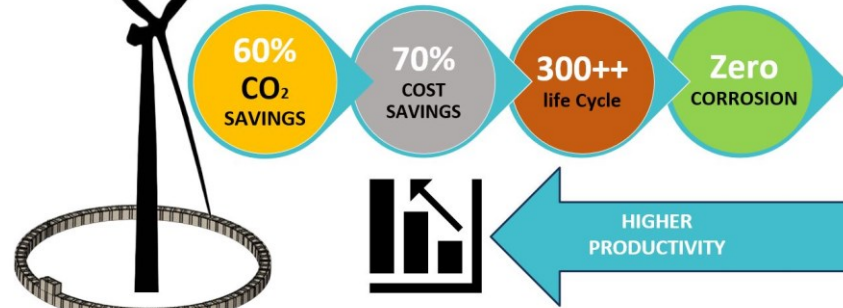
THE FSC REINFORCING  
TECHNOLOGY

- The Concrete Blocks Structural Behavior is dramatically improved by wrapping with FRP “in tension”
- Blocks are connected together by gluing the wrapped FRP
- **The Block Wall Structure behaves in a way very similar to that of the corresponding Steel Structure**
- Block wrapping, and Block connection / Tower Assembling, are highly automated processes
- The FSC Reinforcing Tech is based on FSC Patents

Concrete Block  
after the Wrapping



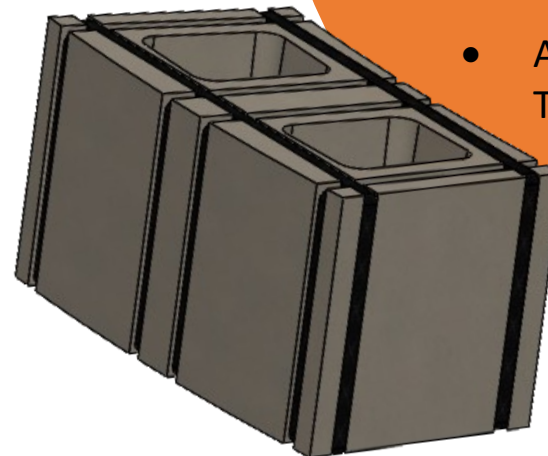
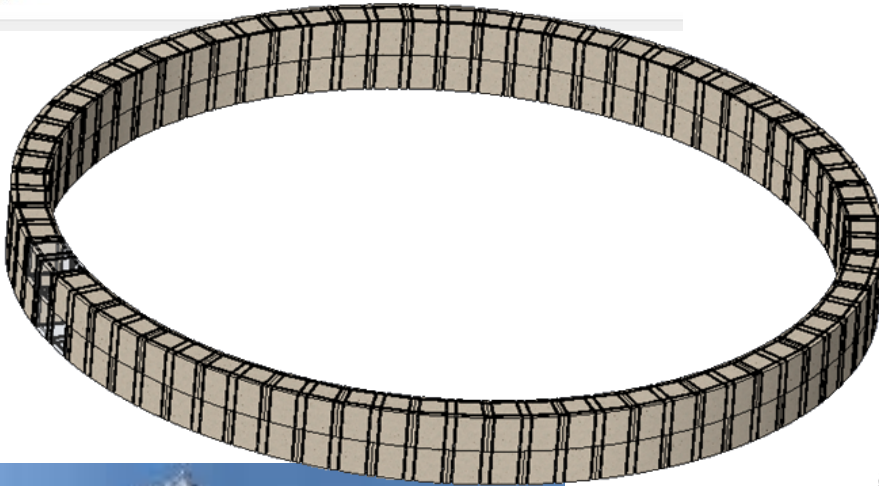
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# AUTOMATION

## A HIGHLY AUTOMATED AND OPTIMIZED PROCESS

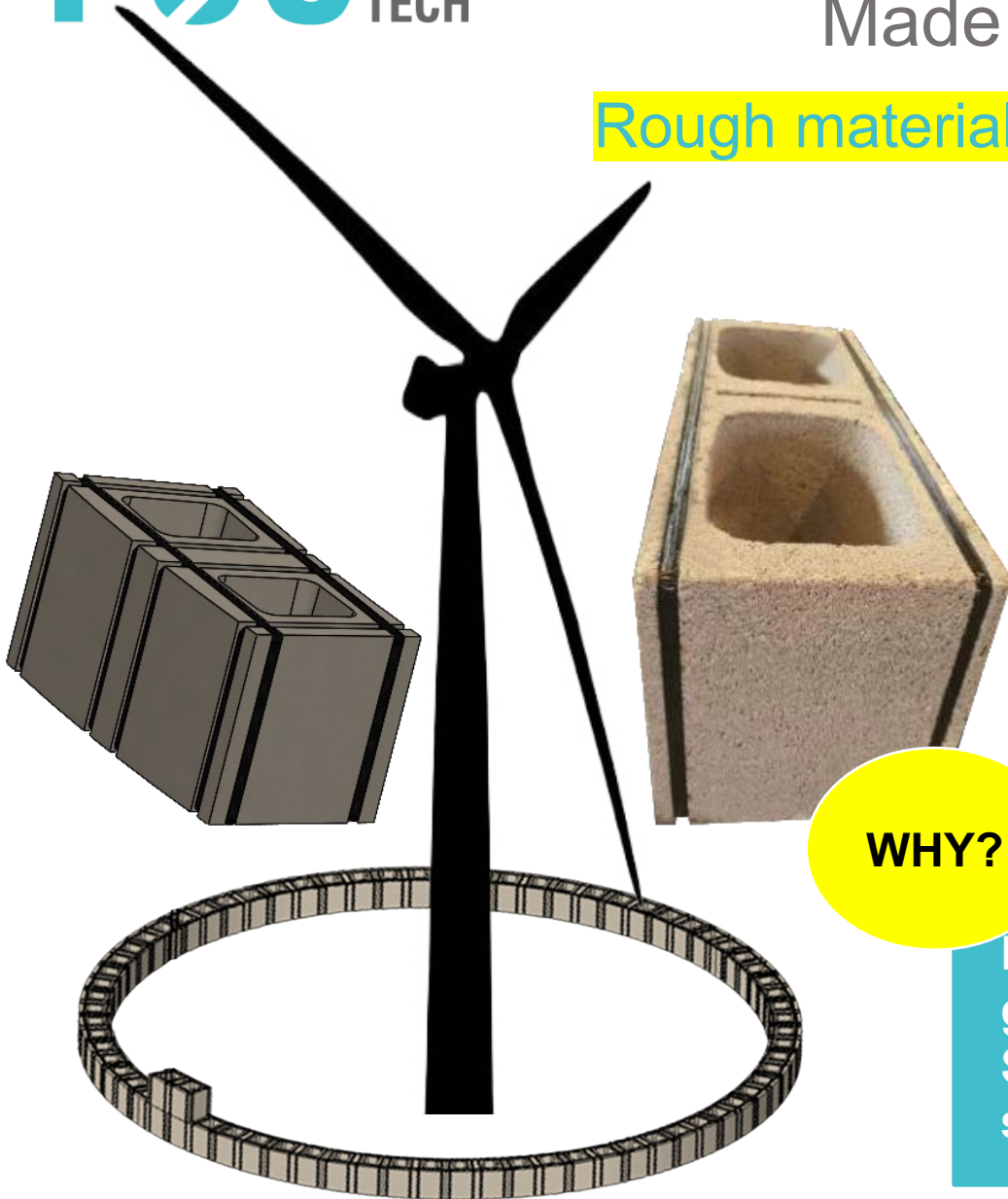
- The Concrete Blocks production is fully automated
- Block wrapping fully automated at the block production plant
- Block transport to Installation Site / Harbor
- Automated construction process in Tower Segments



# Onshore/Offshore Wind Towers

Made with the FSC Structural Tech

Rough materials cost for Wind Tower 110 Mt tall, 8 MW



Materials	Qty	UM	Unit Cost	Total Cost
			\$ USD	\$ USD
Concrete Blacks	800	Ton	75	60,000
Fiber	30	Ton	3,500	105,000
Resin	6	Ton	8,000	48,000
Steel	60	Ton	1,750	105,000
			<b>TOTAL \$ USD</b>	<b>318,000</b>

WHY?

Because the FSC Tech gives the Concrete a Structural Behavior very similar to the steel

## LABOR AND AUTOMATION

Labor is a lot less than steel mast since the process is highly automated. The full mast structure can be assembled