

SUPERSTRUCT

Don't get blocked by the walls in your head

A positive alternative to on-site construction.

Buildings are completed earlier - occupied sooner - faster return on investment.

LEAN CONSTRUCTION - evolving around environmental, sustainability, reducing waste of materials and money, optimize supply chain.

Leadership in Energy and Environmental Design "LEED"

1. Reduced overall construction time and efficient scheduling due to parallel production activities. Construction of modular buildings takes place simultaneously with the foundation construction and other site works thus allowing projects to be completed earlier for immediate occupancy. Since the production of modular buildings can happen simultaneously with the site foundation works and the assembly is much faster than in traditional construction, projects can be completed from 50% to 60% faster than in cases of on-site construction.

Overall cost savings: The use of prefabrication construction methodology allows cost savings at every phase of the production process due to mass production, for example: material savings at the procurement stage and labor savings at the construction phase additional savings can be associated with installation efficiencies and the standardization of the spaces. Shorter construction time inducing lower overhead costs, earlier opening of the new facility generating higher rate of return on investment (ROI) and systematic production under strict QCQA, hence reduced lost material and higher efficiency are all important parameters in the overall cost savings which are induced by using the prefabricated modular construction systems.

2. Increased building quality and craftsmanship

No atmospheric action (cracks) due to
no cellulose material (mold if moisture – pests– not insect resistance).

3. Increased labor safety due to safer construction environment

Safety remains a major concern for the construction management. Construction by nature has a high degree of hazardous activities. The price of construction accidents is high in terms of both suffer and costs.

Accidents add a burden of needless and avoidable expense. Direct costs include medical cost and compensation.

Indirect hidden costs includes:

- Time lost from work by the injured party
- Loss in earning power, economic loss to injured worker's family
- Loss of efficiency by breaking up crew
- Cost to train new or replacement employees
- Damage to equipment and tools
- Loss of production

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- Cost incurred by delays
- Overhead costs associated with disruption of work
- Clean up and repair costs
- Administrative costs of investigations and reports
- Increased insurance premiums
- Loss of future projects due to adverse publicity
- Cost of fines

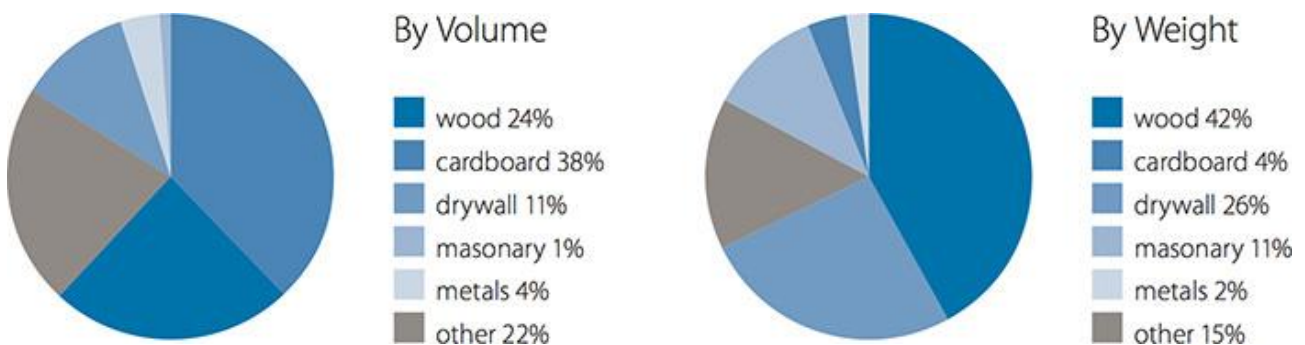
The indoor construction environment reduces the risks of accidents for workers as well as provides improved on site working conditions, less noise and air pollution, less on site traffic, turns the working zone into a safer environment with lower risks. Thus giving additional value to the contractor cannot be neglected.

4. Increased labor productivity

5. Reduced construction schedule – no disruption due to weather/delivery time etc.

A significant portion of the construction is completed inside a factory, which mitigates the risk of weather and reduces delays from 60% to 90%.

6. Minimal environmental impact on site not least due to minimal waste of metal structure.



Removing approximately 80% of the building construction activity from the site location significantly reduces site disruption, noise pollution, air pollution, reducing on-site construction activity and traffic and thereby eliminating a large part of the ongoing construction hazards, is a tremendous advantage. Clean and quiet constructions sites.

As owners and designers look for more sustainable designs for improved environmental impact, modular construction is inherently a natural fit. Building in a controlled environment reduces waste. Waste is eliminated by recycling materials, controlling inventory and protecting building materials. This, along with improved quality management throughout the construction process and significantly less on-site activity and disturbance, promotes sustainability. Based on this evidence, the contribution of the modular prefabricated construction system to achieve "Green Building".

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7. Relocatable.

Environmental lifecycle In the new circular economy, modular construction stands out being relocatable.

Less material-waste in deconstruction.

INCREASES:

1. Speed to completion
2. Quality
3. Safety
4. Flexibility

REDUCES:

1. Overall cost
2. Material waste
3. Impact on environment
4. Construction time

CHALLENGES:

1. Module size and weight limitations
2. Transportation restrictions
3. Transport costs
4. Lack of awareness of long term financial benefits
4. Negative market perception based on built precedence

Development of BIM objects by manufacturer to make it easier for architects to specify products in their design and create on-line virtual presence for immediate integration into BIM projects and for architects and engineers to promote the green benefits of prefabrication so it stands out to clients in contrast to on-site construction.

Diverse library of building components to be developed.

Architects and engineers:

Construction drawings and shop drawings should be merged.

Higher level of detail and time commitment for eventual development of shop drawings.

Knowledge of coding for CAM operated machines

Lack of knowledge of manufacturers process

The effect of manufacturers redundancy and methods of production

How approach to procurement effect responsibilities.

Interface between architects, engineers, general contractor, and production/manufacturers.

Define separate scope!

Engineers with local authorizations (country of construction) must sign off before modules leaves production facilities. I.e. Control.

TECHNOLOGICAL INNOVATION IS A BYPRODUCT OF DESIGN INGENUITY

Architects, engineers, general contractor and production/manufacturers must go beyond what is possible and what has been done before.

They must be malleable and understand their boundaries and be open to push them.

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