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We Deliver Innovative Solution

Extreme Modularization







## We deliver innovative solution

Modular solutions have been evolved in the Life Science and Consumer Products Industries for many years. This has led to Morimatsu's latest innovation "Extreme Modularization". Different from other modular solutions, Extreme Modularization enable us to further maximize off-site construction and help to reduce the site installation from weeks to days and sometimes just hours. The use of advanced technology, like 4D simulation and 3D scanning, have allowed us to facilitate faster site installation with benchmark projects that have accomplished record completion in our industry.



## What is Extreme Modularization?

- Focus on everything under the building shell and above the floor from design to delivery
- Move 90% from on site construction to the well managed workshop
- 1~3 months after building turnover to SOP (start of production)
- Simplified client interfaces



## Benchmark Project

24 hours fast installation

### Key Project Data

**Project Location :** Japan  
**Production :** Skin Care Products  
**Scope :** Full Making Systems

#### Highlights :

- Extreme Modularization
- Site installation completed in 24 hours
- Benchmark project with the shortest installation time in client's history

#### Key Enables :

Power of Extreme Modularization  
Power of Digitalization  
Power of Synchronization





## Innovative Solutions Leading to Extreme Modularization



### • Maximize modularization scope

Beyond the process system, the modular solution can extend to more scope, including the piping rack, raw material handling, storage area, utility station etc to help the client to reduce the site installation time for the whole plant.

### • Smart modular design

Smart modular design to respect the voice of fabrication and installation, split the module to minimize dismantling and site reassembly and facilitate site positioning and installation.

### • Diversified modular options

We select the most applicable modular option to meet the functional requirement and cost target. We have process modules, pipe rack modules, flatbed modules, roof modules, ISO modules, and Pre-engineering buildings to support any application.

### • Full integration (Actual or Visual)

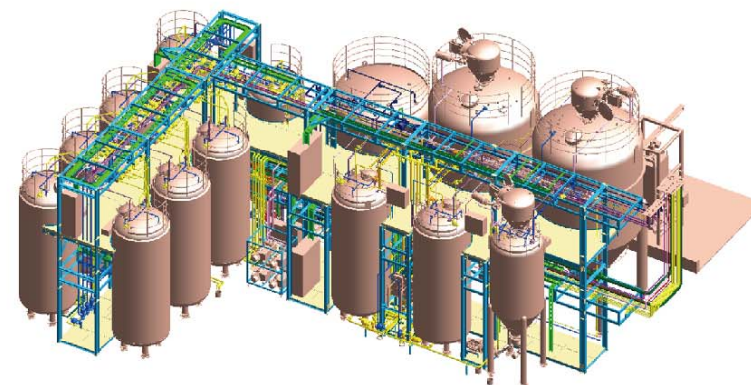
The integration of different system can be done offsite in the Morimatsu workshop to eliminate any risk of mismatch at the site and to further reduce the site installation time. According to our experience and site record, the time saved at site can be 70% if we can do the integration in our workshop, which can bring significant benefit for total project schedule reduction.

### • 4D simulation

4D animation is a very powerful tools to simulate the installation sequence, visualize job safety analysis, visualize training for the construction crew, and guarantee the synchronization of the whole installation process.

### • 3D scanning

3D scanning is a cutting edge device we have adopted. It can scan the existing building, column base, piping tie-in points etc and generate the digital drawing. Through comparison with our 3D design and finished process module, mismatch points can be easily found and modified. This technology is especially valuable for retrofit project.





# Morimatsu Module Journey



## Extreme Modularization Enlarge Scope For Modularization

- Preparation Modules
- Pipe Racks
- Raw Material Handling Modules
- MCC Rooms
- Utilities
- Tank Farms
- Prefabricated interconnecting pipe
- Modular Buildings
- Move above approximately 90% field hours to workshop
- 95% steel & piping on Modules
- 80% electrical parts & 95% instruments on Modules

## Super Process Module Multiple process unit combined

- Preparation Modules
- Making Modules
- Storage Modules
- CIP



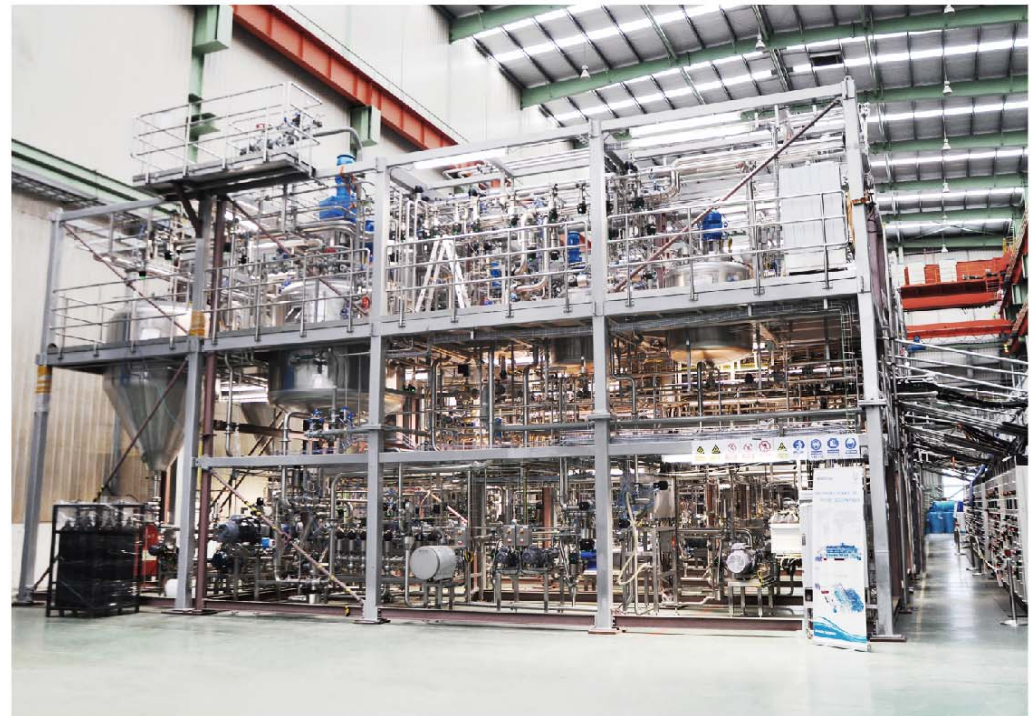
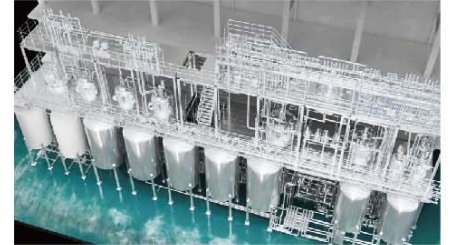
## Simple Module Single process unit,

- CIP
- Simple Mixing Unit

# Benefit of Extreme Modularization

Extreme modularization is step forward from conventional modular approaches bringing more value to clients with a "Hand Free Solution".

- Maximize cost effectiveness
  - Optimize layout and process flow
  - Move more work offsite into the workshop
  - Reduce site work
- Significantly reduce site installation time
- Enhance site safety by minimum site risk
- Improve globally quality
- Repeatable global solution
- Upgradable and uniform platform management





## Reduce Project Schedule



### Our modular solution ensures the fastest delivery in the industry.

It is based on running multiple project steps simultaneously, and thus greatly compress the schedule. Fabrication of your module takes place in our workshop while preparation of the final site is done. Our approach to extreme modularization further maximize our efforts in the workshop, dramatically reducing time spent on-site.

#### Conventional Way



#### Modular Solution



#### Extreme Modularization

