AGENDA

Introduction Ballast Nedam
Modular Building Systems
Effect on Business Architecture
Summary and Conclusions
Ballast Nedam

- Construction and Real Estate company
- Corporate headquarters in Nieuwegein, The Netherlands

- Turnover 2012: US$ 1.75 billion
  - Turnover The Netherlands: US$ 1.55 billion (88%)
  - Turnover International: US$ 0.20 billion (12%)
- Top-5 construction firm in The Netherlands
- EBITDA 2012: US$ 2.7 million
- Net margin 2012: - US$ 55 million
- Order book January 2012: US$ 2.4 billion

- 3860 employees (December 2012)
- 136 year in operation (established in 1877)
Strategy Ballast Nedam

- Work together for a better living environment, today and tomorrow
- Creating “enduring quality” in the lifecycle of development, construction, management and the recycling of our living environment
- Five strategic pillars
  - life cycle thinking and acting
  - our people, standards and values
  - value chain collaboration
  - innovation
  - being at the heart of the community
- Four core activities
  - housing
  - mobility
  - energy
  - nature
Core activities in four areas of work
Core Activity - Housing
Core Activity - Mobility
Core Activity - Energy
Core Activity - Nature
AGENDA

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Modular building systems Ballast Nedam

- iQhome® (concrete housing)
- Ursem® Modular Building Systems (wood frame housing)
- ModuPark® (steel / concrete parking garage)
- Plug and Play Core® (steel / concrete stadium)
iQhome® - The Factory
iQhome® - Logistics / Construction Process

Construction process
iQhome® - Characteristics

- High quality living environment
  - Wall-to-wall room size 5.40m and 6.30m (17.70 and 20.65 feet)
  - High quality finishes
- High speed development in 6 weeks (from 3 units)
- Short construction process
- Sustainable (Energy Performance):
  - EPC 0.6 (A++)
  - EPC 0.4 (A+++)
  - EPC 0.0 (A+++++)
  - EPC - 0.4 (A++++++)
- Reasonably priced
- Adaptable / transformable
- Easily disassembled and re-usable
- Freedom in architecture
iQhome® - Freedom in Architecture
Ursem® - City Living Student Hotel Amsterdam
Ursem® - The Factory
Ursem® - Logistic / Construction Process

A (productie) + B (locatie) = C (project)
Ursem® - Characteristics

- Market segments
  - Newly build: Student housing, Hotels, Schools, Care institutions
  - Renovation: Modular sanitary units
- Completely furnished rooms
- High speed realization
- High-rise up to 10 stories
- Freedom in architecture
- Easily disassembled and re-usable
- Low development / building costs
- Sustainable construction method
- Optimal logistic processes
- Constant high quality
Ursem® - Freedom in Architecture
ModuPark® - Parking Meander Hospital
ModuPark® - Logistics / Construction Process
ModuPark® - Characteristics

- Anticipate in changing parking requirements
  - Location
  - Capacity
- Market Segments
  - Shopping centers, University / college campuses, Hospitals, Educational institutes, Offices, Public Transport Terminals
- Flexible in shape and scalable in size
- Sustainable
- High speed realization
- Easily disassembled and re-usable
- Affordable, several financial schemes (rent, lease, buy, …)
ModuPark® - Freedom in Architecture
P&P Core® - Qatar Soccer World Cup 2022
P&P Core® - Qatar Soccer World Cup 2022
P&P Core® - Qatar Soccer World Cup 2022
P&P Core® - The Movie

Plug and Play Core Movie
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Summary and Conclusions
Fast production / nuisance reduction

- Site preparation
- Assembly
- Use
- Landscaping

(Modular Building systems)

-BIMFORUM-
Business Architecture

• Increase efficiency of processes from development through operation phase (intensive use of BIM)
• Modular object libraries
  • prefab elements and finishes
  • Kitchens, bathrooms, installations, stairs, doors & windows, …
Business Architecture

- BIM Data Manager

- 3D Software (3D Design)
- Relatics (requirements management)
- MS SharePoint (Doc. Management)
- Scan Software (Object Recognition)
- IBM Maximo (Asset Management)

BN BIM Data Manager

- 3D objects + metadata
- Requirements + Verification
- Documents
- ...
- “Linking pin” = SBS
Business Architecture

- CAD-CAM integration (3D model → factory)
- New customer approach → Webconfigurator
- Development of “Serious Game” → Woonvisualisatie
- iPad supported sales process
- 3D printing
- Where used database for modular elements (RFID tagging)
Web based configuration tool
Web based configuration tool
Web based configuration tool
Web based configuration tool
Web based configuration tool
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Modular Building Systems
Effect on Business Architecture

Summary and Conclusions
Summary and Conclusions

• Constant, high quality, healthier end product through production in factory with a conditioned, safe and controlled environment

• Favorable working environment for construction workers

• Energy reduction by more efficient use of (raw) materials, waste reduction and the production of re-usable and adaptable end products with a residual value

• Fast production, shortening site construction time and reduction of nuisance for the environment through industrialization of the construction process

• Favorable pricing from suppliers, efficiency in logistics

• Customer experience and flexibility using custom made options, through online web configurators
Effect of Modularization
On the Business Architecture of Ballast Nedam

Menno de Jonge | Ballast Nedam | 8 October 2013