

An international perspective on modular construction

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To be answered:

01

Building Codes

Are they hindering international sales?

02

Platform Development

Can it be done on an international scale?

03

Intellectual Property

Is it a competitive advantage or not?

04

Geography

Killing the project or not?

05

Service

Is there a service offer rather than a product?





Furniture Fit Out Chojnice, Poland

VBC's furniture fit out factory is 7,500 m² and has been supplying bathroom, kitchen, and furniture for hospitality and residential markets for more than three decades.



Modular Factory Tracy, California

Tracy is the most state-of-the-art factory in the Western half of the United States. It is 56,000 m² and produces up to 2,300 m² of timber-framed accommodations per week. The factory predominantly serves the American West Coast market.



Modular Factory Chojnice, Poland

VBC's European factory is 15,000 m² and can build 930 m² of steel modules per week.

The central location of this factory and proximity to major ports makes it ideal for clients.

Steel Factory Gdynia, Poland

Gdynia is a major steel hub and where VBC builds the hot rolled steel frames for our Chojnice modular factory.

VBC can build up to 500-1,000 m² steel frames per week.

Modular Factory Berwick, Pennsylvania

This 33,000 m² factory can manufacture up to 930 m² of timber-framed accommodations per week and serves the Eastern United States markets.



VOLUMETRIC
— BUILDING COMPANIES —

Hot-rolled steel cage produced and fitted out with furniture in Poland

Shipped across Europe and the US

Designed to local building codes

Permanent modular construction

No domestic market in Poland

Choosing the right project is essential.

- High local labor rate
- Remote or highly dense location
- Speed of delivery crucial
- Scarce supply on location



The Building Codes



The material is still the material

Basic principles like welding, material strength and properties translate

Building codes introduce safety precautions that cap the utilization of the material in that jurisdiction. Building code application is about risk management in the local market.

A code consultant will deliver a framework to apply in each jurisdiction for a project.





Three Pillars

Engineering firms:

Larger engineering firms with presence in several countries will be desirable and knowledgeable if internationalizing modular construction.

Design process:

A thorough briefing with the external and internal design teams is needed to assure compliance. A local consultant team on the client-side is beneficial for contacts with local authorities.

Digital transparency:

Model-based design is an advantage as it provides transparency and bridges language barriers. Communication paths laid down early provides clarity for the team.





Risks & Sacrifices

International modular sales have implications on speed and cost

01 Manufacturing Inertia

The manufacturing team is working to a standard they do not want to change. The risk is large that items are installed and executed with methods that are non-compliant with local building codes.



02 Manufacturing Efficiency

The power of repetition in product vanishes. Since projects are new all the time, there is little organizational learning in the product.

The learning is rather that the drawing is always new, the instructions are always different, and the parts are always according to a new specification.

03 Quality Control

The quality control process cannot run on static templates; it needs to be updated for each new project. Transparency with the client is very important.



04 Onsite Completion

The usage of an in-house set crew might not be feasible for practical reasons. Instead, clear instructions for setting modules are needed.

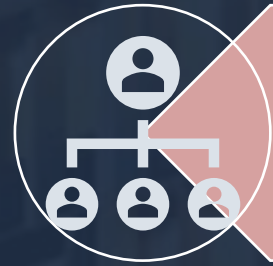




Labor cost



Quality



Experience

Building codes are not really hindering modular to cross borders. But you need a clear competitive advantage to enter a new country.

Platform Development

Platform Development



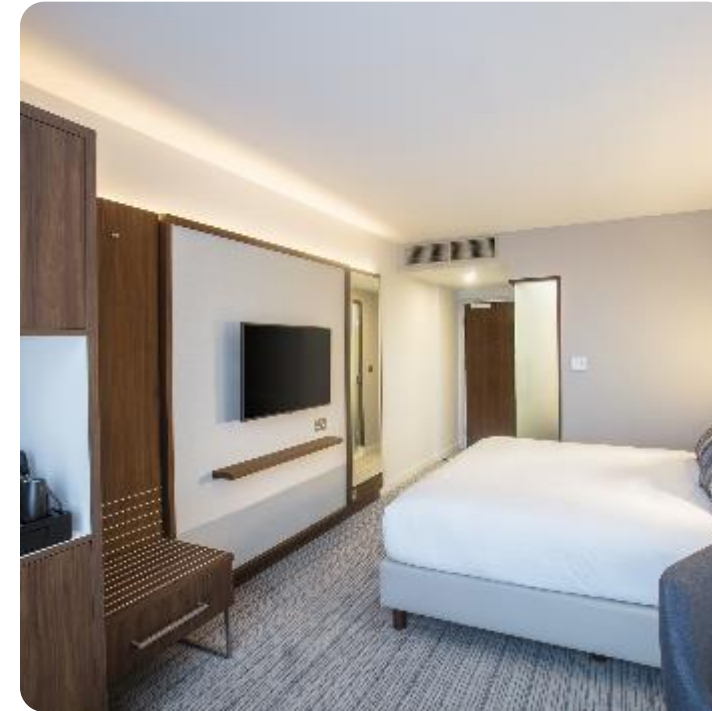
Technology

Traditionally, modular companies invest heavily in templates for design to define their products.



Processes

In actuality, the secret sauce is found in the team and their skill set in solving a project.



Supply chain / Relations

A good team always has great relations with suppliers and value them in projects.



Knowledge

People are trained in handling new situations in all projects.



Four Success Factors

Language skills:

Two or three languages is the norm. Business language is always English. Documentation is presented in two languages.

Process Setup:

Flexible production setup with changeable lines and routings. Low investment in highly specialized production technology. Strong emphasis on routines rather than standardized solutions. Good legal support through network.

Experience:

People in the team need to bring experience from different backgrounds to find solutions in ever-changing situations. Quick learners with a curious mind not afraid to adapt.

Flexible workforce:

The ability to scale the workforce up and down in volume to mitigate varying demand. This also reflects on documentation needing to be very clear and not assume experience.



Investment in a platform for a specific market segment = increase in SG&A for maintaining platform versions

Needs to be outweighed by manufacturing efficiency gains, that in turn require stable pipeline and backlog combined with automation



Keeping the platform less defined to serve several market segments = requires a flexible design process that can be partly outsourced

Manufacturing efficiency is lower, but instability in pipeline can easier be mitigated. The team can work on a multitude of similar projects.

**Be careful about adding SG&A when developing platforms for several jurisdictions.
Or just don't do it.**

Intellectual Property



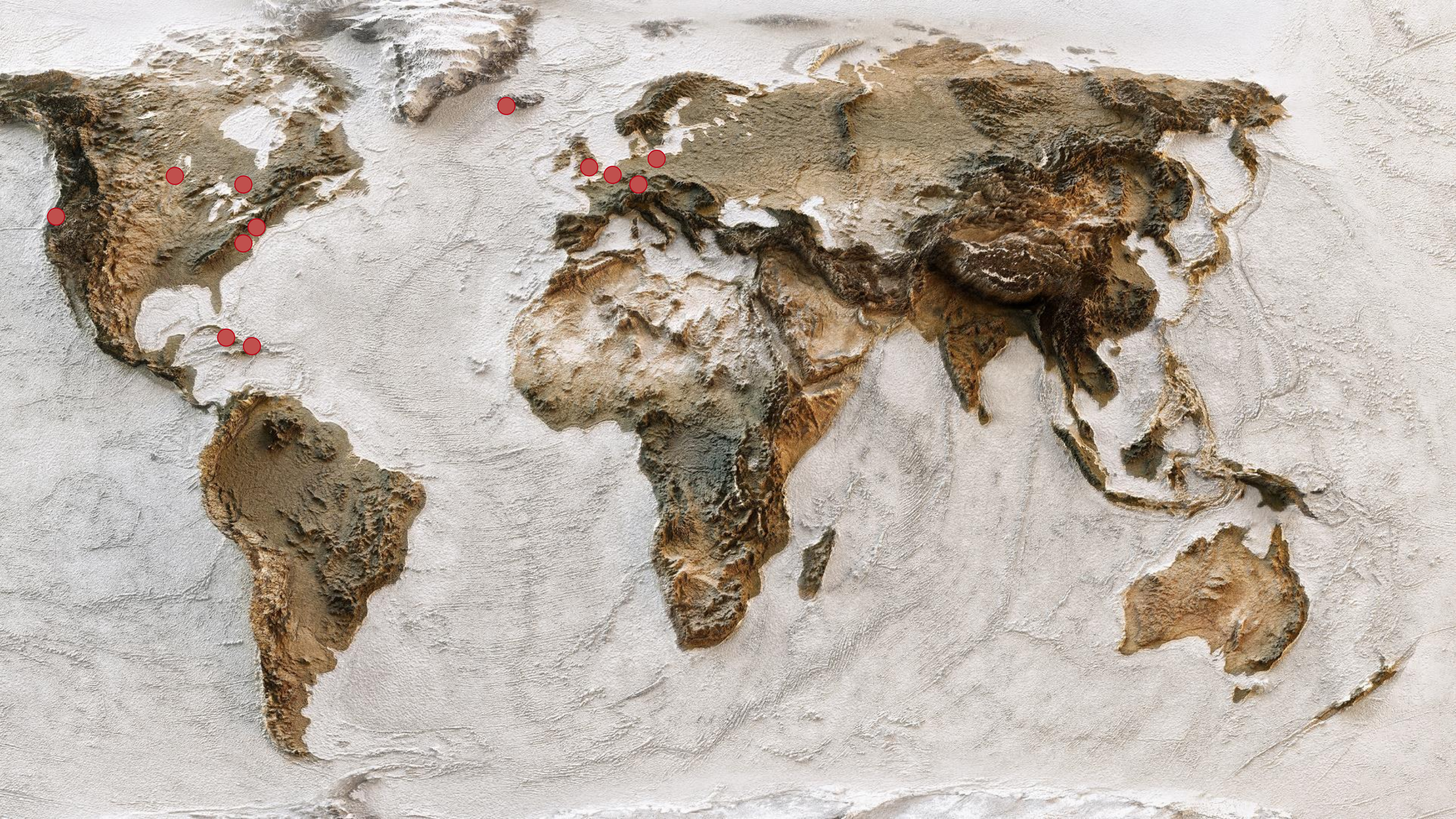
Is IP really as important as we think?



**Have you ever won a bid
in construction based on
just your specific
modular technology?**



Geography





Preconstruction in an Equation

Material cost + Labor cost + Shipping cost < Price & Speed

50%

30%

10%

*"your competition is
the local market you
are serving"*

Service Offer



Furniture Refurbishment as a Service

We understand the logistical challenges of refurbishment projects.

After working with dozens of global clients to update and refinish their hotels and apartments we've seen it all.



Minimizing Interruptions in Low-Traffic Hours

When it comes to refurbishment, Polcom Furniture by VBC offers a unique advantage for our clients with our ability to operate during low-traffic hours. By transporting and installing furniture outside of peak hours, we reduce the impact on local communities and the rest of the building's operations.



Limiting Revenue Loss Due to Renovations

By renovating and installing the refurbishments in phases while the rest of the building stays in operation, we can minimize any potential revenue lost due to public spaces being out of commission.



Accelerated Schedule Options

VBC works with brand standards all the time. Our team has finalized designs from several prominent hotel brands, which speeds up the ordering process.

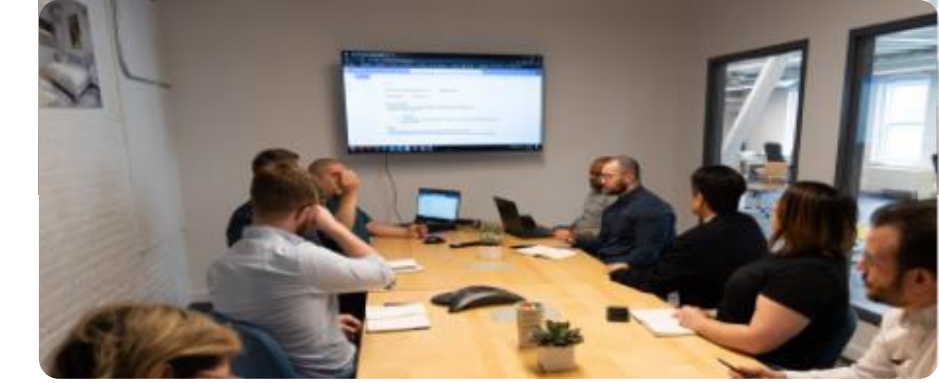


Higher Client Ratings and Better Bookings

By updating the furnishings and the rooms overall, VBC's hotel partners have seen an increase in high client ratings, and repeat booking numbers, and are justifiably able to increase their nightlight rates.



VBC Product & Services



VBC's products & services include:

Full Service Design

Modular Feasibility

Product Development Services for Volumetric Modular

Contacted consultants include:

- Structural Engineering
- Mechanical Engineering
- Plumbing Engineering
- Electrical Engineering



Modular Products (Wood & Steel)

Apartments: Market Rate/Built-to-Rent

Apartments: Affordable/Social Housing

Apartments: Senior Living

Apartments: Student Housing/Accommodation

Healthcare

Hospitality

Military

Workforce Housing

Refugee Accommodation



Furniture

Custom furniture fit-outs

Furniture refurbishment





Hospitality: Done, done, done

COURTYARD
BY MARRIOTT

A 250-unit hotel build demonstrates innovative wood construction technology in partnership with premium steel.

The Marriot Luton Airport Hotel was completed and opened in just under 11 months. Not only did this save the team 6-12 months of construction time, but the combination of VBC's innovative furniture technology combined with VBC EU's premium steel structure allowed for a future-forward sustainable building method.



Building Specs

Location: Luton, UK

Total Floors: 8

Modular Floors: 7

Modular SF: 83,500 / 7,757 m²

Number of Modules: 151

Number of Units/Keys: 250

Construction Timeline: 11 months

Developer: Polcom Group





Summary

Building Codes

Not a hindrance to internationalization. Requires knowledge and a flexible team.

Platform Development

Change in focus from product to process. Risk for high maintenance costs.

Intellectual Property

Low risk with sharing your technology – it is the team, anyway

Geography

Use your location to your advantage – what do you have that competition do not?

Service Offers

Modular products create crossover competencies that can form new service offers

**We look forward
to connecting.**

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