FAB502132

Demain's Journey from Strategic Partnership to Commercial Entity

Alex Jonovski
Demain

Learning Objectives

- Learn about the industry problems that inspired the formation of Demain.
- Learn the history of how Demain has evolved from a branded collaboration to an operating entity.
- Learn about the challenges the consortium has had to overcome.
- Discover new insights that will help you implement your own industrialized construction workflows.

Description

Demain is a consortium of like-minded contractors and engineers that maximize data and manufacturing to unite the value stream and productize the delivery of construction. What began as collaboration between MEP (mechanical, electrical, and plumbing) engineers, contractors, and software engineers has uniquely evolved into its own commercially viable entity. Participants of this session will learn why Demain was founded, and how it's evolved throughout the years. The projects chronicled in this case study will provide the audience with real-life examples of how strategic partnerships can drive the industrialization of construction, and how integration through data offers a compelling alternative to vertical integration.

Speaker

Alex Jonovski's primary focus is leadership and strategy for Demain. Prior to Demain, he served as a Principal and Vice President of Strategic Growth for KLH Engineers and Managing Principal for Levcon Analytics. Throughout his career he has examined best practices and modified workflows to enhance the delivery of the built environment and nurtured the resulting innovations into new services, products, and entities. He is also a frequent speaker on innovative delivery strategies both locally and nationally.

Outside of work, Alex enjoys spending time with his wife, Chrissy, and his son, Theo. He also enjoys playing guitar, restoring vintage motorcycles and cheering on the University of Cincinnati football and basketball teams.

Introduction

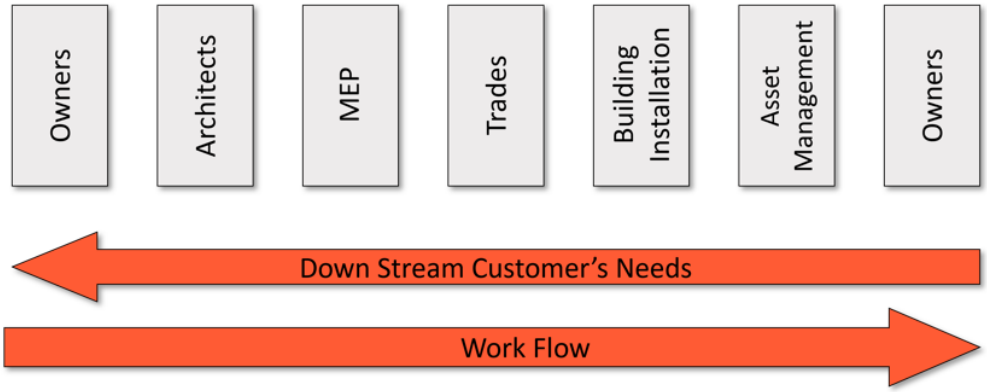
This case study presents the experiences learned from the formation of Demain to those interested in understanding alternative business models designed to meet the challenges of industrialized construction. The industrialization of construction speaks to the digitization and adoption of manufacturing principles to establish interoperability between the planning, design, construction and operations of the built environment. Many of today's businesses and project delivery models struggle to provide stakeholders with a joyous experience and fall short of providing the type of environment described by industrialized construction. The consortium business model utilized by Demain is designed to provide designers, contractors, and building owners the flexibility to execute and fully benefit from industrialization.

Learn about the industry problems that inspired the formation of Demain

The Conflicted Value Stream

The building design and construction value stream has a conflict in that many times a project develops through most or all of design without input from construction or operations. Although most prevalent within design/bid/build, the disconnect between design workflow and the consumers of the designer's deliverables can occur with any delivery model. For example, a consulting engineer may be hired by an architect while their design outputs are meant to inform the contractor. This gap can result in deliverables tailored to the contractual client, as opposed to the actual user.

Making this problem worse are the silos that exist between the stakeholders within the value stream. The processes, contracts and technology used by each entity are typically crafted to mitigate risk, protect profit, and comply with contract demands – all of which take precedent over creating deliverables that can be seamlessly consumed by other partners on the project.



Value stream of a building construction project. Note that the workflow goes from left-to-right yet the deliverables of that workflow are defined by downstream customers.

Friction Between Contractors and Design Professionals

Many times, contractors are given design packages that are not constructable or coordinated and coupled with a specification the size of a telephone book. Deliverables like this are commonplace, create a significant amount of risk for the contractor and result in additional

efforts to correct them. That added rework manifests as RFI's, value engineering, redesigns, 'coordination' exercises, etc. and results in change orders and schedule delays.

This helps to create the impression to contractors that design professionals can be disconnected or poor communicators and this view is continually reinforced with each project. Unfortunately, this can even occur without the design professional realizing it's happening.

Friction Between Different Contractors

Gaps of understanding aren't limited to design professionals and contractors. This also occurs between contractors on a project. Experiences such as conflicting scheduling priorities between trades or competition for space above the ceiling oftentimes create a win/lose situation on a project.

Common between all of the pain points is that the ultimate sufferer of these issues is the building owner.

Learn the history of how Demain has evolved from a branded collaboration to an operating entity

Starting with an Aligned Mission

Initially, the founding consortium members were united by their shared frustration with the status quo and a commitment to one another that we would work together towards a future state where construction was delivered through data and manufacturing. Alignment on 'the why' behind Demain guided the team through the learning experiences that helped to shape 'how' and 'what'.

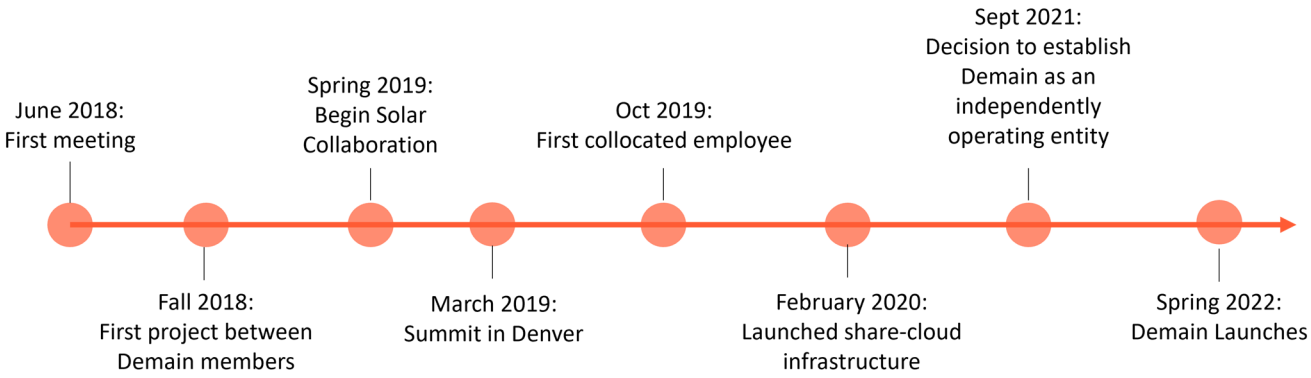


Figure 1: Timeline of events in the development of Demain.

Shared Experiences Build Trust and Focus

The timeline above notes the types of experiences that helped shape the consortium. These were crucial to develop relationships, create trust and gain early market feedback on how to position Demain.

Learn about the challenges the consortium has had to overcome

Bridging the Gap Between Design and Construction

Shared branding alone does not ensure design teams are providing deliverables suitable for downstream partners. For each project, personnel from the shop and field advised engineers on

the design. This was an interactive process that only saw improvement from bringing together the team, capturing results at the end of the project and incorporating lessons learned for future work. Figure 2 below is a snippet from an early project that shows the disparity from the design at permit vs as-built. This type of feedback loop was crucial to eventually creating coordinated, constructable designs.

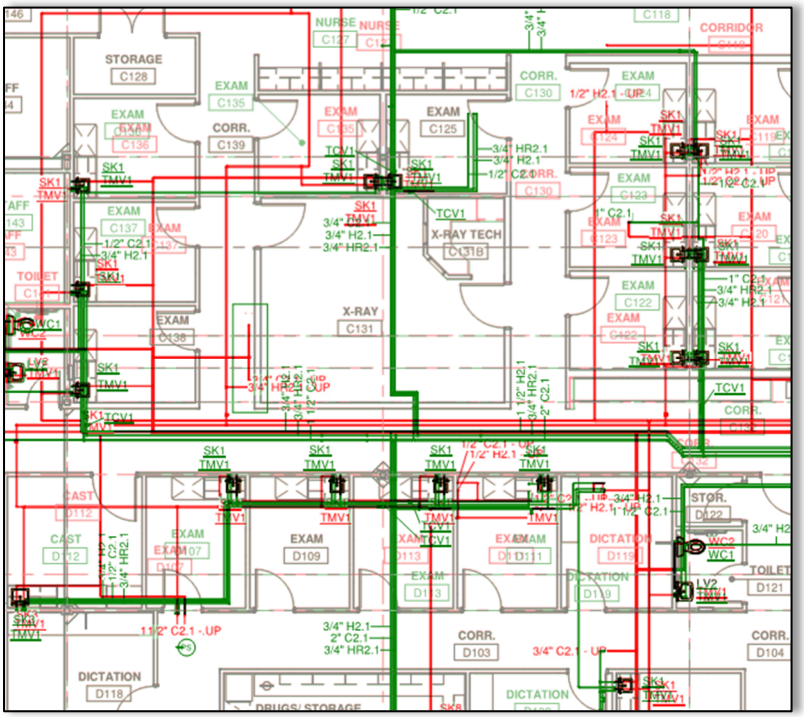


Figure 2: Red lines are piping layouts at permitting, green lines are actual installed routes. Implementing feedback loops like this, couple with training and dialogue, are pertinent in developing constructable models.

Aligning Engineering Departments

Several of the member companies within the consortium each have engineering departments that have developed their own standards and processes over the years. These differences spanned modeling standards, alternative load calculations, conflicting symbols, etc. It was quickly apparent that we needed to also bring these teams together so that the deliverables headed to the manufacturing floor and field would be the same – regardless of which design team it came from. Similar to the gap between design and construction, this has been an iterative process of identifying differences and then working together to pick the solutions that worked for both teams. Also supporting this effort was bringing together the software engineers from each firm so that all of the engineering teams were able to co-develop and benefit from the same developed tech.

Discover new insights that will help you implement your own industrialized construction workflows

Data is the Common Language

Data is the unifying language to unite all project stakeholders. This has been proven many times over in other industries and enough progress has been made within construction to validate it's only a matter of time. However, this is easier said than done. To arrive at a fully data-driven deployment, every decision and workflow must use and generate standardized data. Software must have API's that allow for the push and pull of information to eliminate the risk of siloed data. Any single analog moment will break the digital thread.

Inform Design with Manufacturing and Field Standards

The only way to eliminate wasteful rework is by leveraging downstream resources from the shop and field to advise design teams on their deliverables and workflows. Those that need to use the deliverables are best to inform on the content of those deliverables. Done right, this can also be used as a mechanism to capture institutional knowledge, standardize it across an organization and iteratively improve upon it.

Engage

The industry is poised for disruption. The roles and responsibilities that we're familiar with today will evolve over the coming decade. Now is the time to begin engaging with others to ensure you are prepared and positioned favorably within the new paradigm.

Additional Resources

These resources can be used to provide additional context to the topics discussed within this presentation.

Case Study Workshop: Benefits of Industrializing Construction

Many studies and experiences have highlighted the waste in building design and construction. In fact, it is estimated that as much as 30 percent of the total weight of building materials delivered to a building site is wasted [1]. Industry thought leaders have promoted digitization and prefabrication as strategies to eliminate that waste by reducing time, cost and risk.

Using the hypothetical fit-out of a single patient room as an example, this study was intended to quantify the improvements brought on by embracing data and prefabrication. Proctored by Demain member company, KLH Engineers, an audience of more than 50 construction professionals participated in “Workshop F: Discovering the Power of Data to Inform Multi-Trade Prefabrication Decision Making” at the 2021 Advancing Prefabrication Conference in Dallas, Texas.

Click here and scroll down to access the white paper summarizing the outcomes of this study: https://www.buildingdemain.com/solutions/industrialized-construction/

[1] Osmani, M., 2011, “Waste,” Science Direct, https://www.sciencedirect.com/topics/earth-and-planetary-sciences/construction-waste

The Next Rembrandt

The Next Rembrandt is a project developed to show a glimpse of what data-powered creativity could look like. It’s not meant to suggest that humans should be replaced by algorithms, but it does provide an interesting thought experiment to the intersection of creativity and technology.

https://www.nextrembrandt.com/

Painting in the style of Rembrandt created by machine learning