Asset Leadership Network

BIMStorm at a Distance:

Proven Web Processes in an Uncertain Time

A long-established web-workshop quickly focuses on field hospitals to demonstrate proven paths for the building industry in the pandemic . . . and beyond.

By Michael Bordenaro, ALN, Director, Communications

Forced to work remotely on the web, the building industry has accelerated into a long-awaited acceptance of web-based tools and processes. In an industry that is very hands-on by nature, comfort with the web came slowly. . . until it greatly accelerated in early 2020.

Revenues have dramatically declined and profit margins are disappearing, but essential building industry business is being executed remotely and many projects are moving forward – although into an uncertain future.

Into that breach, the “BIMStorm at a Distance” online workshop series was launched by ONUMA, Inc. to reassure professionals that web-based building industry tools and processes have been proven for more than a decade. The series of web workshops are ongoing and are co-hosted by the National Institute of Building Sciences (NIBS) and the Asset Leadership Network (ALN). BIMStorm at a Distance includes CommArch as a co-sponsor.

BIMStorms are web-based brainstorms to assist planning and design using Building Information Models “landed” on GIS systems, such as Google Earth, to provide a realistic understanding of the implications of decision making for people who are not in the same room together. Established in 2007, there have been dozens of BIMStorms and many have won awards.

BIMStorm at a Distance is intended to help healthcare executives, and others, understand that many benefits can be achieved using proven, web-based processes.

“Why are we doing this now?” asks Roger Grant, NIBS, Executive Director of Building Information Management. “There are immediate unmet needs for temporary and emergency facilities now. And once work restrictions start to lift, there is going to be a

surge in getting existing projects back up to speed. Also, if there are funds for getting new projects out, there will be a need for proven, rapid deployment processes."

Grant noted that the proven processes demonstrated in the web workshops can help now, but also in the future.

Launched in 2008, the first BIMStorm, a cloud-based collaboration method, won an award from the American Institute of Architects for demonstrating the very web-based tools and processes that are demanded by global conditions today. Understanding and repeating the processes in web-workshops focused on fictional projects can prepare professionals for the new normal of increased web-based work.

The web workshops identify a fictional project, and allow professionals from around the world to view real time 3D design information in many software programs, including Google Earth which helps replicate a realistic views of potential design solutions. Information about chosen solutions is retained in a cloud server and is available through the entire lifecycle of a facility – from planning through decommissioning – in software programs that use open data sharing standards.

For example, Michael Welwood, Associate Vice President with Broaddus & Associates, which consults with hospital project management, noted that many hospitals plan staffing around 12-patient units. Therefore, the team knew to plan the number of field hospital rooms in multiples of 12.

This "new normal" work process has been possible for more than a decade, but the web-based adoption curve has moved very quickly from "early adopters" past "early majority" and into "late majority" in the first months of 2020.

A Demonstration of Processes for Any Facility Type

The web-based demonstration highlights how ANY project can be addressed remotely on the web by professionals contributing their expertise from anywhere in the world.

Jim Dieter, CEO of the Asset Leadership Network says, "The workshops show that many relevant stakeholders contributed tactical advice that resulted in the creation of information that was visualized so it could be understood by many people, including executives and operations staff.

"The subtle changes based on input from participants resulted in very accurate information related to costs, siting, arrangement of rooms and lists of the personal property assets in the room. The visualizations enable understanding from strategy, to tactics, to operations and back again, so everyone is acting based on the same, trusted information."

Most importantly, Dieter says, “The detailed climb benefit of the activity is a good way to impact senior level thinking rather than handing them a stack of drawings they don’t understand.”

The focus on field hospitals was intended as a demonstration of a scenario that can be widely valued by municipalities around the country. Yes, there is need for field hospitals, but the people who need to erect them should focus on their currently trusted approaches. Looking at field hospitals in the web workshops was a conversation starter.

And the conversation turned to:

- standards that aid repeated success,
- the ability to involve non-expert stakeholders early in the planning process;
- bringing tools from the retail web world to the building industry;
- involvement of many experts in short period of time to dramatically reduce schedules while increasing mission success;
- building trust in decision making related to complex topics that are made visually clear;
- quickly using new tools and processes to extend expertise in highly beneficial ways;
- linking hospital bed peak projections to assignment of mobile healthcare assets;
- Contact Tracing and more.

Amazon-style Shopping Cart Expedites Planning and Design

To show owners and those who help them achieve mission success what is possible, the web-based workshop series began by looking at field hospital planning, design and preparing information for construction, commissioning, operation, management and decommissioning.

Arthur Kurland, Director, Capital and Asset Management, University Health System, San Antonio University, participated in the web-workshop series in his role as Asset Leadership Network Senior Fellow. “From my perspective, I was completely impressed by how quickly a working design could be put together and different site locations examined so quickly with the input of so many different professionals from all over the country,” Kurland said of the two web workshops he participated in so far.

One exercise utilized an existing “Amazon shopping cart” approach to selecting pre-configured 3D hospital rooms that include visuals of required equipment and supporting information about costs, electrical loads, water requirements, serial numbers, warranties and other data. This approach is based on work first completed for the Department of Defense – Defense Health System and the Department of Veterans Affairs through NIBS.

Another exercise looked at how different field hospital modular units commercially available online can be used. ONUMA, Inc. replicated the publicly available information about the units in the shopping cart system and the team of professionals determined

how to best configure them. Modular field hospital information from Jupe, Austin, Texas, was converted to 3D models and place in the “Shopping Cart” section of the ONUMA System in a matter of hours.

Jupe associate Alterrel Mills participated in the module unit web workshop. Mills says, “Jupe units are designed to be customizable and rapidly deployed because during crises, time is of the essence. With the ability to deploy up to 24 Jupe units on a single flatbed pick-up truck, we can create an off-grid, IoT-connected hospital wing in a matter of hours that safely isolates patients and healthcare workers.”

Mills added, “The web-based, rapid planning and design processes of the workshops complement Jupe's desire to help people quickly respond to crisis."

Charlie Lindahl, Texas A&M Health, Senior Analyst, Campus Operations, noted the Amazon shopping cart approach as a breakthrough concept. “There wasn’t the need for a lot of explanation. Everyone understood what rooms where needed, what special equipment was in each room and saw in real time how all the spaces came together. We didn’t have to waste a lot of time explaining things. As questions come up, they were addressed.”

Lindahl also said, “Everything had a preliminary cost associated with it. So we could look from the 10,000 foot level down to the wall plugs in one, 90-minute session with architects, business people, software folks and others. The session resulted in an end product that looks very good, especially when you consider how fast it happened.”

This approach leads to a culture of success that helps overcome resistance to change. “You are on a successful team, and you are not a spectator, you are a participant.”

Increased Need for Rapid Response Planning

The culture of success related to rapid response planning is important in at this time in human history, according to Lindahl, due to the dramatically increased incidents of natural disasters.

“Everyone in the U.S. has been touched by disaster,” Lindahl says. “When you say, ‘There is a solution to help with disaster assistance – and can demonstrate the solution works – you help people overcome the feeling of hopelessness that accompanies disaster and you motivate them. BIMStorm at a Distance is a motivator.”

When planned ahead of time as a response and a custom “shopping cart” is created with the real time, accurate list of resources and assets that a response agency has, a reactive situation is turned into a proactive situation, according to Lindahl.

But Lindahl, who considers himself a teacher and a student of technology and human interactions with technology, believes that human nature has to be overcome to put tools and processes like this into place, even for disaster response.

“For people to start doing something differently, or better, they have to first admit that they way they were doing things is not adequate. And people don’t like doing that,” Lindahl says. What is needed, he says, is a bridge from between the old way to a new, better way of doing things.

“The bridge allows people to save face by extending the good parts of what they were doing and to bring their knowledge and experience into the better approach,” according to Lindahl. “These BIMStorm web workshops allow everyone to be involved in a quick, successful exercise that shows that what they were doing wasn’t wrong, they just weren’t looking far enough into the future to understand how to succeed with the ever-increasing array of tools being developed constantly.”

According to Lindahl, these exercises are tremendously important for our ability to address the increasing amount of disasters facing the United States.

John Dougherty, Managing Partner, Infrastructure Professionals, concurs. “The field hospital activity is a great example of the power of remote architecture design through web-based applications. Critically, it enables real-time design collaboration through web-based work streams, among building professionals, Dougherty says.

According to Dougherty, the web workshops also make end-user collaboration and real time feedback on the design much easier for everyone involved. “This allows professionals to quickly specify both the space and the moveable assets that the space requires,” Dougherty says.

He adds that professionals can collaboratively meet online to design and analyze spaces in working sessions internally, with clients, or for formal presentations, from their home offices.

“Executed together this creates rapid learning cycles and design refinements. In the real world it means you can consider a helicopter landing pad for a field hospital with negative pressure rooms and inflatable hallways – and reject it as a bad idea in the next breath. It’s not just faster and more convenient, its’ collaborative nature reduces time spent on unsuccessful design strategies,” Dougherty says.

Kimon Onuma, FAIA, President of ONUMA, Inc. says, “It is not good that a pandemic has made it important to remind people of the many proven benefits are possible with web-based tools and processes. We are glad to provide an encouraging message that much is possible despite being forced to do so much work on the web. The virtual workshops show how owners can connect to architects and other consultants. They also connect demand to solutions in real time online, which has never been more important.”

End

BIMStorm at a Distance Video Gallery

Short Intro - 4.12.20
https://youtu.be/UToVYvOaPrs
Kimon Onuma explaining the premise of BIMStorm at a Distance in less than 10 minutes.

BIMStorm Workshop - 4.13.20
A mix of professionals sharing knowledge and insight on how to begin planning and designing a field hospital using web tools and processes in a 90-minute web session

BIMStorm Webinar #1 – Overview of Workshop - 4.14.20
https://youtu.be/JbS_aCijHB4
A 30-minute summary of the web workshop and discussion of tools and processes used.

BIMStorm Workshop #2 - Video - 4.22.20
https://www.youtube.com/watch?v=o-X3jiiOx_E&t=2212s
A 1-hour workshop exploring the use of pre-fabricated hospital modules to plan and design a field hospital.

BIMStorm Workshop #2b – 4.24.20
https://www.youtube.com/watch?v=XVGjihLOAjA&feature=youtu.be
Further refinement of the module-based plans in an 8-minute summary.