Life Cycle Project Time and Cost to Complete Tasks for Projects Using MVW versus Project Not Using MVW and Using Conventional Means

Task	Gathering facility information to develop project	Sharing Information with Project Developers & Stake Holders	Measuring / Simulating Project	Estimating project costs	Getting decision to proceed or not proceed with project	Bidding projects, getting final pricing, and creating methodology to hold vendors accountable	Planning construction	Monitoring Construction	Verifying Project
Time to Complete Task With MVW	Example: The Project Information is gathered by one MADTECH MVW Technician in one Day	No time is needed: all information is shared instantly, with real time virtual onsite collaboration possible, via internet connection with the MVW cloud host from anywhere with no download of files or special software installed.	Example: Measurements taken and simulations done by one MVW Technician in one day	Example: In one day, a Project is laid out in 3D within MVW digital twin by one MVW technician, leaving no room for error in what work is to be estimated	One hour: Using a MVW collaboration room, from wherever they are, all stake holders meet inside MVW digital twin, review the project in 3D, see facilities as they are AND are to be, and then make a decision. All relevant information is available to make a decision and answer questions in the MVW.	Hours: A Virtual job walk is accomplished with vendors showing them what exists now in 3D and then what is to be done in 3D, so there is no room for mistakes. Vendors can re-do job the walk from their offices via internet connection with MVW cloud host when working on pricing. More vendors respond to bids, because there is no need to travel to the site to put in a price. Pricing in general is also better because there is no missing information, and more vendors can participate.	In one Week for a sample project: 1 MVW technician can simulate in 3D all aspects of a project construction and make them available to all engineers and vendors involved 24/7 via internet connection to the MVW. So they always know what needs to be done, before construction begins. Notes, specs, changes, etc are all in the MVW, it becomes the repository of information for all data relevant to the project, and is accessible 24/7 with the click of a button.	As construction proceeds, you can upload pictures, scans, films, notes, drawings, and more to the MVW for easy review & Data dispersal.	As work completes it is scanned, and then laid over the previously Bid 3D Virtual Project Layout in the MVW, easily noting any vendor discrepancies for the punch list. 100% accountability enforced with no wiggle room.
Time to Complete Task Without MVW	The same project information is gathered by multiple people making multiple site visits over days, weeks, or months depending on size of project(s).	Days, weeks, months, or longer depending on size of project. To get information: files need to be downloaded, special software is needed, information is siloed for one user at a time to make or suggest changes - no virtual collaboration is possible.	Same amount of Measurement and simulations: multiple people working days, weeks, months, or longer depending on the size of the project(s).	The same project is laid out using multiple personnel in 2D or 3D over a period of days, weeks, months, or longer depending on size of project(s)	Several days, weeks, months, or longer depending on how many questions require gathering more information, additional site visits, having extra meetings because it is hard get all the stake holders of a project together in one place, etc...	Days, months, or longer because: it is harder to coordinate multiple job walks on-site, harder to show existing conditions, harder to show exactly what is to be bid, and harder to answer vendor questions. Pricing is higher because vendors are missing information, don't clearly understand project, or don't have ability (or time) to go back and see site to get questions answered, therefore creating a significant risk in dollars to the price. If they miss the true scope of the work, and a change order is requested, the project goes over budget.	For same sample project: Conventional practice would take multiple parties several months to create a cumbersome facsimile of the above that would be difficult to access, and require each person to have costly software and download files that are not easily updated for group use. Conventional methods do not enable virtual engagement between working parties on a project, and universal access to the digital twin & needed project information when needed, 24/7. The result: Information is delayed causing delays in the project.	You cannot share/review information easily with stake holders causing costly delays to project, and missing mistakes before they compound.	A negotiation occurs between the vendor and owner over whether the 2D or 3D files provided for the bid were accurate, available during bid and construction for reference, and essentially anything else that can muddy the waters and allow the vendor to issue a change order.
Cost of Task to Project using MVW	X = Cost of Completing a Project Task When Using MVW	X = Cost of Completing a Project Task When Using MVW	X (a measurement is taken in one - two seconds)	X (Easy to get multiple budget vendor prices with MVW)	X (one virtual meeting with everyone from wherever they are inside 3D digital twin to review project.)	X (Virtual appointments to do job walks - no one leaves office - Project in 3D with no missing details / go back into digital twin as many times as want to formulate bids = lower/confident bids) Contigency budget reduced 20-50%	X = Cost of Completing a Project Task When Using MVW	X = Cost of Completing a Project Task When Using MVW	X = Cost of Completing a Project Task When Using MVW
Cost of Task to Project when not using MVW	2X to 100X depending on size of project and availability of information	5X to 200X depending on size of project, type of information, and complexity	100X to 5000X based on location and size of project	2X to 10X (hard to get budget prices without job walks)	5X - 25X (Herding cats, questions needing more info, harder to get them to understand the project without seeing it.)	5X - 200X (Herding cats to get every vendor on-site to bid, doing multiple job walks, and after all of that vendors may not feel comfortable they understand job meaning: high prices)	2X-50X depending on size project plus **eventual cost of mistakes not caught due to lack of 3D scope clarity,** sequence of construction, and **not** doing will it work / fit in simulation in virtual space before real space	2X-20X plus cost of mistakes missed that ripple and compound	2X-100X plus change orders cost due to inability to defend scope of work bid

Note: The above is based on actual project experiences and knowledge. An experienced person, after utilizing the MVW, will realize the time and cost savings estimates are fairly represented.

Note: There will be exceptions here and there, but in aggregate, the cost and time savings associated with using the MVW make it a very compelling to use this disruptive and emerging technology.

Next Project