



STANLEYCONSULTANTS

Establishing our Building Information Modeling (BIM) Program

September 11, 2019

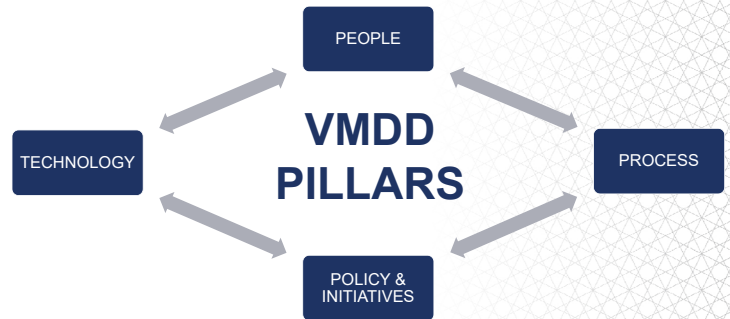
Virtual Modeling Design and Delivery (VMDD) Program

- The future of transportation design, construction, and management will rely on virtual modeling and BIM for Transportation Structures
- We recognize a nation-wide vision to transition to BIM deliverables for transportation projects
- Our main goal is to position our project delivery teams to be trained and ready to successfully design and deliver virtual models
- Establish our Virtual Modeling Design and Delivery, or VMDD, program throughout the company

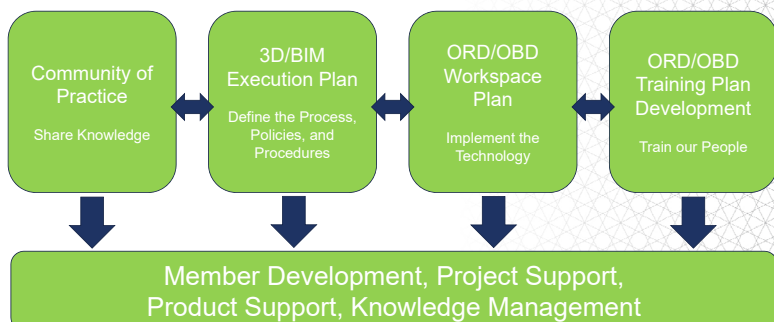
Virtual Modeling Design and Delivery (VMDD) Program

- Internal core team of transportation leaders developing and leading our internal VMDD program
- Goals for the VMDD program
 - Develop our design teams by providing the training and opportunities to implement BIM on projects where value is added for our current and future clients
 - Standardize procedures to ensure high quality on our transportation projects
 - Share knowledge throughout our internal "Community" to accelerate the development of our members
 - Acquire, implement, and maintain the design software

Virtual Modeling Design and Delivery (VMDD) Program



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Community of Practice (CoP)

- Network of our Roadway and Bridge engineers and designers meeting monthly to share knowledge and discuss BIM
 - Software demonstrations
 - Project Spotlights
 - Tips, Tricks, Lesson Learned
 - Industry News
- Standardize workflow and details across all offices
- Creates workshare opportunities to better serve our clients and projects

Virtual Modeling Design and Delivery (VMDD) Program

CoP Office 365 Group

- Central location for all things VMDD
 - Calendar including upcoming internal and external training opportunities
 - Sharepoint Site for document storage
 - ✓ Training Materials
 - ✓ Presentations
 - ✓ Sample Designs
 - Links to external training and resources
 - New feeds with software and industry news

Virtual Modeling Design and Delivery (VMDD) Program

3D/BIM Execution Plan

- Develop a master plan for virtual modeling
- Checklist of items to clearly define the scope of the virtual modeling
- Standardize the procedures for modeling
- Identify key roles and responsibilities of project team
- Communication tool with owners

Virtual Modeling Design and Delivery (VMDD) Program

OpenRoads Designer/OpenBridge Designer Workspace

- Many of our clients do not have 3D CAD workspaces
- Develop Stanley Consultants standard workspace
 - Utilize when a client workspace is not available
 - Utilize for internal training purposes
- Workspace to incorporate both ORD and OBD to fully integrate the design
- Anticipate continuous improvements to implement requirements for multiple locations and clients

Virtual Modeling Design and Delivery (VMDD) Program

Training our Members

- Provide training for engineers and designers from all transportation offices
 - Onsite small group training with Bentley personnel
 - Hands on training using latest Bentley software
 - OpenRoads Designer (ORD) for Roadway Group
 - OpenBridge Designer (OBD), LEAP Bridge Concrete, and ProStructures for Structures Group
- Core leadership group became resource for other members
- Continue to engage with industry software developers to incorporate new versions and features of software

Virtual Modeling Design and Delivery (VMDD) Program

Implementing our Virtual Modeling Designs

- Started small several years ago using virtual models for design checks and visualizations
- Expanded use with 3D LiDAR surveys for bridge rehabilitation projects
- Continued progressing virtual designs by developing approximate quantity checks
 - Preliminary Design Alternative Cost Comparisons
 - Final Design Verification of Traditional Quantity Calculations
- Utilized interoperability of software packages
- Deliverables to include 3D surfaces and structures for use in design and construction

Virtual Modeling Design and Delivery (VMDD) Program

Quality Control

- Implementing new technology must maintain quality
- Verify all input is accurate with printed QC record
- Utilize traditional methods to QC virtual design output
 - Verify results by performing independent checks and verifications of results
 - Utilize virtual model for iterative design while verifying final results using traditional methods
 - Utilize virtual model for approximate quantities to verify traditional quantity computations

Virtual Modeling Design and Delivery (VMDD) Program

Moving Forward

- Directive from Stanley Consultants Transportation Market Leader that all new transportation projects shall be done in the 3D environment
- Utilize capability of fully integrated virtual models
- Continue efficient project delivery while implementing any new technology
- Maintain quality deliverables by using a variety of traditional methods to achieve our quality control requirements

Virtual Modeling Design and Delivery (VMDD) Program

QUESTIONS???

