

MATRIX **NEW**WORLD

Engineering Progress

BUILDING INFORMATION MODELING (BIM) & 3D MODELING

Matrix is advanced.

Matrix employs state of the art High-Definition Surveying (HDS) laser scanning technologies and software to efficiently create high quality 3D models and associated deliverables that are customized to suit our client's needs. The HDS technology provides a very dense and complete data capture with the ability to collect a point at a <1 mm spacing in three dimensions. The resulting data is known as a point cloud, and has a resolution that resembles a photograph. The point cloud is then utilized to create 3D models such as Building Information Models (BIM) as well as numerous other deliverables such as rendering exhibits and construction conflict/clash analyses.

The Matrix team is experienced in utilizing HDS technology and in creating 3D models for a wide variety of projects and applications. For example, we are one of the only firms in the nation to have performed HDS for the interior spaces of the Statue of Liberty, which enabled the project team to verify dimensions in 3D and finalize design/renovation plans. An additional representative example is the creation of a detailed 3D model of the existing Morristown Medical Center main physical plant by Matrix for the design and installation of new boiler and chiller units (photo, below right).

As part of our BIM service, we are able to maintain all elements of a BIM model within our integrated project delivery approach, or provide BIM services to one or more parties involved in a BIM project that do not have the expertise for BIM model creation and management. A key advantage of modern BIM technology over traditional software is that the objects created within BIM models represent actual elements within a construction project, which makes the information in the BIM model more useful to designers and allied professionals.

We provide a wide range of customized electronic and visual deliverables and services, which include but are not limited to the deliverables and services listed herein. Matrix is able to provide these services across the full range of industry sectors for even the most complex projects. Matrix also provides a full suite of terrestrial, subterranean and hydrographic survey services and a full suite of Geographic Information Systems (GIS) services to complement our BIM and 3D modeling services.

Services provided

- HDS Laser Scanning
- 3D BIM (Scan to BIM)
- 4D BIM (Construction Scheduling)
- 5D BIM (Costs)
- 2D Drawings from 3D Models
- Photorealistic Modeling
- Digital Terrain Models (DTM)
- Digital Elevation Models (DEM)
- Fly-through Videos
- Project Site Animations
- Geo-referenced Photography
- Cross Sections & Profiles
- Rendering Exhibits
- Facility & Asset Management
- Construction Conflict/Clash Analysis
- Validation of As-builts
- Volumetric Analysis of Materials
- Update of Construction Documents into 3-D CAD Format
- Construction Defect Analysis
- Crime Scene Modeling
- Expert Testimony

Contact

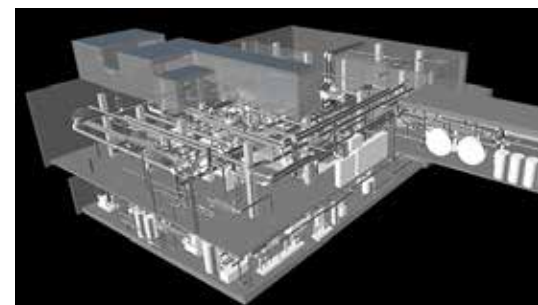
Matrix New World Engineering

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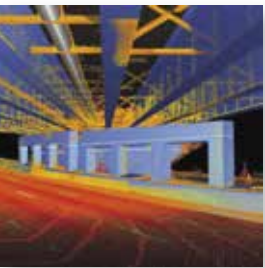
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Certified WBE/DBE



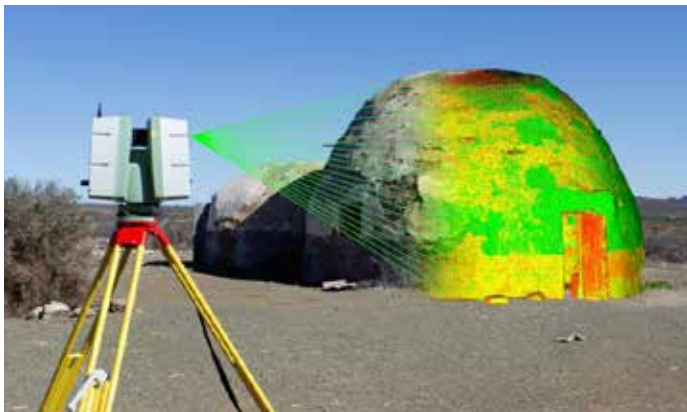
3D Model of Medical Facility (right)



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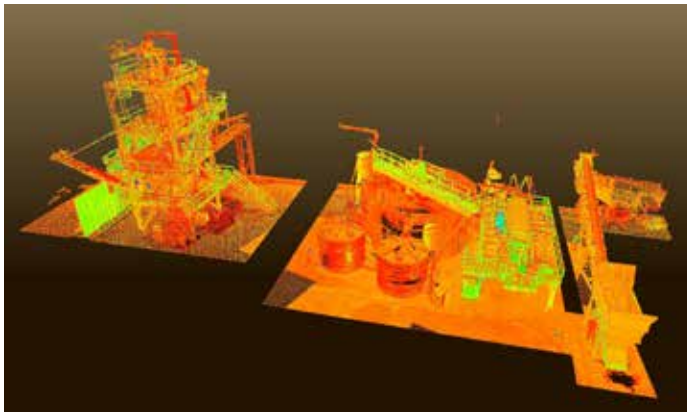
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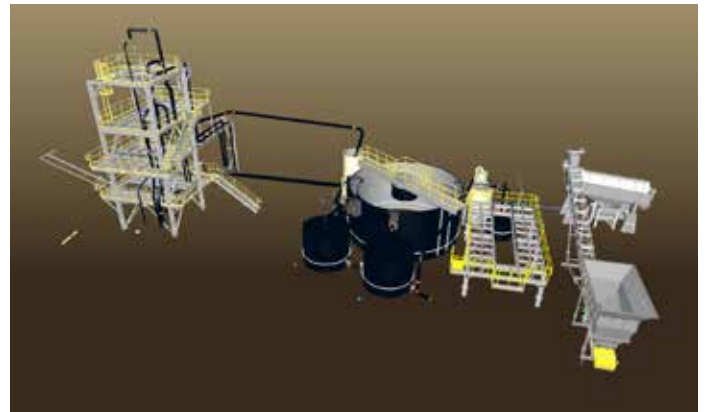
Point Cloud Acquisition



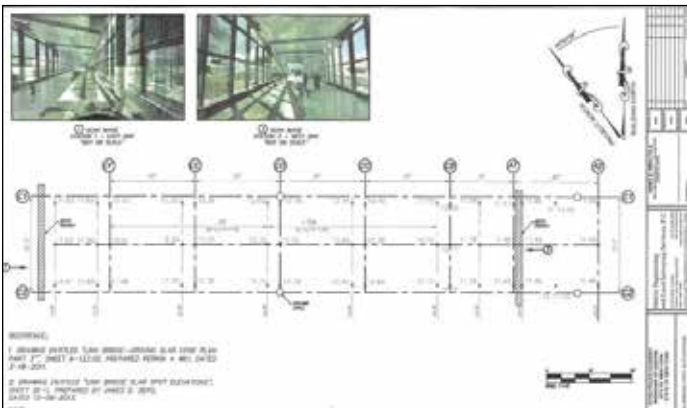
Pipe/Facility Modeling



Point Cloud Data for Industrial Facility



3D Model of Industrial Facility



NY Police Academy Pedestrian Bridge Renovation Design with 3D HDS Illustration



Full-Color Point Cloud Data for M/E/P Project Design