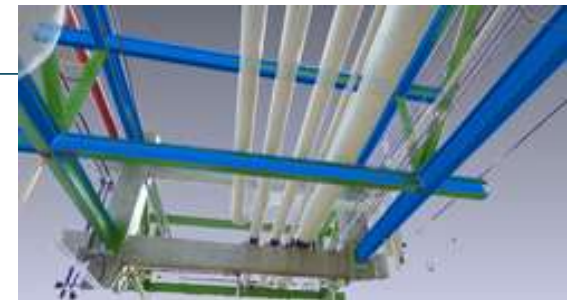
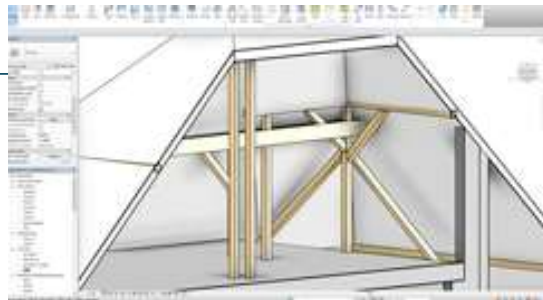


Laser scanning: Integrated BIM workflow

Physical world to digital information



Vijay Chowdhary

FARO Account Manager C-BIM : INDIA



FARO® at a Glance

The world's most trusted source for
3D measurement and imaging solutions



FARO
Empowering Quality
FACTORY
METROLOGY



FARO
Accelerate Design
PRODUCT
DESIGN



FARO
Proven Facts
PUBLIC SAFETY
FORENSICS



FARO
Informed Lifecycle
CONSTRUCTION
BIM-CIM



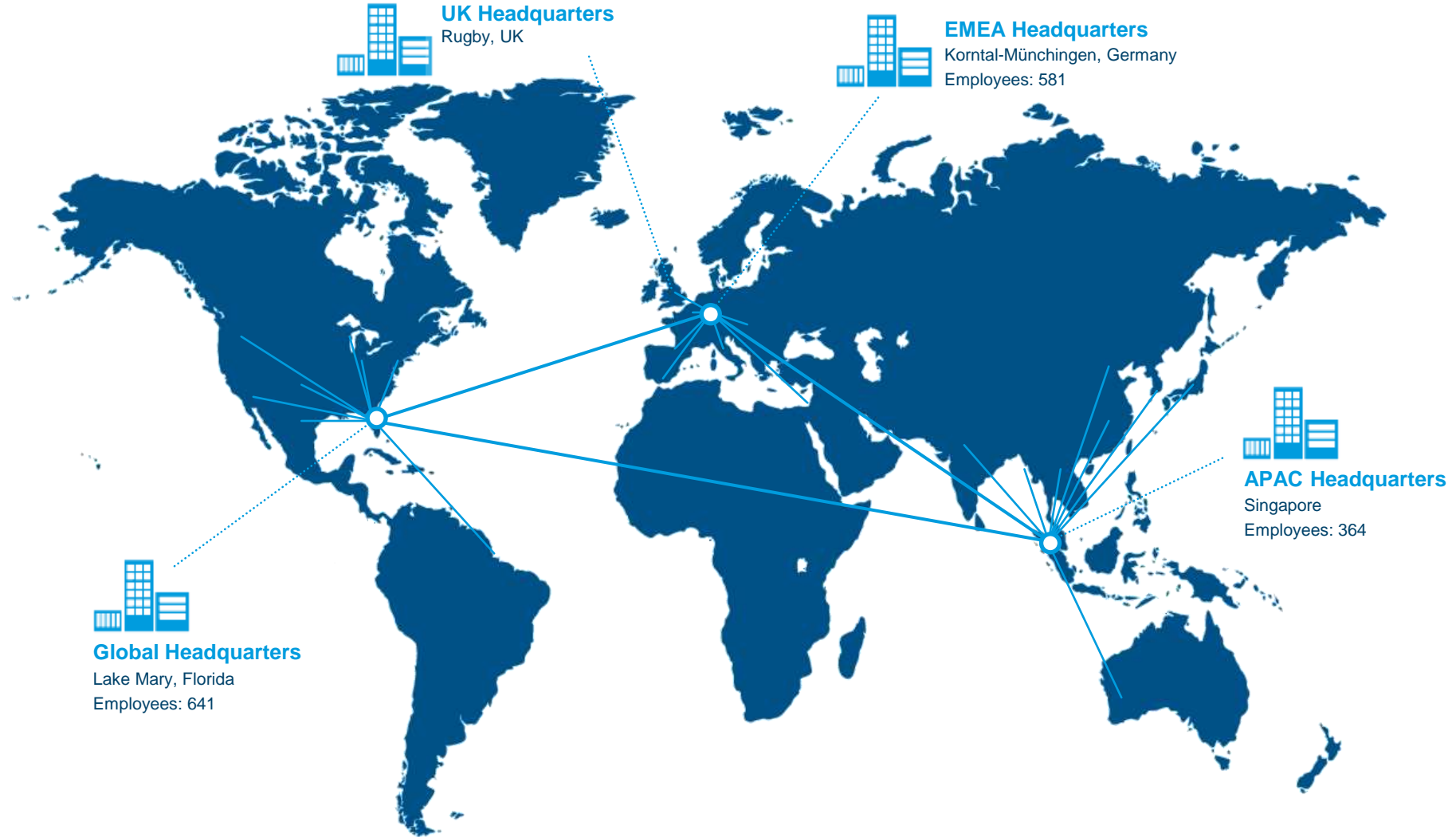
3D Services



FARO
Made to Order
3D
SOLUTIONS

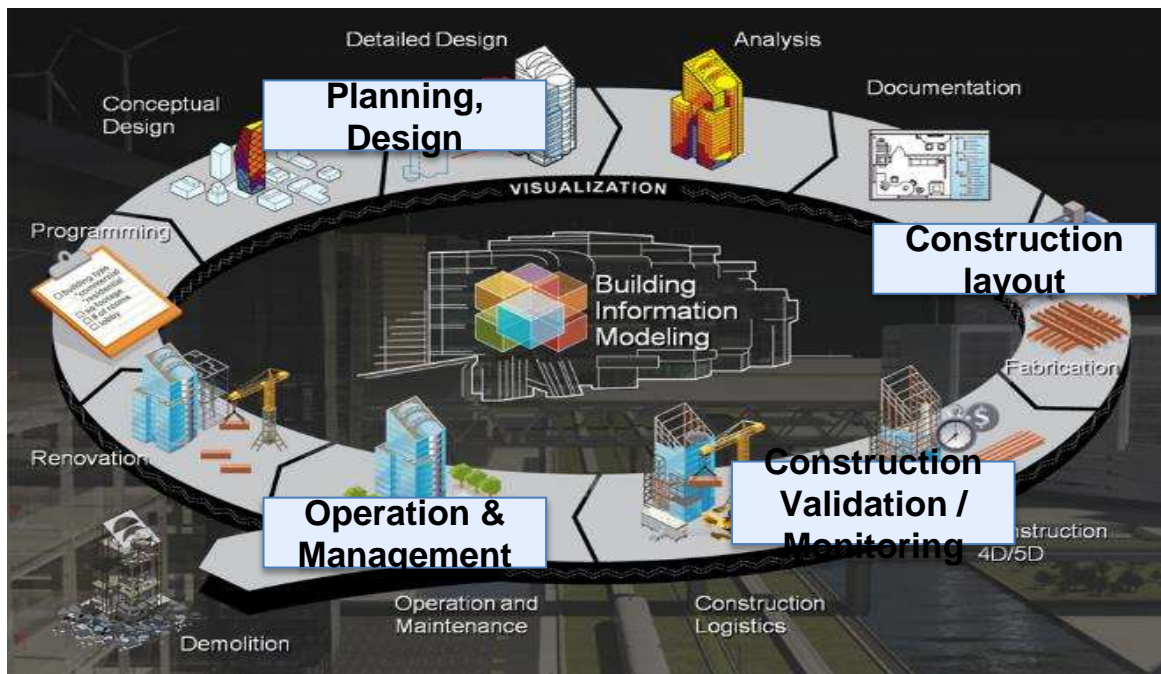
FARO

Global Footprint with Local Sensibility



Headquarters are based in Lake Mary, Florida, Korntal-Münchingen, Germany and Singapore.
Subsidiaries are located in Australia, Brazil, China, France, Germany, India, Italy, Japan, Korea, Malaysia, Mexico, Netherlands, Philippines, Poland, Portugal, Singapore, Spain, Switzerland, Thailand, Turkey, United Kingdom, USA, Vietnam.

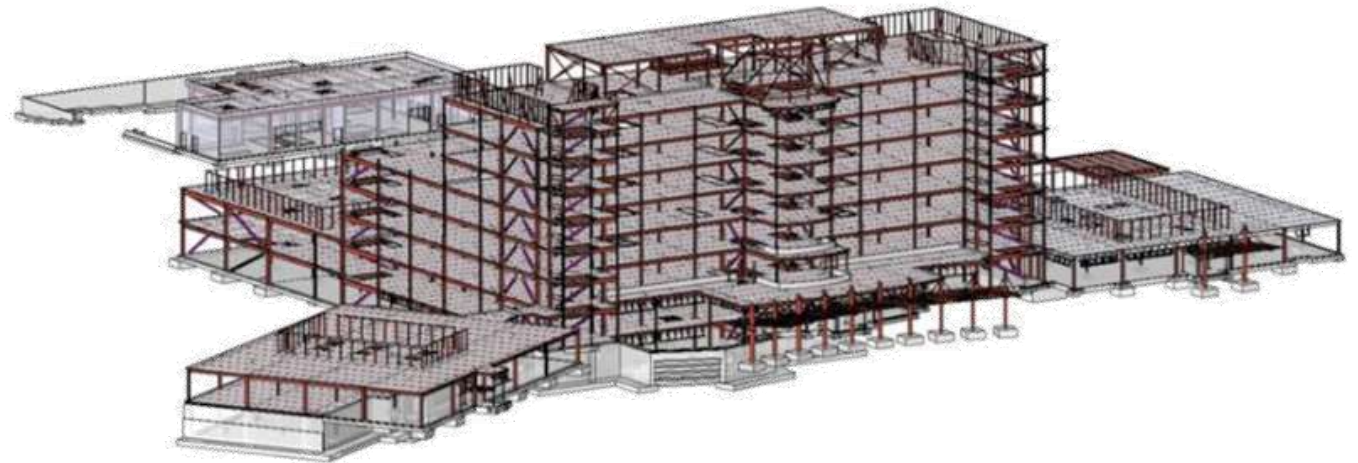
BIM is expected to garner \$11.7 billion by 2022, registering a Compound Annual Growth Rate CAGR of 21.6% during the forecast period 2016 - 2022. BIM is a digital representation of a project, which can be used by architects, engineers, and construction professionals.



- In BIM FARO® helps in planning, designing, constructing, operating, and maintaining the diverse physical infrastructure coupled with speedy data exchange among the involved entities.

BIM adoption challenges

- Long field time to document as-built data
- Inaccurate data collection / lack of true-to-scale dimensions
- Incomplete plans
- Additional equipment in hard to reach areas
- Partly still use of manual drawings
- Lack of cooperation between stakeholders
- Resistance to change



Building Information Modeling (BIM) with FARO Laser Scanners



How can FARO help them?

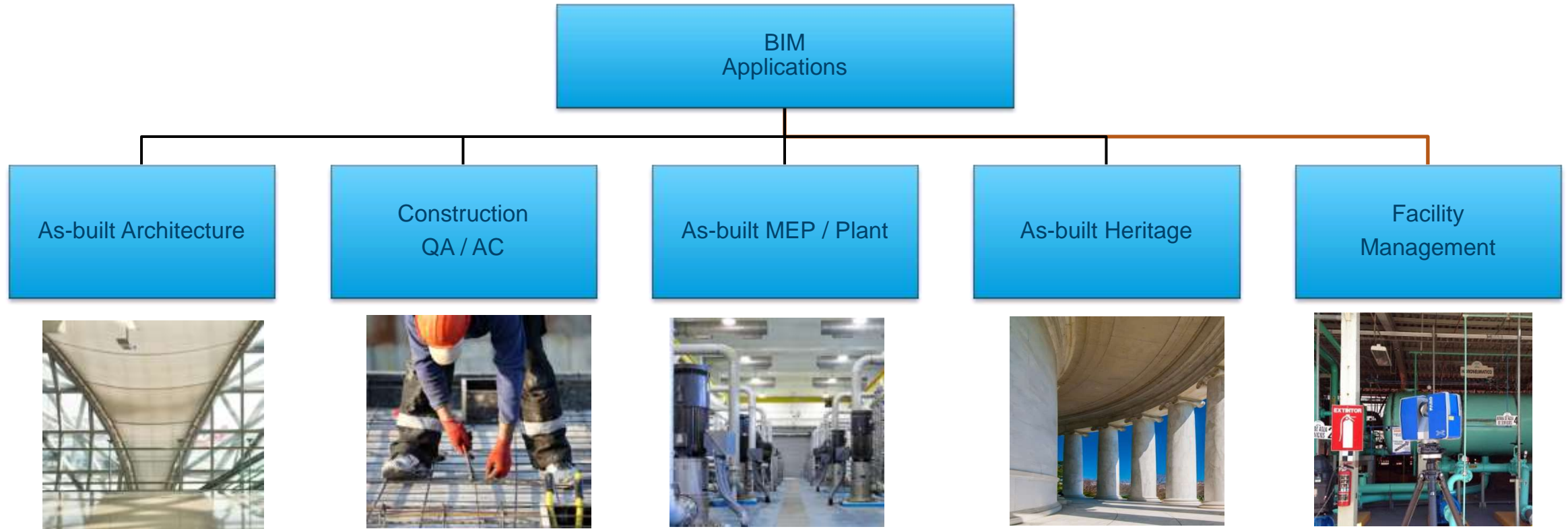
Utilizing FARO® solutions, hardware and software allows AEC customers to:

- Efficiently capture reality (minimize project risks, reduce project costs etc.)
- Capture reliable data
- Capture Asbuilt objects with less man power
- Document data with familiar design tools, like AutoCAD® and Revit®
- Efficiently process data with smart and intuitive software tools



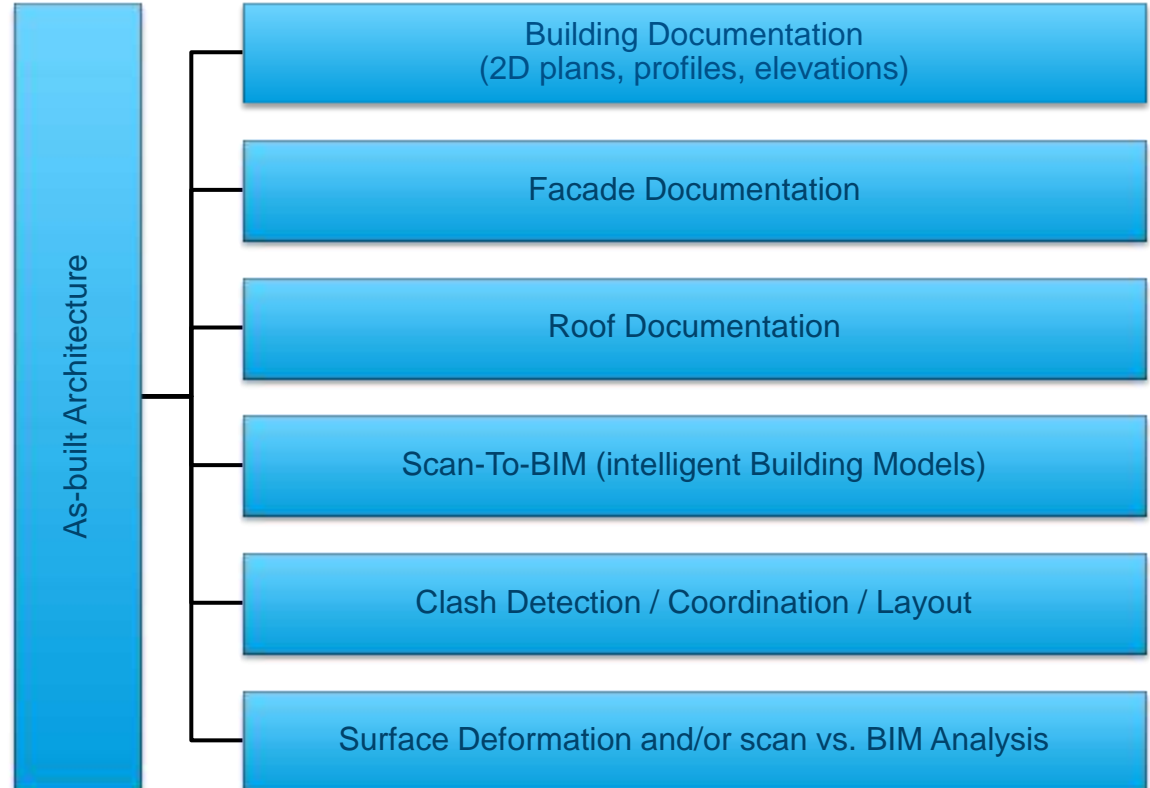
Main Applications

FARO segments Construction BIM as-built documentation in five main applications:

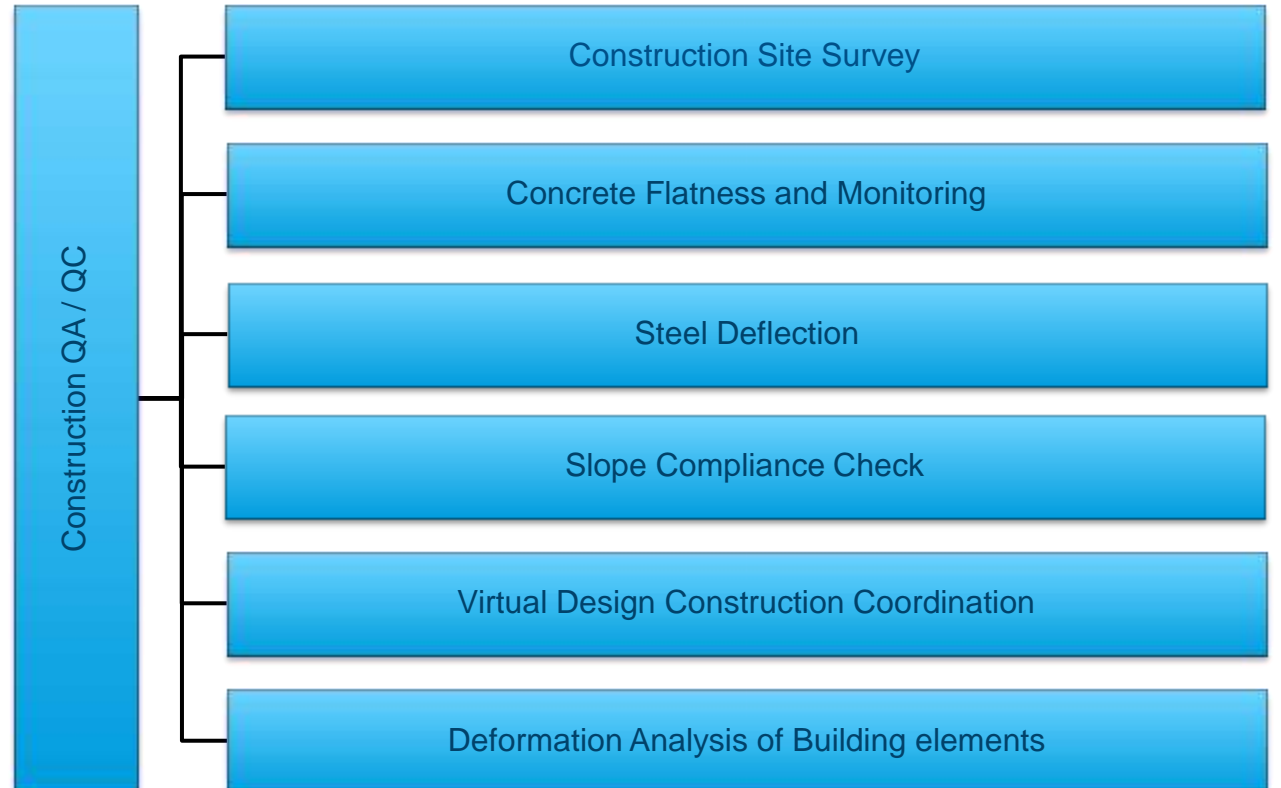


Construction BIM Micropage: <https://constructionbim.faro.com/en/>

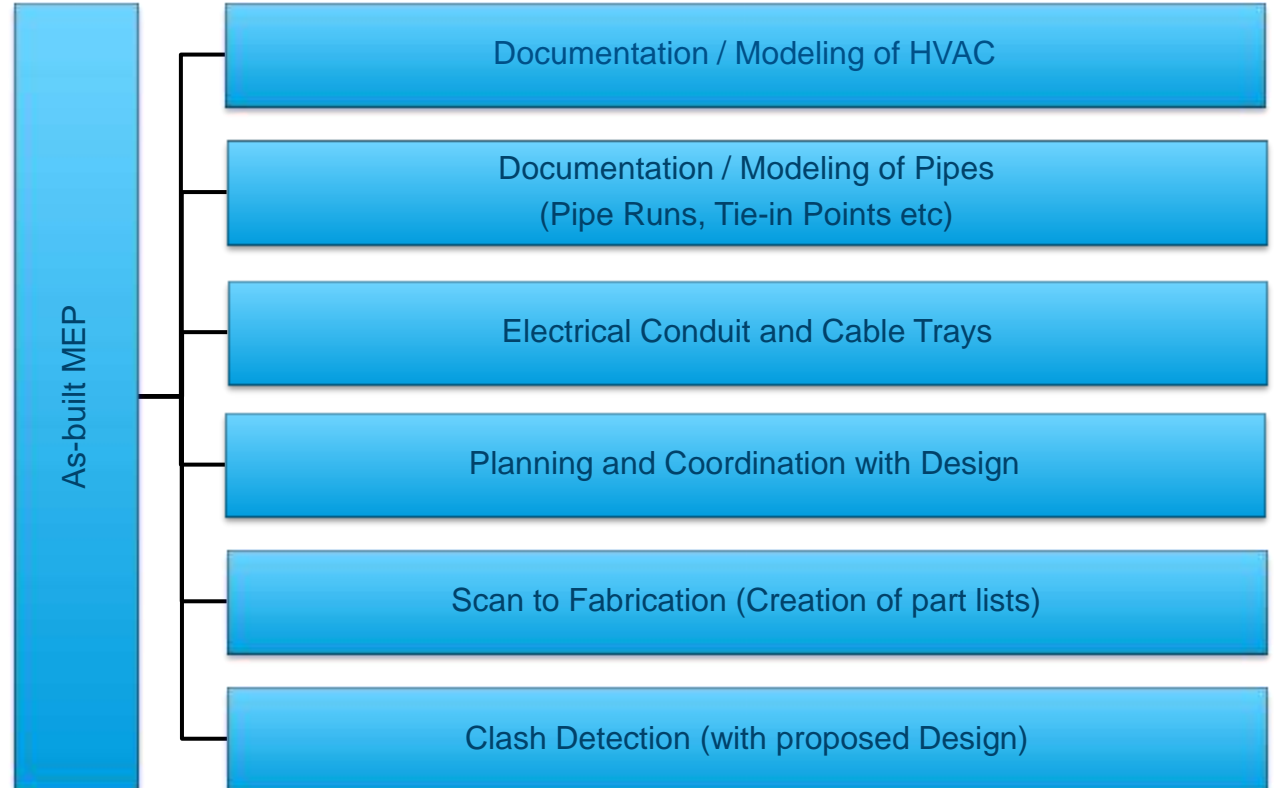
As-Built Architecture



Construction Quality Assurance / Quality Control



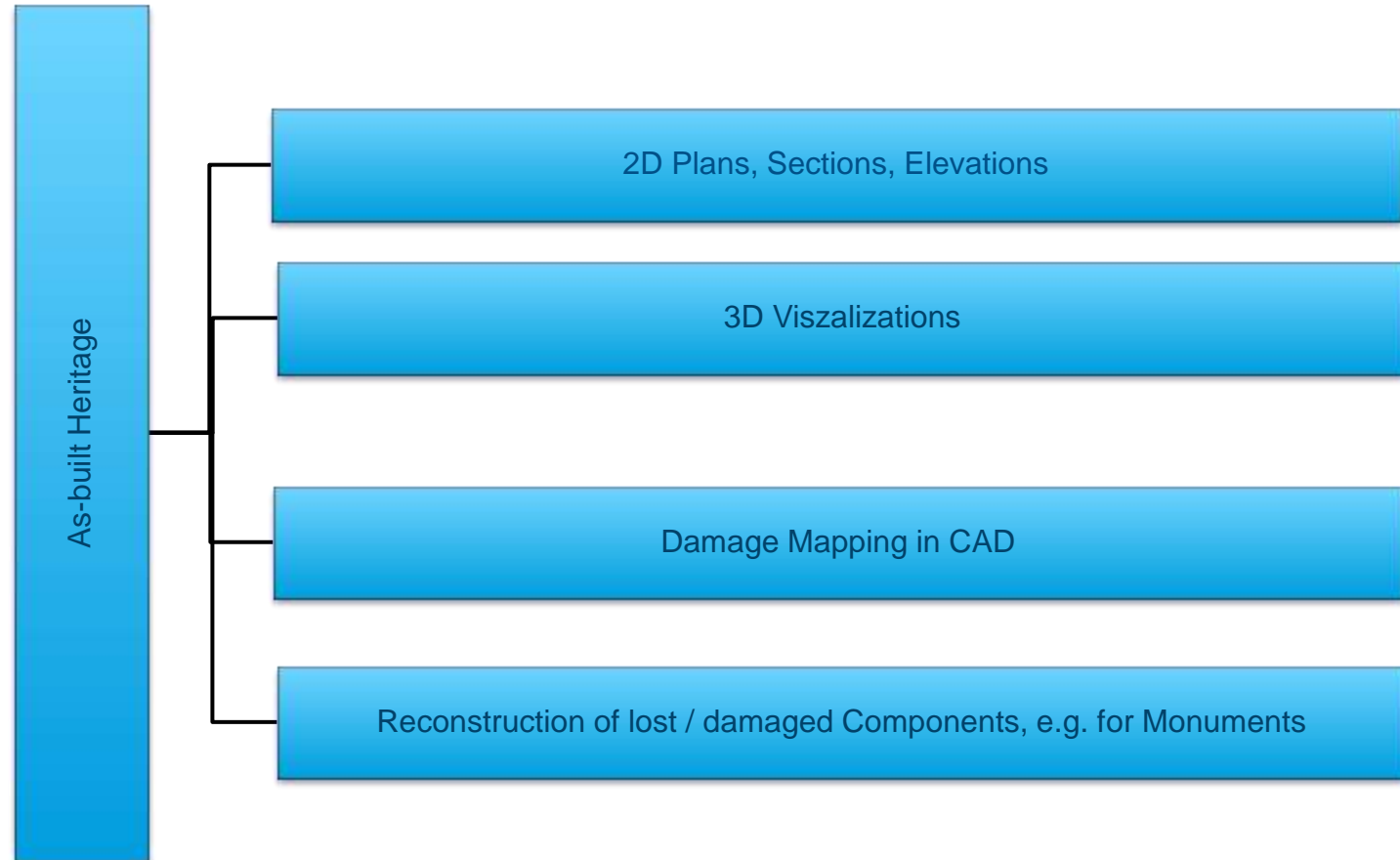
As-built MEP



As-built Plant



As-built Heritage



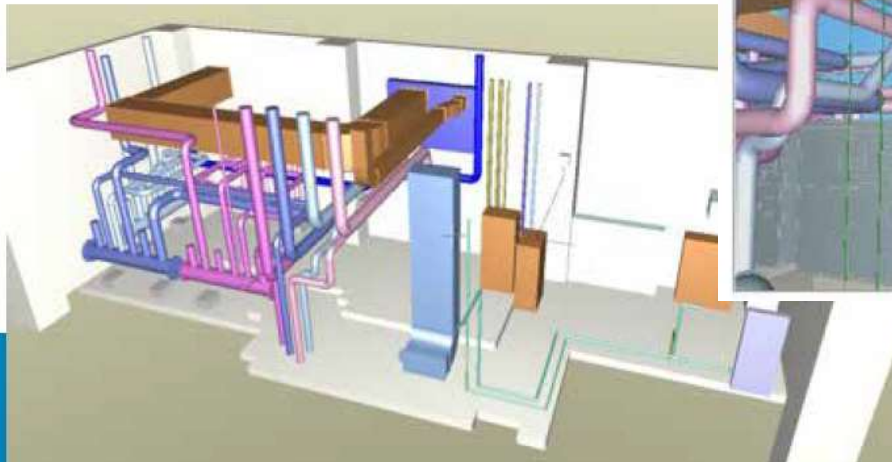
Facility Management



USER STORY Industry: Civil Engineering

Hibiya Engineering Limited: Japan

- **company provides engineering services**– including air conditioning, water supply, drainage and sanitation, electricity, as well as information and communication technology.
- Hibiya Acquires Accurate Measurements of Harsh Mechanical Rooms Safely and Quickly with FARO
- Using point cloud data collected by the FARO Focus3D, the engineers create a BIM model of the current set-up of the mechanical room. Based on the 3D model, the team prepared the plan and design for the renovation accordingly.
- As Hibiya Engineering adopted FARO Focus3D into its workflow, Building Information Modeling (BIM) replaced traditional drawings, enabling the team to virtually design and build a 3D model of any given facility on the computer



BIM model of the current facility.

USER STORY Industry: BIM

Sunyoung Construction Group : China

- Sunyoung is an accredited national high-tech enterprise and BIM implementation model company. The company's seeks innovative ways to implement BIM based information management, using traditional construction technology as its foundations.
- Located in the Minhang District of Shanghai, the building spans a total area of over 10,000 m sq, with a basement and six storeys above ground. The team at Sunyoung soon discovered that there were discrepancies between the building's actual conditions and its as-built drawings. Furthermore, some of the building's pipelines did not comply with the design specifications. For these reasons, the project owner expressed their desire to obtain an on-site point cloud model with a laser scanner, so that they could make use of BIM technology during the renovation process — optimizing the layout of electromechanical pipes, height clearance, and more



Scans captured by the FARO 3D laser scanner in the office building



Pipeline layout delivery diagrams generated from the scan data.

THANK YOU

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