Inspection for Construction and Infrastructure

Benefits

- Improved accuracy of measurements
- Enhanced data management and analysis
- Reduced costs of inspection processes
- Enhanced decision-making and project management

Limitations

- High initial investment costs
- Requires trained personnel for operation and analysis
- Data integrity and confidentiality concerns

The discovery phase

- Identification of potential issues and defects
- Preparation of necessary equipment and resources

Adoption of Best Practice Inspection Techniques from Other Sectors

- Drones
- GPR
- MR
- VR
- Thermography

Drones

- Suitable for large-scale inspections
- Capable of covering vast areas quickly
- Data can be analyzed to detect objects and defects

GPR

- Effective for underground structures
- Helps in identifying subsurface anomalies
- Capable of detecting defects and irregularities

MR

- Aid in detecting metal objects
- Used for non-destructive testing
- Helps in identifying hidden elements

VR

- Virtual reality models can assist in planning inspections
- Can simulate challenging environments
- Helpful in visualizing complex structures

Thermography

- Identifies temperature variations
- Used for detecting structural issues
- Helps in identifying structural integrity

Laser Scanners

- Projects a laser grid onto the surface
- Captures detailed point cloud data
- Used for accurate measurements

Innodata & i3p

- Innovations in data capture and analysis
- Work with existing data management platforms

The inspection data can be consolidated and automated and data infrastructure

- Data can be linked across different projects
- Streamlines data processing and analysis
- Enhances data accessibility

The majority of respondents report encouraging outcomes

- Improved efficiency in inspection processes
- Reduced costs of inspection projects
- Increased accuracy of measurements

Trial methods on existing simple pointclouds

- Use of existing data for testing new methods
- Identification of potential issues with current processes
- Optimization of existing methods

Demonstrate full automated large asset digitisation process

- Automation of data capture and analysis
- Enhanced accuracy of measurements
- Reduced costs of inspection projects

The BIM can be interrogated further

- Integrates data from various sources
- Enhances data analysis and decision-making
- Supports project management and coordination

The map can be associated to BIM elements along with tasks for the

- Mapping of inspection data
- Assignment of tasks and responsibilities
- Enhanced project management

This poster focuses on inspection for construction and infrastructure

- Concentration on specific sectors
- Identification of challenges and solutions
- Promotes best practice in inspection techniques

Elements

- Large Assets
- Buried Assets
- Underwater Assets
- Hidden Elements
- Inspection

This includes data

- Onsite inspections
- Remote inspections
- Data management and analysis

Defects may be identified which were missed by the on

- Identification of missed defects
- Enhances overall safety and reliability
- Enhances project performance

This includes data

- Defect identification
- Data analysis and reporting
- Enhancement of project outcomes

Buried assets

- Identification of buried assets
- Enhances safety and security
- Assistance in project planning

Defect can be identified

- Identification of issues and problems
- Enhances decision-making
- Assistance in project management

This includes data

- Defect analysis
- Data reporting
- Enhancement of project outcomes

Despite this

- Identification of potential issues
- Enhances overall safety and reliability
- Enhances project performance

This includes data

- Identification of issues
- Data analysis and reporting
- Enhancement of project outcomes

The choice of a common coordinate system for all

- Ensures consistency in data analysis
- Enhances data integration
- Supports project management and coordination

This includes data

- Coordinate system selection
- Data integration
- Enhancement of project outcomes

The majority of respondents report encouraging outcomes

- Improved efficiency in inspection processes
- Reduced costs of inspection projects
- Increased accuracy of measurements

When analysing pointcloud data, we can

- Identify defects and issues
- Enhance project planning
- Support decision-making

The choice of a common coordinate system for all

- Ensures consistency in data analysis
- Enhances data integration
- Supports project management and coordination

This includes data

- Coordinate system selection
- Data integration
- Enhancement of project outcomes

This platform has notable new applications e

- Expands the scope of application
- Enhances data analysis
- Supports project management and coordination

This includes data

- Application scope
- Data analysis
- Enhancement of project outcomes

The inspection area has to be

- Prepped for inspection
- Enhanced by the transmitted
- Supports project planning

This includes data

- Inspection area prep
- Transmission
- Enhancement of project outcomes

Data can be associated to BIM elements along with tasks for the

- Mapping of inspection data
- Assignment of tasks and responsibilities
- Enhanced project management

This includes data

- Data association
- Task assignment
- Enhancement of project outcomes