



Photogrammetric Innovations for Industry Applications

How Image Data and BIM will Modernize the Construction Industry

56th Photogrammetric Week, Stuttgart 2017

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**WE TAKE IMAGES
CAPTURED BY DRONES...**



VERTICAL IMAGES
Aerial Photo & Video
www.verticalimages.cz

VERTICAL IMAGES
AERIAL PERSPECTIVE

**CONVERT THEM INTO 3D MODELS
FOR MEASUREMENT AND VIZUALISATION**

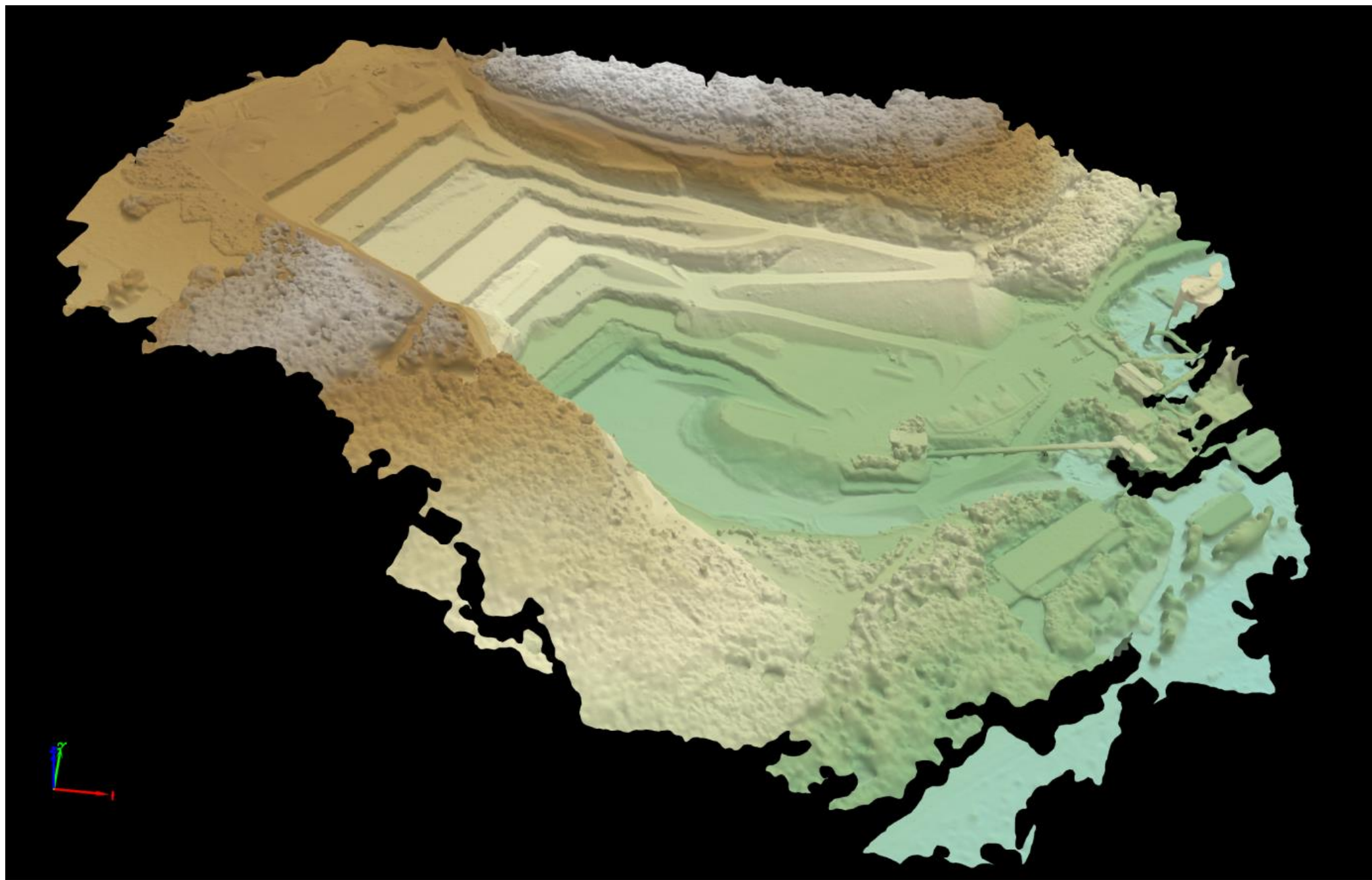


**AND 2D ORTHO-PHOTOS
FOR CAD/GIS COMPATIBILITY**



OUR CONSTRUCTION CUSTOMERS ARE USING DRONES TO CAPTURE INFORMATION ABOUT THE SITE

3D model for earthwork measurement and analysis



Ortho-photos for site visualisation and construction progress monitoring



Week 1



Week 50

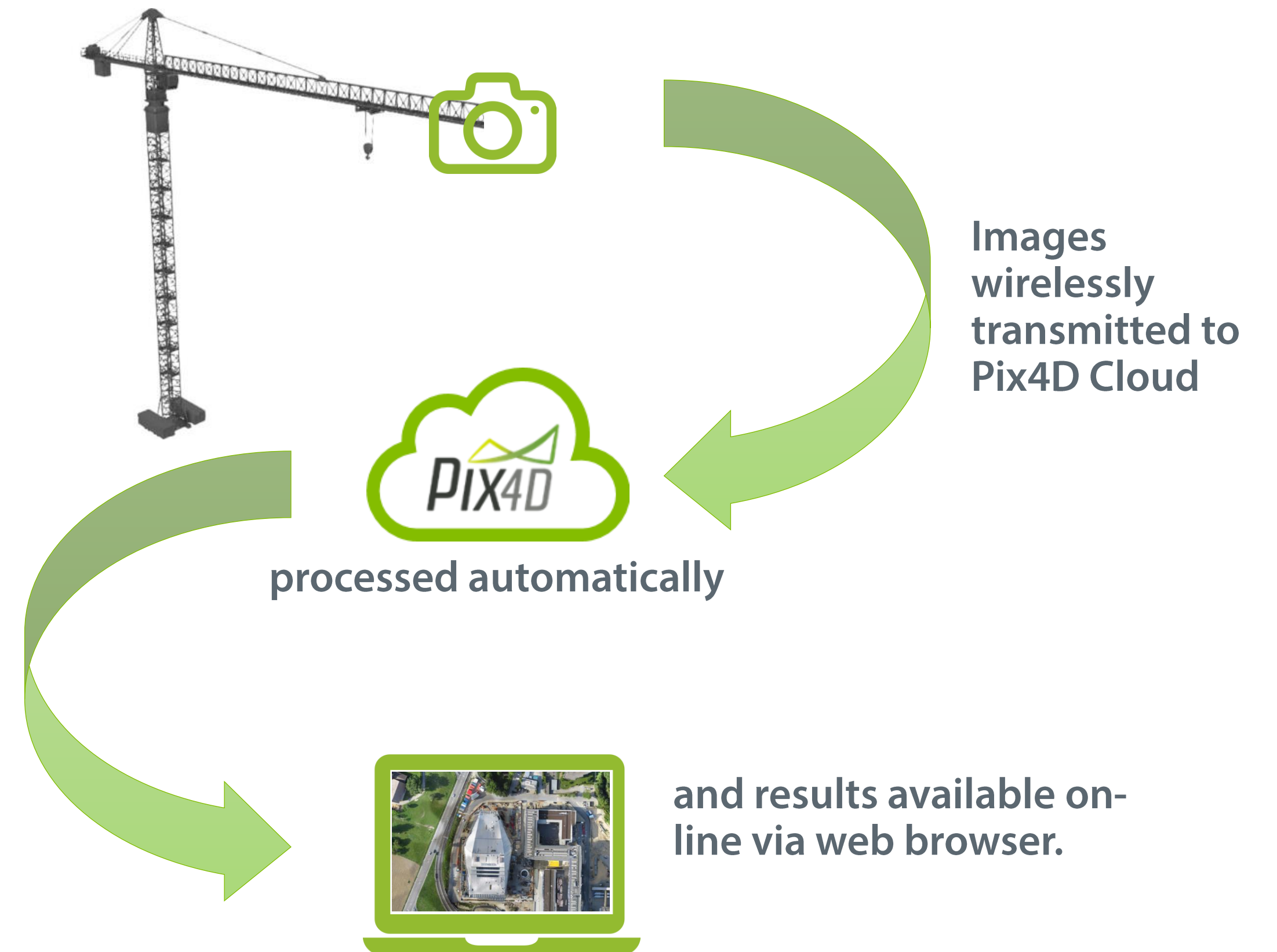
**BUT IT IS NOT ALWAYS EASY TO
FLY A DRONE ON SITE EVERYDAY**



SO WE HAVE DEVELOPED A CAMERA SYSTEM THAT ATTACHES TO THE TOWER CRANE AND CAPTURES IMAGES FROM THERE

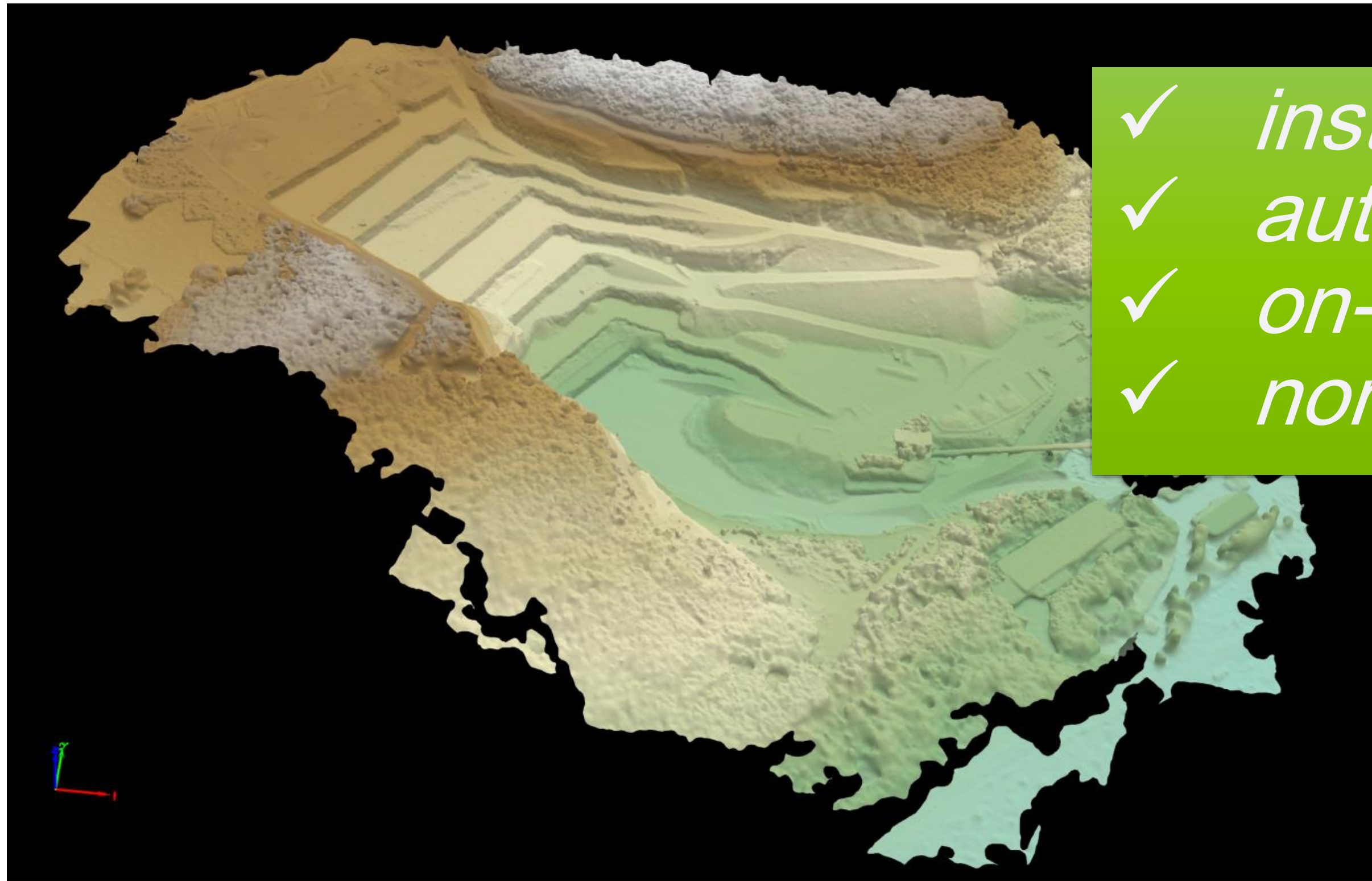


Images captured during normal crane operation or on-demand



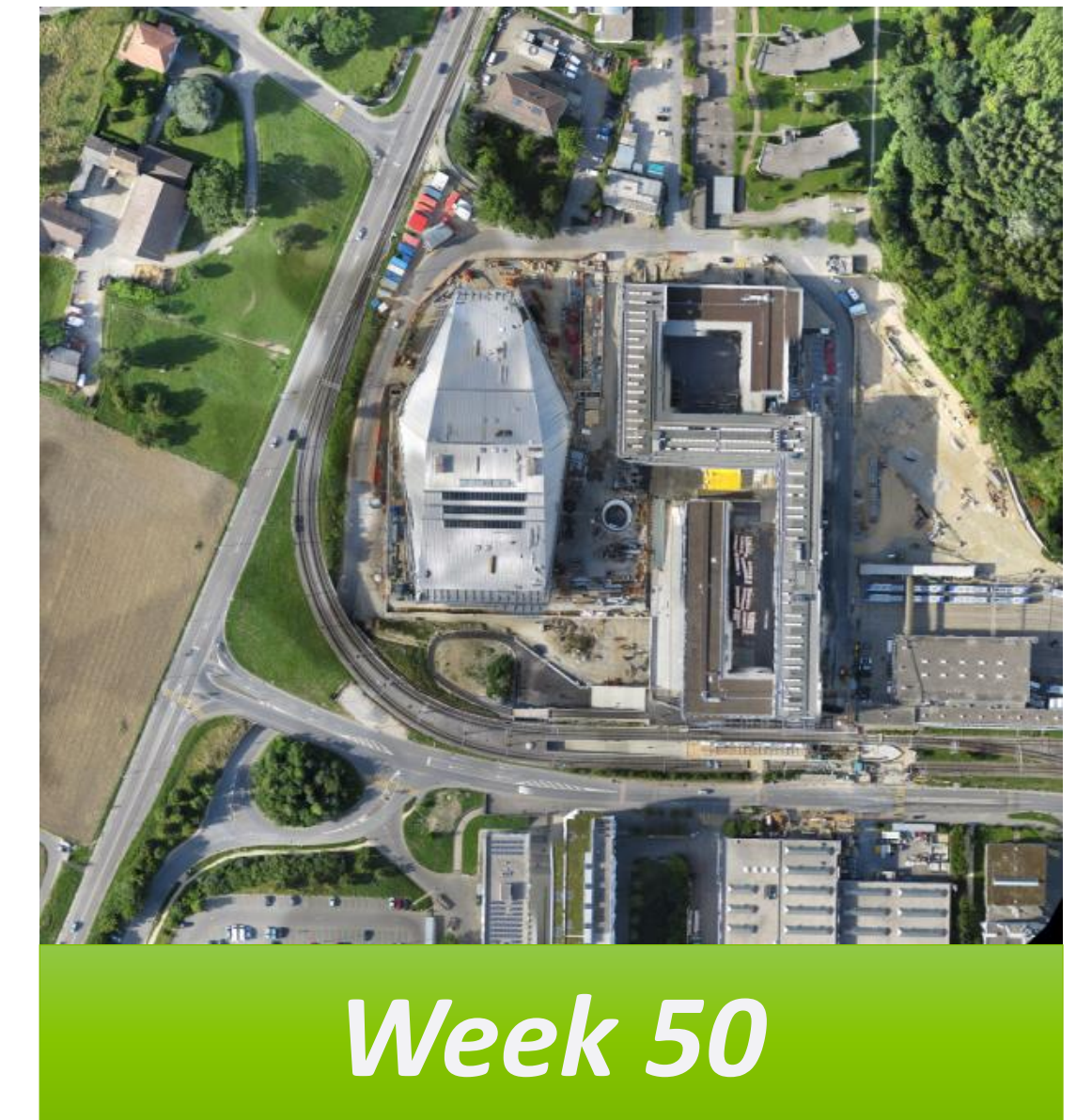
SAME RESULTS AS BEFORE, EXCEPT INSTANT, AUTOMATIC, ON-DEMAND AND NON-INTRUSIVE

3D model for earthwork measurement and analysis



- ✓ *instant*
- ✓ *automatic*
- ✓ *on-demand*
- ✓ *non-intrusive*

Orthophotos for site visualisation and construction progress monitoring



CRANE CAMERA

Latest Results and Customer Value

Seventeen **companies**

Major construction companies from USA, Canada, Switzerland, Germany, Denmark and France

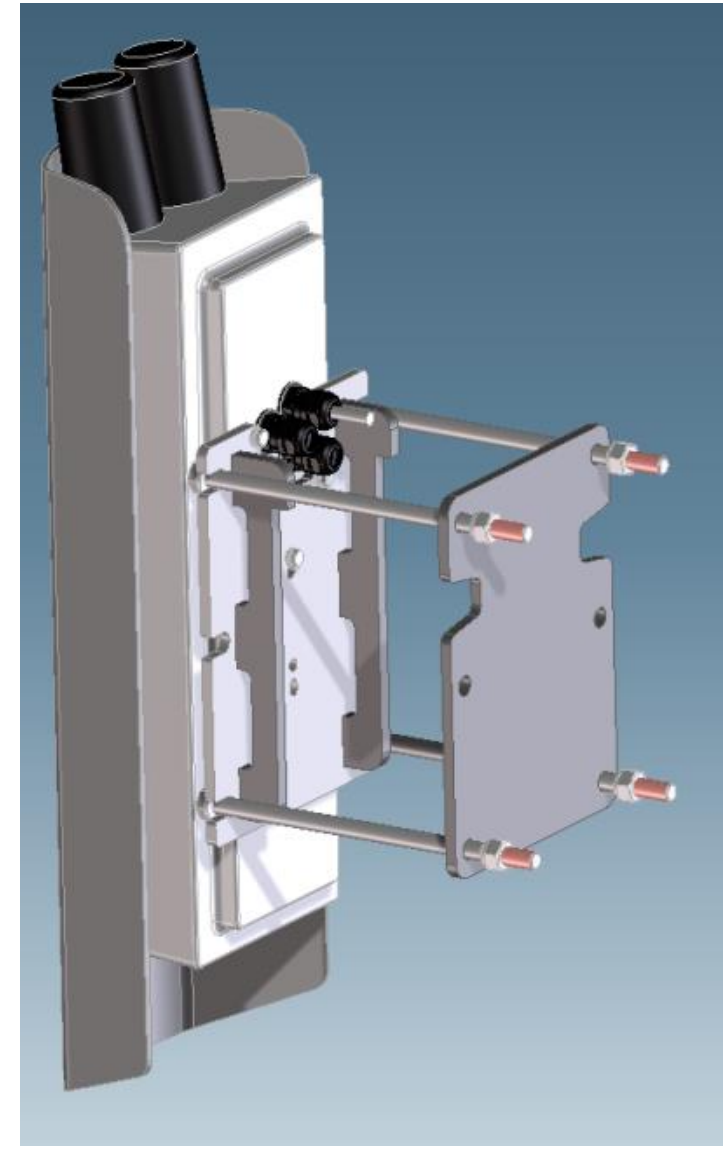


Multiple systems on same crane and multiple systems on same site.

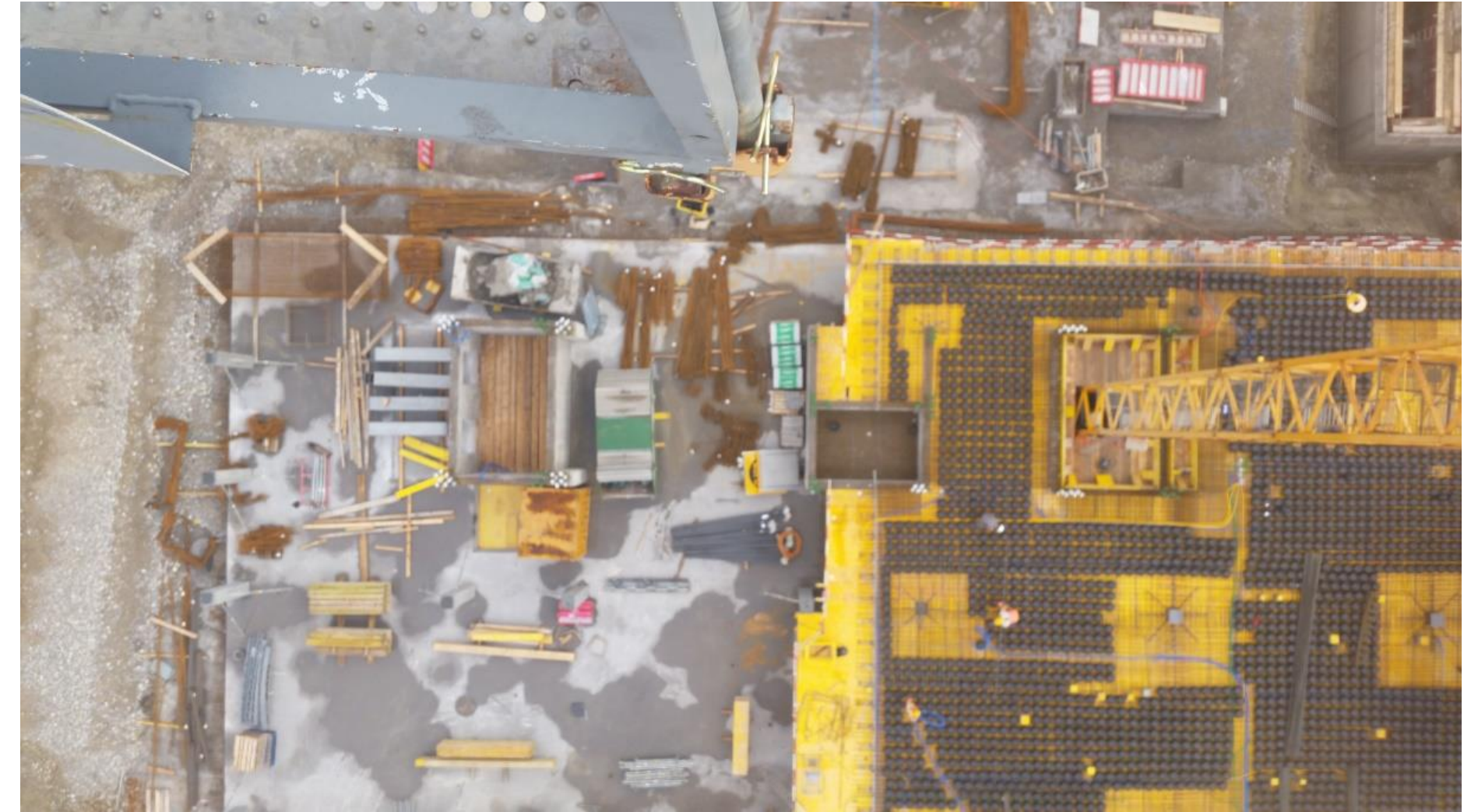
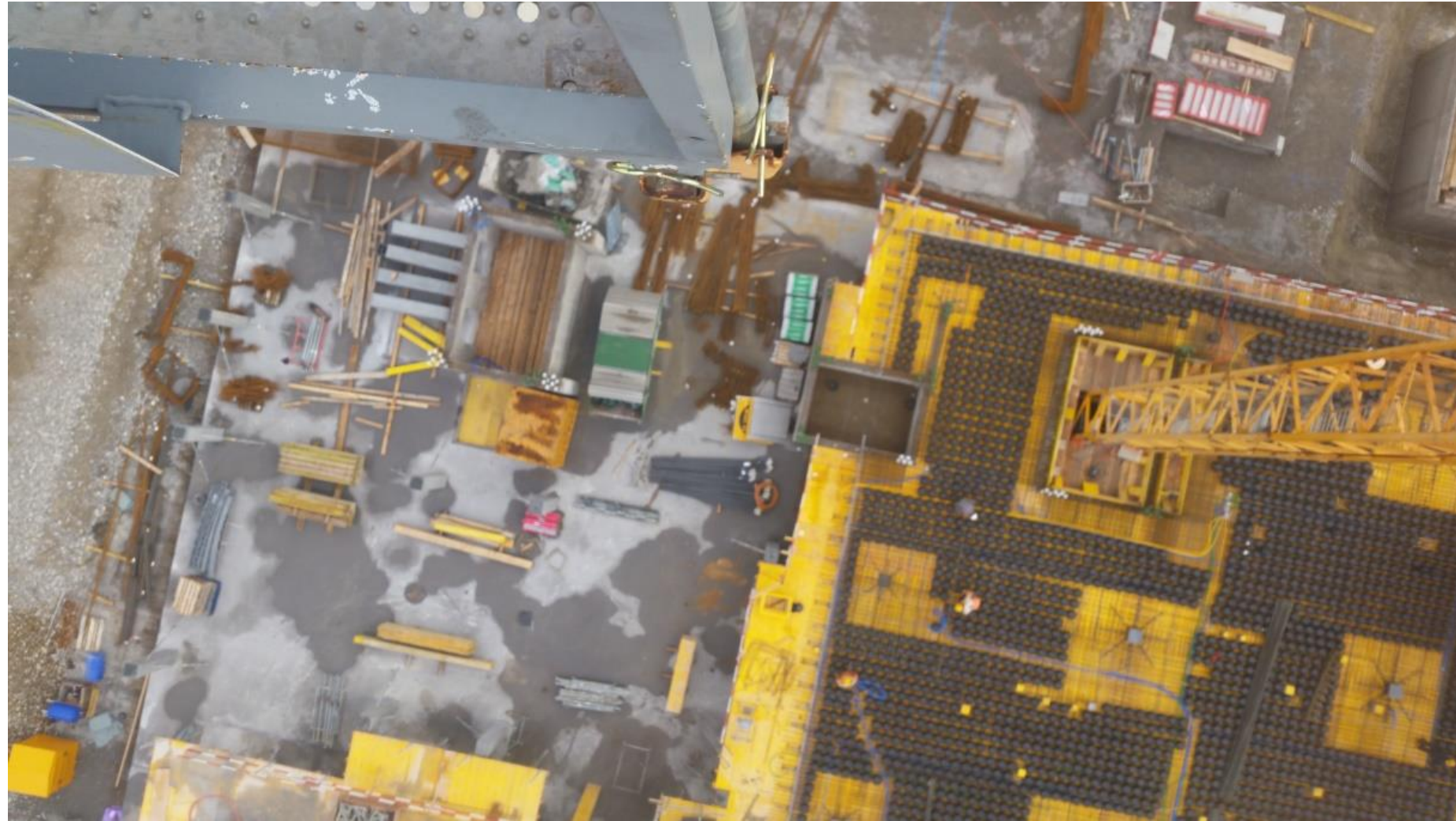
Twenty-seven **systems**

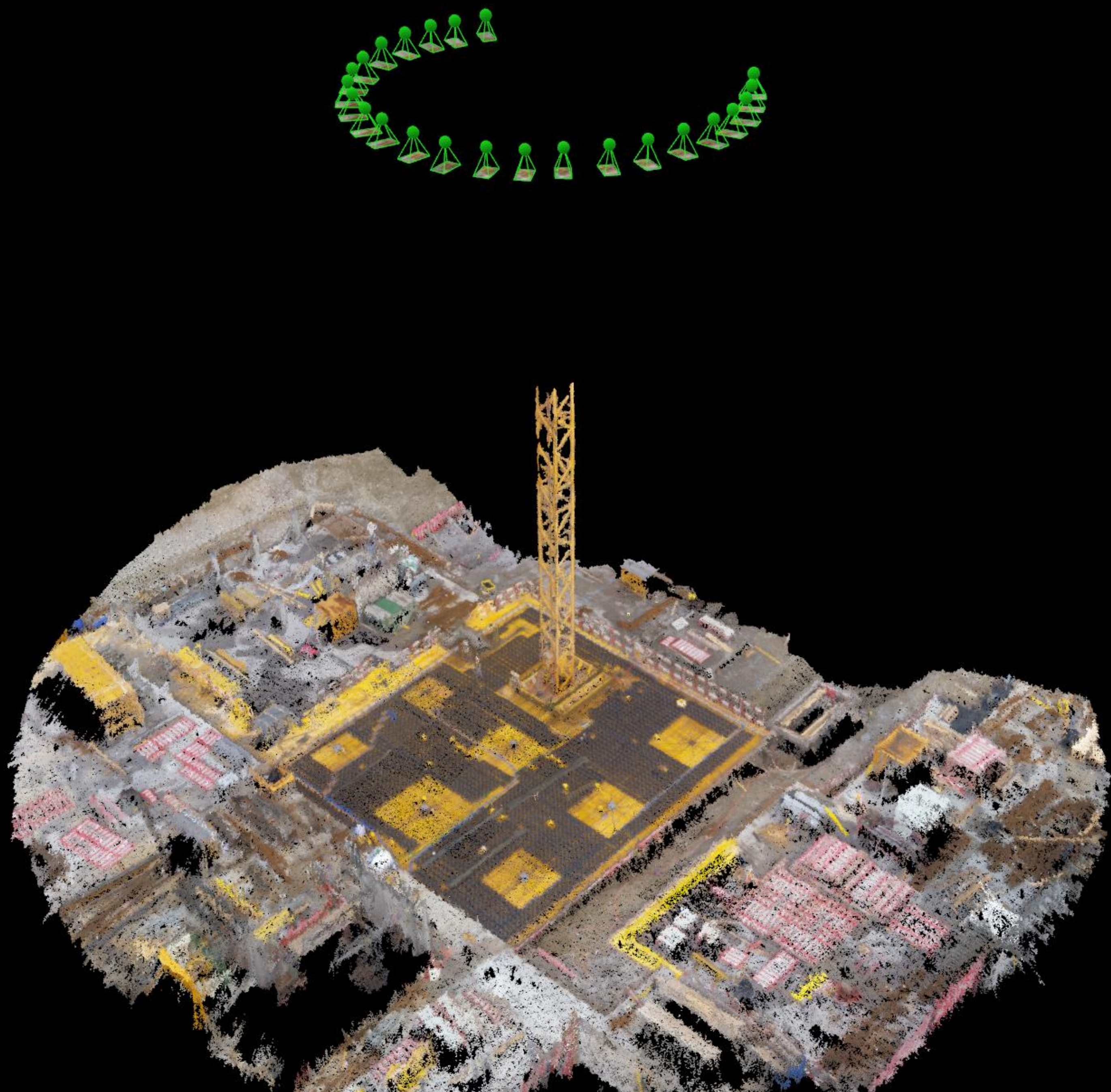
Nineteen **projects**

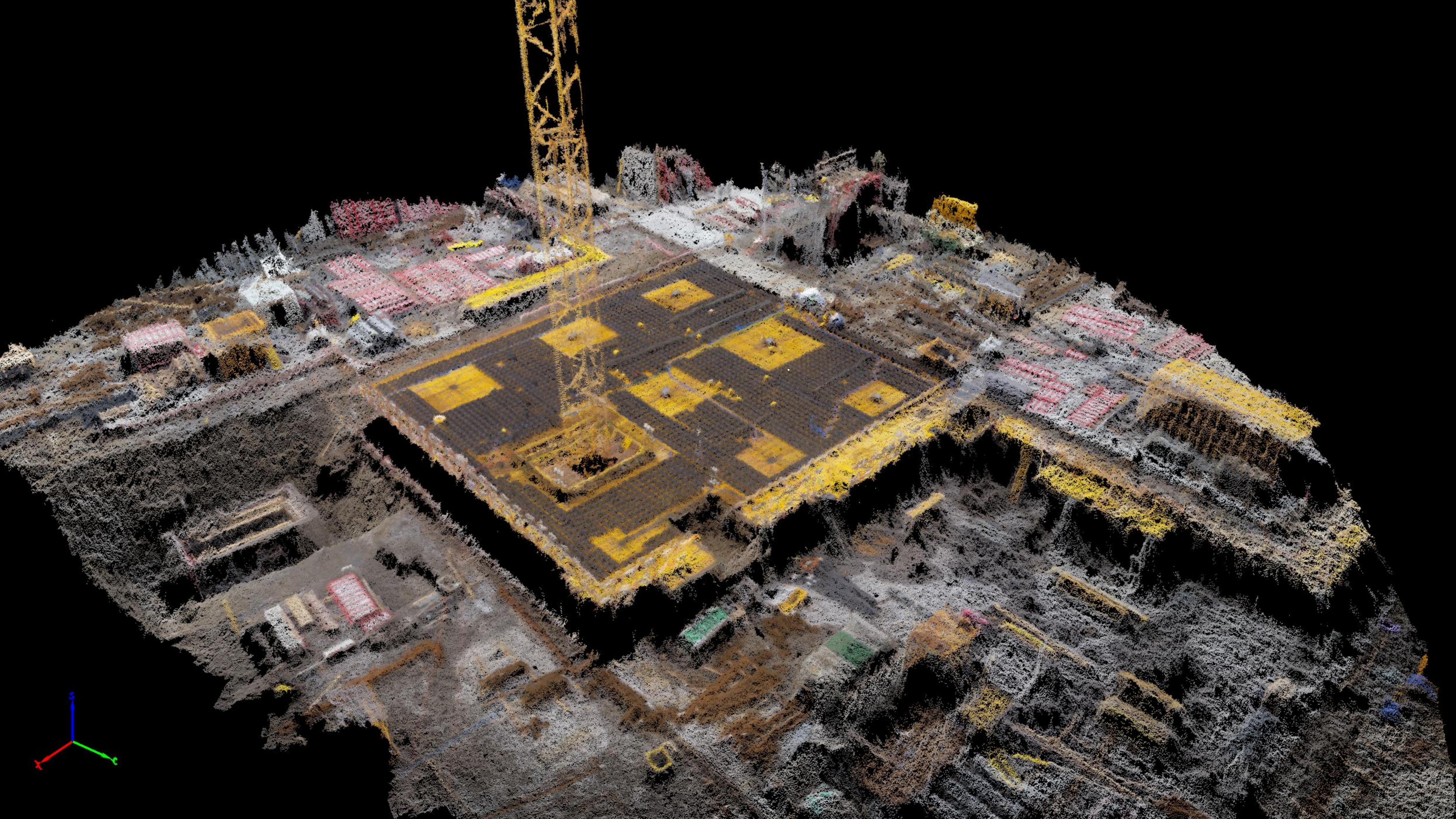
Including a super hospital, 70 floor building, high-tech US government office, underground metro station and railway viaduct

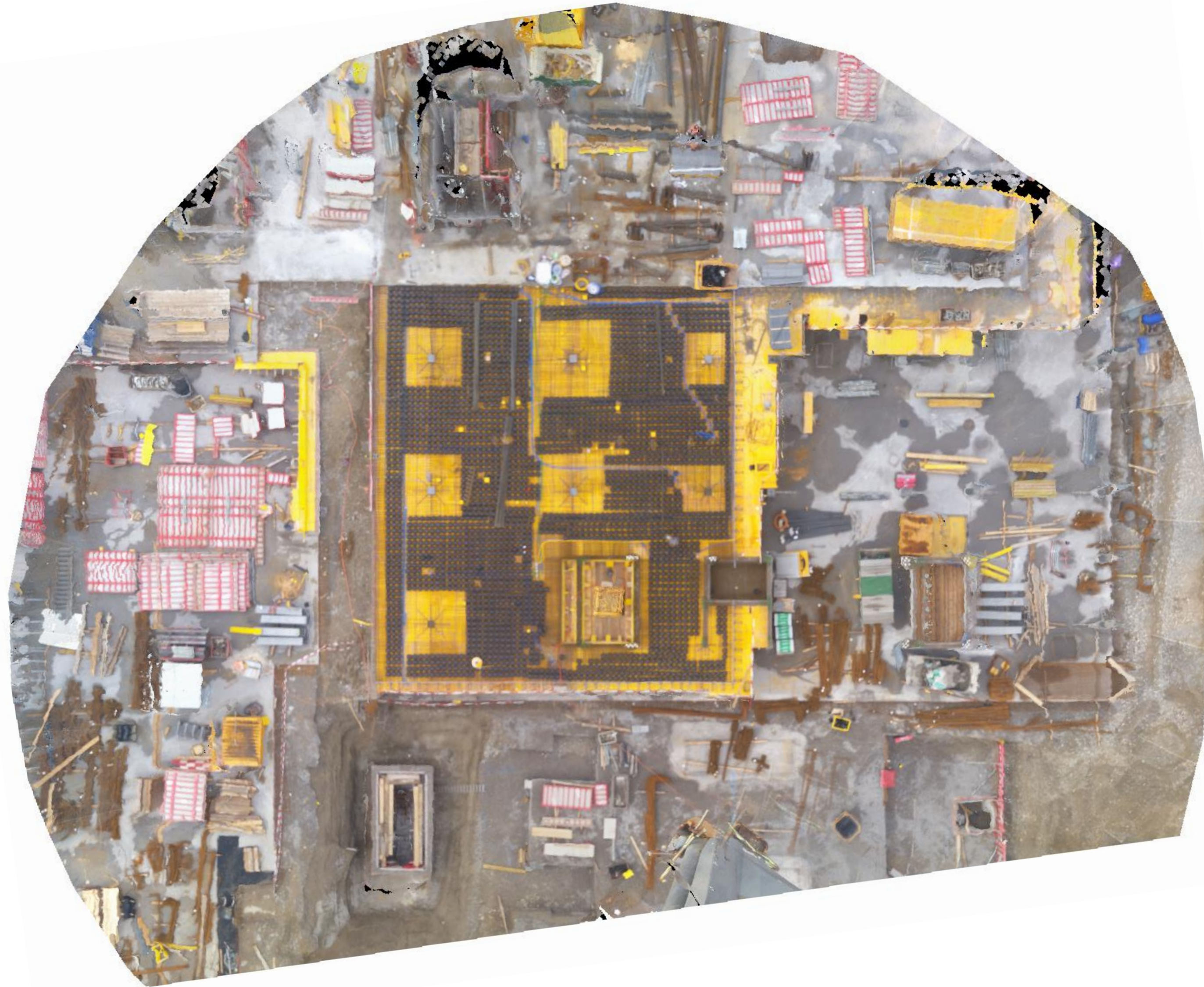


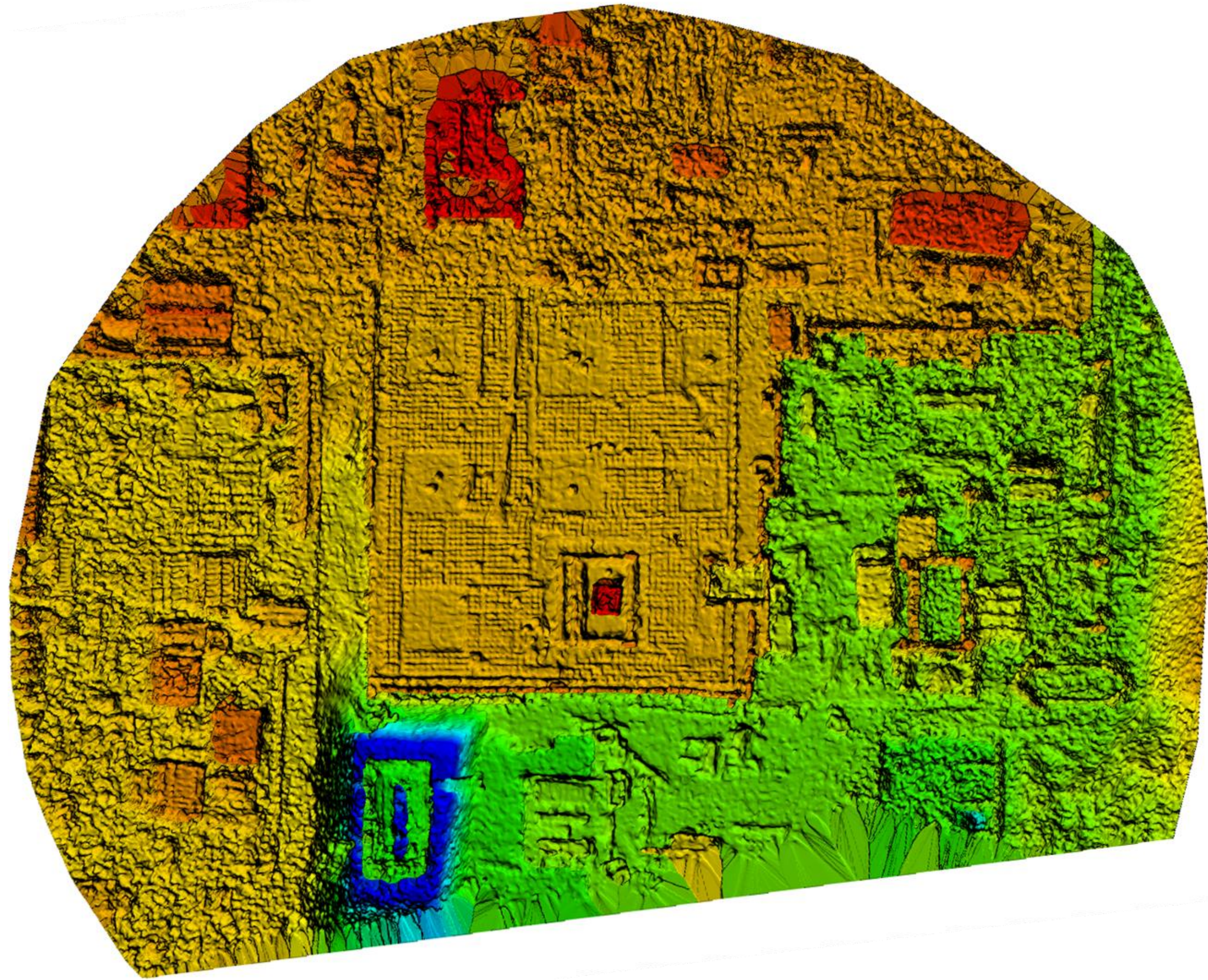
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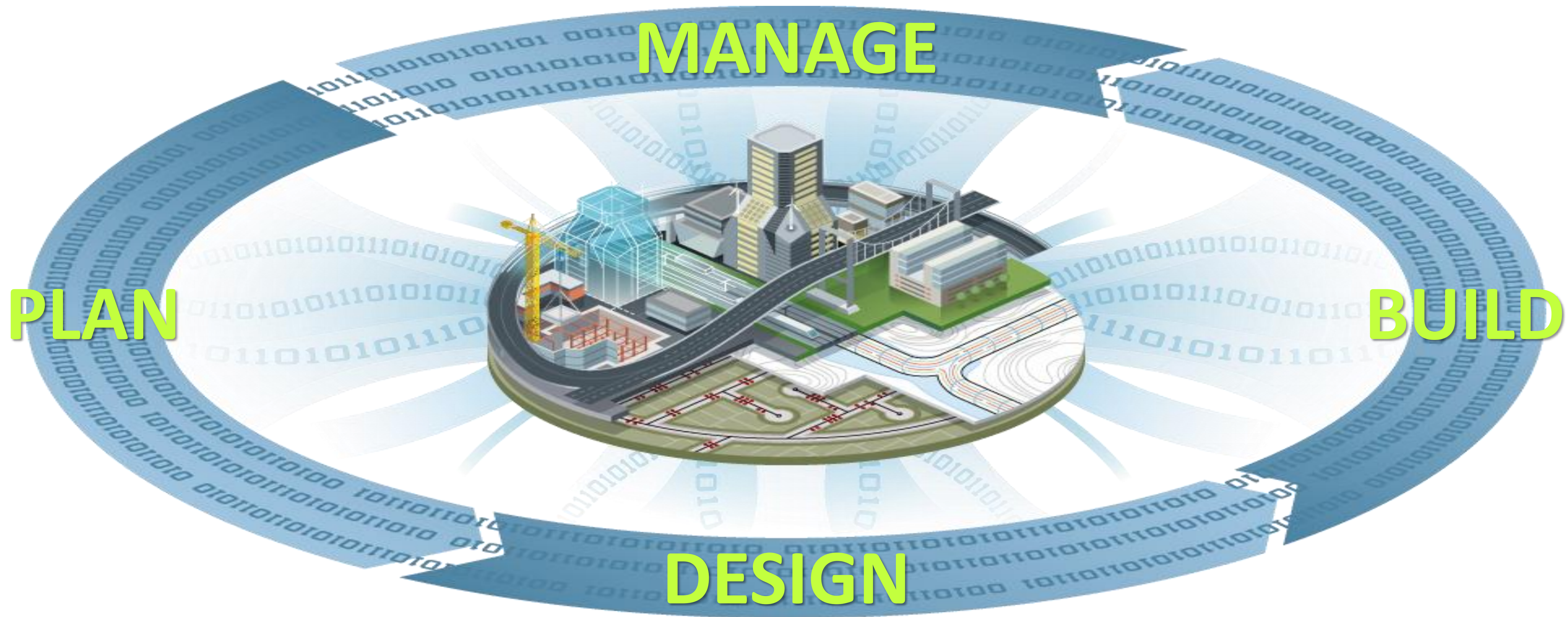




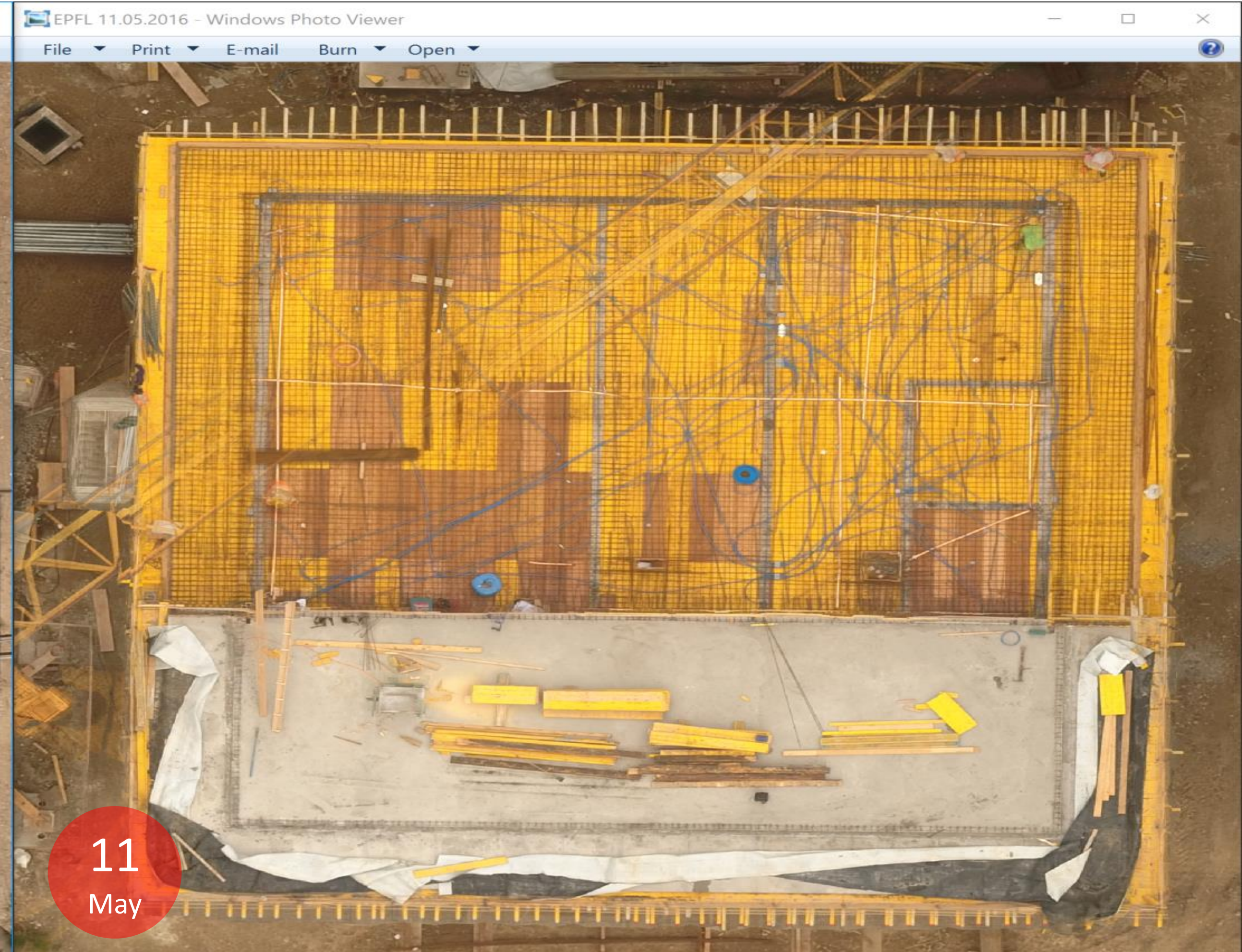
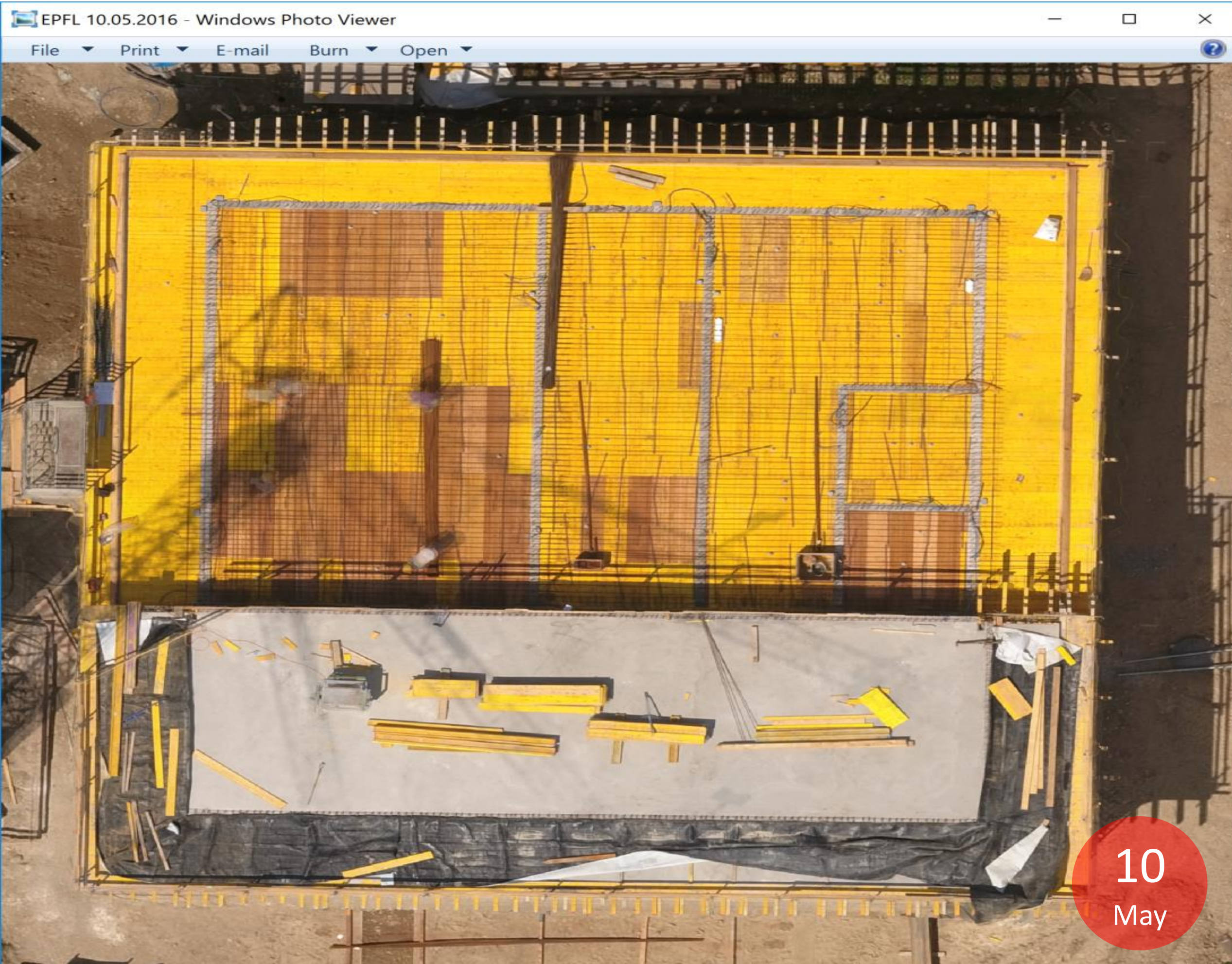


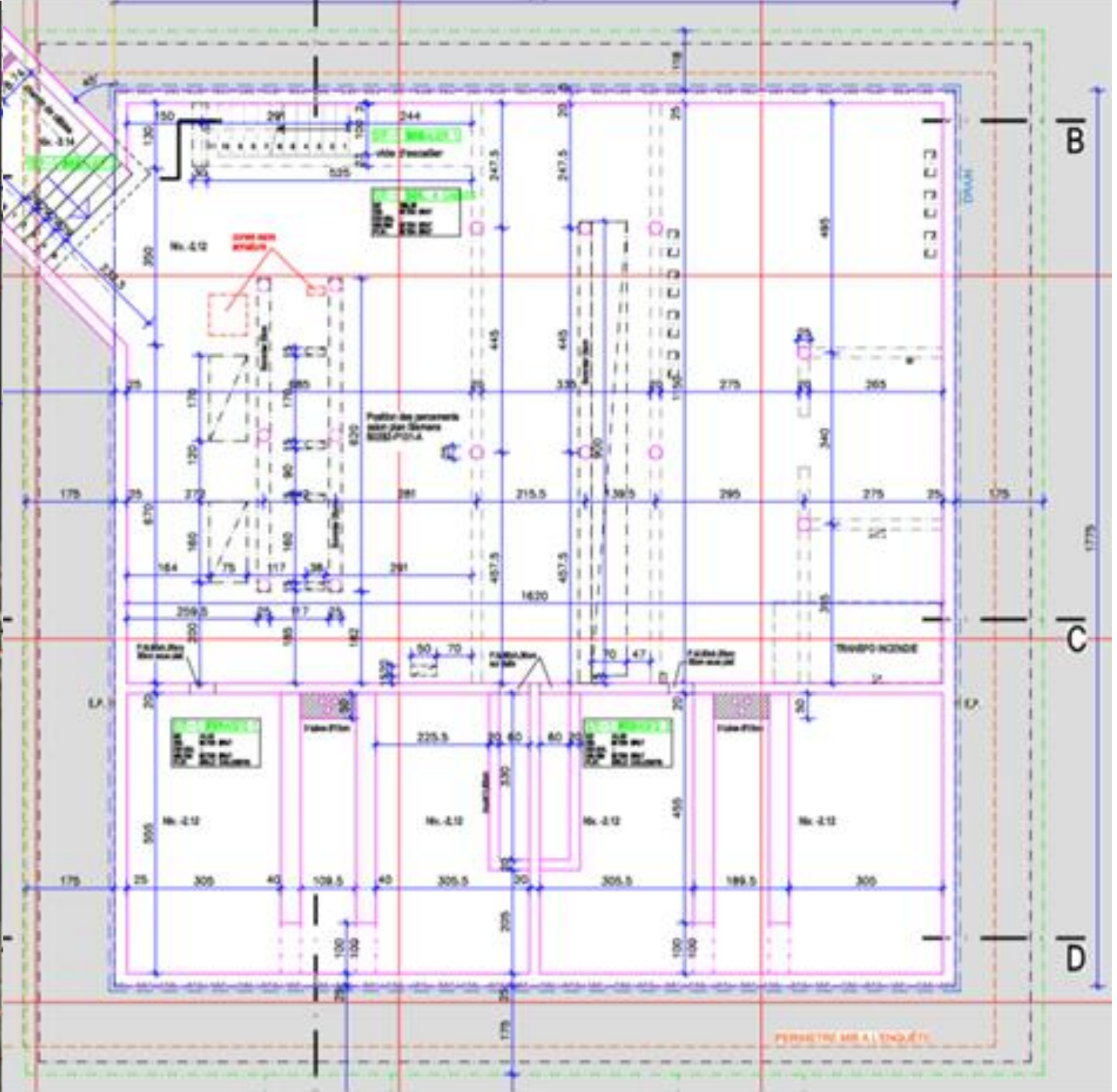


THE RESULTS SUPPORT ALL STAGES OF
THE BIM CONSTRUCTION LIFECYCLE





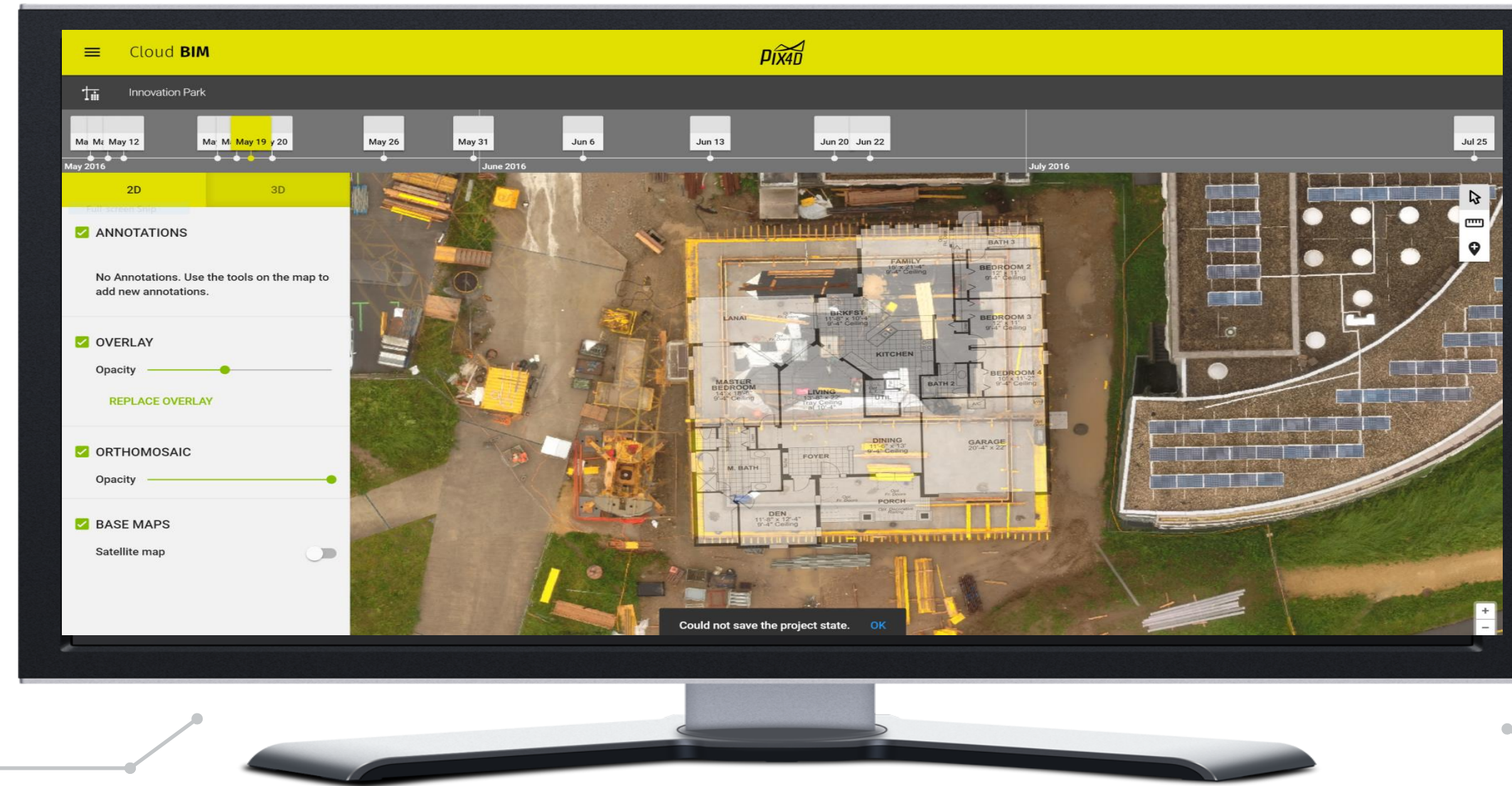




Pix4Dbim Cloud Platform

Timeline

Access both 2D and 3D data for every day over the duration of the project

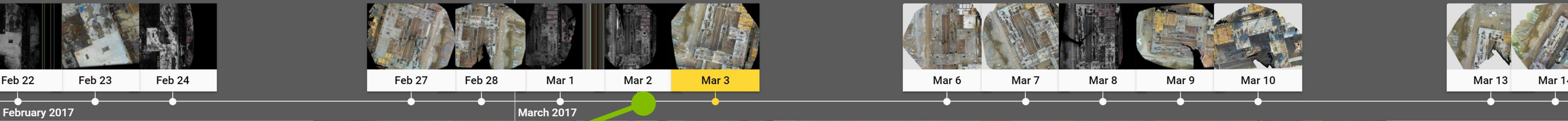


Make linear and area measurements, and annotate them for sharing

Measurements and Annotations

Drawing Overlay

Compare the as-built data from Pix4D with design and schedule drawings to ensure the project is progressing correctly and on-schedule



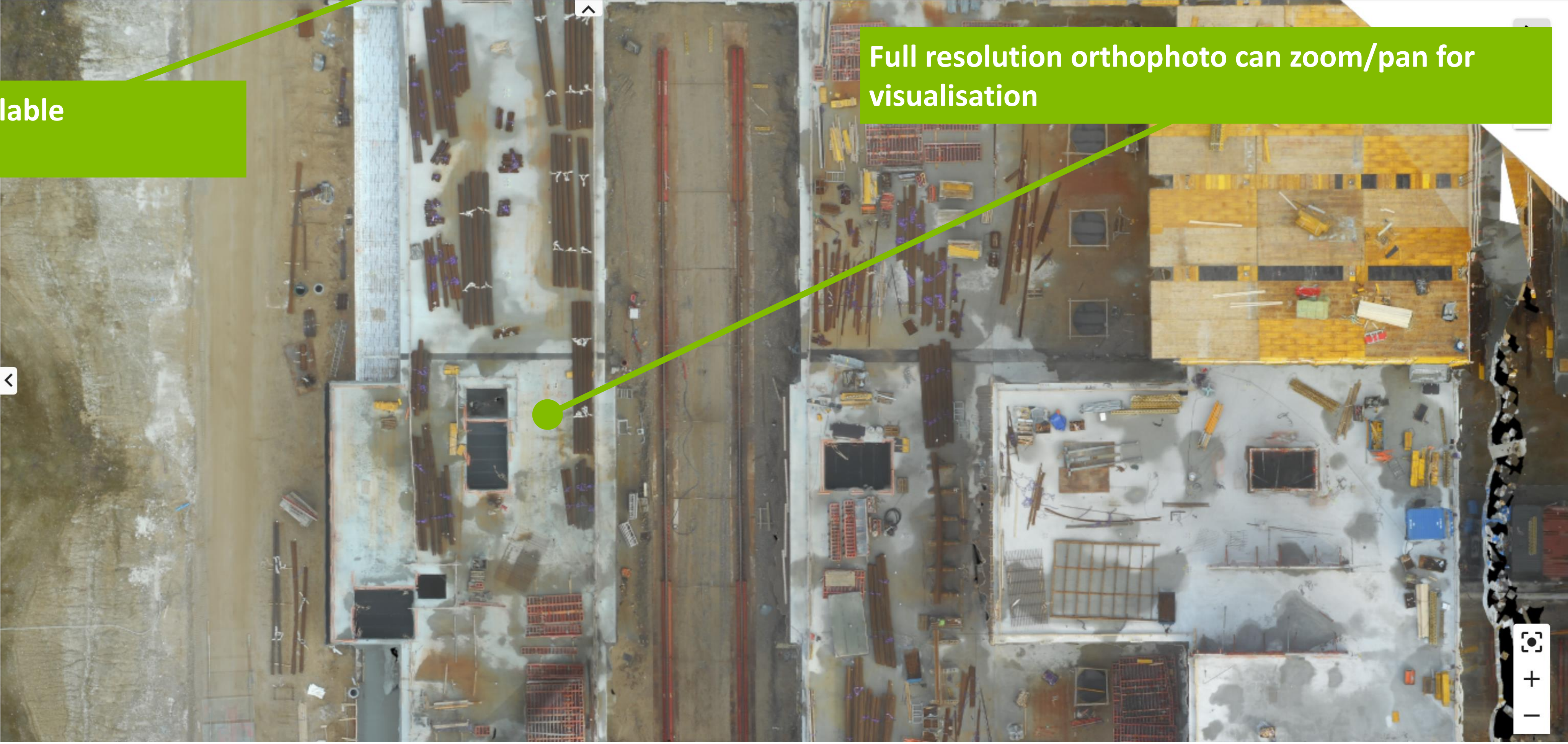
Mar 3, 2017

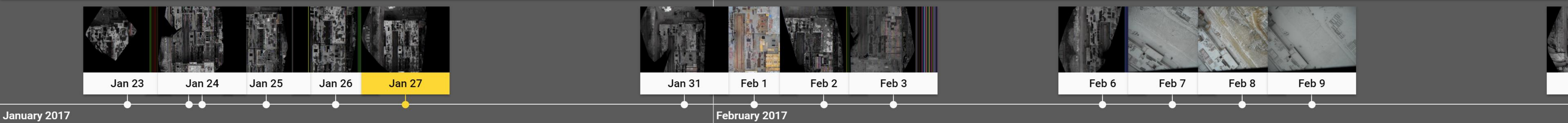
2D

- Annotations
Use the tools on the map to add new annotations.
- Overlay
Opacity
- Orthomosaic
Opacity

Timeline shows available orthophotos

Full resolution orthophoto can zoom/pan for visualisation





Jan 27, 2017

2D 3D

Annotations

- Clearance for delivery
- Formwork placement
- Remove this material

Overlay

Opacity

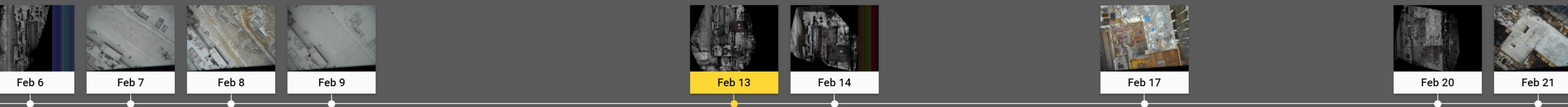
Orthomosaic

Opacity



Blue annotations with associated measurement and note

Annotation and measurement tools



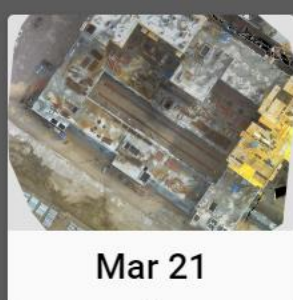
February 2017

Feb 13, 2017

2D 3D

- Annotations
 - Reposition
 - Point
- Overlay
 - Opacity
- Orthomosaic
 - Opacity

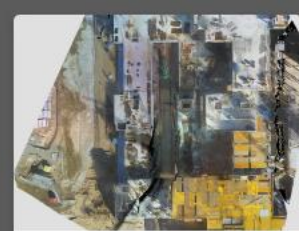




Mar 21



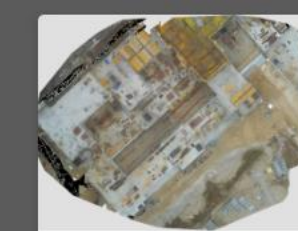
Mar 22



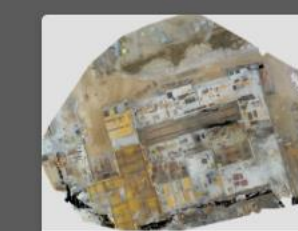
Mar 23



Mar 24



Mar 27



Mar 28

March 2017

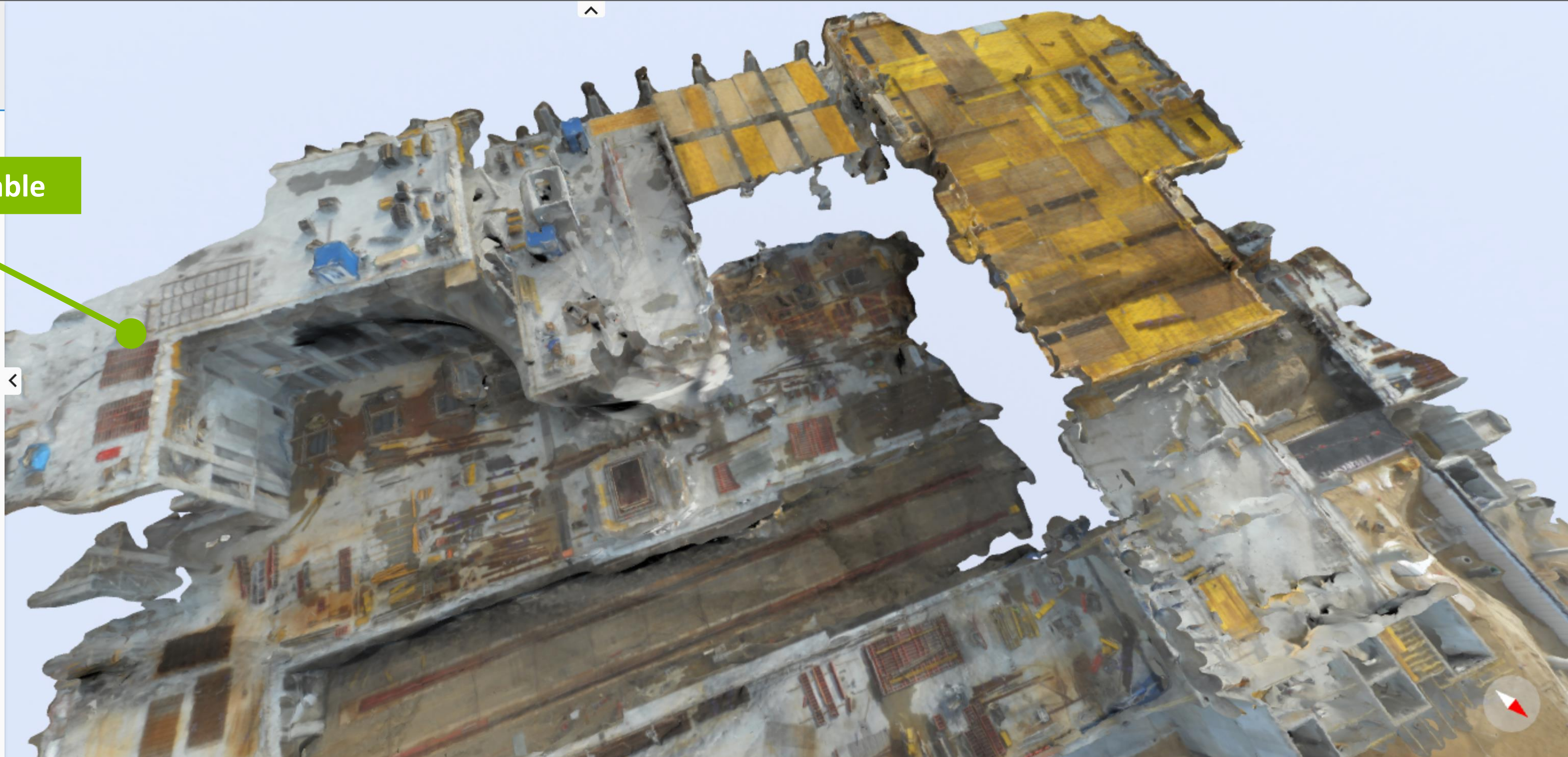
Mar 24, 2017



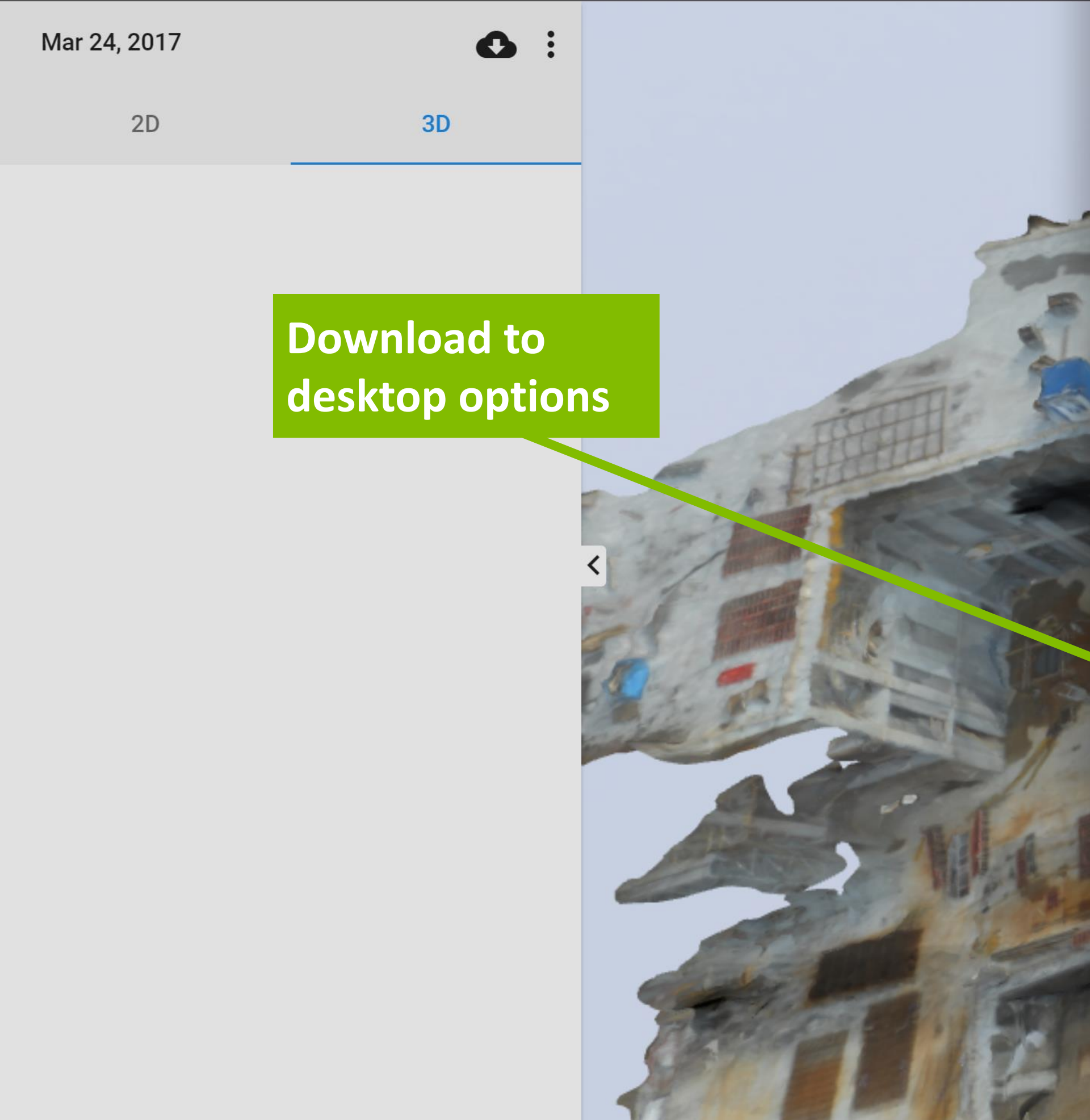
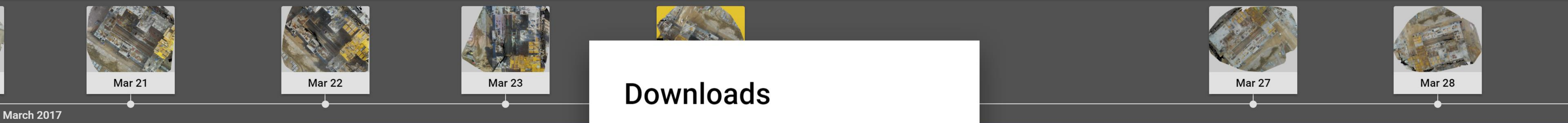
2D

3D

3D model also available











www.pix4d.com



Download to desktop options

Downloads

-  [Export to Pix4D Desktop \(.ZIP\)](#)
-  [Input images \(.ZIP\)](#)
-  [Quality Report \(.PDF\)](#)
-  [Orthomosaic \(.TIFF\)](#)
-  [DSM \(.TIFF\)](#)
-  [Mesh \(.OBJ\)](#)
-  [Point Cloud \(.LAS\)](#)
-  [Processing Log \(.LOG\)](#)

CLOSE





THE FUTURE AT PIX4D CONSTRUCTION



MULTIPLE SOLUTIONS



SURVEYING

- Land surveying
- Mining surveying
- GIS & Mapping
- Forensics
- Thermal Modeling



AGRICULTURE

- Crop Science
- Forestry
- Turfgrass Management



CONSTRUCTION

- Earthworks
- Site Management
- Building Inspection
- BIM

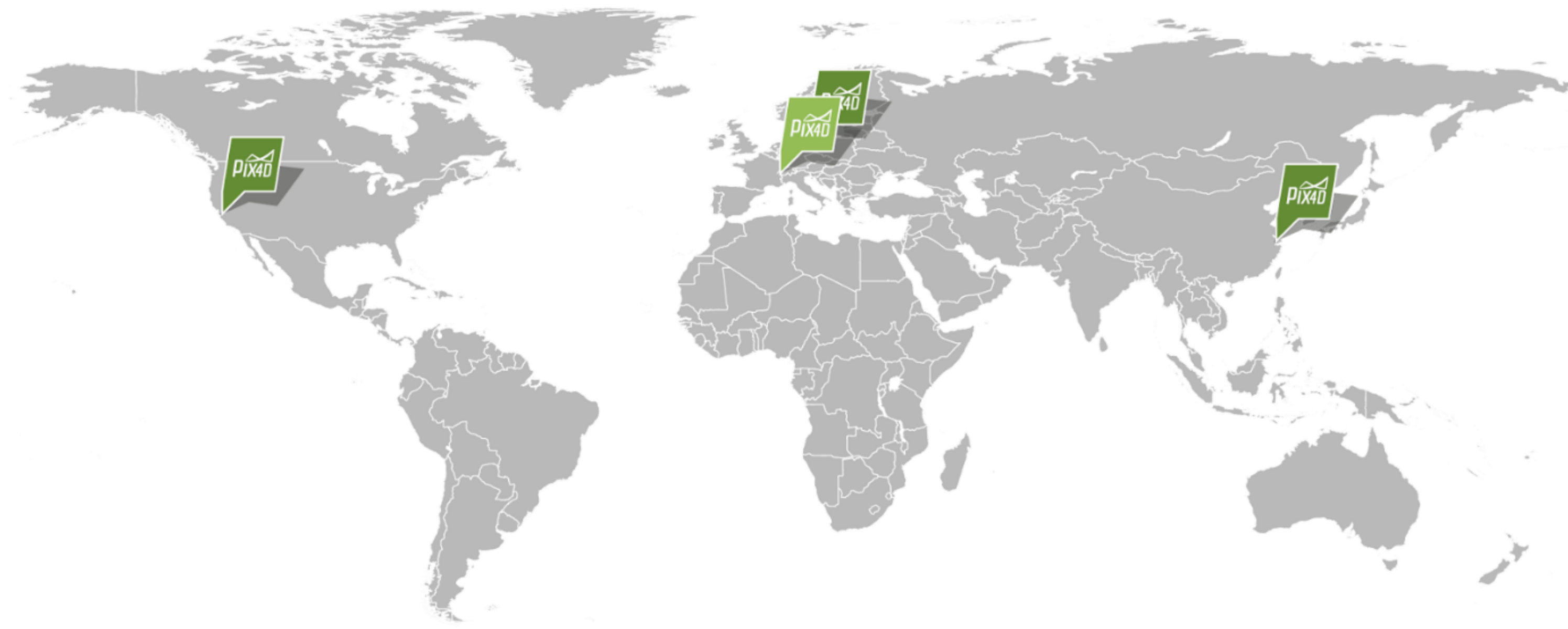


REAL ESTATE

- Communication
- Landscape Modeling
- Architecture
- Hobby & Design



OFFICES



90+

global employees

23

nationalities

26

business languages spoken



SAN FRANCISCO
U.S.A



LAUSANNE
SWITZERLAND

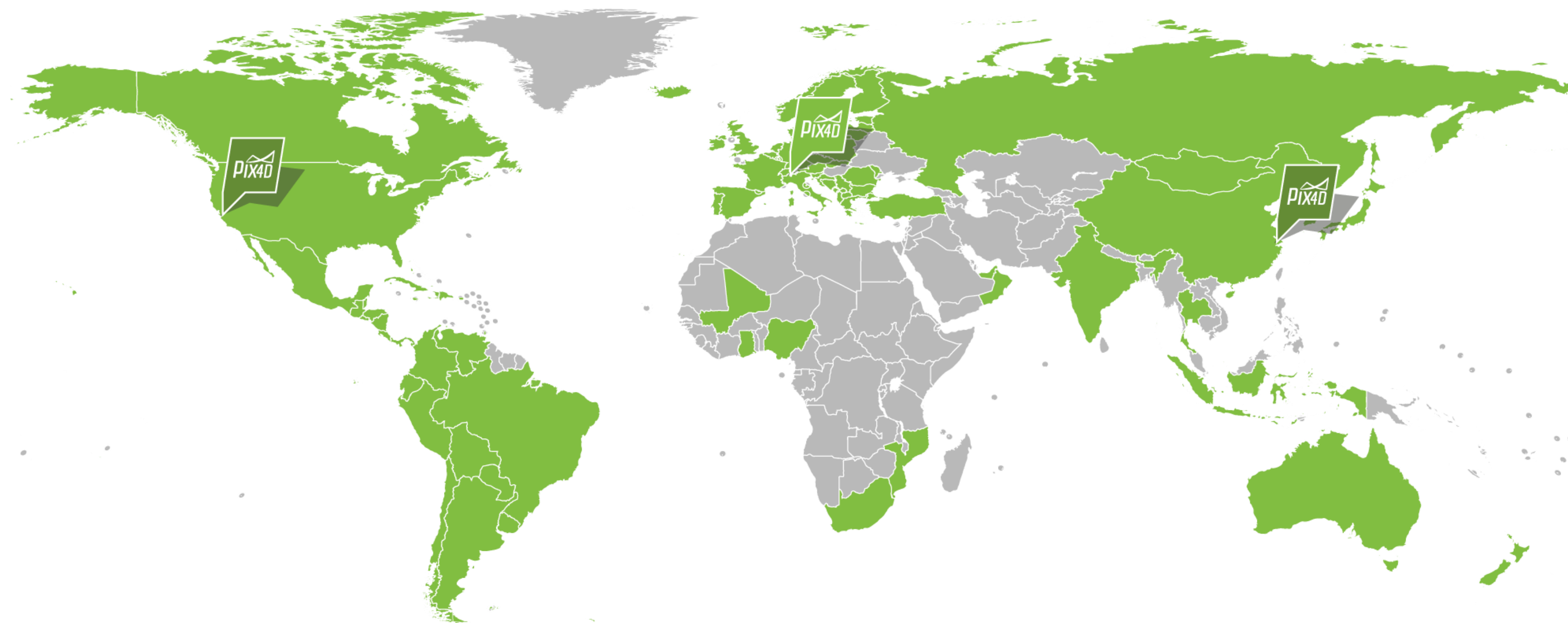


BERLIN
GERMANY

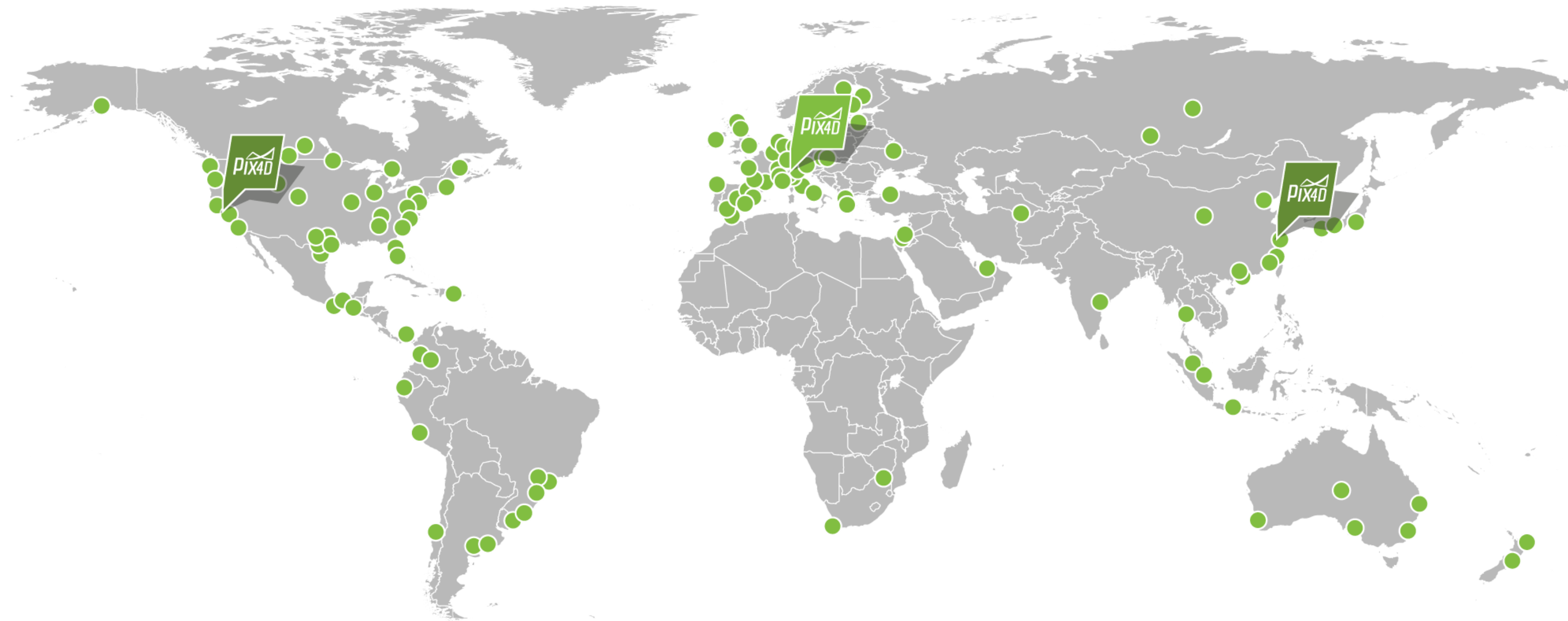


SHANGHAI
CHINA

10,000 ACTIVE USERS/ MONTH



170 RESELLERS AROUND THE WORLD



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