

## Autobahnring A99, Autobahn GmbH, BIM-digitization and AI damage detection

"Autobahn GmbH is a German company responsible for the planning, construction, maintenance, financing and asset management of German highways."

### Facts & Figures:

Location: Munich (Germany)

Year of construction: 1972

Dimensions: 48,25m / 8,9m / 432m<sup>2</sup>

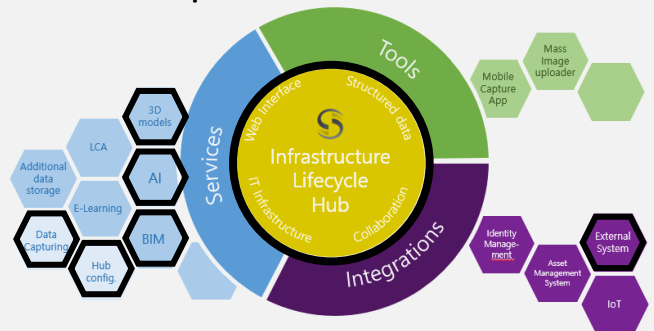
### Challenges:

The project with Autobahn GmbH was a bridge inspection on the A99, where surveying work was carried out on the bridge and the larger surrounding area in preparation for a future demolition and thus new construction. STRUCINSPECT was faced with the challenge of demonstrating the ability to provide the digital decision-making basis for a complex demolition and new construction project during ongoing operations.

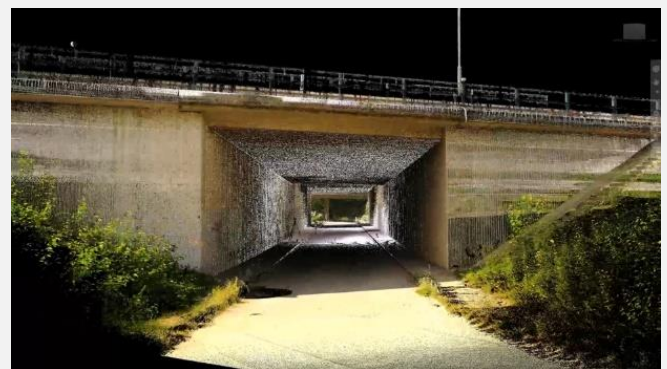
### Benefits:

By performing the inspection and area survey simultaneously, the process was shortened, and the work was completed in a time-saving manner. The use of digital technologies enabled the collection of more structured data of the bridge and information about the surrounding area, which allowed for an improved decision-making process. AI-assisted damage detection enabled higher accuracy of results, minimizing safety risks during deconstruction and reconstruction.

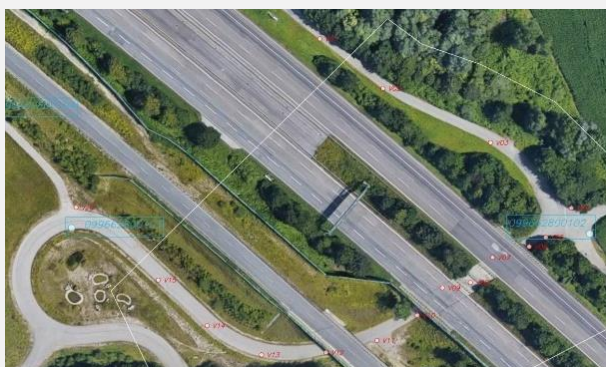
### STRUCINSPECT provided:



- ✓ Data capturing support
- ✓ AI-assisted damage detection
- ✓ 3D Modeling using photogrammetry
- ✓ 3D damage mapping
- ✓ Export of inspection results into BIM Format IFC04



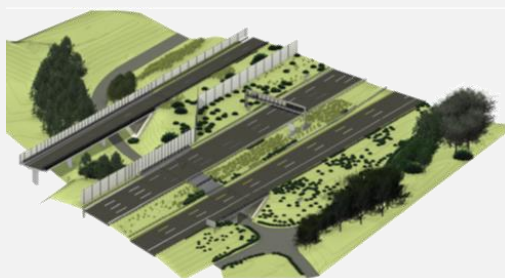
Digital 3D point cloud



Aerial View Autobahnring



BIM Integration of the AI detected damages



BIM Model

Summary	Location	Clashes	Ingenieurbau
Eigenschaft			Wert
Abmessungen	Abplatzungsfläche: 45.66dm2		
Bauwerk_Bauteil	Fluegelwand_(Widerlager_1_Nuernberg)		
Dauerhaftigkeit	2		
ID_Nummer	1876		
IFC_Bauteilklasse	IfcBuildingElementProxy		
Klassifikation	Bauwerkspruefung		
Modellstrukturschlüssel	7836628_A1_Bauwerkspruefung_011		
Pruefbericht	/Pruefbericht/PRUEFBERICHT_7836628_1_2020H.PDF		
Pruefdatum	von_11.08.2020_bis_20.11.2020		
Schadennummer_SIB-Bauwe...	[50]		
Schadenbelegel	BSP-ID_021-08		
Schadenbild	/Schadenbilder/1876.jpg		
Schadenstyp	Abplatzung		
Stand sicherheit	0		
Status	Bestand		
Verkehrssicherheit	0		
X-Koordinate	320.702409.2562634198		
Y-Koordinate	5340212.140966344		
Z-Koordinate	503.9008235321293		

Export of structured data in IFC Format