SUSTAINABLE PLACES 2022
Sep. 6 - Sep. 9, 2022 | Nice, France

BIM SPEED

DEMONSTRATING BIM IMPLEMENTATION ON RENOVATION PROJECTS

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BIM SPEED

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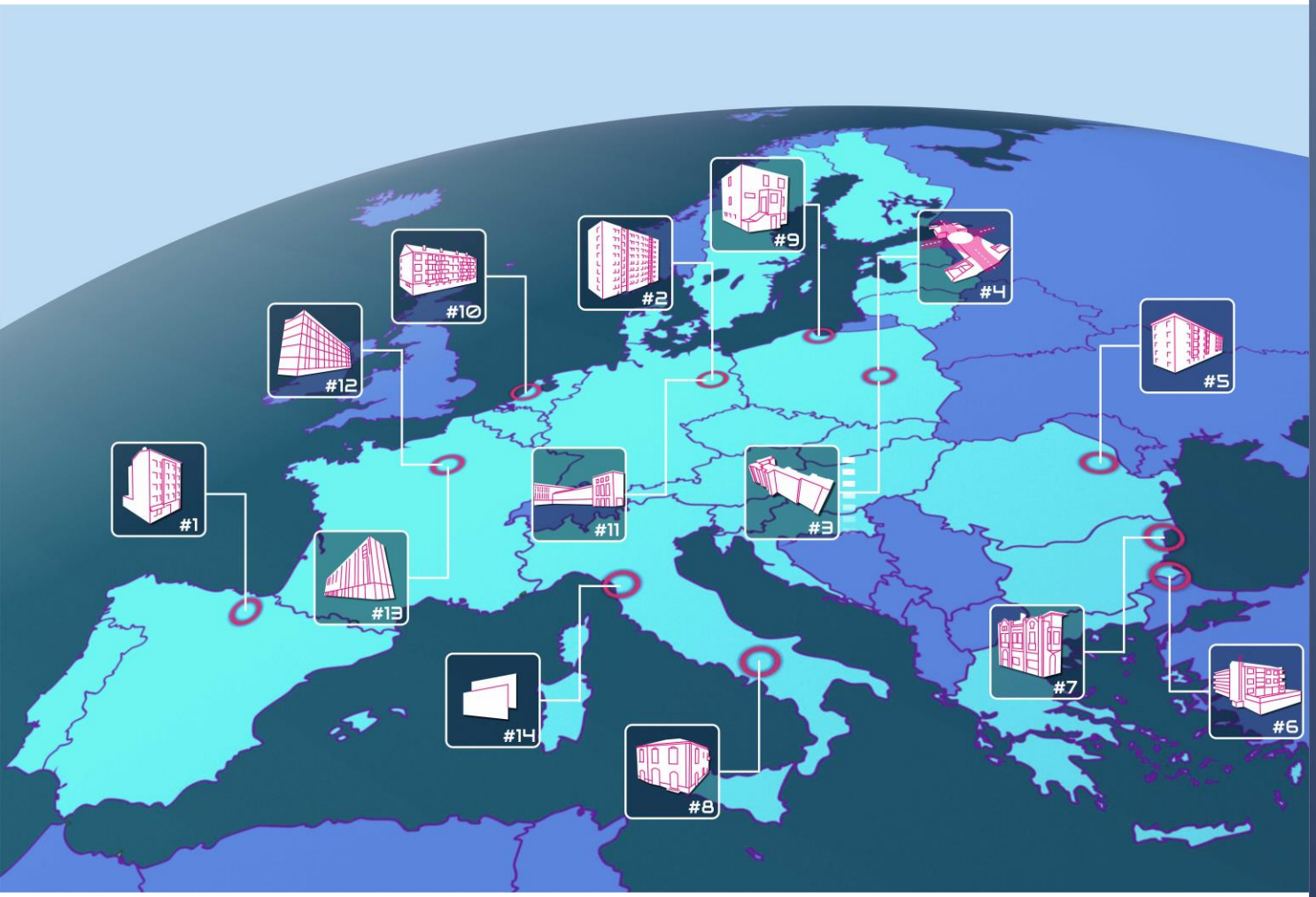
4. # BIM passport for builidings

07.09.2022

Sustainable Places

Agnieszka Łukaszewska

14 Demonstration projects



#1 Apartment blocks
in Vitoria (Spain)

#2 Apartment block
in Berlin-Lichtenrade (Germany)

#3 Apartment block
in Warsaw (Poland)

#4 Care point for homeless people
in Warsaw (Poland)

#5 Multi-family dwellings
in Barlad (Romania)

#6 Multi-family dwellings
in Malko Tarnovo (Bulgaria)

#7 Historic residential building
in Varna (Bulgaria)

#8 Historic Residential building
in Frigento (Italy)

#9 Semi-detached building
in Gdynia (Poland)

#10 Multi-family dwellings
in Warmond (the Netherlands)

#11 Mixed used building
(residential, offices, commercial spaces)
in Berlin-Tempelhof (Germany)

#12 Apartment blocks
in Antony (France)

#13 Apartment blocks
in Massy (France)

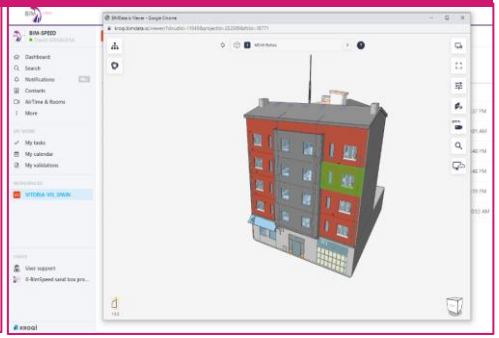
#14 BIM – to – fabrication
for producer of transparent panels
for building facades Focchi (Italy)

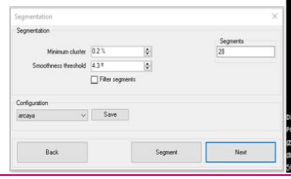
#1 Apartment blocks in Vitoria (Spain)

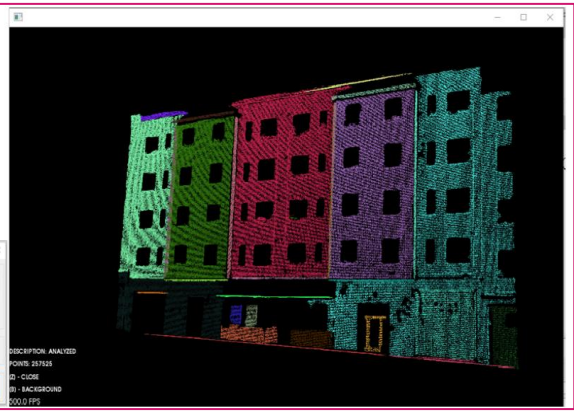
Characteristic: The two residential buildings were built in 1958, located in the city of Vitoria-Gasteiz, in the North of Spain. The buildings are part of Lighthouse demonstrators in a SmartEnCity project.

Performed work: As-built BIM Regarding models have been completed for both buildings. BIM to BEM Model has been Completed in ALD26. Several BIM-SPEED tools have been already tested: **BACN2BIM, 3DAHS tool (3D Scan-to-BIM), BIM-BEM (Cartif procedure), ECOtool, MEREEN weather service, BIM Maturity Tool, Acoustic tool / simulation, Thermal texturing of BIM and BIM-SPEED BIM Library** have been used. Augmented Reality tool is being tested by ARCHITECTURAL SPIES.

AS-BUILT BIM







3D SCANNING & 3D Scan-to-BIM (3DASH tool)

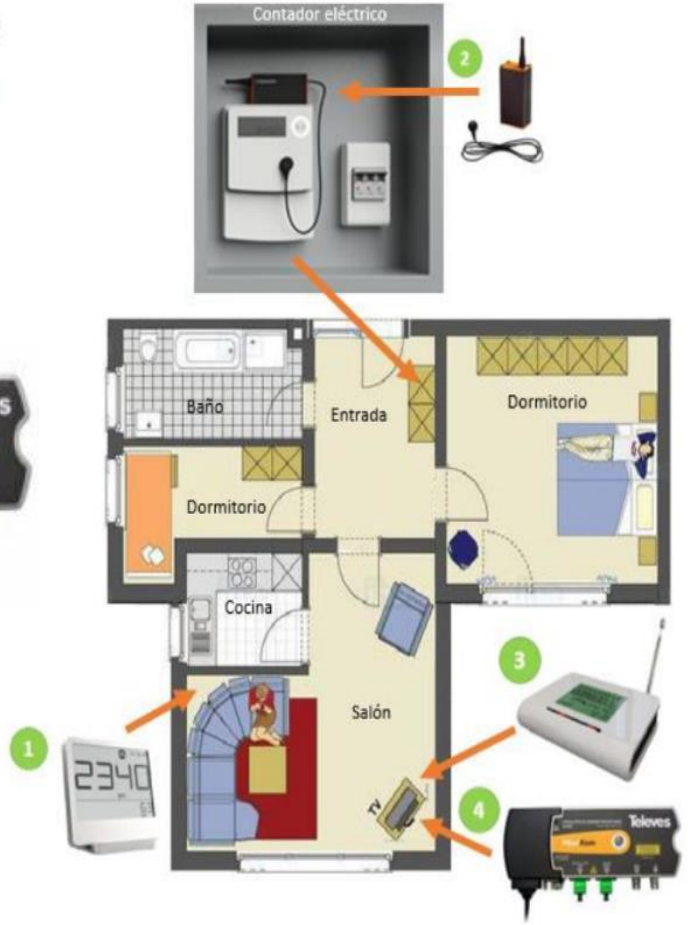
#1 Apartment blocks in Vitoria (Spain)

DYNAMIC DATA COLLETION WITH BIM-SPEED PLATFORM (BACN2BIM TOOL)

Humidity and temperature sensor

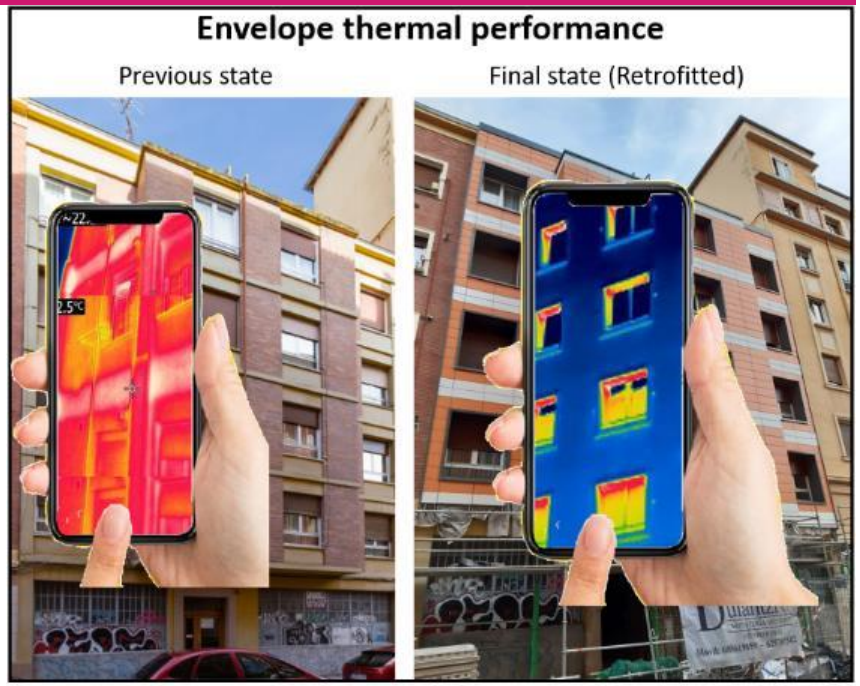
Electric consumption sensor

Gateway



#1 Apartment blocks in Vitoria (Spain)

VISUALIZATION VIA AR

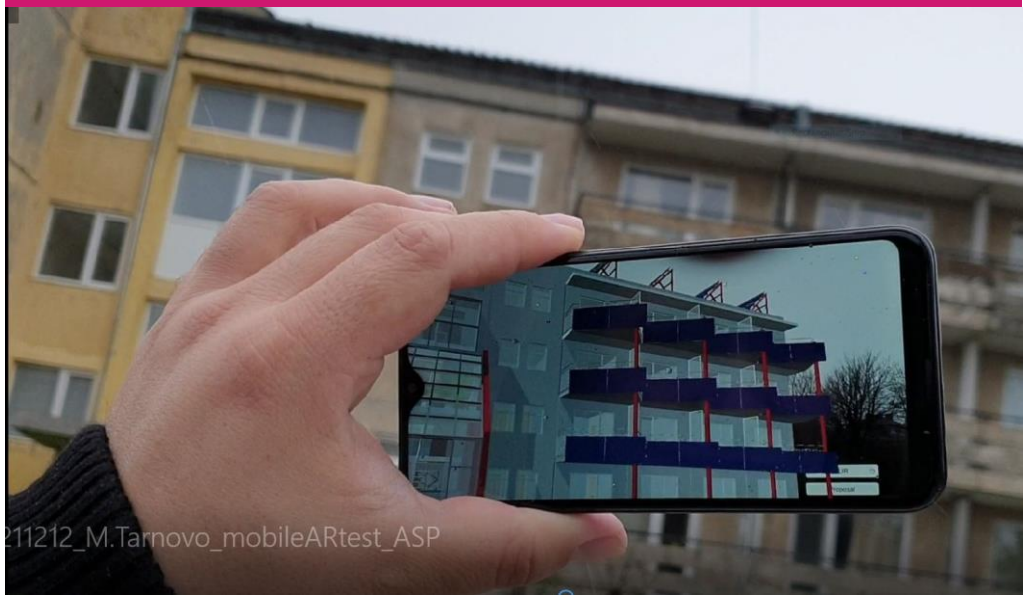


#6 Multi-family dwellings in Malko Tarnovo (Bulgaria)

Characteristic: The three-storey municipal dormitory was constructed in 1982 in the town of Malko Tarnovo, Bulgaria. The building was constructed with industrialized prefabricated method.

Performed work: As-built BIM model was performer, based on Energy simulation and Multicriteria decision making tool best renovation scenario was selected. Mobile augmented reality tool allows to see how the building will look like after renovation or the thermal models of the buildings

Mobile Augmented reality tool



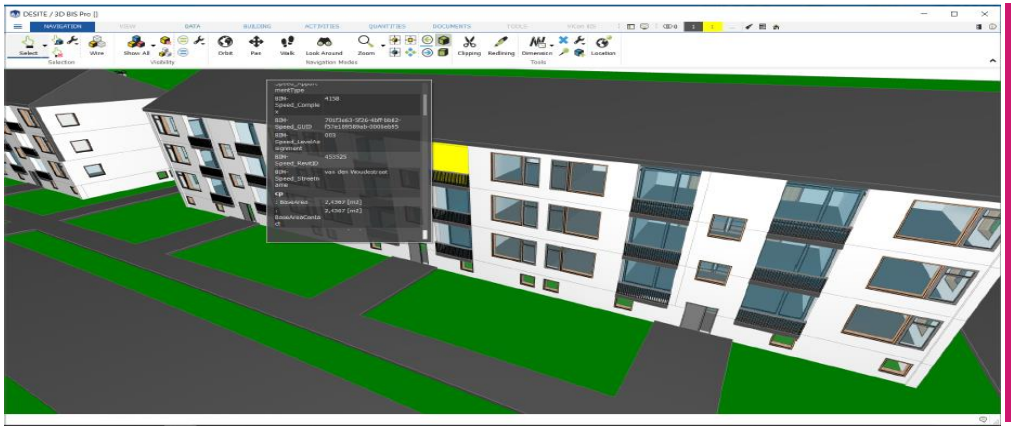
Virtual reality tool

#10 Multi-family dwellings in Warmond (the Netherlands)

Characteristic: The complex consists of a three-storey, multi-family building blocks, built in 1969. The buildings are located in Warmond in the Netherlands. The buildings are privately owned and at the moment, all dwellings have tenants. The current energy label is D.

Performed work: Based on the point cloud deviation analysis was performed and the as-built BIM model was developed. The measurement survey performed in the Warmond demo site allowed to collect all relevant data for acoustic comfort evaluation before renovation and for the calibration of BIM based acoustic comfort models. Installation of the tool „comfort eye" (developed by project partner UNIVPM) for monitoring of indor environmental quality in 5 flats.

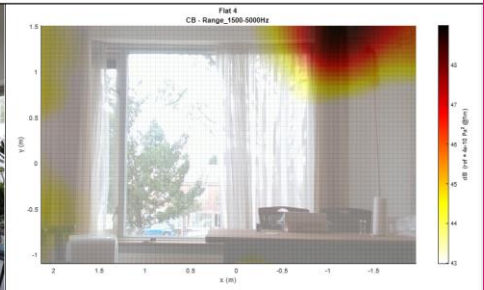
DEMONSTRATION SITE



AS-BUILT BIM

3D SCANNING

Beamforming measurement set-up

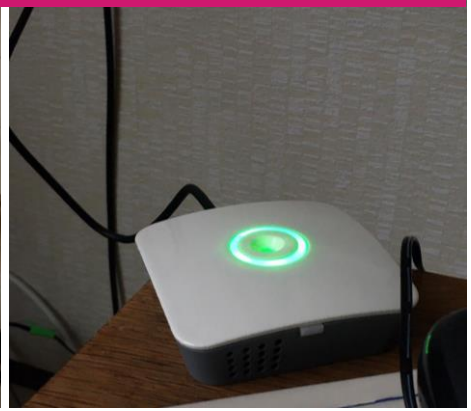


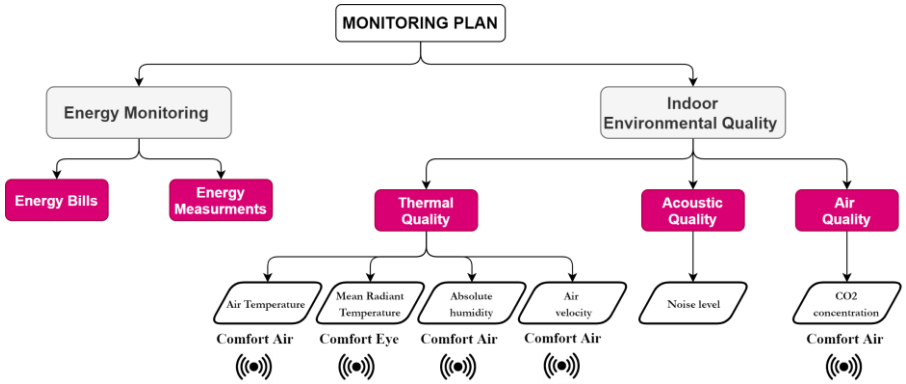
Acoustic pressure contour map

ACOUSTIC COMFORT EVALUATION

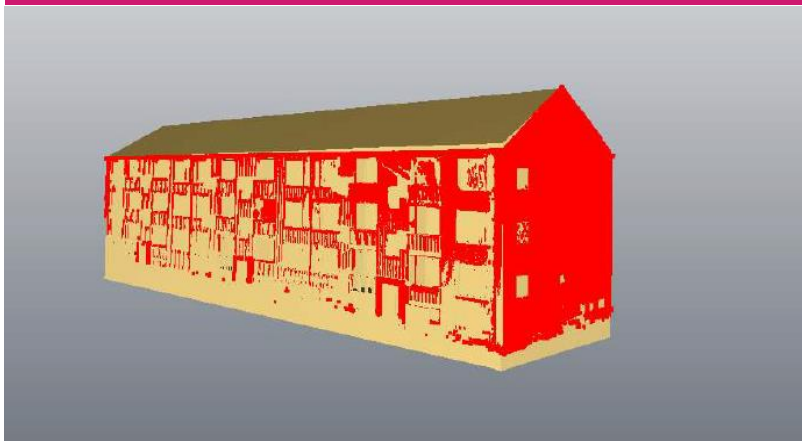
#10 Multi-family dwellings in Warmond (the Netherlands)

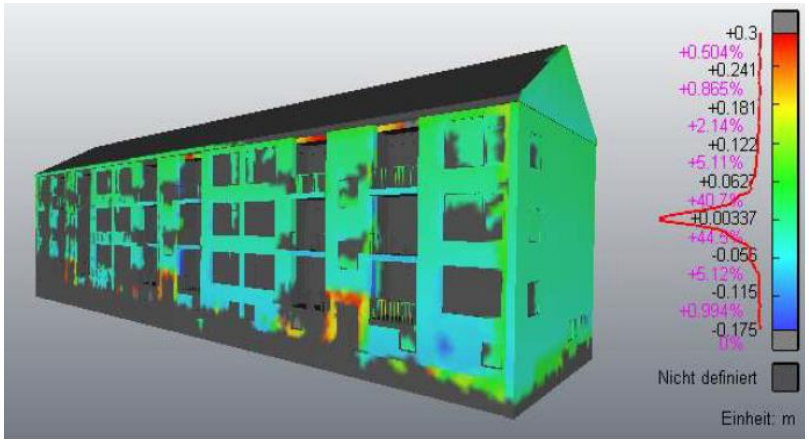
IEQ ANALYSIS





DEVIATION ANALYSIS



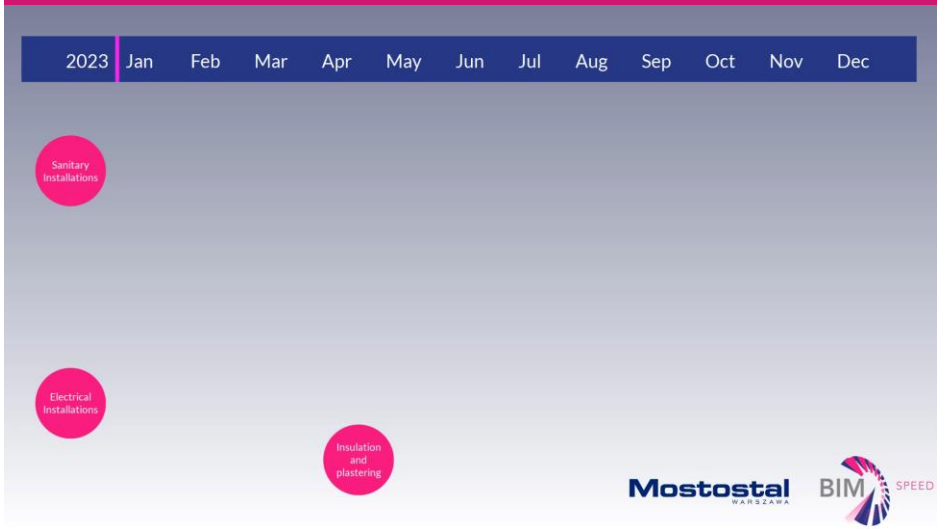


#4 Care point for homeless people in Warsaw (Poland)

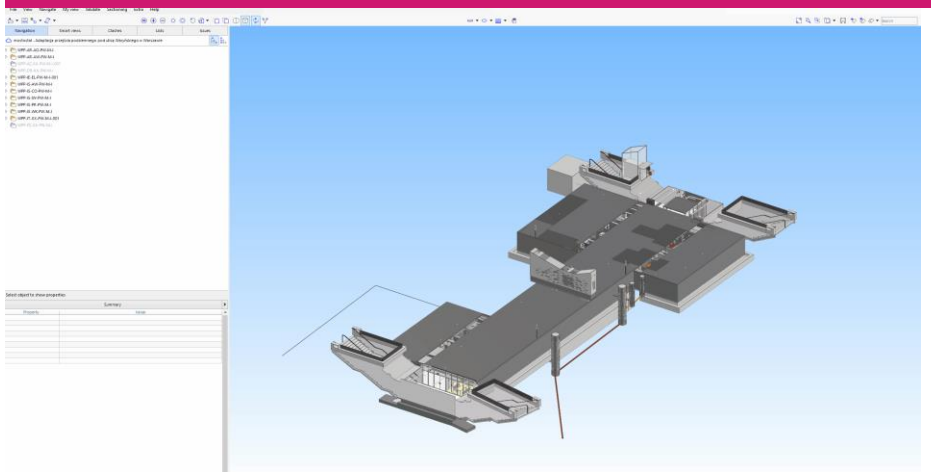
Characteristic: The underground passage located below the roundabout Jazdy Polskiej in the center of Warsaw, will be renovated and transform into a a contact point for homeless people. Owner of the passage – City of Warsaw is performing all the works with the support of BIM.

Performed work: 3D scanning and development of the BIM model based on 3D Scan-to-BIM method (developed in WP1), clash detection analysis. 4D analysis, BIM Eexecution Plan, As-renovated design.

4D ANALYSIS



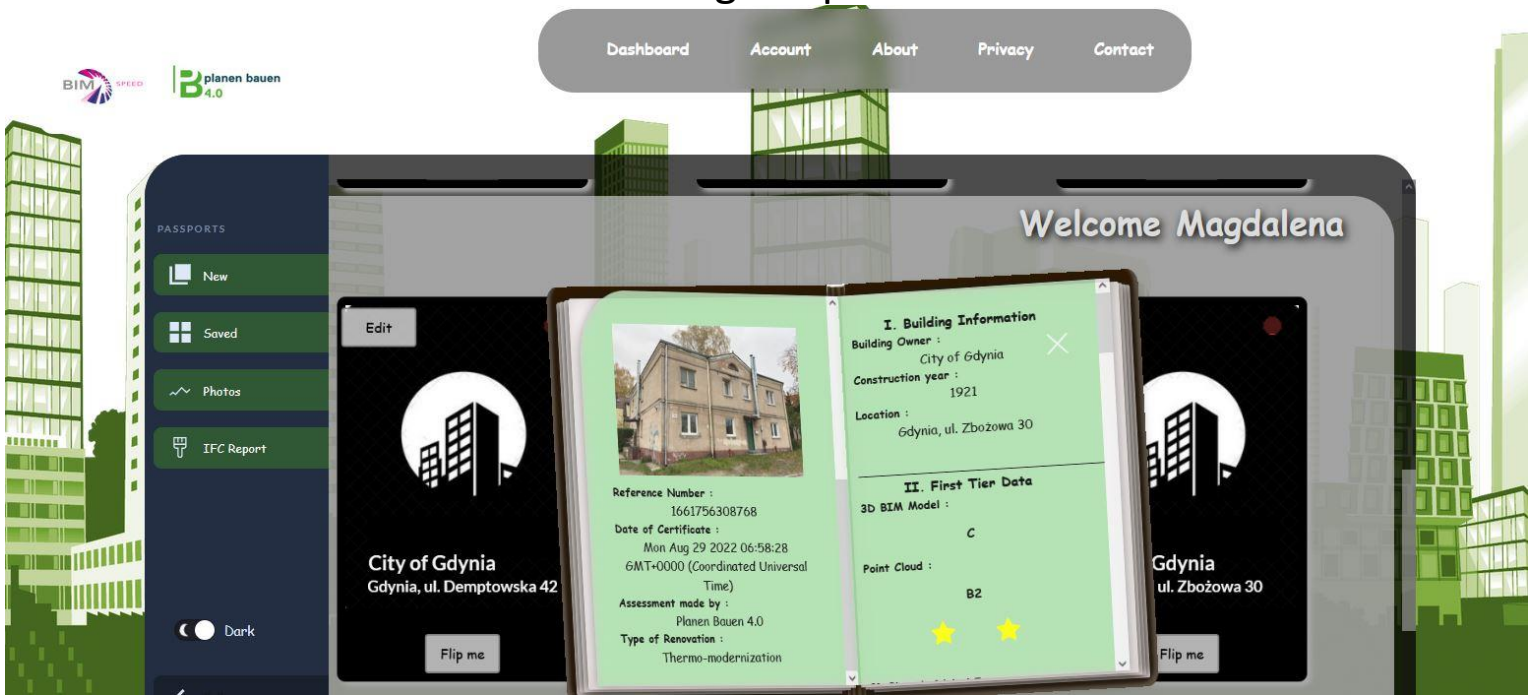
CLASH DETECTION



Health and safety trainings using VR technology

BIM passport

- Digital document for building owner in which the quality of available building data is assessed (cloud point, 2D drawings, BIM model, etc)
- Thanks to building passport the owner can quickly understand which data is still required to perform the needed analysis to find the most optimum renovation scenario
- The data assessment is made through a questionnaire



COLOPHON

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BIM SPEED

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Sustainable Places 2022, Nice, France

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