



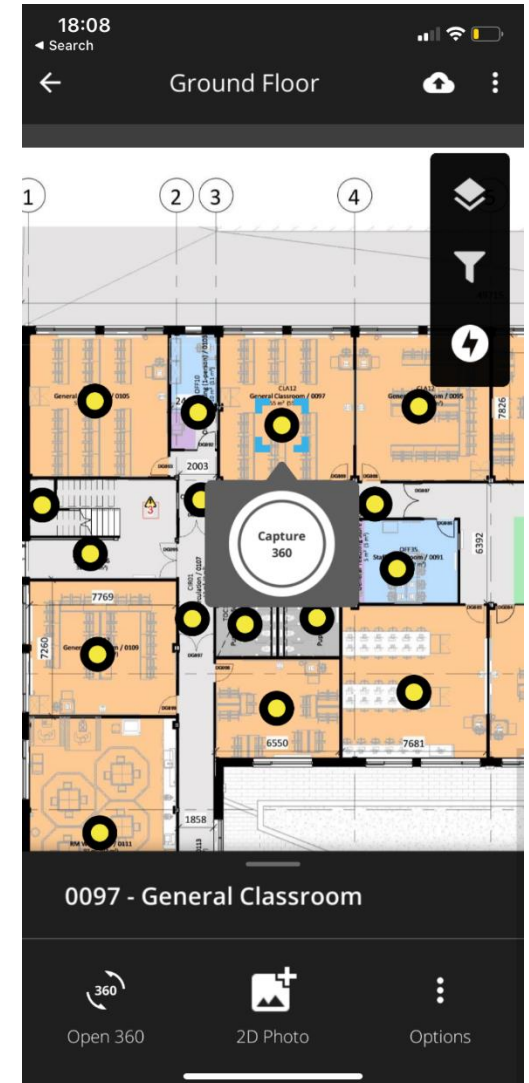
Innovation Presentation : Holobuilder – Jobwalk App

Project: Leigh Academy Blackheath

Presentation by Thomas Moineau

What is HoloBuilder?

- Application to create a 360° digital version of a construction project
- Project is accessible from a computer, phone or tablet
- Create an organized picture records of the project progress and activities from start to finish
- Travel through time and compare different points in time and compare reality with 3D BIM modelling
- Possibility to use app tools to create mark up, reports and take measurements
- Possibility to link it to 3D BIM modelling

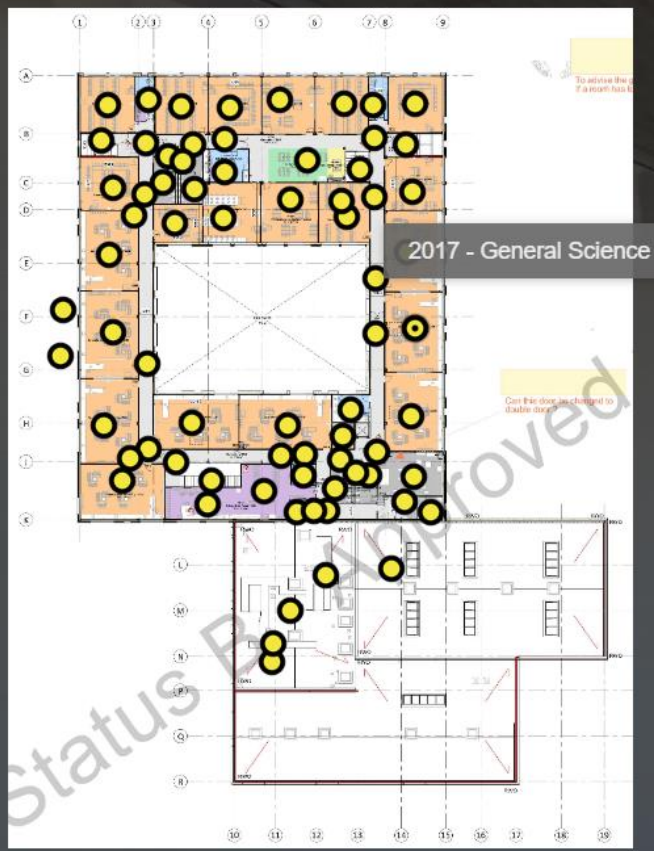


Main usage of the tool & advantages

- Communication with subcontractors to prepare the works and review the progress
- Self-check when in doubt about something on site
- Preparation and review of monthly application
- Giving context when discussing site issues (inc. H&S) during meetings
- Get a full site condition capture before closing during COVID-19 lockdown
(showing storage areas, material on site, progress at site closure)
- During Covid-19 lockdown, allowed the team to keep working efficiently to review design issues, prepare works, assess the site condition to prepare it for Covid-19 measures
- Improve communication among project team members on site and off site
- Virtual site tour for future school students

*Presentation of HoloBuilder Platform for
Leigh Academy Blackheath Project*

Level 2



Navigation toolbar with icons for: Home, Rotate, Zoom In, Zoom Out, and other controls.



Vertical toolbar on the right side of the interface with icons for: Scene, Measure, Objects, Markups, Modify, and 2D Photos.

Back to Editing 2/21/21 14:22

Split Screen

5 days and 23 hours ago



Level 2



Map navigation controls: Home, Pan, Zoom In, Zoom Out, Full Screen

2020/05/21 14:22 ▾

MEP

Architecture

2020/05/21 14:22 (GMT+1)

2020/05/12 09:32 (GMT+1)

2020/05/01 09:19 (GMT+1)

2020/03/27 11:24 (GMT+0)

2020/03/24 16:27 (GMT+0)

2020/03/19 14:10 (GMT+0)

2020/03/12 10:58 (GMT+0)

2020/03/09 11:00 (GMT+0)

Back to Editing

2020/02/26 14:40 (GMT+0)

Split Screen



Scene

Measure

Objects

Markups

Modify

2D Photos



Level 2



2020/05/21 14:22



5 days and 23 hours ago

Split Screen

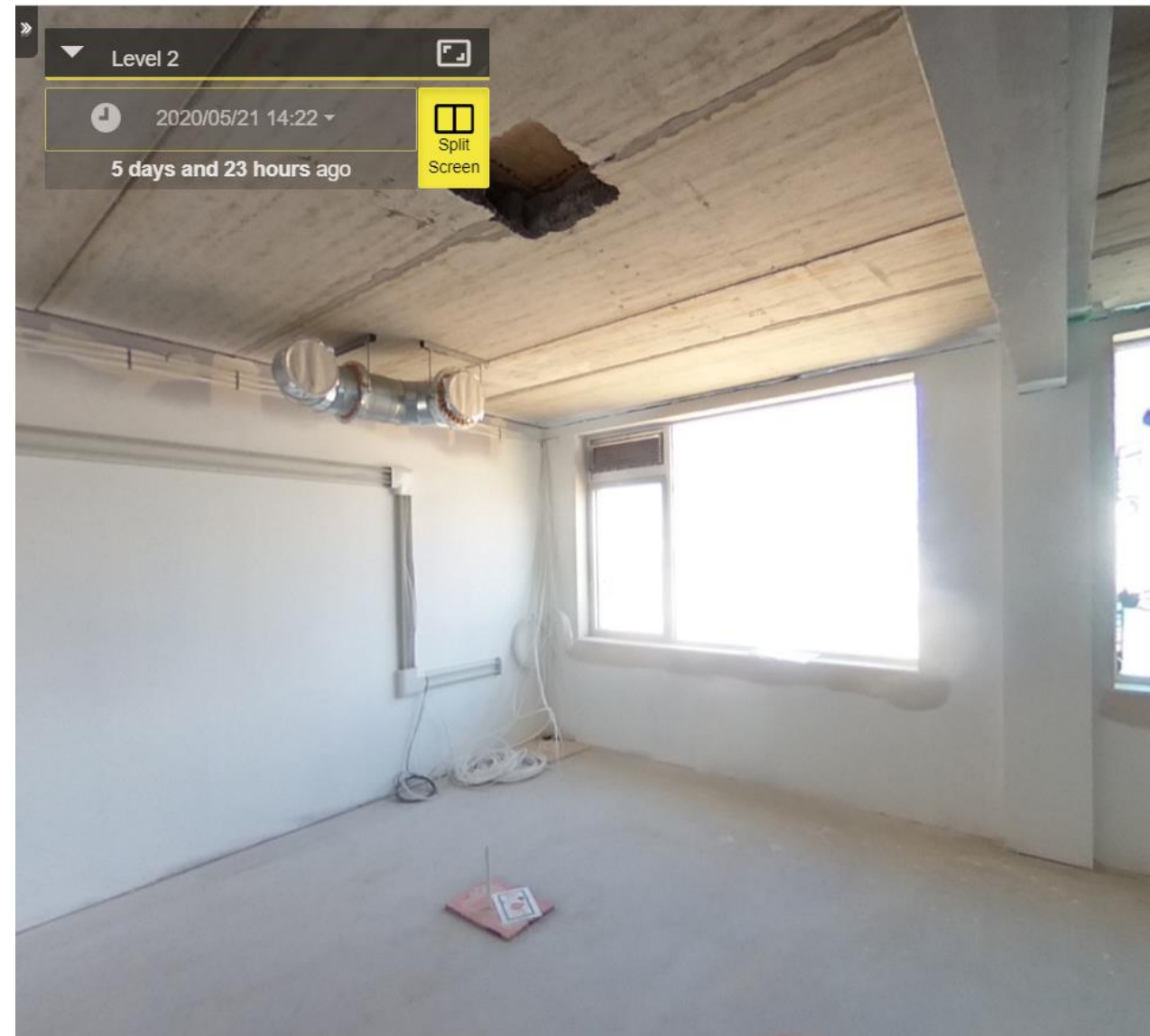
2020/03/19 14:10

2 months and 7 days ago



← BACK TO EDITING

Lock Views



Level 2

2020/05/21 14:22

5 days and 23 hours ago

Split Screen



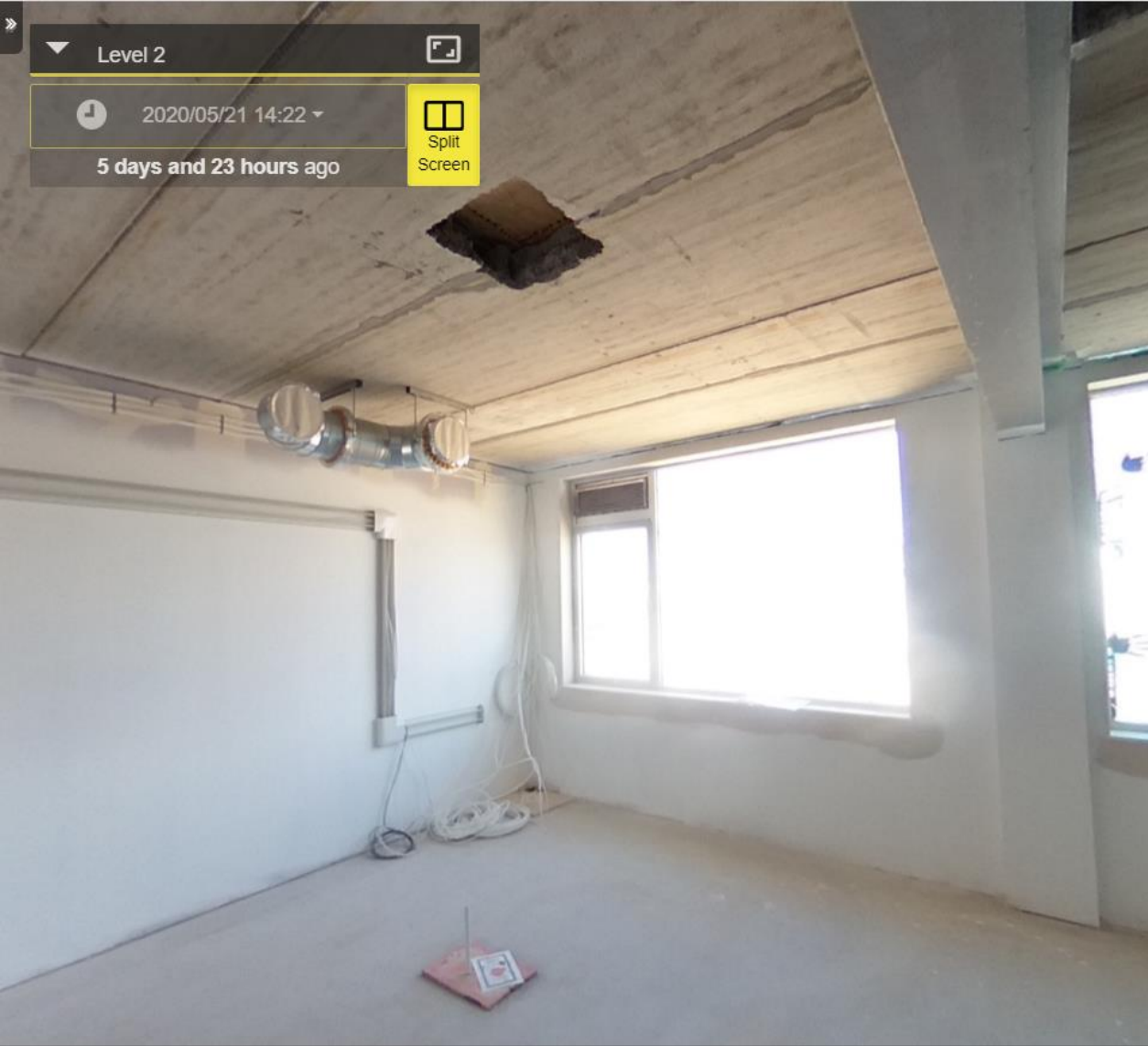
2020/03/25 15:51

2 months and 1 day ago



← BACK TO EDITING

Lock Views 



Level 2

2020/05/21 14:22

5 days and 23 hours ago

Split Screen



2020/03/26 17:27

2 months and 19 hours ago



← BACK TO EDITING

Lock Views 

Costs of using HoloBuilder:

- **Licence for the project.**

Cost for Leigh Academy Project = 1500 USD

- **360° camera**

Cost of Theta V camera is approx. £300

- **A smartphone or tablet**

Usually available on every site. Must have built-in GPS and AR ability to use the “speedmode”

- **Time to take pictures**

On average, 60 pictures are taken within 45 min on site (not using “speedmode”)

Leigh Academy (9000m²) = 320 photos to cover all areas (inc. external) > 4 hours a week

Objective is to have 1 picture a week for each scene + additional pictures if critical works on going

Speedmode feature



- The JobWalk App uses the phone's or tablet's Augmented Reality capabilities to track user location on a plan.
 - 360° pictures are automatically captured when user is close to a Scene
-
- *This is a new feature and is not currently used on LAB Project. The tablet being used are not advanced enough to use this tool but it has been tested on personal tablets/phones.*
 - *We managed to take 90 pictures in 30 minutes which is 2 times faster than without Speedmode.*

Future possible innovation with HoloBuilder

HoloBuilder and Boston Dynamics Launched SpotWalk late 2019.

Robot can walk job sites autonomously, capturing 360° images that record the progress of a construction project over time.

Cost to add:

- . Additional licence (5000 USD)
- . Cost of Robot during project (tbc)



Objectives

	Objective	Define way of measurement or KPIs	Result
Objective 1	Easiness of set up	Measure time to set up Reasonable time to set-up the project (hours versus days)	Very easy. Set up can be done in less than 1 hour. Scene naming represents 1 to 1.5 hour for the whole project.
Objective 2	Easiness of regular photographic capture	Time per surface and number of room	On average, 80 pictures can be taken in an hour. Aprox. 9000m2 are covered within the week and it takes 4 to 5 hours.
Objective 3	Easiness of archiving	Time taken to upload batch of pictures in the platform	Very easy. Tablet to synchronise after taking pictures on site > 5 minutes.
Objective 4	Accuracy and consistency of solution (localisation /quality of picture)	Review of records after several captures low / medium / high	Localisation – To be improved. Speedwalk tool to be tested. Quality of pictures – pictures requires good light to have a good quality. Also the use of a tripod improves quality but makes it longer to take pictures.
Objective 5	Value for money	Overall cost compared with other solutions (traditionnal / disperse / buildots)	Much cheaper than Disperse
Objective 6	Quality of export from the platform to BYUK local environment		At the end of the project, all pictures can be downloaded and archived. Pictures can be opened individually with a 360 viewer. To be able to visualise the project the same way the online plateform, HoloBuilder provide a free software.
Objective 7	Interfacing with BIM model	Easy import of BIM / easy use of BIM comparison with picture Low / medium / high	Couldn't be tested due to firewall issues. However, 360 pictures have been taken in the BIM model and imported to Holobuilder to give a comparison reality vs BIM.
Objective 8	Use of features	To be defined after training	Features are not being used as time consuming and not useful for our project.
Objective 9 Use case	<ul style="list-style-type: none"> •Validate following use case: Valuation support (SC/client) •Contractual management •Collaboration / punch list 	Are the identified use cases identified with the platform? Y/N Who used it?	<ul style="list-style-type: none"> • Valuation support (SC/client) - Acheived • Contractual management - Acheived • Collaboration / punch list - Partially tested