

Evaluation of the project results

Synagogue in Pilica

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3D Repository

- clear structure
- good accessibility of the IFC

Pilica Synagogue (1914), Lodz University of Technology version by Michał Majchrzak [FBX]



47 FPS (14-93)

METADATA ↕

Title: **Pilica Synagogue (1914), Lodz University of Technology version by Michał Majchrzak [FBX]**

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Author: **Michał Majchrzak, Miłosz Kazuła**

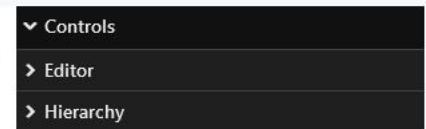
Author affiliation: **Lodz University of Technology**

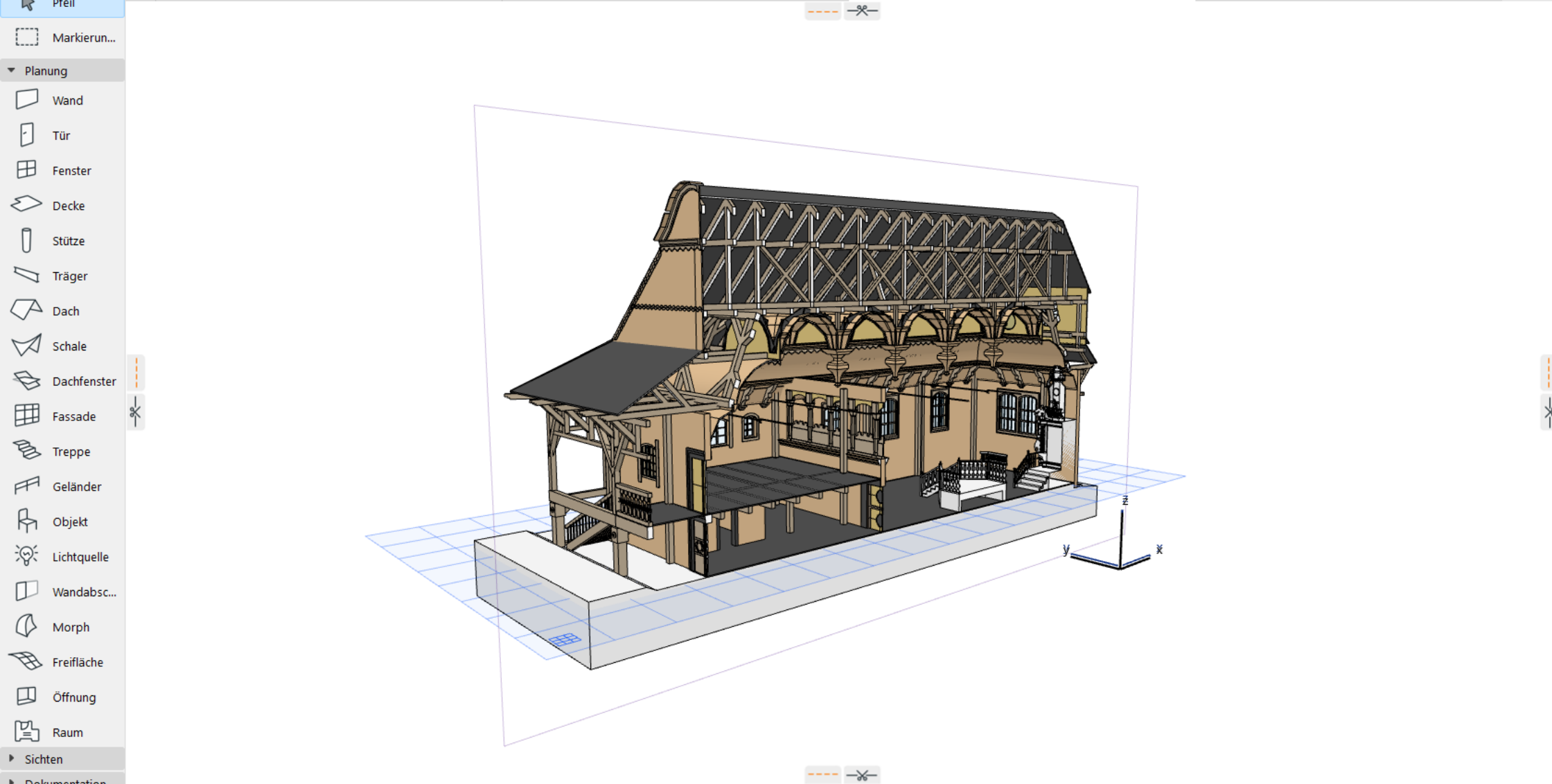
Uploaded file name: **TUL_Pilica.glb**

Loaded format: **glb**

Vertices: **184338**

Faces: **61446**





- Pfeil
- Markierun...
- Planung
 - Wand
 - Tür
 - Fenster
 - Decke
 - Stütze
 - Träger
 - Dach
 - Schale
 - Dachfenster
 - Fassade
 - Treppe
 - Geländer
 - Objekt
 - Lichtquelle
 - Wandabsc...
 - Morph
 - Freifläche
 - Öffnung
 - Raum
- Sichten
- Dokumentation

- ▼ TUL_Pilica
 - ▼ Geschosse
 - 2. Level 3
 - 1. Level 1
 - 0. Level 0
 - Schnitte
 - Ansichten
 - Innenansichten
 - Arbeitsblätter
 - Details
 - 3D-Dokumente
 - ▼ 3D
 - Allgemeine Perspekt**
 - Allgemeine Axonomet
 - ▼ Auswertungen
- Beschreibungen
 - 0. Level 0
- Transparentpause:
 - Aktiv:

IDO VIR

- clear structure
- transparent evaluation of all sources
- good usage of the IDOVIR functions
- highly detailed documentation

🏠 Synagogue in Pilica

Synagogue structure ^

Synagogue

Construction

Ceilings

Columns

Roofs

Roof truss

Stairs

Walls

Vault

Openings

Doors

Windows

📁 Projektstruktur

💡 Quellenübersicht

👤 Rekonstruktionen

👤 Nutzerverwaltung

⚙️ Projekteinstellungen

Ceilings

Variant: ceiling1

Argumentation

EN | The ceiling was partially handed down mostly because of low importance of that element in overall model. Nevertheless, it was reconstructed with high precision as much as sources allowed.

PL

Rekonstruktionen

Evaluation Benutzt im Ergebnis ✓

Geometrie



Oberflächenstruktur



Farbgebung



Abb. 101 Ceiling Pilica_ceiling.png



Beschreibung Ceiling of the synagogue in Pilica was reconstructed using survey drawings.

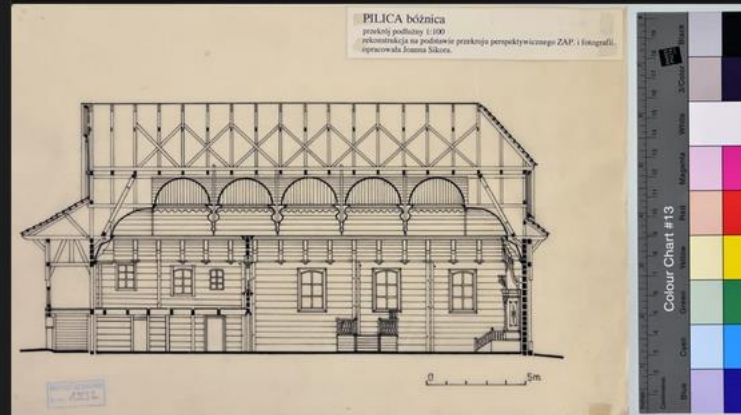
EN
PL

Quellen

Direkte Quelle

Aufmaß

Abb. 5 005_Pilica_IS_PAN_cross_section_03 IS_PAN_005_Przkehr3.jpg



Beschreibung Longitudinal section of the synagogue in Pilica.

EN
PL

Typ Aufmaß

Ceilings



Kommentare (0)

SK

Neuer Kommentar



➤ Senden



Synagogou in Pilica

Synagogue structure

Synagogue

Construction

Ceilings

Columns

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Projektstruktur

Quellenübersicht

Rekonstruktionen

Nutzerverwaltung

Projekteinstellungen

Doors

Variant: Internal door to main prayer hall

Variant: External doors to the vestibule

Variant: External doors to the women's g...

Argumentation

EN | The interior door of the synagogue in Pilica were reconstructed using historical photography. Good quality of source material allowed to reconstruct doors with high precision and meticulous attention to details.

Rekonstruktionen

Evaluation Benutzt im Ergebnis ✓

Geometrie Oberflächenstruktur Farbgebung

Abb. 74 Interior doors to the main prayer hall Pilica_door1.png



Beschreibung The interior door of the synagogue in Pilica, which lead to main prayer hall, were

Quellen



Doors



Kommentare (0)

Neuer Kommentar

Senden

Uncertainty matrix

- good selection of criteria
- used IDOVIR project settings
- transparent explanation
- easily convertible in other forms of displaying like a graph

Uncertainty in 3D Reconstruction

Documentation

- Photographs
- Oral reports

'bLOD' criterion explanation

Cubical geometry	1
General shapes	2
Main divisions, characteristic el.	3
High level of details	4
All details	5

'C' criterion explanation

Pure assumption	0
Oral report/external analogy	1
Analogy w. the same building	2
Low quality photos	3
Historical surveys, quality photos	4
Modern surveys, quality photos	5

Exemplary source evaluation

Main door

Collecting sources

Sources evaluation

3D Modeling

Level of Hypothesis Calculation

If the reconstructed building no longer exists, its reconstruction relies entirely on sources such as photographs and historical architectural drawings. The beginning of the work is to collect and sort them to work further.

The quality of sources varies. Prior to commencing digital reconstruction, it is necessary to estimate the best possible Level of Details of reconstructed 3D model that can be achieved based on these sources (bLOD). Another criterion requiring evaluation is the Certainty of the source; for example, a photograph carries greater certainty than a drawing, and an analogy within the same building is more reliable than an external analogy. The source is always evaluated in the context of a specific element, as the same source material may have different bLOD (Level of Detail) and C (Certainty) values for different elements. For instance, the photograph below provides more information regarding the elements of the hall-timbered construction than the partially ruined balustrade of the external staircase.

After evaluating the quality of sources, we proceed to the modeling stage. At this point, it is necessary to determine the desired mLOD (modelled Level of Detail) for each element of the reconstructed building.

After modeling we can determine the LOH (Level of Hypothesis) of given element of the building. LOH is calculated in the following manner:

$$mLOD - bLOD = LOH$$

Assumption
LOH > 0

We made the element and add more details than is available from the sources (for example we resort to a form of analogy or a more detailed mLOD) greater than bLOD.

mLOD=4
bLOD=3
LOH=1

No hypothesis
LOH = 0

We model the element exactly according to the sources. If sources are good fit to the most defined details, mLOD is equal to bLOD.

mLOD=3
bLOD=3
LOH=0

Simplification
LOH < 0

We made the element and downgrade the LOD for sake of better design or more to make or adjust it to 3D print or All, mLOD is lower than bLOD.

mLOD=2
bLOD=3
LOH=-1

Lodz University of Technology, Architecture Institute, Workshop on Digital 3D Heritage. Exploring 3D-Modelling in Education, Documentation and Dissemination
Miroslaw Kaszuba, Michał Maciejowski, 2023