

Escalhão Church



Description

Escalhão Church, best known as *Igreja Matriz de Escalhão*, was built in the 16th century. Later in the 17th century there were added baroque elements to the existing church as well as the addition of lateral alterpieces.

The study focuses on the *Igreja Matriz de Escalhão*, exploring its architectural evolution and its significance within a transitional period in Portuguese architecture, described as "between renaissances." The objective is to analyze and understand how this church incorporates elements of the Manueline style—distinctive to Portugal during the Age of Discoveries—alongside features of the international Renaissance, blending local and global architectural trends. By comparing the *Igreja Matriz de Escalhão* with similar churches, the study aims to highlight its unique characteristics while situating it within the broader context of Portuguese architectural history.

Modelling

José Araújo, Dionatan Bertelli, Tatiana Monteiro, Marcelo Odani

Cooperation Partnership

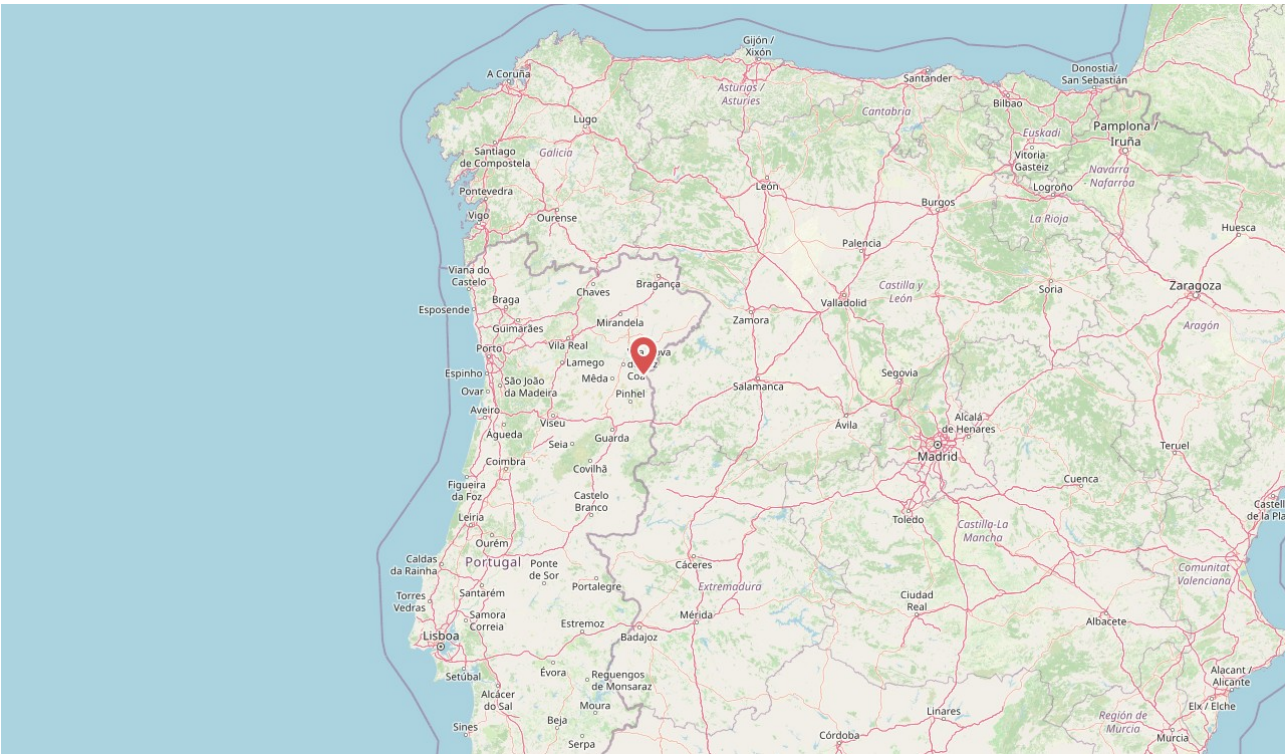
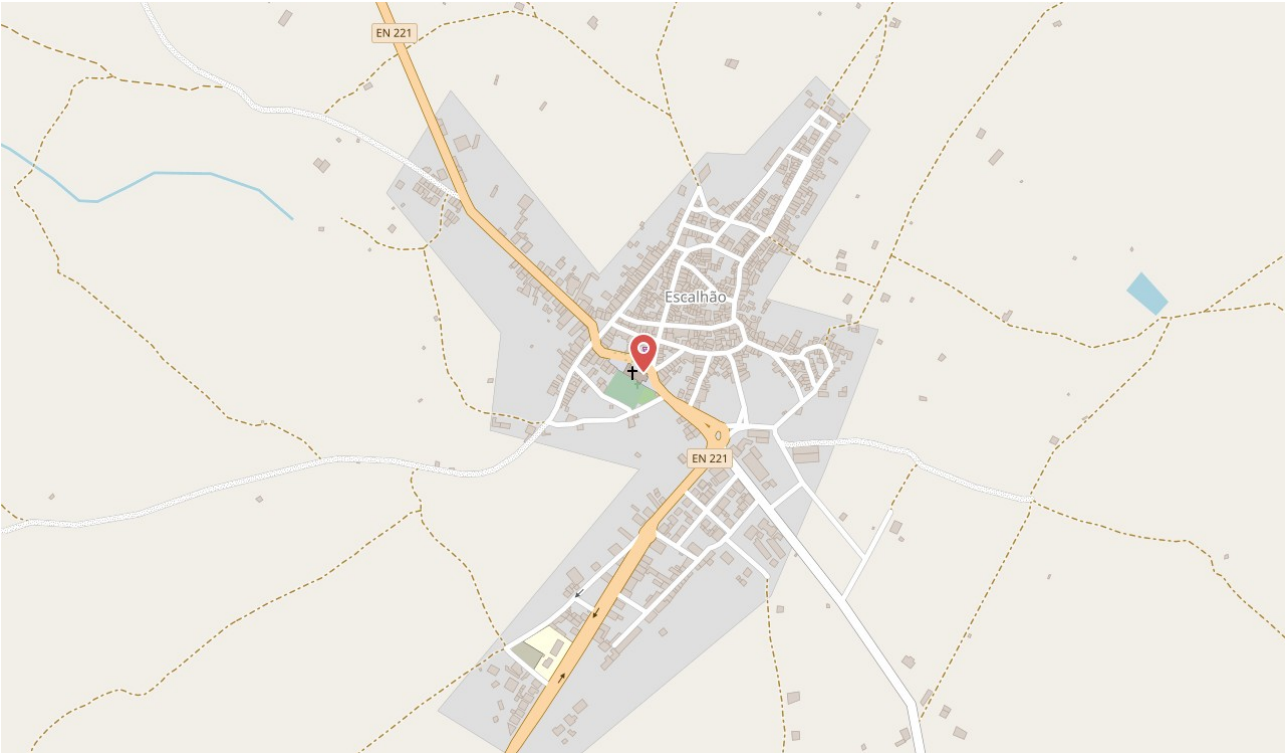
Faculdade de Arquitectura da Universidade do Porto, Alma Mater Studiorum - University of Bologna, Autonomous University of Barcelona

Used software

Blender, Rhino 8, Agisoft Metashape, Darktable, Adobe Photoshop, Adobe Illustrator

Geo-coordinates

Latitude 40.948778 Longitude -6.925917



Selected sources

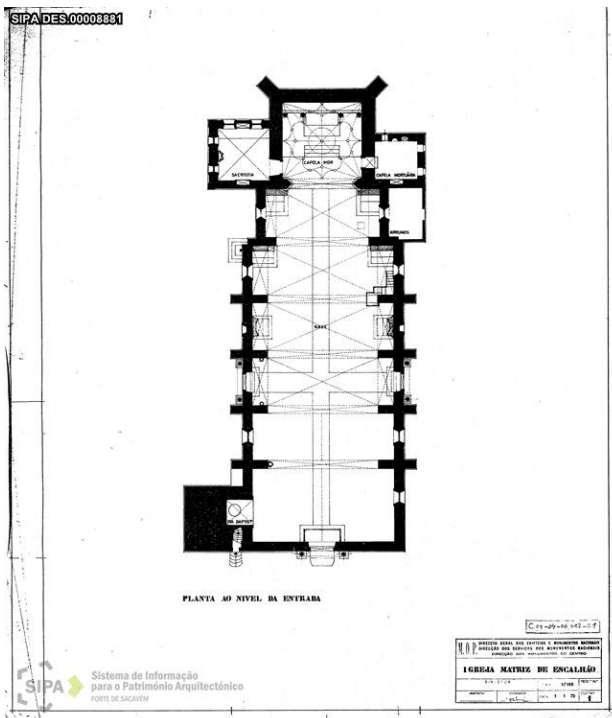


Fig. 45 Floor Plan Reconstruction (1973)

Drawn Reconstructions

Floor Plan

Elevations

Sections

Comparison Analysis

Model Reconstruction

Floor Plan

North Elevation

North Portal

South Elevation

South Portal

West Elevation

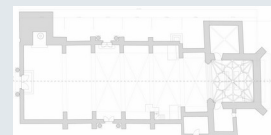
West Portal

East Elevation

3D Model Views

Scale of Uncertainty

Drawn Reconstructions
Floor Plan



Variant: Floor Plan

Working state

The drawn reconstruction of the floor plan is based on the previous drawing provided by the official source (SIPA - Information System for Architectural Heritage) dated on 1973, as well as on-site survey. Therefore, it was possible to prove the church was not orthogonally aligned as the previous reconstruction shown, instead, the Escalhão Church has tilted angles and different dimensions than the one previously represented.

Evaluation Used in the result:

Geometry	Surface structure	Coloring
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Drawing	Contemporary drawing / sketch
Direct source	Unknown

Reconstruction

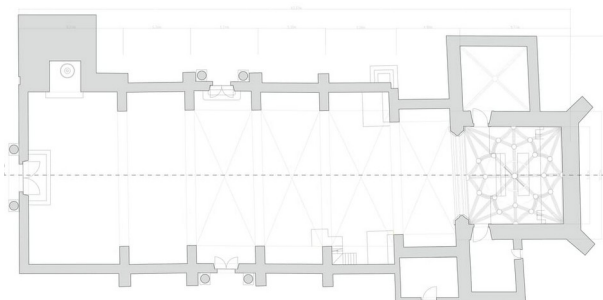


Fig. 20 Floor Plan Drawn Reconstruction

Sources

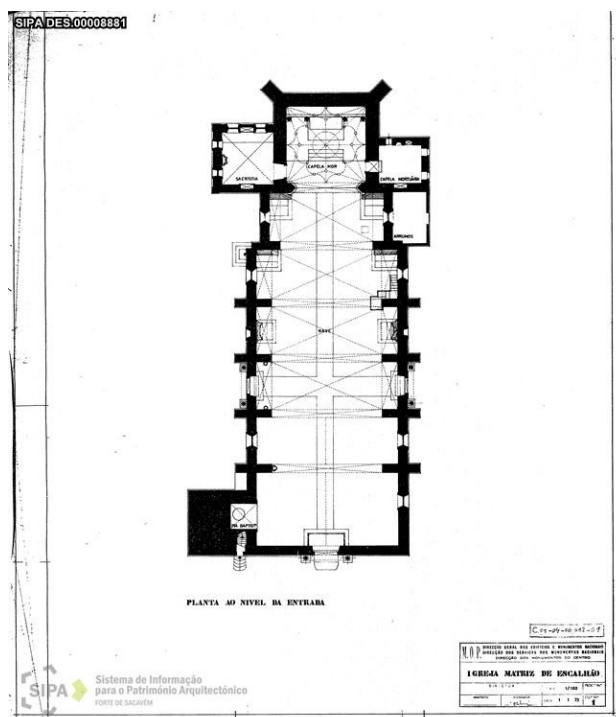


Fig. 45 Floor Plan Reconstruction (1973)

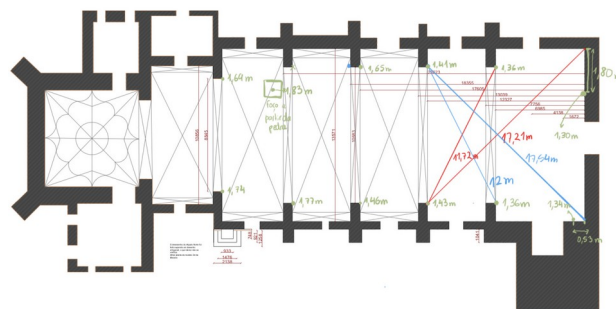


Fig. 65 Simplification of the previous reconstruction and measurements taken on the survey

Drawn Reconstructions Elevations



Variant: Elevation

Working state

The elevation's drawings were based on the on-site survey and photograph records, once there was no previous information provided from official sources. It was possible to assume that interventions were made on the church after it was built, as some ornaments and windows do not represent the architectural vocabulary used in the 16th century.

Evaluation Used in the result:

Geometry Surface structure Coloring

Survey drawing Photographic drawing / sketch

Direct source Unknown

Reconstruction

Sources



Algado Norte

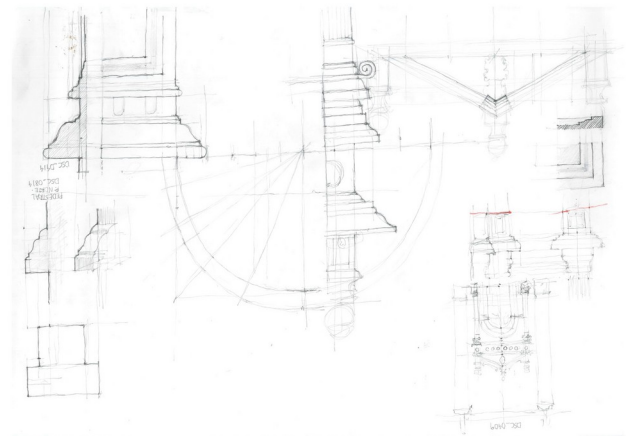
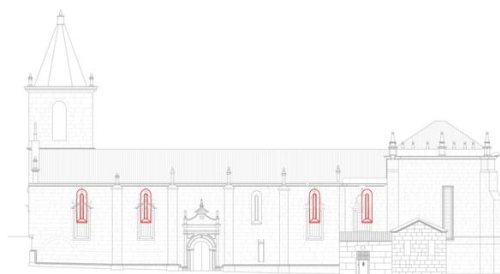


Fig. 9 On-Site Survey

Fig. 14 North Elevation



Algado Sul

Fig. 15 South Elevation



Alçado Poente

Alçado Nascente

Fig. 16 East and West Elevations

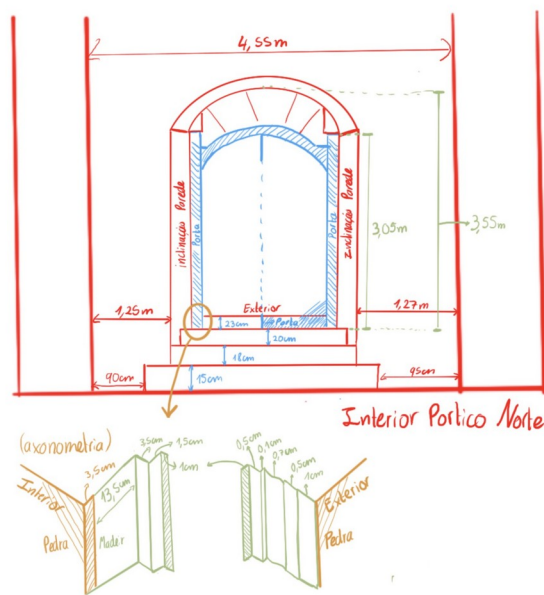
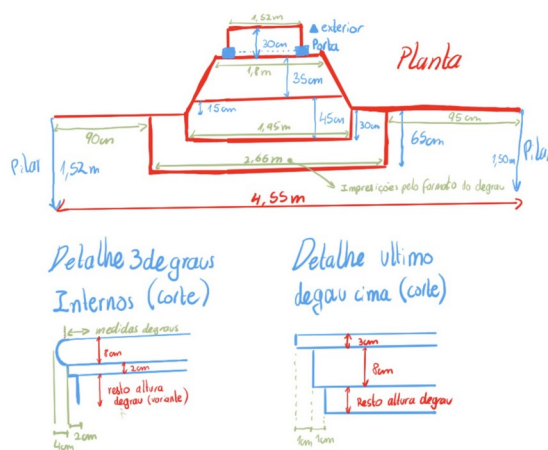


Fig. 13 North Portal Measurements

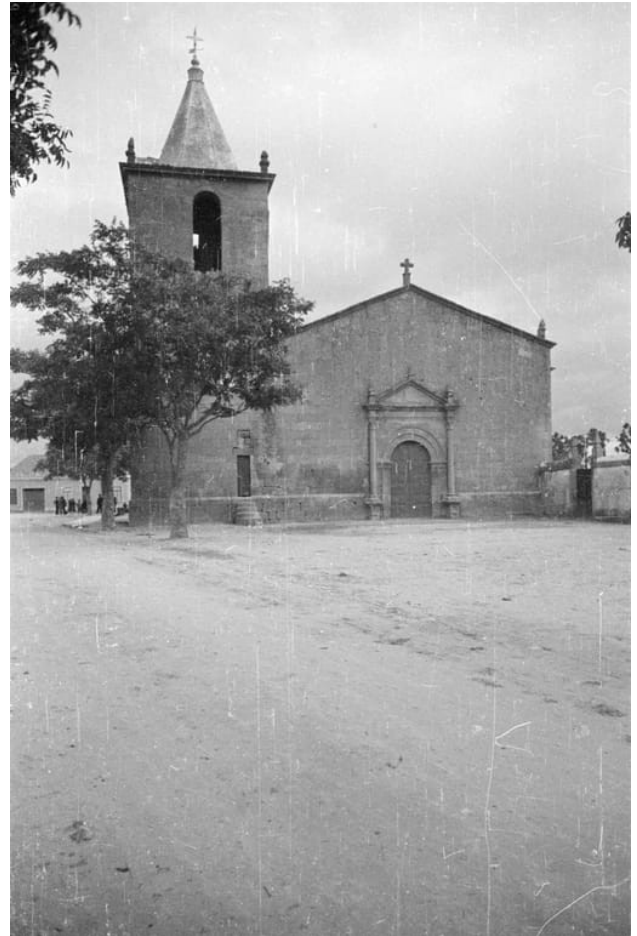
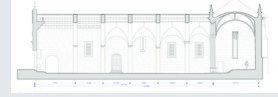


Fig. 7 Main Entrance of Escalhão Church



Fig. 8 Escalhão Church

Drawn Reconstructions
Sections



Variant: Sections

Working state

Evaluation Used in the result:

— — —
Geometry Surface structure Coloring

Reconstruction

Sources

No sources assigned

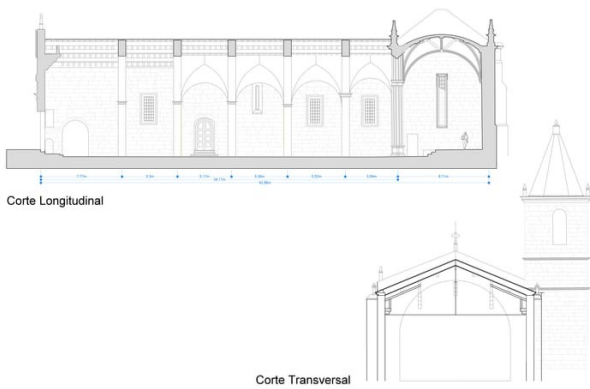


Fig. 17 Section Cuts

Drawn Reconstructions
Comparison Analysis



Variant: Analysis

Working state

Evaluation Used in the result:

Geometry

Surface structure

Coloring

Reconstruction

Sources

No sources assigned

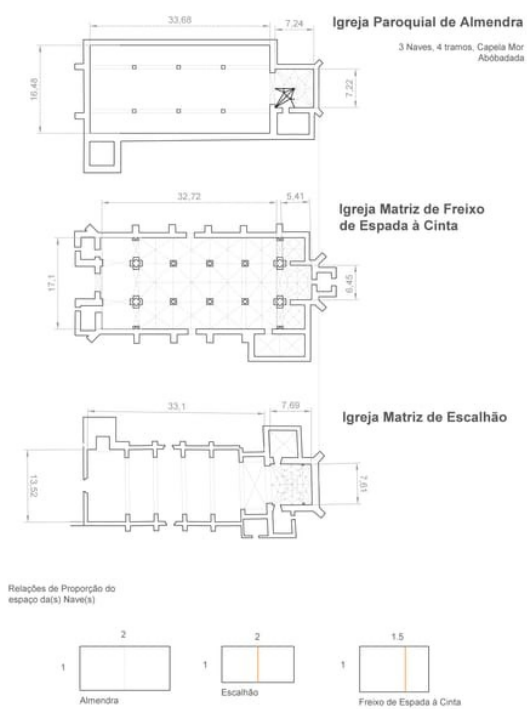


Fig. 21 Comparison between similar structures

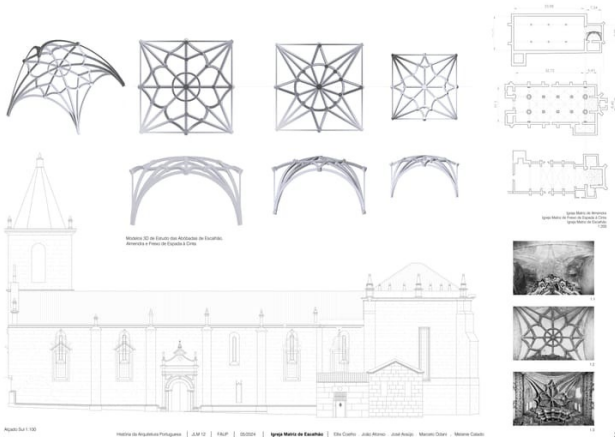


Fig. 18 HAP_painel 2.pdf

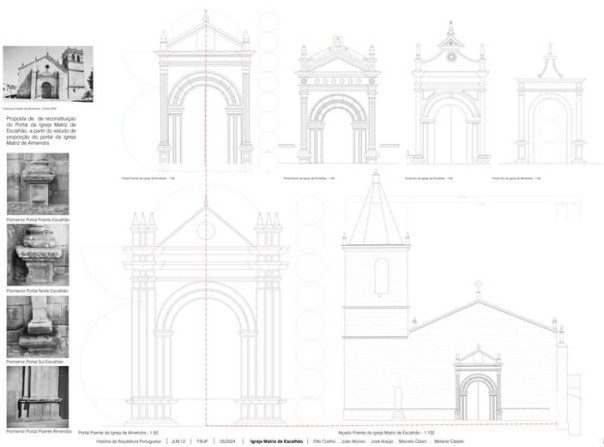
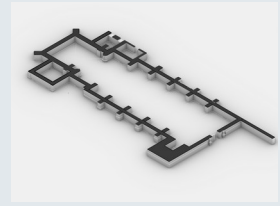


Fig. 19 Proportion's Study

Model Reconstruction
Floor Plan



Variant: Floor Plan

Working state

The model reconstruction is based on the 1973's floor plan. After the On-site survey, the group realized element's alignment didn't match the drawn reconstruction found beforehand. As for the model, it was assumed the it's a representation of the object and didn't have to be the exact replica of what was built, for that, the priority was the orthogonal alignment and the proportion shown in the 1973's drawing.

Evaluation Used in the result: 23

-	-	-
Geometry	Surface structure	Coloring

Drawing

Survey drawing

Direct source

Analogy within object

Reconstruction

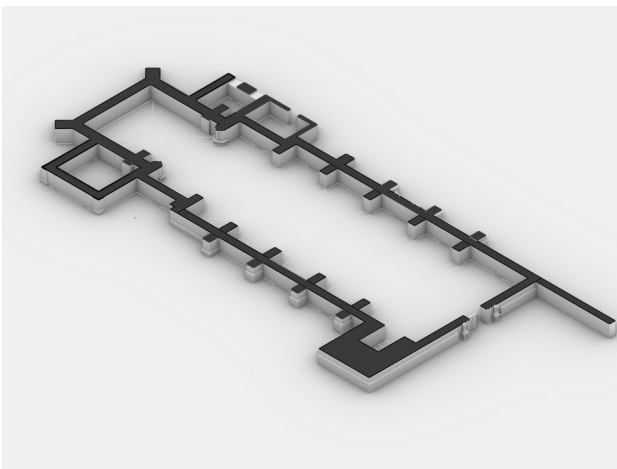


Fig. 44 Floor Plan Model Reconstruction

Sources

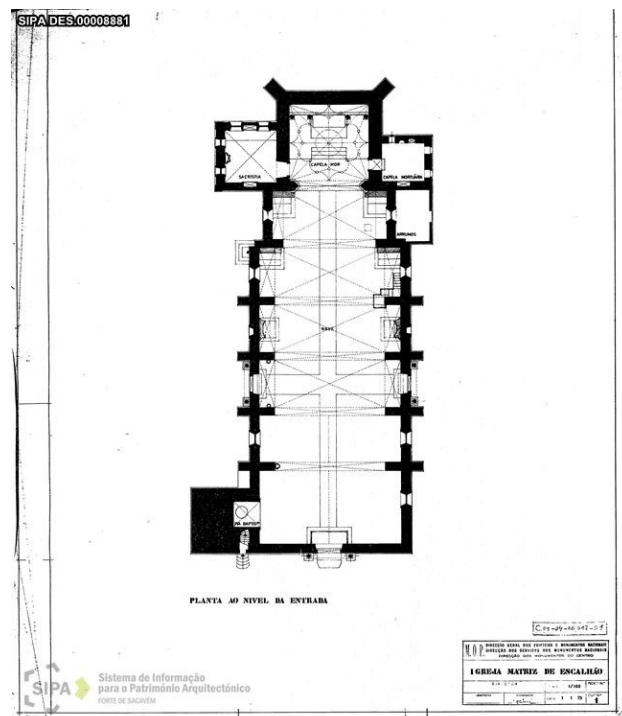


Fig. 45 Floor Plan Reconstruction (1973)

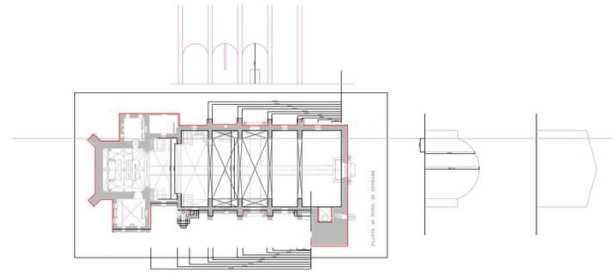
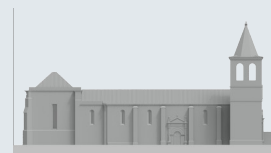


Fig. 12 Measurements over Floor Plan's Reconstruction

Model Reconstruction
North Elevation



Variant: North Elevation

Working state

The north elevation reconstruction is based on the building's original state, disregarding the existence of the main chapel and representing the windows used prior to the baroque intervention.

Evaluation Used in the result:

Geometry Surface structure Coloring

Drawn Reconstruction

Direct source

Reconstruction

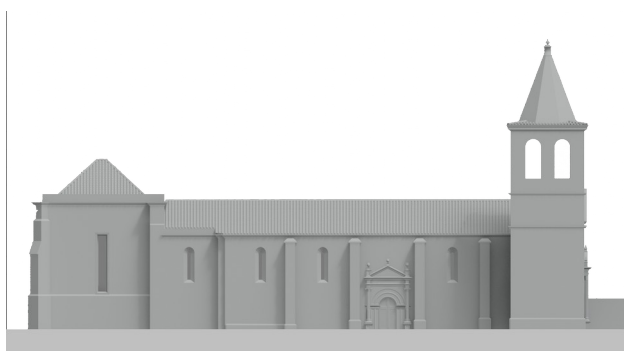


Fig. 51 North Elevation Reconstruction Model

Sources



Fig. 50 North Elevation Reconstruction Drawing

Model Reconstruction
North Portal



Variant: North Portal

Working state

Evaluation Used in the result:

-	-	-
Geometry	Surface structure	Coloring

Unknown	Photography	Architectural drawing / sketch
Unknown	Direct source	

Reconstruction



Fig. 54 North Portal Model Reconstruction

Sources

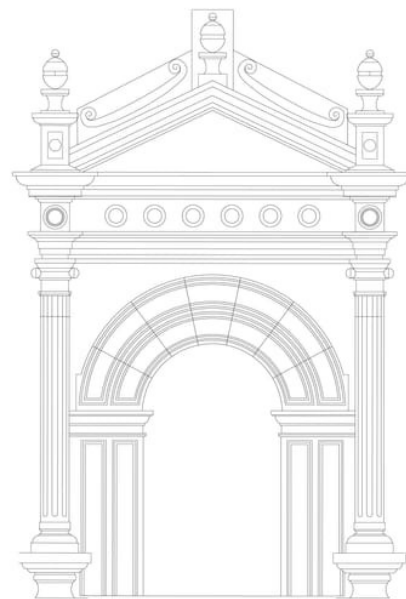


Fig. 30 North Portal Reconstruction Drawing

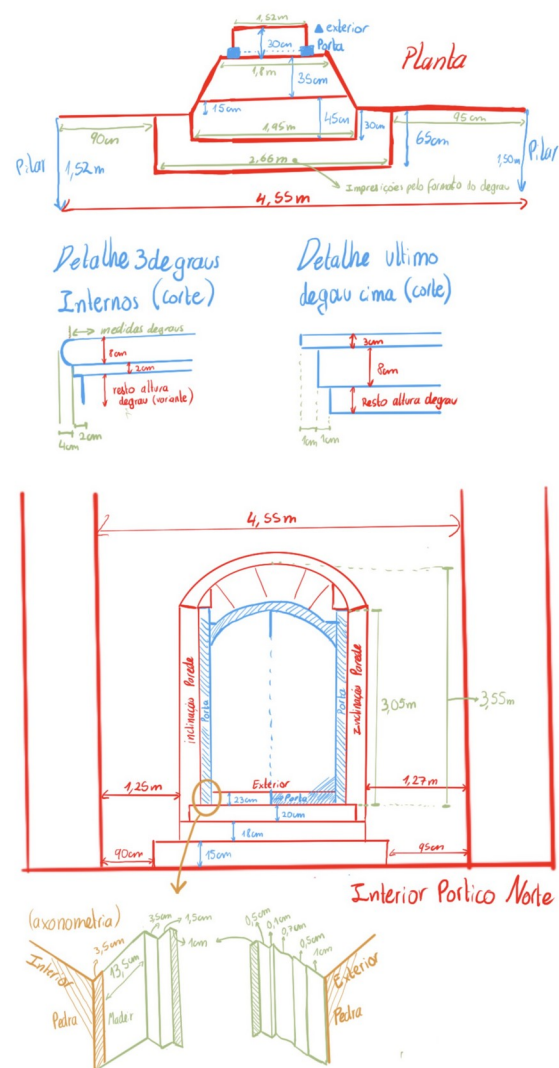


Fig. 13 North Portal Measurements



Fig. 24 North Portal - Entablature Detail



Fig. 22 North Portal (1)



Fig. 25 North Portal, Column Base Detail



Fig. 23 North Portal - Column and Arch Detail

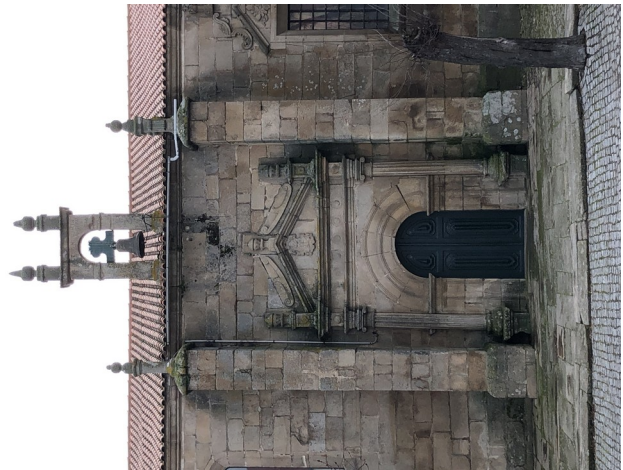


Fig. 26 North Portal



Fig. 27 North Portal, Column's Base Detail

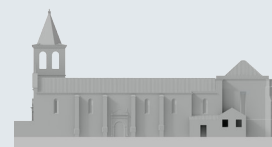


Fig. 28 North Portal, Entablature Detail



Fig. 29 North Portal, Column Detail

Model Reconstruction
South Elevation



Variant: South Elevation

Working state

For the model's reconstruction, it was considered the project's original state, showing the windows used prior to the baroque intervention.

Evaluation Used in the result:

- - -
Geometry Surface structure Coloring

Drawn Reconstruction

Direct source

Reconstruction

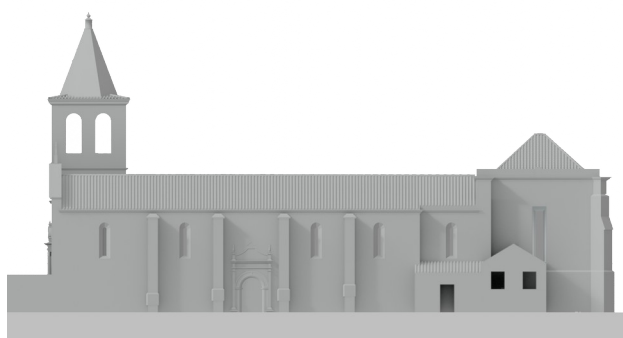


Fig. 49 South Elevation Reconstruction Model

Sources

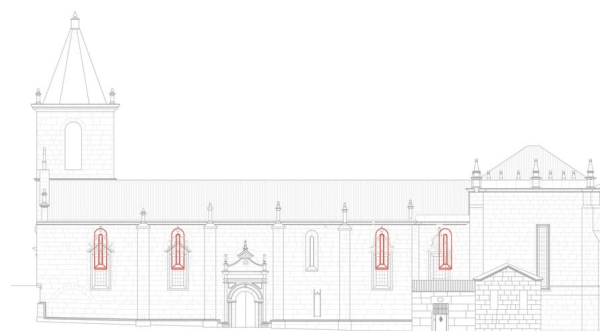


Fig. 48 South Elevation Reconstruction Drawing

Model Reconstruction
South Portal



Variant: South Portal

Working state

Evaluation Used in the result:

-	-	-
Geometry	Surface structure	Coloring

Drawn Reconstruction	Photograph
Direct source	

Reconstruction

Sources

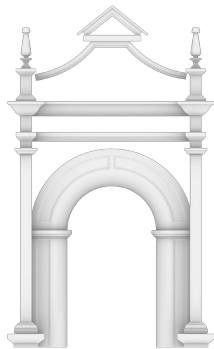


Fig. 43 South Portal Model Reconstruction

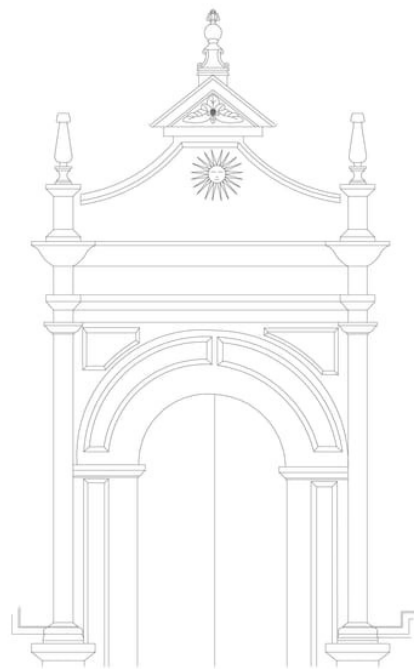


Fig. 42 South Portal Reconstruction Drawing



Fig. 40 2.01 South Portal

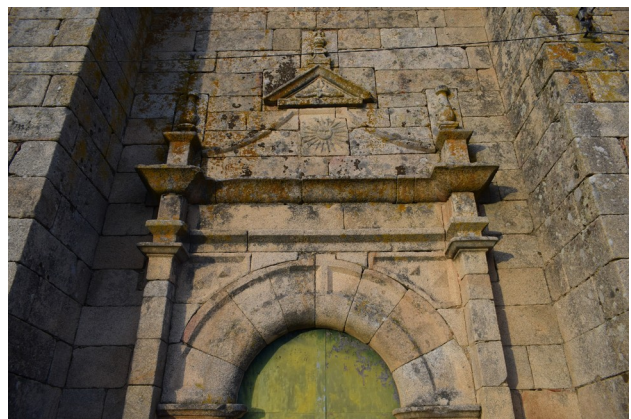


Fig. 38 2.02 South Portal Entablature



Fig. 39 2.03 South Portal's Column Base



Fig. 41 2.04 South Portal's Detail

Model Reconstruction
West Elevation



Variant: West Elevation

Working state

Evaluation Used in the result:

Geometry Surface structure Coloring

Drawn Reconstruction Photograph
Unknown

Reconstruction



Fig. 47 West Facade Model Reconstruction

Sources



Fig. 46 West Elevation Reconstruction Drawing

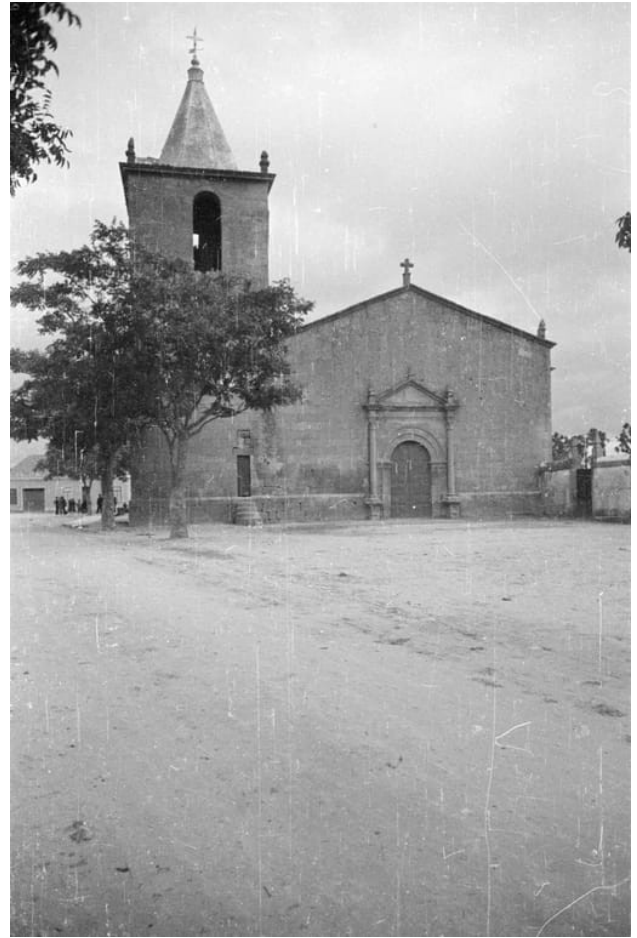


Fig. 7 Main Entrance of Escalhão Church

Model Reconstruction
West Portal



Variant: West Portal

Working state

Evaluation Used in the result:

-	-	-
Geometry	Surface structure	Coloring

Drawn Reconstruction	<input type="checkbox"/>
Photograph	<input type="checkbox"/>
Direct source	<input type="checkbox"/>

Reconstruction

Sources

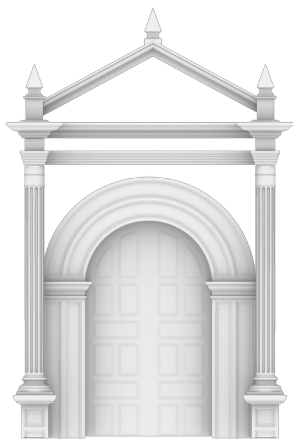


Fig. 37 3. West Portal Model Reconstruction

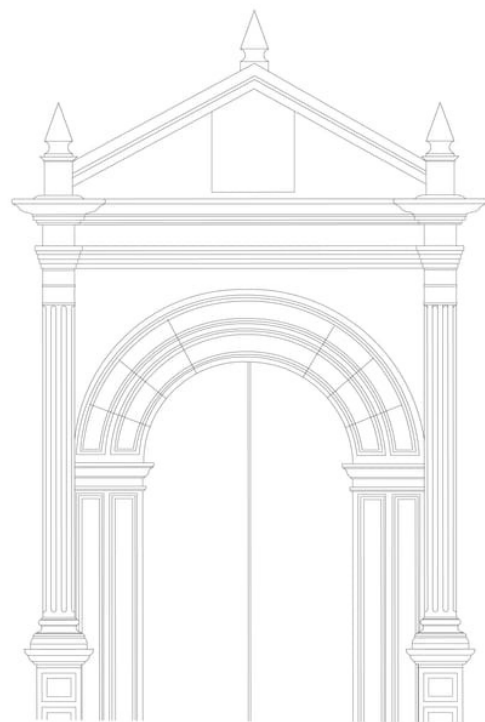


Fig. 36 West Portal Reconstruction Drawing



Fig. 31 3.01_West Portal Detail



Fig. 32 3.02_West Portal Detail



Fig. 33 3.03_West Portal Detail

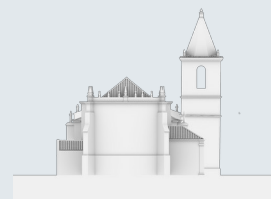


Fig. 34 3.04_West Portal Detail



Fig. 35 3.04_West Portal

Model Reconstruction
East Elevation



Variant: East Elevation

Working state

Evaluation Used in the result:

- - -
Geometry Surface structure Coloring

Drawn Reconstruction
Unknown

Reconstruction

Sources

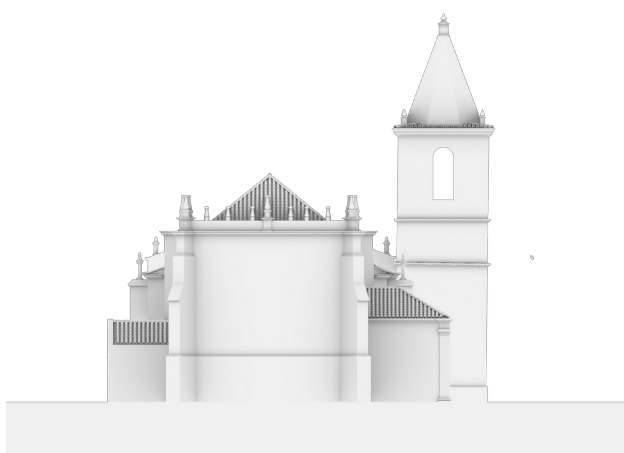


Fig. 53 East Elevation Model Reconstruction




Fig. 52 East Elevation Reconstruction Drawing

Model Reconstruction
3D Model Views

Variant: Renders

Working state

Evaluation Used in the result: 

-

-

-

Geometry

Surface structure

Coloring

Reconstruction

Sources

No reconstructions assigned

No sources assigned



Alçado Norte

Fig. 14 North Elevation

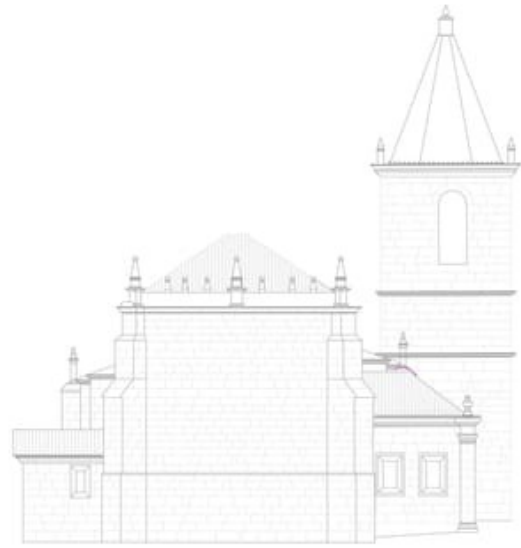


Alçado Sul

Fig. 15 South Elevation



Alçado Poente



Alçado Nascente

Fig. 16 East and West Elevations

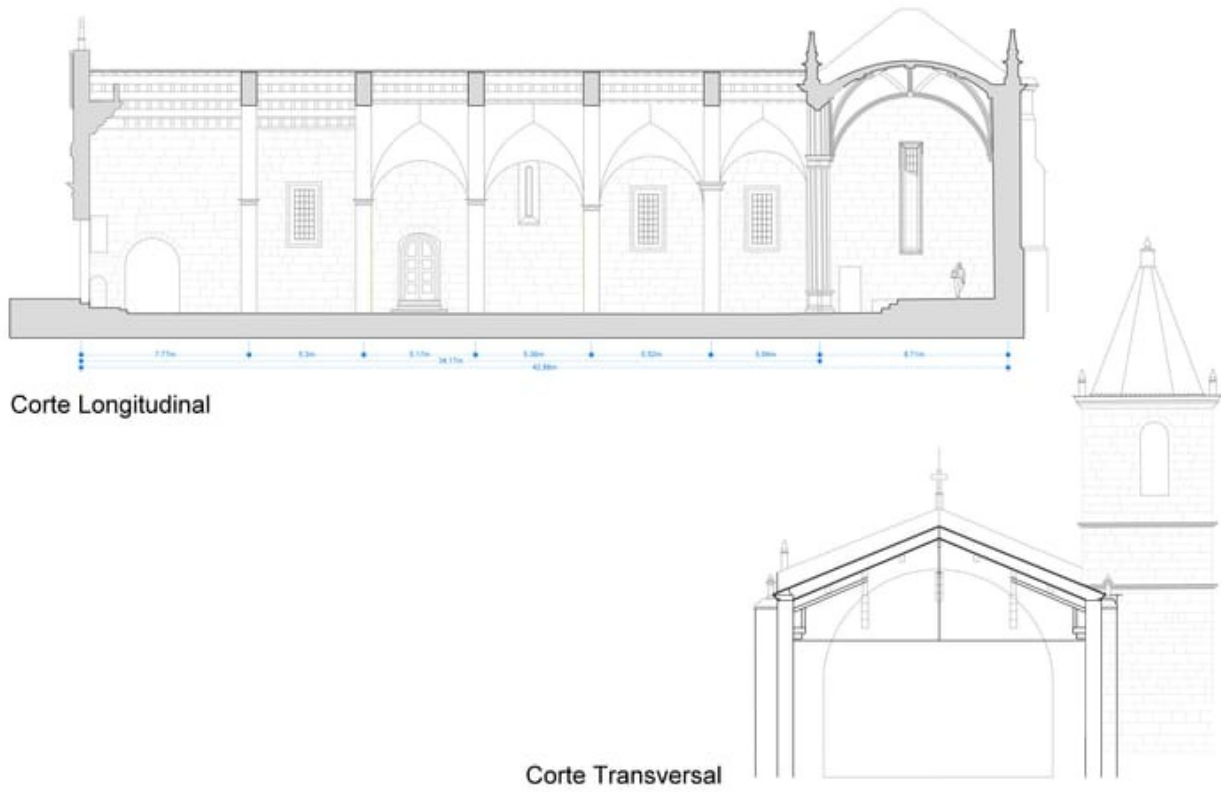


Fig. 17 Section Cuts

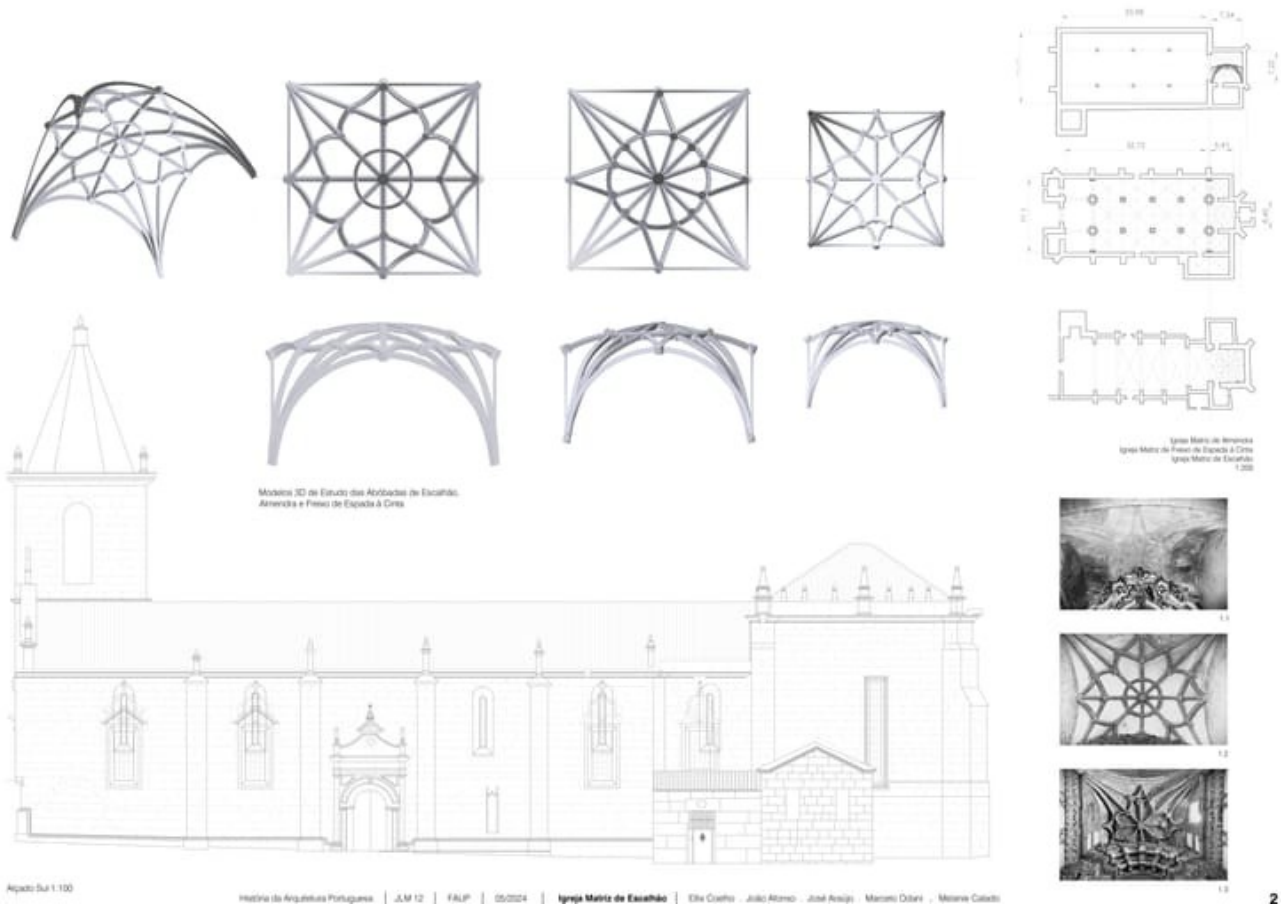


Fig. 18 HAP_painel 2.pdf



Fig. 19 Proportion's Study

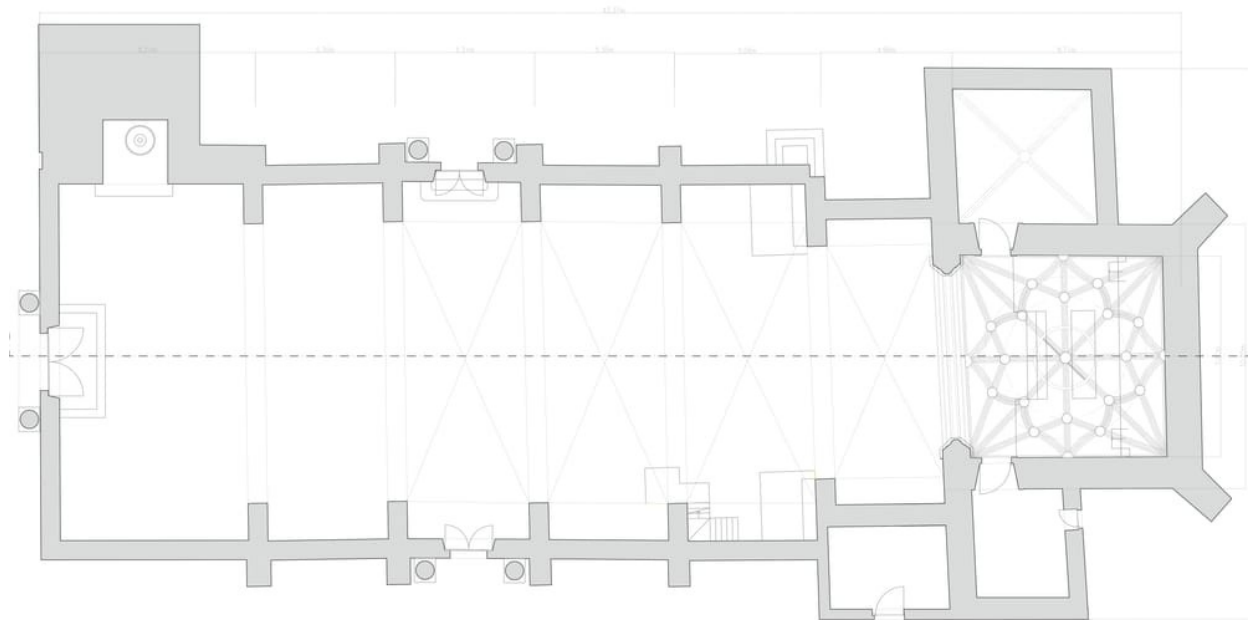


Fig. 20 Floor Plan Drawn Reconstruction

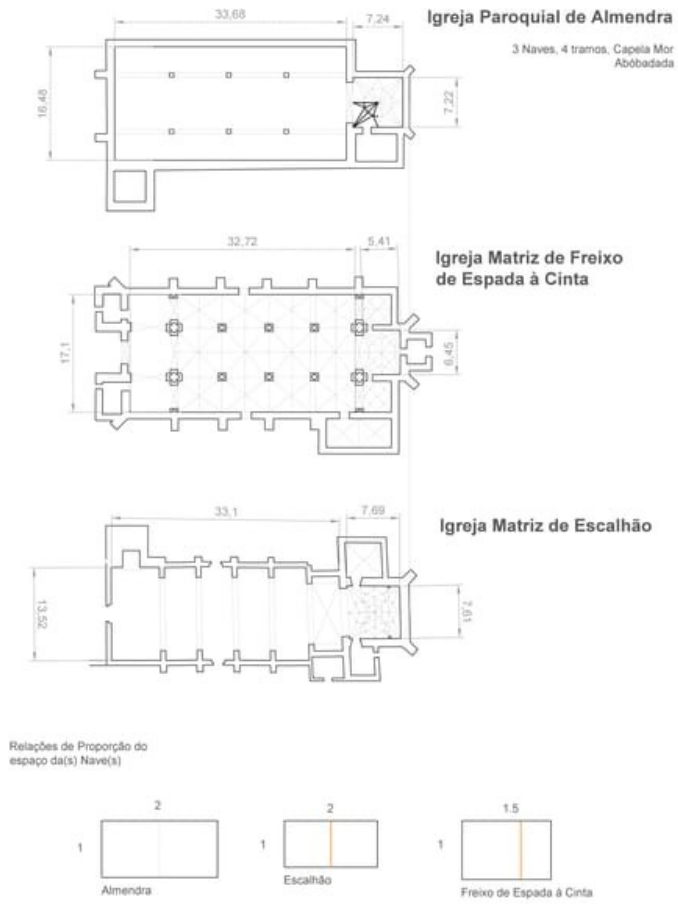


Fig. 21 Comparison between similar structures



Fig. 37 3. West Portal Model Reconstruction

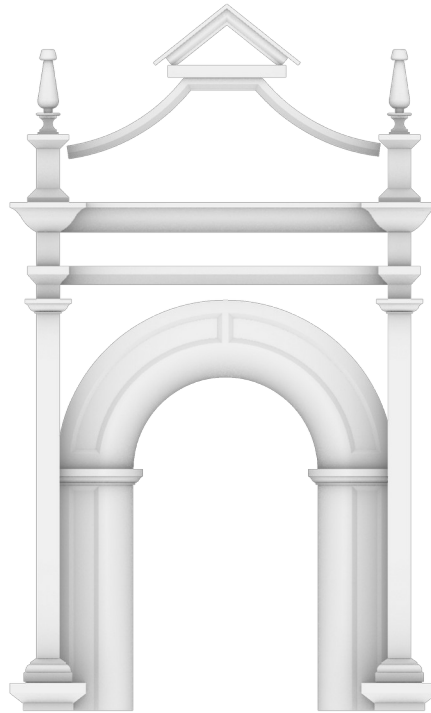


Fig. 43 South Portal Model Reconstruction

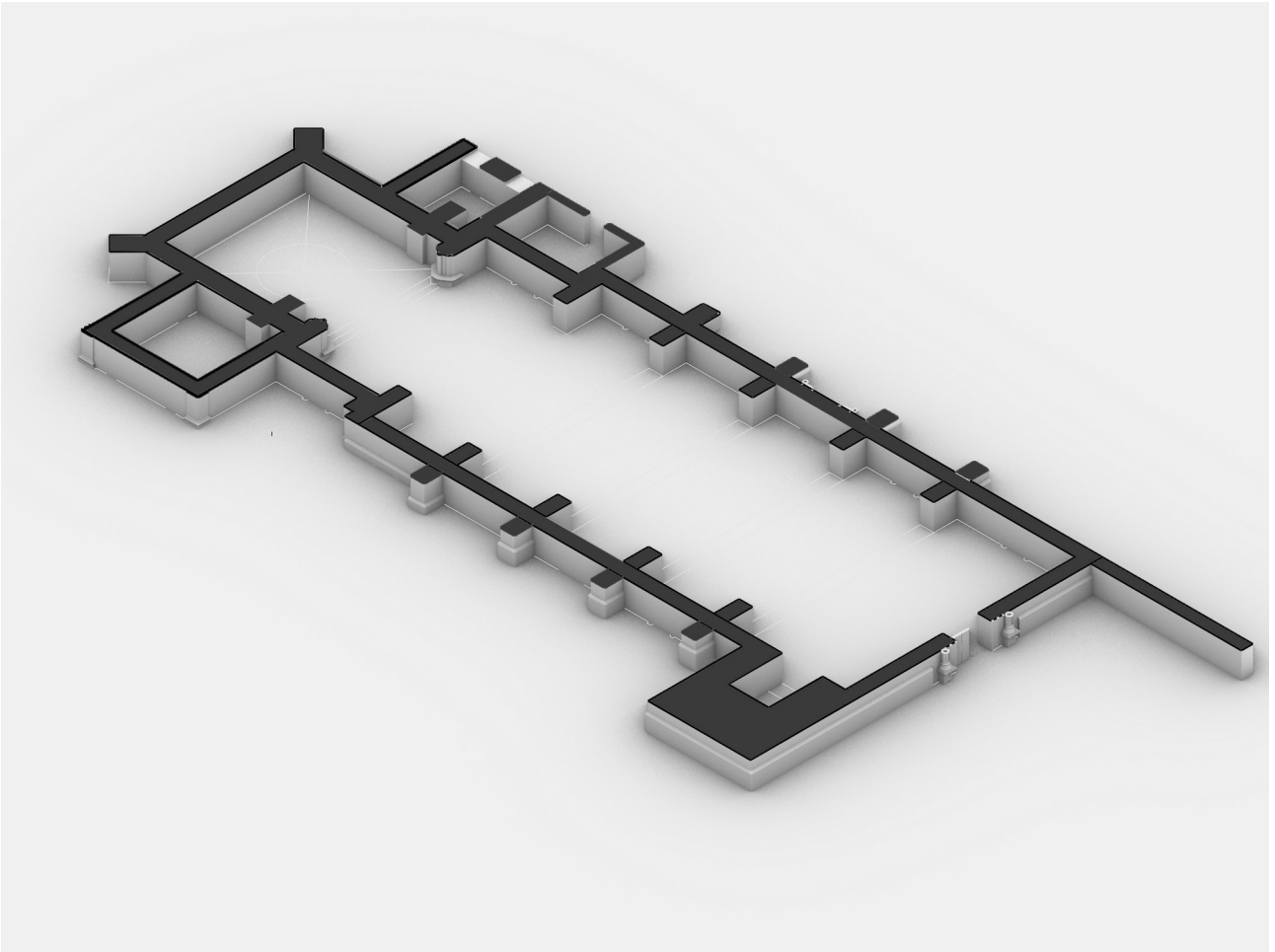


Fig. 44 Floor Plan Model Reconstruction



Fig. 47 West Facade Model Reconstruction

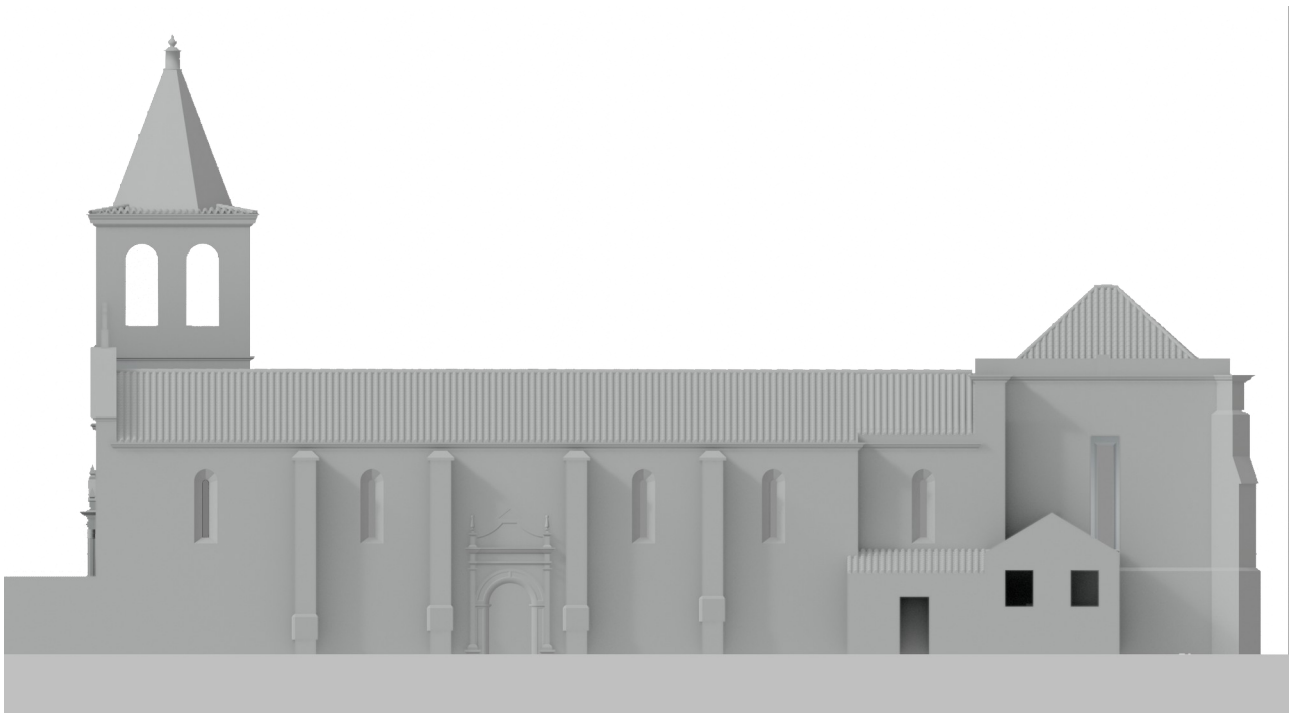


Fig. 49 South Elevation Reconstruction Model

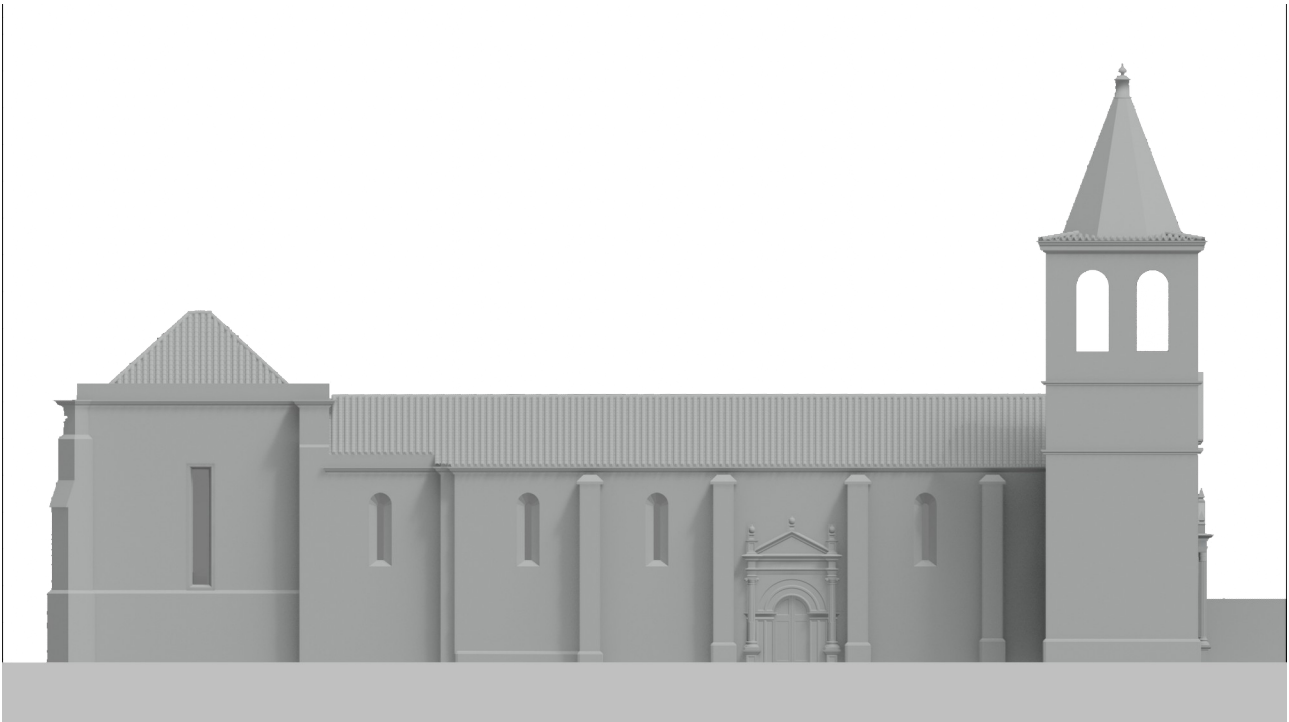


Fig. 51 North Elevation Reconstruction Model

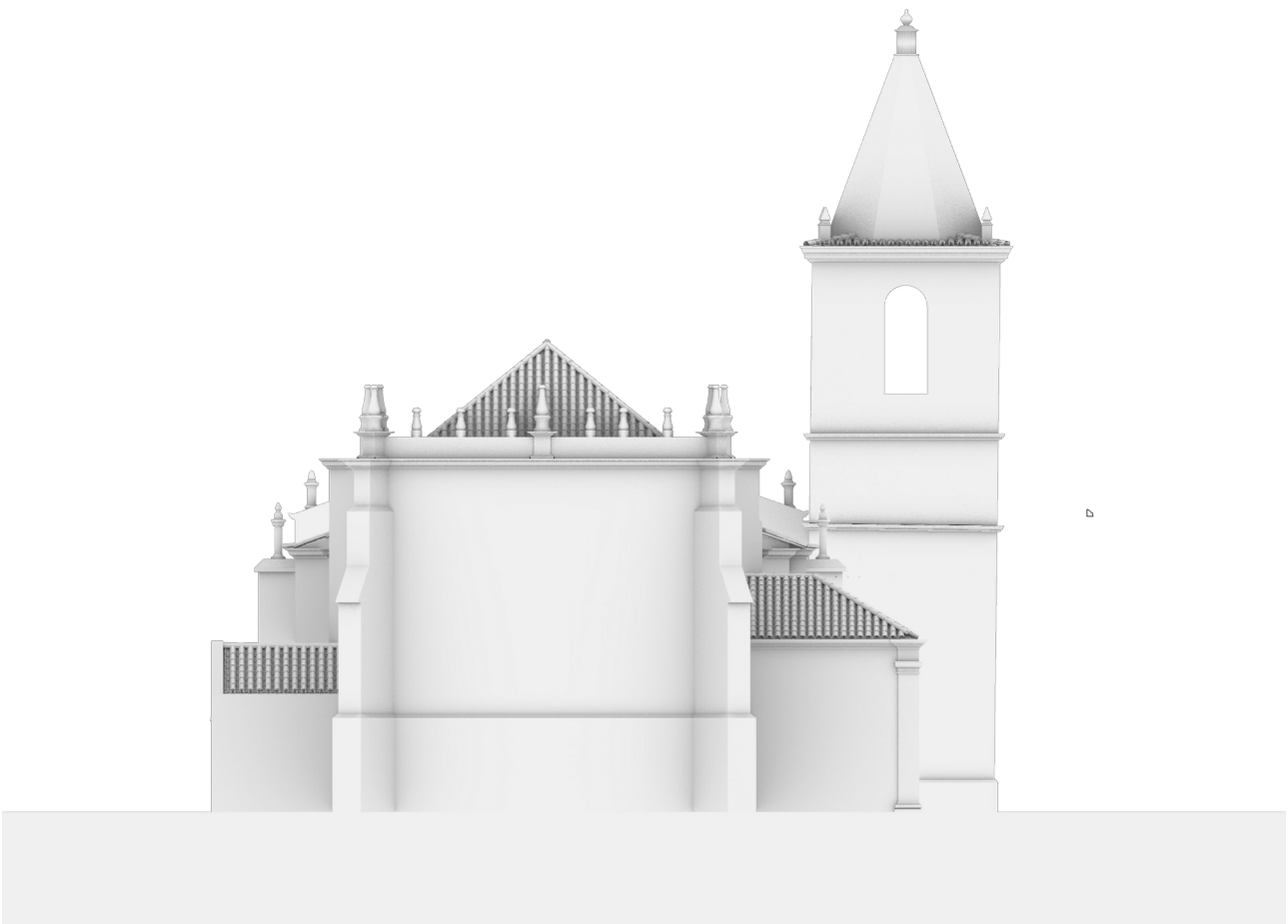


Fig. 53 East Elevation Model Reconstruction



Fig. 54 North Portal Model Reconstruction

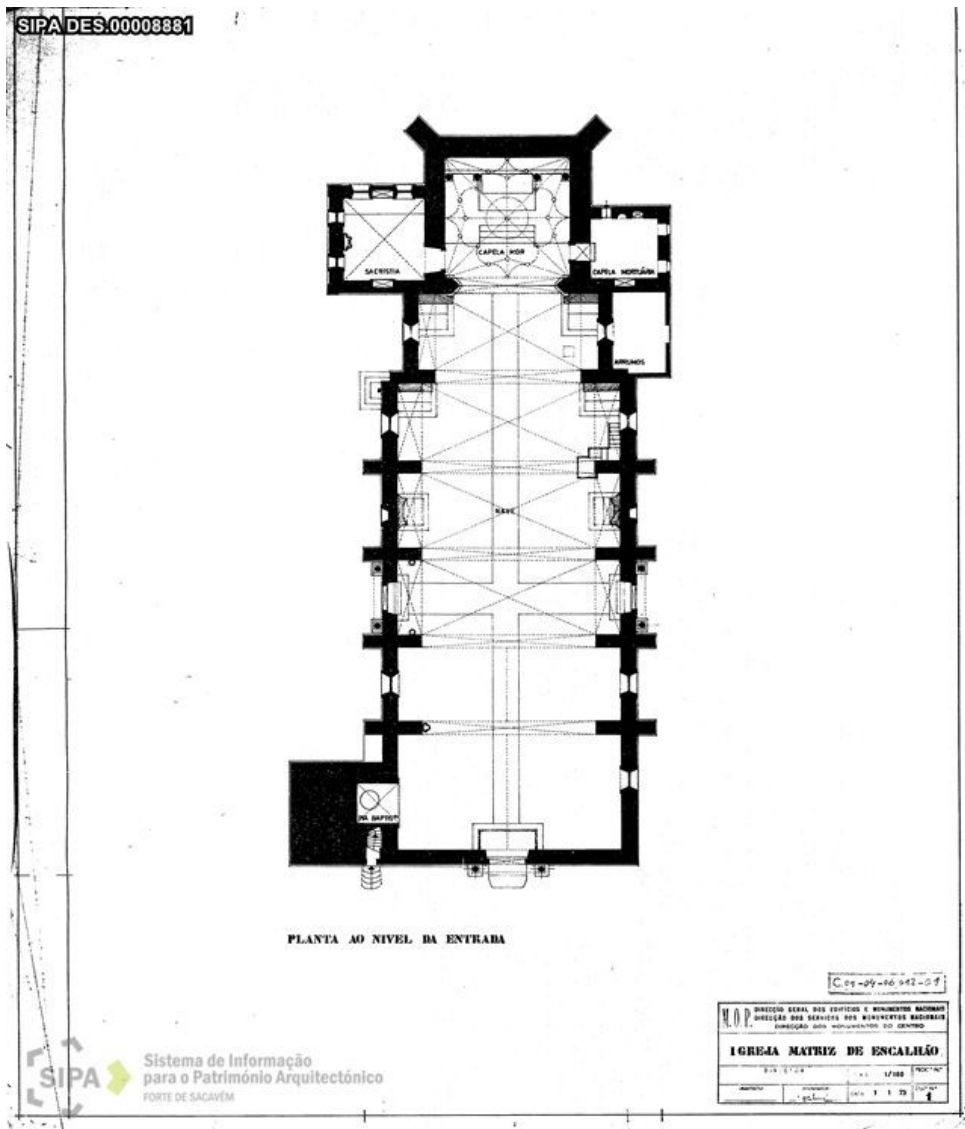


Fig. 6 Floor Plan (1973)

Type Drawn Reconstruction

Description Reconstruction Drawing of the Floor Plan, found on SIPA - Sistema de Informação do Património Arquitectónico (Information System for Architectural Heritage)

Author Unknown

Archive

Signature

Copyright



Fig. 7 Main Entrance of Escalhão Church

Type	Photograph	Used in:	
Description		Drawn Reconstructions	
Author		Elevations	
Archive	Porto City Council's Archive	Model Reconstruction	
Signature		West Elevation	
Copyright			



Fig. 8 Escalhão Church

Type	Photograph	Used in:
Description	Main Chapel and façade of Escalhão Church	<u>Drawn Reconstructions</u>
Author	Guilherme Bonfim Barreiros	Elevations
Archive	Porto City Council's Archive	
Signature		
Copyright		

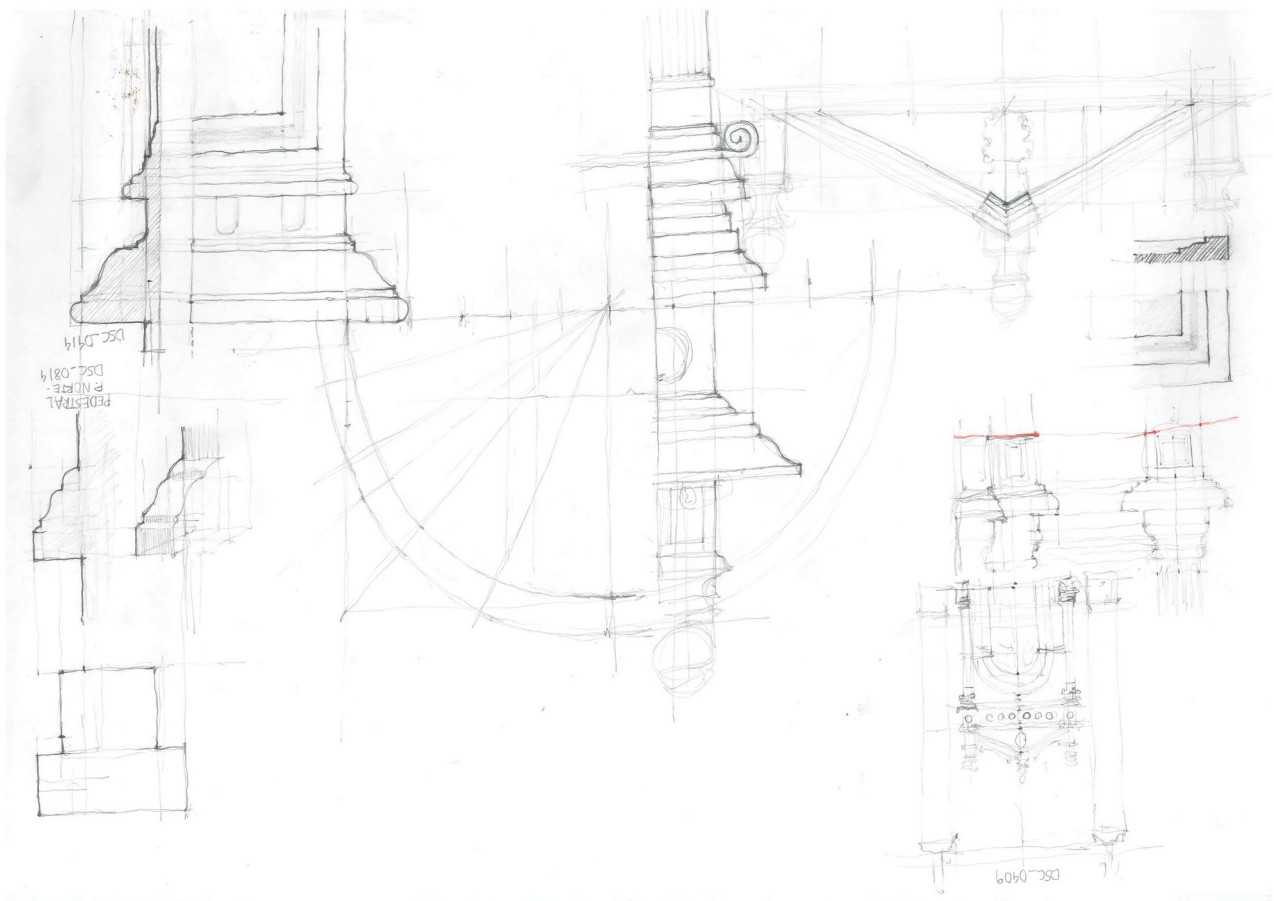


Fig. 9 On-Site Survey

Type	Survey drawing	Used in:	
Description	Hand drawing from the measurements taken on the site survey	Drawn Reconstructions	Elevations
Author			
Archive			
Signature			
Copyright			



Fig. 11 Element's Alignment over Picture

Type Photograph

Description

Author

Archive

Signature

Copyright

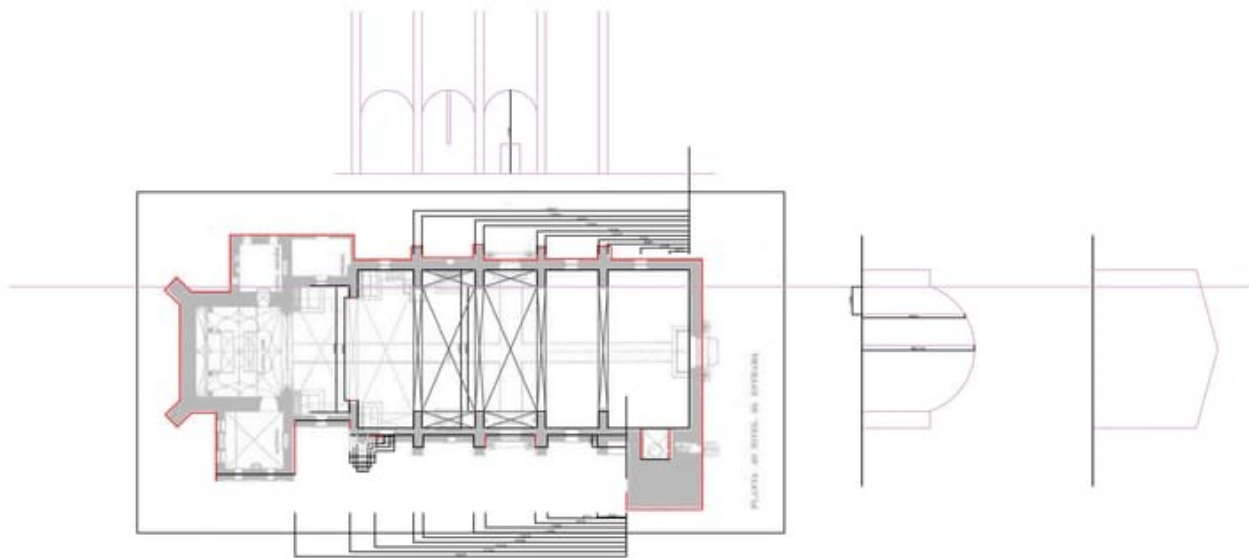


Fig. 12 Measurements over Floor Plan's Reconstruction

Type	Survey drawing	Used in:
Description	On-site survey, measuring the elements according to the existent Floor Plan	<u>Model Reconstruction</u> Floor Plan
Author		
Archive		
Signature		
Copyright		

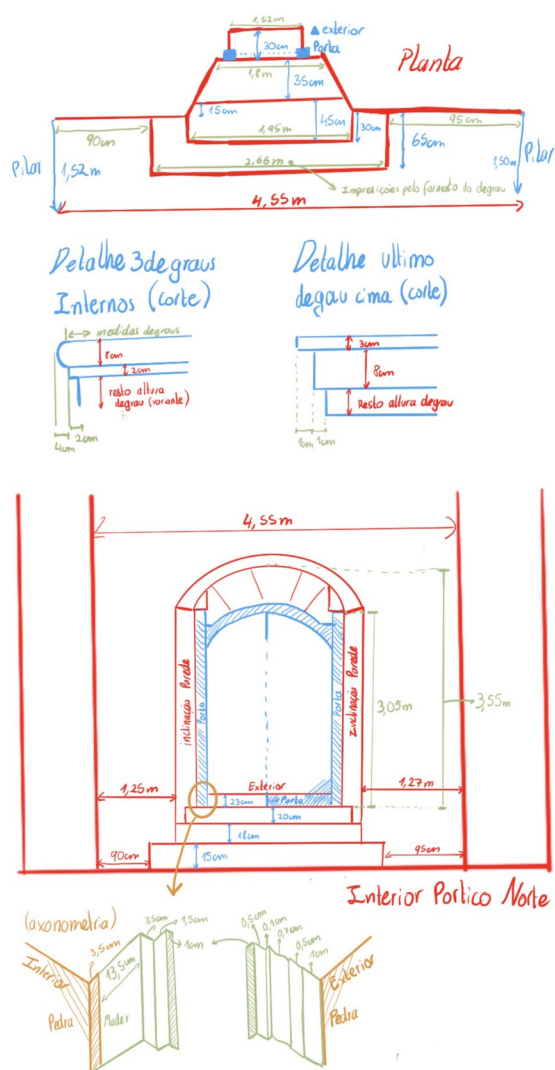


Fig. 13 North Portal Measurements

Type	Contemporary drawing / sketch
Description	Digital sketch containing the measurements from the North Portal
Author	
Archive	
Signature	
Copyright	

Used in:	Drawn Reconstructions
	Elevations
	Model Reconstruction
	North Portal



Fig. 22 North Portal (1)

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 23 North Portal - Column and Arch Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 24 North Portal - Entablature Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 25 North Portal, Column Base Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 26 North Portal

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 27 North Portal, Column's Base Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 28 North Portal, Entablature Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 29 North Portal, Column Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal

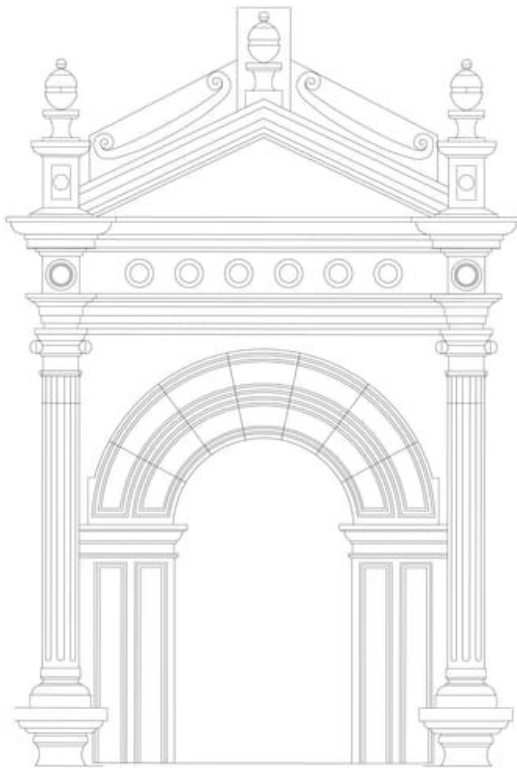


Fig. 30 North Portal Reconstruction Drawing

Type Drawn Reconstruction

Description Drawn reconstruction based on photograph records and on-site survey

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Portal



Fig. 31 3.01_West Portal Detail

Type Photograph

Description Column's Base

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

West Portal



Fig. 32 3.02_West Portal Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

West Portal



Fig. 33 3.03_West Portal Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

West Portal



Fig. 34 3.04_West Portal Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

West Portal



Fig. 35 3.04_West Portal

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

West Portal

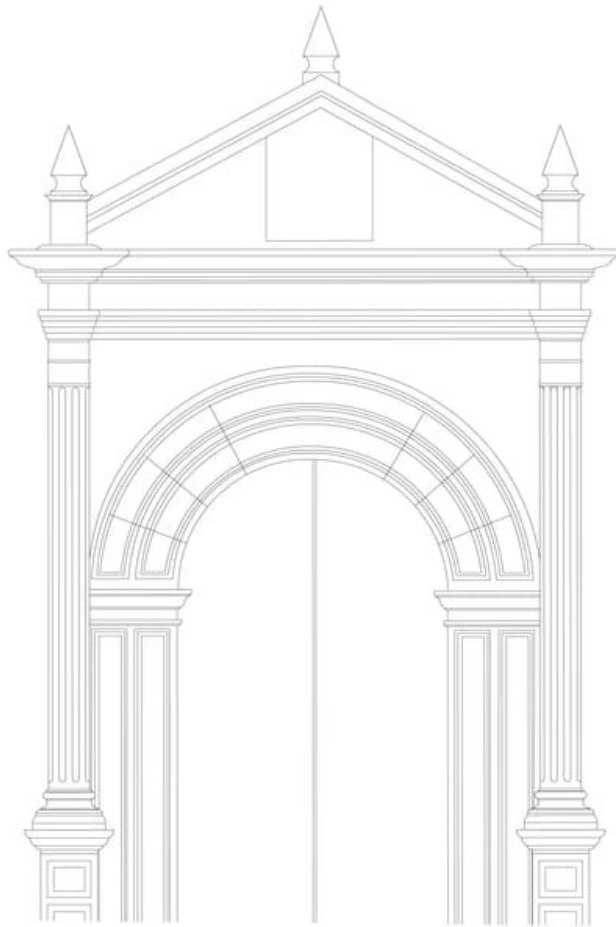


Fig. 36 West Portal Reconstruction Drawing

Type Drawn Reconstruction

Used in:

Description Drawn reconstruction based on photograph records and on-site survey

Model Reconstruction

West Portal

Author

Archive

Signature

Copyright



Fig. 38 2.02 South Portal Entablature

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

South Portal



Fig. 39 2.03 South Portal's Column Base

Type
Description
Author
Archive
Signature
Copyright

Used in:
[Model Reconstruction](#)
South Portal



Fig. 40 2.01 South Portal

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

South Portal



Fig. 41 2.04 South Portal's Detail

Type Photograph

Description

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

South Portal

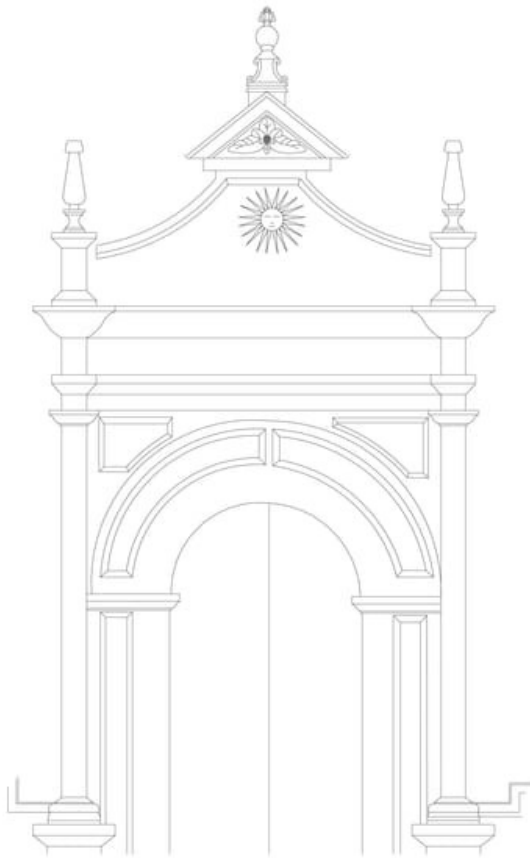


Fig. 42 South Portal Reconstruction Drawing

Type Drawn Reconstruction

Used in:

Description Drawn Reconstruction based on
On-site survey

Model Reconstruction

South Portal

Author

Archive

Signature

Copyright

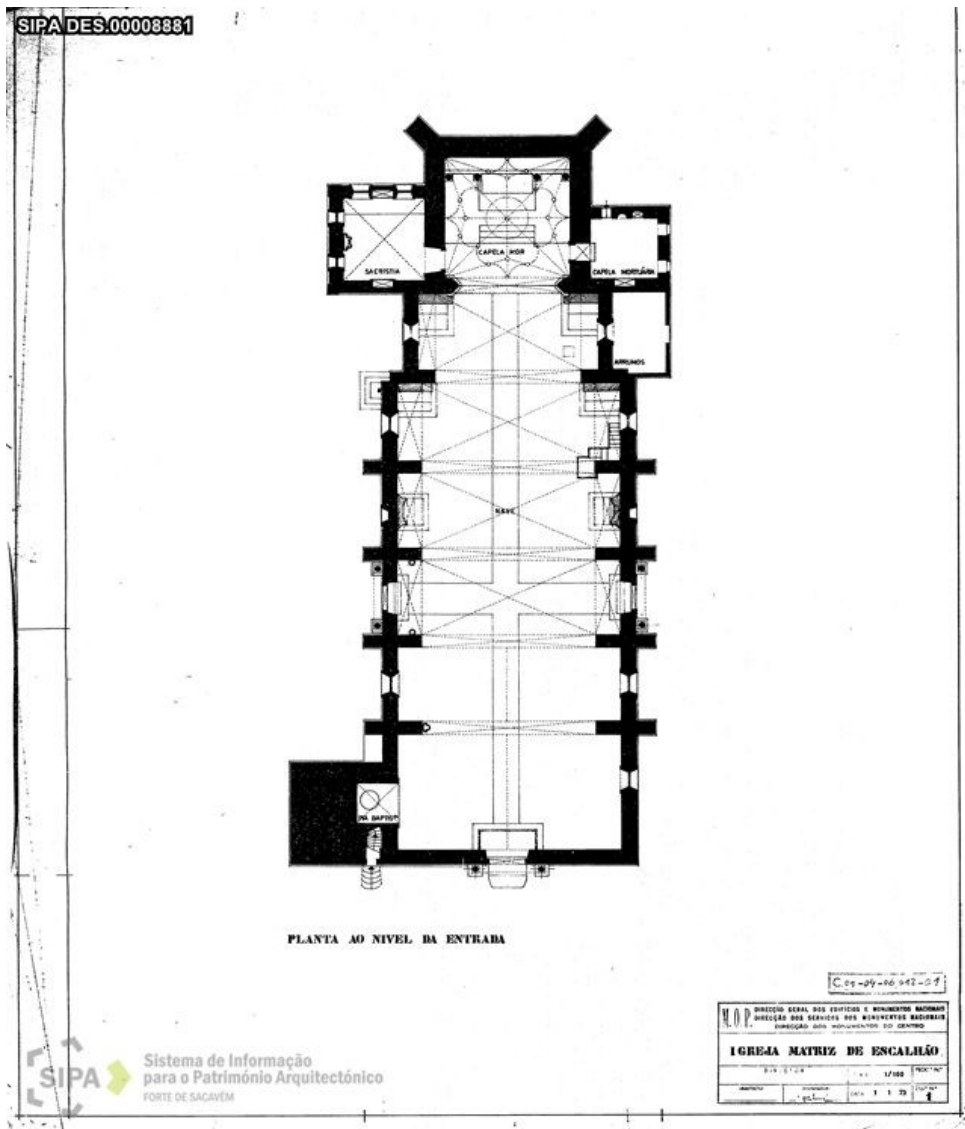


Fig. 45 Floor Plan Reconstruction (1973)

Type	Drawing	Used in:
Description	Floor Plan Reconstruction from 1973, unknown author	Drawn Reconstructions
Author	Unknown	Floor Plan
Archive		Model Reconstruction
Signature		Floor Plan
Copyright	SIPA (Information System for Architectural Heritage)	



Fig. 46 West Elevation Reconstruction Drawing

Type Drawn Reconstruction

Used in:

Description

Model Reconstruction

Author

West Elevation

Archive

Signature

Copyright



Fig. 48 South Elevation Reconstruction Drawing

Type Drawn Reconstruction

Description Drawn reconstruction, showing the project in the current state according to photograph records and on-site survey. In red, the windows used in the building's original stated, before interventions.

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

South Elevation



Fig. 50 North Elevation Reconstruction Drawing

Type Drawn Reconstruction

Description Drawn reconstruction showing the current state of the building, based on on-site survey and photograph records.

Author José Araújo, Marcelo Odani

Archive

Signature

Copyright

Used in:

Model Reconstruction

North Elevation

Used as area image in:

Drawn Reconstructions

Elevations

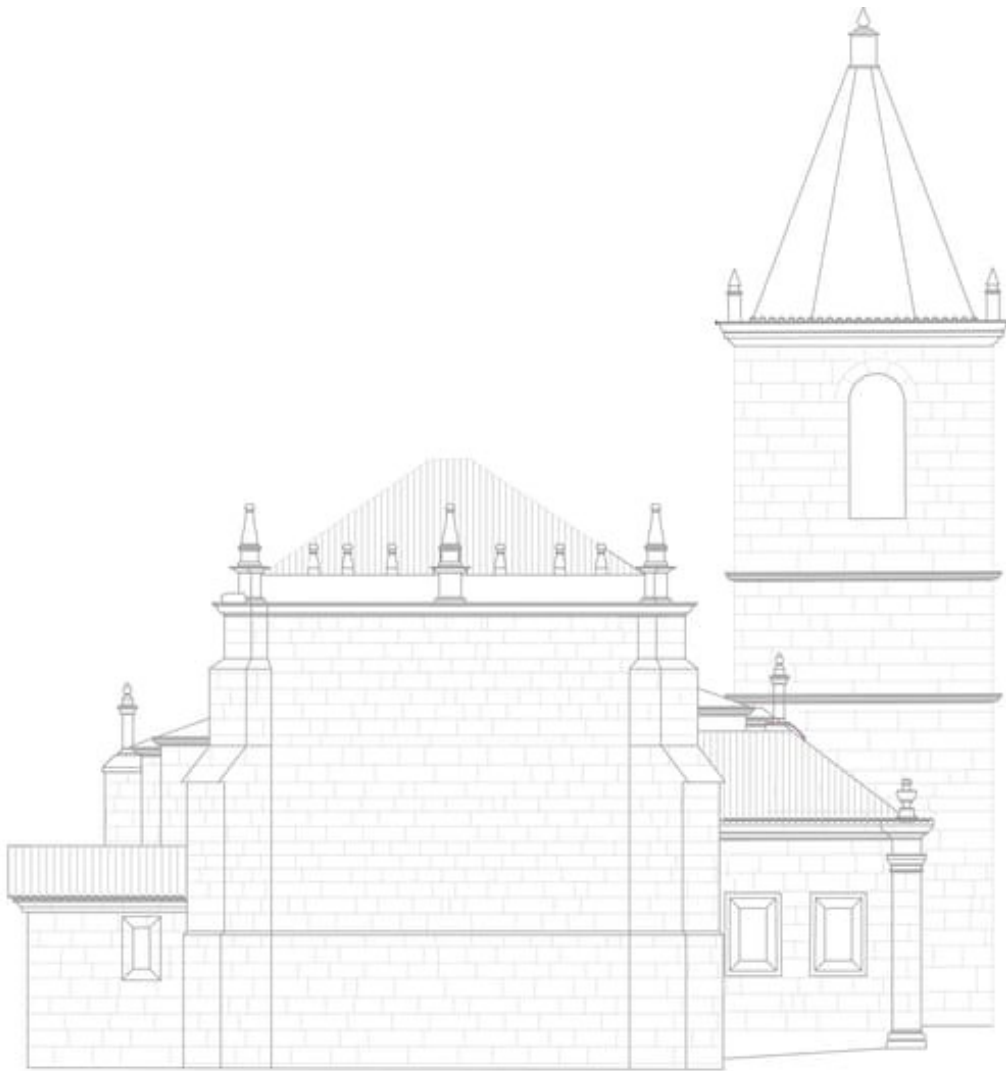


Fig. 52 East Elevation Reconstruction Drawing

Type Drawn Reconstruction

Description Drawn reconstruction of the building's current state, based on photograph records and on-site survey

Author

Archive

Signature

Copyright

Used in:

Model Reconstruction

East Elevation



Fig. 57 North Portal

Type

Description

Author

Archive

Signature

Copyright

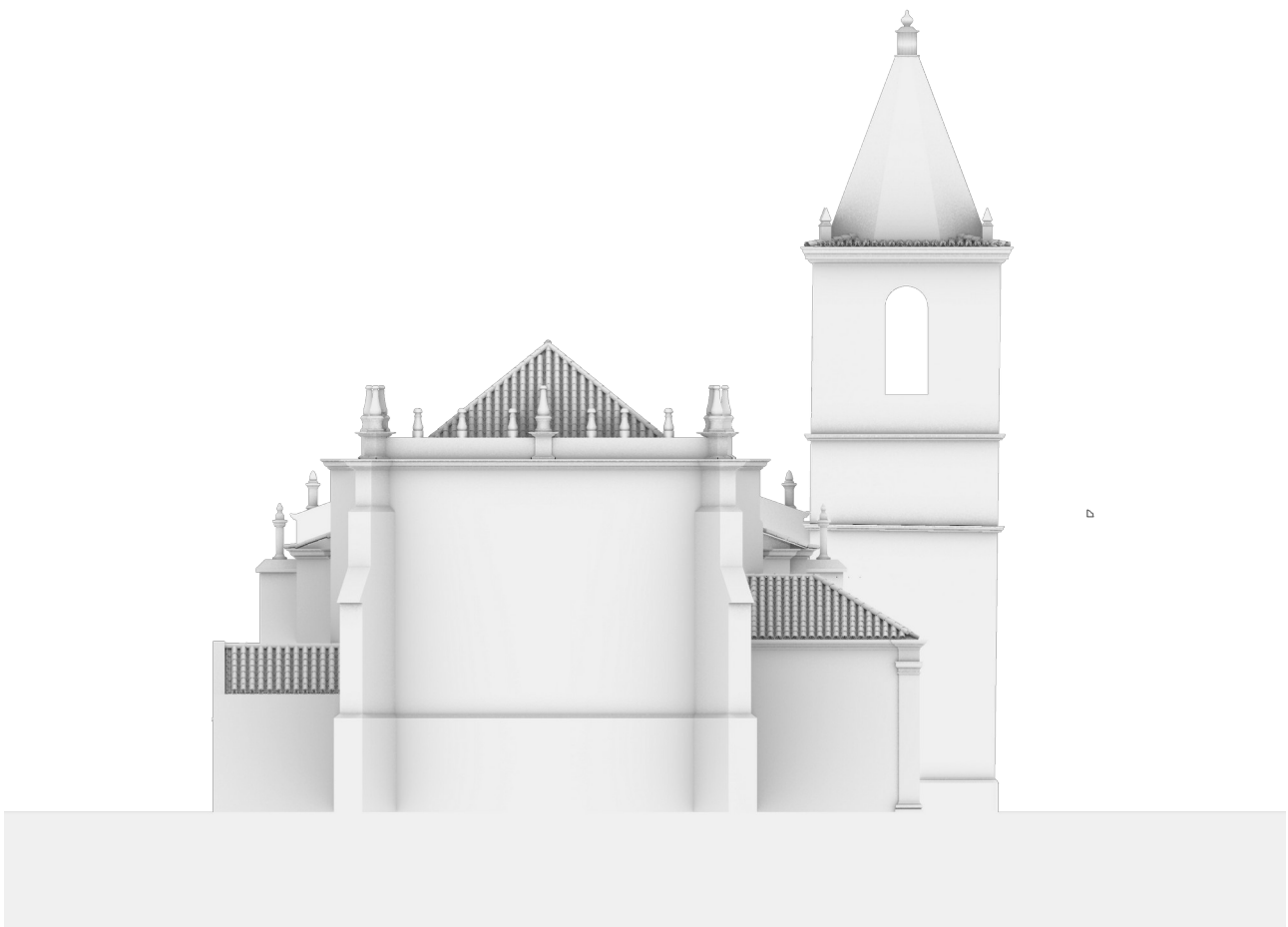


Fig. 61 West Elevation

Type

Description

Author

Archive

Signature

Copyright

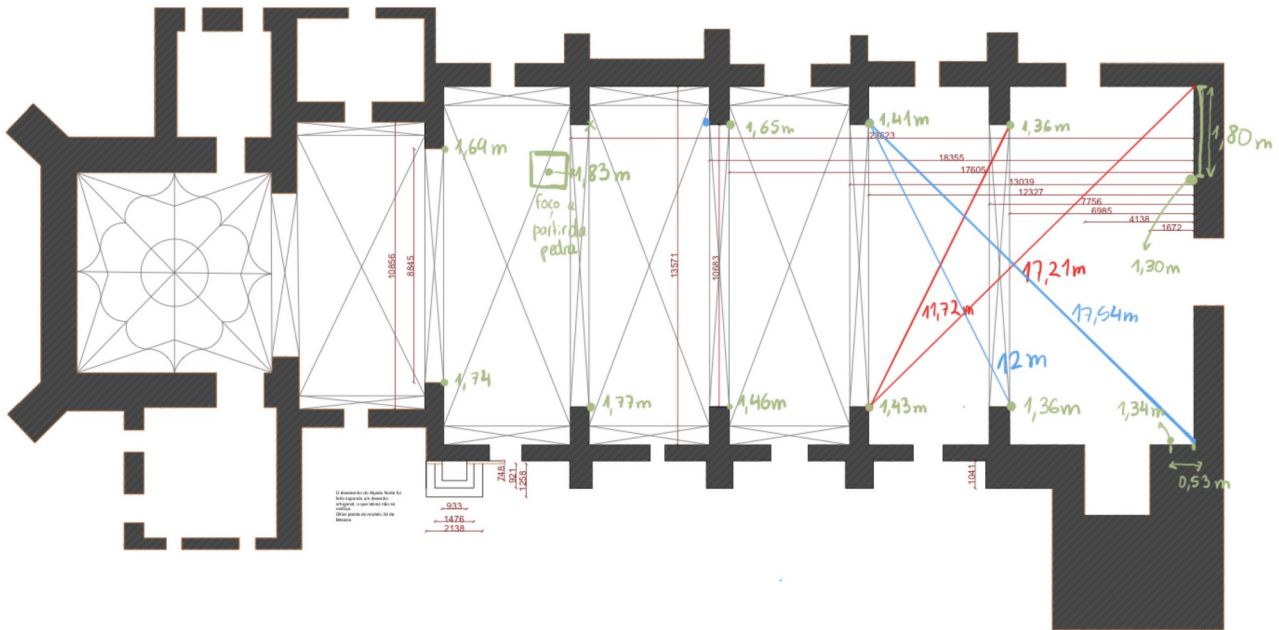


Fig. 65 Simplification of the previous reconstruction and measurements taken on the survey

Type	Contemporary drawing / sketch	Used in:
Description		<u>Drawn Reconstructions</u>
Author		Floor Plan
Archive		
Signature		
Copyright		