SAXON ARCHITECTURAL HERITAGE IN TRANSYLVANIA
A Research Project: The Ensemble of Sighişoara Fortress - area inscribed on the World Heritage List – Part I[1]

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Abstract

Since 1999, the HISTORIC CENTRE OF SIGHIŞOARA, formed by THE FORTRESS, a fortified settlement located on a rather steep hill that overlooks the valley of the Târnava River, and part of THE LOWER TOWN, situated at the bottom of this hill, is included on the World Heritage List, position 902. Continuously being inhabited till the present day, the structure of the urban space (streets, parcels) together with the architectural quality of the buildings, that compose the HISTORIC CENTRE OF SIGHISOARA, have been preserved unaltered by time. The town developed during the middle ages and it was fortified with an approximately 930 meter long wall that surrounds the hill on the contour of its two planes. It initially had 14 defense towers from which only nine exist today. The fortified ensemble, preserved in a proportion of 90%, is inscribed on the Historical Monuments List/2004 at position MS-II-a-A-15805.

In 2004-2007, the Architecture Faculty of the Spiru Haret University has carried out a complex research of the built environment from the Ensemble of Sighişoara Fortress - area inscribed on the World Heritage List. Results of the research were part of the project Rehabilitation and Revitalization of the Assembly of Sighişoara Fortress, Area included on the World Heritage List, FEASIBILITY STUDY / PART II - building fund and public spaces, included in The National Program of Restoration 2007.

The results of the complex research formed an extensive documentation, five volumes that contain 298 objective files, a photographic documentation which contains 2130 photos, and graphic syntheses of the entire data that highlight the need for interventions across protected areas.

This kind of research can be a model for the monitorization of other historical centers from Romania.

Keywords

Saxon architectural heritage, historical centre, medieval architecture, Transylvania

PART I[2]

1. General overview of the research

In 2004-2007, the Architecture Faculty of the *Spiru Haret* University has carried out a complex research of the built environment from *the Ensemble of Sighişoara Fortress - area inscribed on the World Heritage List.*

Results of the research were part of the project *Rehabilitation and Revitalization of the Assembly of Sighişoara Fortress, Area included on the World Heritage List*, *FEASIBILITY STUDY / PART II - building fund and public spaces*, included in *The National Program of Restoration 2007*.

The project was developed in partnership with the *National Institute for Historical Monuments* from Bucharest and *Nits* Ltd., a design company from Târgu-Mureş, and beneficiaries were the *Ministry of Culture and Religious Affairs* and the *Local Council of Sighişoara*.

The research team from the Architecture Faculty of the *Spiru Haret* University consisted of Project Responsible and Scientific Coordinator - Sorin Minghiat, Associate Professor, Ph.D.Arch. (currently a Professor), Scientific Consultant - Corina Lucescu, Lecturer, Ph.D.c.Arch., Applied Research Coordinator - Andreea Liliana Pop, Assistant Professor, Arch. (currently a Lecturer, Ph.D.c.Arch.), and a research team formed of teachers - Iuliana Fulău, Assistant Professor, Arch., and Dan Stamate, Arch., and student architects Alexandru Bilciu, Gabriela Carp-Rusu, Valentin Cozma, Sergiu Cujbă, Cătălin Dinulescu, Elena Dumitraşcu, Cătălin Ghimiş, Irina Leţea, Romina Niţu, Camelia Păsăroiu, Ioana Păstrăv, Cristian Petre, Andrei Teodorescu, Mădălina Toma, Ionuţ Vlăsceanu, Anca Zaharia. The research team of the *National Institute for Historical Monuments* was represented by Ana Maria Biro, Ph.D.c.Eng, currently a lecturer, Ph.D.Eng, at the Architecture Faculty of the *Spiru Haret* University**.**

The subject of the research was the built environment of the area inscribed on the World Heritage List, the Fortress, and the Lower Town. The following activities were carried out:

- Selection of the collected data
- Direct investigation regarding the physical conservation state, damages, decay, and so on
- Systematization, processing and interpreting the collected data and presenting it as 298 objective files – 131 for the Fortress and 167 for the Lower Town. Out of these, 167 are inscribed on the List of Historical Monuments / 2004 – 94 from the Fortress and 73 from the Lower Town.
- Photographic documentary – Fortress and Lower Town
- Graphic presentation of the type of ownership, height, functions, state of conservation, proposed interventions, Scale 1:1000

The Objective Files represent a Culture 2000 Programme application, a Technical Cooperation and Consultancy Programme under the common aegis of the European Commission and Council of Europe - *Regional Programme for Cultural and Natural Heritage in South East Europe (RPSEE) - Integrated Rehabilitation Project Plan / Survey of the Architectural and Archaeological Heritage (IRPP/SAAH)*. The programme has started in 2003 and its beneficiaries were nine countries from southeast Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, Romania, Serbia, Former Yugoslav Republic of Macedonia, and Kosovo. All these former communist countries have a common concept regarding the protection, conservation, and restoration of architectural and archaeological heritage.

The content of the Objective Files was created by inserting into the basic inventory files those elements that were pointed out by the Council of Europe Programme - IRPP/SAAH, as being extremely important for the sustainable development strategies of the architectural heritage. The additional information consists of the juridical situation, the present and proposed function, the conservation, restoration and post-execution maintenance management and the rehabilitation and revitalization techniques of the heritage. These Objective Files proved to be so well structured, that we think they could be used also for the monitorization of other historical centers from Romania.

The content of the Objective Files was structured in six large chapters:

I. Identification
II. Description
III. Technical – architectural evaluation

IV. Recommendations – type and priority of intervention
V. References
VI. Inventory data

Each chapter has a series of subchapters and subheadings. An example of the Objective File-2007 form content is presented below:

Objective photo	**Site plan** (based on the plan developed by the Survey Department of the Town Hall of Sighişoara)
I.	**IDENTIFICATION DATA:**
1.	**Country, county, city, area:**
	Romania, Mureş County, Sighişoara
	Area included in the World Heritage List - Historical center
	Fortress / Lower Town
2.	**Name and address of the objective:**
3.	**Date of inventory:**
	World Heritage List / 1999, C4-902 position; List of Historical Monuments / 2004: – Fortification ensemble, position 710, code MS-II-s-A-15805 – Historical center, position 711, code MS-II-s-A-15806
	Historical monument / Historical ensemble / Historical fund: code .....
4.	**Category, by nature of the objective:**
5.	**Date:**
6.	**Type of use:**
7.	**Current use:**
8.	**Initial use:**
9.	**Previous use:**
10.	**Category of significance:**
11.	**Interest level of objective:**
12.	**Categories of ownership and using:**
12.1.	Type of ownership:
12.2.	User identification data:
12.3.	Type of user:
12.4.	Legal act regarding the entitle to use:
II.	**DESCRIPTION:**
13.	**PARCEL:**
13.1.	Type of parcel:
13.2.	Shape of parcel:
13.3.	Area of parcel:
13.4.	Position to the street:
13.5.	Types of accesses:
13.6.	Number of accesses:

13.7.	Position of court:
14.	**PLAN OF BUILDING /-S:**
14.1.	Number and type of buildings situated on the parcel:
14.2.	Position of the main building /-s:
14.3.	Built Area: Ac total =
14.4.	Number of levels / height:
14.5.	Developed Area: Ad =
14.6.	Plan type of the main building /-s:
14.7.	Symmetry plan of the main building /-s:
14.8.	Access to the building /-s:
14.9.	Characteristics of the street façade:
14.10.	Other characteristic elements from urban point of view:
15.	**ELEVATION OF THE MAIN BUILDING /-S:**
16.	**FAÇADES / PARAMENT OF THE BUILDING /-S:**
16.1.	Description of the main façade:
16.2.	Description of the secondary façades:
17.	**ROOF COVERING:**
18.	**CONSTRUCTION ELEMENTS:**
18.1.	Structural elements:
	- GENERAL STRUCTURE:
	- INFRASTRUCTURE:
	- LOAD-BEARING SUPERSTRUCTURE:
	- OTHER CONSTRUCTION ELEMENTS:
	- ROOF FRAMING:
18.2.	Nonstructural elements and pavements:
19.	**ARTISTIC AND FURNITURE COMPONENTS:**
20.	**TECHNICAL EQUIPMENT:**
III.	**TECHNICAL EVALUATION:**
21.	**DEGREE OF RISK (VULNERABILITY):**
21.1.	Natural threats of the site:
	a. Degree of seismic risk:
	- Seismic Zone: E
	- Period Corner: Ks = 0,12; Tc (s) = 0,7
	- Seismic intensity: VII MKS
	- The average period of return of the earthquake: > 100 years
	b. Risk of landslides:
	b1. Terrain topography:
	b2. Nature of terrain:
	b3. Potential production of sliding and probability of landslides
	b4. Type of slides:

	b5. Frost depth: h =
	c. Degree of risk from flooding:
	c1. Types of floods:
	c2. The maximum amount of rainfall in 24 hours: ..... mm / sqm
21.2.	Natural threats from mechanical, physical, chemical and biological agents from the environment, on the objective:
	a. Nature of the foundation soil:
	a1. Type of foundation soil:
	a2. Groundwater level: .... m
	a3. Water infiltrations:
	a4. Changes in terrain in the vicinity of building:
	b. Soil-structure interaction:
	b1. Improper composition of foundations:
	b2. Inadequate arrangement of the outdoor space:
	b3. Dynamic action of the foundation soil:
	c. Class of importance of the objective:
21.3.	Inappropriate structural composition and detailing:
21.4.	Changes in time and inappropriate use:
21.5.	Other causes:
IV.	**RECOMMENDATIONS:**
25.	**Technical documentation required depending on the degree of intervention and the intervention proposals:**
	Technical documentations:
	Intervention proposals:
26.	**The required priority intervention level:**

Type of intervention		**The required priority intervention level**			
		High	**Medium**	**Low**	**Very Low***
		1	2	3	4
C	**Consolidation**				
F	**Finishing**				
I	**Interior installations**				
M	**Mansard-roofing**				
S	**Vertical systematization of the parcel**				
R	**Repairs of annex buildings**				
	***Recently enhanced and restored / Maintenance work				

27.	**Management:** Management plan – under the laws of UNESCO
	Responsible with maintaining the objective: Owner /-s
	Responsible with administration of funds and execution supervision:

V.	**REFERENCES:**
28.	Documentation and bibliography:
	- Photos:
	Archive of the *Architecture Faculty of Spiru Haret University:* research campaigns 2004, 2005, 2006, 2007 Archive of Nits ltd. Archive of the *National Institute for Historical Monuments*
	- Other information:
	Archive documents Research Studies Monographs
	Specialized bibliography
VI.	**DATA INVENTORY:**
29.	**The institution which has synthesized the information:**
	National Institute for Historical Monuments Bucharest, 16 Ienăchiţă Văcărescu Street, sector 4
	Feasibility Study / Part II - Building fund and public spaces Chief of Project: Josef Kovacs, Arch.
30.	**Institutions that have conducted research:**
	Architecture Faculty, Spiru Haret University Bucharest, 13 Ion Ghica Street, sector 3 Data selection, description, technical and architectural assessment, recommendations, references, annexes - photographic documentary Project Responsible - Scientific Coordinator: Sorin Minghiat, Associate Professor, Ph.D.Arch. Scientific consultant: Corina Lucescu, Lecturer, Ph.D.c.Arch. Applied Research Coordinator: Andreea Liliana Pop, Assistant Professor, Arch. Compiled: Stud.Arch. …… / campaign ……
	Nits ltd. Târgu Mureş City, 9 Vulcan Street, Mureş County Technical assessment and recommendations for structure, annexes - photographic documentary
	Compiled: Alexandru Tiberiu Nits, Arch.
	National Institute for Historical Monuments Bucharest, Ienăchiţă Văcărescu Street, no. 16, 4 sector Data selection, Technical Assessment and Recommendations for indoor and outdoor installations, annexes - photographic documentary Compiled: Ana Maria Biro, Ph.D.c. Eng.

A feasibility study regarding the Rehabilitation and Revitalization of the Ensemble of the Sighişoara Fortress – the Area Inscribed on the World Heritage List, was carried out based on the large quantity of research material, structured in five volumes.

The content of these volumes is the following:

Volume 1

THE FORTRESS - BUILT ENVIRONMENT

Data synthesis and objective files (117 buildings from which 81 are classified as historical monuments): Bastionului *(Bastion)* Street, Fortress Square, Cojocarilor *(Furriers)* Street, Cositorarilor *(Tin Makers)* Street, Museum Street, Scării *(Staircase)* Street, Şcolii *(School)* Street, Tâmplarilor *(Joiners)* Street, Fortress Wall Street.

Volume 2

FORTRESS – FORTIFICATION (Towers and fortress wall) and RELIGIOUS BUILDINGS

Data synthesis and objective files – 9 towers, 1 fortress wall, and 4 churches (14 buildings from which 13 are classified as historical monuments):

Fortress Wall – 25 sections, Clock Tower *(Turnul cu Ceas)*, Fierarilor *(Blacksmiths)* Tower, Cizmarilor *(Shoemakers)* Tower, Croitorilor *(Tailors)* Tower, Cojocarilor *(Furriers)* Tower, Măcelarilor *(Butchers)* Tower and Bastion, Frânghierilor *(Rope Makers)* Tower, Cositorarilor *(Tin Makers)* Tower and Bastion, Tăbăcarilor *(Tanners)* Tower, Roman-Catholic Church, The Church of the former Dominican Monastery, today the Evangelic Church, The Evangelical Church *"On the Hill"*, The ruins of the first Parish Church.

Volume 3

LOWER TOWN – BUILT ENVIRONMENT

Data synthesis and objective files (70 buildings from which 40 are classified as historical monuments): Hermann Oberth Square Street, Turnului *(Tower)* Street, Cetăţii *(Fortress)* Street, Octavian Goga Square Street

Volume 4

LOWER TOWN - BUILT ENVIRONMENT

Data synthesis and objective files (97 buildings from which 33 are classified as historical monuments): Ilarie Chendi Street, Morii *(Mill)* Street, December the 1st 1918 Street, Samuel Micu Street.

Volume 5

PHOTOGRAPHIC DOCUMENTARY, GRAPHIC SYNTHESIS, CD

- Photographic documentary (2130 photos from fortress and lower town from research campaigns in 2004, 2005, 2006, and 2007)
- Graphic synthesis – the Ensemble of Sighişoara Fortress - area inscribed on the World Heritage List:
  A1. Status of the juridical condition - 2007
  A2. Status of the height regime – 2007
  A3. Present use - 2007
  A4. State of conservation-damages-decay - 2007
  A5. Interventions Proposals – Consolidation
  A6. Interventions Proposals – Finishing

A7. Interventions Proposals – Interior installation
A8. Interventions Proposals – Mansard-roofing
A9. Interventions Proposals – Vertical systematization of the parcel

- Summary of the research documentation
- Annex 1-2
- CD - digital presentation for the graphic synthesis

2. The research results

2.1. The fortress fortifications

In 1999, the UNESCO World Heritage Committee decided to include the historic centre of Sighişoara on the World Heritage List, position 902, based on the following criteria:

(iii) *Sighişoara is an outstanding testimony to the culture of the Transylvanian Saxons, a culture that is coming to a close after 850 years and will continue to exist only through its architectural and urban monuments.*

(v) *Sighişoara is an outstanding example of a small-fortified city in the border region between the Latin-oriented culture of Central Europe and the Byzantine-Orthodox culture of Southeastern Europe. The apparently unstoppable process of emigration of the Saxons, the social stratum that had formed and upheld the cultural traditions of the region, threatens the survival of their architectural heritage as well.*

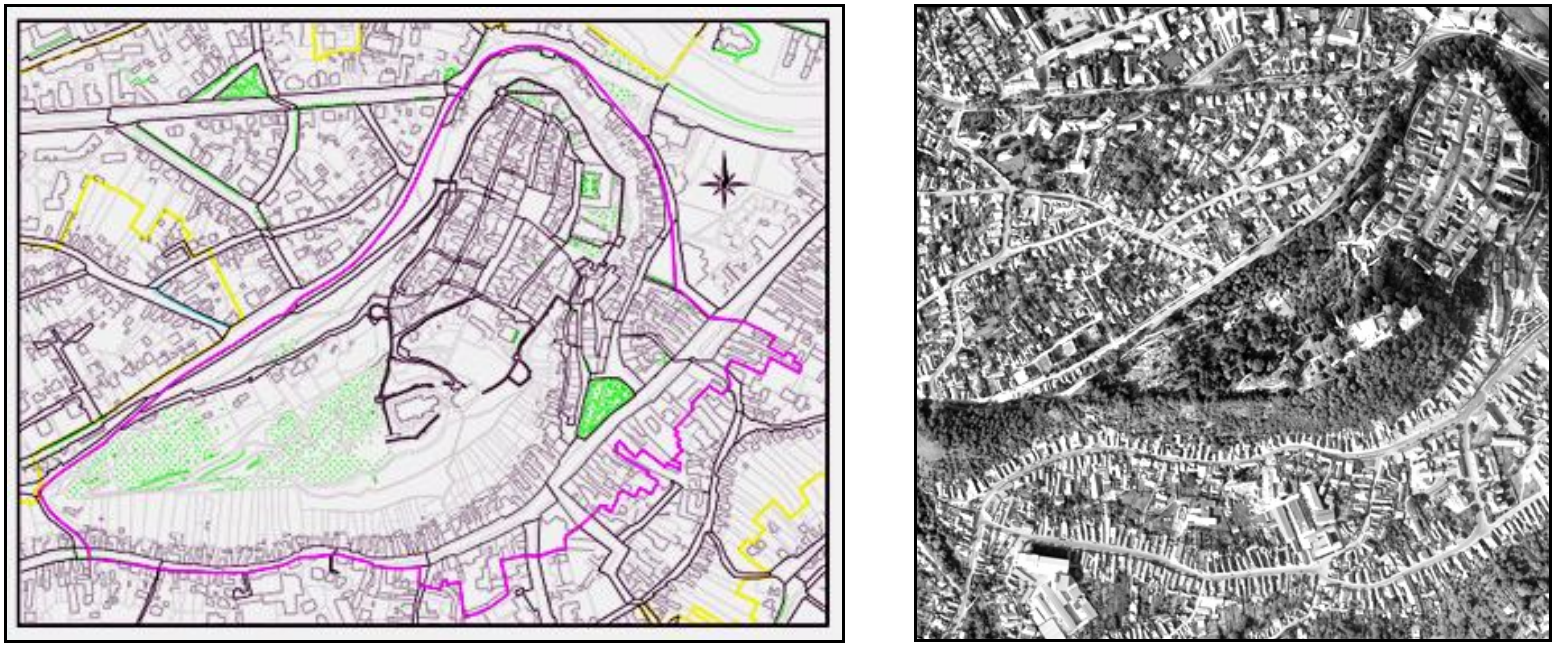

Fig.1. Historic Centre of Sighişoara,
the UNESCO protected area, plan and aerial view

The HISTORIC CENTRE OF SIGHIŞOARA is formed by THE FORTRESS**,** a fortified settlement located on a rather steep hill that overlooks the valley of the Târnava River, and part of THE LOWER TOWN, situated at the bottom of this hill.

This peculiar position gives the site a *very particular urban configuration*, which derives from the need to adapt to the form of the land.

Continuously being inhabited till the present day, the structure of the urban space (streets, parcels) together with the architectural quality of the buildings, that compose the HISTORIC CENTRE OF SIGHISOARA, have been preserved unaltered by time.

An important feature of the HISTORIC CENTRE is the large density of historical monuments, which by the diversity of their typology are making up *expressive ensembles*.

The position of the roads and the urban spaces, tailored to the landforms, through their sequence are creating surprising effects that are *exceptionally picturesque*.

The fortified ensemble is inscribed on the Historical Monuments List/2004 at position MS-II-a-A-15805.

In Sighişoara, the fortified ensemble has been preserved in a proportion of 90%, compared to other urban medieval centres of Transylvania, such as Sibiu, Braşov, Cluj, where the original medieval fortification structure has only been preserved fragmentarily – Sibiu about 30%, Braşov 45%, Cluj 15%.

The town developed during the middle Ages and it was fortified with an approximately 930 meter long wall that surrounds the hill on the contour of its two planes. It initially had fourteen defense towers from which only nine exist today.

Legend:

The Fortress Wall

The Fortress Towers

1. The Clock Tower *(Turnul cu Ceas)*
2. The Tanners *(Tăbăcarilor)* Tower
3. The Tin Makers *(Cositorarilor)* Tower and Bastion
4. The Rope Makers *(Frânghierilor)* Tower
5. The Butchers *(Măcelarilor)* Tower and Bastion
6. The Furriers *(Cojocarilor)* Tower
7. The Tailors *(Croitorilor)* Tower
8. The Shoemakers *(Cizmarilor)* Tower
9. The Blacksmiths *(Fierarilor)* Tower

Fig.2. The fortress fortifications – Planimetric scheme

2.1.1. The fortress wall

THE FORTRESS WALL dates back to the 13th-16th century, and it maintains the traces of different building stages, due to the changes that appeared in the military technique.

Three different building stages can be identified in the structure of the Walls:

1. The oldest masonry was made out of sand stone and it was about 4-5 m high.
   After 1241 - the old wooden and earth fortifications were replaced with stone and mortar walls, through the modernization program of Sighişoara military architecture. In the late 13th century - beginning of 14th century – the stone fortifications were extended to surround the whole hill of the city, and were equipped with battlements and inside towers located at 50-60 m apart.
   The first defense system of the city was completed in the 14th century, when the settlement on the Fortress Hill was completely surrounded by a 4.5 m high wall, provided with small neat towers, and protected by guild craftsmen. The result was a strong medieval fortified town.
2. The first addition was made in the 15th century, a 3-4 m high wall made out of rock and brick masonry. Since the 15th century, the old walls of the site and the towers were modified by increasing their height and changing the architectural forms. The new medieval fortifications required at least two mandatory elements: a large and continuous precinct, and a fortified refuge or citadel, in which defenders could withdraw for a last resistance. In the case of Sighişoara, this system has a third component: a natural moat represented by the creek of the river Şaeş and the riverbed of Târnava Mare.
   In 1625, various portions of the fortification belt were renovated. In 1679, the guard roads were rebuilt.
3. The second addition was made out of bricks and it is only partially preserved.
   In the 15th and 16th centuries, the defense system was increased. Traces of these phases of evolution can be seen on the section of wall that descends from the Rope Makers *(Frânghierilor)* Tower to the Butchers *(Măcelarilor)* Tower, which is the best-kept part of the 8-10 m high wall.
   In the first half of the 17th century, some parts of the precinct wall were raised by a further 1 meter. New walls were made of brick. Therefore, in the 16th and 17th centuries, Sighişoara became one of the strongest cities from Sibiu Province. The city was admired for its beauty and coveted by the Princes of Transylvania. It was the age of glory of the fortifications, with 15 defense towers, 5 artillery bastions and 2 towers, which protected the main gates. Today (2007), only nine towers and two bastions are still standing.

Several sieges affected the structural integrity of the walls, which were repaired in time. Some of the demolished parts have not been rebuilt, such as the *Castaldo Bastion* and the adjacent walls.

In 1848, ditches and earth walls strengthen the city fortifications. In 1858, the part of the wall that runs between the Furriers *(Cojocarilor)* Tower and the Tailors *(Croitorilor)* Tower, together with the Weavers *(Ţesătorilor)* Tower that existed on this section of the wall, have been partially demolished, and the material was used to pave the streets and squares of the Fortress. The part of the wall that ran between the Town Hall and the Clock Tower *(Turnul cu Ceas)* has also been demolished, and kept only as a parapet. The only section of this wall that is still standing is the one that is integrated into the Western

part of the Blacksmiths *(Fierarilor)* Tower. This was identified when the exterior surface of the tower was researched in order to be restored. Some throwing holes were also marked out with this occasion.

A series of consolidation and repair works have been made in the period of 1990-2000.

The fortress wall, due to its continuous degradation, presents a high risk of loosing its stability and therefore requires immediate interventions.

The city wall, which has a length of about 930 m, with heights ranging from 2 m to 10 m, was researched in 25 sections.

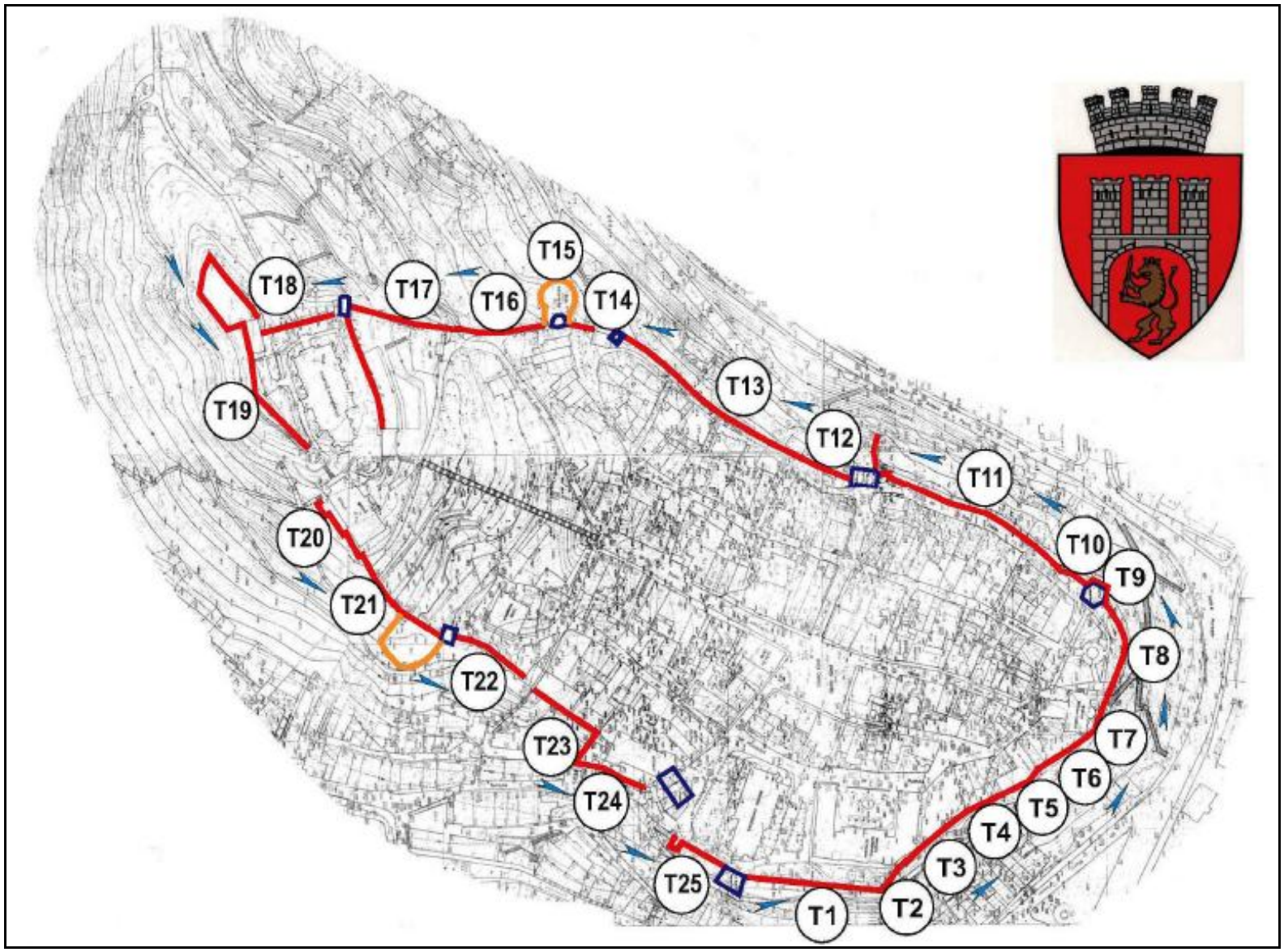

Fig.3. The fortress wall – Planimetric scheme of the research sections, 2004-2007

Section 1:
The wall is made of dry stone masonry, and stone and brick masonry bound with lime mortar. The façade is flat and high, with iron railings at the top. There are visible stages of reconstruction and vertical extensions. This section of the wall presents traces of water infiltrations at base and median level. In 2007, building works started on this section.

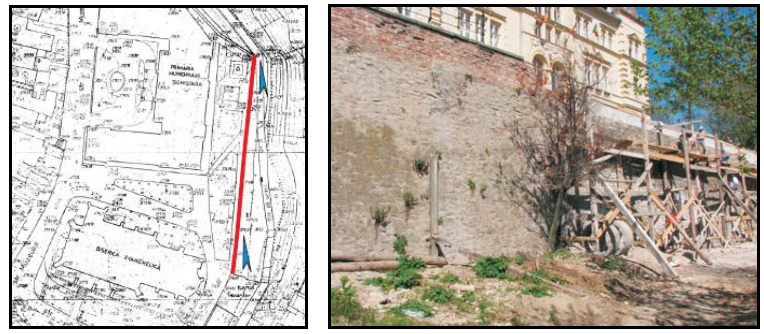

Fig.4. The fortress wall –Section 1, Plan and image, 2007

Sections 2, 3, 4 and 5:
The wall is made of dry stone masonry and stone and brick masonry bound with lime mortar.
The façade with average height has parts that were later incorporated into buildings erected next to the wall. This section of the wall shows dislocation of building material generally at the base of the wall. There are visible stages of reconstruction and vertical extensions.

Fig.5. The fortress wall – Section 2, 3, 4, and 5, Plan and image, 2007

Sections 6, 7 and 8:
The wall is made of dry stone masonry and stone and brick masonry bound with lime mortar. The flat façade with average height shows traces of water infiltrations and spontaneous vegetation. On the top part of the façade, there is a visible vertical extension made of brick.

Sections 9 and 10:
The wall is made of dry stone masonry and stone and brick masonry bound with lime mortar.
The wall presents bumps, traces of unequal settlements and major water infiltrations, spontaneous vegetation on large areas, and plaster dislocations. The top of the wall is covered with brick.
This section requires maintenance.

Fig.6. The fortress wall – Section 9 and 10, Plan and image, 2007

Section 11:
The wall is made of dry stone masonry and stone and brick masonry bound with lime mortar. The façade has a relatively flat surface. The top of the wall is covered with ceramic tiles. This section is relatively in a good condition, but the cleaning of vegetation is needed.

Fig.7. The fortress wall – Section 11, Plan and image, 2007

Section 12:
The wall is made of dry stone masonry and stone and brick masonry bound with lime mortar. The façade has a relatively flat surface. The top of the wall is covered with ceramic tiles. The wall has a height of about 10-12m and it is partially integrated into buildings. Shooting holes on top are preserved. The elevation of the wall has portions with detached plaster and it is free from infiltrations or vegetation.

Fig.8. The fortress wall – Section 12, Plan and image, 2007

Section 13:
The wall is made of dry stone masonry and stone and brick masonry bound with lime mortar. Several portions (irregular shape) of the wall have collapsed at different times, due to lack of maintenance (systematic loss of cohesion of the binder under the action of rainfall). This section of the wall is presently abandoned. One can see the various consolidation attempts, but in the absence of a major intervention, other displacements and collapses of the wall occurred. The preserved parts present cracks in the joints of the materials (stone - brick), bumps and traces of infiltration and vegetation.

Fig.9. The fortress wall – Section 13, Plan and images, 2007

Sections 14 and 15:
The wall is made of stone and brick masonry bound with lime mortar.
In this section there is an access known as "Törle" (in German small door). Much of this portion was protected by a potting house. The elevation shows dislocated areas and degradations, especially at the base level.
The Butchers Bastion – is treated in the Objective File of Butchers' Tower.

Fig.10. The fortress wall – Section 14 and 15, Plan and images, 2007

Sections 16 and 17:
The wall is made of stone and brick masonry bound with lime mortar. The wall is wider at the bottom, for defensive reasons and in order to support the watch road (similar to the Archer Gallery). There are several bumps and a large part collapsed due to lack of maintenance and the loss of cohesion of the binder material under the systematic action of rain. The watch road is destroyed, especially at the top. These sections of the wall are now abandoned. The two sections are separated from each other by the gateway to the Evangelical Cemetery, this portion being the only one, which has suffered minimum maintenance works.

Fig.11. The fortress wall – Section 16 and 17, Plans and images, 2007

Section 18:
The wall is made of dry stone masonry and stone and brick masonry bound with lime mortar. The section that is part of the Castaldo Bastion has an average height and is covered by abundant vegetation. On the upper part, there is a 2m high protective mesh fence. The face of the wall is made of stone without plastering.

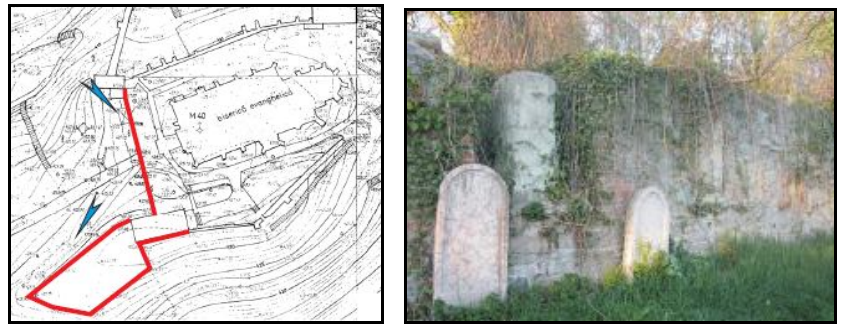

Fig.12. The fortress wall – Section 18, Plan and image, 2007

Section 19:
The wall is made of stone and brick masonry bound with lime mortar. The face of the wall is made of stone and it is plastered. This part of the wall has a pedestrian gate crowned by an arch that marks the access. There is significant degradation at the top of the wall. At the base of the wall, there is a thickening - a sign of a previous phase of construction. There are visible infiltrations at the median level and excess vegetation. On the outside of the precinct, there are massive buttresses. Plaster is decayed and there are major dislocations in the masonry.

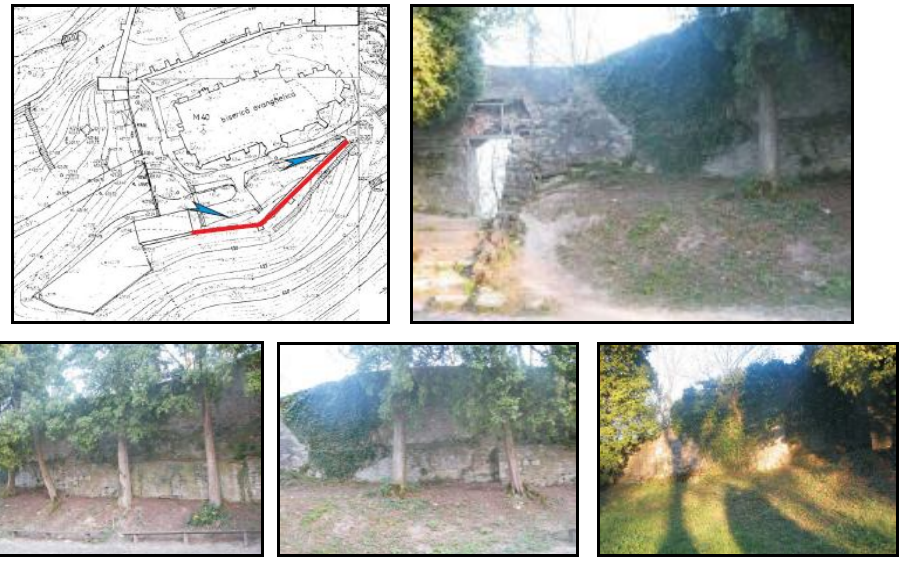

Fig.13. The fortress wall – Section 19, Plan and images, 2007

Section 20:
On the outside of the precinct, the wall is made of stone and brick masonry bound with lime mortar. On the inside of the precinct, the face of the wall is made of brick. This portion of the wall was rebuilt, with a lower height. On the outside of the precinct, the wall presents cracks, dislocation of stones, plaster bumps, local collapse, and abundant vegetation.

Fig.14. The fortress wall – Section 20, Plan and image, 2007

Section 21:
The wall is made of stone and brick masonry bound with lime mortar.
This section of the wall has great height and is located on a steep slope. The top of the wall has collapsed. In the area of contact with the ground, there are bumps, infiltrations, and vegetation. Large areas of plaster are fallen.
One can see traces of successive reconstructions in the immediate vicinity of the Tin Tower.
This part includes access to the Tin Bastion.

Fig.15. The fortress wall – Section 21, Plan and images, 2007

Section 22:
The wall is made of stone and brick masonry bound with lime mortar without plaster. This portion of the wall is doubled with masonry arches that support a wooden superstructure of a gallery with tile covering – the Archers Gallery. At the top, the wall is equipped with shooting holes. At the bottom, under the arches, the face of the wall is made of masonry or brick, left apparent or plastered.

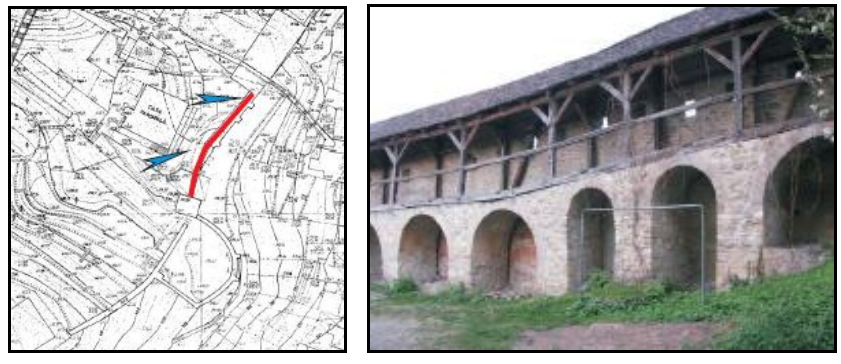

Fig.16. The fortress wall – Section 22, Plan and image, 2007

Section 23:
The wall is made of stone and brick masonry bound with lime mortar. Portions of this wall are surprisingly well preserved. The traces of consoles, which sustained the former watch road, still can be seen. Part of this section is embodied in a building; the rest having a greater height is still preserved. At the top, the wall has a ceramic cover. The face of wall presents infiltrations, vegetation and bumps on the bottom. The plaster is fallen on large portions.

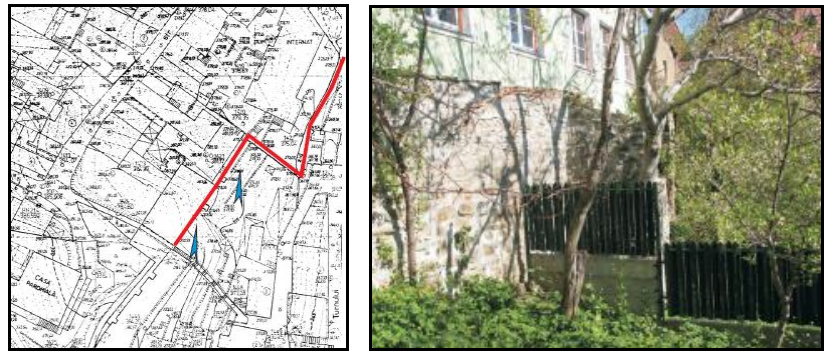

Fig.17. The fortress wall – Section 23, Plan and image, 2007

Section 24:
The wall is made of stone on the bottom, and brick masonry bound with lime mortar, plastered, on the top – traces of a vertical extension phase. This section has an average height.
On the exterior, the wall is doubled with the Elderly Ladies Gallery - a wooden structure with ceramic roofing. An iron railing protected the top of the wall. On the inner sidewall, height is very small, due to large difference in level between the inside and outside; this caused the appearance of vegetation at the top of the wall.

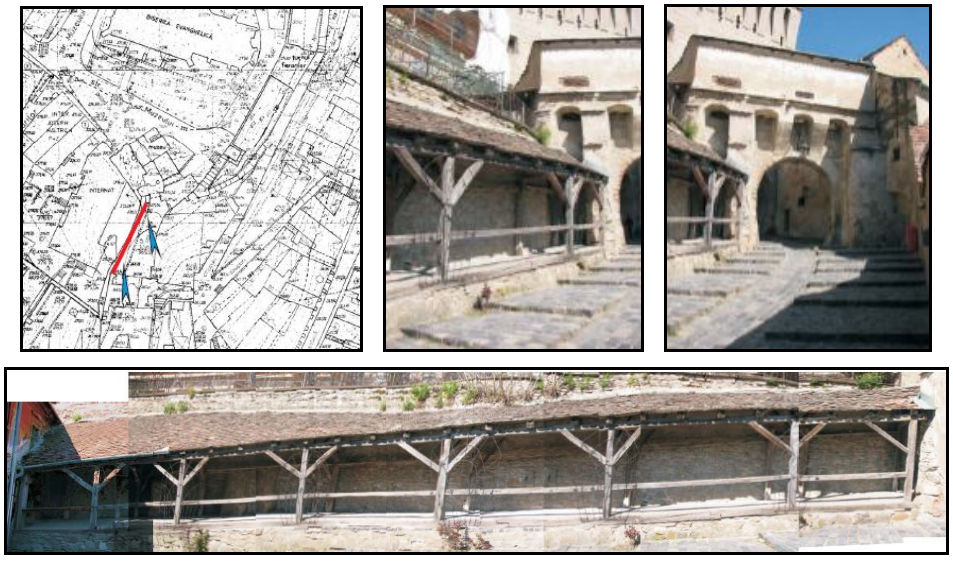

Fig.18. The fortress wall – Section 24, Plan and images, 2007

Section 25:
The wall is made of stone and brick masonry bound with lime mortar.
The wall presents portions of variable height, which have been preserved quite well. On the bottom, the wall has some bumps, especially near the Blacksmiths Tower, where the wall is higher. There are portions of vegetation and fallen plaster.

Fig.19. Zones that present a high risk of loosing its stability and therefore require immediate interventions, 2004-2007

2.1.2. The fortress towers

THE CLOCK TOWER (Romanian: Turnul cu Ceas, German: Stundturm), 14th century, 16th century, rebuilt in 1676, repaired in 1774, restored in 1894.
Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).
1 Museum Square *(Romanian: Piaţa Muzeului nr.1).*

This tower marks the main entrance to the fortress and it is the tallest and most imposing of all towers, also being the master tower of the defense system.

It is located on the interior face of the fortress wall with two passing ways, and it housed the City Council until 1556.

The symbol of the public authority is expressed by the four corner spires of the roof, the clock with wooden puppets, and the weather vane in the shape of a rooster, the gilt sphere, and the two-headed eagle on the top.

The tower was rebuilt in 1676 after the fire, repaired in 1774, and restored in 1894.

Today, the 64 meter high, Clock Tower is housing the city museum, and it dominates the nearby squares: the Hermann Oberth Square, the Museum Square, and the Fortress Square.

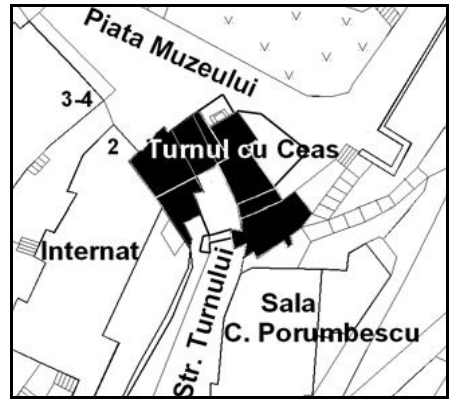

Fig.20.The Clock Tower, plan

The plan of the tower is a 14.00 m x 8.66 m rectangle, with a vaulted ground floor and five floors. The last floor is retired with 1.4 m and surrounded by a timber gallery. The foundations are made of stone, the structure is out of brick and stone, the floors are made of timber, the interior staircases are made of brick and timber, the roof has a timber structure, and the roofing is made out of ceramic plates and tin plates on the spires.

The tower needs consolidation and restoration works especially on the roof structure and the roofing. There are dislocations and vertical cracks on the northeastern and southwestern elevations between the third and fifth floors. On the interior, there are cracks at the fifth, fourth, and third level, extended to the vault of the entrance gate. A biological expertise is needed to be made on the timber structure.




Fig.21. The Clock Tower, images, 2004-2007

THE TANNERS TOWER *(Romanian: Turnul Tăbăcarilor, German: Gerberturm*), 13th-14th centuries, 16th century, 19th century.
Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).
18 Tin Makers Street *(Romanian: Strada Cositorarilor nr. 18).*

Fig.22. The Tanners Tower, plan and images, 2004-2007

It is located on the Southeastern part of the fortress, to the West from the Clock Tower *(Turnul cu Ceas)*.

It is a modest-looking tower, a square prism covered with a single sloped roof. The tower was probably built during the 16th century when fortifications were modernized.

The archaic-looking tower was not affected by the fire in 1676.

Neither the tower nor the boarding school that is next to it, with a pedestrian passage added to it in the 19th century, is in use today.

There are no visible degradations, only dislocated plasters.

THE TIN-MAKERS TOWER *(Romanian: Turnul Cositorarilor, German: Zinngiesserturm*) and BASTION, 14th century (tower), 1583 (bastion).
Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).
11 Tin Makers Street *(Romanian: Strada Cositorarilor nr. 11).*

The tower is located on the southern part of the fortress wall and it is overlooking the Lower Town.

It is located on the interior face of the fortress wall and it has five differently shaped floors: the first two floors have a rectangular, but almost square plan; the next two floors have pentagonal plans, while the last floor was built on masonry cantilevers and has a hexagonal plan with bevelled corners, gothic shooting holes in the shape of upside down keyholes and small openings.

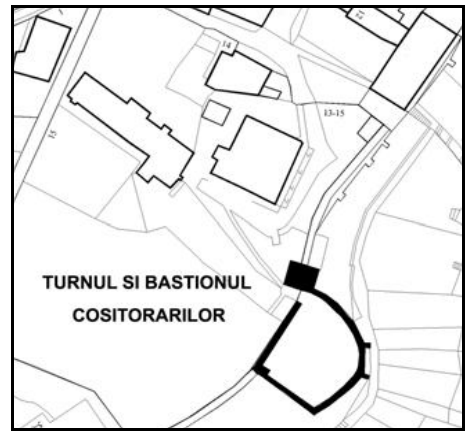

Fig.23.The Tin-Makers Tower, plan

The masonry is made out of stone for the first four floors and of brick for the last floor. The first floor is covered with a brick barrel vault. The slab over the second and third floor is made of timber beams and boards, over which on the third floor there is brick flooring.

The fourth floor is covered with a system of irregular intersected vaults, with a flat section in the centre. The roof structure is made of massive timber pieces.

In 1583, a bastion was erected nearby the tower, which today is filled up with earth and transformed into a garden.

From the structural point of view, the tower and the bastion are in an extremely fragile state, close to collapse, the access to the tower being closed.

The main degradations, visible from both inside and outside, are the almost vertical cracks that run in the area of the openings. Typically, these cracks appear on the outside of the fifth floor, from the cornice to the level of the *machicules* sustained by brick cantilevers. The tower is separated into vertical segments starting from its upper part, having an additional swelling tendency at the vault over the fourth floor. There are local dislocations of the masonry, probably due to the settling of the ground. The roof structure needs major replacements and the roof tiles are decayed and favor the infiltration of rain.

Fig.24.The Tin-Makers Tower, images, 2004-2007

THE ROPE MAKERS TOWER *(Romanian: Turnul Frânghierilor, German: Seilerturm*), 14th-16th centuries, rebuilt in 1630, new building in 19th century

Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress)

8 Staircase Street *(Romanian: Strada Scării nr.8)*

It is located on the interior face of the fortress wall, on the northeastern corner of the precinct of the Church on the Hill, on the battlements of the old wall, visible at the first floor. The tower has a square plan and four floors. The masonry is made of stone, the window openings that were later added have brick frames; there is a small number of rectangular openings, some of them being walled in.

In the 19th century, a new building was added to the tower and the entire construction was turned into the home of the Evangelical Cemetery's keeper. Today the ground level corresponds to the towers second floor.

The tower has a wide vertical fissure on the northern elevation, decayed plaster and medium degradations on the roof.

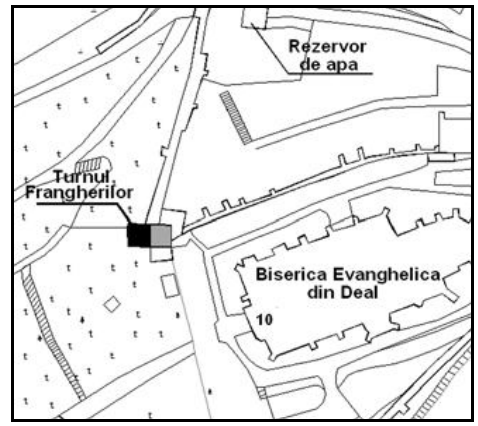

Fig.25.The Rope Makers Tower, plan

Fig.26.The Tin-Makers Tower, images, 2004-2007

THE BUTCHERS TOWER and the BASTION (Castaldo) *(Romanian: Turnul şi Bastionul Măcelarilor, German: Fleischerturm und Fleischerbaistei),* 16th-17th centuries.

Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).

15 Furriers Street *(Romanian: Strada Cojocarilor nr. 15).*

Situated on the northwestern part of the fortress, it is protecting together with the *Furriers (Cojocarilor) Tower* the *Törle Entrance*. The tower, situated on the exterior side of the fortress wall, has a hexagonal plan and five floors.

The last two floors, made of brick, were added at the time when the oval bastion was built in front of the tower.

There are three levels of keyhole shaped or rectangular embrasures, and its high roof has a pyramidal shape. The fire did not affect the tower in 1676.

The timber roof structure and the roof tiles need reparations and replacements.

Today the tower is not in use due to its advanced state of degradation.

There are fissures and cracks at the openings, dislocated plaster, and the mortar is washed out of the masonry. The bastion has a crack that runs along its whole height.

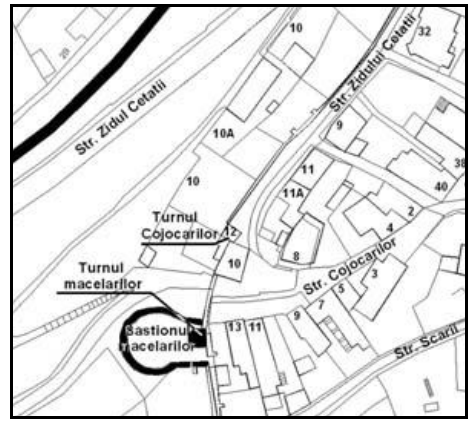

Fig.27.The Butchers Tower and the (Castaldo) Bastion, plan

Fig.28.The Butchers Tower and the (Castaldo) Bastion, images, 2004-2007

THE FURRIERS TOWER *(Romanian: Turnul Cojocarilor, German: Kürschnerturm)*, 1484, rebuilt in 1679. Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).
12 Furrier Street *(Romanian: Strada Cojocarilor nr. 12).*

The tower is located on the exterior face of the wall on the northwestern part of the fortress, next to the Butchers Tower. There is a small opening in the wall between these two towers called *Törle.*

This is one of the old towers that are mentioned in 1484, and it appears on Honterus' map in 1532.

It has a square plan, four floors, and the top floor lies on masonry cantilevers and has fuel oil throwers and rectangular and gothic loop-holes. The tower was destroyed in the fire in 1676 and rebuilt in 1679.

The foundations are made of stone; the masonry is made of stone and brick and the roof has timber structure and ceramic roof tiles.

Today the tower is not in use and needs general repair works.

At the bottom of the tower, repairs have been made with cement plaster, at the back of which it is possible to have degradations. There are cracks on the upper part of the tower, at the cornice level.

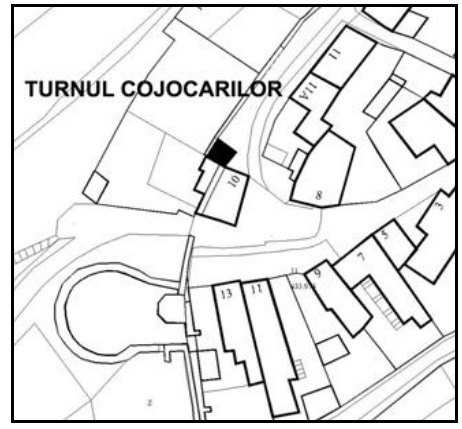

Fig.29.The Furriers Tower, plan

The roof structure and the roof tiles are in an advanced state of decay. The arch above the entrance to the Fortress that is next to the tower has a typical crack in the centre.



Fig.30.The Butchers Tower, images, 2004-2007

THE TAILORS TOWER *(Romanian: Turnul Croitorilor, German: Schneiderturm)* and the FORMER BARBICAN, 14th century, rebuilt after 1676.
Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).
7 Fortress Wall Street *(Romanian: Strada Zidul Cetăţii nr. 7).*

It is an interior tower and an entrance, situated on the northwestern side of the fortress. The exterior gate was protected by a barbican, attached to the fortress wall and the access was strengthened with two additional gateways. From the old barbican, there are only some pieces of wall left. The tower has a rectangular plan and three levels. On the first level there are two rib vaulted tall gates keeping the holes of the ancient fallen-gates.

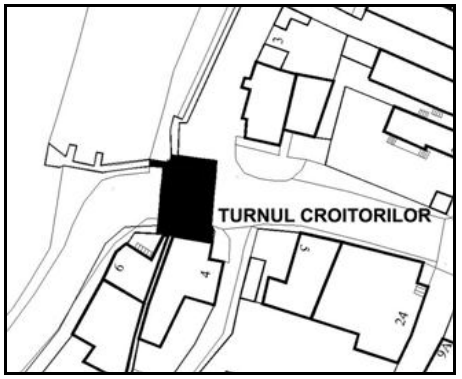

Fig.31.The Tailors Tower, plan

After the fire in 1676, the upper floors were rebuilt out of bricks, with timber floors, with loopholes and throwing holes, with a relatively tall roof with four slopes.

The foundations are made of stone; the masonry is made of stone and brick and the roof has timber structure and ceramic roof tiles.

The tower has an ample dislocation on its entire elevation – from the cornice to the entrance vault, and further to the foundations. The roof tiles have medium degradations.

The tower was used for the needs of the town and also as a storage place, but currently its precarious state makes it unsafe to use and visit. Today, the two gates permit the access of cars into the fortress, creating vibrations in the structure.

Fig.32.The Tailors Tower, images, 2004-2007

Fig.33.The Tailors Tower, interior details, 2004-2007

THE SHOEMAKERS TOWER *(Romanian: Turnul Cizmarilor, German: Schusterturm*), 15th-16th centuries, rebuilt in 1681, bastion built in 17th century.
Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).
2 Fortress Wall Street *(Romanian: Strada Zidul Cetăţii nr. 2).*

It is an interior tower placed in an important strategic location, in the northeastern corner of the Fortress. It is probably one of the first towers. In the 17th century, a bastion was built to the northeast of the tower, towards the *Locksmiths (Lăcătuşilor) Tower*, pulled down in 1894.

The present aspect of the tower, with a hexagonal plan, with a basement level and two floors, with rectangular embrasures and throwing holes, and its height, is a consequence of the rebuilding of the tower in 1681, after the fire in 1676.

The foundations are made of stone; the masonry is made of stone and brick and the roof has timber structure and ceramic roof tiles, the timber slabs have severe degradations. The pyramidal tall roof has two watch towers, one to the north and one to the south.

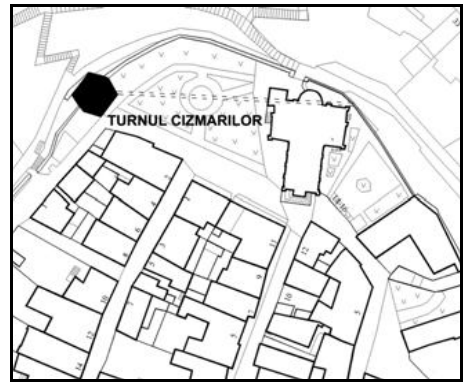

Fig.34.The Shoemakers Tower, plan

In the modern era the tower was used as the towns archive; today it accommodates a local radio station. The interior space of the tower was refurbished and redecorated, and today it houses a local radio station.

Fig.35.The Shoemakers Tower, images, 2004-2007

THE BLACKSMITHS TOWER *(Romanian: Turnul Fierarilor, German: Schmiedturm),* 1631, repaired after 1676.
Historical monument, code MS-II-a-A-15805 (part of the ensemble of fortress).
9 Museum Square Street *(Romanian: Strada Piaţa Muzeului nr. 9).*

It is located on the exterior face of the wall on the southeastern part of the fortress in front of the former Dominican Monastery. It has a rectangular plan, three floors and the access is made through the upper floor.

It was built in 1631 in the place of the *Barbers (Bărbierilor) Tower*, after the southeastern wall was reinforced with an earth mound. It was repaired after the fire in 1676.

The tower was built out of stone and brick, has three floors with loopholes.

The cantilevered upper floor has a series of rectangular openings with the sides slanted so that they are wider on the inside than on the outside.

The consolidation and restoration works were made with PHARE funds and it was included in the Cultural Heritage Programme of the WORLD BANK. After its restoration, the tower will house the *Tower Theatre*.

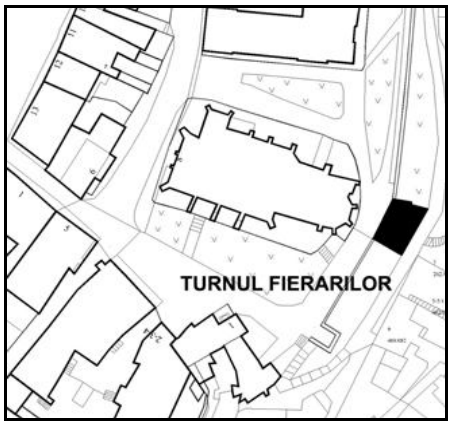

Fig.36.The Blacksmiths Tower, plan

Fig.37.The Blacksmiths Tower, images, 2004-2007

2.2. The religious buildings

THE EVANGELICAL CHURCH ON THE HILL *(Romanian: Biserica din Deal, German: Bergkirche*), 13th- 16th centuries, rebuilt after 1704 and 1833, restored in 1934 and in 1992-2004.
Historical monument, code MS-II-m-A-15974.
10 Staircase Street *(Romanian: Strada Scării nr.10).*

The Evangelical Church on the Hill, dedicated to Saint Nicholas, is the most important religious monument of Sighişoara, the third biggest church of Transylvania, representing the Transylvanian Gothic style.

The church is situated on the top of the School Hill and it is overlooking the landscape around it.

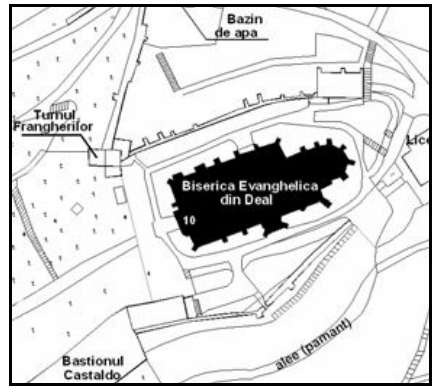

Fig.38.The Evangelical Church on the Hill, plan

The church was built in several stages: between the 13th century and the 16th century. The initial church, with a narrow nave, was transformed into a hall church between 1429 and 1525, being under the influence of the German school of architecture. The Romanesque style was replaced with the Gothic style, considered more appropriate to the universal aspirations of Catholicism. The roof and the belfry have been rebuilt after the fire set by the *kuruc* (anti-Habsburg Hungarian revolutionaries) in 1704, and after the earthquake in 1838 the choirs destroyed vaults have been replaced with timber imitations, and the halls vaults were partially replaced with brick ones.

The interior of the church owes its present aspect to the restorations from 1934, which brought to light the old frescos dating in 1484, covered with lime dating in 1776.

The current building is a hall-type church with three naves that are almost equal in height, covered with gothic net vaults. The western tower was erected during the first building stage and had initially a defensive role. Later on, the tower was built into the side aisles and partially covered by the double-sloped massive roof of the hall. The oblong choir built on top of a Romanesque crypt has two spans and a polygonal apse with five sides. On the southern part, there is the two-storey sacristy and the entrance portico. The stone decorations of the elevation, the window frames, the porch, and the buttresses decorated with canopies and sculptures reflect the stylistic influences of the time that came from Central Europe. Inside the church there is a remarkable ensemble of gothic and renaissance frescoes (14th-15th centuries), a representative series of funeral monuments (16th-17th centuries), artworks carved in stone – a gothic tabernacle (15th-16th centuries), a holy water holder (15th century) and a pulpit (15th century), medieval furniture (15th-16th centuries) and several gothic retable.

During the 20th century, because of the massive immigration of the Saxon community from Sighişoara, a general phenomenon in Transylvania, the church diminished religious activity, used only temporary. Without parishioners, a slow but constant decay was produced. Cracks started to appear on the walls and vaults and the roof has started to deteriorate - biologically and physically.

Fig.39.The Evangelical Church on the Hill, images, 2004-2007

Between 1992 and 2004, ample restoration works have been initiated on the church, co-financed by the *Ministry of Culture* and the *Messerschmitt München Foundation*. The structural interventions are partly reversible and completely invisible:

- consolidation of the structure by introducing metallic bars into holes drilled into the walls
- consolidation of the vaults with metallic laminated profiles anchored into the perimeter walls and supported by the columns of the hall
- repair and consolidation of the roof structure and renewal of the roofing
- re-plastering of the facades and painting it into light ochre
- restoration of the choir sculptures and of the gothic stone works
- restoration of the frescoes
- restoration of the furniture, paving of the hall with stone slabs
- rehabilitation of the surrounding area by the renewal of the stone paving and creating an exterior sewage system that collects the rain water and eliminates humidity

Ample archeological research has been made together with these works, inside and outside the church, which contributed to the clarification of the different building stages.

In addition, the *Church on the Hill* has been given a new function. The religious function has been completed with the *Museum of Saxon Art and the Romanian-Saxon Cultural Centre*, giving it a new life. This will certainly contribute to the revitalization of the Historic Centre of Sighişoara.

The team that carried out this remarkable restoration and consolidation of the church together with its adaptation to the new function of museum and cultural centre, has won in 2004 one of the five important prizes (10.000 Euro) of the *European Union Prize for Cultural Heritage* at the Architectural Heritage category, through the European Committee Program launched in 2002. *Europa Nostra* was selected as the organization responsible for this program, in order to recognize the high quality in the field of cultural heritage.

At present (2007), the following works are still necessary to be made: restoration of the exterior frescoes in the altar area, restoration of the interior frescoes under the tribune.

Fig.40.The Evangelical Church on the Hill, scale model of the fortress, 2004

THE CHURCH OF THE FORMER DOMINICAN MONASTERY (*German: Klosterkirche*), TODAY THE EVANGELIC CHURCH, 13th century (1298 - mentioned in documents), transformed in 1483-1515, partial rebuilt after 1676, 1804, 1886, restoration in 1928-1929.
Historical monument, code MS-II-m-A-15936.
8 Museum Square Street *(Romanian: Strada Piaţa Muzeului nr.8),*

The *Church of the Monastery*, dedicated to Virgin Mary, is located near the *Clock Tower*. It is the second important gothic monument of the town. It dates back to the second half of the 13th century – confirmed in documents from 1298.

It was built as the *Church of the Dominican Monastery*, part of one of the two monasteries of the *Dominican Order* that occupied the northeastern side of the Fortress Hill plane. After 1550, when the Saxons switched to Protestantism, the church became the *Parish church of the Saxon community* (Evangelic Church) and the ensemble of the *Dominican Order* was turned into the town hall. After the fire in 1676, the monastery and the church were restored and partially rebuilt. Between 1886 and 1888, the monastic buildings were almost entirely demolished to make place for the *Palace of the Târnava Mare County*, the present Town Hall.

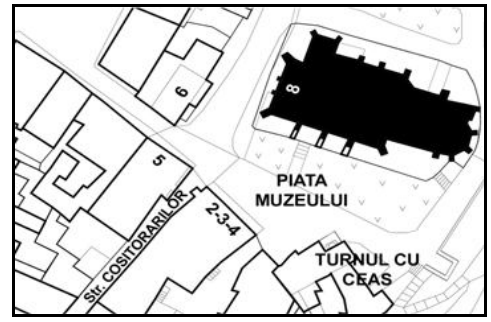

Fig.41.The Evangelic Church, plan

The gothic volume of the *Church of the Monastery* dates from 1483-1515, when it was transformed into a hall-type church. After the great fire in 1676, changes were made to the interior that gave the church a baroque style. At the restoration in 1928-1929, the old balconies and the gallery were abolished.

The church is a monumental hall with late gothic architectural elements that preserves on its northern side the corridor of the old monastery. On the southern side, after the medieval buildings were demolished, three special buttresses were added to the church – three vertical columns having rectangular sections that ended in flying buttresses. The three spans of the nave have the same height and the vaults were rebuilt after the fire in 1676. The choir consists of three spans: a pentagonal one that preserves the initial gothic rib vaulting and two rectangular ones with cross vaulting.

The monumental character of the church is given by the tall roof and its great pinion. The western façade is dominated by the steep triangular gable, with a typical composition for a monastery – three gothic windows and a portal with gothic section. The rhythm of the undecorated elevations is given by the gothic window frames.

The church preserves a baroque altar from 1680, a bronze font made in the 15th century, a gothic and a renaissance frame, a collection of oriental carpets – 39 Anatolian ones that decorate the northern columns and banisters.

Presently (2007), the state of the exterior of the church, with water infiltrations, missing plaster and exfoliated areas, requires the re-plastering of the entire building. The works are in process, financed by the Evangelic Parish. Before the beginning of the execution works, archeological and façade research has been made.

Fig.42.The Evangelic Church on the Hill, works in process, 2005

THE RUINS OF THE FIRST PARISH CHURCH, 14th century, 16th-17th centuries.
Historical monument, code MS-II-s-A-15806.
The Tin Makers Street *(Romanian: Strada Cositorarilor)* - without number, corner School Street *(Strada Şcolii).*

Fig.43.The ruins of the first parish church, plan and images, 2007

The walls that exist between the *Covered Staircase* (*Students Staircase*) and the *Parish House*, in the garden of the *Evangelical Church District Consistory*, at the bottom of the *School Hill,* belong to a gothic church. The church had a short polygonal altar, with six buttresses, and a rectangular nave with eight buttresses, that was approximately 26 m long.

Presumably, this stone church dates back to the 14th-15th century and it was used as a parish church in the period when the *Church on the Hill* was transformed from a Romanesque building into a gothic one. Between the 16th-17th centuries, the old church began to be used as a cemetery chapel, as it was located next to the oldest medieval cemetery of the Fortress.

Today only ruins of the exterior stonewall and a small number of buttresses can be seen. These ruins are not marked nor signalized in any way and conservation and protection works are needed to be made.

THE ROMAN-CATHOLIC CHURCH
14-16 Bastion Street *(Romanian: Strada Bastionului nr.14-16)*

Fig.44.The Romano-catholic Church, plan and images, 2007

The Church was erected on the place of the former *Clarisa Monastery*, in the northern end of the Fortress, close to the *Shoemakers (Cizmarilor) Tower.* In 1894 the old Franciscan church that used to be the catholic parish church was demolished together with the *Locksmiths (Lăcătuşilor) Tower*, in order to make place for the current larger Catholic Church.

H. Letz architect, who used Italianized neo-Gothic and neo-Romanesque elements, designed the building. The church has a Latin cross plan, a wide nave, a long semicircular apse, and a transept. Near the choir, there is a belfry-like, tall tower. The openings are wide, the portal is neo-Romanesque, and the main façade and the transept are provided with rose windows.

The church was built in the eclectic style, characteristic to the époque, and its silhouette reminds of the volumetric accents of the former buildings.

In 1984, after the fire of 1983, the interior was redone and recently the whole exterior church was refinished.

List and source illustrations[3]:

Fig.1. Historic Centre of Sighişoara, the UNESCO protected area, plan, and aerial view
Source 2
Fig.2.The fortress fortifications - Planimetric scheme
Source 1
Fig.3.The fortress wall – Planimetric scheme of the research sections, 2004-2007
Source 1
Fig.4.The fortress wall – Section 1, Plan and image, 2007
Source 1
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[2] The whole paper contains the following chapters, divided into two parts, as follows:

PART I

1. General overview of the research
2. The research results:
   - *2.1. The fortress fortifications*
     - *2.1.1. The fortress wall*
     - *2.1.2. The fortress towers*
   - *2.2. The religious buildings*

PART II

   - *2.3. The building fund*
     - *2.3.1. General description:*
       - *2.3.1.1. Common elements*
       - *2.3.1.2. Specific elements*
     - *2.3.2. Current state*
       - *2.3.2.1. Common elements – the Fortress and the Lower Town*
3. Research conclusions

[3] Note: All the figures have only three sources:
Source 1: the archive of the *Architecture Faculty of Spiru Haret University,* The National Program of Restoration 2007, the project *Rehabilitation and revitalization of the Assembly of Sighişoara Fortress, Area included in the World Heritage List, FEASIBILITY STUDY / PART II – building fund and public spaces,* specialized research by the *Faculty of Architecture, Spiru Haret University*, 2007.

Source 2: the archive of the *National Institute for Historical Monuments,* currently *National Institute of Heritage*
Source 3: the archive of *Nits ltd*.