

ARC ΕΣ401 Εργαστήριο Αποκατάστασης Κτηρίων

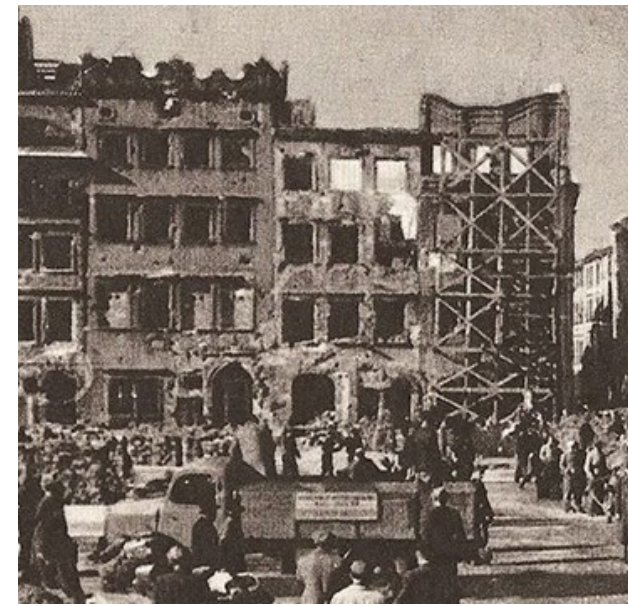
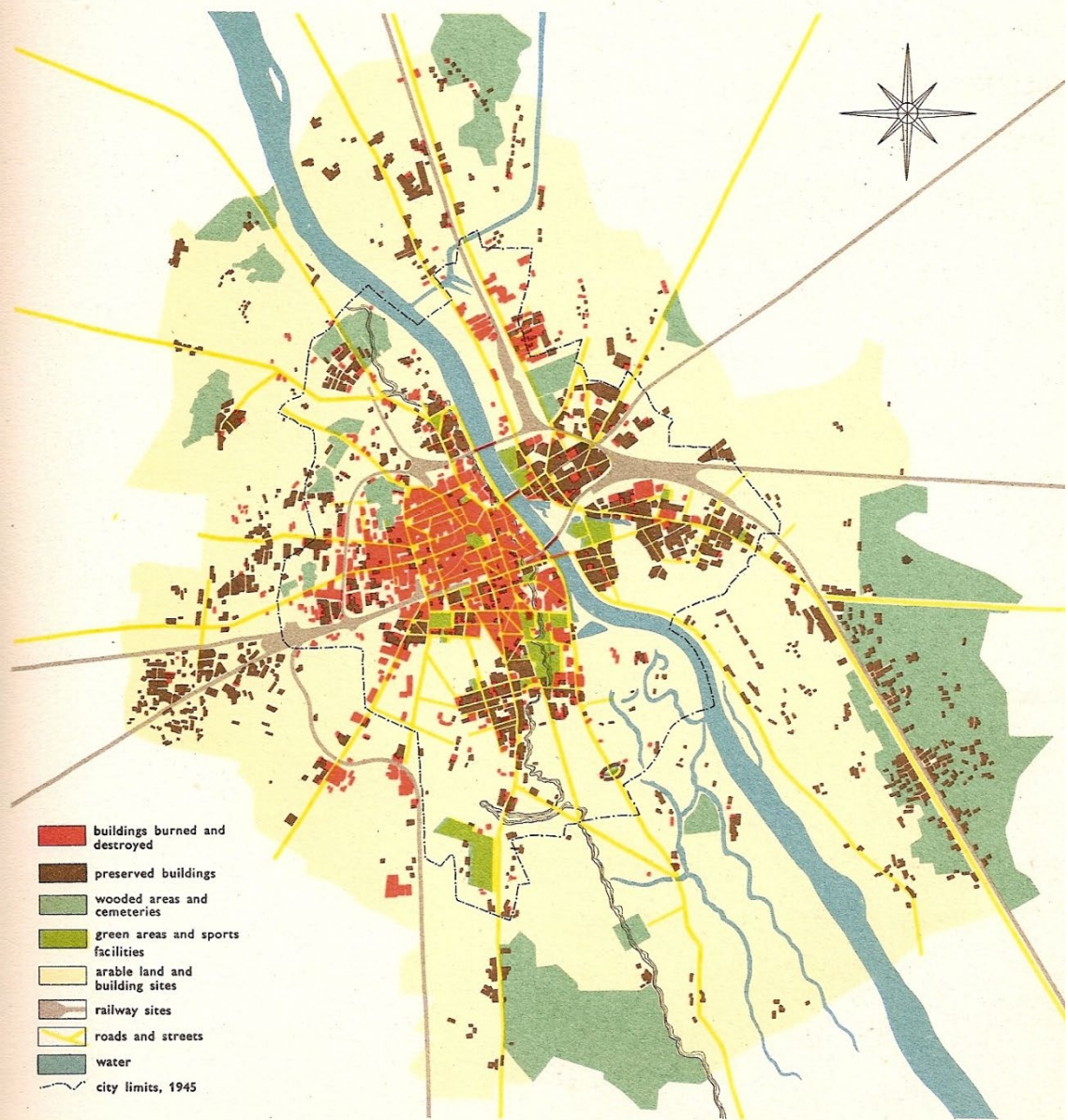


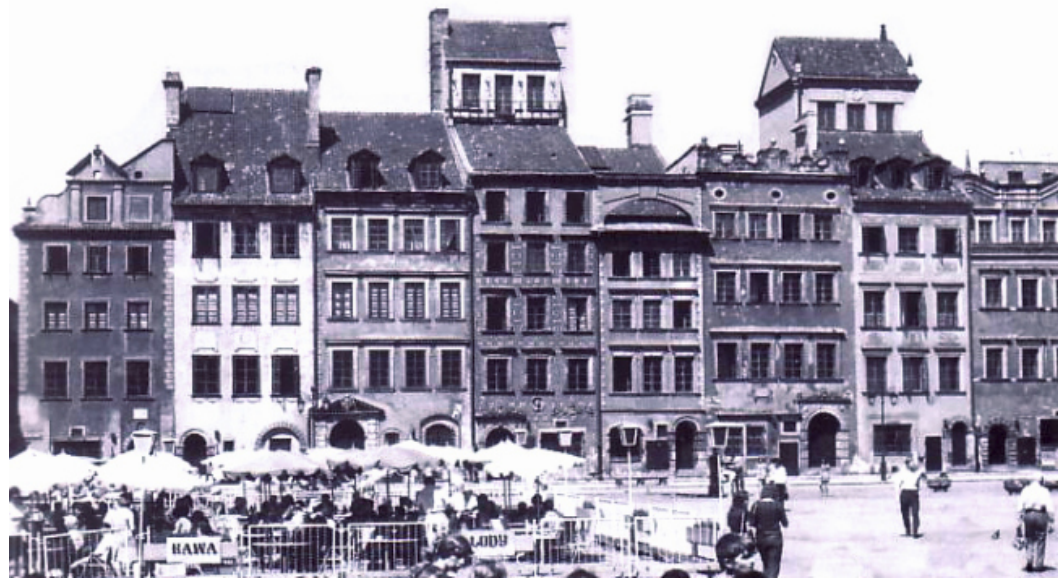
Μάθημα 4.4 Παραδείγματα επεμβάσεων - Μνημεία

Διδάσκων : Σταύρος Μαμαλούκος

ΠΟΛΩΝΙΑ- Βαρσοβία

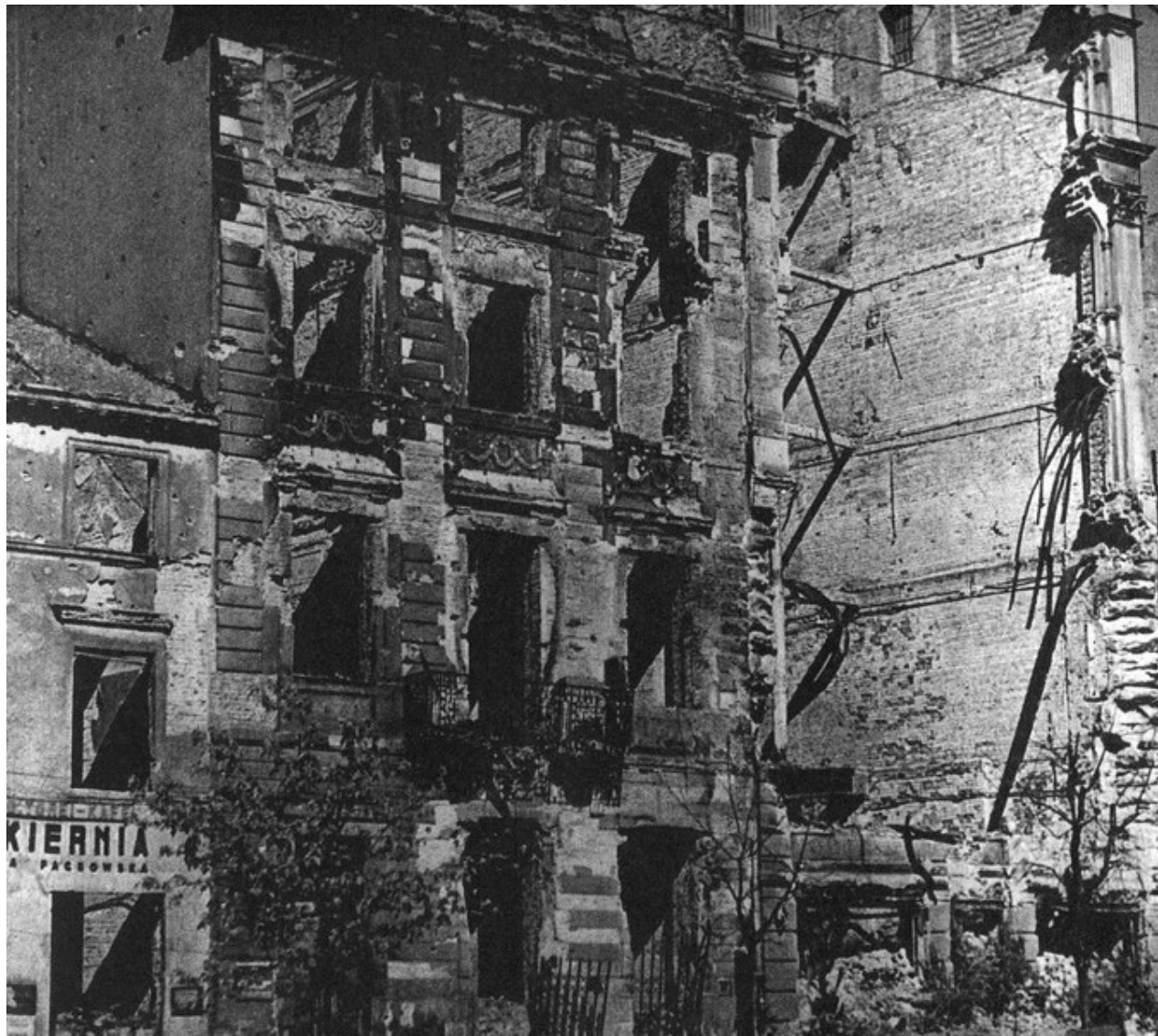
WARSAW, 1945 — AT WAR'S END — PRESERVED AND DESTROYED BUILDINGS





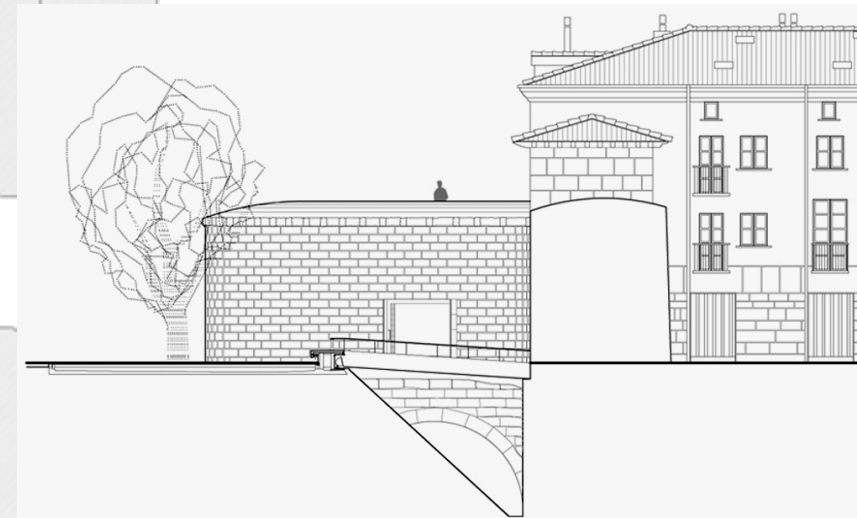
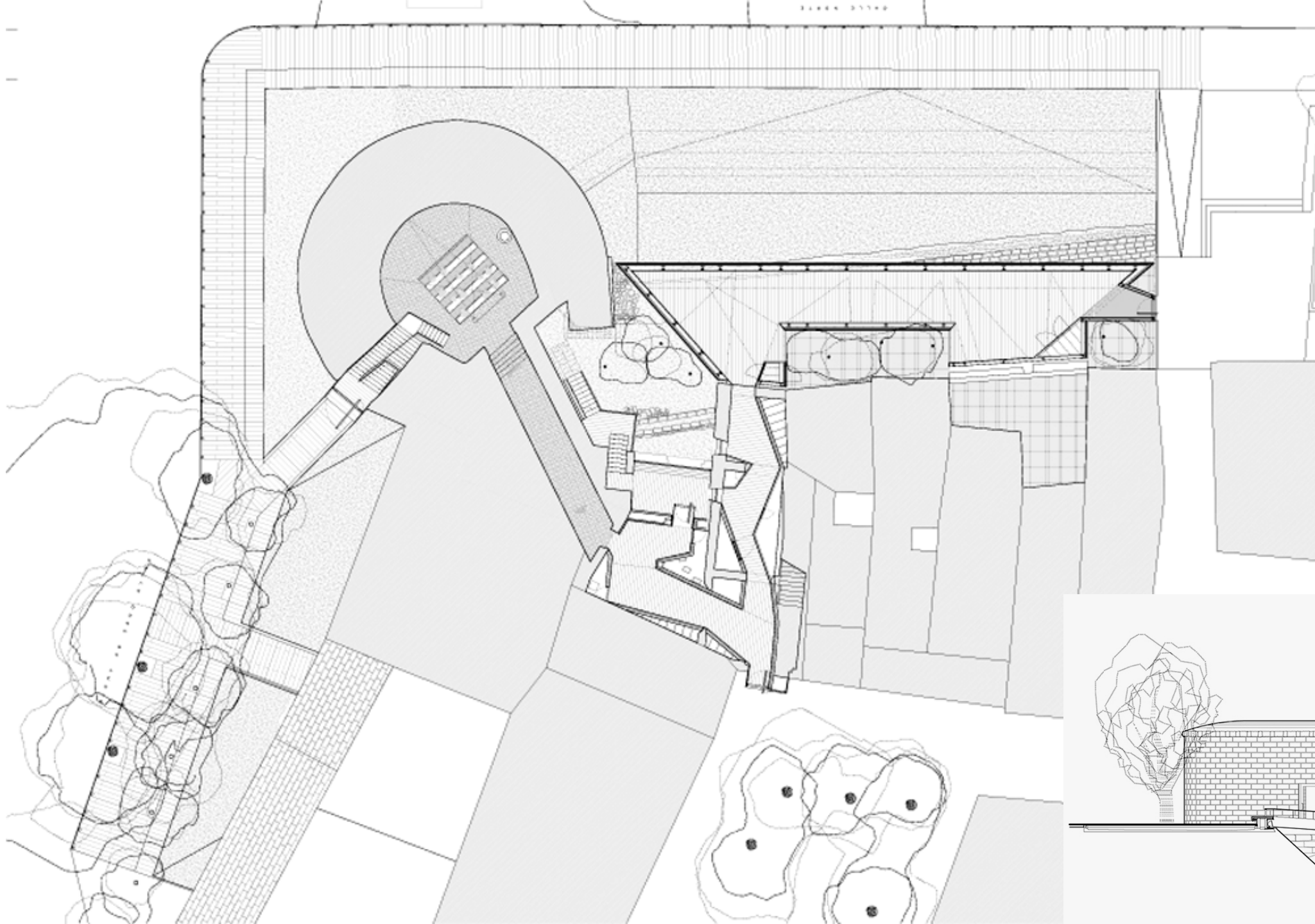


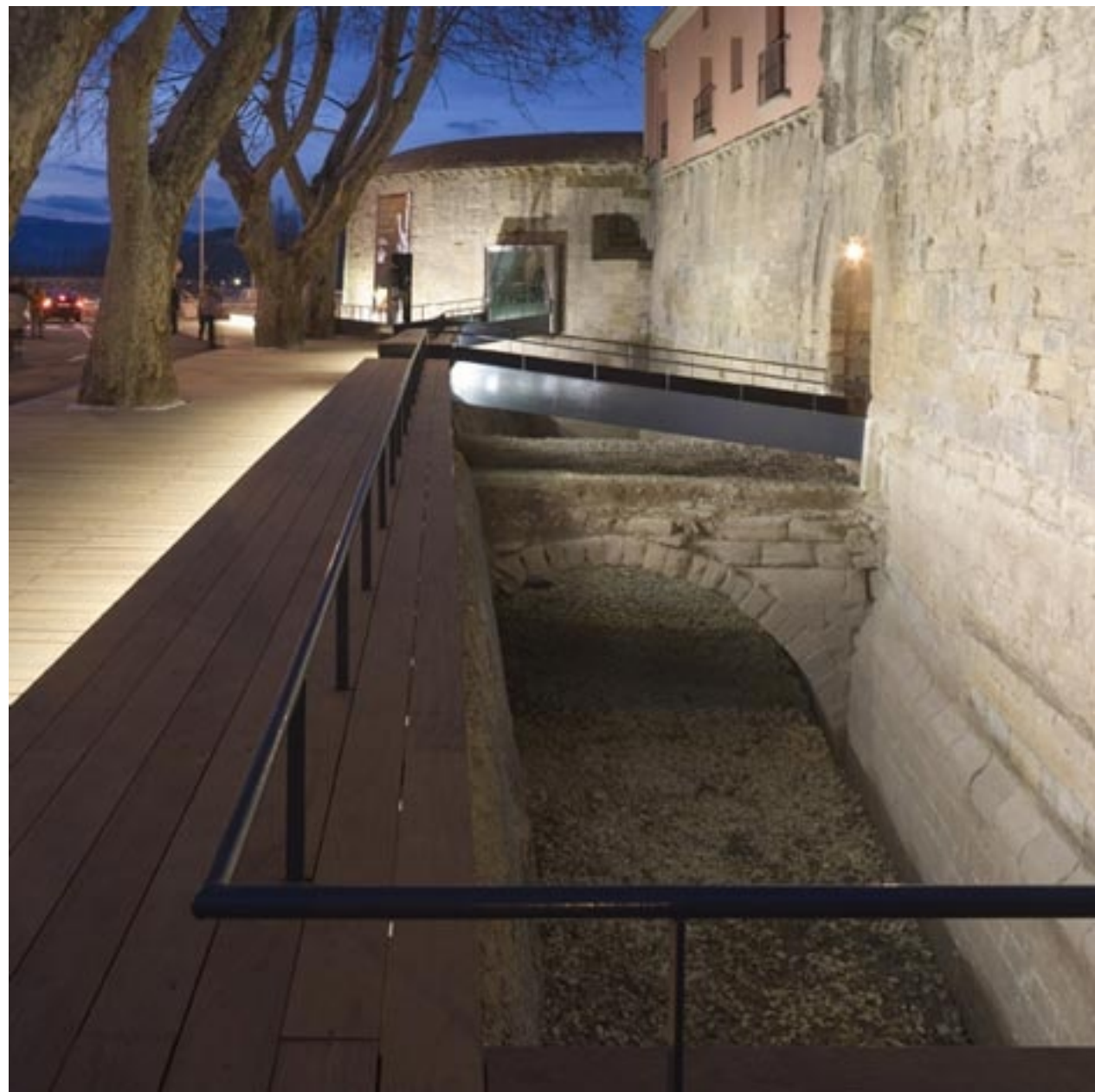




Logroño, Ισπανία. Muralla del Revellín













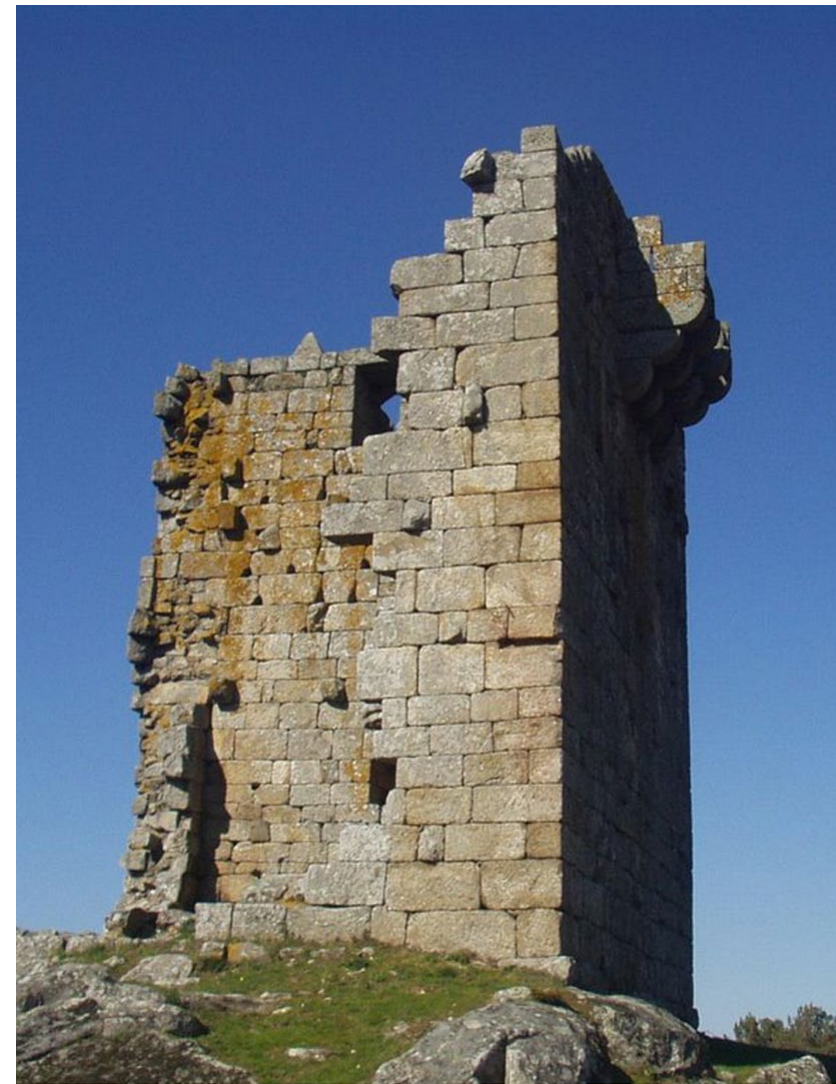
ΙΣΠΑΝΙΑ-Matrera Castle, Vilharigues Tower κ.α.

Vilharigues Tower in Portugal

τέλη του 13^{ου} ή αρχές 14^{ου} αιώνα

<http://www.medievalhistories.com/matrera-castle-vilharigues-tower/>





Tower of Vilharigues –
before restoration



Vilharigues Tower in Portugal



Castle Matrera

Villamartin, Spain



*Castle Matrera before the restoration
built by Omar Ben Hafsun in the
late ninth century*



Cádiz Castle Restoration: Interesting Interpretation or Harmful to Heritage ?

In 2011, after the partial collapse of the Matrera Castle in Cádiz, Spain (dating back to the 9th century) the city decided to restore the remaining tower, with the aim of preventing its collapse and protecting the few elements that were still standing.

The challenge fell into the hands of Spanish architect Carlos Quevedo Rojas, whose design received the approval of the Regional Government of Andalucía, in compliance with the Historical Heritage law 13/2007, which prohibits mimetic reconstructions and requires the use of materials that are distinct from the originals.

In the words of the architect: “This intervention sought to achieve three basic objectives: to structurally consolidate the elements that were at risk; to differentiate the additions from the original structure (avoiding the mimetic reconstructions that our law prohibits) and to recover the volume, texture and tonality that the tower originally had. The essence of the project is not intended to be, therefore, an image of the future, but rather a reflection of its own past, its own origin.”

The polemical restoration has provoked a broad international discussion about heritage restoration, and the Izquierda Unida group has said it will bring the case to the Andalusian Parliament’s Culture committee to see if the restoration was the result expected by the Ministry of Culture. On the other hand, while the building had previously received only sporadic visits, it has now become a new tourist attraction in the area.

Why has a restoration based on the anastylosis technique – which exists around the world – caused so much controversy? It is it really a “heritage massacre” as the media has said? Do you think it could have been carried out in a better way?









Formación de pendiente del 2% e impermeabilización con tratamiento hidrogelante
 Acabado con revestimiento continuo según bases previas, anclando, faja vidrio mortero de cal
 Sobra de hormigón sobre lámina previa tratándose con mortero de cal de nidos degradado
 Armado de lazo conectado a perfiles metálicos
 Troncha ligada de café en lámina de última fase constructiva de empalmes en terrado
 Múltiple cruce de la lámina expuesta previamente a la limpieza y degradado
 Consolidación y consolidación con lámina de tejido perforado
 Revestimiento original con fajas de tejido impreso, tratamiento limpieza y consolidación
 Acabado con mortero de cal y mortero de cal blanco apagado
 Revestimiento de lámina de completado de 15cm con respecto al paramento original
 Limpieza de láminas exteriores según procedimiento anterior
 Perfiles metálicos con perfiles de acero HEB-142 para refuerzo estructural anclado de la coronación
 Casado de 12x12cm sobre línea superior de alfileres para distinguir bases constructivas en volumen
 Empalmes a ras de la corona con ladrillo hueco sencillo
 Tratamiento especial para uniones interiores
 Lámina de lazo de hormigón armada previa tratamiento en láminas para conformar el cajado
 Medios de anclaje repetidos para la colocación de terrado como anclaje en terrado
 Consolidación de lámina existente con lámina de perfurado conectada con mortero de cal
 Cuerpo de lámina añadido anexo en diámetro base anexo y superpuesto a las alfileres
 Zonas previstas para el anclaje de la alfileres como faja girata a alfileres
 Zonas previstas por acción de las mariposas y ladrillos anclados con argamasa

Tratamiento hidrogelante y pendiente del 2%
 Acabado con mortero de cal y mortero de cal blanco apagado
 # 0 12 a 20 cm y separación de 20 cm
 Tramo de acero pasado lavado
 Termino superior formado por argamasa de cal impermeable compuesta de alta resistencia
 Acabado mediante faja de acero congado # 20 con tres perforaciones
 Curvadillo proyectado en tramo de bóveda con armadura base, hierro y asbesto

Ovejas de ladrillo en bóveda superior
 Mortero en línea de imposta
 Faja de cerámica vidriada ornamenta original en el paramento exterior
 Limpieza de paramento exterior manual con jabón neutro fosforado
 Revestimiento limpieza en paramento exterior previa limpieza con hipoclorito
 Acabado con mortero de cal blanco apagado en alfileres discontinuos
 Revestimiento original de argamasa a consolidar con Parabot S-72
 Tratamiento hidrogelante tras limpieza y consolidación de todos los paramentos

Bases
 Revestimiento original con argamasa en alfiler de asbesto
 Acabado con mortero de cal y mortero de cal blanco apagado
 Acabado de asbesto para impermeabilización de coronación
 Casado de coronación, Mortero de cal base prima
 Mortero de 15cm a la cara interior y exterior
 Faja de acero congado # 20 mm L=1,20m
 Troncha de mortero expuesta con revestimiento
 Perforación realizada en lámina # 20mm
 Caja de hormigón especial de 10 cm
 Casado de base de hormigón armado
 # 0 12 a 20 cm y separación de 20 cm
 Tramo de acero pasado lavado
 Curvadillo de la bóveda por faja irregular, mortero de cal y resto existentes
 Lazo de piedra en bóveda inferior
 Viga a compresión de reparto de hormigón armado

Revestido con mortero de cal blanco apagado-retanqueado 2cm
 Ovejas de piedra caliza regular en bóveda inferior
 Faja de aluminio de separación de 15 mm
 Perforaciones en mortero de 10mm
 Cuadrados de P.V.C en espaldas
 Mortero de 15 cm
 Revoque de mortero de cal base blanco apagado
 Lazo en posición de faja de vidrio
 Revestimiento previo con mortero lavado
 Cajas de ladrillo perforado formado con mortero de cal
 Múltiples piedras calizas discontinuas formadas con mortero de cal
 Argamasa
 Faja de acero interna del muro portante
 Alfileres de acero en bóveda regular
 Caja previa de mortero de cal base prima
 Zonas de lazo natural sobre faja de hormigón y canchales interior sur
 Revestimiento original según procedimiento sobre lazo natural
 Limpieza y consolidación de esmaltes
 Limpieza previa del lazo











FERNANDO VISEDO MANZANARES
RESTORATION OF THE SETENIL DE LA BODEGAS
HOMAGE'S TOWER



<http://divisare.com/projects/308180-fernando-visedo-manzanares-fernando-alda-www-fernandoalda-com-restoration-of-the-setenil-de-la-bodegas-homage-s-tower>

After the recapture of the town in 1482 the keep is very run down and practically abandoned cause the loss of space and ceiling of the top floor.

The return of the top volume was made with mud concrete juxtaposed with historical techniques of integration through the areas that have maintained a sufficient percentage of material.

Subdued light filtered through plywood Dome informs us of the historical situation in which it found for 5 centuries open.

1. Access to the tower and the deck.
2. IPE wood floating cover, covering the room through a plywood structure similar to the original layout.
3. Conservation of existing ground floor room by removing the various mortars covering the original layer, cleaning, consolidation and fixing the historical substrate and the realization of a homogeneous coating paints.
4. Intervention on the facades Five types of intervention build on the facades.

Restitution of stones and mud.

Consolidation of mud and masonry.

Integration with historic adobe recess.

Gunned areas where mud loss is greater than 15 cm to be a stretch to replenish thickness which is reduced to the implementation of the excessive mud and contrary to solved by mortar based coating.

Juxtaposition of mud and concrete access to the tower.

Finally, homogenizer set treatment with mineralizing surface maintaining current texture and color.





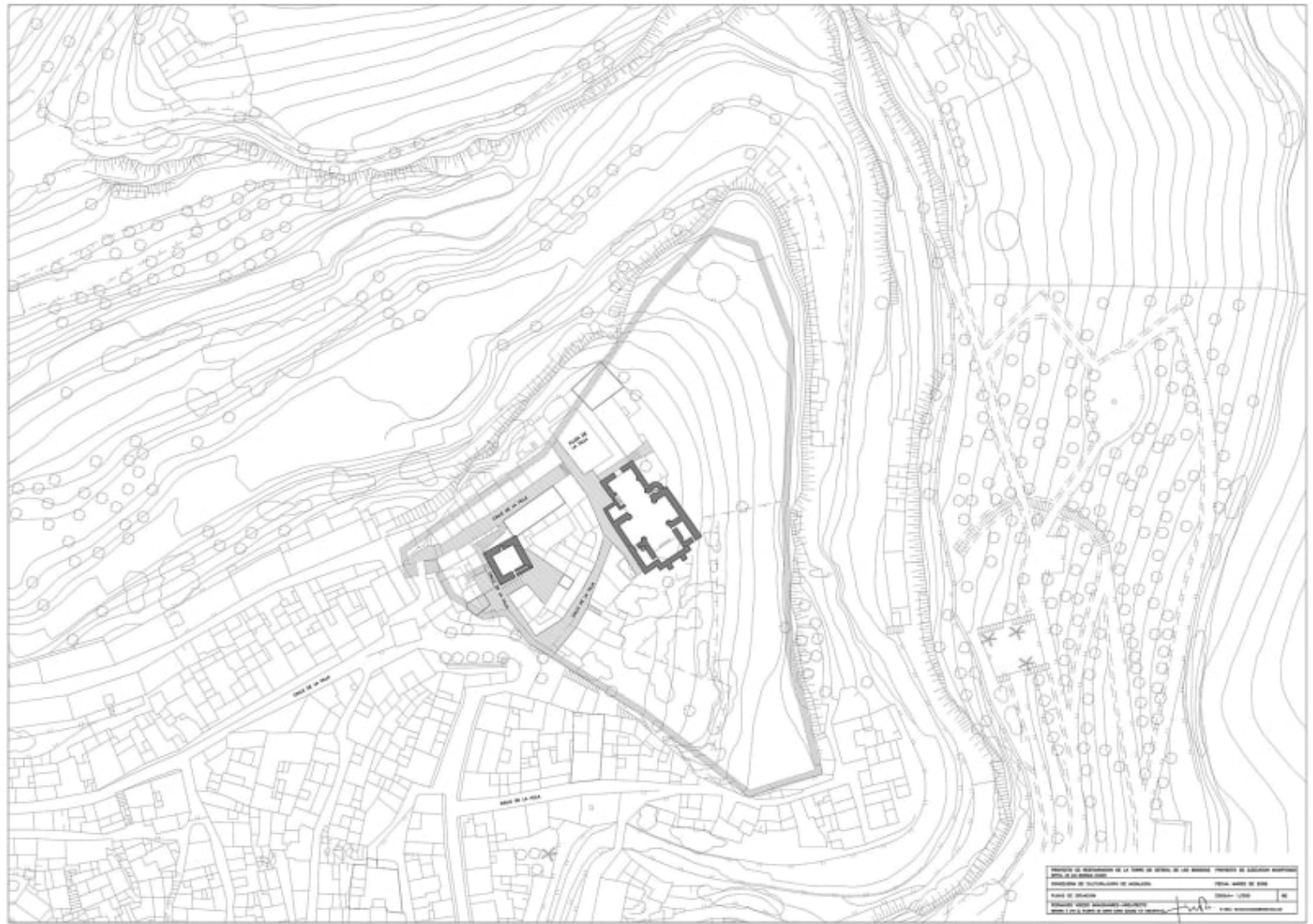
Surface: 3 stage. 432 m2

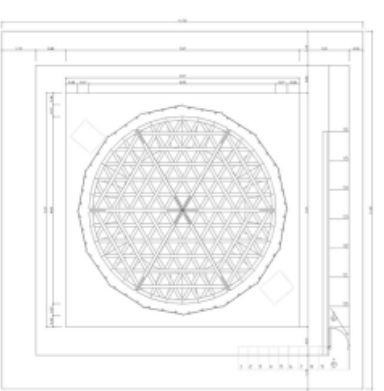
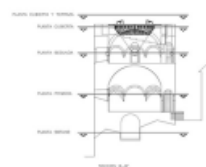
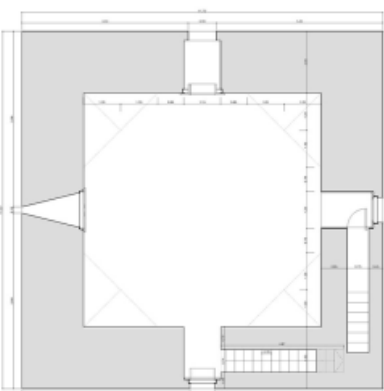
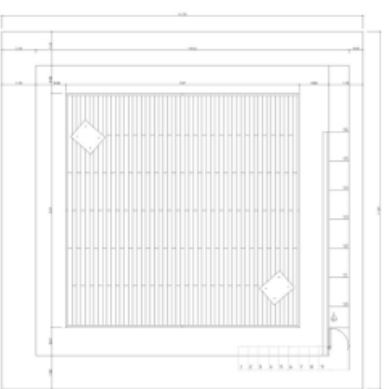
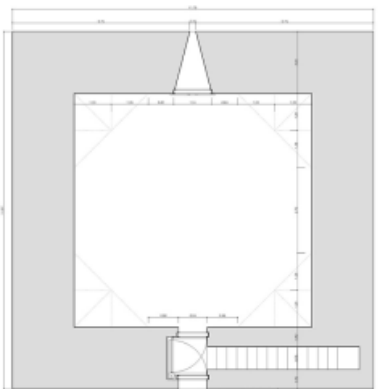
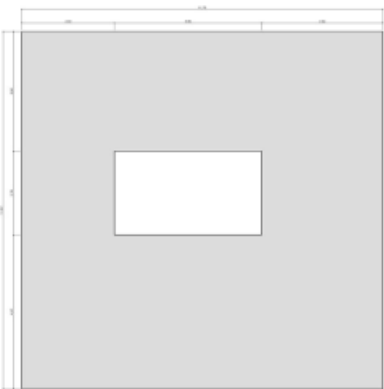
Budget: 603.278 €

Client: Consejería de Cultura. Junta de Andalucía

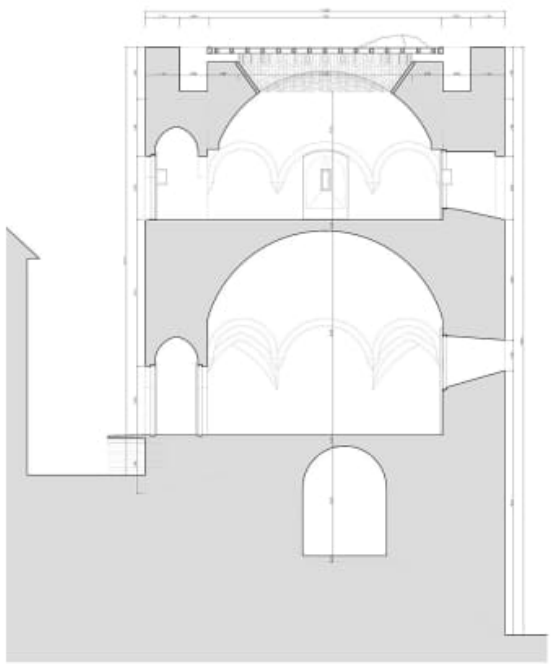
Collaborators: Jesús López Jiménez, Víctor Rejón Orellana, Jose Carlos Armesto Canalejo

Contractor: Hermanos Campano, Structure: Lanik

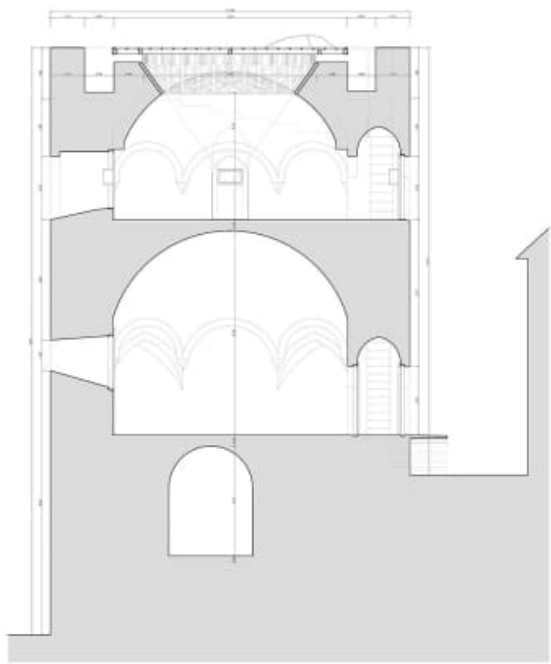




PROYECTO DE RECONSTRUCCIÓN DE LA TORRE DE SEÑAL DE LOS BARRIOS - PROYECTO DE CÁLCULO ESTRUCTURAL
 DATOS DE IDENTIFICACIÓN:
 PROYECTO DE CÁLCULO ESTRUCTURAL
 FECHA: 2024-10-20
 AUTOR: [Firma]
 REVISOR: [Firma]
 APROBADO: [Firma]



SECCION 4-4'



SECCION 5-5'

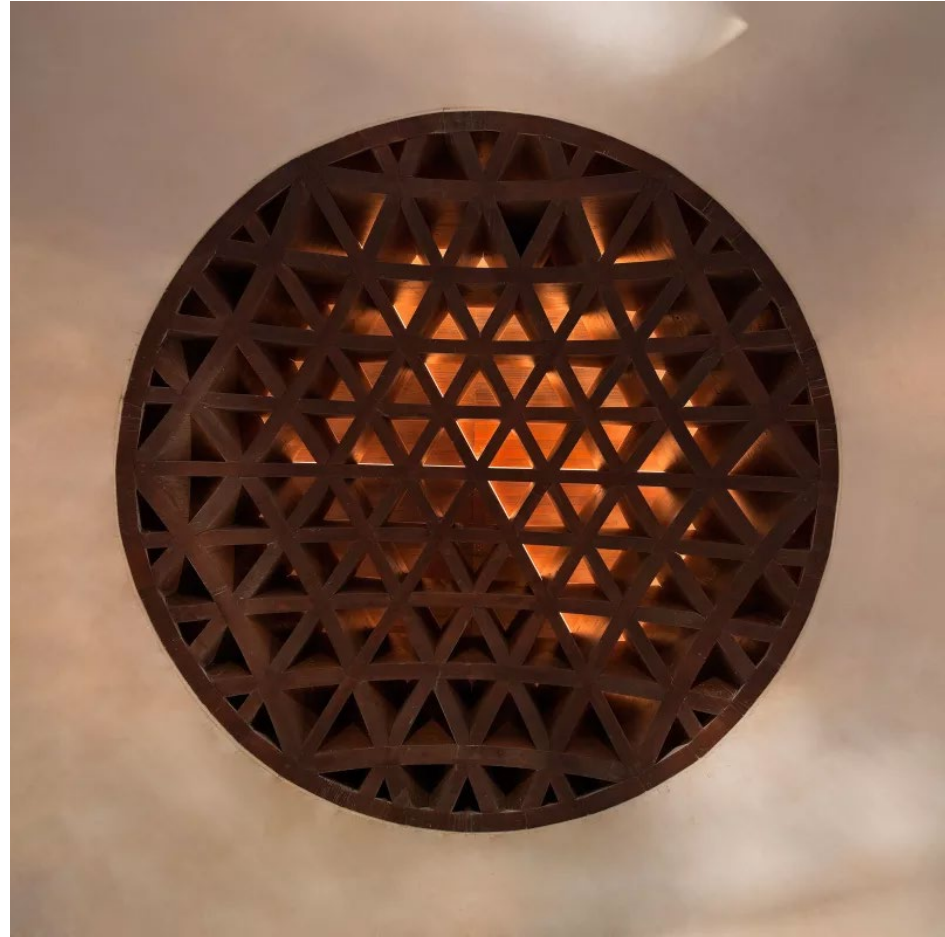


PROYECTO DE RECONSTRUCCIÓN DE LA TORRE DE SEÑAL DE LOS BARRIOS - PROYECTO DE CÁLCULO ESTRUCTURAL
 DATOS DE IDENTIFICACIÓN:
 PROYECTO DE CÁLCULO ESTRUCTURAL
 FECHA: 2024-10-20
 AUTOR: [Firma]
 REVISOR: [Firma]
 APROBADO: [Firma]









project: tower restoration in huercal-overa



architects: castillo-miras arquitectos (mercedes miras varela. luis castillo villegas). www.castillomiras.es

client: consejería de cultura de la junta de andalucía (andalusian regional government. department of cultural affairs).

location: huercal overa. almeria. spain.

project team: daniel lopez martinez. luis hervas lopez. **quantity surveyor:** luis hervas lopez.

structural engineer: satec ingenieros s.l.

lighting consultant: lledo s.l., **archaeologist:** entorno y vegetacion s.a.

contractor: construcciones j.lorenzo s.l., **photos:** fernando alda.

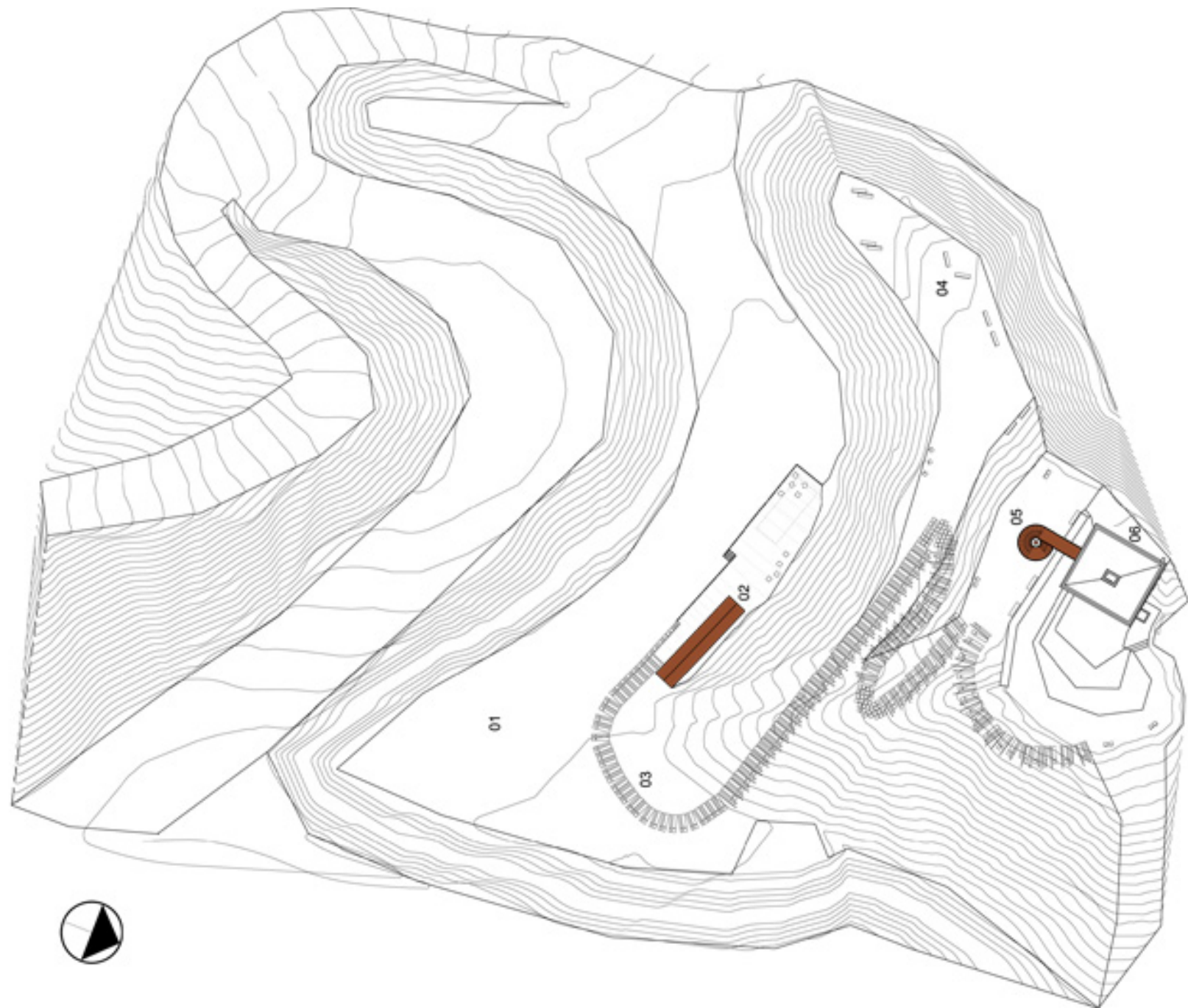
area of the whole intervention: 3483,47 m²., **costs:** 639.239,74 €

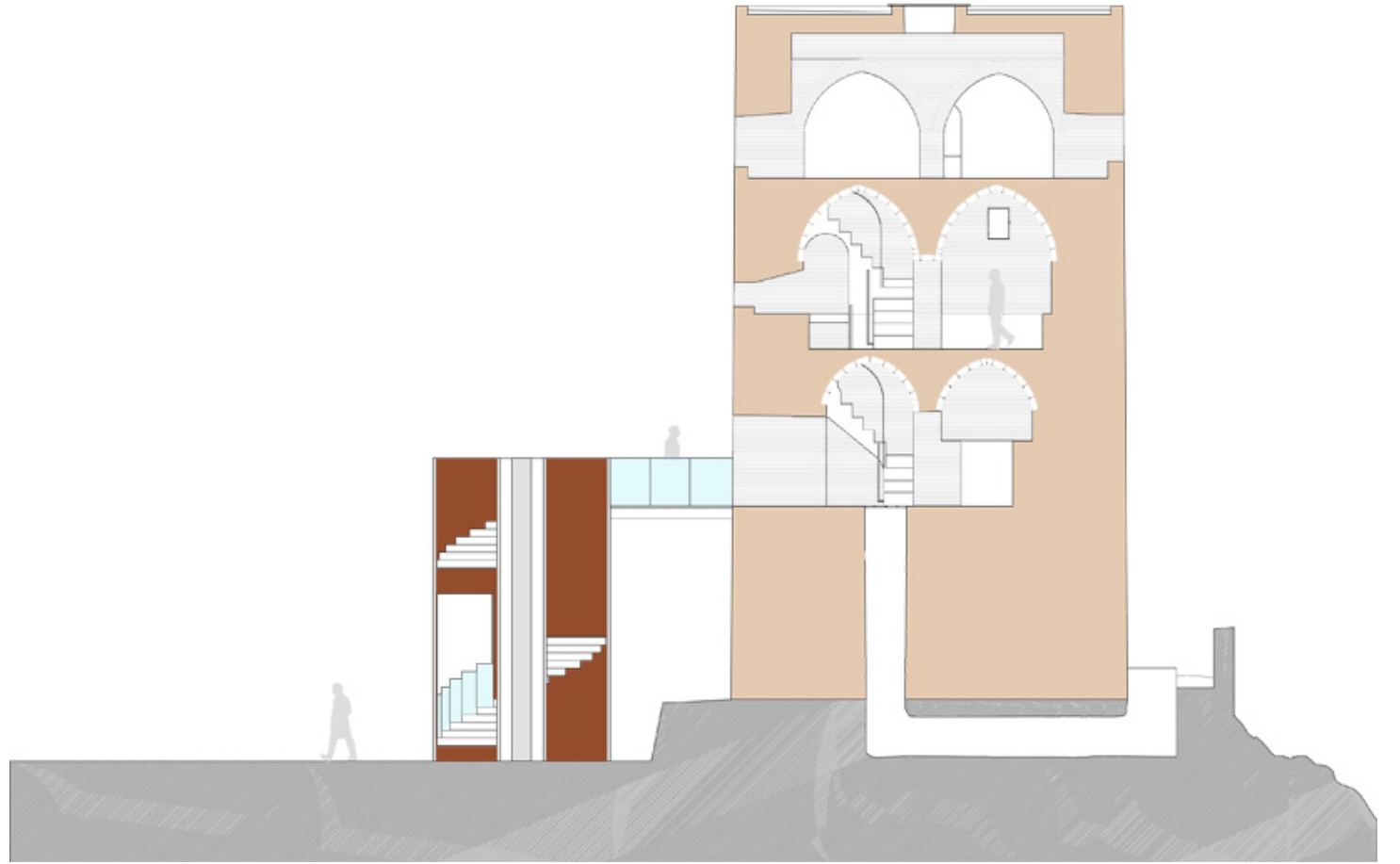
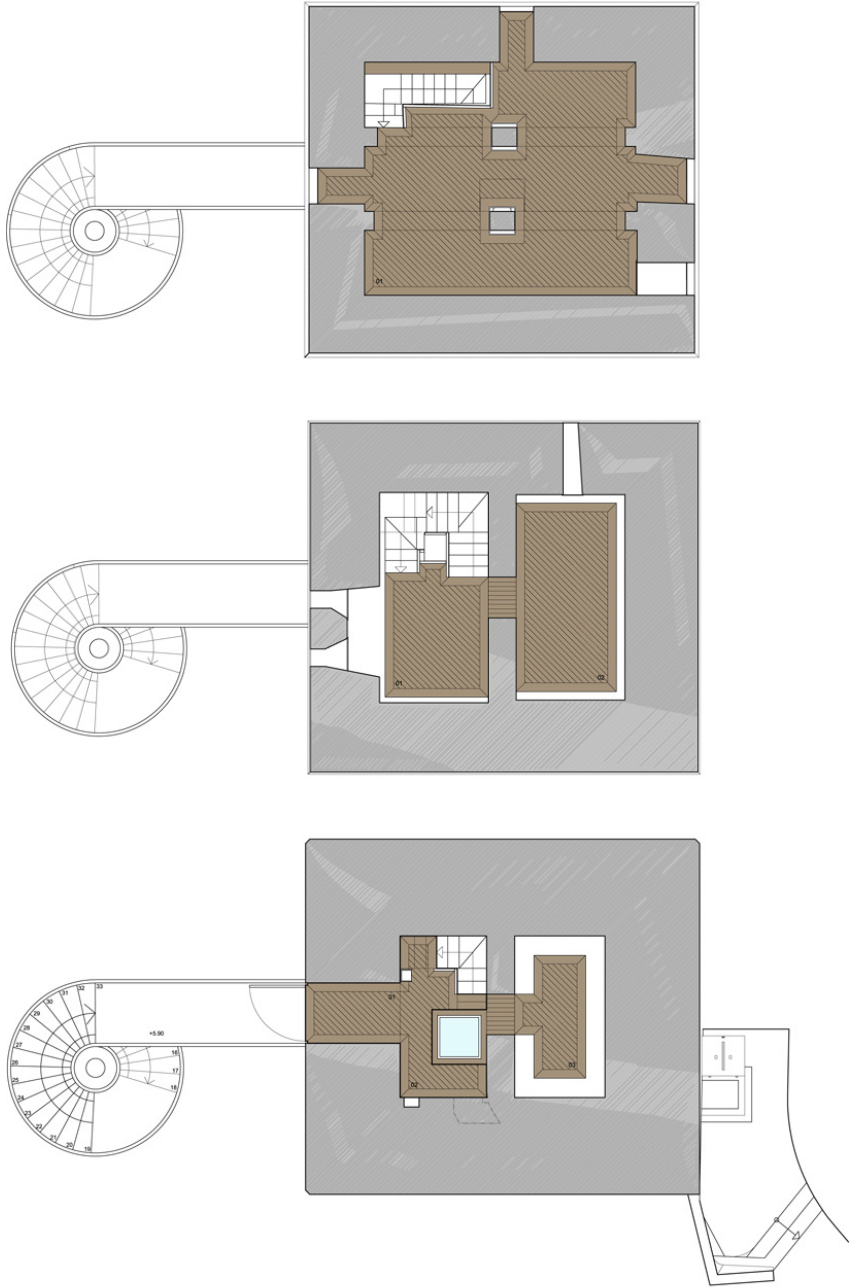
<http://www.designboom.com/architecture/castillo-miras-arquitectos-nazari-tower-restoration-in-huercal-overa/>

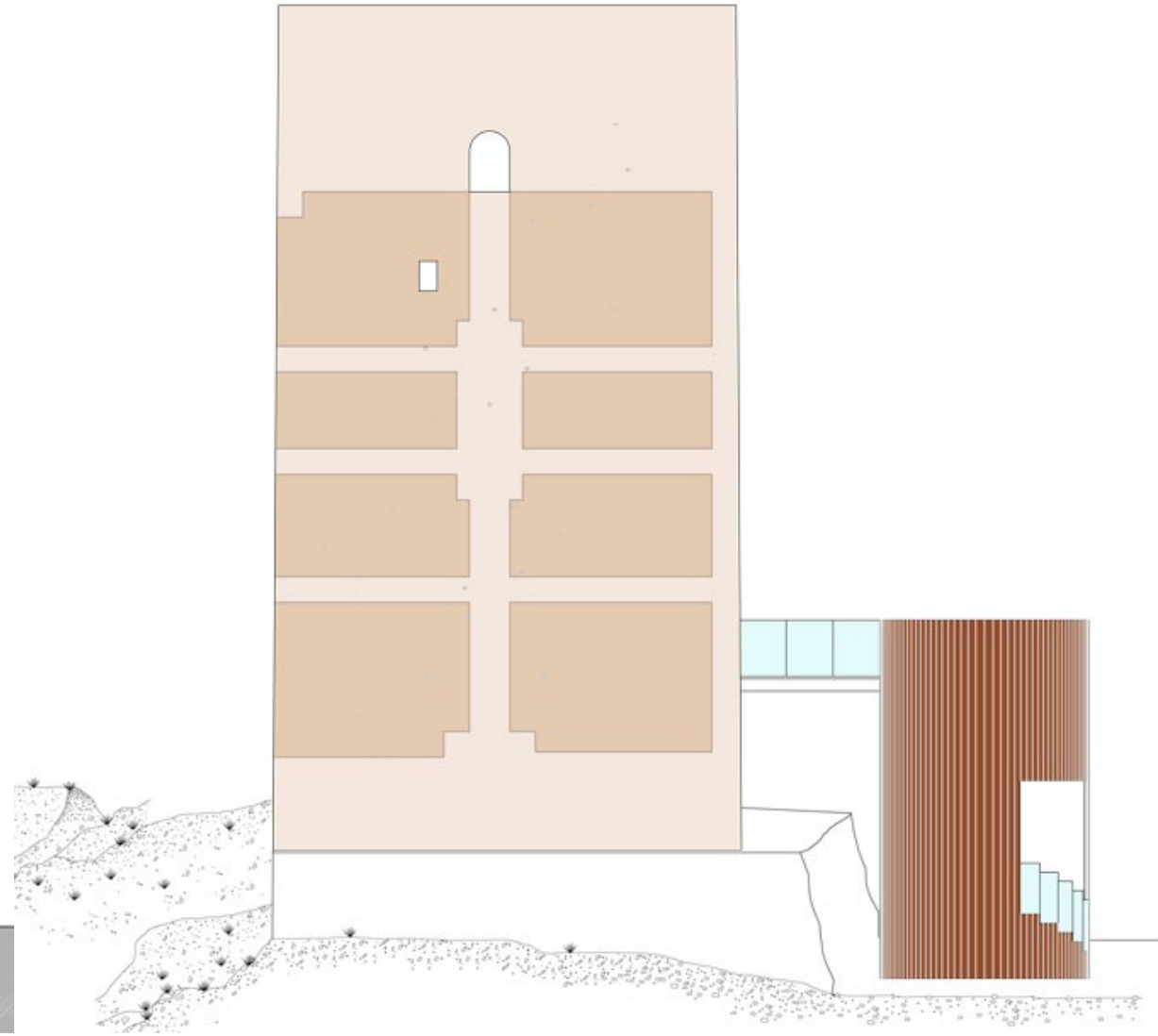
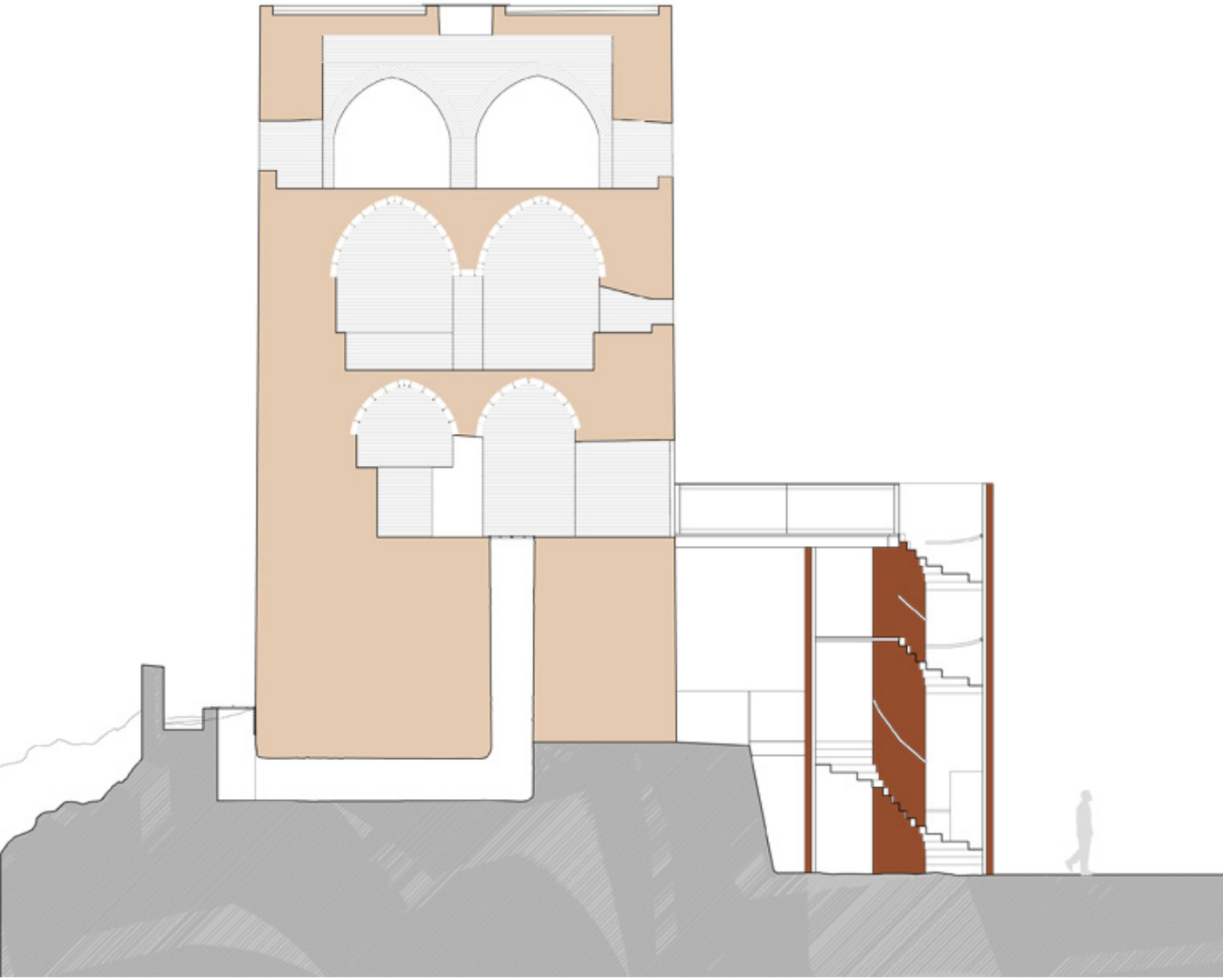


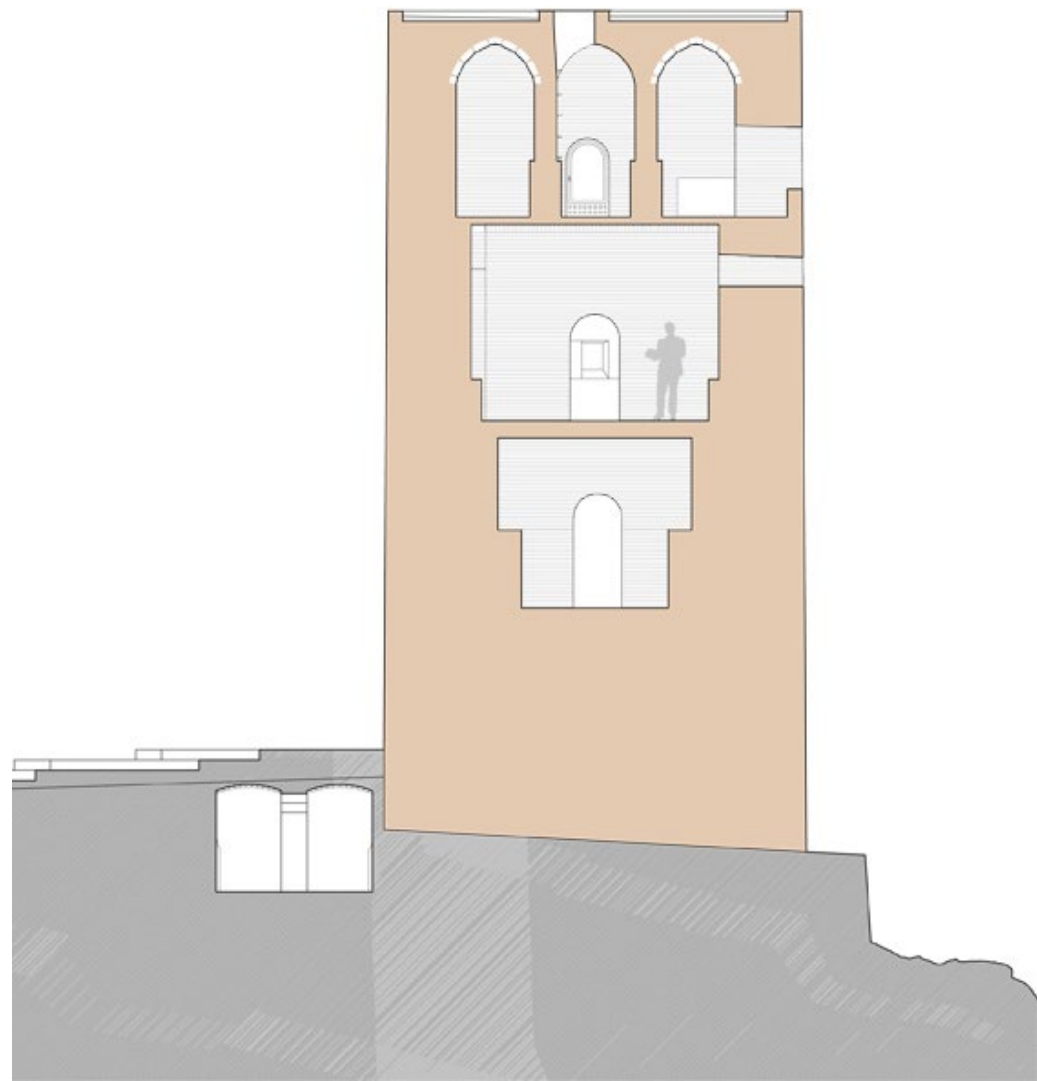
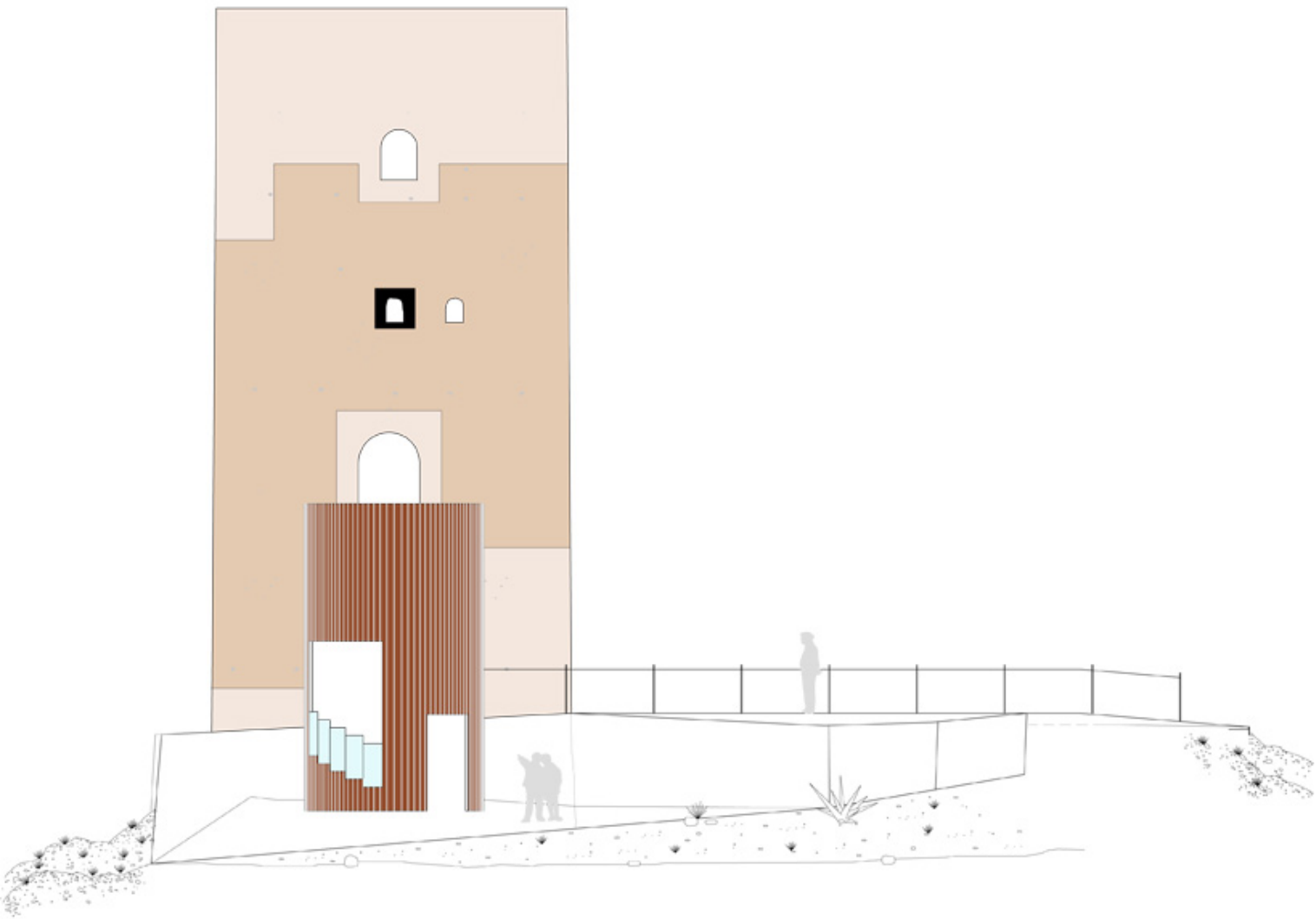
the original structure contained a staircase penetrating the hillside



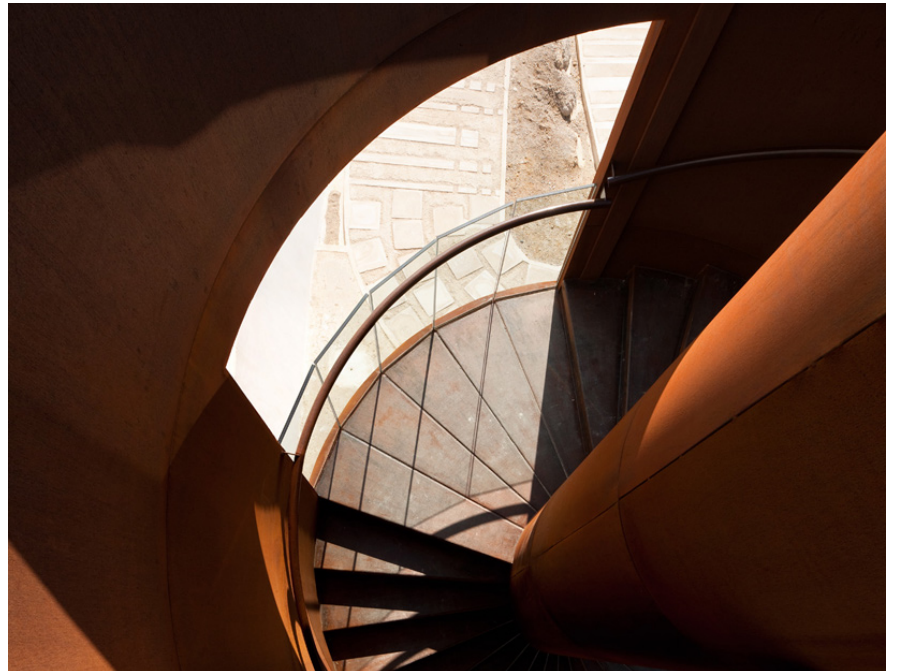




























Verona, Italia. Castelvecchio

Castelvecchio. Verona, Italy

Location

Castelvecchio is located in Verona, northern [Italy](#).

History

Castelvecchio (Italian: "Old Castle") was built on the probable location of a [Roman](#) fortress outside the Roman town of Verona, along with Castelvecchio Bridge ([Italian](#): Ponte di Castelvecchio) by the lord of the city [Cangrande II della Scala](#) in the mid 14th century. It is "the most important military construction of the [Scaliger](#) dynasty that ruled Verona in the [Middle Ages](#)". Damaged by French troops during the [Napoleonic Wars](#) (1796-1797) and turned into barracks under the [Austrians](#), Castelvecchio was heavily restored in 1923. The monument suffered major damages on April 24, 1945, when the retreating [German troops](#) destroyed the Castelvecchio Bridge. After the war the Bridge was totally reconstructed between 1949-1951 and the Castle was restored between 1959 and 1973. The famous Italian architect [Carlo Scarpa](#) (1906-1978) has been responsible for the restoration and the rehabilitation of the great monument. Since 1923 Castelvecchio is home to the Museo Civico di Castelvecchio which displays a collection of medieval sculpture and painting.

Description

Castelvecchio is located on the bank of the Adige River, the point where the medieval wall meets the river. It has a trapezoid shape in plan with a length 130 m and width about 60 meters. It «is powerful and compact in its size with very little decoration - one square compound built in red bricks, one of the most prominent examples of [Gothic architecture](#) of the age, with imposing M-shaped merlons running along the castle and bridge walls. It has seven towers, a super elevated [keep](#) (maschio) with four main buildings inside. The castle is surrounded by a ditch, now dry, which was once filled with waters from the nearby [Adige](#)». The castle consists of three parts. The north one and the larger includes a courtyard which from the north and west is closed by the north wing. The central section includes an enclosure witch secures the access to the bridge. The southern area includes a small courtyard and the south wing of the old castle.

Notes

The various buildings of Castelvecchio don't have the same historical and archeological value. The north wing is a building that emerged in 1923 by a radical overhaul of the barracks of the 19th century. Instead the ramparts and the south wing broadly maintain their original medieval structures and the authentic character. The interventions of Carlo Scarpa are very different of the various parts of the complex. In well-preserved medieval buildings the interventions are minimal and very subtle: mostly limited to the equipment of the museum. In altered by various recent interventions parts of the monument the interventions are very active and bold: the interiors of the buildings have almost completely reformed via new structures in order that new exhibitional spaces to be created. At the same time on the exterior of the buildings, as in the junction of the north wing and the wall of the bridge, has undergone radical interventions. These interventions have the characteristics of the architecture of the modern movement. As it has characteristically been noted: "Scarpa's unique [architectural style](#) is visible in the details for doorways, staircases, furnishings, and even fixtures designed to hold a specific piece of artwork".

Βιβλιογραφία

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Semes, Steven W., [2009] *The Future of the Past. A Conservation Ethic for Architecture, Urbanism, and Historic Preservation*, New York – London: W. W. Norton & Company

[http://en.wikipedia.org/wiki/Castelvechio_\(Verona\)](http://en.wikipedia.org/wiki/Castelvechio_(Verona))

http://en.wikipedia.org/wiki/Castelvechio_Bridge

http://en.wikipedia.org/wiki/Museo_di_Castelvechio



Ημερομηνία εικόνας: 9/9/2007

2003

45°26'35.51" Β 10°59'52.70" Ε ανύψ 67 μ

Google earth

Eye alt 5.59 χλμ



Ημερομηνία εικόνας: 9/9/2007 2003

45°26'25.52" Β 10°59'46.80" Ε ανύψ. 67 μ

Google earth

Eye at 2.27 χλμ



© 2012 Tele Atlas

Google earth

Ημερομηνία εικόνας: 9/9/2007 2003

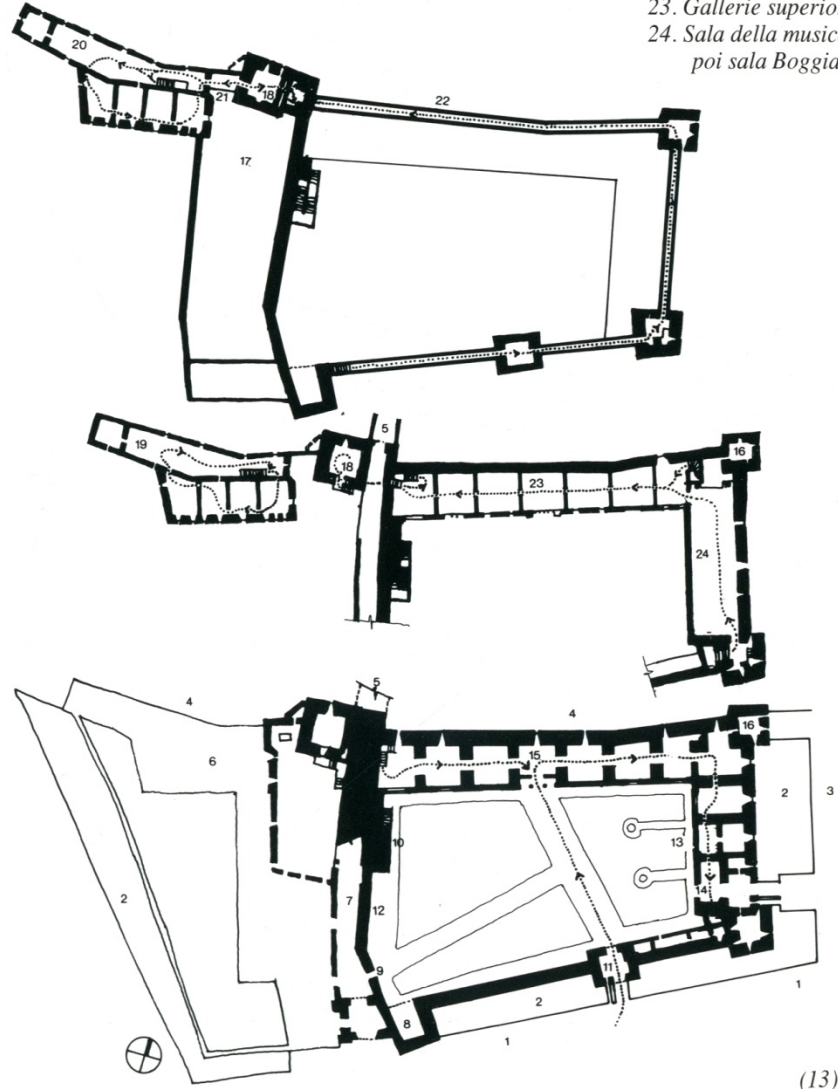
45°26'23.40" Β 10°59'15.66" Ε ανύψ 63 μ

Eye alt 400 μ





- Pianta e itinerario di visita del museo di Avena del 1926.*
- | | | | |
|----------------------------|------------------------------|------------------------------------|---|
| 1. Corso Castelvechio | 4. Il fiume Adige | 10. Scala napoleonica | 17. Cortile della Reggia |
| 2. Vallo esterno | 5. Il ponte scaligero | 11. Torre dell'ingresso principale | 18. Torre del Mastio |
| 3. Piazzetta Arco dei Gavi | 6. Pianterreno della Reggia | 12. Muro comunale | 19. Primo piano della Reggia |
| | 7. Strada al ponte scaligero | 13. Fontane | 20. Secondo piano della Reggia |
| | 8. Torre dell'orologio | 14. Entrata secondaria | 21. Vetrata |
| | 9. Entrata sud-ovest | 15. Entrata al museo | 22. I camminamenti |
| | | 16. Torre di nord-est | 23. Gallerie superiori |
| | | | 24. Sala della musica, poi sala Boggian |



(13)













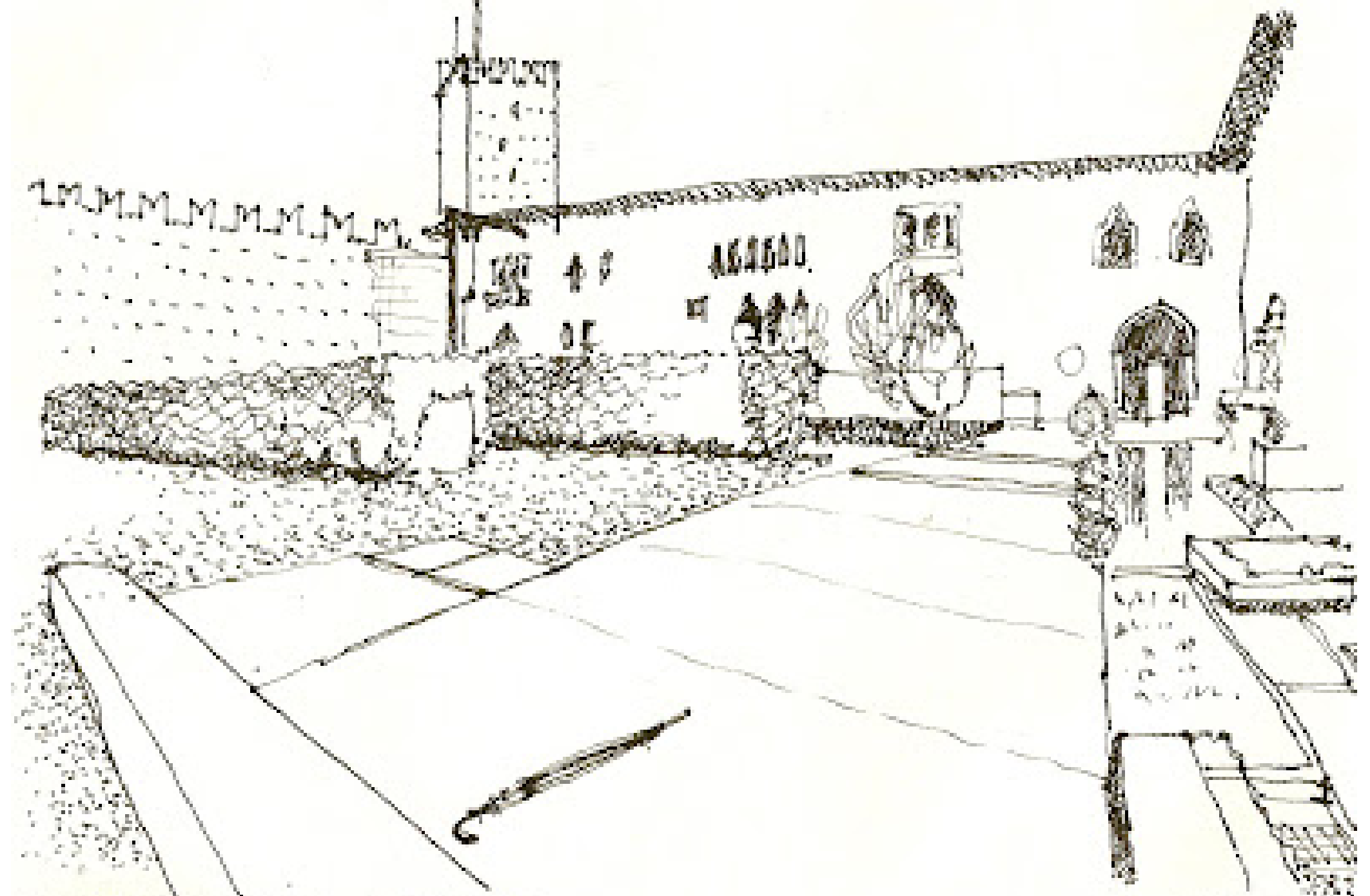






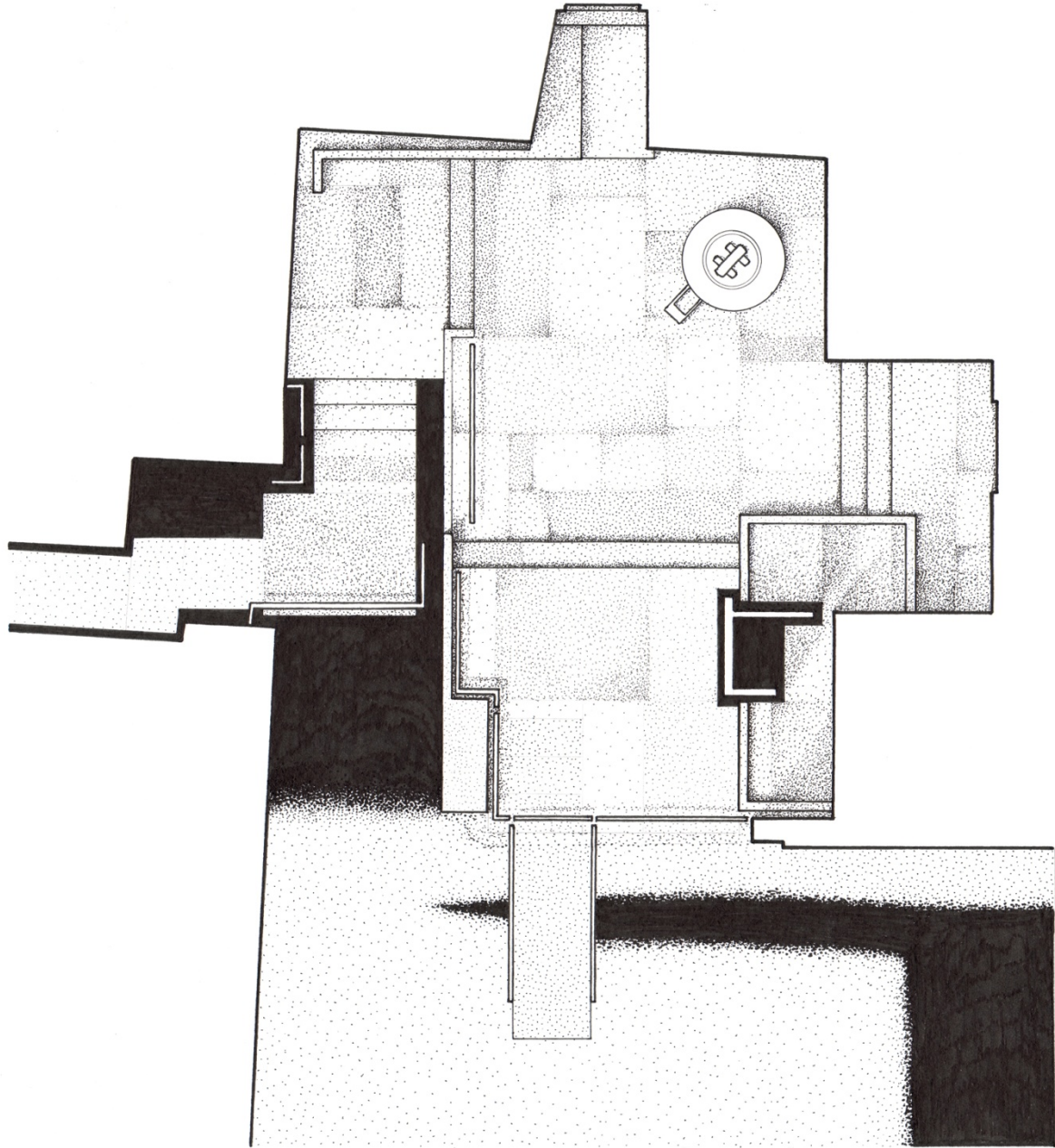






CASTELVECCHIO VERONA

13 11 92



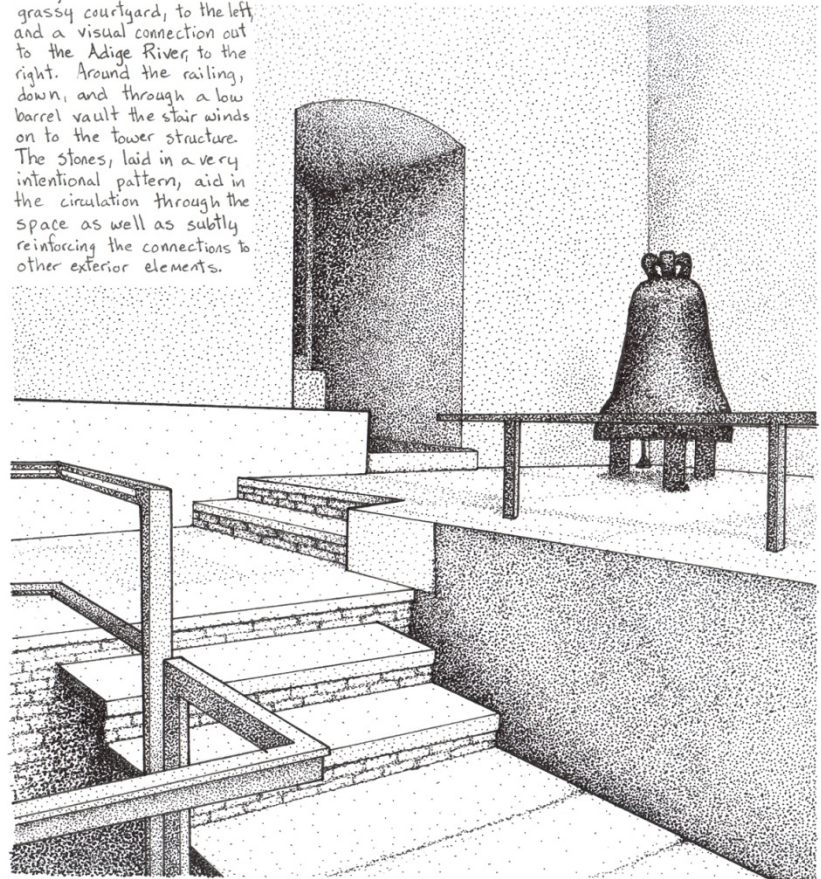
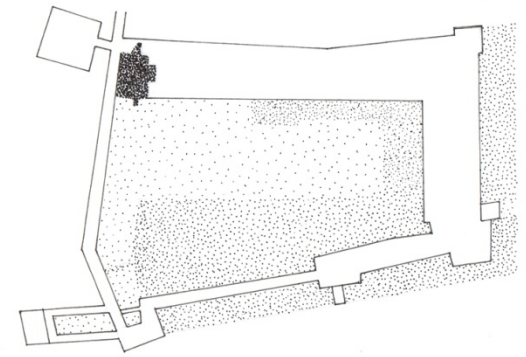
STONE STAIR

CASTELVECCHIO, VERONA

The exterior stone stair, known as "the link", connects the main building to the tower. The broad, gentle stairs transition over a shallow change in elevation.

This minimal vertical difference along with an indirect path and generous width of the stairs creates the feel of a space rather than a circulation zone.

This exterior space provides connections to other elements in addition to linking the two buildings. As you exit the main building, a low railing forces you either left or right. This allows a bridged connection to the grassy courtyard, to the left, and a visual connection out to the Adige River, to the right. Around the railing, down, and through a low barrel vault the stair winds on to the tower structure. The stones, laid in a very intentional pattern, aid in the circulation through the space as well as subtly reinforcing the connections to other exterior elements.





















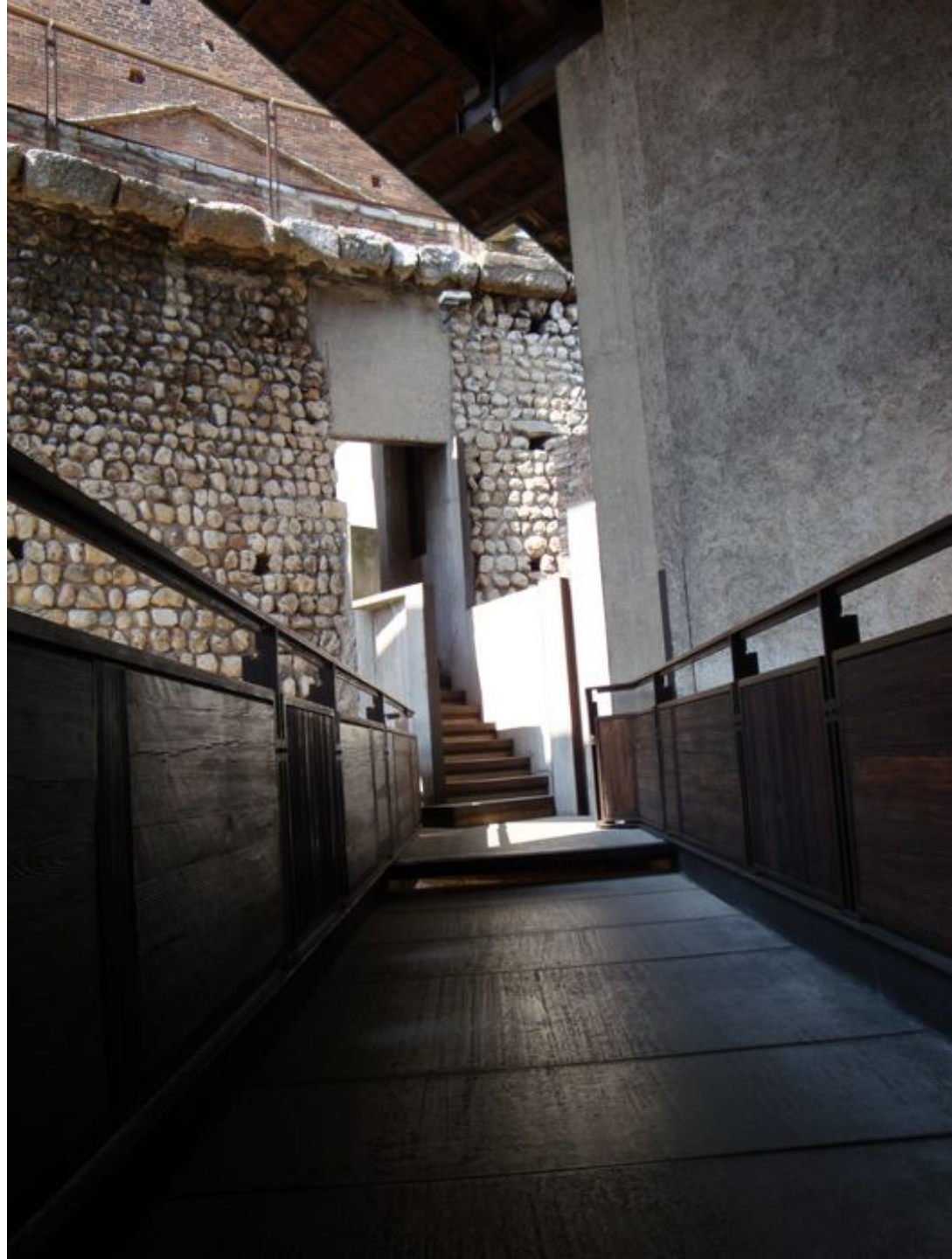














































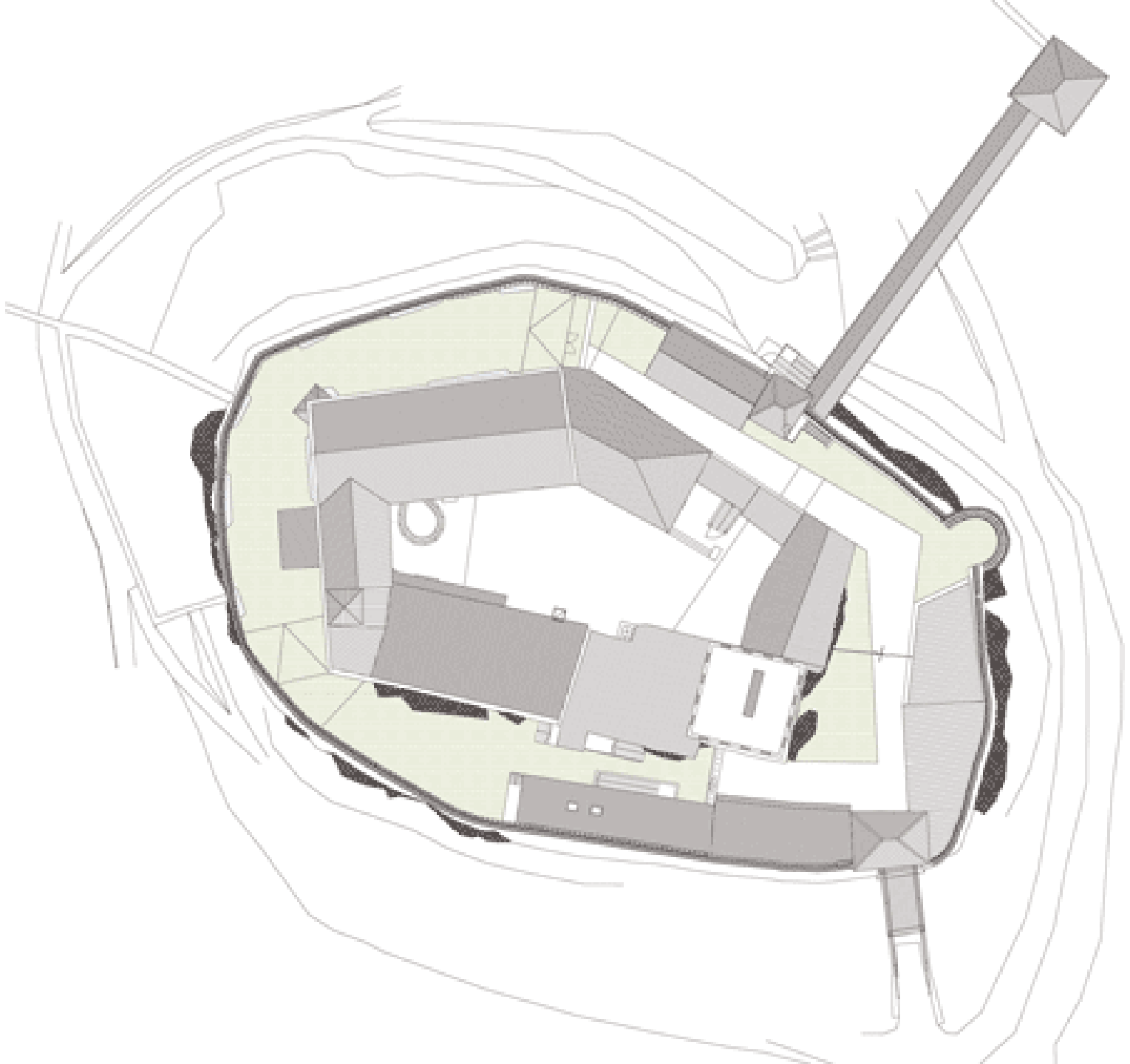
ITALIA-Messner Mountain Museum

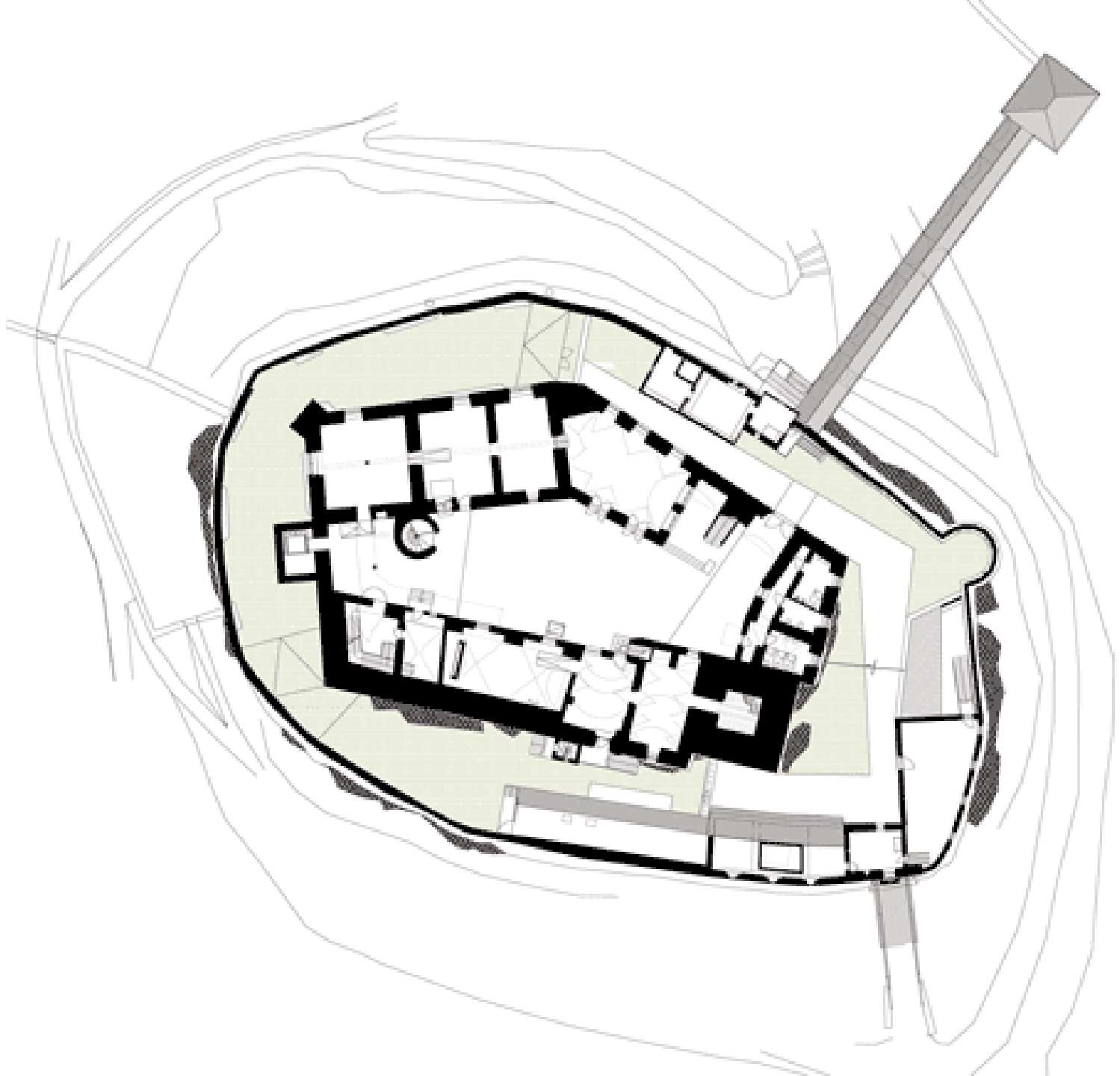
ITALIA-Messner Mountain Museum

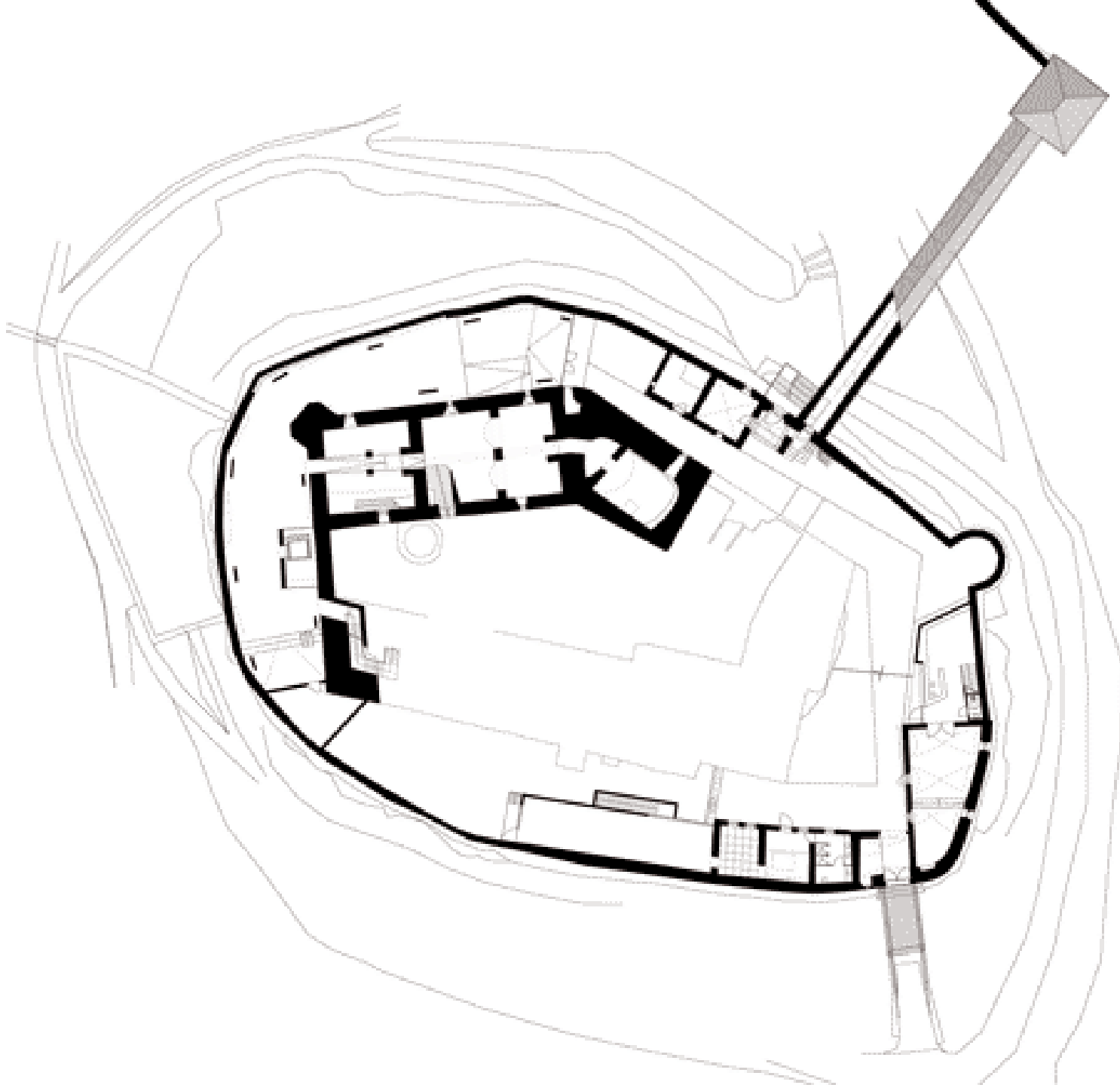
<https://www.dezeen.com/2011/07/08/messner-mountain-museum-by-em2/>

The architects left the exterior untouched but constructed several new rooms in unfinished timber, added wooden staircases inside and opened up the basement.

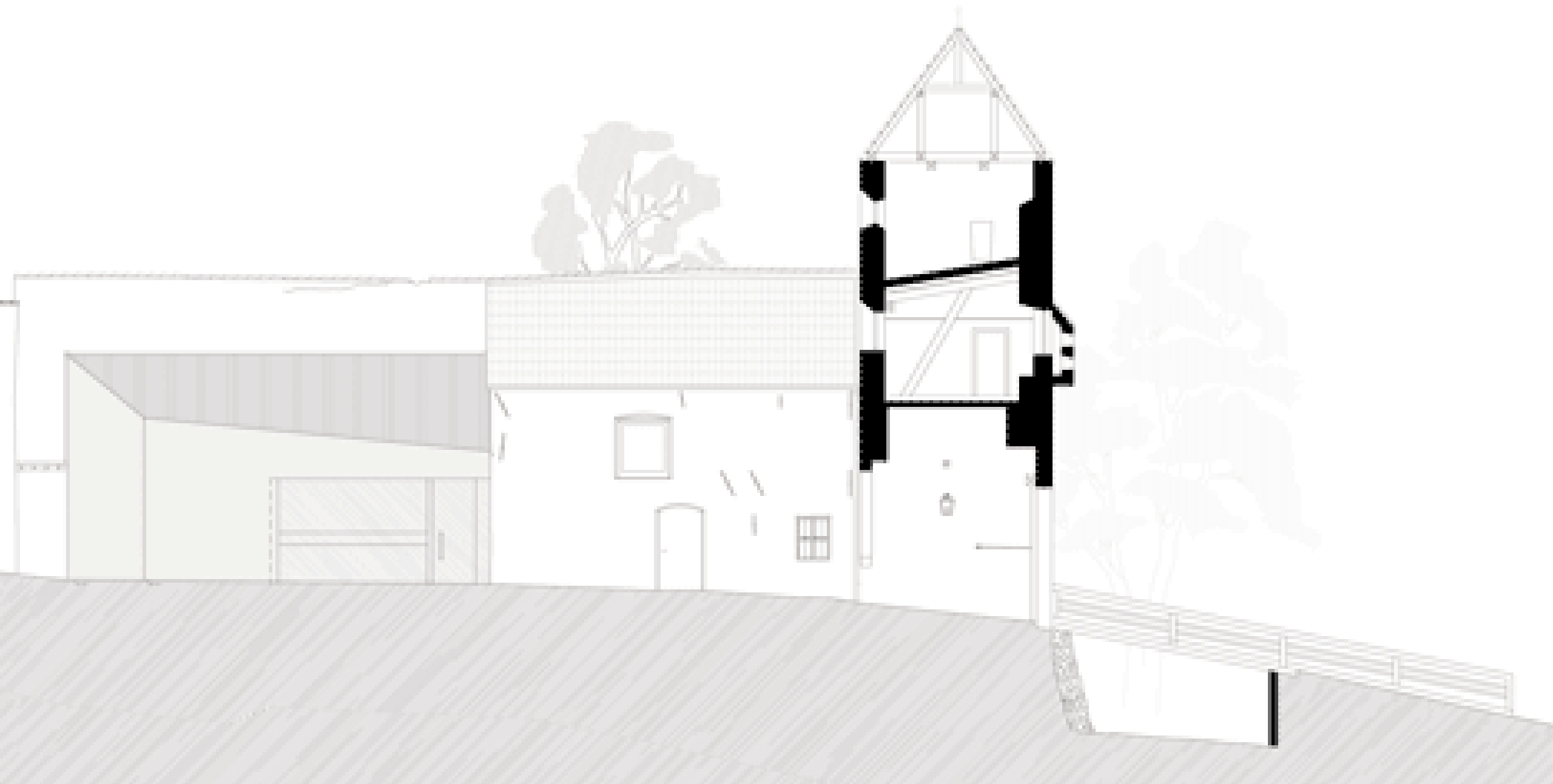
Located in the Alps, the [Messner Mountain Museum](#) houses a permanent exhibition about people who live in mountainous regions around the world.

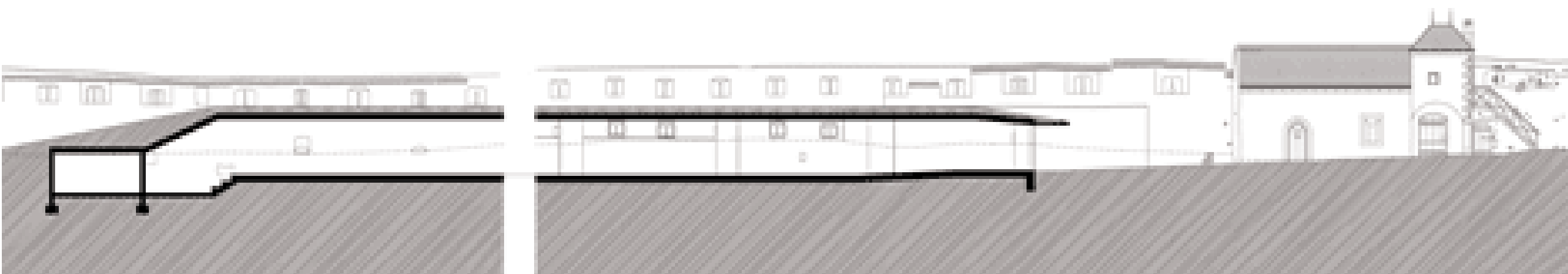






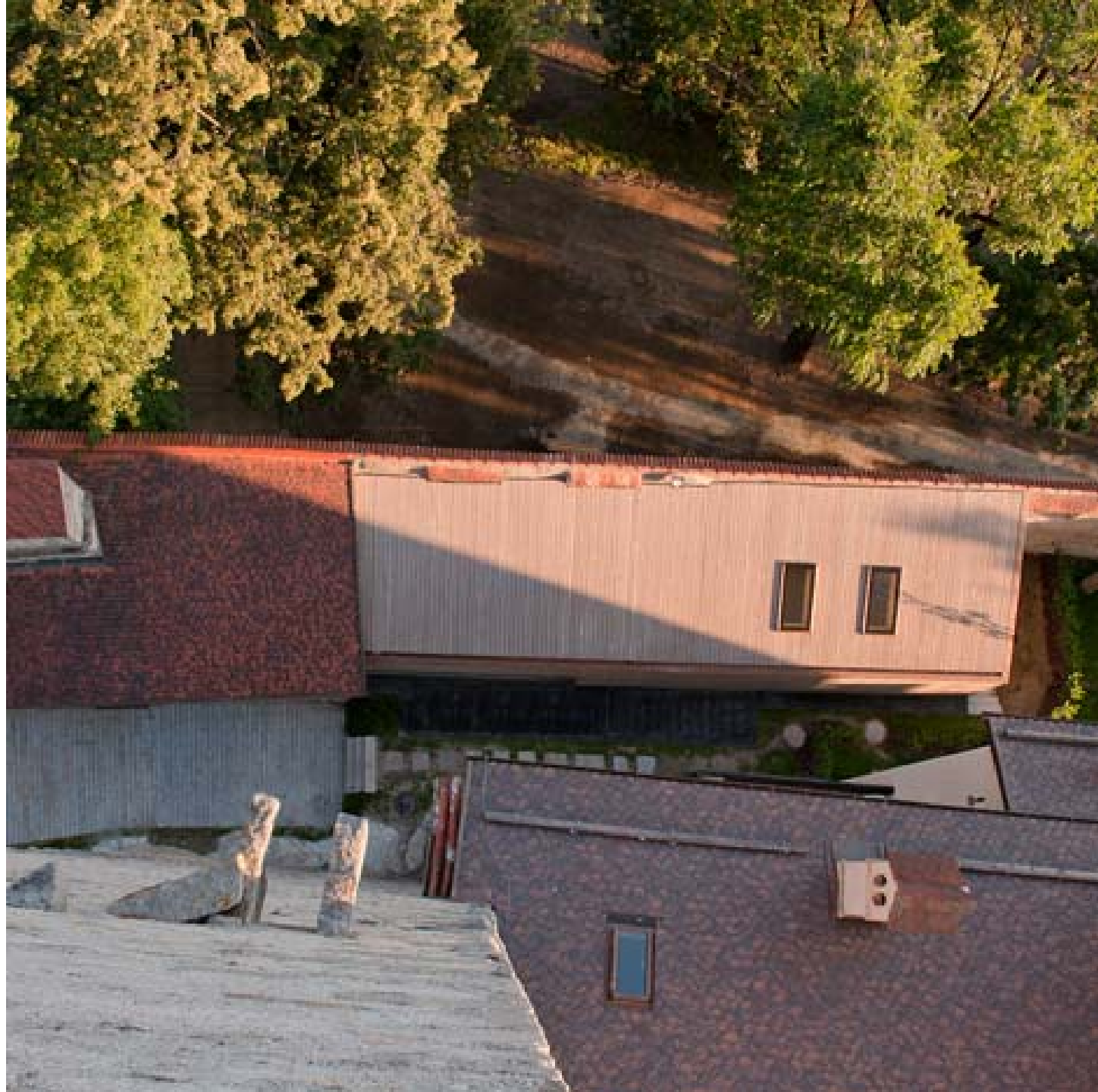


































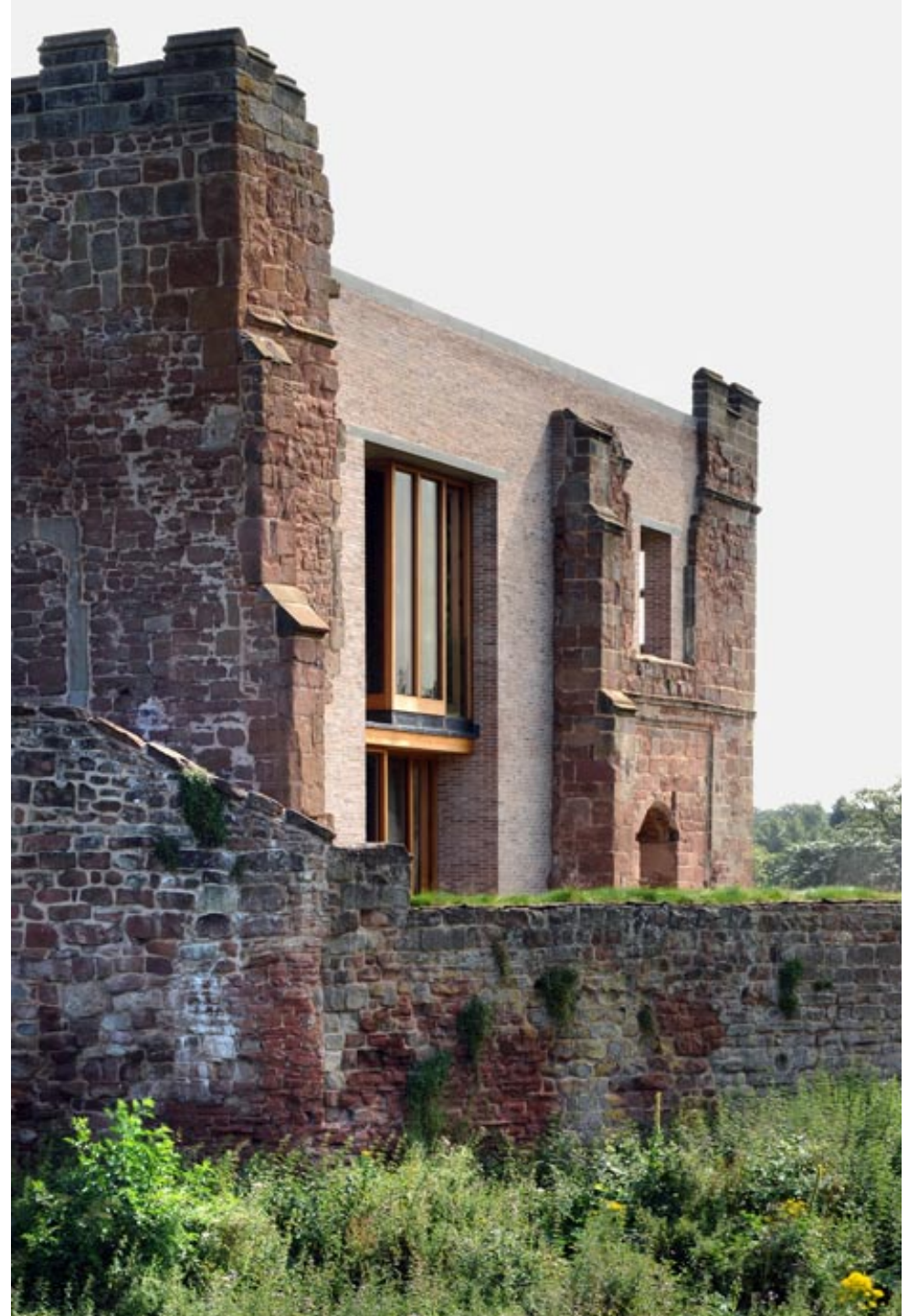






ΑΓΓΛΙΑ (UK)-Astley Castle

A contemporary house inserted into the
twelfth-century ruins of Astley Castle





A contemporary house inserted into the twelfth-century ruins of Astley Castle in Warwickshire by Witherford Watson Mann has won the RIBA Stirling Prize 2013 for the greatest contribution to British architecture in the last year.

This is the first time London studio Witherford Watson Mann has been nominated for the prize, which is awarded annually by the RIBA to a building designed by a UK-registered architect. It is the first house and the first restoration project to win the award in its 18-year history.

The two-storey residence squats within the chunky sandstone walls of the abandoned mediaeval castle, creating a holiday home for up to eight guests.

A new system of wooden floors and ceilings creates living areas and bedrooms in the oldest part of the building, while extensions added in the sixteenth and eighteenth centuries are now used as entrance courtyards.

"It's an extreme retrofit in many ways," said RIBA president Stephen Hodder. "It sends out great messages about conservation."









main hall exemplifying moments of the new intervention and the old construction

















bricks follow the uneven wall lines of the original masonry walls

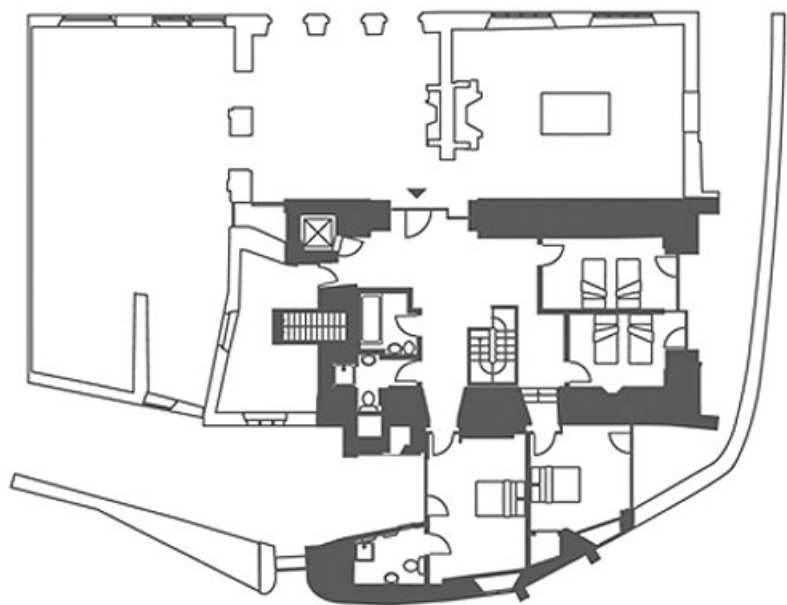












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