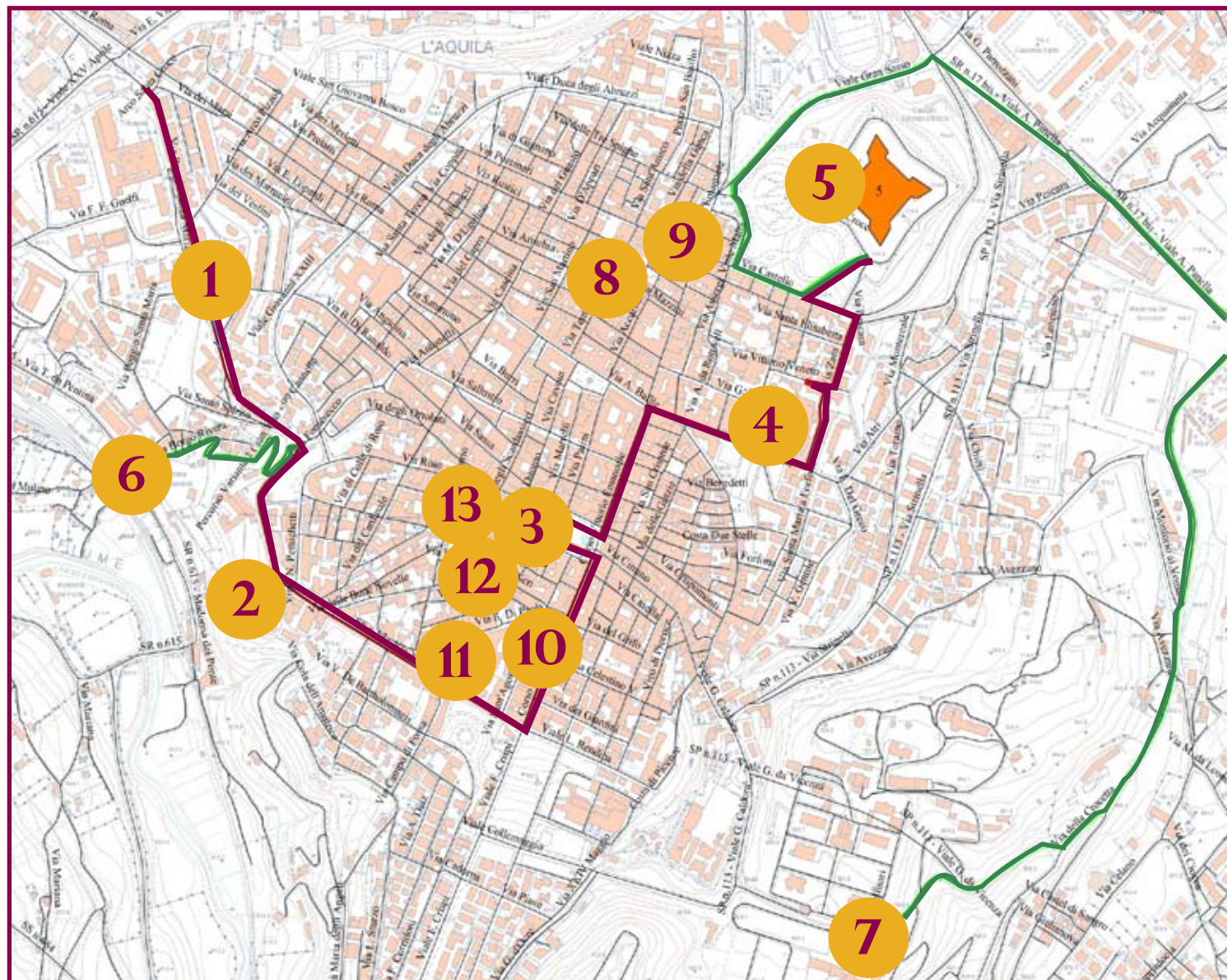




ABRUZZO THE EARTHQUAKE IN L'AQUILA

Itinerary among the most significant buildings damaged by the earthquake



Map of L'Aquila

legend

— main itinerary
— route changes

- | | |
|---|--|
| 1) 123 XX Settembre street | 7) Church of S. Maria of Collemaggio |
| 2) Student's Lodging | 8) Church of S. Maria Paganica |
| 3) Church of Santa Maria del Suffragio (Anime Sante) | 9) Ardinghelli Palace |
| 4) Church of San Bernardino | 10) Church of S. Agostino |
| 5) Spanish Fortress | 11) Prefecture Palace |
| 6) Church of San Vito alla Rivera and "99 tap" fountain | 12) Church of S. Marco |
| | 13) S. Massimo Cathedral and Archbishop's Palace |

Historic and artistic description

There had been a four-storey building with 8 apartments in a group of former low-rent tenement houses at 123 XX Settembre Street.



quake damage

Collapse of reinforced concrete pillars and ceilings, followed by the collapse of the entire structure.

fire service operations

The collapse of reinforced concrete pillars and ceilings, built one on top of the other, had trapped six people.

The search for the victims was immediately started employing USAR (Urban Search and Rescue) techniques and the assistance of canine units.

This allowed the quick extraction of an elderly woman, living on the top floor, (she had been sheltered by a truss) and, above all, to detect Francesca a young woman, aged 21, who was able to maintain vocal contact with the rescuers.

To reach the woman, fire-fighters had to dig a trench more than 10 metres long and 3 metres deep, until rescuers could see a lock of Francesca's hair, pinpointing her position under the rubble.

Francesca was trapped under a concrete beam. Using lifting cushions and sawing through a wooden bracket pressing upon Francesca's back, fire-fighters managed to free her.

At 5 p.m. of April 6, Francesca was pulled alive from the rubble. She was in good condition, with only a fractured clavicle and some scratches.

The remaining four missing people were later found dead under the rubble.



STUDENT'S LODGING

Historic and artistic description

The Student's Lodging in XX Settembre Street was one of the university dormitories run by the Azienda per il Diritto allo Studio Universitario (Association for the Right to College Education) in the city of L'Aquila. The dorm hosted fellowship students and students participating in educational exchange programmes (Socrates, Tempus, etc.). The dorm was a four-storey reinforced concrete building.



quake damage

*Collapse of a wing of the building.
Extensive damage to the other wing.*



fire service operations

The scene facing the fire-fighters was particularly grim. They were convinced that there were students trapped under the rubble and there was a sequence of aftershocks that might cause further collapses, involving the rescuers as well. The Fire Service teams worked four days in a row without interruption to detect and rescue survivors and later to recover the bodies of the young victims.

USAR (Urban Search and Rescue) techniques were used to detect victims trapped at various sites and at differing depths. Therefore, it was necessary to open new access ways through the rubble, both from the top and bottom of the heap of debris, passing through the cafeteria in the basement.

Operations were characterized by different stages:

First, shoring of existing openings and removal of rubble by means of mechanical and pneumatic equipment and crane lifts to lift large concrete slabs.

Second, propping and shoring of detached sections.

Third, removal of debris by hand or with small portable equipment.

Seven students were rescued. The last one was Marta, a young woman aged 24, pulled alive from the rubble after 22 hours. Tragically, ten other students were found dead. At the end of rescue operations, fire-fighters had to demolish unsafe sections of the building by means of FS vehicles called GOS – Special Operational Groups (earth moving machinery, heavy duty vehicles).

CHURCH OF S. MARIA DEL SUFFRAGIO

3

Historic and artistic description



The Church of Santa Maria del Suffragio (called Church of Anime Sante by locals) overlooked the main square of the city and became its focal point due to the elegant and imposing Baroque features of the façade.

The Church was built in 1708 after the 1703 earthquake had destroyed the prior chapel located in via Roio. The Baroque façade was completed in 1775, and the dome was added by Valadier in 1805.

quake damage

Collapse of drum, dome and lantern. Collapse of projections such as veil, spire, pinnacles, etc. Extensive damage to the triumphal arch. Extensive damage, near to the collapse, to roofing elements of presbytery and apse.



fire service operations



Recovery of important works of art dating back to the 17th and 18th century. Thanks to advanced laser technology, it was possible to develop a restoration project for the collapsed sections of the dome by using steel trusses. The SAF (high angle rescue) teams installed reinforcement rings around the dome, in order to prevent further structural detachments, and strengthened the drum windows. After these preliminary safety measures were taken, it was possible to install the "spider", a metal structure with eight extendable arms, inside the dome.

CHURCH OF SAN BERNARDINO

4

Historic and artistic description

The San Bernardino Church was built between 1454 and 1472, but it was all but razed by a catastrophic earthquake in 1703. Its façade consists of three orders of columns in the different classical styles (Doric, Ionic and Corinthian) and was designed by Cola dell'Amatrice in 1540. The second chapel of the right aisle presents a valuable altar-piece by Andrea della Robbia, a Madonna in polychrome terracotta. The body of the Saint is placed in the mausoleum built by Silvestro dell'Aquila, pupil of Donatello, now a place of pilgrimage.



quake damage

Collapse of belfry, extensive damage to dome drum. Severe cracks in the apse and on longitudinal walls. Cracks also in the adjacent convent and barracks.



fire service operations

Recovery of important works of art, mainly paintings of the 18th century, and removal of the valuable altar-piece by Andrea della Robbia and a Virgin with Child by Silvestro dell'Aquila.

The fire-fighters also removed the relics of the Saint, who was buried in the church in 1444. Later the church was secured by means of provisional measures and the only wall of the bell tower left standing was shored up with wooden props.

The dome drum was strengthened by reinforcement rings. Parts of columns and stones fallen on the roof of the adjacent convent were recovered for future restoration work.



SPANISH FORTRESS

Historic and artistic description



The Spanish Fortress was built in 1401 on the highest spot of the city where a stronghold already existed. All around the fortress was a ditch 23 metres wide and 14 metres deep, to be filled with water in case of an emergency. The ditch is now crossed by a 4-arch stone bridge that had replaced the old wooden drawbridge in 1846. Each side is 130 metres long.

The fortress is made of four bastions connected through massive walls that are 10 metres thick at the bottom and 5 metres thick at the top. The

castle underwent a total restoration in compliance with heritage protection rules and was chosen as the seat of the Museo Nazionale d'Abruzzo with sections dedicated to archaeology, sacred art, numismatics, modern and contemporary art. It also housed some scientific and cultural institutions, among which the National Institute of Geophysics and the National Research Centre (CNR).

quake damage

Partial collapse of ceilings and of entrance wall top. Severe cracks on vertical walls, overturning of open gallery and ground floor pilasters. Extensive damage to the collections of the National Museum of Abruzzo.



fire service operations

Removal of the collections of the National Museum. Securing of the more damaged sections of the castle by means of steel tie beams (i.e. the entrance wall and the imposing inner open gallery).

Cranes able to lift 100 tons were used to install heavy steel beams and to remove unsafe sections of a reinforced concrete roof.

In order to ensure safe access to inner premises during future restoration works, wooden containment structures – called tortoise – were built.



CHURCH OF SAN VITO ALLA RIVERA

Historic and artistic description

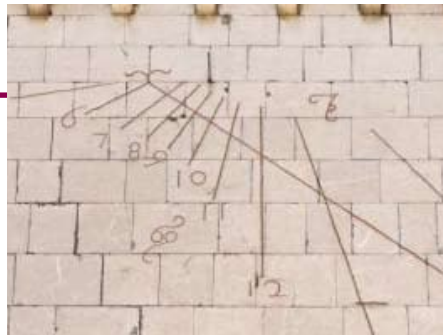
The small Church of San Vito lies near the "99-tap Fountain", close to the Rivera Gate. The church dates back to the 13th century and has a beautiful Romanesque portal.

On the façade there is a sundial with French hours, particularly interesting for the fans and experts of gnomonics.



quake damage

Collapse of the top of façade and overturning at the top.



fire service operations

Recovery of collapsed façade elements and detachment of unsafe sections.

The damaged roof was protected with a waterproof covering, to prevent rain damage.

Due to the value of the sundial engraved in the stone, all fragments were carefully numbered to allow the sundial's restoration.



The church destroyed by the tremor. Above: the firefighters covering the roof of the church and a detail of the sundial. At the top: the Church of San Vito before the earthquake.

CHURCH OF S. M. OF COLLEMAGGIO

7

Historic and artistic description

According to tradition the basilica was built on a hill where the hermit Peter from Morrone dreamed of the Virgin Mary. In 1294 the basilica was the site where Peter from Morrone was consecrated pope Celestine V.

The Holy Door is located in the left wall of the church. In the lunette, beneath a stone eagle symbol of the city, there is a 14th century fresco showing the Virgin with Child, Saint John the Baptist and the Pope Celestine V.



quake damage

Collapse of transept vaults, triumphal arches, drum, dome and transept roof. Extensive damage, near to collapse, to presbytery, apse and related roof elements. Moderate damage to bell tower and projections.



fire service operations

Working among huge heaps of rubble inside the church, fire-fighters managed to salvage the relics of Saint Celestine V and those of another Blessed one.

Several works of art were removed from the church: paintings, statues, altar-pieces. One of the most precious works of art was a sculpture in polychrome terracotta by Saturnino Gatti, dating back to the 16th century and depicting the Virgin with Child.

Moreover, the 15th century frescoes inside the church were also protected.



CHURCH OF S. MARIA PAGANICA

8

Historic and artistic description



The church of Santa Maria Paganica was built in the 14th century. After the devastating earthquake of 1703 it was rebuilt and enlarged. The Romanesque façade is preceded by a flight of stairs with an inscription reporting the date of 1308. The central door is magnificent thanks to its rich decoration and particular design. The lunette contains a statue of the Virgin with Child, while some bas-reliefs portraying Christ, the Redeemer, among other Saints can be admired on the lintel. A grotesque mask is fixed to the apse outer wall. The mask sticks out its tongue as admonition against curses.

quake damage

Collapse of dome and drum, collapse of the vaults of the chapels. Collapse of side wall roofs. Collapse of architectural elements of the hall. Extensive damage, near to collapse, to the top of façade. Severe cracks in the central nave and side aisles. Severe cracks in the triumphal arches and in the apse. Detachment of façade from side walls and overturning at the top.



fire service operations

Removal of all works of art inside the church. Recovery and classification of the fallen ashlar belonging to the main portal. Securing of the top section of the left corner with polyester bands.

ARDINGHELLI PALACE

9

Historic and artistic description

Ardinghelli Palace, one of the most famous private houses in L'Aquila, is sited in via Roio and overlooks the square of Santa Maria Paganica. The Palace, commissioned by a rich Tuscan family and designed by Fontana in the 17th century, was built between 1732 and 1742.

In April 2008 it was purchased by the Ministry of Cultural Assets and Activities to house the Directorate for Cultural and Environmental Assets of Abruzzo.



quake damage

Extensive damage to bearing structures. Severe cracks and partial collapse of façade projections and decorations.



fire service operations

Recovery and classification of cut stone fragments fallen from the main balcony. The area surrounding the palace has been cordoned off.



CHURCH OF SANT' AGOSTINO

10

Historic and artistic description

The church was built according to a project of Ferdinando Fuga after the complete collapse of the original 13th century church in 1703. The façade is divided into three parts by pilasters, with niches and balusters as horizontal crowning, and is dominated by an impressive octagonal dome.



quake damage

Collapse of the lantern. Extensive damage, near to collapse, to the dome. Severe cracks on longitudinal walls and on the façade. The precious works of art inside the church were damaged as well.



fire service operations

The SAF (high angle rope rescue) teams secured the dome by means of steel reinforcement rings, strengthened the belfry veil and removed the unsafe sections of the lantern which still hung ominously over the building beneath.



PREFECTURE PALACE

Historic and artistic description

In 1282 the bishop of L'Aquila authorized the Augustinian friars to build a convent in the area close to Saint Mark square. During the centuries the original building underwent many changes. It was used as a theatre and then as "Palace of the Government" (i.e. the seat of the Prefect, Head of the Province administration).

It is still possible to identify the original convent design in the current layout of the premises. The courtyard is flanked by Doric fluted columns, similar to those supporting the balcony above the main entrance. The columns refer to the wooden columns of the "Olympia" theatre by Palladio in Vicenza. The neoclassical façade dates back to 1820.



quake damage

The building collapsed except for the ground floor, also seriously damaged



Recovery of the painting "Bestie da soma" by Teofilo Patini



fire service operations

Inside the building there were not only valuable paintings, but also all files and historic documents concerning the administrative life of the city and the province. The salvage of the documents stored in the Archive of State was carried out after the archive premises had been secured. Securing activities: removal of the rubble on the ceilings, shoring of premises and shelves, opening of emergency passage ways. The documents, once removed from the archive, were first stored in suitable containers placed in the cloister of the former convent. Next the containers were lifted by means of a crane and placed on trucks to be moved to new safe storage facilities.

SAN MASSIMO CATHEDRAL AND ARCHBISHOP'S PALACE

cenni storici

13



The Archbishop's palace belongs to the complex of the Cathedral of San Massimo and San Giorgio. The Cathedral was founded on February 20, 1257, when the bishop's see was moved from Forcona to L'Aquila by Pope Alexander IV.

The original church layout was a Latin cross with three aisles, transept and apse. After the earthquake of 1703 it was rebuilt, except for the right side wall, in cut stone, divided by nine fluted pilasters and three ogival windows. In the mid 1800s it was given a neo-classical façade.

quake damage

Collapse of triumphal arch, dome and transept. Severe cracks on the hall and side aisle vaults. Severe cracks on the vaults of the side walls and in the apse



fire service operations

The SAF (high angle rope rescue) teams recovered the "treasury" housed in the ancient archbishop's palace, close to the Cathedral. The "treasury" was made up of more than 500 church ornaments and vestments: precious chalices, gold-embroidered mitres, several thuribles, silver vases and cruets, stored on the first and third floor. Among these, the famous "Cross of Monticchio" of 1436, a fine example of goldsmith's art by Nicola from Guardiagrele.

The salvage operations were particularly difficult because of the collapsed ceilings. It was necessary to shore up the internal structure. Once recovered, the "treasury" was packed and carried to a safe storage by the Carabinieri of the National Heritage Safeguard Unit.



SANTA GIUSTA IN BAZZANO

Historic and artistic description

Bazzano lies on a hill at 670 metres above sea level in the eastern part of the L'Aquila province. The old name of Offidio (or villa S. Giusta) stems from an ancient temple dedicated to the god Fidio, on which the church of the virgin San Giusta was built. In 1238, a new triple-nave church arose on the ruins of the 3rd century chapel. Inside the church there is a hypogeum with a cave leading to catacombs which reach the Church of San Giustino in the Paganico's plain. The façade of the church is divided into several panels by thin columns and two small rose-windows.



quake damage

Collapse of the top of façade, overturning of façade top and side walls. Partial collapse of the roof, severe cracks in vault arches, cracks in the pillars, damaged frescoes.



fire service operations

The Fire Service teams, after having recovered fallen cut stone work and detaching the unsafe ones, carried out significant provisional measures in order to secure the building.

Shoring of the façade and side walls, centering of nave arches and hooping of pilasters.

After these safety measures it was possible to recover the paintings and allow restorers to enter the church in order to cover the precious frescoes inside.



CHILDREN'S HOME OF S. GREGORIO

2

Historic and artistic description

The children's home "Immacolata Concezione" is a religious community in a small ward of L'Aquila, called San Gregorio. In 1939, the noblewoman Giulia Onori, widow of Nardis, donated a house to the local nuns.

The house was intended to be used as a social-educational centre for the children and the young women of San Gregorio and nearby villages. Now the building can host 32 children aged 0 – 8 years.



quake damage

Total collapse of the building



fire service operations

Fire-fighters arrived quickly and started hauling debris away by hand, to avoid further collapses due to the mechanical vibrations that would be caused by the heavy equipment.

Frantically searching for survivors, they removed stones and wooden beams to open small passages among the collapsed walls of the old masonry structure.

Around 8 a.m., voices and cries were heard closer and closer. Seven young guests, aged 4-8, and four nuns were pulled alive from the rubble.

During the initial quake, the nuns had tried to lead the children outside, but the building had collapsed around them trapping them under the rubble.

Fortunately, a wall with a small crucifix hanging on it withstood the tremor, sheltering nuns and children. Only one nun was still missing, Sister Anne, the cafeteria manager.

On Monday Fire Service teams continued to dig and detected the body of Sister Anne in her bedroom, on the ground floor.

It took another 24 hours of work to remove the two-storey high heap of rubble and recover the body of the nun.