

## **Earthquake in Mirandola: damages on Cultural Heritage.**

### **The sense of loss and the will to restart.**

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**Abstract:** In May 2012, two major earthquakes occurred in the Emilia-Romagna region, causing twenty six casualties and widespread damage across the cities of the area, the surrounding countryside and the productive infrastructure. Also the cultural heritage, composed of little churches, castles and city buildings, was severely damaged.

The first earthquake, registering magnitude 6.1, struck on 20 May 2012; the epicenter was between Finale Emilia and San Felice sul Panaro. Two aftershocks of magnitude 5.2 occurred the same day, killing seven people.

Nine days later, a magnitude 5.8 earthquake struck the same area, causing an additional eighteen deaths and widespread damage, particularly to buildings already weakened by the 20 May earthquake. In the whole area 14000 people were left homeless.

Mirandola is located in the middle of the earthquake area. Many buildings in the city center were severely damaged, forcing the local administration to forbid access to the whole area.

Among them public buildings such as The Palazzo del Comune, the castle of the Pico family, which had been recently restored and opened to the public. Both of them now damaged.

Also churches like the Duomo, dating from the end of the 15th century, and S. Francesco, a fine Gothic church dating from the 14th century, were completely destroyed; the Baroque Church of the Gesù (1690) was severely damaged.

Now the city center is partially accessible, but only for people who live there. Some works have been completed to secure some buildings, but mainly the old city is still desert and hoping for further intervention. The poster proposed want to show and locate the sense of loss from the missing parts of the town and the effect of emergency on the people uprooted from their usual contest; at the same time, the images and the story presented here want to underline the will to restart, continue and recover from this disaster.

**Keywords:** Earthquake, Emilia-Romagna, emergency, disaster, recover.

### **The earthquake in Emilia-Romagna, the case of Mirandola**

In May 2012, two major earthquakes occurred in the Emilia-Romagna region, causing twenty six casualties and widespread damage across the cities of the area, the surrounding countryside and the productive infrastructure. Also the cultural heritage, composed of little churches, castles and city buildings, was severely damaged.

The first earthquake, registering magnitude 6.1, struck on 20 May 2012 at 04:03 local time; the epicenter was between Finale Emilia and San Felice sul Panaro. Two aftershocks of magnitude 5.2 occurred the same day, killing seven people.

Nine days later, a magnitude 5.8 earthquake struck the same area, causing an additional eighteen deaths and widespread damage, particularly to buildings already weakened by the 20 May earthquake. In the whole area 14000 people were left homeless.

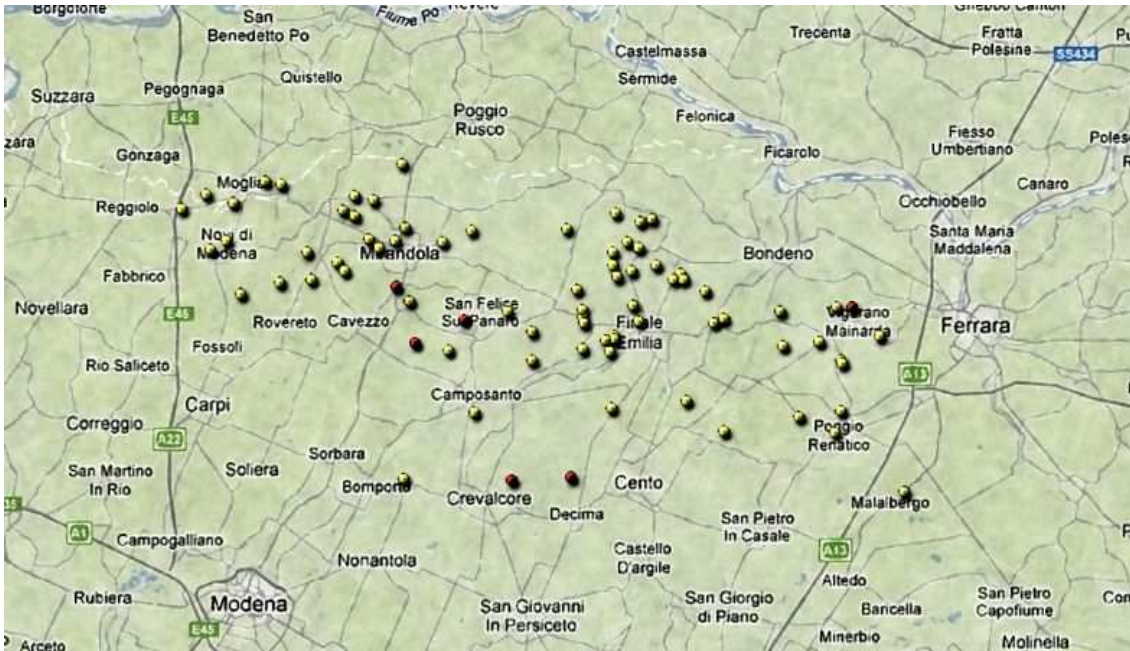


Fig. 1 – Map showing the major earthquake shakes in Emilia-Romagna

Mirandola is located in the middle of the earthquake area. The town originated as a Renaissance city-fortress. For four centuries it was the seat of at Duchy, a possession of the Pico family, whose most outstanding member was the polymath Giovanni Pico della Mirandola.

Many buildings in the city center were severely damaged, forcing the local administration to forbid access to the whole area.

Among them public buildings such as The Palazzo del Comune (a 15th century edifice of Gothic style), the castle of the Pico family, which had been recently restored and opened to the public. Both of them now damaged.



Fig. 2 – The Palazzo del Comune, before the earthquake, and after being secured with scaffolds.

Also churches like the Duomo, dating from the end of the 15th century, and S. Francesco, a fine Gothic church that housed the tombs of the Pico family (14th century), were completely destroyed; the Baroque Church of the Gesù (1690) was severely damaged.

Now the city center is partially accessible, but only for people who live there. Some works have been completed to secure some buildings (like the San Francesco Church facade), but mainly the old city is still desert and hoping for further intervention.



Fig. 3 – The Duomo. The ceiling is completely destroyed and the bell-tower is severely damaged.<sup>1</sup>

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<sup>1</sup> Figure 3 and following: © Stefano Morelli, <http://www.stefanomorelliphoto.com>





Fig. 4 – San Francesco church, the ceiling completely destroyed, the facade leaning forward.

### **The rural context and the productive infrastructure**

The heritage of the area, though identified in several buildings, such as has to be considered as a whole system of relationships between the territory and the population, based on traditions, identities and different dynamics.

The earthquake has stepped into this delicate system, compromising its existence, in Mirandola and in many towns in the same territory as well.

The earthquake has shut down the agricultural economy, which was already facing a declining phase. The rural buildings already degraded before the earthquake show now the damage on a wider scale. All the previous attempts to recover the value and the Cultural Heritage (tangible and intangible) like small museums, visiting area, minor activities, are now halted by the heavy damage caused to all the architectural structures, such as countryside houses, barns and all the related buildings the structure of the territory used to rely on.

Also many of these kind of buildings, since they were already old or partially damaged before the earthquake, even if still functional, are now not worth to be restored to their previous state, and will become abandoned ruins in the near future.

The severe damages occurred meant in many cases the end of the rural micro-economy, meaning no economic resources to restore damaged building.



Fig. 5 – Abandoned barn and silos.



Fig. 6 – Damaged barn on a countryroad. (Copyright: Stefano Morelli, <http://www.stefanomorelliphoto.com>)

The case of Mirandola and its surrounding territory is also peculiar due to a specific productive district which has been leading the overall local economy since the sixties, focusing on the production of biomedical disposable and all the related hospital machinery.

As a result the whole area developed a highly specialized entrepreneurial network, mainly targeting foreign markets and, at the same time, locally concentrated in a peculiar system of big industries and small businesses, providing more than five thousand jobs locally.

This productive system, nationally recognized as a high-tech district, has also attracted investors and foreign corporations, and has become during the years the main sector, driving the development of the area, and becoming crucial for maintaining the overall economy.

Many industrial buildings that hosted such a core industry has been tore down by the first earthquake shakes, and many people tried to fix them in order to keep the business running, being aware that a production halt could lead to customer loss in the short term.

That's why when the second shake hit the area again nine days later at 9 in the morning, it caused an additional eighteen deaths, mainly workers going back to work to check the damage level and to make the production back running.

Now many resources have been devoted to restore and secure the industrial buildings, also using temporary structures when needed.

In many cases new structures have been built next to the old ones using prefabricated components. Though those new buildings have been crucial to restore the production level back to normal in a short time, they contributed to change the structure and the aspect of the landscape, causing even further changes to the delicate equilibrium of the territory, and also psychological disorientation among the people. In a matter of a few months areas once devoted to agriculture outside the city boundary, were quickly populated by new industries, temporary structures, and the related power plants, while many building located in the industrial neighbourhood were abandoned because there was no time to restore them.

That led to further changes to the perception of the territory itself, and to the social relationship related to it, in some case even more than the destruction of historical Cultural Heritage.



Fig. 7 – Damaged factory, with bulldozers holding the side wall in place.



Fig. 8 – Damaged factory. The damaged ceiling has been removed.





Fig. 9 – Recently built factory plant, just outside the town border.

### **The emergency for the population, facing the loss**

The relationship between town and community is a living expression of social and civic dynamics. Almost all towns in the area rely on common urban schemes (square-church-hall or, main street-hall-church). This pattern has guided the development of the town through the centuries, and even today they allow the community to gather around these common social values. The earthquake has stepped into this delicate system, compromising its existence.

The physical damage on Heritage caused long term effects on the population and the structure of the territory as well. The first huge quake hit at night time, catching everyone sleeping and forcing them out of their homes. The second quake hit while many people were back to work trying to estimate the damages and figuring out how to keep their business going (that alone explains why the second hit caused more casualties). People has been feeling insecure about their homes and working places since then.

Also for a long time after the main shakes the whole area has been affected by strong aftershocks for months. This caused the psychological condition of stress, despair and helplessness to be driven in a *never ending* state. Many people wouldn't go back to their place because of the fear, and ended up camping in public parks even if their house were declared safe.





Fig. 10 – The psychological stress caused many people whose homes were intact to sleep elsewhere because of the fear of further shakes.

In this phase people naturally gathered small communities living together in public parks, camping with tents, caravans, or lightweight wooden structures. These spontaneous communities, even though very heterogeneous, managed to plan everyday life and mutual support, being open for everybody to join. Some other people decided to camp in their own gardens, in order to be next to their homes but still not willing to go back into the buildings.

Some other people, whose houses were destroyed or severely damaged, had to face the worst stress condition, suddenly losing home and all their belongings with them.

The community support and also the help of local administrations and central government was crucial to give shelter to these people, through hotels and temporary prefabricated houses built for the emergency.

Since the warm summer weather was certainly convenient for camping, but was difficult especially for old people to be in the sun all day, ill and old people had been granted prioritized access to emergency houses that had been quickly built with air-conditioning for thermal comfort.

Still one main issue to be faced in the emergency phase and in the long term as well has been the psychological stress for all the population, caused also by the sudden change of the territory, of the different habits and the relationships between inhabitants. This change was very distressing, and psychological support was provided by volunteers in many cases as well.



Fig. 11 – Spontaneously grown camping site.



Fig. 12 – People too afraid to sleep home used cars as a bedroom.



Fig. 13 – Washing dishes after lunch.

### **The will to restart**

The town of Mirandola has been hit hard by the disaster, and the population has still to face a tough time. Many parts of the Cultural Heritage are irreparably damaged, and even though much intervention has been carried out to preserve them, most of them cannot be recovered.

The Heritage has specific architectural and cultural value related to the territory, which determine stylistic and typological uniqueness. Since the VIII century, the territorial settlement has been relying on agricultural economy, creating typical architectural artifacts; this Heritage, despite the fact of belonging to a minor artistic and architectural value, can be considered and must be preserved according to its importance as a "grid system" strictly connected to the social structure of this area.

During the last months the local administrations and the Italian Government focused their work on securing damaged buildings and limiting the access to the dangerous areas, especially in city centers. Small interventions are still conducted to improve stability of buildings, slowly extending accessible areas. Social and functional relational systems within the towns and the surrounding territory has been severely damaged as well, and naturally evolve to reach a new equilibrium, whether the local administrations is trying to coordinate an intervention or not.

The study of other territories hit by earthquake underlines that those relational systems are functional to the structure of the territory itself, and need to be fully understood to empower correct intervention strategies. A careful planning and intervention is required to keep alive such a delicate equilibrium, and to drive it outside this delicate and critical stage.



Just like damaged buildings, the risk of “doing nothing” is to break such a complex aggregation of relationship, causing the abandon of little towns and of their surrounding territories, losing all the elements of this Heritage, from the tangible to the intangible



Fig. 14 – Moving forward.

The earthquake changed the town forever in several ways, in terms of architecture, landscape, social environment, economy, relationship with the territory and the population.

Eventually some peculiar phenomena can be observed after the earthquake and still now.

Above all the strong reaction of the community, driving itself outside the crises, working with relentless efforts to recover from the disaster and to fight the fear of this tough time.

This reaction has been completely spontaneous, nevertheless has made the restart possible for the community, in a mutual support environment testifying the strong will to recover.

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