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A RECONNAISSANCE REPORT. THE APRIL 6, 2009, L'AQUILA EARTHQUAKE. ITALY

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SUMMARY

The 2009 L'Aquila Earthquake, a magnitude M_w 6.3 event struck L'Aquila and neighborhood, Italy, on Monday morning, April 6, 2009 at 01:32:39 UTC. L'Aquila is located at about 6 Km northeast of the epicenter. A team composed by the authors surveyed and inspected the earthquake damages both in Paganica, a town nearby, and L'Aquila city, from April 26 to May 2, 2009.

The structural damage ranged from several complete collapses of masonry and reinforced concrete buildings to medium damage of industrial facilities and minor paint and finish repairs for several buildings and houses. For the sake of comparison, some photos have been retrieved from Google StreetView.

ACKNOWLEDGMENTS

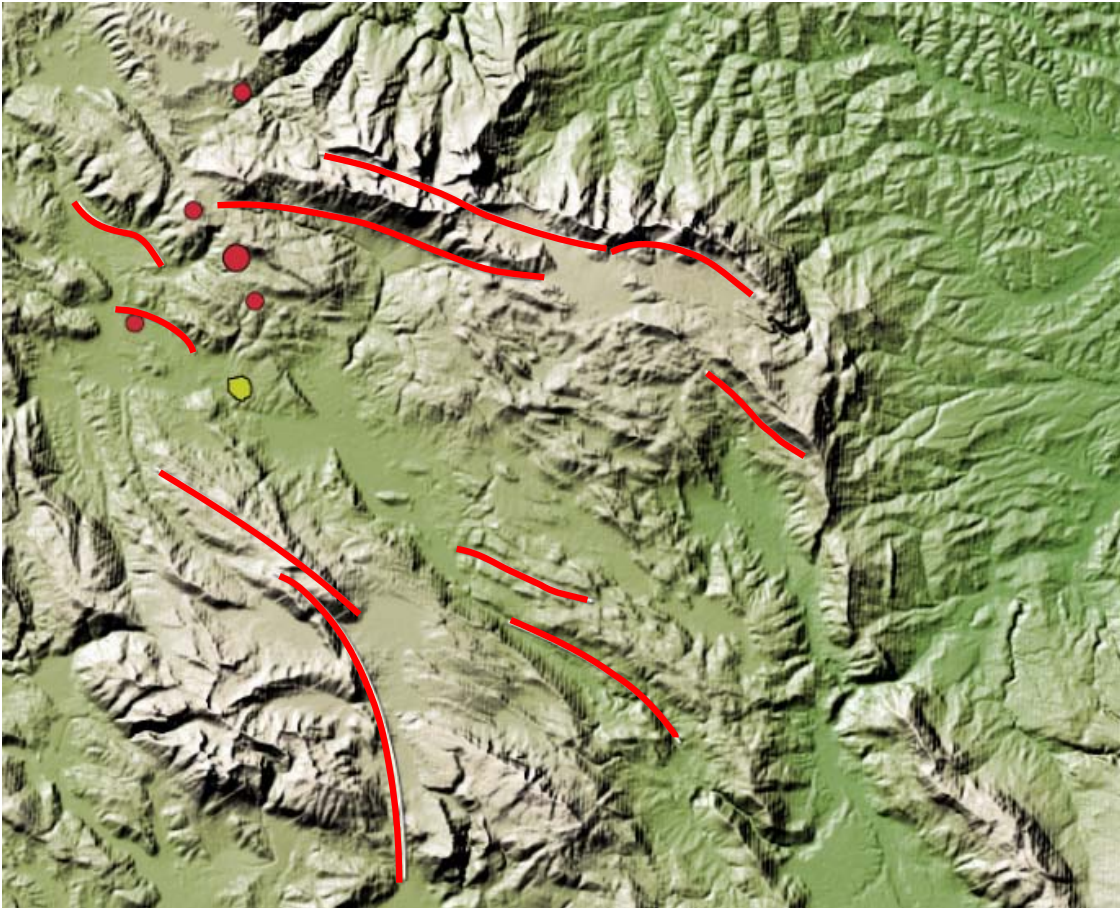
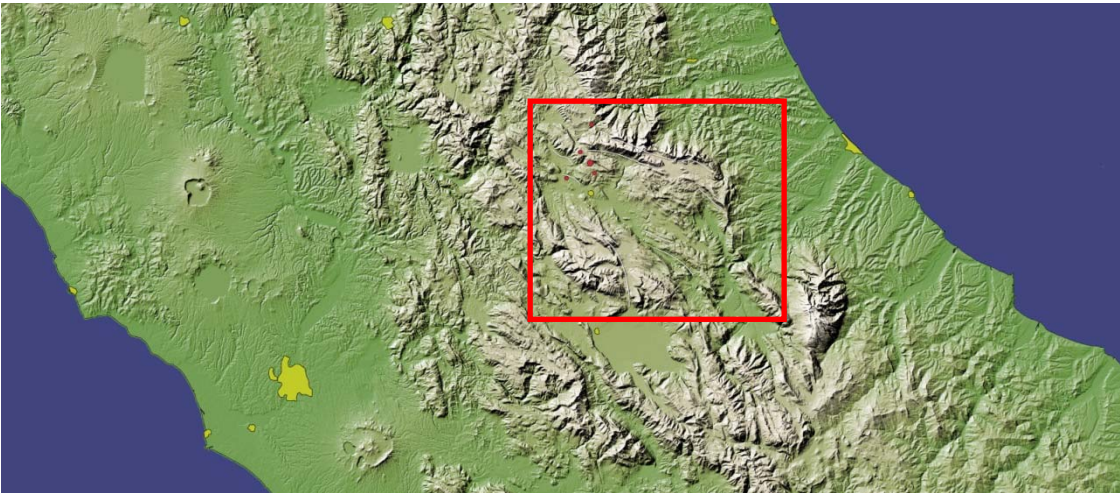
The team wishes to acknowledge the support, assistance, and contributions of few organizations and individuals in this investigation of the L'Aquila Earthquake.

Both the rector, Prof. D. Bassi and Prof. P. Zanon of the University of Trento, that arranged and made possible both the inspection and the visit, from which valuable information about inspections were obtained are acknowledged.

The Civil Protection of the Provincia Autonoma di Trento (PAT) is acknowledged for its support and assistance in the field.

Last but not least, the scientific and co-ordination support of The University Network of Seismic Engineering Laboratories (RELUIS) and of the Istituto Nazionale di Geofisica e Vulcanologia (INGV) sezione di Milano-Pavia are acknowledged.

Fault lines of the affected area



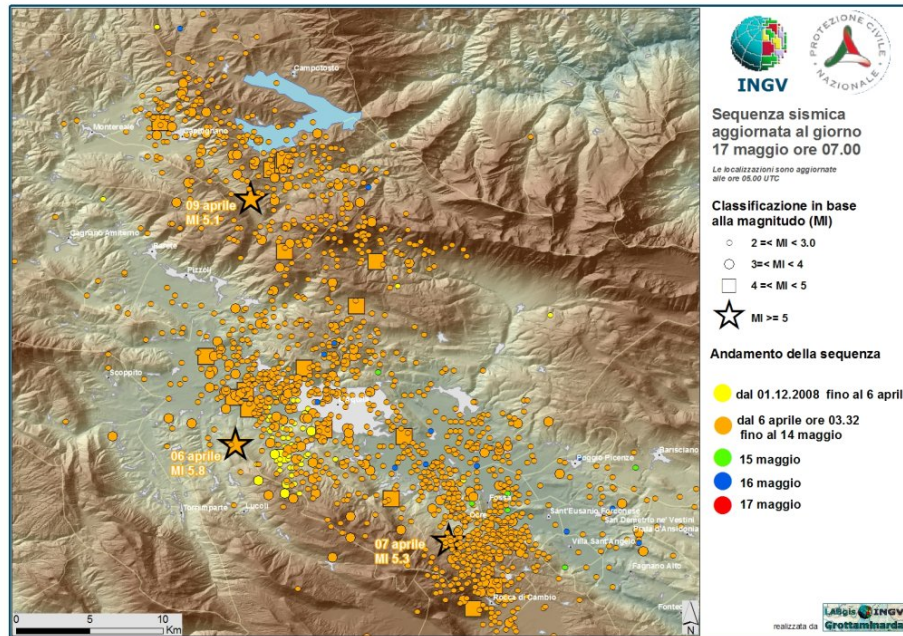
(from http://earthobservatory.nasa.gov/images/imagerecords/37000/37794/italy_srtm_2009096_lrg.jpg)

Epicentral area



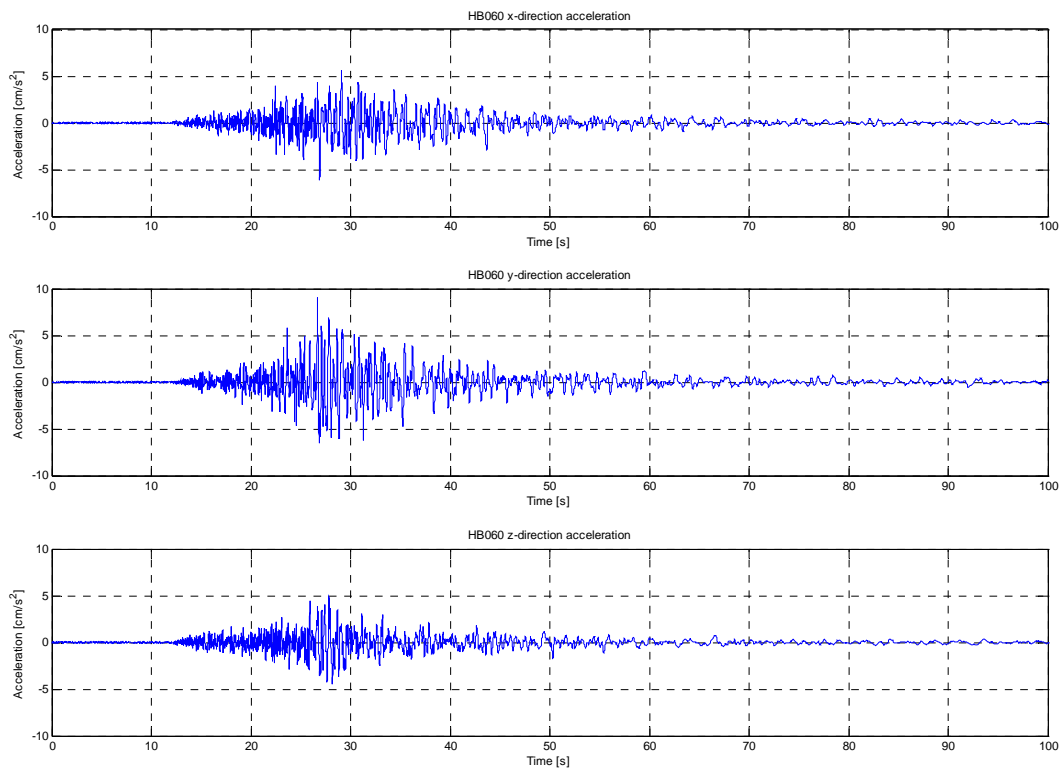
(from Istituto Nazionale di Vulcanologia: [http://portale.ingv.it/portale ingv](http://portale.ingv.it/portale_ingv))

The seismic sequence of L'Aquila - April 2009.



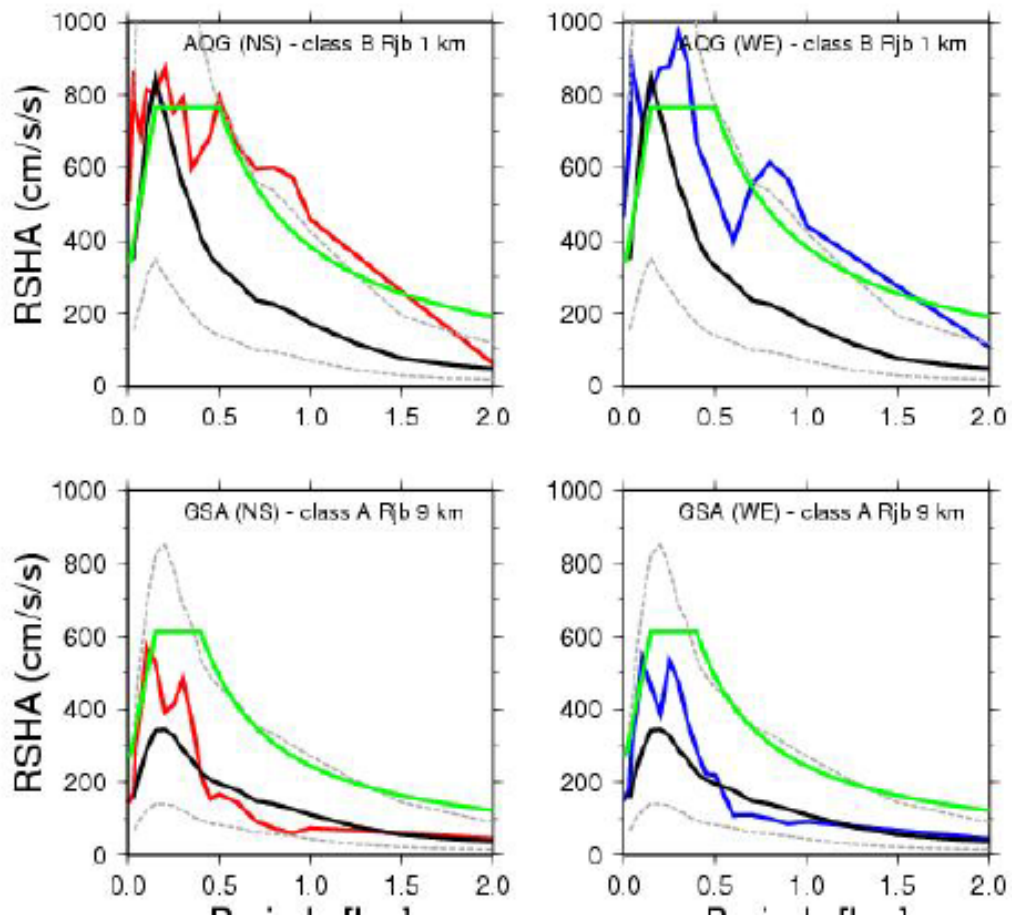
(from Istituto Nazionale di Vulcanologia: http://portale.ingv.it/portale_ingv)

Durations of a ground motion record



HB060 Ground motion time histories -X, Y and Z direction accelerations at 65.9 Km Epicentral distance-

Observed 5% damped accelerations spectra and EC8 spectral shapes scaled to the PGA of the national hazard map (0.25 g) for two near-fault records belonging to soil class A and B, respectively.



(from Ameri G. et al. Istituto Nazionale di Vulcanologia: http://portale.ingv.it/portale_ingv)

Affected areas



A view of Paganica town

Photo by the Provincia Autonoma di Trento (PAT) Geological Service



A view of L'Aquila city

Photo by Bursi, Dusatti and Pucinotti

Geology and seismology



Paganica
Photo by PAT Geological Service



Paganica
Photo by PAT Geological Service

Reinforced concrete buildings



Reinforced concrete building in Paganica - via San Vincenzo, 9
Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in Paganica - via San Vincenzo, 9

Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in Paganica- via San Vincenzo

Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in Paganica - Via Sant'Emidio
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



(from Google StreetView)



Reinforced concrete building in Paganica - Via Sant'Emidio
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Reinforced concrete building in Paganica - Via del Pianello

Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



(from Google StreetView)



Reinforced concrete building in Paganica - Via L. Biordi

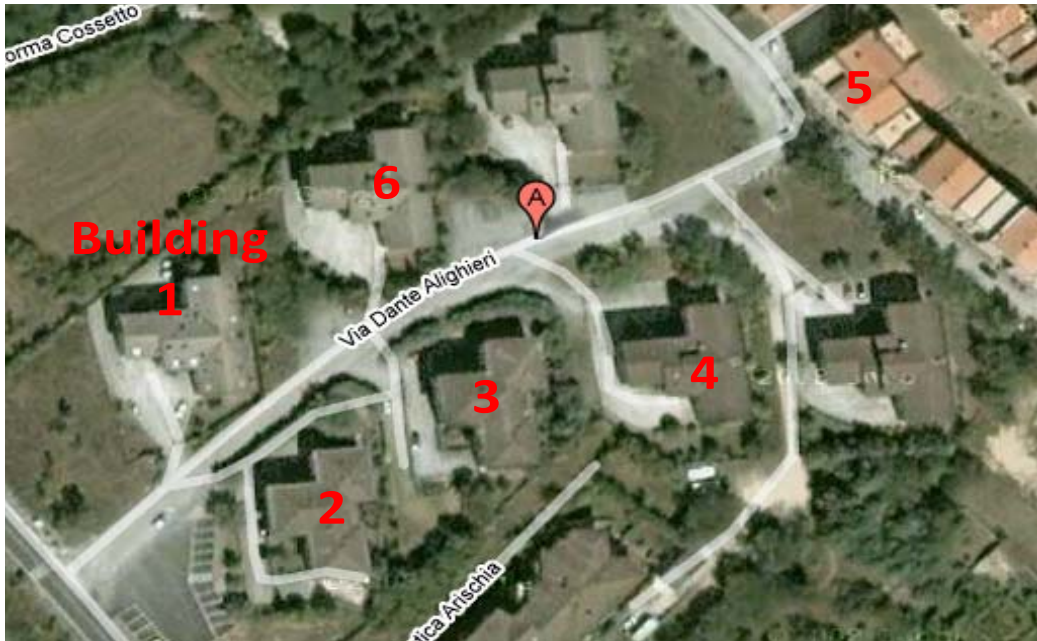
Photo by Bursi, Dusatti T. and Pucinotti



Reinforced concrete building in Pianola
Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete School building in Pettino
Photo by Bursi, Dusatti and Pucinotti



A view of buildings nearby via Dante Alighieri in Pettino (from Google Maps)

Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Pettino: via Dante Alighieri – Building N. 1

Photo by Bursi, Dusatti and Pucinotti



Pettino: via Dante Alighieri – Building N. 1
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Pettino: via Dante Alighieri – Building N. 2

Photo by Bursi, Dusatti and Pucinotti



Pettino: via Dante Alighieri – Building N. 6

Photo by Bursi, Dusatti and Pucinotti



Pettino: via Dante Alighieri – Building N. 3
Photo by Bursi, Dusatti and Pucinotti



Pettino: via Dante Alighieri – Building N. 4
Photo by Bursi, Dusatti and Pucinotti



Pettino: via Dante Alighieri – Building N. 5
Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in L'Aquila
Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in L'Aquila
Photo by Bursi, Dusatti and Pucinotti

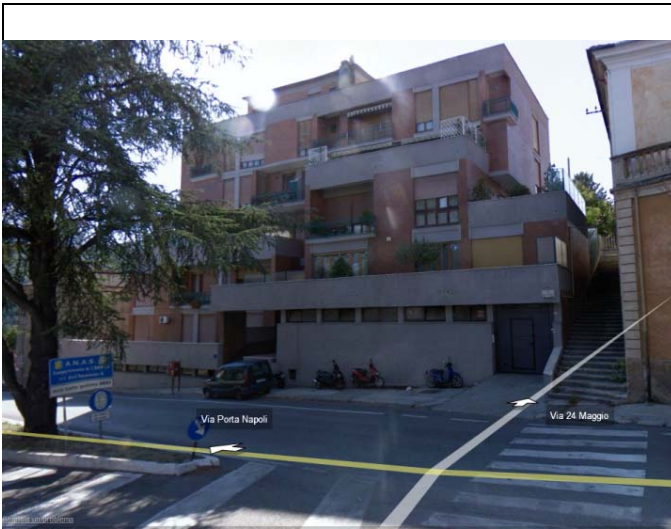


Reinforced concrete building in L'Aquila - via XX Settembre (Student House)
Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in L'Aquila - via XX Settembre (Student House)

Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Reinforced concrete building in L'Aquila - via Porta Napoli

Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in L'Aquila - via XX Settembre
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Reinforced concrete building in L'Aquila - via Giovanni XXIII (Hotel Duca degli Abruzzi)

Photo by Bursi, Dusatti and Pucinotti



Reinforced concrete building in L'Aquila - via Giovanni XXIII (Hotel Duca degli Abruzzi)

commento immagini

Photo by Bursi O.S., Dusatti T. and Pucinotti R.



Reinforced concrete building in L'Aquila

Photo by Bursi, Dusatti and Pucinotti

Masonry buildings



(from Google StreetView)



Masonry building in Paganica - piazza della Concezione

Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Masonry building in Paganica - SS 17 Bis

Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Masonry building in Paganica - via San Gregorio
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



(from Google StreetView)



Masonry building in Paganica - via San Gregorio
Photo by Bursi, Dusatti and Pucinotti



Masonry building in Paganica - via Castellano, 70
Photo by Bursi, Dusatti and Pucinotti



Masonry building in Paganica - via del Cardarello
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Masonry building in L'Aquila - via Ponte Rosarolo
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



Masonry building in L'Aquila - via San Gregorio
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



L'Aquila - Porta Napoli

Photo by Bursi, Dusatti and Pucinotti



L'Aquila - Duomo

Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



(Photo by Osti F.)

Masonry building in L'Aquila - Piazza della Repubblica

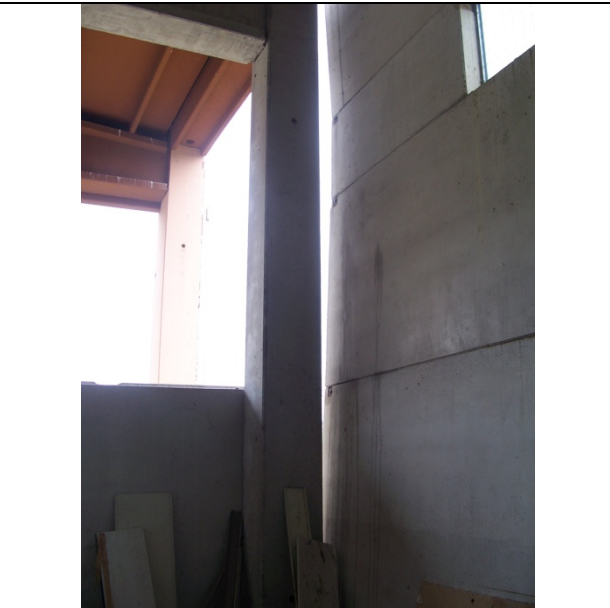
Photo by Bursi, Dusatti and Pucinotti



Masonry building in Onna

Photo by Bursi, Dusatti and Pucinotti

Industrial buildings



Industrial building in Bazzano
Photo by Bursi, Dusatti and Pucinotti



Industrial Silos in Bazzano
Photo by Bursi, Dusatti and Pucinotti



Industrial Buiding in L'Aquila Pile
Photo by Bursi, Dusatti and Pucinotti

Wooden buildings



Wooden Buiding in Roio Piano

Photo by Bursi, Dusatti and Pucinotti



Wooden house in Paganica - via C. Mastracci

Photo by Bursi, Dusatti and Pucinotti

Emergency repairs by the Civil Protection of PAT



(from Google StreetView)



(from Google StreetView)



Bazzano - via Santa Giusta

Photo by Bursi, Dusatti and Pucinotti



Bazzano - via Santa Giusta
Photo by Bursi, Dusatti and Pucinotti



(from Google StreetView)



L'Aquila - Corso Vittorio Emanuele
Photo by F. Osti



L'Aquila - Corso Vittorio Emanuele
Photo by F. Osti

The camp of the Civil Protection of PAT @Paganica



Photo by Bursi, Dusatti and Pucinotti

The inspecting team

