

Contract:

ENEA – Banco Interamericano de Desarrollo (BID)/InterAmerican Development Bank (IDB)

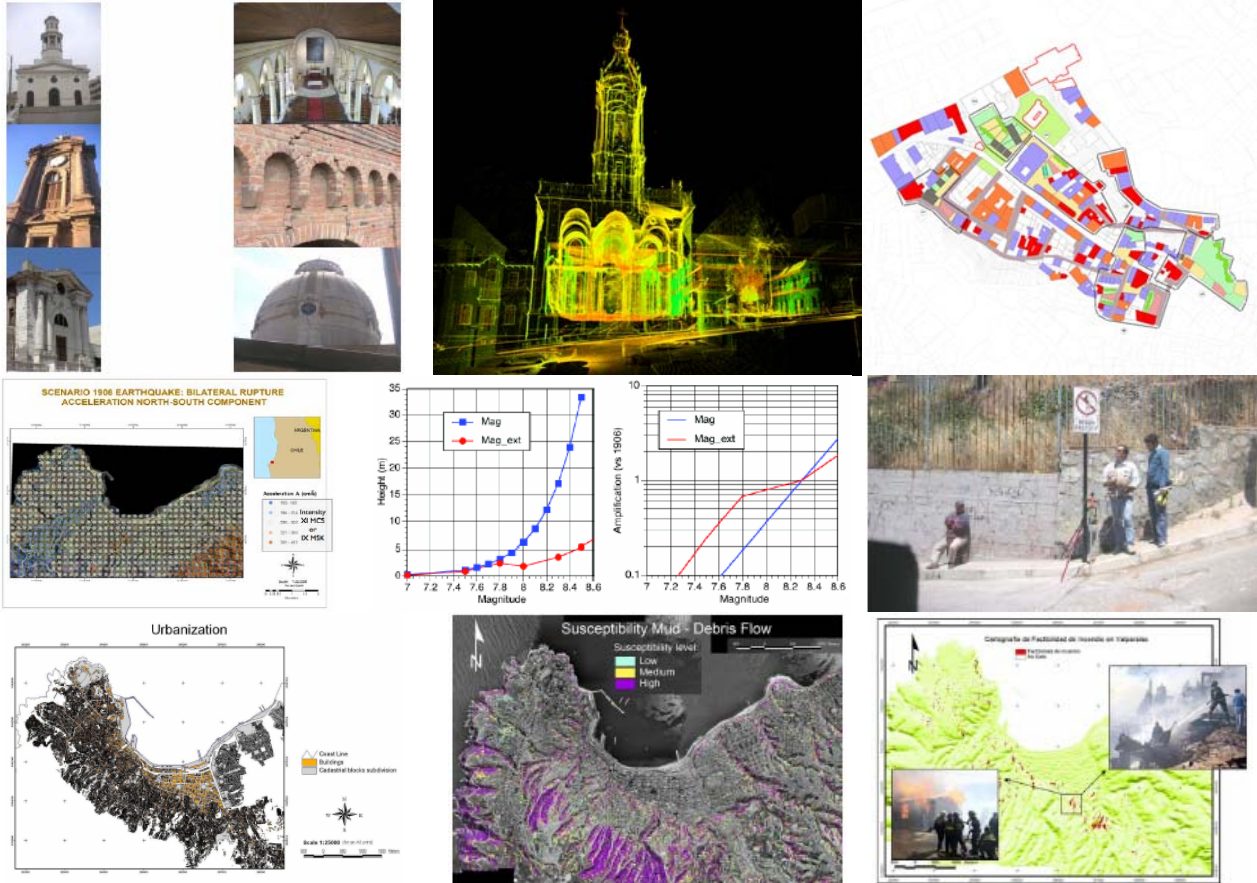
# Manejo de Riesgos en Valparaiso, Servicios Técnicos

Acronym: "MAR VASTO"

ATN/II-9816-CH

Contract n.

PRM.7.035.00-C



## GENERAL PROGRESS REPORT N° 3

|         |      |            |           |                      |  |  |  |
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## PREFACE

The activities are foreseen by the Contract n. PRM.7.035.00-C between the InterAmerican Development Bank and ENEA, signed on March 12<sup>th</sup>, 2007 by Dott. Marcello Garozzo, Director of Environment, Global Change and Sustainable Development Department [01].

The main goal of the project “MAR VASTO” is to contribute to risk management due to natural disasters in the historical part of Valparaíso. This third general report describes the final work obtained during the missions performed by the Italian team in Valparaíso and in the framework of the activities done in Italy.

Reference documents are the general progress reports [02-04] and specific work-package reports [05-13].

### Valparaíso missions

During the last two missions at Valparaíso (May and October-December 2007), many local Organizations strongly cooperated to the *in situ* work of the experts coming from Italy: above all, the Municipality of Valparaíso (mainly the Heritage Office, “Oficina de Gestión Patrimonial OGP”, headed by Paulina Kaplan Depolo, with the excellent support of Arch. Sotero Apablaza Minchel and other professionals) providing logistic and technical support of about fifteen people, but also qualified personnel of Environment and Housing Departments); the Ministry of Culture (“Consejo Nacional de la Cultura y Las Artes”); the Regional Authority (“Intendencia V Region Valparaíso”); the Regional Civil Defense (“OREMI”); the SHOA (“Servicio Hidrográfico y Oceanográfico de la Armada de Chile”); Valpómio (“Programa de Recuperación y Desarrollo Urbano de Valparaíso”); the Firemen (“Bomberos”) and the Sea Rescue (“Bote Salvavidas”) Corps of Valparaíso; city organizations (“Junta de Vecinos” of the Cerro Cordillera and “Gerencia Barrio Puerto”, which is the historical district of the City); the Board of Architects of Valparaíso and other professionals; the Police (“Carabineros de Chile”); Church Authorities and other Universities (“Pontificia Universidad Católica de Valparaíso”, “Universidad de Valparaíso”); the Valparaíso Italian Community. Finally, important was the contribution of the Geocom Santiago team, which provided the laser-scanner equipment.

The in-field work (October-December 2007) gave excellent results and involved about 30 professionals (Italian and Chilean):

- Maurizio Indirli (ENEA, coordinator of the project);
- Fabio Geremei (ENEA);
- Claudio Puglisi (ENEA);
- Augusto Screpanti (ENEA);
- Daniel Blersch (University of Ferrara);
- Osvaldo Neira Figueroa (Geocom Chile);
- Marco Quevedo Tapia (Geocom Chile);
- Luca Lanzoni (University of Ferrara);
- Marco Miglioli (University of Ferrara);
- Giampaolo Simonini (University of Ferrara);
- Enrico Milani (University of Ferrara);
- Nieves Lopez Izquierdo (ENEA and University of Ferrara);
- Marco Munari (University of Padua);
- Fabio Romanelli (University of Trieste and ICTP);
- Paulina Kaplan Depolo (Director of the Oficina de Gestion Patrimonial, Valparaíso Municipality);
- Sotero Apablaza Minchel (Oficina de Gestion Patrimonial, Valparaíso Municipality, coordinator of the Chilean team);
- Karen Fried Agosin (OGP);
- Mauricio Gonzalez Loyola (OGP);
- Cristian Palma Valladares (OGP);
- Claudia Zuñiga Jara (OGP);
- Sandra Aliaga Vera (OGP);
- Carolina Avalos Avalos (OGP);

- Sofia Ayala Santander (OGP);
- Gabriela Lozano Sandoval (OGP);
- Carolina Peñaloza Pinto (OGP);
- Claudia Ulloa Espinoza (OGP);
- Juan Carlos Molina Carvajal (OGP);
- Samuel Castro Zamora (OGP);
- Oriana Ramirez Muñoz (OGP);
- Mauricio Sanchez Pincheira (OGP);
- Thomas Sturn (University of Chile).

Other experts were contacted:

- Tania Bertoglio, José Campusano (Dirección Desarrollo Habitacional, Municipality of Valparaíso);
- Mauricio González Peña y Lillo (Departamento Medio Ambiente, Municipality of Valparaíso);
- Milagros Aguirre Donoso (Ministerio Obras Públicas and Chilean Board of Monuments);
- Francisco Saavedra (Valpomio);
- Luis Enriquez, Javier Troncoso (Jerencia Barrio Puerto);
- Nelson Morgado Larrañaga (Board of Architects of Valparaíso);
- people of SHOA, OREMI, Firemen and Sea Rescue Dept., Church Authorities, professionals, etc.

Several Chilean Institutions thanked formally by letters the Italian team for the work done: the Municipality of Valparaíso, the Intendente of V Region of Valparaíso, the Ministry of Culture, the Archbishop of Valparaíso, the Organization of the Chilean Architects, the Organization of the Italian Community of Valparaíso [03].

The support of the Chilean Universities, partners of the project (University of Chile, University Federico Santa María) and others (Pontificia Universidad Católica de Valparaíso, Universidad de Playa Ancha, etc.) was excellent.

Two presentations of our project have been made: a specific conference at the University Federico Santa María (November 22) and an invited lecture at the session "El terremoto de Valparaíso de 1906" of the "VI Congreso Chileno de Geotecnia", organized by the Pontificia Universidad Católica de Valparaíso (November 29).

The work interested very much also the media (TV and press) [03].

Meetings took place also at ICE (Istituto Italiano per il Commercio Estero - Istituto Italiano para el Comercio Exterior) at Santiago (with the responsible Roberto Santilli and Maruzzella Giannini) and at the Italian Ambassador in Santiago (Ambassador Paolo Casardi, Niccolò Fontana and Rosa Minetti).

### **Further cooperation between Chile and Italy**

After an agreement with the Istituto Italo Latino Americano (IILA), thanks to the General Secretary Ambassador Paolo Bruni and Dr. Eugenia Fedeli (Figs. 1-2), and also with the authorization of the present OGP Director Arch. Paulina Kaplan Depolo, 4 Chilean experts (two still belonging to the OGP, and other 2 working for OGP at the time of the Italian missions) have been entrusted of short bursaries in Italy (Spring 2008), specifically targeted on the "MAR VASTO" project activities. They are:

- Arch. Claudia Andrea Zuñiga Jara, OGP (2 months)
- Arch. Mauricio Sebastian Gonzalez Lodola, OGP (2 months)
- Arch. Cristian Ignacio Palma Valladares, Chilean expert (4 months)
- Arch. Carolina Avalos, Chilean expert (4 months)

Moreover, an expert functionary of OGP, Arch. Sotero Apablaza Minchel, officially entrusted by the OGP Director, reached Italy in the same period (2 months) and contributed in an excellent way to the "MAR VASTO" project and for the identification of future cooperation.

The Chilean experts were involved in several activities, as explained below.

#### *a) Cooperation to the "MAR VASTO" project*

technical meeting on April 23, 2008 at the Ferrara University

Faculties of Architecture and Engineering of the Ferrara University are partners of the “MAR VASTO” project. The meeting focused the following aspects:

- data transfer and elaboration of the laser scanner results, with the aim to build up structural models of the three churches (San Francisco, Hermanas de la Providencia, La Matriz) for seismic analysis and identifications of future strengthening interventions;
- completion of the work regarding the study of the pilot sector in the Cerro Cordillera;
- GIS implementation, including the evaluation of fire hazard;
- final proposals for the City of Valparaiso.

technical meeting on May 5, 2008 at the Ferrara Municipality

The meeting with Arch. Davide Tumiati, Head of the Territorial Urban Planning Sector of Ferrara Municipality, focused urban planning aspects in UNESCO areas and the experience of the Ferrara Municipality.

technical meeting on May 7, 2008 at the Trieste University and ICTP

ICTP (Abdus Salam International Centre for Theoretical Physics) is an UNESCO Organization and a fundamental partner of the “MAR VASTO” project. After a brief visit to the Trieste center (an harbour city with presents some interesting common features with Valparaiso, including an history of earthquakes and tsunamis), the following points have been stressed during the meeting:

- definition and implementation of hazard models and scenarios (earthquake and tsunami) for the City of Valparaiso;
- preparation of hazard maps for the GIS platform;
- definition of the seismic input for the structural calculations to be performed on the churches of San Francisco del Baron, Las Hermanas de la Providencia, La Matriz.

technical meeting on May 13, 2008 at the ENEA-Casaccia Research Center near Rome

ENEA is the coordinator of the project. This meeting has been dedicated to the development of the GIS database for all the City of Valparaiso and to the study of landslide hazard. In particular, the following questions have been discussed:

- GIS and Image Processing implementation;
- discussion on the DGPS results;
- discussion on the geological data and definition of a landslide hazard map.

technical meeting on May 14, 2008 at the Ferrara University

In this meeting, the situation of the three churches (San Francisco del Baron, Hermanas de la Providencia, La Matriz) has been deeply analyzed, discussing the work done in Valparaiso, the present damage situation, the structural calculations, the necessity of future strengthening interventions. In particular:

- the present damage situation of the San Francisco Church is considered very worrying, because partial or total collapse can happen in case of earthquake; the church is unsafe and urgently must be closed partially or totally, planning a prompt strengthening intervention;
- the present damage situation of the Hermanas de la Providencia Church is considered very worrying, because partial or total collapse can happen in case of earthquake; moreover, the church is located in the area of the highest Mercalli Intensity (X) for the 1906 seismic event; fortunately, the church (considered unsafe) is now almost completely closed;
- the situation of La Matriz Church is enough good from the seismic point of view; only simple strengthening interventions can be done; on the other hand, this building needs fire protection, preservation from materials degradation and termite attack.

A methodological approach for the restoration of the three churches has been also discussed, in order to harmonize the restoration with the conservation criteria; in fact, the common practice used for modern buildings (masonry, reinforced concrete, steel) cannot be used for cultural heritage, in order to preserve the monument. This conflict can be avoided only by using special antiseismic codes specifically elaborated for the cultural heritage protection.

technical meeting on May 16, 2008 at the University of Padua

The Faculty of Engineering of the Padua University is a partner of the “MAR VASTO” project. Also in this meeting, the situation of the three churches, together with possible strengthening interventions, has been again discussed, with the same considerations reported before.

In particular, the following references have been taken into account for cultural heritage structural restoration:

- guidelines for evaluation and mitigation of seismic risk to cultural heritage, recently edited by the Italian Ministry for Cultural Heritage and Activities (July 21, 2006);
- International Standard ISO 13822, Assessment of Existing Structures;
- ICOMOS-ISCARSAH (International Scientific Committee for Analysis and Restoration of Structures of Architectural Heritage, UNESCO), 20051: Recommendations for the analysis, conservation and structural restoration of cultural heritage.

*b) Future cooperation*

technical meeting on April 23, 2008 at the Ferrara University

This meeting focused the following aspects:

- an overall discussion on a future project regarding the intervention on the San Francisco Church;
- final proposals for the City of Valparaiso, related to the Valparaiso "Plan Maestro".

technical meeting on May 14, 2008 at the Ferrara University

In this meeting, Prof. Paolo Ceccarelli spoke about all the past contacts with the Chilean Authorities, in particular the Municipality of Valparaiso (in Italy and in Chile). Prof. Ceccarelli underlined the importance to strengthen the contacts for new projects, especially on the future completion of the Plan Maestro of Valparaiso.

technical meeting on May 16, 2008 at the University of Padua

In this meeting, the organization of a possible Chilean-Italian "join venture" (design and structural restoration work) has been discussed, as done in the previous meeting held at the University of Ferrara.

*c) Participation to the Master Ecopolis courses*

Master Ecopolis is managed by the University of Ferrara and regards urban and environmental planning (<http://www.masterecopolis.it/>). All the Chilean experts have been involved in some training courses, after a specific meeting on April 21, 2008 with the Master responsible Prof. Gianfranco Franz. Moreover, the following presentations have been carried out on May 8, 2008:

- Maurizio Indirli (ENEA): "The MAR VASTO Project";
- Luca Lanzoni (University of Ferrara): "The urban planning approach in UNECO sites";
- Sotero Apablaza (OGP Valparaiso): "Valparaiso, world cultural patrimony";
- Mauricio Gonzalez (OGP Valparaiso): "Urban planning and GIS in Valparaiso";
- Claudia Zuniga (OGP Valparaiso): "OGP in-progress projects".

**MAR VASTO project final conference**

the final MAR VASTO project conference has been planned in Valparaiso on next September 29-30, 2008, possibly with the presence of UNESCO, BID, and Chilean/Italian Authorities. The organization of this conference is underway.

The final part of the Master Ecopolis (<http://www.masterecopolis.it/>), already foreseen in Valparaiso, will join the "MAR VASTO" conference, as agreed by the Master Director, Prof. Gianfranco Franz, and the "MAR VASTO" coordinator, Dr. Maurizio Indirli.

In addition, in the framework of the conference, also the following international training activities will be presented:

- Master on the Structural Analysis of Monuments and Historical Constructions (SAHC), University of Padua (<http://www.msc-sahc.org/>);
- training and education activities at ICTP (<http://www.ictp.trieste.it/pages/education.html>).

Moreover, an exhibition of Italian technical-scientific activities on cultural heritage (sponsored by IILA) will be available in the same period of the final conference.

**PROGRESS IN THE PROJECT WORK-PACKAGES**

**WP01 “State-of-the-art” for all the municipality of Valparaiso**

| <i>WP 01</i> | <i>activity</i>                                                  | <i>sub-activity</i>                                                                                                                                                                                                       | <i>leader</i> | <i>contributions</i> |
|--------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|
|              | <i>“state-of-the-art” for all the municipality of Valparaiso</i> | 1.1 collection of cartography and maps of Valparaiso; acquisition of high resolution satellite images and aerophotos                                                                                                      | ENE A         | ALL                  |
|              |                                                                  | 1.2 collection and analysis of historical material (photos, maps, databases, etc.)                                                                                                                                        |               |                      |
|              |                                                                  | 1.3 collection and analysis of existing studies/investigations regarding natural and anthropic risks (seismic events, landslides, floods, tsunamis, coastal erosion, fire, status of infrastructures and lifelines, etc.) |               |                      |
|              |                                                                  | 1.4 data homogenization and organization of a digital archive of the “state-of-the-art”, in GIS format (Geographic Information System) – see WP6                                                                          |               | -                    |

The activity has been completed. Specific work-package reports have been produced on landslide hazard [07] and fire hazard [08].

## WP02 Topographic and Laser Scanner 3D survey

| <i>WP 02</i> | <i>activity</i>                                | <i>sub-activity</i>                                                                                                                                                                                        | <i>leader</i> | <i>contributions</i> |
|--------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|
|              | <i>Topographic and Laser Scanner 3D survey</i> | <b>2.1</b> topographic survey of the GCPs (Ground Control Points) to georeferencing high resolution satellite images and DTM (Digital Terrain Model) implementation for all the municipality of Valparaiso | ENE A         | UNIFE                |
|              |                                                | <b>2.2</b> DGPS (Differential Global Position System) topographic survey in static configuration of the most significant and representative structures                                                     |               |                      |
|              |                                                | <b>2.3</b> 3D Laser-Scanner survey of 1 to 3 significant structures of the UNESCO area in Valparaiso (mainly in Barrio Puerto)                                                                             | UNIFE         | ENE A                |

The activity has been completed.

Specific Work Package reports have been produced on 3D Laser Scanner (LS) survey [11] and DGPS survey [06].



### WP03 Study of seismic hazard

| <i>WP 03</i> | <i>activity</i>                | <i>sub-activity</i>                                                                                            | <i>leader</i> | <i>contributions</i> |
|--------------|--------------------------------|----------------------------------------------------------------------------------------------------------------|---------------|----------------------|
|              | <i>study of seismic hazard</i> | 3.1 evaluation of existing studies and investigations                                                          | ICTP          | ENEA, UC, USM        |
|              |                                | 3.2 suggestion of future deeper analysis through new seismic microzoning experimental campaigns, if necessary  |               | ENEA                 |
|              |                                | 3.3 elaboration of seismic hazard scenarios and maps; digital archive of results; also in GIS format – see WP6 |               |                      |

The activity has been completed.

A specific Work Package report has been produced [09].

## WP04 Study of tsunami hazard

| <i>WP 04</i> | <i>activity</i>                                     | <i>sub-activity</i>                                                                                                         | <i>leader</i> | <i>contributions</i> |
|--------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|
|              | <i>study of tsunami and coastal erosion hazards</i> | 4.1 evaluation of existing studies and investigations                                                                       | ENEA, ICTP    | -                    |
|              |                                                     | 4.2 implementation of the existing studies and investigation regarding tsunami and coastal erosion risks in the UNESCO area |               | -                    |
|              |                                                     | 4.3 elaboration of risk scenarios and maps; digital archive of results, also in GIS format – see WP6                        |               |                      |

The activity has been completed.

A specific Work Package report has been produced [10].

## WP05 Vulnerability analysis

| <i>WP 05</i> | <i>activity</i>               | <i>sub-activity</i>                                                                                                                                         | <i>leader</i> | <i>contributions</i> |
|--------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|
|              | <i>vulnerability analysis</i> | 5.1 identification and classification of the structural typologies present in Valparaiso, with particular regard to the UNESCO area                         | UNIFE         | ENEA                 |
|              |                               | 5.2 visual quick survey (architectonic/structural) for a representative amount of buildings and comparison with data obtained by satellite image processing |               |                      |
|              |                               | 5.3 visual deeper survey (vulnerability evaluation) of some representative buildings                                                                        |               |                      |
|              |                               | 5.4 vulnerability scenarios and maps elaboration                                                                                                            |               |                      |
|              |                               | 5.5 identification of interventions reducing structural vulnerability                                                                                       |               |                      |
|              |                               | 5.6 suggestion of future diagnostic campaigns, in situ dynamic characterization and experimental laboratory tests; suggestion of numerical simulations      | ENEA, UNIPD   |                      |
|              |                               | 5.7 organization of a digital archive for the results and cataloguing , also in GIS format – see WP6                                                        | ENEA          | UNIFE                |

The activity has been completed.  
 Specific Work Package reports have been produced [12-13].

## WP06 Development of the geo-referenced digital archive

| <i>WP 06</i> | <i>activity</i>                                          | <i>sub-activity</i>                                                                                                                                                                        | <i>leader</i> | <i>contributions</i> |
|--------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|
|              | <i>Development of the geo-referenced digital archive</i> | 6.1 development of the GIS conceptual model                                                                                                                                                | ENEA          | UNIFE                |
|              |                                                          | 6.2 analysis and spatial homogenization of the information provided by existing studies and investigations (« state-of-the-art ») for all the Valparaiso area                              |               | -                    |
|              |                                                          | 6.3 ortho-rectification of the satellite images, implementation and actualization of the high definition vectorial base from satellite images of the buildings for all the Valparaiso area |               |                      |
|              |                                                          | 6.4 urban classification of Valparaiso from high definition satellite images                                                                                                               |               | UNIFE                |
|              |                                                          | 6.5 creation of the GIS digital archive for the results obtained from the risk analyses performed for the UNESCO area                                                                      |               |                      |
|              |                                                          | 6.6 spatial elaboration of maps and scenarios (hazard, vulnerability, specific and multiple risks)                                                                                         |               | UNIFE, ICTP, UNIPD   |

The activity has been completed.

A specific Work Package report has been produced [05].

## WP07 Principal final proposals

| <i>WP 07</i> | <i>activity</i>                  | <i>sub-activity</i>                                                                                                      | <i>leader</i> | <i>contributions</i> |
|--------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|
|              | <i>Principal final proposals</i> | 7.1 natural/anthropic disasters mitigation and vulnerability reduction in Valparaiso and particularly in the UNESCO area | ENE, UNIFE    | ICTP, UNIPD          |

The activity has been completed.

Final proposals are reported in each specific work-package reports [05-13].

Furthermore, an additional summary report is going to be produced before the final conference.

## WP08 Realization of multimedia products

| WP 08 | activity                           | sub-activity                                                               | leader | contributions      |
|-------|------------------------------------|----------------------------------------------------------------------------|--------|--------------------|
|       | Realization of multimedia products | 8.1 project and realization of the WEB site, audiovisuals, CD-ROM, WEB-GIS | ENEA   | UNIFE, ICTP, UNIPD |
|       |                                    | 8.2 international workshop                                                 |        | ALL                |

The activity has been completed.

The project website (<http://www.bologna.enea.it/lab-risk/Valpa.proj.Presentazione.htm>) is going to be updated with all the final results.

All the in-field activities have been filmed. In particular, during the work in the Cerro Cordillera, an important interaction with the resident people (through interviews) has been developed, in order to explain the research goals and receive their feedback about risk awareness. Thus, a movie, summarizing the “MAR VASTO” activities, will be presented in the framework of the final conference (Valparaíso, September 29-30, 2008).

Two presentations of the “MAR VASTO” project have been carried out (an invited lecture at the conference “El terremoto de Valparaíso de 1906” in the framework of the VI Chilean Congress of Geotechnics, held by the Pontificia Universidad Católica of Valparaíso, November 29, 2007; a specific seminar organized at the Universidad Federico Santa María of Valparaíso, November 22, 2007).

The presentation of the following scientific paper has been done at the 6<sup>th</sup> Conference on Structural analysis of historic construction (SAHC), Bath, United Kingdom, 2-4 July 2008:

M. Indirli, F. Geremei, C. Puglisi, A. Screpanti, ENEA, Italy

D. Blersch, L. Lanzoni, N. Lopez Izquierdo, E. Milani, M. Miglioli, G. Simonini, University of Ferrara, Italy

M. Munari, University of Padua, Italy

F. Romanelli, ICTP, Abdus Salam International Centre for Theoretical Physics of Trieste, Italy

*“A GIS platform on main natural hazards for Valparaíso City (Chile) and vulnerability studies for some historical constructions and urban sectors”.*

The presentation of the following abstracts has been done at the PROHITECH 2009 International Conference, “Protection of Historical Buildings by Reversible Mixed Technologies”, Rome, June 21-24, 2009:

- Maurizio Indirli, Sotero Apablaza Minchel, et al.

*“General description of the project MAR VASTO (Manejo de riesgos en Valparaíso)”;*

- Luca Lanzoni, Sotero Apablaza Minchel, Marco Miglioli, Enrico Milani, Marco Munari, Giampaolo Simonini, Cristian Palma Valladares, Claudia Zuñiga Jara, Maurizio Indirli

*“The investigation on a Cerro Cordillera building stock in the framework of the project MAR VASTO (Manejo de riesgos en Valparaíso)”;*

- Marco Munari, Enrico Milani, Daniel Blersch, Sotero Apablaza Minchel, Carola Avalos Avalos, Cristian Palma Valladares, Claudia Zuñiga Jara, Maurizio Indirli

*“The investigation on three important churches stock in the framework of the project MAR VASTO (Manejo de riesgos en Valparaíso)”;*

- Fabio Romanelli, Claudio Puglisi, Augusto Screpanti, Lorenza Bovio, Fabio Geremei, Mauricio Gonzalez Loyola, Sotero Apablaza Minchel, Maurizio Indirli

*“Hazards investigation in Valparaíso stock in the framework of the project MAR VASTO (Manejo de riesgos en Valparaíso)”.*

The MAR VASTO general activity has been also presented and discussed in the framework of the EU COST Action C26, “Urban Habitat Constructions under Catastrophic Events”, (<http://www.civ.uth.gr/cost-c26/>), both in the general meetings and in the WG4 sessions (Working Group 4: “Risk Assessment for Catastrophic Scenarios in Urban Areas”, in which Dr. Maurizio Indirli is Vice – Chair).

Moreover, in the framework of the Master Ecopolis, managed by the University of Ferrara, regarding urban and environmental planning (<http://www.masterecopolis.it/>), the following presentations have been done (May 8, 2008):

- Maurizio Indirli (ENEA): “The MAR VASTO Project”;
- Luca Lanzoni (University of Ferrara): “The urban planning approach in UNESCO sites”;
- Sotero Apablaza (OGP Valparaiso): “Valparaiso, world cultural patrimony”;
- Mauricio Gonzalez (OGP Valparaiso): “Urban planning and GIS in Valparaiso”;
- Claudia Zuniga (OGP Valparaiso): “OGP in-progress projects”.

Press conferences together the Mayor of Valparaíso and other meetings with reporters during the in-field activities have been carried out. An example of a newspaper’s report (“La Estrella de Valparaiso, December 1<sup>st</sup>, 2007) is shown in **[03]**.



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il segretario generale

Roma, 12/02/2008  
205C/278

**Ing. Maurizio Indirli**  
Responsabile dell'aggregato progettuale PSICHE  
Protezione Sismica del Cultural Heritage  
Ente per le nuove Tecnologie, l'energia e l'Ambiente (ENEA)  
Bologna

**Oggetto:** Concessione di borse IILA per il Progetto di ricerca "Manejo de riesgos en Valparaiso, Chile", realizzato dall'ENEA con il finanziamento del BID.

Gentile Ingegnere,

in risposta alla Sua relativa alla richiesta di 4 borse di studio per architetti cileni nell'ambito del progetto in oggetto, ho il piacere di confermarLe il sostegno di questo Organismo Internazionale all' *Ente per le nuove Tecnologie, l'energia e l'Ambiente (ENEA)* attraverso il finanziamento di un periodo di 12 mesi/uomo per la formazione prevista nell'ambito del progetto in oggetto.

I beneficiari, ai quali invieremo la comunicazione di assegnazione della borsa, sono quelli da Lei indicati:

- Arch. Claudia Andrea Zuñiga Jara ( 2 mesi)
- Arch. Mauricio Sebastian Gonzalez Loyola (2mesi)
- Arch. Cristian Ignacio Palma Valladares (4mesi)
- Arch. Carolina Avalos ( 4 mesi)

Una volta concluso il loro periodo di formazione in Italia, La prego di farci pervenire le relazioni che gli stessi sono tenuti a redigere e le Sue osservazioni sui risultati conseguiti; così come lo studio che invierete al BID, nonché le eventuali proposte per nuove iniziative che possano eventualmente includere anche altri paesi membri dell'IILA.

Distinti saluti

  
Paolo Bruni

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Figure 1: Letter of IILA for bursaries to Chilean experts.





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Roma, 20/02/2008  
205C/335

Ing. Maurizio Indirli  
Responsabile dell'aggregato progettuale PSICHE  
Protezione Sismica del Cultural Heritage  
Ente per le nuove Tecnologie, l'Energia e l'Ambiente (ENEA)  
Bologna

Oggetto: Concessione di borse IILA per il Progetto di ricerca "Manejo de riesgos en Valparaiso, Chile", realizzato dall'ENEA con il finanziamento del BID.

Gentile Ingegnere,

Di seguito il dettaglio del contributo IILA all'Ente per le nuove Tecnologie, l'Energia e l'Ambiente (ENEA) per le borse di studio agli architetti cileni nell'ambito del progetto in oggetto:

- Arch. Claudia Andrea Zuñiga Jara : € 1.200 mese x 2 mesi, marzo - aprile 2008 = € 2.400 - Assicurazione borsisti - INA Assitalia;
- Arch. Mauricio Sebastian Gonzalez Loyola: € 1.200 mese x 2 mesi, marzo - aprile 2008 = € 2.400 - Assicurazione borsisti - INA Assitalia;
- Arch. Cristian Ignacio Palma Valladares: € 1.200 mese x 4 mesi, marzo - giugno 2008 = € 4.800 - Assicurazione borsisti - INA Assitalia;
- Arch. Carolina Avalos: € 1.200 mese x 4 mesi, marzo - giugno 2008 = € 4.800 - Assicurazione borsisti - INA Assitalia;

La prego di comunicarci le modalità per la erogazione delle borse di studio e di ricordare ai beneficiari e alla Municipalità di Valparaiso che si tratta di borse erogate dall'IILA.

Colgo l'occasione per porgerLe i miei più distinti saluti e La prego di mantenere l'IILA informato del lavoro svolto.

  
Eugenia Fedeli  
Capo Servizio Cooperazione IILA

Figure 2: Letter of IILA for bursaries to Chilean experts.

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