

COORDINATOR'S MESSAGE

Welcome to the first newsletter of the **Know your city, Reduce seismic risk through non-structural elements** (KnowRISK) project. A part of the publicity actions planned for this project is the publication of a periodic electronic newsletter that is aimed at presenting the KnowRISK on-going activities and results. In this 1st issue we present a summary of the project, its goals and tasks, the latest news about meetings and workshops, and work that is in progress.

[Mário Lopes]



Overview

The KnowRISK project's main goal is to provide local communities access to expert knowledge on reduction of non-structural seismic risk and protection solutions. Scientific knowledge is turned into practical knowledge to be used by citizens and to engage communities in disaster risk reduction. This project was awarded a grant from the European Union (ECHO) and is being coordinated by Instituto Superior Técnico (IST) of Lisbon. KnowRISK project duration is two years, between 1 January 2016 and 31 December 2017.



PROJECT STRUCTURE



Added Values

Portfolio, Practical Guide and Video

KnowRISK risk communication initiatives rely on specific tools that can be used by a wide range of stakeholders: a Portfolio for building stakeholders, managers and professionals, and a Practical Guide for citizens. The Portfolio will help identify non-structural elements in building stock that may cause harm to occupants and reduce buildings' functionality, and provide economic and socially feasible solutions to reduce such risks. The Practical Guide is a tool to raise awareness among citizens on the need to reduce non-structural vulnerability highlighting which are the Do-It-Yourself solutions and which are those requiring expert intervention.

Shaking table tests on a full scale bedroom took place at LNEC, in Lisbon. The tests are intended to simulate the seismic action that leads to the toppling or movement of common furniture in most homes. Earthquake mitigation techniques to secure items and other elements were tested to assess their effectiveness as self-protection against non-structural damage that occurs during an earthquake. These tests will result in an awareness action film, to publicize and communicate protective actions and measures relating to non-structural elements and components.

Amatrice Field Mission



Norcia partially damaged by the 30th October earthquake



Aerial view of Amatrice



A KnowRISK mission, comprising members of IST and INGV visited the region of Amatrice in October and December. The IST team visited Norcia on 26th October, a few hours before the earthquakes of that day. They had a meeting with the Sindaco (mayor) of Norcia, during which they discussed the reasons for the good performance of the Norcia housing stock during the 24th August earthquake, and the seismic strengthening that had been performed during the last 4 decades.

ENGAGEMENT

Schools are a main target of KnowRISK communication actions. Playing a central role at the community level, they are places where different social groups normally converge. **Know your school: be safe!** are the participatory campaigns that engage public in risk communication. They stand on a dialogic approach where experts (researchers and local civil protection officials) collect inputs to tune their actions, while the public participation (students, teachers and their surrounding community) reinforce active citizenship.

SCHOOLS ACTIONS in Italy and Portugal

Know your school: be safe! in Italy

It started in the Spring of 2016 and it is an on-going action that will involve more than 2.000 students living in La Spezia, Milano, Varese, and Catania. A new learning strategy, based on Situated Learning Episode, EAS, was implemented to risk communication. It is a flipped up teaching approach where homework is for learning and skills, and classwork is for reworking and understanding. The KnowRISK-EAS is peculiar: it starts and ends with two different focus groups where students and teachers meet researchers and fire brigades to rework, restructure concepts and to come up with appropriate behaviors towards non-structural vulnerability.

Know your school: be safe! in Portugal

It started on October 2016 and will finish in March 2017. It involves 120 students from two schools in the Alvalade pilot area. The activities comprise: 1) Ex ante and Ex post surveys; 2) Ten classes to teach concepts about seismic risk and non-structural protective measures to 11-14 years old students; 3) Final workshop dedicated to the entire school, parents and local authorities and community.

Know Your School: be Safe!



The KnowRISK EAS for Italy

The protocol included Ex ante and Ex post surveys

Preparation	T ₀ Focus Group	Expert support	Problem solving
Activity	Home work	Students	Learning by doing
Debriefing	T ₁ Focus Group	Expert support	Reflective learning

Protective behaviour model for Portugal

Knowledge

Dialogue

Vision of consequences

Development of competences



MEETINGS: 2ND GENERAL MEETING

The Osservatorio Etneo, INGV Sezione di Catania, hosted the 2nd General Meeting of the KnowRISK project from 15 to 16 December 2017 (<http://www.ct.ingv.it/knowrisk2016/>). Participants discussed engineering and seismological scenarios in the three pilot areas. Indeed, an in-depth debate was also devoted on ways to implement efficient strategies for risk communication. Experts' attention focused on barriers that hinder adoption of preventive measure, even when they are low-cost and easy to implement.

The meeting had the patronage of the town of Noto - a UNESCO cultural heritage site - where the participants of the meeting had a field trip on December 17th. The old town Noto was totally destroyed by a M 7.3 earthquake on January 11th 1693 that caused 60000 casualties. Extended abstracts of the meeting are published on an open access journal: MISCELLANEA INGV, ISSN 2039-6651, 33.

<http://istituto.ingv.it/l-ingv/produzione-scientifica/miscellanea-ingv/>



Credits photo by Alfio Amantia

KnowRisk

Catania

PORTUGAL

ITALY

ICELAND

DISSEMINATION EVENTS

Talks | Comunicação de Risco. Quando Lisboa Treme – de 1755 à Cidade Resiliente

Date(s): 28 January 2016

Location: Lisbon, Portugal

KnowRISK involvement: standard dissemination

Website: <http://www.cm-lisboa.pt/cidade-resiliente>

EGU General Assembly 2016

Date(s): 17-22 April 2016

Location: Vienna, Austria

KnowRISK involvement: project presentation + standard dissemination

Website: <http://www.egu2016.eu/>

[The 3 presentations of the project - one PICO and two posters - received great appreciation, as the number of worldwide visitors was particularly high. Attendees had their expertise in several fields: seismologists, engineers, experts in communication, filmmakers, and architects]

Sísmica 2016 - 10º Congresso Nacional de Sismologia e Engenharia Sísmica

Date(s): 20-22 April 2016

Location: Azores, Portugal

KnowRISK involvement: standard dissemination

Website: <http://sismica2016.azores.gov.pt/>

ScienzAperta

Date(s): 12-13 May 2016

Location: Milan, Italy

KnowRISK involvement: project presentation + standard dissemination

People: 10 classes with more than 200 students

Website: <http://scienzaperta.rm.ingv.it/>

ScienzAperta

Date(s): 16-21 May 2016

Location: Catania, Italy

KnowRISK involvement: project presentation + standard dissemination

People: 12 classes with more than 500 students and several other visitors

Website: <http://scienzaperta.rm.ingv.it/>

ICUR2016 - International Conference on Urban Risks

Date(s): 30 June-2 July 2016

Location: Lisbon, Portugal

KnowRISK involvement: standard dissemination

Website: <http://www.ceru-europa.pt/icur2016/>

35rd General Assembly of the European Seismological Commission (GA ESC)

Date(s): 4-11 September 2016

Location: Trieste, Italy

KnowRISK involvement: project presentation + standard dissemination

Website: <http://www.35esc2016.eu/>

Sons do Vale_Sustentabilis

Date: 11 September 2016

Location: Lisbon, Portugal

KnowRISK involvement: project presentation + standard dissemination

Website: <https://www.facebook.com/sonsdovalesustentabilis/?fref=ts>

TutelaSpezia

Date(s): 1-2 October 2016

Location: La Spezia

- a) KnowRISK involvement: lectures to elementary school students with a scientific story-telling activity (PROTEGO 2016);
 - b) the participated exhibition "Non aver paura! Gioca e impara a convivere con la natura" with hands on activities and scientific fairy tales;
 - c) the conference "Risk is a choice, are you aware?".
- a) and b) in collaboration with Ordine Regionale dei Geologi della Liguria and fiabeefrane from Viareggio.

Website: <https://www.facebook.com/tutelaspezia/photos/a.485439121638538.1073741828.484087525107031/612939558888493/?type=3>;
https://tutelaspezia.files.wordpress.com/2016/10/tutelaspezia_comunicatostampa_1.pdf;
http://www.speziafiere.it/index.php?option=com_content&view=article&id=386:tutelaspezia&catid=22:calendario-completo-2016&Itemid=72

La Settimana del Pianeta Terra

Date(s):

- a) 16/10/2016 Playdecide: terremoti, comunicare l'emergenza, Ferrara.
<http://www.settimanaterra.org/node/1981>
- b) 17-22/10/2016 Rischio sismico e ambientale: tra conoscenza e mitigazione, Lerici (La Spezia) with the scientific games for schools "Trova il senso... con il rischio" <http://www.settimanaterra.org/node/2067>
- c) 18-19/10/2016 Tra terremoti e dissesto idrogeologico: un paese di pericoli, Varese with scientific games for schools and excursion in collaboration with Parco Campo dei Fiori <http://www.settimanaterra.org/node/2069>

Location: Varese, Ferrara and La Spezia

KnowRISK involvement: T₀-Focus group, Lecture activity, hands-on laboratory and a role game (playdecide)

Website: <http://www.settimanaterra.org/>

Bimbi per bimbi

Date(s): October-November 2016

Location: Viareggio and Fivizzano

- a) 11/11/2016 at "Jenco" school of Viareggio
- b) 20/11/2016 a Fivizzano (MS) "Terremoto in Piazza" together with Settore Sismica della Regione Toscana

KnowRISK involvement: Lecture activity, hands-on laboratory

Website: <https://fiabeefrane.com/>;
<https://fiabeefrane.com/2016/09/24/bimbi-per-bimbi/>

The schools' security day

Date: 22 November 2016

Location: La Spezia

National event by the Ministry of Education MIUR (Ministero dell'Istruzione, dell'Università e della Ricerca)

KnowRISK involvement: KnowRISK EAS at "J. Piaget" school of La Spezia
Website: http://www.istitutocomprendivo6laspezia.it/pvw/app/SPME0045/pvw_sito.php?sede_codice=SPME0045&from=-1&page=1979591;
http://www.istitutocomprendivo6laspezia.it/pvw/app/SPME0045/pvw_sito.php







COORDINATOR'S MESSAGE

Welcome to the second newsletter of the **Know your city, Reduce seismic risk through non-structural elements** (KnowRISK) project. Nearly to the end of this two years project, in the 2nd issue we present the latest news about meetings, stakeholders, workshops, dissemination activities and events, advertising campaigns and their results. Stay tuned for the Final Conference!

[Mário Lopes]

2nd NEWSLETTER →

Stakeholders involved in Iceland

In Iceland among the stakeholders, were the Mayors of Hveragerði and Selfoss, two nearby towns in South Iceland. The Mayor of Hveragerði shared her opinion on the Practical Guide. The headmaster of the school Sunnulækjaskóli shared preventative actions commonly undertaken in his school professionals and engineers from the Icelandic Construction Authority and consulting engineers discussed various solutions to mitigate vulnerability of non-structural components (NSC), and the provisions in Icelandic design practice.

3d General Meeting at ICESD 2017

The International Conference in Earthquake Engineering and Structural Dynamics (ICESD 2017), dedicated to the memory of Prof. Ragnar Sigbjörnsson, took place in Reykjavík (Iceland, 12-14 Jun). The Conference brought together distinguished scientists, experts and stakeholders to share and debate engineering seismology, earthquake engineering, science education and communication. A special session was dedicated to the KnowRISK project. It was an excellent opportunity to share our findings and communication activities.

<http://icesd.hi.is/proceedings/>



3rd General Meeting at ICESD 2017

Stakeholders involved in Italy



Selected stakeholders were contacted in Italy to discuss barriers to the adoption of preventative measures for the reduction of NSC vulnerability and present project products. Schools stakeholders, citizens living in historical downtowns, building stakeholders, architects, engineers, civil protection officers have given their contribution to the project in different ways. Within the summer schools for earth science communication and education held at the University of Camerino (16-19 July) school stakeholders, namely teachers and principles, coming from all over the country assessed the Practical Guide and Students' Short Guide as concerning their efficacy of communication. KnowRISK had a shared partnership with the Master in Journalism and Institutional Communication of Science at the University of Ferrara for the involvement of citizens and stakeholders that had recently experience the 2012 Emilia earthquake. Focus groups, in-depth interviews results were discussed in a final workshop held in Ferrara last October. Here, the project coordinator, EERC and the INGV partners discussed risks maps and the Practical Guide with stakeholders. The institution of engineers of Sicily was contacted to assess a preliminary list of items that might be addressed in the Portfolio of Solutions that KnowRISK was going to prepare. They were explicitly asked to detect missing items, comment on their vulnerability, express their priorities (High, Medium and Low) and eventually suggest measures to reduce vulnerability they consider be the most feasible. The results were extremely useful and incorporated into the making of the Portfolio.

NEXT TRAIN
12:17

Stakeholders involved in Portugal

Several meetings with different stakeholders took place from July to October 2017. The meetings were in general of one-hour duration and the KnowRISK team presented a powerpoint explaining the project and asking the collaboration of the stakeholders for the completion of the Portfolio of Solutions. The Practical Guide and a preliminary version of the KnowRISK Portfolio of Solutions were distributed to the stakeholders. The meetings were very productive with the discussion about the main non-structural elements concerning each stakeholder, and how the project will affect their problems and needs. Meetings with stakeholders: EDP-Energias de Portugal, CTT Correios de Portugal, SONAE MC, Jerónimo Martins, NOS communications and entertainment group, IKEA Portugal, CP Comboios de Portugal, Metropolitano de Lisboa, Infraestruturas de Portugal, EPAL-Empresa Portuguesa das Águas Livres, S.A. and Siemens.



Data Centre, Portugal



KNOW YOUR SCHOOL: BE SAFE!

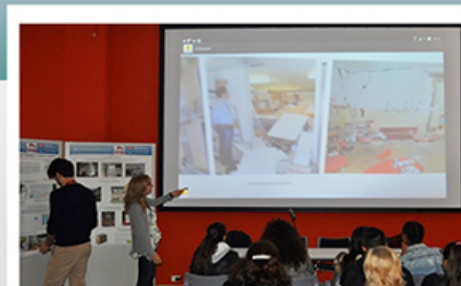
In Italy the action in the schools continued testing the project common questionnaire (Laveno Mombello, Northern Italy pilot area) and including the Mt Etna pilot area. The challenge that INGV project members faced was to adapt the protocol of intervention, tested in a moderate and middle-seismic hazard zone, to be run in a high-hazard zone. Students' homework were part of a contest entitled **"Are you taking too many risks?"** that prized last May three of the KnowRISK schools. We plan to host representatives of Italian schools who won the contest at the KnowRISK final conference. In May 2017 ScienzaAperta in Milano was again entitled to KnowRISK.

Members of the INGV task-E working group, coming from INGV divisions in Catania, La Spezia, Genoa and Milano, and the project's consultant gave talks and run several activities with more than 120 students. We used the Augmented Reality (AR) tool to motivate students towards the need to reduce NSC vulnerability, the Students Short Guide to run games (i.e. find the difference before and after the solutions). To distinguish structural from non-structural components is fundamental to support Do-it-Yourself actions. Towards this end we run with the students a shake table activity with mush-mellow and spaghetti.



Images below, from the left:

1. *"Shake it!"*, a cardboard hand-made shake table to understand the effect of shaking on buildings;
2. INGV coordinator welcome address to the conference hall;
3. *"On duty at the earthquake monitoring centre"* to learn which are the most important parameters to measure when an earthquake occurs;
4. *"The risk is not a game"* to learn how to distinguish hazard from risk and to detect the most common Non-Structural Components (NSC) at home and at school;
5. *"Non-structural damage: do you know the risk?"* to learn the consequences of shaking on Non-Structural Components and how to reduce the risk, from Augmented Reality applications.



In Portugal, on April 2017, the students from Rainha Dona Leonor and Padre António Vieira schools presented their house models to other colleagues and teachers and they also made a presentation to communicate seismic risk and protective measures.

From 9 to 11 May 2017 a selected group composed by 17 students of a third class (13-14 years), four teachers and the headmaster from Istituto Scolastico Secondario di Primo Grado Jean Piaget of La Spezia (Italy) visited Lisbon to promote knowledge exchange. The visit was composed by a thematic tour around the city on the first day. On the second day they visited LNEC's shake table and participated in the activity "**Who wants to be safe?**". On the last day Italian students visited Padre António Vieira school and both countries presented the KnowRISK experiences. It was interesting and fun, and the language exchange was a wonderful way to learn about the two cultures



Exhibition at Escola Secundária Rainha Dona Leonor and Padre António Vieira



La Spezia school visiting Lisbon



DISSEMINATION EVENTS: Highlights



In Portugal and Italy

KnowRISK participated in the European Researcher's Night (ERN), celebrated all over Europe in September 29, from 6p.m. to 12p.m.



In Lisbon pilot area, during the ERN, the exhibition "**Hard Engineering: Propositions for Future Ruins**" was inaugurated at the National Museum of Natural History and Science (on display until November, 5). It includes six visual and text guides to Lisbon that are the result of new collaborations across a broad range of disciplines (Art, Architecture, Civil Engineering, Physical and Human Geography and Social Anthropology). The video installation, situated in the main riding hall, extends these themes and approaches with a work made collaboratively by the artists involved in the city guides. The exhibition was curated by RCA Research Tutor, Jaspar Joseph-Lester, Julie Westerman and Susanne Prinze. More information here: <http://www.museus.ulisboa.pt/pt-pt/hard-engineering>

The IST team - Mónica Amaral Ferreira - collaborated in the "**Building up and Falling Down**" city guide.

"Move, Protect and Secure" campaign

In Portugal KnowRISK launched the advertising campaign "**Mover, Proteger e Fixar**" on International Day for Disaster Reduction (September 13). Each of the four clips aims to remind us of the importance of securely fastening items around the home. On The KnowRISK website you can download the Practical Guide and watch the videos. Portuguese stakeholders are running this campaign in their internal communication channels as well as the Practical Guide.

Practical Guide: <https://knowriskproject.com/practical-guide/?lang=pt>

Mover, Proteger e Fixar:

<https://knowriskproject.com/campanha-mover-proteger-e-fixar/?lang=pt>

In Northern Italy pilot area, during the ERN, the INGV coordinator presented and distributed to general public the Practical Guide and the Short Guide for Students at the Museum of Science and Technology of Milan. In Mt Etna pilot area, the 5th edition of La Settimana del Pianeta Terra (Week of Planet Earth) hosted a KnowRISK event at INGV Sezione di Catania (October 21, 2017, from 9:30 to 19:30). **"Inside the earthquake: a path with Augmented Reality applications for the knowledge and reduction of non-structural damage"** was organized by INGV team members in collaboration with the Istituto di Radio Astronomia (IRA; Noto, Syracuse). More than 100 visitors, students, families, and professionals, attended the event. Sounds, images, and videos "animated" by Augmented Reality presented the problem (seismic hazard), its effects on non-structural components and suggested the possible solutions to reduce damage. The KnowRISK project was presented and its products (the Practical Guide and the Students' Short Guide) were distributed to the local community.



Banner of the "geoevent" Settimana del Pianeta Terra (Week of Planet Earth) at Catania on October 21 2017 along with INGV project members - who run the AR tool during the event - and external co-workers. Photo courtesy of P.R. Platania.

In Northern Italy pilot area, KnowRISK participated also at the 2nd edition of a Science Festival from 2nd to 5th of November 2017, held in Suzzara (Mantova), a small town hit by a damaging earthquake in 2012. Two conferences, for adults and students, were the framework in which KnowRISK products (i.e. the Practical Guide and the Students' Short Guide) were presented and delivered.



Science Festival (Suzzara, Mantova)
INGV coordinator talking to students on earthquakes and solutions to improve vulnerability of buildings contents.



MORE DISSEMINATION EVENTS

Keynote

Date: 6 November 2017

Location: Lisbon, General Secretariat of the Ministry of Finance

KnowRISK involvement: seismic vulnerability of Pombaline construction and non-structural risk

People: 60

Lectures for students, teachers and Civil Protection from Almada

Date: 31 October 2017

Location: Almada, Colégio Campo de Flores

KnowRISK involvement: measures to reduce seismic risk

People: 100 students of 11-12 years old, teachers and 20 agents from Civil Protection

Exhibition "Hard Engineering: Propositions for Future Ruins"

Date(s): 29 September - 5 November 2017

Location: Lisbon, National Museum of Natural History and Science

KnowRISK involvement: Alvalade RiskMAP and shake table movie

School of Science Communication

Date(s): 27 March 2017 - 1 April 2017

Location: Castiglione del Lago (Perugia)

KnowRISK involvement: lecture to PhD students and young researchers

Talks | Conversa de Café

Date: 24 March 2017

Location: Lisbon, JF Olivais

KnowRISK involvement: seismic risk and civil protection plans

Website: <http://www.jf-olivais.pt/noticias/?UserKey=Conversas-de-Cafe>

Workshop Loja + sustentável

Date: 24 March 2017

Location: Lisbon, JF Olivais

KnowRISK involvement: workshop to shopkeepers from Olivais markets

Volalibro

Date(s): 6-10 March 2017

Location: Noto

KnowRISK involvement: activities for pupils with Augmented Reality on how to reduce non-structural damage

People: 350 students

Website: <http://www.volalibro.org/wps/>

Lectures for teachers

Date: 24 February 2017

Location: Bolzano, Museum of Natural History

KnowRISK involvement: lectures on "how to teach earthquakes at school"

People: 50 teachers

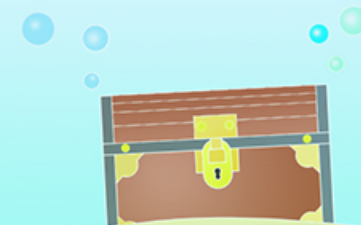
Lectures for students and teachers

Date: 22 February 2017

Location: Lisbon, Instituto Superior Técnico

KnowRISK involvement: measures to reduce seismic risk

People: 80 students of 15-16 years old, from Escola Secundária Quinta do Marquês, Oeiras



SAVE THE DATE

Lisbon, 11-13 December 2017
KnowRISK Final Conference

The KnowRISK organises its Final Conference and 4th General Meeting on December 11-13, 2017. The aim of the conference is to strengthen cooperation between stakeholders, to share information and to present the main findings of this two years project. This conference also represents a moment to explore new opportunities for collaboration.



Designed and built by Lisa Orlando

