EUR-OPA
EUR-OPA MAJOR HAZARDS AGREEMENT
ACCORD EUR-OPA RISQUES MAJEURS

COUNCIL OF EUROPE
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EUROPEAN CENTRE ON PREVENTION AND FORECASTING OF EARTHQUAKES

E.P.P.O.
Earthquake Planning & Protection Organization

Meeting of the Directors of Specialised Centres E.C.P.F.E.

European and Mediterranean Major Hazards Agreement (EUR-OPA)

17-18 November 2022

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2022 ACTIVITIES

ACTIVITY No 1 : "Edition of an Atlas of the "Monuments of Greece classified according to their seismic behavior"
Coordination Center : ECPFE

Different Structural typologies already elaborated By ECPFE

SRUCTURAL CATEGORY	LAGOMARSINO CLASSSIFICATION GREEK ADAPTATION	
A	This category collects architectonic assets with two main bearing structural elements: **vertical walls** and **horizontal floors or roofs**. If they are properly connected, cooperation between the structural elements allows the building to **behave as a box,** or a number of boxes	*A1 palaces* *A2 castles* *A3 religious houses* *A4 caravansaries* *A5 madrasas*
AB	This category collects **complex** architectonic assets which are characterized **by wide spaces with** few inner walls, with or without colonnades, connected to the perimetric walls with **intermediate floors or roofs, or with additional box structures around the main wide space**	
B	This category collects architectonic assets which are characterized by **wide spaces without intermediate floors** and few inner walls. Independent damage mechanisms occurs in the different parts of the building, and it is often possible to recognize **specific structural macroelements** (façade, triumphal arch, apse, dome, transept,…). It refers mainly to large scale structures	*B1 churches* *B2 mosques* *B3 temples* *B4 baptisteries* *B5 mausoleum* *B6 hammam* *B7 theatres*

SRUCTURAL CATEGORY	STRUCTURAL	SYSTEM
C	This category collects architectonic assets in which the **vertical dimension prevails** on the other ones. Since usually, these buildings are characterized by significant slenderness, their seismic response may be assumed as a **global flexural behavior**.	C1 *towers* C2 *bell towers* C3 *minarets* C4 *lighthouses* C5 *chimneys*
D	This category collects architectonic assets with long free standing **columns** / piers / walls with or without **beams** / arches / vaults / buttresses forming mainly a plane structural element. Their seismic response may be assumed as an out of plane flexural behaviour	*D1 triumphal arches* *D2 aqueducts* *D3 bridges, walls*
E	This category collects massive constructions in which the wide thickness of walls, if compared to other dimensions, doesn't allow the idealization as plane structural element. Local failure occurs as, for example, the detachment of external leaf. Geotechnical aspects play as well important role.	*E1 fortresses* *E2 defensive city walls*
F	This category collects single isolated architectonic assets, which do not delimit an interior space.	*F1 columns* *F2 triliths* *F3 obelisks* *F4 archaeological ruin*

SRUCTURAL CATEGORY	STRUCTURAL	SYSTEM
G	This category refers to historical centers, or other clusters of buildings made of ordinary buildings' aggregates, which assume the relevance of cultural heritage asset as whole in the urban context. The seismic response must consider the interaction among adjacent buildings.	
H	This category refers to archaeological sites consisting of ordinary masonry remains of small height which are mainly vulnerable to environmental threats other than earthquakes	
I	This category refers to underground structures, often constructed with the cut-and-cover procedure, or structures carved in soft bedrock or caves. In these particular structures the geotechnical aspect is of main importance.	

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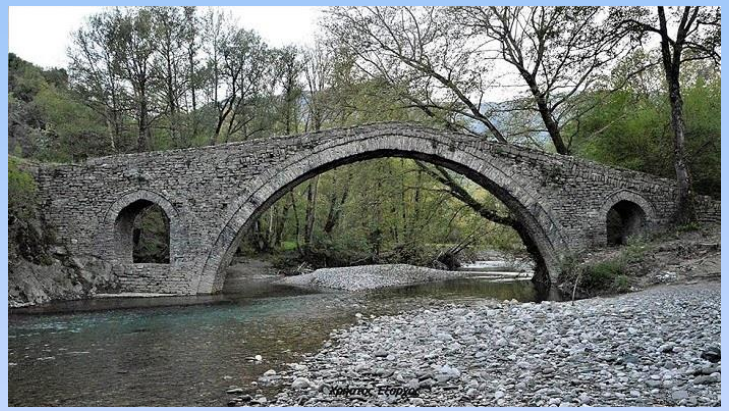
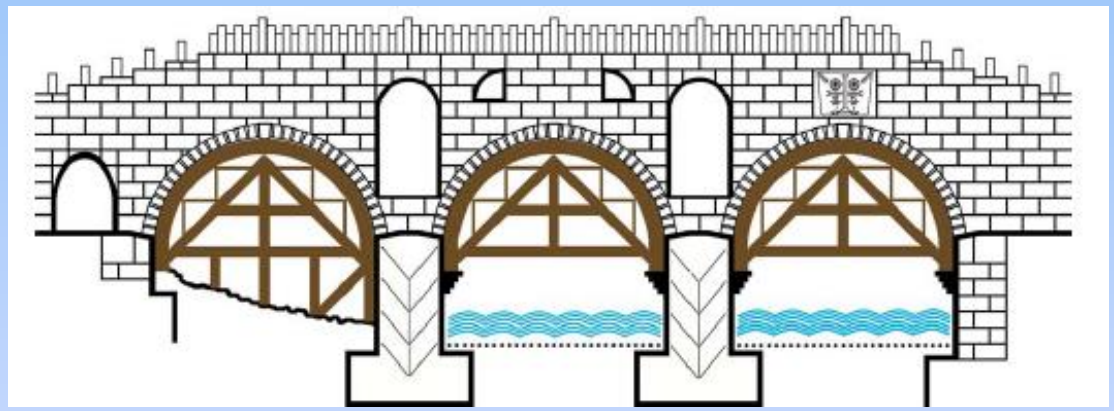
- Presentations and studies of the structural system of the various typologies of Monuments , based on Lagomarsino classification, but altered in such a way so as to simulate better the Greek Monuments, accompanied with photos
- Assessment of the Vulnerability of the different typologies





Structural Typology D3: Bridges

CO OPERATIONS WITH OTHER CENTERS

1. EUROPEAN CENTER FOR FOREST FIRES (ECFF)

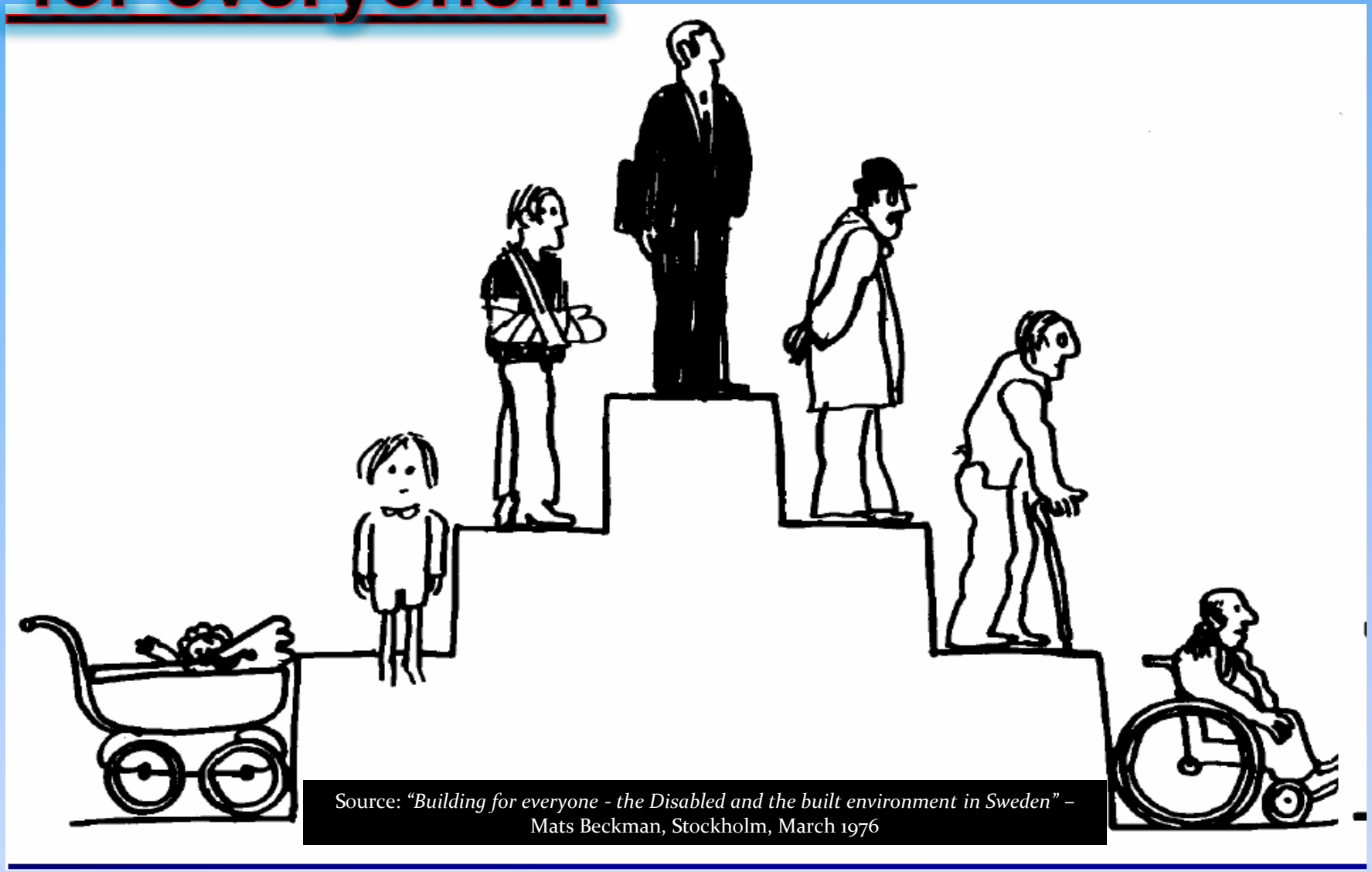
«Inclusion of Vulnerable groups in Disaster Preparedness and Response for coping with emerging Risks : Evacuation exercise including people with disabilities»

Coordination Center : ECFF
Partner: ECPFE

1.1.Presentation in the Workshop carried out in 8 November 2022, by ECFF titled:

«Earthquakes and people with disabilities: Protection Measures»

Earthquake Protection Policy for everyone…



Source: *"Building for everyone - the Disabled and the built environment in Sweden"* – Mats Beckman, Stockholm, March 1976

1.2 ACCESSIBILITY ASSESSMENT

The application of the methodology developed is beneficial for the promotion of the equality and non-discrimination principles.

During this Activity the following were carried out:

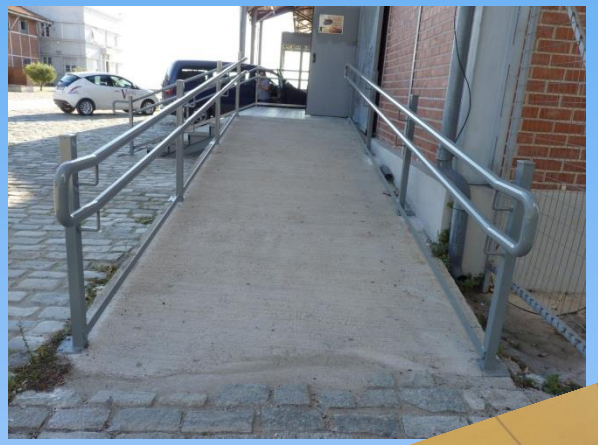
- The Development of a Methodology for evaluation the accessibility of disabled people in historic buildings
- The syntax of the relevant questionnaire

ACCESSIBILITY ASSESSMENT

1.2 Γεφύρωση υψομετρικών διαφορών πεζοδρομίου – οδοστρώματος (ράμπες στην οδό)

Γενικά

	Ναι	Όχι	Σημειώσεις
1.2.1 Υπάρχει υψομετρική διαφορά κατά μήκος της διαδρομής η οποία γεφυρώνεται με ράμπα / σκάφη; Εάν ναι, παρακαλώ μαρκάρετέ τη στο χάρτη.			
1.2.2 Συνέχεια: υπάρχει ράμπα / σκάφη στην απέναντι πλευρά της οδού;			
1.2.3 Εάν υπάρχει νησίδα ασφαλείας στην οδό υπάρχουν ράμπες / σκάφες σε αυτή;			
1.2.4 Αντιστοιχούν οι νησίδες ασφαλείας στις ράμπες / σκάφες της οδού / πεζοδρομίου;			
1.2.5 Ορατότητα: μπορούν οι πεζοί να δουν με ευκολία στην απέναντι πλευρά της οδού;			
1.2.6 Θέση: υπάρχουν ράμπες / σκάφες στα σημεία στα οποία οι πεζοί θα ήθελαν να διασχίσουν την οδό;			
1.2.7 Υπάρχουν εμπόδια τα οποία περιορίζουν το πλάτος της ράμπας;			
1.2.8 Είναι η ράμπα συνήθως κατειλημμένη από σταθμευμένα οχήματα;			
1.2.9 Είναι η επιφάνεια της ράμπας αντιολισθηρή, σταθερή και εύκολη στη			



The evaluation of the accessibility of an infrastructure or an archeological site focuses :

- **To what extent is the accessibility of an Infrastructure suitable to people with disabilities**
- **To make proposals for Accessibility improvement interventions in infrastructures, monuments and in archeological sites of significant tourist interest**
- **To the incorporation of the above in the Building Anti-Seismic Code**
- **To the improvement of the Accessibility management of various Governmental bodies, concerning people with disabilities**

2. EUROPEAN CENTER FOR VULNERABILITY OF INDUSTRIAL AND LIFELINES SYSTEM (ECILS)

«Seismic Vulnerability Assessment of the Skopje Old Bazaar»

Coordination Center : ECILS

Partner: ECPFE

During our visit to North Macedonia we carried out the following:

- **In 3 selected buildings of the Skopje Old Bazaar , we performed the Rapid Visual Inspection according to the First Degree Pre-Earthquake Assessment Procedure that is implemented in Greece using the related Form.**

- **The results were compared to those derived by the Relevant Methodology implemented in North Macedonia and regardless the different approach the 2 countries share a similar attitude.**

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THANK YOU FOR YOUR ATTENTION

https://ecpfe.oasp.gr

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