PROTECTION OF CULTURAL HERITAGE OBJECTS WITH MULTIFUNCTIONAL ADVANCED MATERIALS

RICHES Policy Seminar
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HEROMAT PROJECT

Protection of cultural heritage objects with multifunctional advanced materials

- FP7 theme [ENV-NMP.2011.3.2.1-1 NMP], Project reference: 282992
- Project type: COLLABORATIVE PROJECT - Small or medium scale focused project
- Duration: 48 months, Start date: 2011-12-01, End date: 2015-11-30
- EU contribution: 2.59 mn EUR, Total budget: 3.47 mn EUR

THE MAIN AIM WAS TO DEVELOP:

- innovative and environmental friendly materials that have chemical and mechanical properties tailored with respect to the protection of immovable cultural heritage assets.
- innovative protective materials: self-cleaning coatings, anti-microbial coatings and consolidants.

Fortress Bač, Serbia
- stones, mortars, renders, bricks

Dornava Manor, Slovenia
- stones, mortars, renders, bricks, concrete
THE IDEA

Sampling of the materials from the two selected historical sites

Preparation of model substrates

Simulation of degradation process and characterization

Development of protective and consolidative materials

Testing newly developed materials prior to their application onto selected historical sites

In situ application of the newly developed materials
Application of the suspension synthesized on designed pilot production line was performed on the wall built in HGP. In situ measurement with Resazurin (Rz) proved the existence of the photocatalytic effect on the treated wall.
DIRECT & INDIRECT OUTCOMES

- Development of **new multifunctional materials**: synthesis and characterization
- **NEW EQUIPMENT**
  (mobile laboratory, non-destructive techniques)
- Setting up **PILOT PRODUCTION**
- **In situ application** of newly developed materials

Education programs and international students exchange
- New master course
  Materials in cultural heritage protection
- Summer schools of Architecture

DISSEMINATION - A NEW “SKIN” FOR OLD STONES