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Efficient short-term projects of demonstration by AGW

- Former Palace of Justice, Lviv (Ukraine)
- Medieval castle and church of Sion (CH)
- Private building „Villa Rainer“, Baden (AT)
- Various „Gründerzeit“ façades in Vienna (in progress)



Lviv, Ukraine

The building

Former Palace of Justice of the Austrian-Hungarian Monarchy, then military building

Now faculty building of Lviv University of Technology

Originally unpainted RC-façade elements (render, ornaments), generally in good condition, but severe decay in some places due to excessive water infiltration

Covered by later layers of cement and by dust



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The exemplary restoration procedure performed

- Removal of all paint layers with overheated steam
- Cleaning the surface by rotational blasting (wet system)
- Local desalinisation by poultices (cellulose)
- Assembling a mould of a key-stone and producing a new cast-element from RC
- Re-profiling and stuccoing with RC
- Coating and homogenising the surface with a very thin RC-slurry (spray and brush)

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- Missing metal sheets on the cornices and damaged rain-pipes cause water infiltration
- Technical overhauling was not started before our intervention











Contrasts

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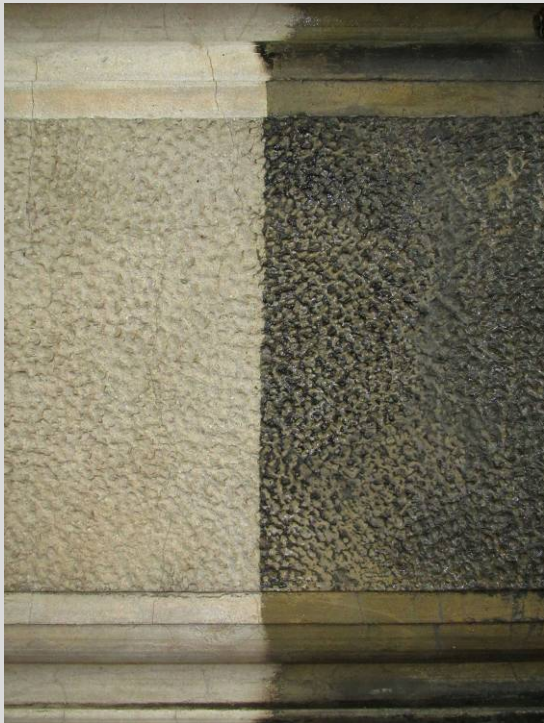
Cleaning (full test area)





- Water steam
- JOS® – system











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Salt load

- Salt efflorescence on the surface
- Salt under paint layers
- Cubical burst (caused by salts?)



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Moulding and casting

- Four-part mould from silicon and epoxy
- RC Gartenau : aggregate = 2 : 1 by volume
- Weight: 280 kg (dry), empty core for later mounting in the original way with Portland cement









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- Full restoration of test area with cleaning in two steps, desalination, filling of cracks, re-pointing the socle made of porous limestone – all based on RC-mortars
- Moulding and casting of a console element under the balcony (presently stored indoors)
- Students training and information poster about this 10-day trial



Former Palace of Justice, Lviv

Conclusions and benefits

- New standards of façade conservation for the huge architectural heritage of Lviv
- Technical ways based on the RC-technology to achieve optimum results
- High public interest raised
- Currently no implementation



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Sion/ Switzerland

Château de Valére

- Medieval complex of buildings made from various types of stone
- Around 1900: use of RC (Grenoble?) for re-pointing the joints
- Around 1980: removal of parts of RC-mortars despite their excellent performance
- Today: wish to apply RC-mortars again





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Joint-mortar: 19th cent.

- Generally excellent state
- Characteristic cracks (unproblematic)
- Excellent adhesion between stone and RC mortar





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Tests, training, application

- Gartenau-RC (IMBM) DARC, carbonate sand
- Stress on colour and structure
- Use of traditionally formed tools (spatula, brush)
- No primer
- Pre-wetting and curing for 3 days





Château de Valére, Sion

Conclusions and benefits

- Information for conservation experts on site
- Exemplary use of the RC-technology for the restoration of medieval structures
- Prove of excellent workability of de-activated RC-mortars, agreeable colour and structure
- Impact on decisions for the ongoing restoration project – implementation of RC-technology likely

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Villa Rainer

Baden, next to Vienna

Otto Wagner, 1867

Owners:

- Chevalier Epstein
- Archduke Rainer
- Private



19th century residential villa

Lime-based render with thin ochre coat, some ornamental paints

Ornaments of RC-cast mortar

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Details of present state







Uncovering and cleaning
(original paint layers)

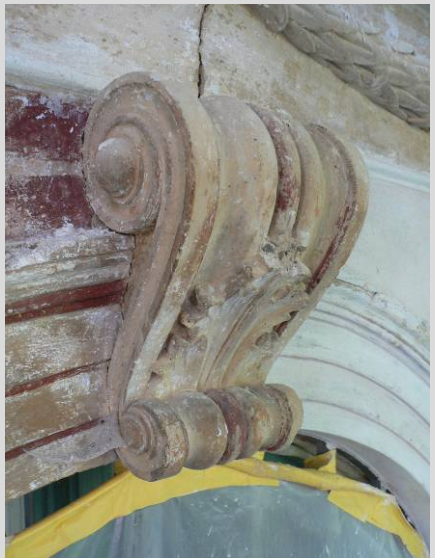
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- Supercritical steam (entire surface)
- Manually by scraper and retouching knife (partly)
- JOS® Piccolo rotation blasting (partly)







Reconstruction with RC















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Painting

In original method and material



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General conclusions

- High potential of RC-technology for the restoration of 19th to early 20th century architecture and for specific tasks of restoration of other historic buildings
- Experts feel the need to use more compatible materials
- Short-term projects of demonstration are of value to raise the interest of conservation experts
- On-site trials help to gain experience and encourage the use of RC in restoration projects

THANK YOU FOR YOUR ATTENTION

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For additional information see

www.rocare.eu

www.ateliergurtner.at