ETH zürich VILLE DE PARIS GRAU D BAUG /CHAIR FOR SUSTAINABLE CONSTRUCTION

W O R K S H O P

New materiality for the passage Notre-Dame

5-16th Septembre 2022

D BAUG

Workshop on new materiality for the passage Notre-Dame

On the 27th June 2022, the team led by landscape designer Bas Smets with GRAU as urban planners and architects and Neufville-Gayet as heritage architects, won the competition of the surroundings of Notre-Dame Cathedral.
Within this project, came the idea to develop a material made with the raw elements from the site that can contribute to a long term discussion between the material history and future use of an underground space by the next generations. Based on the first mix design developed, this workshop aims to deepen the research on this material potential.

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The project

Following Paris's transformation over years, the Mayor of Paris, with representatives of the Public Establishment responsible for the conservation and restoration of Notre-Dame de Paris Cathedral (EPRNDP) and the Diocese of Paris, launched a competition to refurbish Notre-Dame Cathedral square. The architect and urban planner agency GRAU decided to refurbish the car park underneath with a minimum intervention. It creates a new underground space where local excavated materials such as earth, limestone or recycled bricks and concrete are engaging a dialogue with Notre-Dame Cathedral materiality and its archeological past. The new indoor promenade of more than 3'000 m2 will host the Notre-Dame reception areas, a new access to the archaeological crypt and an opening onto the Seine. The project will also allow new views of the cathedral.

Workshop central questions

How to design a material made with the raw elements from the site that can contribute to a long term discussion between the material history of Notre-Dame Cathedral and future use of an underground space by the next generations? How to design a material for eternity if it is made out rubbles of concrete, earth and stone? Should we design for eternity or accept decay? Patina?

And more fundamentally, how much carbon emission is it reasonable to emit for a project that will transform the main square in front of an eight hundred years old cathedral? This raises the question of what heritage do we want to bequeath to the next generation? A Cathedral square and/or a climate and functioning ecosystem that allows them to thrive?

Low Carbon materials explored during workshop

Poured earth, or earth concrete, is a new technology well adapted to cities areas. The earth as liquid form is poured into a formwork and uncast after several hours to produce wall elements. Floors can be also done with this technology as it is currently done with concrete slab. It is a local material when excavated material from the site is used. It is nearly zero carbon as the additives used to modify its properties (water resistance, strength, fluidity) require low energy for their production (bio-additives...) and circular as the material can be returned to nature without environmental and societal impact.

Low carbon, local, durable and circular are the driving criteria for the material design. We will work with earth, limestone, plaster and demolished bricks and concrete as they are the main materials available in Paris.

Workshop organisation

Based on the first mix design developed, this workshop aims to deepen the research on this material potential. The workshop is based on hands-on experiments and lectures given by GRAU and the Chair for Sustainable Construction on the architectural intention around Notre-Dame renovation, Life Cycle Assessment and material science of building materials.

The first week explores the influence of processing and material mix design on colors and textures.

The second week dives into durability questions, maintenance and transformations over decades and centuries.

By the end of the workshop, the students will present by group their work to selected stakeholders involved in the project as well as key experts from architecture preservation, material and sustainability science.

- 2 weeks of workshop **5-16th September** ETH Hönggerberg
- **16 places**. Open to Bsc and Msc students (preferred MSc ARCH, BAUG, MATL, MAVT, USYS)
- Credits: 2 ECTS
- Knowledge on earth as construction material is an advantage but not required.

Send application with motivation letter to **materiality@ethz.ch until August 15th**

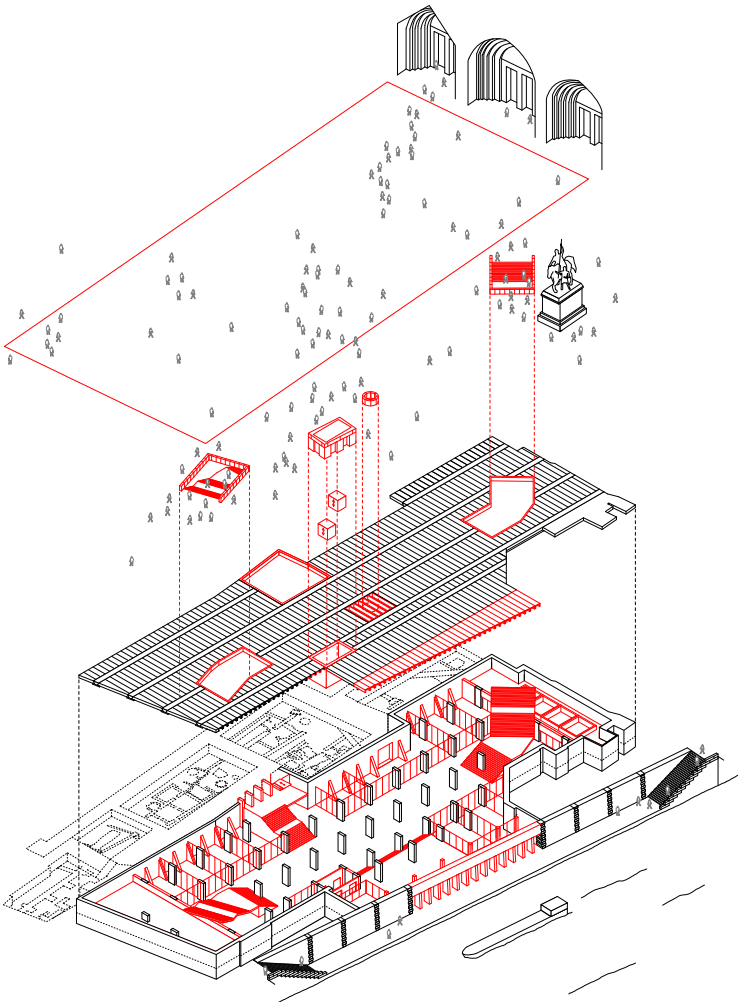
Cover Parvis Notre-Dame *Alma Studio*

1 Passage Notre-Dame: Crypte entrance and access to the Seine river *Jeudi Wang*

2 Galerie Seine *Alma Studio*

3 Experiments on earth surface texture with several mix design. *Chair for Sustainable Construction*

4 Transforming the infrastructure *GRAU*



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