Laboratoire Ville, Architecture et Patrimoine (LVAP)

Ecole polytechnique d'Architecture et d'Urbanisme d'Alger (EPAU), Algiers, Algeria

Digital Material Libraries

Overview and application case

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cibW78 LDAC 2021 Conference

11-15 October 2021

LUXEMBOURG

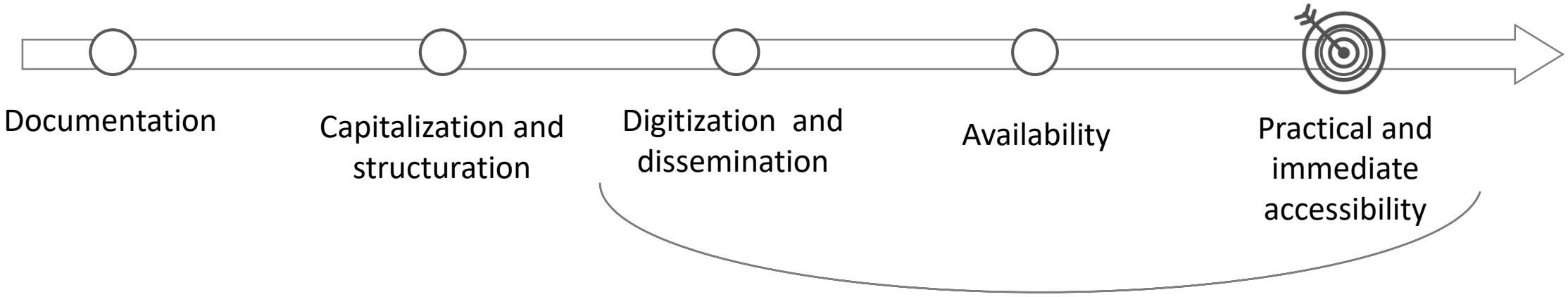
October 15th – Online attendance

Content

1 Introduction-Context

Architectural design
Architectural heritage conservation
…

Tasks requiring a perfect knowledge of the construction materials and implementation techniques.



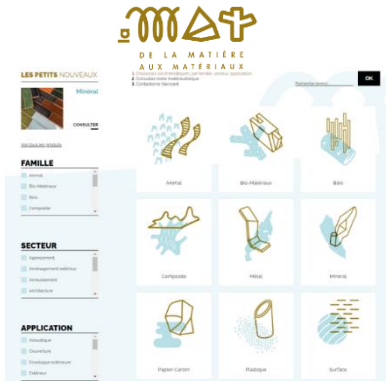
Unavailability of digital tools to practically manage and access materials and techniques information in Algeria !

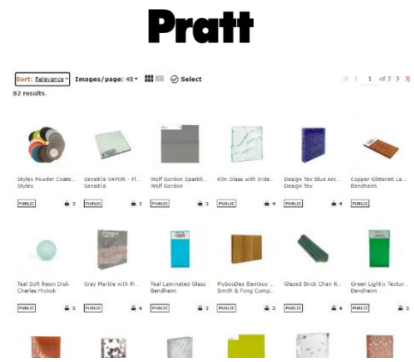
1 Introduction-Context

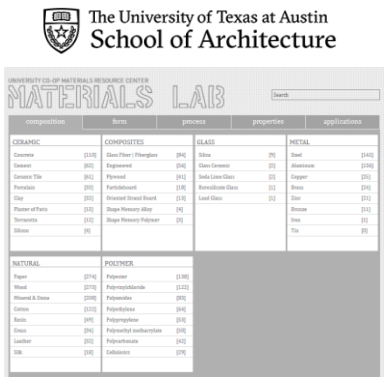
Motivation

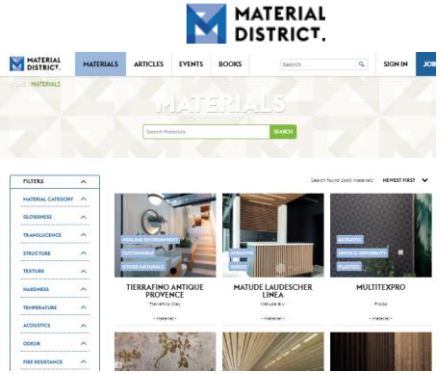
Unavailability of such tools in Algeria

Importance of building materials thorough knowledge.







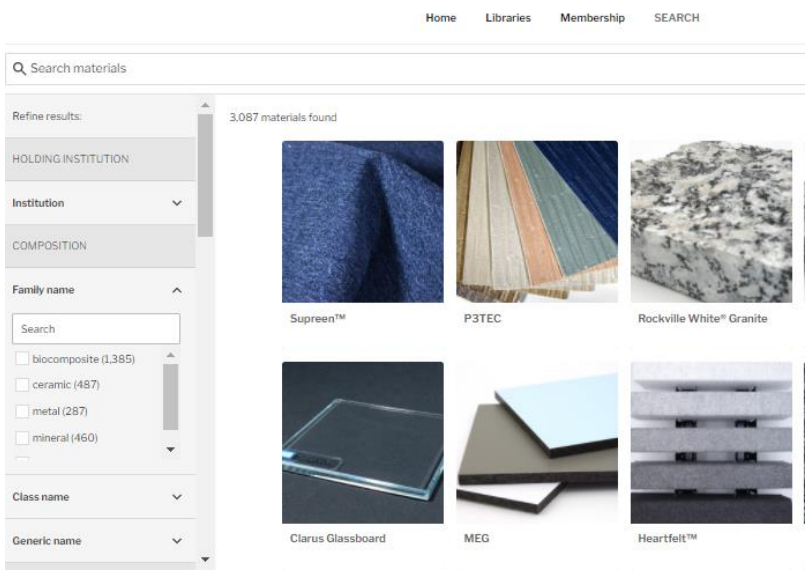


➔ Digital material libraries for building materials knowledge vulgarization : basics aspects

➔ Algerian architectural heritage digital materials library : project features

1 Introduction-Context

ENSA Paris-Val de Seine



The content vary depending on :

➔ character and purposes of the institution

➔ nature of the samples (Raw materials, Building materials/products, finished objects)

Material Library (as a real space)

Digital material library

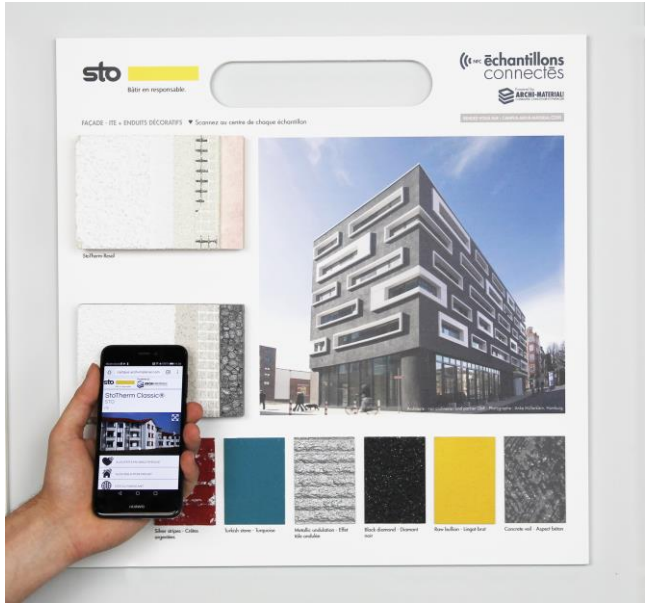
2 Why digital material libraries ?

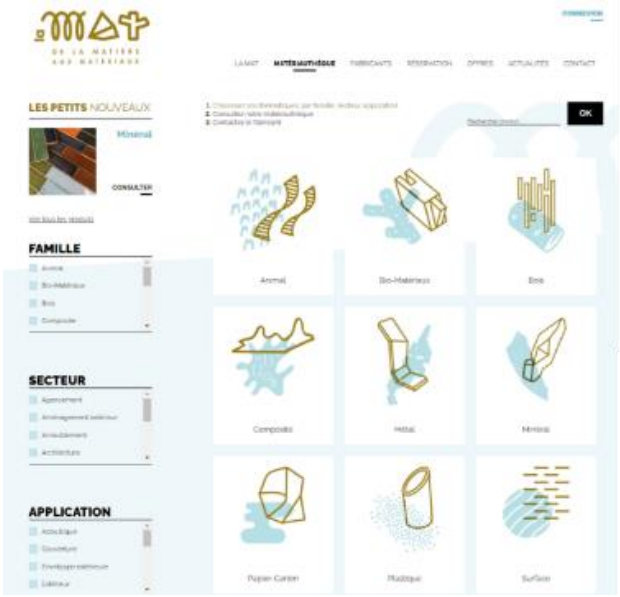
- Interesting examples developed under diverse contexts, with different scopes
- Facilitate the understanding of their functioning and allow to suggest new ideas and aspects
- Flexible tool, customizable and adaptable in content and form
- Practical and decision-support tool*
- Gap = unavailability of such tools in the Algerian context

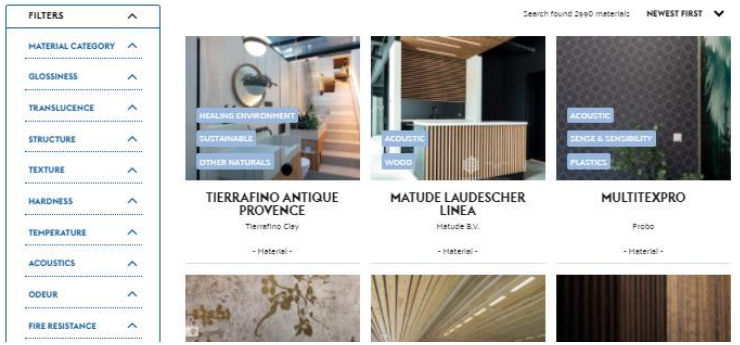
*Hindmarch 2009, Frangipane 2010, Kampfova 2010, Wilkes 2018, Napolitano 2019

3 Discussion

FAIR principles	**F**indability **A**ccessibility **I**nteroperability **R**eusability
Forms of digital access	- Connected material libraries - Digital material libraries accessible without connection to the physical samples - Material libraries existing only in digital version
Content organization	
Search modes	
Search results	







3 Discussion

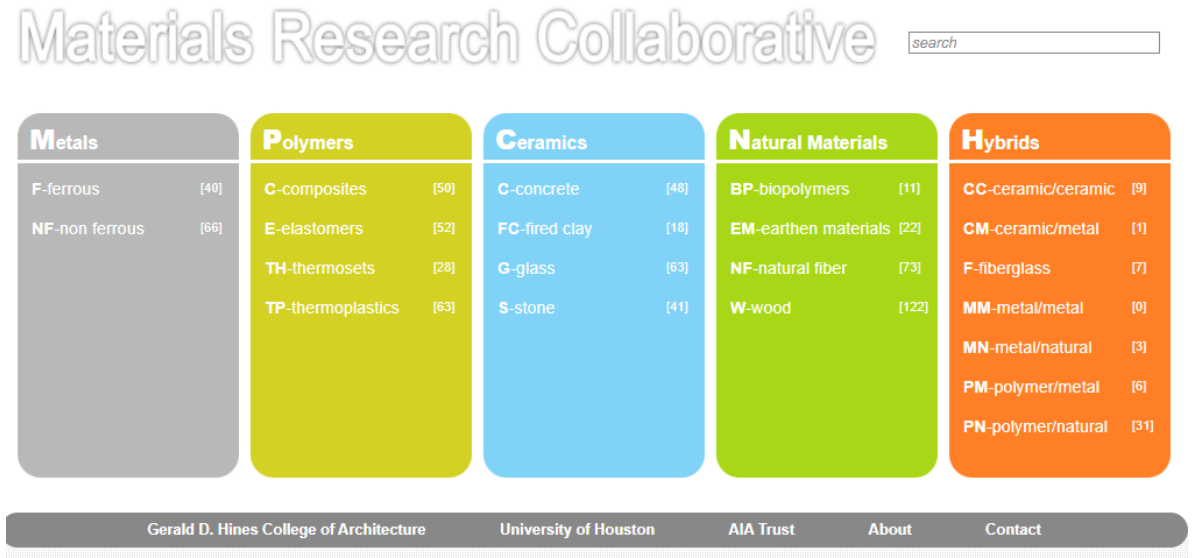
4 FAIR principles

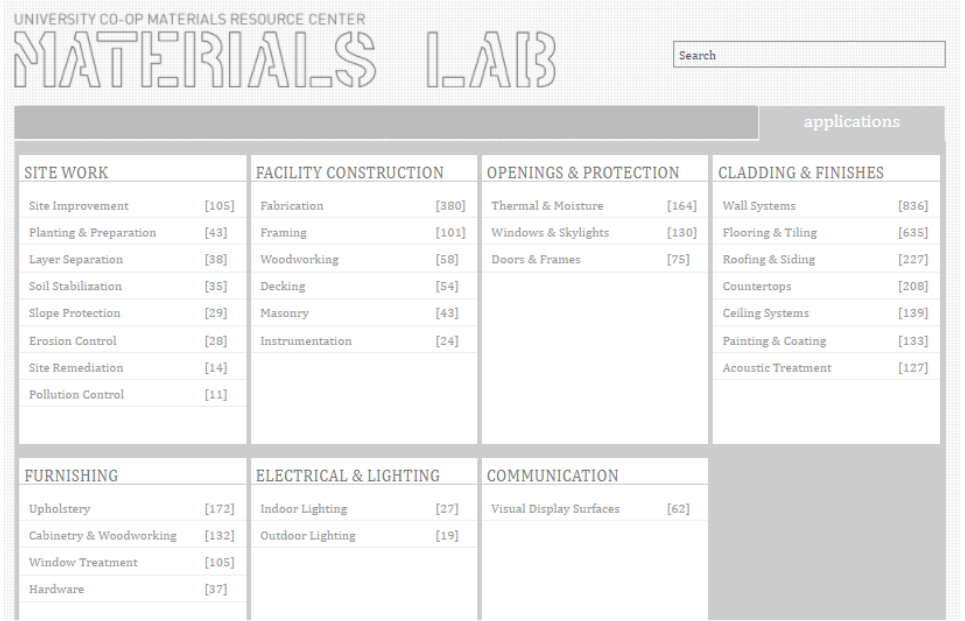
Forms of digital access 5

Content organization	- Material family / composition - Use / application - Manufacturing process, State / nature, form, appearance aspects, origin and provenance

Search modes

Search results





3 Discussion

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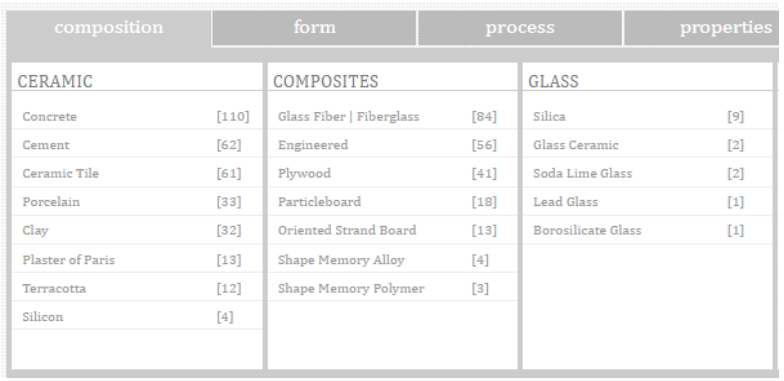
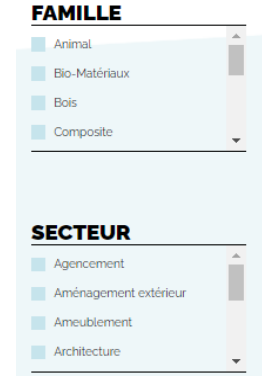
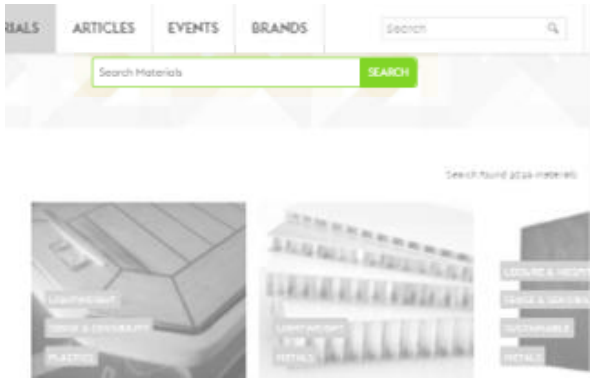
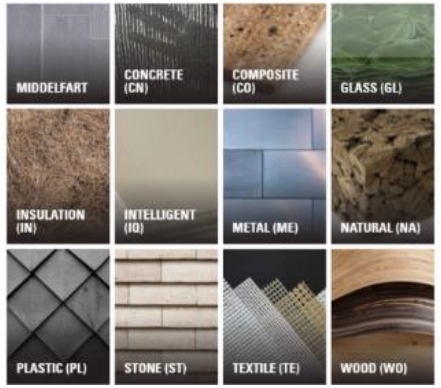
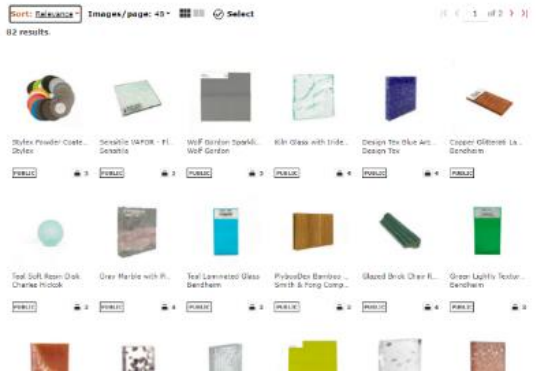
FAIR principles	
Forms of digital access	
Content organization	
Search modes	- Predefined headings - Text entry or keywords - Images can be used as : search mode, search result, or both
Search results	











3 Discussion

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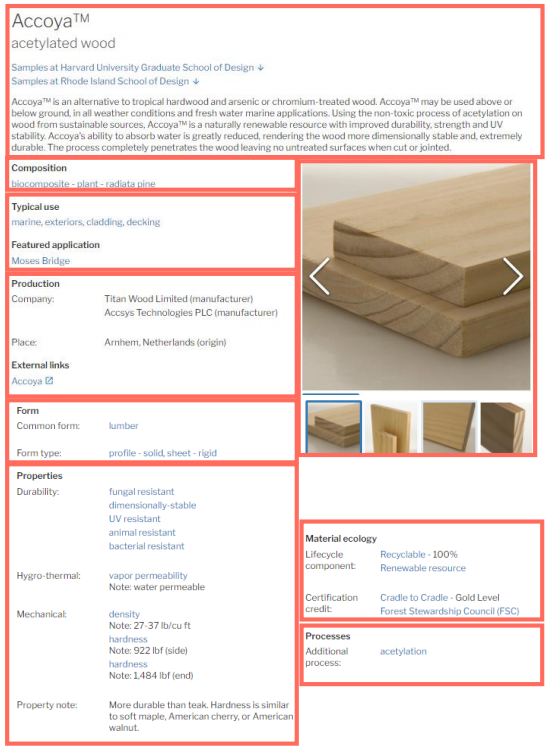
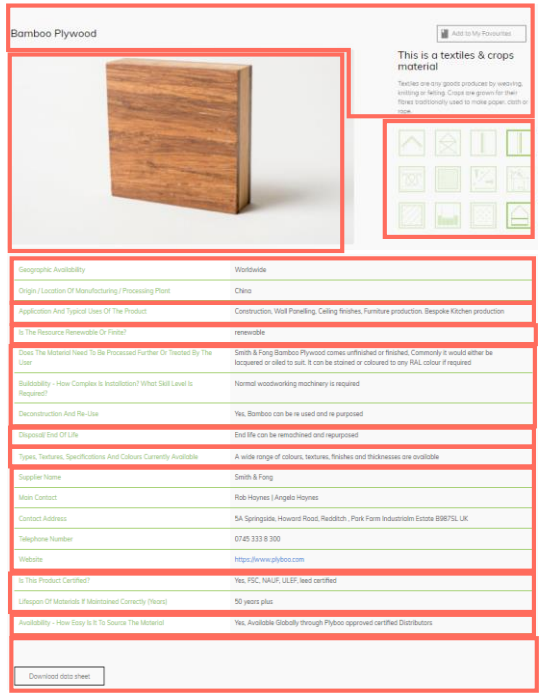
FAIR principles	
Forms of digital access	
Content organization	
Search modes	
Search results	- General information, Illustrations, Technical data… - Application, Provenance… - Manufacturing processes, installation techniques, maintenance - Appearance aspects - Ecological and environmental data - References, downloadable documents





4 Application case in the Algerian context

Digital material library relevance in the local context

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Suitable material/ appropriate treatment method selection → Perfect knowledge of the aspects related to materials and construction techniques → A digital material library in the Algerian built heritage context.

- Multidisciplinary analysis and preparation of the expertise report (REHABIMED method* intervention process)
- Archaeology of the building
- Architectural Monography ➔ architectural description and analysis of the building
- Classification files of the cultural properties as Historical Monuments

* RehabiMed Method for the Rehabilitation of Traditional Mediterranean Architecture

4 Application case in the Algerian context

Aspects particular to the field

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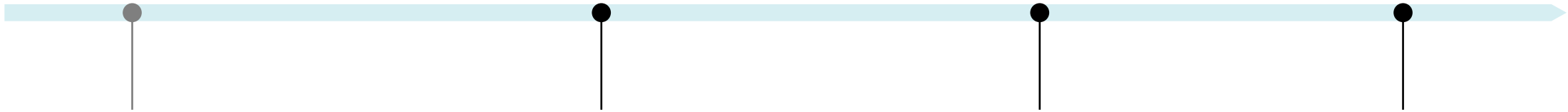
- Hierarchical levels
- The use of common categories, for non-professional users
- Aspects particular to the architectural heritage field : geographical region, historical period, constructive typology…

Taxonomy development based on published literature and controlled vocabularies in the field

Research results must allow :
- Identification of the material and its technical characteristics/properties
- Uses (By product/ by location in the building/ by project)
- Implementation techniques
- Pathologies (Related to materials and implementation techniques adopted)
- Treatment or strengthening techniques

5 Concluding points

Algerian architectural heritage digital materials library



General functioning and aspects to be considered

Data collection meeting the local context information needs

Content organization and operating principles

The tool design and creation

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Thank you !

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