Conclusions

- L’architecture de terre au Mali connaît une mutation reflétant l’évolution de la société, l’influence de l’extérieur, l’utilisation de nouveaux matériaux, ...

- L’implication des communautés locales ainsi que celle de l’ensemble des professionnels de l’habitat et de l’urbanisme est le gage d’une bonne conservation de l’architecture de terre au Mali.

Recommendations

- Poursuivre l’inventaire et la documentation sur l’architecture de terre au Mali en valorisant le savoir et le savoir-faire local

- Encourager le transfert des connaissances à travers la gestion participative, une plus grande implication des femmes et l’apprentissage des jeunes générations

- Traiter le problème de la conservation de l’architecture de terre dans son ensemble, en prenant en compte les différents aspects

- Intégrer les études d’impact environnemental dans les programmes de gestion et de conservation de l’architecture de terre
Conclusions

There is a great variety of earthen living heritage which strongly contributes to the world’s cultural diversity.

Each earthen heritage site must be seen in its specificity. It is very much linked to its social and physical environment, and has a strong impact on its landscape.

Some earthen heritage sites are flexible by nature and change over time. Therefore change may be seen as an intrinsic value that must be taken into account when discussing authenticity and conservation needs.

Some typologies are designed taking into account the actual capacity of the owners, and/or the community, and/or those with traditional construction skills and responsibilities to carry out maintenance on a very regular basis. Others may require less constant attention.

A balance must be found between the conservation and development needs. When development expectations are not taken into account, there is a tendency by decision-makers and local populations to reject earth construction and adopt other building methods.

Conclusions cont.

Some living heritage sites have the capacity to change and adaptive reuse with relative ease. For others, the very heritage values that need to be protected imply that change must be approached in a much more cautious manner.

Conservation projects, even those that sometimes produce spectacular short term results, do no ensure that long term conservation is guaranteed. There is a need for continued monitoring, maintenance, and repair over time.

This long term care of living earthen heritage sites must rely, in the first place, on their owners, and/or the community, and/or those with traditional construction skills and responsibilities. Conservation experts may be needed for particularly complex situations, but always in collaboration within the local system.

Earthen historic cities have special problems related to their conservation, maintenance, building standards, infrastructure, and rules for new construction. There is a need for developing integrated planning mechanisms which ensure that these special cities can maintain their heritage values while improving the quality of life for their inhabitants.
Recommendations

- All aspects of the earthen heritage sites should be taken into account when planning conservation interventions. These include aspects related to building materials, methods of construction, related social systems, and tourism and other development concerns, as well as legislation and planning instruments.

- Intangible aspects of the heritage and their social dynamics and evolution must be studied and taken into account before any conservation intervention. Consideration should be given to beliefs, symbolism, rules for use, building practices, and maintenance mechanisms. In particular, attention must be paid to the passing down of information, skills, and knowledge to the next generation.

- A cultural landscape perspective may be a very useful tool to guide decisions concerning conservation of earthen heritage sites.

- There is a need not only to give respect, but also to value (promote) to the earthen heritage and related building skills. Efforts must also be made to adapt earthen heritage sites to contemporary life without compromizing the heritage values.

Recommendations

- In conservation interventions, priority should be given to facilitating and creating the proper conditions for owners, communities, and those with traditional construction skills and responsibilities to implement the necessary maintenance and repair.

- Develop and publish good practices for management, conservation and upgrading of living earthen heritage sites which focus on methodological approach to address specificities.

General Recommendation

- Call for support to be given to the World Heritage Programme on Earthen Architecture so as to ensure that it can be fully operational.
Conclusions

- Historic earthen architecture is a repository of local knowledge as vested in the execution of form, space, structure, services and detail. There is however a high incidence of loss of local knowledge.

- Conservators, planners, architects, developers etc need to take cognisance of the underlying value systems embedded in local or vernacular earthen architecture. Symbolic manifestations are important to local people. Where a worldview and beliefs are clearly reflected in traditional or vernacular earthen architecture, the intangible component is integral to the built form and detail, being persistent over a long time period.

- Conservation of vernacular earthen architecture must include the intangible domain, as vested in the oral tradition – appropriate research methods and skills are required to identify, retrieve, document and include these in conservation strategies and management plans, and to understand change.

Conclusions (cont’d)

- There is a need to preserve the way of transmission of the intangible domain of vernacular earthen architectural heritage. Performance/ritual is the vehicle that carries oral traditions in and among villages and are points of reference in the heritage inventory. Performance is site and place specific.

- Where the social balance is under threat there is need to work on social fabric and balance associated with a project.
Recommendations

- The inclusion of this topic on future TERRA conference agendas is vital.
- Linkage with working groups such as the ICOMOS ISC on Intangible Heritage is vital.
- Any conservation must acknowledge all the knowledge systems relevant to conservation - no conservation of historic earthen architecture must proceed without including traditional/local knowledge systems as pertains to the tangible and intangible heritage.
- The parameters of the relationship INTANGIBLE HERITAGE : EARTHEN ARCHITECTURE must be defined more closely.
- Methods of retrieving local knowledge of tangible and intangible heritage aspects must be further developed, and become an integrated part of any conservation approach, strategies, management plans.

Recommendations (cont’d)

- Awareness raising re the importance of traditional/local knowledge systems and intangible heritage in conservation is necessary on all levels.
- No conservation of historic earthen architecture must proceed without the blessing and participation of local stakeholders.
- The social and technical dimensions of conservation must be integrated.
- The technical dimension of conservation must be subservient to the social dimension.
- The result of various social impacts, eg acculturation, globalisation, the touristic gaze, etc, must be acknowledged, and addressed in any heritage management.
Conclusions

MANAGEMENT PLANS
- Management plans formulated with a participatory approach have become more inclusive in incorporating both the tangible and intangible aspects of earthen archaeological sites.

TRENDS IN CONSERVATION
- At many earthen archaeological sites, the trend is moving away from the use of modern materials and toward traditional materials and methods used in both traditional and new ways.

TRAINING AND SUSTAINABILITY
- At several archaeological sites, projects were used as opportunities for masters to train new generations of people involved in the preservation of sites. Given the excellent skill base that is often readily and locally available, bringing together local expertise integral to sustainable conservation and management of earthen sites.

LESSONS LEARNED
- At several earthen archaeological sites, conservators altered treatment strategies in response to lessons learned, in some cases reversing decades-old policies, and in others, responding to unique site conditions and building materials.

Recommendations

MANAGEMENT PLANS
- Most often universal values of earthen heritage are assigned first in order to secure funding. We recommend, instead, that the local and regional values of a site also be taken into consideration, especially when the resulting actions provide benefits to neighboring communities.

- Ensure the public availability of management plans developed for archaeological sites as examples for others developing plans for their own sites. These tools can be available through websites like ALUKA.

- Archaeologists, conservators, and site managers are in unique positions to advocate for better legislation governing the care of archaeological heritage at many levels. Develop a set of tools that facilitate legislative advocacy for distribution to these professionals.
Recommendations

TRENDS IN CONSERVATION
• There is a need for better dissemination of information on the investigation and conservation of archaeological sites, with better coordination between professionals doing similar work at similar sites. The 2007/2017 Earthen Architecture World Heritage Program might be a forum for this coordination.

TRAINING AND SUSTAINABILITY
• Existing training programs and printed materials for management planning should be adapted for archaeological sites, recognizing local customs and conditions. Training should be directed to local communities and professionals and should include provisions for continuing education and follow-up to ensure sustainability.

LESSONS LEARNED
• Given the historical trend of excavating without conserving, consider alternative interpretive schemes that may help to minimize excavation and impacts on sites; consider backfilling as a valid conservation method for sites not requiring full exposure.

Conclusions / Recommendations
• Develop monitoring and modeling tools and procedures to assess conditions and interventions, and that can be used to assess and predict condition over time.

• Document scientifically the advantage of earthen construction to promote its use.

• Improve dissemination of research through networking, peer reviewed journal publications, and other means (international committees, web sites etc.) to reach also the non-academic audience.
Conclusions / Recommendations (cont’d)

- Scientific research should give priority to conservation or construction needs and emphasize informed decision making rather than providing recipes.

- More research should be devoted to the amelioration of material properties (such as water resistance, durability). For example for roofing.

Conclusions

- Seismic issues have become a critical topic for research, projects, etc. and have expanded tremendously over the past few years due to recent dramatic events;

- Although earth is a non-ductile building material we are able to introduce ductility into earthen structures;

- Earth construction has the capacity to dissipate energy through cracking and friction, and this should be considered acceptable;

- The approach to cultural heritage and new construction are different but complementary;

- Vernacular architecture embodies a tremendous amount of local knowledge and intuitive engineering;

- The material is not inherently bad but could be through its application.
**Recommendations**

- Encourage on-going research in seismic subjects especially at the academic level allowing the field to be pro-active rather than reactive;

- Acknowledge the need for a multi-disciplinary approach in order to bring complementary expertise to solve new and complex problems in the field;

- Efforts should be made to identify, evaluate and disseminate vernacular seismic-resistant building cultures;

- Engage regulatory bodies and general public in the understanding of the context between two earthquakes;

- Building codes need to be updated to recognize the difference between existing and new earth construction in seismic regions

**Conclusions**

- In conserving earthen architecture, the specific economic, environmental and social issues of a place are inseparable and must be considered within an encompassing framework. Conservation efforts must strive to address both tangible and intangible aspects of heritage.

- Conservation initiatives must issue from the local community, and ideally the community should be engaged at all levels of planning and implementation. The local community must be encouraged to have a sense of proprietorship over the processes of the project and its results.

- Places and buildings are invested with historical, political, cultural and socioeconomic significance. In many locales, earthen architecture is associated with poverty and backwardness. Visibility of good examples and best practice are crucial for generating local revaluation of the earthen architectural heritage.
Recommendations

- Conservation efforts should be encouraged to incorporate an “ethnographic” approach of listening and learning before intervening. It is imperative that the social structures in which building practices are imbedded be understood and respected for achieving sustainable results.

- Development must be at the heart of conservation efforts. Clear benefits for the community must be established including opportunities to gain and improve skills and technical knowledge; improve professional status through accreditation schemes; and gain employment and financial remuneration for works done related to the project.

- Conservation projects must include flexibility in order to be responsive to the changing needs, aspirations and life-style choices of the community. The conservation of places and buildings should not only point to the past, but must also have present significance and future potential in meeting community needs.

Conclusions and Recommendations

- Construction of earthen buildings in urban centers in many parts of the world is illegal

- Standards for new construction continue to be limited and practically non-existent

- Standards need to respond to diversity of issues including regional specifications and needs of current societies

- Standards are an essential tool to:
  - Lend credibility to earth as a material
  - Guarantee human well-being and safety
  - Lead to policy development and regulations for earthen construction and conservation
Conclusions

- The importance of integration
  - Theory with practice
  - Construction with conservation
  - Informal with formal ways of teaching
- The importance of multi-disciplinarity
  - Science and humanities
- The importance of learning from those who build
  - Craftsmanship (e.g. masons and guilds) as a basis for achieving higher-quality conservation

Recommendations

- Institutionalize more coherently the best methods of teaching about earthen architecture

- Disseminate scientifically-derived conclusions and technical solutions in creative ways to diverse groups of people

- Create more effective networks among practitioners and teachers