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Annexure D – Case study Saint Luis – the use of local building materials
Module 5: Climate Change and Urban Energy

Summary

1. Name of practice

«Red bricks» form of adaptation of buildings in Saint-Louis?

2. Location(s)

Isle of Saint-Louis, Municipality of Saint-Louis, Senegal

St. Louis is characterized by original architectural forms that have allowed it to be ranked by UNESCO in 2000 as a World Heritage Site. These forms of construction concern mainly the Isle of Saint-Louis which is the former urban center, the site of implantation of the colonizers. Different types of building materials have been used throughout history. Red bricks mark particularly the island's landscape and more in the South district. Their use dates back to the colonial era with the settlement of French who wanted to find a building material that may be able to resist the infiltration of waters, the effects of salt which is present everywhere on the site. A red brick factory "the brickyard of Boppu Thior Island" was created to transform the laterite extracted nearby St- Louis.

Today, this practice which was abandoned a long time ago in favor of cement, is finding more and more membership, in favor of actions of restoration of old colonial buildings. The relevance of the red brick is more and more shown as a material to cope with climate risk (salinity, rising water ...).

3. Actors

About the restoration of the heritage, UNESCO, the Municipality, the State, the Associations or NGOs, the inhabitants are involved in the discovery of red bricks' engineering, dealing with its use and its production.

4. **Issues addressed/ focus** *[1 paragraph]*

The expansion of the city of Saint-Louis to the basins exposes the houses on the districts located in areas with risks of capillarity and rising salt, which erode buildings. Attempts to responses to climate-related vulnerabilities appear hitherto insufficient and inadequate in respect to the recurrence of

problems in Saint-Louis. The use of red brick in the construction of houses participates to the urban climate resilience of the city of St. Louis which is surrounded by brackish waters.

5. Stage of implementation

The use of red brick in the city of St. Louis dates back to the 1850s during the colonial era. Colonizers in search of suitable materials for the construction of houses on the island opted for bricks that are durable and resilient to the environment of the city. With the existence of a brickyard in Boppu Thior, most of the houses on the island were thus built in red brick.

The process of rehabilitation of buildings that is ongoing under the action of public and municipal authorities is still limited to the old patrimonial city. Architectural studies, surveys and inventories as well as institutional measures have led to an albeit timid but promising start of the use of red brick in the construction of buildings.

6. What was/ is being done?

Les propriétés de la brique rouge sont assez connues dans la sous région et son utilisation assez répandue. Comme matériau d'adaptation, elle satisfait à la problématique des températures (vagues de chaleur, à l'infiltration des eaux, à la remontée du sel,…) tout en restant esthétique.
Les Métiers du bâtiment l'ont adapté comme matériaux de base car le conseil de l'ordre des architectes l'a homologué comme solution.

Properties of red brick are sufficiently known in the sub-region and its use is quite widespread. As material of adaptation, it meets the problem of temperatures (heat waves, water infiltration, rising salt, ...) while remaining aesthetic.

The Building Trades have adopted it as basic materials because the Council of the Association of Architects has certified it as a solution.

7. Outcomes and impacts

The widespread use of red brick in the city of St. Louis to produce quality housing and benefit from a sustainable construction in St. Louis' estuarine sites where land is rather limited.
The habitat is more resistant to moisture and its corollary salt.

8. Sustainability

With the existence of lateritic cuirass in St. Louis, a new brickyard could help boost the production of red brick in the city. It would also be interesting to consider reducing the cost of red bricks to allow the majority of people to benefit from it. Trades around this local industry should be promoted.

9. Replicability

On the island of Saint-Louis some collapsed houses are rebuilt on the basis of red bricks with the birth of some private organizations and associations such as PTS (Property, Trades and Solidarity). Red bricks are everywhere producible with the presence of laterite in Senegal (see study niches of the secondary sector production of clay bricks) and are effective against heat and rising salt.

10. Documentation

Ministère de l'économie et des finances du Sénégal (?). Créneaux porteurs du secteur secondaire, production de briques d'argiles. Rapport ABC consulting, 29p.

Municipalité de Saint-Louis du Sénégal (2011). Stratégies de développement à l'horizon 2030, 23p.

Sarr (Ch.),? Etude du site urbain de Saint-Louis (du Sénégal) : capacité et intensité d'utilisation du sol, 12p, sous presse.

Anonyme (2007). Ile de Saint-Louis du Sénégal. Plan de Sauvegarde et de Mise en Valeur, Règlement volume 2, 21p.

11. Credits :

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