Proceedings of Conference: ***People and Buildings*** held at the offices of Arup UK, 23rd September 2011. London: Network for Comfort and Energy Use in Buildings, http://nceub.org.uk

# Architecture as Environment: Perceptions on gender and community as determinants of comfort and energy use in buildings.

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**Abstract**
This paper investigates the extent to which notions of gender and community are expressed and promoted through materiality, spatial quality and passive design as a way to promote comfort and efficient energy use. Generally, comfort and efficient energy use may be achieved as a result of: (i) familiarity and ownership; (ii) beauty, security, safety, privacy, autonomy and interactive spaces, and; (iii) appropriate lighting, ventilation and indoor-outdoor links. Contrary to the biased/myopic sentiments that it is about women–their domestic, political, spiritual and societal role, gender is used as a springboard to promote a more community oriented agenda and consequently how the built environment ought to be shaped in that regard.

**Key words:**
Community, Gender, Appropriate Buildings.

## Gender and community at the centre of the milieu

Gender is a concept that has been discussed for a good number of years but how it relates to community is not as distinct.

> The concept of gender and community development entails mainstreaming gender in community development activities and programmes geared towards empowering both women and men and applying affirmative action where it is required. It should be noted that in community development, different categories of people in society are considered. These include: women, youth, people with disabilities, children, elderly women and men (East African Community Gender and Community Development Framework, 2009, pp 37).

Community hinges on society in general and what bonds people; gender initially is even more explicit but not necessarily as clear cut as it raises issues on differences, exclusion, imbalance or marginalisation of a particular gender, and in most cases it is the women at the centre of it all socially and culturally. However, Smith's (1999) implied scope of gender as part of family organisation, child rearing, political and spiritual life, work and social activities perhaps gives it a twist that starts to curve a community oriented agenda.

In the context of architecture, Olweny (1996) cautions that some cultural factors such as privacy and security, religious beliefs, ceremonial needs, and the inclination to exhibit power, status or prestige may lead to some irrational architectural responses that are often out of context with the local climate; therefore, as Boyer and Mitgang (1996) assert, whereas competence in building and fulfilling clients wishes will win one more commissions, it is crucial that design ultimately fosters more wholesome neighbourhoods, safer streets, more productive workplaces, a cleaner environment, and more cohesive communities. As such, an expectation of the design process especially on a project of this kind is community consultation, the outcome of which are more informed design decisions not only for women but society as a whole at a civic level.

## Context of Study

The context of this study is a predominantly rural community of Nkozi, Uganda in the midst of which is the Uganda Martyrs University (UMU). UMU–Nkozi is located approximately 82km South West of Kampala the Capital of Uganda and is in close proximity to the Equator. The population of Nkozi is about 3,000 and is comprised of subsistence farmers, students, small-scale retail businesspersons and a few academics and health workers.

I examine and make a correlation of the outcomes of a what was a participatory design process undertaken by six students in the final year of the Bachelor of Environmental Design, in the Faculty of the Built Environment at UMU with the views of representatives of the local community namely: a community development professional, a gender researcher, a research analyst and student representatives, on what a Community Centre ought to be or could be. Pertinent issues that were raised collectively included:

1. To what extent a project or parts of it relate to specific user/community needs;
2. To what extent projects appreciate interests of the *indigenous* community;
3. To what extent cultural issues have been considered;
4. To what extent one proposes alternatives for space use and energy;
5. To what extent designers apply creativity pragmatically in a cultural context.

What follows is an attempt to get to the gist of these issues and also go on to theorise on gender as it came up albeit timidly. This has been done as much as possible in the context of architecture and how comfort and efficient energy use can be achieved.

## Architecture as Environment

Architecture ought to flourish within the natural and built environment and blossom alongside the people for whom it is meant.

> Architecture as Environment accepts people as an element of its design. It is malleable and responsive to change, being comfortably reused in various ways. It assumes no perfection and celebrates the random diversity of the people it is built to serve (Pfeiffer, 1974, pp 12).

The social-cultural context of a community can be expressed through form and *materials*–the aesthetics of a building and, a *spatial quality* that sustains function(s) by appealing to the way people live, work, relate and consume (Olweny and Wadulo, 2008) (Ndibwami, 2010). In addition to materiality and spatial quality this paper reiterates the importance of technology–*passive design* approaches to local climate, an acknowledgement that thermal preferences are context specific, based largely on the social, economic and cultural characteristics of the different societies (Olweny, 1996). Unless the social context (in particular gender and community) is properly understood, then *architecture as environment* may elude us, a consequence of which will be discomfort and wastage of energy in buildings.

## The image of a building: Materiality

The choice of materials well aware of how familiar the community is with them either in terms of manufacture, sourcing, installation, culturally, economically or ultimately their environmental properties for efficient use and durability is only prudent.

From the two proposals that follow, Kusimwiragi Kalumire and Esther Magambo present schemes with a familiar material palette of brick, eucalyptus poles, bamboo, timber, plaster and glass. An interesting concern from one of the representatives of the community about these two schemes was the inclination to institutionalise the concept of a Community Centre as they reminded them of some buildings at the neighbouring Uganda Martyrs University, perhaps a stereotypical response to context.

They add, "This creates a risk of distancing the users from the proposed facility, seeing as anything about the University is perceived as being above their means." The question thus: what should a community centre in a village like Nkozi look like?

**Figure 1:** The pavilion with the rest of the facility in the background. (Kusimwiragi Kalumire)

**Figure 2:** Interaction with the street. (Esther Magambo)

Perhaps, the answer lies in what Melhuish (2008) refers to as fusing the materials and aesthetics of the built environment with traditional low cost, low-tech materials and processes. However, it calls for a more inclusive design and development process that taps into and or enhances the indigenous knowledge bases and technical skills, subsequently enabling people to own the facility.

**Inclusive design: Spatial quality**

It is inevitable that people will need to take a break from their homes or places of work to seek spaces that appeal to them in a number of ways; spaces that are conducive and capture different interests.

> Designers and decision-makers need to think more about how to attract a wide range of different people to come and enjoy themselves in public spaces of towns and cities. One way of achieving this is simply through making such places beautiful–a concept rarely discussed in the context of safety. It is this quality above all which will draw people out of their homes and cars to occupy and enjoy a sense of well-being in public urban space (Davis, 2008, para 10)

In that regard, a faculty member at the Southern California Institute of Architecture restates the value in the intimate connection between the built environment, the natural environment and the activity in a space by suggesting in Boyer and Mitgang (1996, pp 32), "to foster a sense of connection and responsibility between people and places, in big ways and in small ways, could be simply by ensuring there is enough light to a room where one will study and houseplants grow."

**Figure 3:** Building embracing its site and users. (Dianne Nyinambungira)

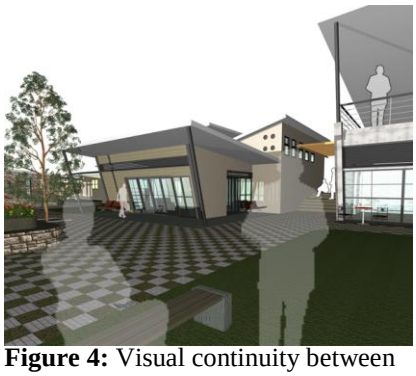

**Figure 4:** Visual continuity between spaces. (Gilbert Matsiko)

Two students Dianne Nyinambungira and Gilbert Matsiko attempt to do this by not only creating outdoor spaces that have a visual link with indoor spaces, but can also direct individuals around the centre. The users also have an opportunity to interact with the buildings in several other ways–by touching, sitting close by or simply taking time to smell the roses, perhaps a gendered quality of the spaces.
Whereas Melhuish (2008) reveals that safety and security are high on the list for women, providing this at a community level is a more holistic approach. Above all, as long as the spaces promote autonomy, privacy, easy access, visual connections, intimacy, self-identity and are beautiful, those spaces will remain relevant.
Another desirable quality of space is flexibility to accommodate changing user needs through time of day, seasons, and events. In that regard, Dianne Nyinambungira and Gilbert Matsiko propose outdoor spaces that could be used to either promote what Smith (1999) refers to as gendered social activities that in their case could include market days and occasional exhibitions. Activities in these spaces will tend to spill over from the indoors, inevitably embracing the charm of the local climate, classified as modified upland-tropical with two dry and wet seasons, and the generous southeasterly breeze from the Lake Victoria and, northwesterly return from the hills.

**Technology: Passive design**
Thermal comfort studies by Fisk and Sappänen (2007), Damptey (2006), Cuesta-Santos et al (1997), Sharples and Malama (1996), on the benefits of natural ventilation, daylight and an intimate indoor-outdoor relationship have shown that there are improved levels of performance among users/occupants and a lot less wastage of energy.

> The *jilimi* (domestic accommodation for single women of the Warlpiri Aboriginal people in Australia) themselves were self-built, by the women, and comprised a combination of different natural structures articulating a mainly open-air social and activity space: windbreak, 'shade tree', 'bough shade' and enclosed shelter. The windbreak and shelter were placed on the eastern side, creating more personalised spaces for nighttime living, and a solid boundary to the site. Moving towards the west, the 'bough shade' and 'shade tree' forms generated less defined areas for social activities including cooking, which being oriented outwards towards the rest of the site allowed the women occupants to survey their surroundings beyond their own *jilimi.* This was an important aspect of the site design: women said it made them feel safer. (Melhuish, 2008, para 3)

The traditional homesteads in Nkozi and many rural settings in Uganda attempt to maintain a similar format to the Warlpiri, but it is debatable as to whether the way people live, work, relate or consume in Uganda today is in touch with the benefits of passive design/construction. For example as Nnagenda-Musana, et al (2011) reveal, houses built newly (circa 1990s) by men have since been altered by the women who spend more time at home and that evidently cooking, tilling, washing clothing, subsistence trade and watching kids play are outdoor activities that are a part of gendered territory consequently reducing male dominance. As such it is only prudent that such spaces are glorified with environmental benefits and in tandem enriched with a cultural meaning making them more useful, enjoyable and efficient. Depending on the time of day, the benefits of inter alia: light, air, or views ought to be promoted in order to bring people together, for example under a shade/tree by day or seating round a fire by night, or better still, ensuring that the main amenities spill over to alluring outdoor spaces or simply, traditionally about a courtyard.

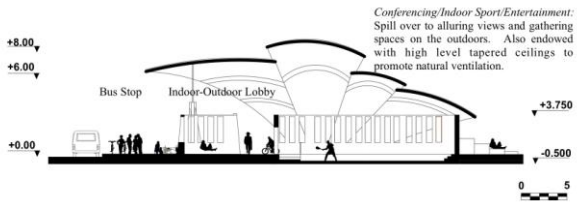


**Figure 5:** Spatial and environmental quality (Bryans Mukasa).

**Figure 6:** Indoor-outdoor connections (Joseph Ssenkabirwa).

Bryans Mukasa and Joseph Ssenkabirwa propose solutions that usher the users into a series of spaces that have an intimate indoor-outdoor relationship. This link to outdoor spaces presents environmental benefits in the provision of shade, diffusing daylight and enhancing passive cooling; the outcome of which are bearable thermal conditions that not only control energy use by avoiding the use of active systems but also increase productivity in the freedom with which the users relate to the spaces.

## Conclusions

The Nkozi community posed a challenge as the community is multifaceted, indeed the prevalent nature of many a multi ethnic postcolonial society–to struggle for a common agenda. Steen Eiler Rasmussen in his book *Experiencing Architecture* (1999) stresses three things: (i) that architecture solves practical problems; (ii) that good architecture ought to be utilised as the architect planned; and (iii) that the task of the architect/designer is to bring order and relation into human surroundings. However, this is only possible when the architect/designer gets to what the very nature of a society is in order to appeal to it.

The socio-cultural issues raised as part of this paper can be related to a housing study carried out by Olweny (1996) regarding how people respond to space: that the socio cultural and economic aspects of a community are important factors in determining the acceptance of housing [read buildings]. It goes ahead to reveal that whereas there is a need to incorporate certain occupant thermal preferences in design it is not always the case that they will promote comfort, but there are higher chances that this will control energy use. Part of the bigger challenge though for the design professional is how to decipher the interests of different groups: economically, socially, culturally and otherwise. As such, a simple separation between gender specifically and community in general starts to give some answers and prompts a certain social ethic that is mindful of the needs of each individual and groups of individuals.

On the issues that test the designers pragmatism and creativity on how space is comfortably used or how much energy is used, indeed appreciating different people or groups of people's preferences is only prudent. The approach is simply through participatory design and a more intimate understanding of what binds and or separates people in order to create comfortable and efficient spaces. Besides, this serves as an opportunity to innovate and provide contemporary architectural solutions.

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