TITLE	Ecological Sanitation meets architecture
Keywords	architecture, design, participatory planning
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Short CV for Introduction Purposes (100 words max)	Compare paper: “Sanitation for a rural school in Uganda – a successful implementation process”
Photograph attached (jpg)	

BACKGROUND

The need to improve sanitation has become a widely discussed topic during the last years. At the same time the MDG’s claim to halve the fraction of the world’s population without basic sanitation by 2015 has developed this challenge to a forcing issue. Conventional sanitation system have proven to be unsuitable to solve the global sanitation problem – only looking at the real cost rules out any discussion about that.
Planning in sanitation was and still lies mainly in the hands of technicians. Solid and liquid waste management, treatment and disposal are solved purely on a technical basis, neglecting the fact that sanitation is more than just a technical problem.
Ecological Sanitation on the contrary addresses the problems in a holistic manner on an interdisciplinary base. A variety of disciplines, from wastewater engineering to agriculture, hygiene to social sciences are involved in promoting, planning and implementing EcoSan projects. During the last years and in various discussions it became clear that this list requires an expansion to architecture, as a discipline which is traditionally involved in participatory planning processes of buildings and constructions. Architects are much more familiar with planning tools to find out their clients preferences, independent from technologies. They define planning in a wider sense than only constructing infrastructure to – technically – solve a certain problem. Architecture tries to balance effect and functionality and shows that design has a major influence on acceptance among users.
The following paper is based on presentatios and discussions of a seminar “Kreislauf-orientierte Abwassersystem - Planung und Ausführung von ökologisch orientierten Sanitärkonzepten“ („Cycle oriented wastewater systems – planning and design of ecologically oriented sanitation systems) held in Vienna in September 2004, aiming, among others, at initiating the creation of a link between architects and sanitation planners. It tries to extract on the one hand deficits in EcoSan planning as seen from the architectural point of view and on the other hand opportunities for the implementation of EcoSan Concepts by linking sanitation planning to architectural planning.

THE CONCEPT OF MODERN ARCHITECTURE

Modern architecture was defined in the 1960's (Ernst A. Plischke, in Treberspurg 2004) as being positioned between a spatial concept and operational planning on the one side and the building structure and the construction on the other side. Nowadays this concept is extended to include ecological issues – the environmental impact of a building caused by it's construction, resource consumption over it's lifespan (Öttl, 2004) and final disposal as shown in Figure 1.

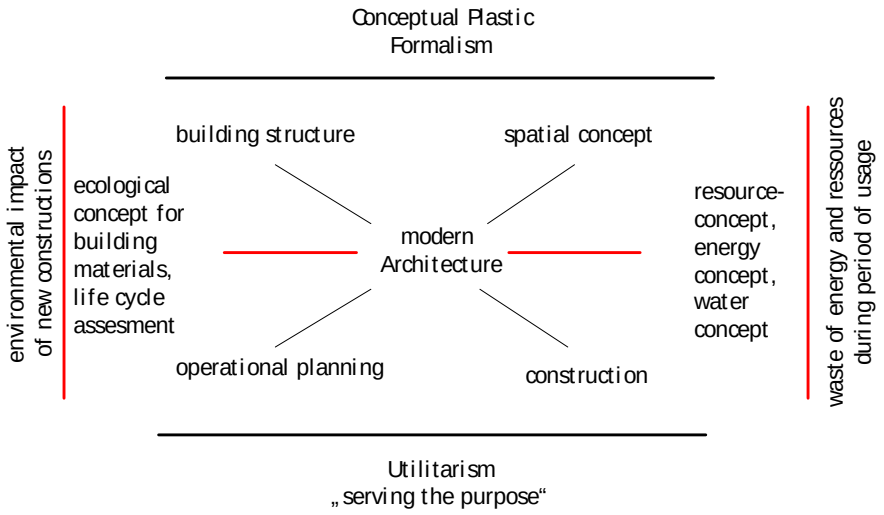

Figure 1: Modern Architecture (Treberspurg 2004; modified)

The tension in the above picture can be visualised by the artistic architect designing fancy buildings and the down-to-earth civil engineer having to realise them.
Still this tension is what makes buildings attractive to the majority of the users; pure art is rejected for being unpractical and pure function for being boring beyond this very function.
Transferring this picture to EcoSan planning makes it obvious that at present efforts are focused on the lower half of the above picture only, commonly and unfortunately, at least to the authors knowledge, also neglecting the picture's left and right margins.

THE LINK TO ECOSAN

1. Make Water and EcoSanitation Concepts part of architectural planning

Modern architectural concepts according to Figure 1 (shall) take into account the environmental impact caused by a buildings' construction, operation and final disposal at the end of it's lifespan. While life cycle assessment of building materials, the implementation of energy concepts and – to a limited extent – water concepts are slowly playing a bigger role in architectural planning, sanitation concepts virtually do not exist. The reason is, obviously, a lack of knowledge on the side of the architects and, probably less obvious, a lack, resp. a very limited choice of attractive state of the art solutions. Still the general features of architectural planning – the participatory approach, the identification of user preferences on a very abstract level – could serve as an ideal entry point for the spreading of EcoSan concept, an entry point which is not available to the common "sanitation planner". Planning in Sanitation traditionally starts outside a building while EcoSan Concepts need to be started from within.

2. Make use of extensive planning experience of architects

Architects regularly do have a long experience in participatory planning approaches which sanitation engineers do not have. Sanitation planners are more distant to the users and are commonly not directly employed and therefore not directly responsible to them. EcoSan approaches on the other hand, due to their closeness to the users, require the planners to

have a set of tools available which they were mostly not educated in. For a start copying architectural planning methodologies seems to prove a suitable way forward to overcome this problem.

3. Complement the utilitaristic approach in (eco)sanitation planning

As mentioned earlier purely functional buildings are rarely more than accepted for their function. They are not viewed as being attractive or interesting, in particular when it comes to serving a function called “excreta management” or “waste management”, which is already unattractive by itself. Still the dominance of technicians in EcoSan planning often leads to solutions which purely serve a certain purpose, even more enforced by the need to develop low-cost solutions (maybe wrongly assuming that more attractive solutions will be more expensive).
Taking into account the general assumption underlying this paper, that there is a need to promote EcoSan concepts, also the so called opportunity cost have to be taken into account. EcoSan concepts are commonly based on non-conventional solutions which need to have direct benefits for the users which surpass the performance of conventional solutions by the value of the opportunity cost (“cost” advantage required to give up a known solution). Therefore the need to develop concepts and solutions which go beyond purely serving a purpose becomes even more important. As a fact, e.g. a dry toilet must be more than just equal to a flush toilet to become acceptable for a majority. From practical experience it must be clearly stated that in many cases the real function is in fact less important compared to other aspects.

EXAMPLES

The following three examples shall serve the purpose of illustrating the above said. In all cases the clients were right from the beginning of the projects interested in alternative, environmentally friendly solutions but still
EcoSan concepts were viewed with a certain degree of uncertainty and doubt.

Kalungu Girls Secondary School

“Kalungu Girls Secondary School” is a boarding school in Southern Uganda. Problems with the water quality and the unsatisfying conditions of toilet facilities (pit latrines) caused the administration of the school to ask for support to improve the situation. Looking at the user’s priorities the major interest was to get rid of smell, solid and liquid wastes, interest in handling any of these materials or in reusing them was practically zero. Still a concept, based on dry urine diversion toilets and a constructed wetland system for grey water treatment was developed. Based on experiences in other comparable projects and the above said a graphic designer was contracted to prepare an attractive design for the teachers’ dry toilet unit based on their priorities.

Figure 2: Dry Toilet Facility Kalungu

The final draft was then reviewed with the teachers and amended before construction. Finally, although initially unthinkable, presently urine and dried faeces are being reused in an adjacent banana plantation. Both the participatory planning process as well as the attractive design are believed to have had a significant share on the success of the project.

MIVA office building

MIVA through it's procurement facility BBM is a client of the Authors since 1997, having financed the implementation of various projects on waste management in Uganda. 2003 the construction of a new office building was being started. While the planning took into account energy reduction in building operation and use of rainwater for toilet flushing no other measure on the sanitation side was planned. All original proposals to split flows and reduce waste production / mixture at the source were rejected, mainly because on a practical level they could not be argued. Any reduction would not have led to any economic advantage, e.g. in the sense of reduced cost for wastewater treatment since the fee to the municipality was set to a non-negotiable lump sum. Still finally, apart from waterless urinals, one other measure was realised which was the treatment of grey water in small reed bed filters in the conference hall of the building before reuse together with rainwater. One major reason for the decision was the originality of the design rather than the original function of treating water.

Figure 3: Reed bed filters for grey water treatment

Balit Hospital dry toilet design

Balit Hospital in Mindanao, Philippines, is a newly constructed hospital (2004/5). The original plan, to equip the hospital with conventional flush toilets, sewer system and treatment plant was discarded for the sake of the installation of dry urine diversion toilets and small, decentralised grey water treatment units. In order to improve the acceptability of the dry toilet facilities, together with the local architect and an Austrian artist a new dry toilet pedestal was designed, leaving room for adjustment to personal preferences – the lower part can be manufactured according to individual preferences (in case of the hospital stainless steel) and

Figure 4: Urine diversion pedastal – upper part

only the upper part, comprising the urine diversion, which can be equipped with a water flushing valve if desired, needs to be bought – and a prototype developed.

At present a local company is starting the production. Demand beyond the project has already been announced.

CONCLUSION

Based on the above said it can be summarised that linking EcoSan planning to architectural planning in order to create mutual synergies can be on possibility to further spread EcoSan concepts beyond a comparatively small group of “believers”. If the fact is accepted that the ideas behind EcoSan concepts – closing cycles – are not every bodies prime interests the establishment of such a link can help to get a step forward in terms of numbers of users of EcoSan solutions.

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