EcoPark, VietNam

Brief Interpretation of the Sustainability of Aspects of the EcoPark Development

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Oberding, Tomáš J, PhD

Caveat:

As the Master Plan for the project is not yet full translated, I cannot provide as in depth or detailed an analysis, as I would like. What follows below is a preliminary interpretation based on interviews of key employees, as well as a brief tour of the EcoPark facilities conducted on 26th, August 2011.

Once the translation of the Master Plan is completed, I will add in appropriate details that appear incomplete herein.

Team information:

The team consisted of Mr. Peter, Ms Thu, Ms Huong and myself. Ms Thu provided translation for my questions.

Summary:

EcoPark is a planned community built over several stages located outside Hanoi. There are several positive and negative aspects to this project, and some fairly large pitfalls that can still be corrected to ensure that this is indeed a sustainable eco-friendly community.

Positives

On the surface there appear to be several positive sustainable aspects to the community. Key facilities such as school, shopping and a hospital are located on sight. This will limit the need for residents to travel far for their needs and foster a sense of community with the 'historical re-creation' area. In addition, green spaces are included in the design to provide a pleasant atmosphere and open space for resident use.

A new wastewater treatment facility is being constructed on site, with storm water drains leading to the facility; this will enable the managers to use gray water for irrigation. Covenants exist limiting the owners to use of treatments to 'green' products ("no chemicals") for the care of the landscaping. The management company will care for the landscaping of all open areas as well as for residents who so desire, thus maintaining a standard visual appearance. Green roofs ("Sky Gardens") are planned for several high-rise buildings (these cut down on heating and cooling costs and can provide additional space for localized food production). The management has nursery facilities (an internal sub company/department) for the entire landscaped collection (every plant in the community is grown from seed or seedling in their nursery) and can readily address any issues with the plants that may occur.

Permission to build an electrical power distribution substation has been applied for with the government. This will allow the managers to distribute power to the facility on a more direct basis and adjust for variations in demand.

Negatives

Community:

Though there is a commercial area, it is only located in phase 1 meaning that subsequent phases will have to travel longer distances to access these facilities. The commercial area is only partially mixed use, and there are no other plans for mixed use (commercial on the ground floor, residential on subsequent floors) outside a few low buildings (Figure 1). Mixed-use establishments are the norm in Vietnamese cities, the lack of them in this project is an unsettling trend, as it will increase the distances that people have to travel to access their necessities and work.

Infrastructure

Transportation- There are roads planned to connect most parts of the project with the others. Surprisingly there was less detail (no solid answer was given) as to the management's encouragement of alternate forms of transportation. There are no existing bike paths and sidewalks appeared infrequently. There seems to be no consideration for bike transport in the community plan what so ever and the topic of speed limits on the roads was met with a less than detailed response of how the existing roads are still under construction. Alternate forms of transport and car free communities are the norm for a sustainable eco friendly development. (Easy solution is to paint bike lanes onto the roads Figure 2)). Additionally the road accessing the site of the development from Hanoi was unsettling. Though Hanoi has recently grown to nearly the border of EcoPark, the roads are very narrow and at least on the route the team took, certainly do not appear to be able to handle any increase in traffic particularly from a new community.

Wastewater- As mentioned above there is a wastewater treatment facility being constructed on sight to handle water from the residential, commercial areas as well as the storm water runoff from the streets. It was unclear (details should be in the Master Plan) the capacity of this facility. More importantly, the level of treatment of the wastewater was unclear (again, details should be in the master plan). The water engineer mentioned column A methodology and alluded to tertiary treatment of the water (there are several alternative possibilities for tertiary treatment of wastewater some physical some chemical; Tchobanoglous et al 1991). This all appears to be strict traditional engineered treatment. There was no mention or talk of constructed wetlands to assist in the filtration of the water (Kivaisi, 2001). An additional safety concern is the project's neighbors. Figure 3 shows the wall dividing the EcoPark project from the neighboring homes. There appear to be effluent pipes draining from the neighboring homes into an open ditch on the side of EcoPark. This open ditch was not indicated on the maps or the diorama in the main office center. No information was given regarding the ditches' future (filled in, left alone). The additional concern is that this ditch and wall occur within less than 5 meters distance from both a power substation and the future site of a telecommunications tower.

Power- All power will be provided by the national electrical supply grid. The only choice now remains as to which regional authority will be the primary provider. There is no thought or planning for the use of alternate sources to generate electricity such as solar and micro wind turbines (small efficient units that are installed on rooftops to supplement the buildings needs). Additionally there is no

assistance (or even regulation) provided to the individual homeowners who want to install a solar array on their rooftop. It is up to the individual homeowners to determine the best solar solution for their home (if any). This dearth of regulation will lead to a lack of visual uniformity in the community. It is one of the most egregious oversights of the entire project that can easily prevent it from being considered ecologically friendly. The area of EcoPark has a plethora of sunshine and the technology has sufficiently evolved to the point that it is cost effective to have individual street lamps powered by their own miniature solar panel. Each building can have its own supplementary solar panel, which municipal buildings supplied with a combination of solar and wind generators on the rooftops.

Landscaping-

Though 'green' ("no chemical") products are touted as being used for soil amendments, when pressed on the topic of pesticides, the response was that the caretakers would remove bugs "by hand" and that "biological" means of pest control would be employed. Contrary to an ecologically sustainable plan, there are no thoughts to keeping the landscaped flora local. The flora will come from all regions of VietNam as well as from abroad, so there will be multiple non-native species in this area. The use of non-native species introduces the potential for increased water use or at the least increased complexity in the care of the grounds as non-native flora will have different predators and diseases than native ones. Without a complete list of plants on the grounds I am unsure as to how many of them have 'biological' pest control available for them- not all pests can be picked off 'by hand'. The Master Plan should also have some more details as to what the restrictions on the homeowners are (covenants) in terms of the approved landscaping treatments and plants shall be.

A last point of concern is less to do with environmental sustainability but structural and project sustainability. There are two natural rivers that are incorporated into the project, with constructed ponds and reclaimed land planned for several future phases. There are, according to the director of infrastructure projects, no contingencies to deal with flooding that may occur during heavy rains. Considering the propensity of both Hanoi and Saigon to flood during heavy rains, it is surprising that this project does not incorporate some basic flood control devices. It is important to know the details of the storm water drainage system and the capacity of the wastewater treatment plant to minimize the damage from rising waters of the rivers or constructed ponds.

Conclusions

There are several positive aspects to the EcoPark project, namely the recycling of water, green roofs and professed use of “biological” and “green” landscape treatments. While the inclusion of a commercial center, schools and hospital also make the community more self contained, they alone do not make it a sustainable community. As noted, one of the most disconcerting aspects is the lack of alternative energy sources included in the plan (or even guidelines for homeowners who choose to include them in their homes). Additionally, the reliance on automotive transport (no consideration for bicycle transport within the development is an oversight, one that is easily rectified) makes the project appear more of a simple planned community as opposed to an ecologically friendly sustainable community of the future.

Figures

Figure 1 Low-rise mix used commercial building

Figure 2 Primary road with enough space for bike lanes

Figure 3 Dividing wall with neighbor's effluent pipes draining into open ditch on EcoPark property

Citations

Kivaisi, A, 2001, The potential for constructed wetlands for wastewater treatment and reuse in developing countries: a review Ecological Engineering, Volume 16, Issue 4, , Pages 545-560

Tchobanoglous, G | Burton, F L, 1991,Wastewater engineering: treatment, disposal and reuse McGraw-Hill. Inc., New York, 3rd edition, 1334pp