RETHINKING THE ADOPTION OF GREEN BUILDING RATING SYSTEMS IN DEVELOPING COUNTRIES

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ABSTRACT

This paper critically reviews the adoption of green building rating systems in developing countries such as Indonesia. Most new buildings in Indonesian cities are replacing the already socially-vibrant urban kampungs; however, green building rating systems do not assess environmental, social and economic impacts upon the existing communities. The paper compares the motivation and approaches of the green building movement and green rating tools with the philosophies and implementation of the urban kampung improvement programme (KIP), implemented for years to improve the condition of Indonesia's urban kampungs. Ideas and the means for developing more socially-responsible green developments are presented and a closer integration of KIP with 'green' urban development is recommended.

Keywords: *green buildings, green rating systems, socially responsible, sustainnable development, kampung improvement programme*

ABSTRAK

Makalah ini secara kritis mengkaji penerapan sistem rating bangunan hijau di negara berkembang seperti Indonesia. Kebanyakan bangunan baru di kota-kota Indonesia menggusur kampung perkotaan yang sudah terbentuk secara sosial, namun tingkatan sistem bangunan hijau tidak menilai lingkungan, dampak sosial dan ekonomi pada masyarakat yang ada. Makalah ini membandingkan motivasi dan pendekatan gerakan bangunan hijau dan alat penilai arsitektur hijau dengan filosofi dan implementasi program perbaikan kampung kota (KIP), yang telah dilaksanakan selama bertahun-tahun untuk memperbaiki kondisi kampung perkotaan di Indonesia. Ide dan cara untuk mengembangkan arsitektur hijau yang lebih bertanggung jawab secara sosial disajikan di sini dan integrasi yang lebih erat antara KIP dengan pembangunan kota 'hijau' dapat direkomendasikan.

Kata kunci: *arsitektur hijau, sistem penilaian arsitektur hijau, tanggung jawab sosial, pembangunan berkelanjutan, program perbaikan kampung*

INTRODUCTION

The concept of 'green building', which originated in the developed nations, is rapidly being extended to emerging economies and developing countries. Whilst reducing the consumption of energy and other resources in the building sector is an admirable objective, highlighted at the recent COP 15 in Copenhagen, the pursuit of 'green' without regard to social and economic factors may lead to overall detrimental impacts on sustainability of communities in developed and especially developing countries. Hence, using Indonesia as an example, this paper advocates an urgent rethink and reform of the green building approach in order to achieve more balanced, integrated and, ultimately, sustainable 'green' developments.

The paper begins by examining the origins and motivation for the Green Building Movement and analysing the accompanying green rating systems. Though it may seem unrelated, it then examines the background of the Kampung Improvement Program (KIP) in Indonesia, and its achievements as a model for sustainable development. Next, it highlights the problems that can arise when the Green Building Movement meets the sustainable development objectives of KIP, leading to a discussion of the need for reform of the green building approach and integration with KIP and local contexts. A case study indicates what may be achieved to meet the objectives of developers, investors and a local community in a mutually supporting manner. The paper concludes with a series of recommendations to guide further research and, importantly, a rethink and reform of the Green Building Movement.

The authors argue that this is a critically important and worthwhile area of research and investigation, not only for Indonesia, but also many other developing countries and, indeed, the world. They illustrate the problem and a research direction, but much remains to be done. This paper is only a beginning of a major process of reconsideration and reform.

The Green Building Movement

In general terms, the built environment generates substantial social and economic benefits, employing over 111 million people and contributing approximately 10% to global GDP. At the same time, as Tepe (2007) highlighted, it contributes significantly to global consumption of resources such as materials and energy, and generates about 30-40% of solid waste and about the same proportion of greenhouse gases.

In essence, "green building refers to the shift from standard building practices, which as typically guided by short-term economic considerations, to 'best practices' emphasizing quality construction, energy efficiency, indoor air quality, conservation of water and other resources, and thoughtful planning and design for human productivity and health" (Tepe 2007). In addition, it promotes a holistic and 'life-cycle' approach, estimating the cumulative environmental and social impacts of a building throughout its lifespan, from construction to use to demotion or reuse. All of these are noble and worthwhile objectives.

Given the world attention on reducing greenhouse emissions and combating climate change, and the prospect of a 'peak oil' crisis, it is not surprising that the global green building market is growing rapidly. Green buildings typically reduce energy use by 25-35%, or even up to 80% in some of the best performing buildings, resulting in significant long-term costs savings and reduced greenhouse gas emissions. In addition, green building rating and certification schemes have multiplied rapidly throughout the world, being adopted by over 21 countries, and the World Green Building Council (World GBC) now includes member organisations in many emerging economies and developing countries including Brazil and Mexico and, in the Asia Pacific region, China, India, Vietnam, Philippines, Singapore, Malaysia and Indonesia. The World GBC's Asia Pacific Network, based in Australia, was established in September 2009 to "provide support for countries in the region as they establish their own GBCs, develop rating tools...and roll out education programs" (GBCA 2009b citing McMullan). Greening the Asia Pacific's property industry is seen as of global importance because of the scale and speed of construction in the region. Lofty ambitions were set: "The new Asia Pacific Network will enable established green building councils in the region...to help emerging councils to take action on global warming, improve urban environments and alleviate urban poverty" (GBCA 2009b citing McMullan, our emphasis).

However, the motivation 'to promote green property opportunities through the Asia-Pacific' is evident in an earlier statement by the GBCA (GBCA 2009a). The Asia-Pacific Committee is chaired by Daniel Grollo, Chief Executive of property group Grocon, and includes high-level representatives from GBCA member companies and works closely with Austrade. As part of supporting the acceleration of green building in the region, the committee will pursue the development of not only education, products and technology but also corporate opportunities (GBCA 2009a, our emphasis).

There is no doubt that, stemming from COP 15, actions to create a carbon neutral building sector are of global importance, and that the Green Building Movement has a leading role to play. However, as UNEP's Sustainable Building and Climate Initiative has noted in its key messages to COP 15, "developing countries may also combine their efforts as addressing the challenges that climate change poses with their overall sustainable development

goals, such as those outlined in the Millennium Development Goals" (SBCI 2009, p 45).

Green Building Rating

In order to encourage green building practices, Green Building Councils in developed countries have developed environmental assessment rating tools, aimed initially to rate the (predicted) performance of a building design. The US' LEED or Leadership in Energy and Environmental Design (USGBC 2010) and the UK Building Research Establishment (BRE)'s BRE Environmental Assessment Method, BREEAM (BRE 2009) are the first two environmental assessment tools developed, followed by Green Star developed by Green Buil-ding Council Australia (GBCA 2010a). These tools have now been adopted in many other countries including Malaysia, Singapore and Indonesia.

Though details of each tool are different, in general they assess similar aspects of design performance, namely energy, emissions, indoor air quality, water, material, land use and ecology, transport, management and innovation. Ness and Pullen (2009) argued, however, that in spite of these assessments, these tools do not yet rate embodied energy or overall consumption. Further, as Rees (2009, p 308) has noted, "the overall goal of future planning should be to reduce the ecological footprint of the built environment', to which could be added 'to improve social and economic sustainability". At present, most green rating tools focus exclusively on environmental sustainability. Rees (2009, p 309) has emphasized that "LEED and like 'green building' protocols may have been a necessary first step but fall far short of both the necessary and the possible". He also reminds us that "the private sector and market forces alone are unlikely to achieve the necessary social or even sectoral transformation", adding that "we must recognize that...each local project must reflect the harsh global ecological, economic and ethical context in which it is embedded".

There are promising signs of a change in thinking within the Green Building Movement. For example, there is now a proposed Australian national framework for 'Green Star Communities' aimed to achieve not only environmental, but also social, cultural, governance and economic outcomes (GBCA 2010b). Furthermore, this framework focuses not on individual 'green' buildings but rather precincts and urban development, and seeks to "promote integration across the spectrum of sustainability issues relating to sustainable communities" and "facilitate stakeholder engagement" during their evolution. According to GBCA (2010c), "Sustainable communities are liveable. They are diverse, affordable, connected and healthy. They enhance social interaction and ownership, are safe and caring and improve people's well-being". It is to be hoped that this wider encompassing approach to sustainability may also be adapted and applied to 'green' developments within developing countries, and extend to green buildings themselves.

Green Building Rating in Developing Countries

Based upon the above rating tools, South East Asian Countries such as Malaysia, Singapore and Indonesia have recently devised similar tools called Green Building Index (Malaysia), Green Mark (Singapore) and Greenship (Indonesia). All these rating tools have similar objectives and features, where the focus is on rating the 'greenness' of the building design itself. One of the reasons to develop the local version of a green building rating tool is the local building practices are still perceived to be far from practising sustainable design approaches and the resulting building, particularly commercial buildings, consume a lot of energy to operate.

The 'Greenship' rating system developed recently in Indonesia covers six rating criteria – the use of site, energy, water and materials, indoor air quality and environmental management (Setiawati, 2010). This is accompanied by a revised bylaw on building permits that requires construction projects to meet energy efficiency standards, laying the foundation for a new certification scheme for 'environmentally friendly buildings'. The new regulation is expected to help meet the City of Jakarta and Indonesia to meet its pledge to cut CO2 emissions by 26% from current levels by 2020.

Whilst acknowledging that any attempts to reduce environmental impact of buildings are commendable, the authors believe further work is required to extend the indicators in the green rating system to include socio-economic factors as mentioned above, and to integrate green buildings and urban developments with the local fabric, texture and social networks in an inclusive manner. It is noteworthy that politicians have emphasized that the City of Jakarta should be consistent in upholding spatial planning regulations, as "the city often turned a blind eye to large developers who neglected the environment *and the concerns of nearby housing areas*" (Setiawati 2010, citing Asayari of National Mandate Party, our emphasis). This emphasis seems to have not been considered or included in the current building rating scheme. As Kaipale et al. (2008) emphasized, 'green' rated buildings may even be unsustainable in some circumstances in developing countries, where they do not pay adequate regard to their poor community contexts, disrupt local infrastructure and draining systems, and add to the dichotomy between rich and poor – especially where extravagant hotels and the like are juxtaposed with slums. However, they suggested that "green buildings could be a point of entry for a wider agenda including action on improving lives of slum dwellers – not just green, but socio-economic improvement". These comments are especially pertinent to green buildings that may have impact on urban *kampungs* within Indonesia, as discussed in the section below.

RESULTS AND DISCUSSION

Kampung Improvement Program as a Sustainable Model

Why is it important to discuss *kampungs* in the discussion of green buildings? In cities in developing countries particularly in Indonesia, almost all new commercial or high-rise buildings are built on sites where a kampung used to exist. A kampung is an "informal, accretive and unserviced urban village which houses a majority of the urban population" (Garr 1989). Similarly Dhakal defines kampungs as "informal and self-planned (unplanned) settlements that constitute large share of urban settlements in Indonesian cities" (2002). The existence of kampungs in major Indonesian cities is unavoidable. In Jakarta, this began during the 1950's and 60's during a construction industry boom period, attracting unskilled labourers from regional areas to migrate to Jakarta to construct roadways, public monuments, offices, hotels and a large sport complex (Holod and Rastorfer, 1983). As the development continued so did the migration and from 1961 to 1971 the population of Jakarta nearly doubled from not quite 3 million to 5 million people. In Surabaya, East Java, the condition was no different.

As these cities were not prepared to accommodate these migrants, kampungs started to dominate the city. Migrants looked for unoccupied lands such as abandoned rice paddies, marshes, and vacant lots, and started to build simple dwellings without any planning, "a near-solid massing of one- and two-storey structures broken only by mazelike footpaths and waterways" (Holod and Rastorfer, 1983). By 1969, approximately 60% of Jakarta's urban area consists of kampungs, inhabited by 75% of its total population. Dhakal, however, argues that a kampung itself is not necessarily a slum (2002). Buildings, mainly dwellings, are permanent; however, the whole settlement area is usually ill serviced and lacking an appropriate clean water supply, sewage system, waste (rubbish) collection, proper roads and laneways, and other basic public services.

In 1969 the Indonesian government started to implement the Kampung Improvement Program (KIP) in order to affiliate the living environment, particularly in the physical sense, and quality of life, particularly the socio-economic conditions, of urban kampungs. This program focused on improving the site and services instead of providing the actual housing. The available but limited funds were used to install basic infrastructure such as paved roadways, sanitary facilities and public toilets and water taps (Holod and Rastorfer, 1983). The program was initially administered by an independent technical unit of the city government, the Muhammad Husin Thamrin Proyek (MHT), created to consolidate and expedite programme administration, finance, planning and supervision. It was funded by the city government and later by the World Bank. What is important to note is that, although initiated by the city government, this is in a way a "grass-root" activity. The implementation of the program involved discussions with sub-district heads and community leaders who then commu-

nicated the ideas and plans and sought input from the community. The agreed plans were then transformed into engineering drawings and tender documents to be contracted out to local contractors. The community was also involved during construction, such as removing or setting back buildings that obstructed proposed access routes and, after construction, such as maintaining and cleaning the infrastructure and public facilities, as well as organising the collection of refuse from households (Holod and Rastorfer, 1983).

Achievements

The Kampung Improvement Program implemented to improve the living environment in low-income settlements in Surabaya, called Comprehensive Kampung Improvement Program (C-KIP) has become a model for improvements of cities in other developing countries. The program directs and encourages community to identify their problems and potentials as well as solve the priority of needs and obstacles, encourages community to construct self planning, implementation and evaluation of the development, improve the community competency and the social economic capacity of the community (Dhakal, 2002). With a low budget, KIP was able to serve more than 60% of population in Surabaya. It subsequently received various international awards such as the Aga Khan Award for Architecture in 1986, the United Nations Environment Programme Award in 1990 and The UN Habitat Award in 1991. In the beginning of the new millennium, C-KIP had carried out not only physical environment improvements such as pathways, drainage, waste management and public toilets, but also community development such as skill and management training and providing soft loans, housing improvement and land management such as issuing building permit and land certification. This program has since been implemented in many other cities around Indonesia and other developing countries (Syahbana, 2008).

Although this program officially ended in 1994, the KIP model is still continued and has been a way of life among urban managers (Syahbana, 2008). Without being officially labelled as a 'sustainable' development, a term commonly used by the formal and planned developments, the authors argue that KIP is essentially a true model of a sustainable development. The program employs socio-culture approaches to strengthen and empower community involvement, enhances the economic capabilities and outcomes of the community through small scale industries and businesses, and upgrades the quality of the physical environment of the people.

Problems of Simply Adopting Existing Green Building Ratings

On one hand, the attempt to improve the design and performance of individual buildings is indeed necessary. Commercial buildings in cities in Indonesia consume nearly 70% of the total industrial energy consumption (Sasistiya, 2009), hence any attempt to reduce energy consumption from the building

sector will have impact on the overall energy consumption and resulting greenhouse gas emission. On the other hand, as pointed out by Kimmet (2009), the most common understanding of sustainable development seems to be along the physical and economic lines of development only, "based on the accepted truism that less waste and greater energy efficiency is good for the environment" and the efforts to achieve that "seldom specifically address or reflect sustainable development as initially defined." (Kimmet, 2009: p 471)

There are three main issues that will be highlighted here. The first relates to the understanding of green and sustainable. The initial definition of sustainable development is a "development that meets the needs of the present without compromising the ability of future generations to meet their needs", with over-riding priority to be given to the essential needs of the world's poor (Bruntland, 1987). Because more than 60% of existing land in cities throughout Indonesia has been occupied for urban kampungs, the majority of new developments particularly of commercial buildings are built on an existing urban kampung. As Tunas and Peresthu (2010, pp 316-317) have highlighted, kampungs have been "gradually engulfed by urban development". Every time a new building is erected, a common question would be 'where do all those people who used to live there now live?' So despite the fact that this new development or building may be categorised as a 'green' building, its existence potentially displaces an area or community that is already socially and economically sustainable (through KIP) though may still have issues in terms of its environmental performance. Hence, from the point of view of true sustainability, this new and "green" development is not green at all, although from the point of view of the environmental sustainability of the building *itself* this building may be perceived as sustainable. Urban kampungs exist as a result of economic activity in Indonesian cities that has occurred for more than 50 years, so it is ironic that their existence now is pushed aside by another economic acti. This, in turn, may create yet another urban kampung elsewhere if not make another urban kampung be more crowded than ever to accommodate people whose dwellings are displaced by this new development.

The second issue relates to the socio-economic implications of the development. The planning and development processes of new commercial buildings such as office buildings and shopping centres in cities are unlikely to involve the community that has existed on site where the buildings will be erected. Those people may indeed receive compensation for losing their dwellings; however, this new development is unlikely to have anything to do with the existing community. New offices or shopping centres are likely to target people with a higher socio-economic background, while local people may only passively observe the buildings during and after construction. Jobs will indeed be created during and after the development processes; however, it is not guaranteed that those people who used to live in the area will be the ones who work in the new development; the jobs available, particularly in the area of providing services

(such as cleaners, gardeners, security guards), are open to anyone and there are more job seekers than the jobs created.

The third issue relates to the mechanism and the rating tool used to assess the 'greenness' of the new development or building. All green building rating tools adopted in developing countries such as Malaysia and Indonesia stem from existing rating tools from developed countries whose socio-economic backgrounds are very different from these countries, particularly from Indonesia. None, if very few, of (green) buildings built in countries such as the UK, US and Australia are built on existing highly populated informal residential areas as in Indonesian cities. Assessing the impact of new buildings using a system adopted from LEED or Green Star building rating only focuses on the environmental impact of these new buildings on the land and on the global environment but not necessarily (or never) on the existing communities *that have been removed*. In the UK, US and Australia, buildings that are built on existing brown sites, that is, sites with low ecological values, will be rated higher and building on existing green sites or sites with high ecological values will be regarded as potentially damaging the existing environment, hence will receive a lower rating. This issue is quite different from the context of developing countries such as Indonesia. Most new buildings are built on existing residential areas, not a brown or green site, no matter how informal and unplanned these residential areas are. None of the assessment criteria of the above tools addresses this issue.

As discussed in section 3, existing tools generally rate the following performance of the design: energy use, indoor air environment, water supply and use, waste management, and material use. The first two assessment categories are indeed necessary to assess the impact of design on the building's energy consumption, its resulting greenhouse gas emission and on the occupants to ensure a healthy, liveable or workable indoor environment. The assessment of water use including how water is collected and distributed within the building is also necessary to conserve and minimise water use by the building. Though the focus is on minimising energy and water use within the building, reduction of such consumption does have a wider impact on the environment and the community in general. Less energy and water use by new buildings mean the resources can be used by others or by future generations and minimising greenhouse gas emissions does have a global impact.

On the other hand, the assessments of waste and material use are still limited to the building itself and not necessarily about its impact on the surrounding highly populated environment. Locating a new building in a highly populated area, which already lacks a proper waste management system, will only add to the wastes created by the area despite the fact that the new building is likely to have its own waste management and disposal system. New developments are unlikely to improve or contribute to dealing with the existing waste management system or other infrastructure within the area. The issue of material is

even more contradictory. It is not uncommon that clients prefer imported material and building services systems instead of using locally produced materials (Takabatake and Corless, 2000), while the application of recycled materials in existing and new commercial or high-rise buildings is still not a preferable option. On the contrary, reuse, recycling and reclamation of existing material and products have been common practices in urban kampungs surrounding these buildings (Silas, 1992).

However, the most crucial issue that needs to be highlighted is that there is no place in these tools to assess the social and economic impact of new commercial building developments on the existing communities or areas these buildings are replacing. The assessment tool is only about making the new buildings look greener, hence focusing only on the environmental aspect of sustainability, based on the understanding of *what green buildings mean in developed countries*. For example, there is no assessment about whether or not the construction of the new building will use of a certain percentage of labours, materials or products from the surrounding area and in particular of the area where the new building is built upon. There is no assessment on whether local people will be employed in the new development, nor is there an assessment about the economic benefit the new development will have on the surrounding neighbourhood. There is no assessment whether or not the quality of lives of the local people will improve due to the erection of the new building. In these tools the assessment about the design process is about the teamwork and management of the project itself but not about whether the local community is also involved in some capacity during the planning and development of the new building or project.

One may argue that building rating tools are not intended to assess the social and economic aspect of new developments, hence the issues mentioned above are outside the scope of building rating tools. However, looking at the history and philosophy of green movement and the initial intention of green buildings, it is crucial that the assessment of new developments, particularly in countries where there are still wide socio-economic gaps within the society, are not limited to the comparatively narrow environmental aspect of the development. Assessing new developments or buildings in these countries cannot be separated from assessing the social and economic impact of the development at the same time.

Kimmet argues that codified schemes such as LEED, BREEAM and Green Star are tools to develop, measure and report on the sustainability of the commercial property sector "in a context where most of us want to be seen to be at least a little green." (2009: p 471) He further argues that "sustainability efforts are now geared toward high achievement of grades, and seldom specifically address or reflect sustainable development as initially defined." The commercial property sector may view that what is more important for the property industry is to build something that is (or rated to be) green and being able to demonstrate that they

are able to build something green will attract more investment to be made which, in turn, will result in a sustainable financial return (for the property industry itself).

The question that needs to be asked is then, in the context where there are still wide socio-economic gaps in the society and there are environmental issues that need to be solved in the area where new buildings are to be built, can building new buildings which do not necessarily contribute to improving the surrounding environment and society be considered as a true green, sustainable move? The energy embodied to build a new multi-storey building and the energy required to operate the building are likely to be much higher than the embodied and operating energy of the unplanned, informal housing this building is replacing. Kimmet argues that focusing on high-level technology accompanied by trivial behavioural change (of the users of new green buildings) "has become a dominating discourse assuring us that progress is being made with social and environmental solutions"; however, "it distracts us from taking stock of what can actually meaningfully be done to preserve resources and drastically cut emissions and waste" (Kimmet, 2009: p. 477).

Case Study

Realising a socially responsible investment as opposed to sustainable commercial property investment, as Kimmet (2009) put it, is not impossible. Few examples can be found in developments in Indonesia and other developing countries. This paper will highlight a commercial development which occurred more than 20 years ago in Samarinda, East Kalimantan, called Citra Niaga (Al-Radi, 1994). Similar to Jakarta, Samarinda experienced a rapid population increase due to economic activity in the area such as from logging and oil exploration and exploitation. Squatter settlements sprawled throughout the city and migrants who could not find work in the formal sector became street hawkers whose numbers increased by more than 200% per year since 1983. This situation had forced the local government at the time, who wished the city to have a better look, to do something to solve the problem.

While in many big cities in Indonesia, particularly in Jakarta, a similar problem is likely to be solved by removing the informal street vendors elsewhere to make a way for a new commercial development, what happened in Samarinda was very different. With the approval from the government to use a government owned piece of land, hard work by a socially-conscious developer and a community-oriented architect, the centre of the city which used to be the worst slum area was turned into a mixed use, mixed income level integrated commercial and housing development. "The underlying idea was "Urban Development without Eviction" directed at the existing low income street hawkers which are commonly evicted by most large urban development scheme." (Pambudi, 1988) The project was conceived through collaborations with the central and local government, private sector, and most importantly with

the low income local inhabitants who illegally had occupied the land for the development. The project consisted of house-shops for high to middle income levels, kiosks for low income level, and pavement stalls (*kaki lima*) for the lowest income level with the profits made from the sale of the house-shops subsidising the development of *kaki lima*. Including in the project were an open space for evening gatherings, a covered performance space, a symbolic tower acting as a focal point for the site, and public toilets.

Since the completion of the project this mixed use commercial development has been maintained by self-managed board with representatives from all users. The lowest income level vendors also pay for service charges, however, with a lower rate than what they had to pay before the project was conceived. Although a certain percentage of the development is occupied by these low income vendors, the developer managed to earn a considerably high rate of return of 27% while the price of the built-up area nearly doubled in two years after the development was completed. This development has also become the focus and pride of the city despite the fact that the site used to be the worst slum area. It is "a well-conceived, well planned and aesthetically beautiful complex of buildings with a unique character and style. It terms of planning it has succeeded in giving Samarinda a city centre." (Al-Radi, 1994: p. 79). In 1989 the development received the Aga Khan Award for Architecture (Figure 1).

Figure 1. Citra Niaga Development
Source: http://www.creativecities.org.uk/wp-content/uploads/2010/01/CitraNiaga_archnet.jpg and http://img232.imageshack.us/img232/9968/646822083ljv9.jpg

There are a number of lessons learned from the above project but only three will be highlighted here. First, it is possible to develop a commercial real estate property which not only benefits the developer or owner but also the local community. In the case study above not only does the new development provide financial profits to the developer, it also provides security and profits to the informal low income vendors and local community. The second lesson is that it is possible to build a new commercial development on an already occupied site without permanently removing the existing occupants or users. In fact, in the case study above, the main focal point of the new development was given to the previous street vendors who used to be perceived as the main nuisance in the

area. The achievement of the above development, however, would not have been possible without involvement from the government, socially-responsible developer and architects, and continuous communication with the local community. That is the third lesson.

Green Buildings in Kampung Level

Authors such as Rees (2009), Kimmet (2009) and Gardiner (2008) have highlighted the need for consideration of socially responsible and sustainable commercial property investment, not just 'green'. As Gardiner (2009) emphasized, with a mind to corporate social responsibility (CSR), "property owners have a need for a deeper requirement beyond just green buildings and the interplay of social and economic issues in the built environment sector can lead to a more useful methodology for enhancing the triple bottom line performance of buildings for property owners beyond the economics of just 'greening' buildings".

Thus, before proceeding on its relentless passage through the developing countries of the Asia Pacific, the green building juggernaut should pause, 'take on board' some additional considerations and objectives, and modify and add to the range of green building indicators. Thus, it may not only achieve 'green' but also wider sustainability objectives, and mutually beneficial outcomes for developers, investors and local communities.

In addition, some changes could usefully be made to the KIP programme. As the World Bank (2003) has pointed out, there tends to be no integration between KIP projects and city development in general. As Tunas and Peresthu (2010, p 315) have observed, "the government sometimes seems to be happy to let the urban poor live in their own self-help housing, under the condition they do not hamper the progress of main economic goals connected to urban development". In addition, the private sector targets mainly the middle to high end of the market to ensure the highest possible profit "building for the poor is not an option". However, according to Tunas and Perestha (2010, p 321) "the post self-help housing area must be accompanied by economic viability....Education and job creation are two important social dimensions that need to be integrated into the social structure of the self-help housing residents. Local entrepreneurship should have more economic viability and operate in the formal sector". In addition, kampung communities require both security of tenure and opportunities to participate fully in the spatial planning and urban development process, according to the Government Regulation on 'Community Participation in Spatial Development' (PP no 69/1996, cited by Winayanti and Lang 2004). As the Samarinda case study has indicated, there is an opportunity to integrate the KIP programme with private development funding, so that urban development includes assistance for kampung self-help housing, security of tenure and infrastructure. Thus, community and private investment goals may be simultaneously achieved.

CONCLUSIONS

The authors have sought to highlight the importance of this area of research, not only for Indonesia but also for other developing countries, and the lack of work in this field to date. They have begun to illustrate the problem and to propose a policy and research direction, recognising that this paper is only a beginning of a major process of reconsideration and reform. It is therefore recommended that:

1. World green building approaches and rating systems should be modified to include socio-economic and contextual considerations when applied in developing country contexts, such as Indonesia.
2. In order to do this, an overarching sustainable development framework needs to be first developed which will become the point of reference for various processes, from the spatial urban planning, community development, building design, to the construction practices, as well as operation and maintenance of the development and buildings.
3. The Australian 'Green Star Communities' framework, which promotes integration across the spectrum of sustainability issues and facilities local stakeholder involvement during evolution of sustainable communities, for example, could provide a useful basis for developing a strategy for green urban precinct development and buildings in developing country contexts.
4. The KIP programme and improvement of associated self-help housing and infrastructure could usefully be integrated with privately funded urban developments, as illustrated by the Samarinda case study, and with spatial planning regulations.
5. Government support for private development and investment should be conditional upon a number of performance criteria being satisfied, not only environmental but also social and economic.
6. The proposed reform to address the above issues should be supported by further more in depth research.

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