**Brief for GSDR 2015**

**Inclusive Green Affordable Housing for All**

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**Introduction:** Affordable Housing (AH) is deemed affordable depending on family’s income and particular country’s housing status. AH can address all three dimensions of sustainability and it can influence 13 goals set in Sustainable Development Goals (SDGs) out of 17 goals directly and indirectly (United Nations, 2014). SDGs are designed as action-oriented goal in 2012 to realize 8 Millennium Development Goals set in the year back in 2000. It is envisaged that AH would result in financial and social inclusion of Economically Weaker Section (EWS) and Low Income Group (LIG). AH can offer them an opportunity to prosper economically and to enjoy basic urban services (Sen, 1998). It will address the Goal 11 of SDGs i.e. *Make cities and human settlements inclusive, safe, resilient and sustainable.*

**The approach:** Well defined action-oriented objectives are required to realize Affordable Housing. Pre-design, Design, Construction and Post-occupancy are four major stages identified for intervention. Activities identified in each stage as shown in Table 1 can make AH as climate responsive, socially sensitive and economically promising habitat. To address urban housing scarcity, approach shall emphasize on reforms at concept and action levels, inclusive design, sense of belongingness, ownership policy, livelihood opportunity to prosper and climb social ladder, provision of sustainable water, sanitation and hygiene (WaSH) and healthy quality environment.

At **pre-design stage**, land and finance become most crucial. Infrastructure status for AH would be a big boost and a paradigm shift (MoHUPA, 2014). Contradictory and prescriptive Standards and specifications need attention for revision. Case studies reveal gloomy expression of sustainability in LIG/EWS Housing globally, where socio-economic concerns and environmental safety are greatly eluded. On contrary, limited studies reported novel solutions- experimentation with economic sustainability (income generation, construction/maintenance cost, access to repayable loan), socio-cultural and environmental sustainability (JLL, 2014).

High rise apartments can be an apt response to limited land accessibility, though this option escalates construction and maintenance cost. Compensatory economic measures need to be planned to offset the additional cost.

Community participation at **Design stage** can bring remarkable difference to AH (Hart, 1999). Design brief developed for a specific site shall reflect the local aspects optimally (Altman, et. al, 1980) (Ventury, 2011); AH is meant to accommodate idea integration to address social, economic and environmental sustainability. Individual block and unit design, site-layout shall get prime attention from the designers and the community. Social interaction shall receive high priority during this stage; units clustered at each wing around interactive spaces (like street, courtyard or combination) create more humane and livable space instead of matchbox architecture that defies residents' social needs (Unwin, 1902) (Newman, 1973)(Appleyard, 1981)(Moudon, 1991). And culture shall bring the distinction (Pandya, 2005). Safety from Fire and other hazards, climate responsive design decision (orientation, use of Autoclaved aerated concrete (AAC) block, ample cross ventilation, daylight harvest) are notable feature at this stage. At community level multi-tasking activity spaces provide for health (play area/field/jogging track), education (crèche/vocational training), economic activity spaces like rental commercial spaces, community hall, pisciculture, urban agriculture etc. can be value addition (Mukherjee, 2014). Options for re-densification, slum rehabilitation, redevelopment, regularization, infill development are to be explored depending on the situation (Jacob, 1993)(Kundu, 2003)(Lavy, 2012).

**Construction and Post-occupancy** stages are meant to realise the dream dreamt together. Role of private sector can be crucial here. Environmental strategies for rain water harvesting, decentralized waste water treatment, bio-swales, zero water discharge from site, efficient plumbing fixture, energy management (solar panel, LEDs, balanced

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phase loading) shall be worked out in detail. Community participation of different degree need to be integrated for success of such housing (Mukherjee, 2007). Resource flow mapping, strict monitoring, quality control and site management are all the more necessary during construction and maintenance afterwards for AH (HDB, 2013).

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<thead>
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<th>TABLE 1: Concepts and Actions identified for Stages of Affordable Housing</th>
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<td><strong>Stages</strong></td>
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| **Pre-Design Stage** | Land-  
Fair and transparent land acquisition for Social Housing and Infrastructure  
Brown field redevelopment in comparison to green field development; regularization of informal settlements  
Increase FAR/ FSI; Introducing Incentives like TDR, Amenities and accessibility to job places  
Private developers compulsorily shall develop 15-20% of social housing in any of their project  
Social-  
Identifying general and special Social space requirement- be it livelihood, education, health or anything  
Self-help Housing Concept  
Nothing as freebee; repayment in kinds if not in cash  
Standards and Specifications- Benchmarking, Prescriptive to quality improvement, Economy-  
Livelhood opportunities, Access to finance- micro-finance, repayable loan terms  
Cross-Subsidy, Corporate Social Responsibility, Infrastructure Investment  
Stakeholders’ meet on policy decisions  
Environmental-  
Stocktaking of natural resources  
Limited intervention through tree cutting, top soil disturbance  
Target setting for Sustainable WaSH |
| **Design Stage** | Land-  
Flexible Building regulation to optimally utilize land resource, Density, FAR, Height, Access Road width, neighbouring and within the site features to be considered  
Vertical construction  
Roads, drains, water, sanitation, street lighting, community halls  
Social-  
Avoiding typical matchbox solution to give wider scope to socialising  
Naturally- lit stair and lift lobby to enhance safety, security and interactions among community members  
Cultural distinction  
Social interaction at ground level  
Health (Club, ground, Gym, running/jogging track), Education (kindergarten, primary and vocational), crèche  
Entry/Exit point safety, Universal Accessibility, Old and child friendly environment  
Economy-  
Good design for housing unit ensuring optimum use of natural resources  
Cross subsidy through mixed use and mixed economy group housing i.e commercial rentable spaces, HIG housing to offset cost  
Opportunity for Onsite Income generation  
Selection of construction method and materials  
Environmental-  
Inclusive Site planning  
Conserving natural resources |

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| **Construction Stage** | Efficient and Sustainable WaSH  
Land-  
Participation through Un/skilled labour from the community,  
Selecting long-lasting materials and techniques to minimize maintenance and operational cost  
Social-  
Social Interaction to be increased through self-help housing concept  
Design review, construction quality monitoring  
Economy-  
Resource flow management  
Environmental-  
Limiting construction footprint to optimum in order to preserve onsite biodiversity  
Effective implementation of toilet, drinking water, electricity, other amenities  
Roads, drains, water, sanitation, street lighting, community halls |
| **Post-Occupancy Stage** | House-  
legal ownership, asset, stricter norm to change ownership,  
Social-  
Education-preschool, non-formal, adult literacy, computer training  
Gender awareness, Preventive healthcare,  
Economy-  
Micro-credit, rental options, Income generation from home, job opportunity, vocational training  
Urban agriculture, pisciculture  
Security of tenure, strict check on ownership change  
Environmental-  
Strategic maintenance regime for Rainwater harvesting, efficient plumbing fixture, water conservation, Waste water treatment and recycle, Natural light and ventilation, Renewable Energy use,  
Check on Leakage, theft and transmission losses for water and electricity |

Conclusion:

- Success of AH will depend on political willingness and community participation in long term.
- Availability of approachable urban land, contemporary integrated low carbon housing design concept and Micro-credit would be crucial for realization of AH.
- Facility management (housing, open spaces, social and economic activities), policy decision on ownership and its change, future growth potential are likely key aspects to resolve regularly in an AH project.
- Affordable Housing will be socially inclusive, economically promising and environmentally responsive.
- This can be a mandatory action listed under SDGs as it addresses majority of the issues identified. And alternative roadmaps for the same for different geo-cultural context shall be taken up.

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References:


JLL. Housing for all: Reforms can make it happen sooner, Nov, 2014; Jones Lang LaSalle Property Consultants (India) Pvt Ltd and CREDAI, India


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