Innovative Solutions for Cities Sustainable Development

Eng. Nadine Chahine Bitar
Founder – Place Making
Turning urban spaces into places
Email: nadine@placemakingme.com

In resolution 66/207 and in line with the bi-decennial cycle (1976, 1996 and 2016), the United Nations General Assembly decided on the Habitat III Conference to reinvigorate the global commitment to sustainable urbanization, to focus on the implementation of a “New Urban Agenda”, building on the Habitat Agenda of Istanbul in 1996. The Habitat III tackles in particular one of the new global Sustainable Development Goals announced on the 25th September 2015 when the Heads of State and Government and High Representatives, met at the United Nations Headquarters in New York as the Organization celebrates its seventieth anniversary.

The agenda 2030, 17 Sustainable development goals span many sectors ranging from education to green economy, climate change to biodiversity, poverty alleviation to science and research.

Figure 1- United Nations Sustainable Development Goals - Agenda 2030 (source: United Nations)
Both Goal 11 and its targets bring to our awareness one of the most important disciplines in approaching sustainable development of cities – Urban design.

Cities, the birthplace of innovation, are subjected to the pressure of climate change, the forces of globalized economy and the strive to increase their livability for intensifying migrant millennia.

Urban Design has been confused with Urban planning that is more strategic giving a global view on programs without informing the physical. It has also been born out of Architecture and Landscape Design which are both detailed and specific in their scope but in some instances lose the linkage to the urban strategy.

Urban design translates the strategic overview of urban planning and informs the crafted details of architecture thus playing a pivotal role in guiding the transformation of cities and synthesizing in a holistic way the inputs of the different agencies and stakeholders of the urban environment.

It is at this level that urban policy for sustainable development takes shape, communities are master planned to be smart and sustainable, urban space is conceived as a place of creativity and innovation, infrastructure is redefined as a hub for life and vibrant urban life and mostly and the urban landscape is planned without compromising the needs of future generation.

Thus, urban design differentiates itself as mostly a synthesizer discipline which uses holistic thinking to engage on multiple levels; Urban policy for sustainable development, master planning communities to be smart and sustainable, conceiving urban space as a place, redefining infrastructure as a hub for vibrancy and planning landscapes that are resilient.

Increasingly, Urban design is positioned to be the discipline that is pushing for innovations on an urban level. That pivotal role is significantly apparent in dealing with sustainability on a community/neighborhood level through proposing new models developments that use smart city strategies to enhance their sustainability.
In general, extensive research in urban design proves the direct relationship between Urban Sprawl, car dependence and Carbon Emissions. As an Antidote to the negative effect of dispersed developments connected by Highways and thus contributing to increased air emissions, Peter Calthrope proposed a new model for sustainable urban neighborhoods—Transit Oriented Development developments which include housing and commercial facilities concentrated around 2000 feet radius linked through a high quality public realm to a transit station.

However, as Dr Robert Saliba in his book “Urban Design in the Arab World” mentions that the diversity that one face when defining Arab world as an area needs to reformulate urban design tools in the context of the specificity of each of its contexts. It is a “womb of which a multiplicity of opportunities for shaping, upgrading, and rebuilding urban form and civic space while subjecting global paradigms to regional and local realities.” Thus, one needs to frame these opportunities using five proposed generic dimensions—identity, ecology, infrastructure, public space and private development.

Figure 2- Urban Design the missing link (source: Author -Placemaking.me)

Figure 3- Climate Responsive Transit Oriented Model -copyright Author
Based on this approach, I have invented an innovative model to develop sustainable and smart communities in GCC in particular and Arab cities. This Model takes into consideration the physical aspects of Arab cities planning, the social aspects of Arab cities multi-cultural environment and the environmental aspects of hot and humid weather.

The model has been detailed into a series of urban design tools in order to bring forth the three tenents of sustainable development – economic vitality, Social Diversity and Environmental Integrity. 15 tools were developed in order to guide urban planners, real estate officials, housing officials, architects and landscape designers to design and implement a sustainable and smart community.

Figure 4- how transit stations can become a place rather than just a node?
As such, the model and toolkit -applied across three scales: city-scale, district-scale and site-scale in Dubai as a Contemporary Arab city - generated a master plan that densified and diversified the site uses around transit; and proposed an extensive network of walkable and active climate responsive public spaces. As seen in Figure 5 above, the proposed master plan functions throughout the day and contains variety of uses and spaces that are within walking distance to transit. The resultant development is unique and therefore exudes a sense of place that is authentic and climate-responsive.

*Figure 5- visual renderings showing an example of a sustainable and smart neighborhood using the Climate Responsive Transit Oriented Model- Copyright –Author*
The proposed climate-responsive Transit Oriented Model and toolkit can be tested across geographies in the Arab world. Cities such as Amman, Riyadh, Kuwait, Cairo, and Algiers all offer opportunities to test its principles taking into consideration the distinct character of these cities, their history, and their culture.

Spatially, the model and tool kit can be applied to urban, peri-urban and even urban edges to understand the different criteria which would affect its dimension and elements. For example, urban inner city offer less opportunities for injecting green spaces, so ecological approaches would focus more on vertical greening. TOD built on the urban fringes might not have sufficient population densities. Hence, its planning policies might offer incentives for people to work and live in the same area.

Above all, I would like to end this study with a series of recommendations that would assist Dubai in particular, and the Arab cities in general, in adopting Transit oriented model as a development paradigm to limit their urban sprawl, refocus their growth, and particularly reinforce their identities.

TOD needs to be embedded into a regional transport policy that would encourage their developments in partnership with the private sector. Incentives need to be considered to attract private development; and specific joint ventures’ legal structures need to be considered to structure such partnership. This article summarized an applied research study in urban design using design tools to test the hypothesis which has proved to be an essential aspect in thinking about sustainable development for cities.

**Cities as Land Bank**

City structural and framework plans need to embed sufficient land bank in for future transit oriented development around proposed transit stations. Urban Structure might also consider regional TOD transit corridor. Their urban planning framework might include specific transit oriented development guidelines taking into consideration local climate thermal comfort, current urban densities, available zoning and planning spatial tools to guide urban blocks within TOD and public realm based on the toolkit.

**Cities as living labs**

Experimental urban design studies that reflect on alternative urban forms for transit-oriented development in retrofitting suburbs might explore new morphologies. These experiments can use current urban spaces as their living labs exploring the outputs of these forms and their sustainability and livability metrics. These measurements are essential to measure the progress on GOAL 11 and the journey towards Agenda 2030.