Mixed Use Development - The future of lifework in Egypt, The basics and practices

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ABSTRACT

Through the past decades, within the urban planning and real estate development, world's mixed-use development was always a center stage. Mixing between land uses is a widespread component of the subsidiary visions and ideals, either, it's the Congress for the New Urbanism, Smart Growth, the Compact City, or any other trend related to the built environment improvement. Until recently, mixed-use developments are often illegal, in the Middle East. And some towns don't change their regions division until now. The Conventional Areas defines the permitted land use on each plot of land, and does not permit both residential and commercial buildings in one building. The urbanism certainly supports the concept of mixed use, but there are buildings and other mixed-use developments that do not include the whole new urban theory. Development can be oriented towards commercial or residential transit, although many current examples are actually mixed use. The development of mixed use creates a sense of identity of residential use, and a more populated and safer city environment. The key to success in the development of mixed uses is to adhere to a number of core principles in conjunction with the assessment of economic synergies and suitability among potential users. The Egyptian cities from the very beginning, reaching a huge urban size. Today many periods of renaissance, stability, deterioration, and stagnation result from several key factors and different periods reflecting those structures, which consists the city. The Arabic character during the urban transition prefers mixed uses over urbanization in that period. The Egyptian cities are currently undergoing urban development, regarding the concept of development whether the pattern of urban fabric. One of the advantages is that this study deals with one of the new urban theories, mixed use theory, concept, standards, and applicability of reality in Egyptian cities.

Key words: Mixed Use Development, Egyptian cities, urban developments.

I. Concept of Mixed use development

Mixed use is a wide meaning for urban, suburban or rural development, for each single building that combines between residential, commercial, cultural, institutional or industrial uses. To achieve integration between functions, physically and functionally, and providing links to pedestrians (Coupland, 1997).

What is the mixed-use development?

Moreover, the term "mixed-use development" used sometimes, referring to a mixed-use development project, developed by a private developer, or government agency, including; a building, complex, compound, neighborhood or district, in the city.

mixed use allows a range of land uses, includes residential, commercial and industrial, to be integrated, to support sustainable transportation; such as public transportation, hiking and biking, increasing relief in the neighborhood. The economic vitality of a region can be enhanced by mixed land-use developments, by increasing the people number in public places and in the street. (www.healthyplaces.org.au). National Multi Housing Council (NMHC). Identification of the basic characteristics of mixed-use development was the survey purpose; also, the results were compiled to produce the following definition: Mixed Use Development is considered planned integration of real estate project, for combination of different functions such as retail, office, residential, hotels,
entertainment. It is mainly for pedestrian. It increases the use of space, has architectural amenities and expression and tends to ease traffic (Niemira, 2007). The term "mixed use" in general, covers a very wide range of development types, beginning from small units to huge areas master plans. However, there are number of criteria that mixed use development should meet:

- Includes a range of related uses in one place - residential, office, retail, entertainment, civil space, and government uses.
- Provides a large proportion for each use within the mix.
- Provides convenient and safe links for pedestrians and bicycles, inside and outside the development.

II. Mixed-use in Egyptian traditional cities context:

Human settlements have traditionally evolved into multi-use patterns. However, with manufacturing as well as the invention of skyscraper, government zoning systems have been developed to separate different jobs, such as manufacturing, from residential areas. In the United States, the peak use of separate areas in the United States after the Second World War, but since the 1990s, when the advantages of multi-use zoning has been noticed, it became eligible again. These advantages include:

- Increase residential density and variety
- Decrease distances between residence, workplaces, commercial and other origins
- Compact development
- Enhancement of residential buildings' character
- Provision of pedestrian and bicycle axes

In traditional Egyptian cities, residential use was dominant, overlapping with other activities. There are also shops, presses and mills, which considered a service center. After urban transformations happened in Egyptian cities, the general structure of land use in Egyptian cities can be summarized in the following main uses:

Housing - Services - Industrial activities - Agricultural activities.

Fig. 2: Mixed land use in a traditional Egyptian cities (Elmahlla & Mout cities)  Source: Researcher 2005
Land use has been mixed everywhere in cities and urban areas, since the early beginning of humanity. The areas required to accommodate basic functions of the built environment, including accommodation, social activities, in addition to the production and distribution of goods and services, have been mixed taking in consideration walking distances (Morris, 1994). It was mixed across the city within individual buildings; the density of population was eminent, with high densities in cities and low intensity in the surrounding areas; there was a clear distinction between town and country (Jackson, 1985).

The industrial revolution has radically transformed the patterns of development that have re-organized the structure of the man-made environment, particularly in the United States, eroding the set of common principles that have shaped their historic urban form. This shift has been driven primarily by five factors: industrialization, urbanization, and progress in transport, zoning, and the rise of the wealthy middle class (Drummond, 2011).

The changes affect on the physical environment dramatically. As a result, the Egyptian cities characteristics nowadays, contradicts basically with the pre-industrial city: the main transportation means are vehicles; separate uses in areas are rarely mixed within buildings; the density of population curve is flat in most places, Low densities throughout the vast metropolis; and there is a clear recognition between city and country.

A key element of "mixed-use" approach is to achieve mixed-use development. notice that, the mixed-use development modern concept differs from the historical model because it is developed in zoning ordinances context. That's why, cities in the past were mixed-use zones, modern mixed-use areas, are just one tile within a mosaic of mostly single-use zoning classifications. In addition, contrary to mixed uses in the past, which developed gradually through long time, as result of builders additions to the city, modern projects usually are multi-use developed through short period of time by a developer (Schwanke, 2003). It's important to be taken into consideration the differences between historical and modern applications of multi-use, while comparing this concept between theory and practice.

III. Mixed-use in new urbanism theory

Mixed use composed of three-dimensional mainly, pedestrian-oriented spaces, public services, and utilities together in various scales.

The deviation from land uses separation and their integration into multi-use development has been an important model for planning and development. Indeed, many people consider it as an antidote for the fragmented urban area problems (Grant, 2002; Coupland, 1997).

The rise of mixed-use theory

An establishment of the basic principles will create a variety in mixed-use projects. Main factors such as individual land uses function and the combination of mixed uses should be taken into consideration, and to which extent uses can be mixed. There are two conceptual models that are consistently referred to in literature. The first classification was developed by Rowley, (1996) and the second was created by Hoppenbrouwer and Louw (2005) in an attempt to expand Rowley's ideas.

Rowley's Typology: mixed-use development conceptual model, created by Alan Rowley (1996) is based on the view that mixed-used development is essentially an aspect of the settlements internal texture. It focuses on mixed use horizontally, or among adjacent buildings, that mixed use development physical form is an urban texture function, location. (Rowley, 1996).

Four types of locations where mixed-use development can occur:

- City centers consisting of commercial and civic cores.
- The inner areas of cities consisting of abandoned, vacant or built-up land that require renovation.
- Suburban or edge of the towns.
- Greenfield sites out past the urban fringe.
Fig. 3: Rowley’s Mixed-Use Model  Source: Rowley, 1996

Hoppenbrouwer and Louw’s Typology:

The development of a model spatially, to be organized by function, dimension, scale, and urban texture. The mixed-use development component refers to the mixed uses. While their classification utilizes residential and offices achieving simplicity, the model is flexible enough to be extended to any other uses combination. (Hoppenbrouwer and Louw, 2005).

IV. Benefits of mixed-use:

Benefits of mixed-use development include: (Scott, 2005)

- Increased housing density and variety, affordable housing (smaller units).
- Decrease distances between residential, workplaces, commercial, and other facilities.
- Improve access to fresh and healthy food (through providing food markets within walking distances).
- Further compact development and synergy of land use (for example, providing residents with retail customers that provide amenities for residents).
- Stronger architecture character
• Taking walking distances into consideration, bike-able neighborhoods, resulting in lower transport costs

**Fig. 4:** Hoppenbrouwer and Louw’s Mixed-Use Model

**Fig. 5:** Benefits of mixed-use development (Scott B. 2005)
V. General characteristics of mixed-use community:

- **Walk Ability**: Most uses must be set at appropriate distances for walking from home to work. The street design should be suitable for pedestrians make pedestrian axes without vehicles.
- **Connectivity**: A connected roads network on which traffic distributed. The hierarchy of network, roads classes, boulevards, pedestrian walkways.
- **Mixed Use & Diversity**: Mix of commercial uses, administrative, residential around design, mix use in quarters Diversity of people from different ages, classes, cultures and races.
- **Mixed Housing**: Different models, scales and costs of housing units.
- **Quality Architecture & Urban Design**: enhancement of aesthetic, luxury and relief, architecture with humanistic scale and beautiful environment.
- **Traditional Neighborhood Structure**: special edges of Public spaces in city centers and open space including variety of uses taking in consideration walking distance.
- **Transect Planning**: most and least densities of city center and its gradual reduction.
- **Increased Density**: residential units, commercial and services within walking distances, in order to enhance resources and services, to create convenient place for living.
- **Smart Transportation**: A high quality railway systems network connecting different scales of residential communities, to encourage using bicycle and walking.
- **Sustainability**: least Environmental side effects. Technologies that respect natural systems values, and Energy efficient.
- **Quality of life**: make neighborhood units more efficient, with ability to walk, creating better quality of life.

New urbanism movement create human made environment include:

A. Neighboring units
B. Activity fields
C. Ways of access

Design of the most important structures with new urbanism principles include: roads, blocks, buildings, open spaces

**Cairo Festival City, Egypt**

The second city developed by the Al-Futtaim Group, after Dubai Festival City. CFC occupies an area of 3,000,000 sq. m., located on the ring road in the west of New Cairo City. “Oriana” is the residential compound that occupies an area of 860,000 sq. m., 480 villas designed in 3 types & 3 styles (Italian, French, & Spanish) plus 20 club villas (serviced/rental) and a club house (http://digitaleg.com/Cairo-Festival-City/masterplan).

Cairo Festival City is a new mixed-use development, in New Cairo. In addition to residential, civic, educational, religious and recreational facilities, it features Egypt’s first – indoor/outdoor mall. Festival Centre, two levels of enclosed commercial, food court and entertainment center, a collection of outdoor shops, restaurants and spaces. A stepped pedestrian streetscape with more shops and cafes, public spaces between many international brands stores.

Sky Court, in the dancing fountain Court, rings of neon and stainless steel into a reflecting pool, with greenery of ornamental grasses and shrubs. And the Light Court offers a cluster of oversized lanterns to brighten the mood in the absence of natural light.

**CFC Master Plan & Land Use**

Cairo Festival City is a promising mixed-use urban community, located in New Cairo of area 3 million sq. m. (http://www.5plusdesign.com/projects/?p=0303). Cairo Festival City sets new standards in Egypt as premier indoor-outdoor shopping mall, and entertainment destination, providing spectacular residential villas and luxurious apartments, in addition to administrative spaces, and hotels, plus international schools and showrooms within landscaped context.
Fig. 6: Master plan of mixed-used development - The new heart of Midland, Australia. (Lagendijk, 2001)

Fig. 7: CFC&New Cairo Master Plan Zoning Study
Source: http://www.5plusdesign.com/projects/?p=0303.
Comfortable, Pedestrian Outdoor Climate/Public Realm

Combination between landscape and lifestyle, bike paths (2.7 km), parks, parking, bus stations, paths and plazas bring residents, helping families and friends gathering. Life-style experiences are truly distinctive where careful attention to detail is evident and all components of the project are seamlessly connected.

Sustainability at Cairo Festival City

• Sustainability was the major principle in Cairo Festival City design, in all aspects, whether during construction or operation. Using "Build to Operate" concept, reaching a trouble free operation.
• A Central Command Control (CCC) building used to control and operate MEP systems within Cairo Festival City, while following HSE plan.
• Cairo Festival City was provided with Multi-source electrical power supply, which minimize power cut off risk.
• Provision of District Cooling Plant (DCP) to centralize the chillers for maintenance and quality control consistency.
• Selection of colorful landscape and evergreen plants considering ease of maintenance.
• Applying LED lighting, dimming systems to reduce the electrical consumption.
• Waste Water Treatment Plant (WWTP) to remove biological or chemical waste products from water, thereby permitting the treated water to be used for other purposes.

VI. Concluding remarks and follow-on investigations

This paper presents mixed land-use development terminology; in the past communities used to be single use zones, such as industry, residential. Smart growth approach concerns various community aspects creating varied uses in close proximity. This maximizes use of public spaces, and number of citizens in community. When Citizens live closer to their work it considered an attraction point to create community.

The parks and recreation axes allow moving easily between housing, transportation corridors and business uses. Land-use development projects considers some factors such as land uses functions, combination methodology, and scale.

Mixed-used development is essentially, that's the main conceptual model Rowley’s Typology. This model focuses on mixed-use horizontally and proposes the physical form. Hoppenbrouwer and Louw’s Typology model: is developed spatially and functionally organized and by dimension, scale, and urban texture.

Finally, mixed-use communities are characterized by main advantages such as walk Ability, connectivity, diversity, Housing, quality of architecture & urban design, variety of density, smart transportation, sustainability, quality of life.

Cairo Festival City is new master-planned mixed-use community. It's planned to be multi-use complex; residential, civic, educational, religious and recreational facilities; it is considered Egypt’s first indoor-outdoor shopping center. Festival Center, food court and entertainment center.

Real estate investment future in Egypt is based on such mixed uses projects. That's why; the Ministry of Housing in Egypt proposes a number of existing multi-use development projects, especially in East Cairo, to confirm this pattern which makes the future of development in Egypt is promising.

References

www.healthyplaces.org.au, 2009. Design Principle – Mixed Land Use, project was funded by the Australian Government Department of Health and Ageing
http://digitaleg.com/Cairo-Festival-City/masterplan.
http://www.5plusdesign.com/projects/?p=0303.