

Utilizing Mixed Use Theory in Order to Obtain a Sustainable Urban Development

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Abstract: One of the most important challenges for urban designers and planners about the conditions of cities is changing cities main structure and initial form of some areas because of mismanagement, kinds of different pollutions and converting land uses or discharging them due to inhabitants' migration. In duration of time, they transform to problemable areas and free of residents. Unfortunately many residential areas are developed without any particular regard to their surroundings. This causes because of increasing reliability on cars (Biddulph, 2007, 131). On the other hand builders typically only build houses, while other developers specialize in commercial schemes, and investors like the security of investing their money in single uses—rather than in mixed developments—thus maximizing their profits and planners often like to zone and therefore separate, different types of uses so that conflicts of amenity do not occur (the same) and a city doesn't have seen as an active and energetic open system that reforms itself in order to responding the surroundings condition. So for achieving a mixed use balance between different needs of users and beneficiaries we require to present the alternative that can satisfy all beneficiaries and users also create desirable urban spaces. As a main problem of current cities and metropolises, is land leakage and its difficulties, one of the suitable options is a kind of using the space that encourages the commercial benefits and can be efficient in longer period of time. This spatial design pattern attains by mixed use theory

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1. Introduction:

1.1. Recent History of Mixed-Use Development

Prior to World War II, much of town planning and development, including housing construction, incorporated a mix of uses in relatively close proximity to one another. Examples include the “apartment above the store” still found in older inner cities, and the “streetcar suburb”, where single family and multi-family housing was typically located within walking distance to retail, services and public transportation. Due to the much lower rate of automobile ownership at this time, it was necessary to build housing accessible to alternative forms of transportation.

After World War II, automobile ownership increased dramatically and a mass exodus from central cities began. Land use planning and zoning regulations followed suit by requiring greater and greater distances between housing and non-residential uses, and even between differing types of residential units, thus increasing dependency on the automobile. This pattern of development has created various challenges, however, and current trends are revisiting how to mix or better integrate these uses to meet these challenges (A. Tombari, 2005).

By the end of the 1980s, two movements seemed to offer strategies: both saw mixed use as part of the solution to urban problems. The healthy cities movement proved quite influential in Europe and in Canada. Its proponents suggested that cities should promote health, not detract from it. Clean

environments, good employment and education, resource conservation, healthy living, and livable cities are essential to human and environmental health. Compact cities with good public transportation and walk able neighborhoods would contribute to community health. An international movement for sustainable development gained steam with the publication of the Brundtland Report. Sustainable development offered strategies for economic improvement without damaging environments or robbing future generations of their opportunities. The initial push of sustainable development theory involved a message of restraint: for instance, minimizing use of non-renewable materials, reducing waste outputs, and finding strategies that protected the environment (Jill Grant, 2004, 5).

Both these movements supported mixed use as a strategy. Mixed use could contribute to community health by reducing the need for car transportation and enhancing local self sufficiency. Strategies that might reduce energy consumption could also be defined as sustainable. Sustainable development implies limited growth in that seeks to minimize resource consumption and waste generation. Both theories looked for bottom-up solutions, often providing support for local initiatives such as running recycling drives, planning open space systems, and revitalizing neighborhoods. Today, much commercial development is environmentally benign, and there are often advantages to locating different uses in close proximity (the same: 6).

Mixed use concentrated development, preferably near transit, is seen as a key “smart growth” tool to reduce auto dependence and preserve green space and natural resources. Thus many communities are turning to “mixed use,” which generally refers to a deliberate mix of housing, civic uses, and commercial uses, including retail, restaurants, and offices (Metropolitan Area Planning Council, 2009, 1).

Mixing uses, however, works best when it grows out of a thoughtful plan that emphasizes the connectivity and links among the uses. Results may be haphazard when communities simply enable multiple uses without providing guidance about the mix of uses and how they are spatially related.

Mixed land use enables a range of land uses including residential, commercial, and industrial to be co-located in an integrated way that supports sustainable forms of transport such as public transport, walking and cycling, and increases neighborhood amenity (the same).

A mixed-use development is not a standardized product form. It can differ in location because it can be built in an urban setting or a suburban setting. The density levels are generally higher in an urban setting but not necessarily. It can differ in relation to its surroundings. It can be a higher density infill project in an established urban setting or it can be a development in the growth corridor in a suburban setting. It can also differ in configuration (Joseph S. Rabianski & J. Sherwood Clements, 2007, 4).

Two differentiating terms about the uses in a mixed-use development are “cornerstone use” and “dominant use.” The *cornerstone use* is the most viable and profitable use in the project. It drives the development concept as well as the decisions about the suitability and compatibility of the other uses in the project. The *dominant use* is the use that takes up the most space in the project. The dominant use might not be the cornerstone use but it needs to be financially strong (the same).

2. Benefits of Mixed-Use Development

Mixed-use development is not a new concept, but it has gained popularity as a development and revitalization strategy in recent years. The mixed-use development projects can benefit a community by:

- creating a "sense of place";
- increasing economic vitality and expanding economic market opportunities;
- supporting long-term economic stability by providing tax base and jobs for communities, building and maintaining markets for businesses, and enhancing investment potential for lending institutions and investors;

- increasing transportation options such as walking, biking or busing, subsequently reducing auto-dependent travel;
- maximizing use of public investment and infrastructure, i.e., roads, sewer, water;
- maximizing use of land and supporting sustainable development;
- providing affordable and market-rate housing options; and
- encouraging historic preservation, reuse or redevelopment of existing buildings.

These benefits often provide an added incentive for developers, neighborhood and local government representatives, and lenders to pursue mixed-use projects despite the added complexity of this kind of development (www.minneapolisfed.org).

3. Challenges, Obstacles or Barriers to Mixed-Use Development

- Extraordinary planning, management, political patience, capital resources and risk
- Assembling land parcels
- Inadequate capital planning
- Lacking knowledge of available public/private benefits
- Maneuvering through zoning regulations
- Addressing environmental issues
- Working with planning agencies
- Working with the community
- Working with multiple development teams
- Working with multiple owners
- Securing project finance/capital
- Addressing transportation issues
- Designing parking
- Designing a pedestrian-friendly environment
- Managing the financial challenges of a sequenced roll-out of project parts
- External trip generation to all uses but mostly to retail and office
- Street capacity
- Water usage
- Air emissions
- Sewer capacity
- Endangered habitat limitations
- Economic and market cycles
- Congestion and traffic issues
- Location
- Management Healthy balance of uses (Jill Grant, 2004, 16).

4. How Is Synergy Achieved in a Mixed-Use Development?

- Each use is able to generate revenue from the other uses on the site. Occupants of the residential and office uses shop at the on-site retail facilities. Office and retail space users live in the residential units.
- Each use is an amenity for the other uses. Office users need restaurants and hotels in close proximity to

attract tenants. Hotels benefit from visitors to the office space.

The combination of uses provides a place for supply to meet existing, unfulfilled demand in the geographic market area. Moreover, it could be a catalyst to redevelop a blighted area which increases the future level of demand. It could be a “town center” for a suburban community which will attract consumers from further distances. It could be a starting point for additional development projects (Joseph S. Rabianski & J. Sherwood Clements, 2007, 8).

5. Mixed Housing Types

A diversity of housing types should be offered to meet the diverse needs of the community. Housing types could include accessory units, multifamily units including duplexes and quadraplexes, small lots, condos, townhouses, and manufactured pre-fab homes.

- In order to prevent homelessness, a variety of housing types are needed including single room occupancy dwelling units and housing with appropriate supportive services.
- In addition to diverse housing types, changes to current zoning may be needed to allow for greater occupancy levels.
- Alternatives to single family detached homes will bring prices down and create more green space.
- Residents in the planning district have diverse needs and require a mix of affordable rental units as well as opportunities for home ownership. In order to meet the needs of low income people, it is necessary to increase the rental stock in the area and develop ordinances to ensure affordable units in any new developments (www.tjpd.org).

6. Building Types

In a mixed use development, a variety of building types are permitted. Each building within a mixed use development shall be classified as a building type and shall adhere to all standards applicable to that building type.

I. Mixed-Use Building is a structure with a vertical mixture of uses. The upper floors may be used for office, residential, lodging, storage, or parking; the ground floor (lot frontage at the street level) may be used for retail or office

II. Live/Work Building is a dwelling unit that contains, to a limited extent, a retail or office component. A live/work building is a fee-simple unit on its own lot with the commercial component limited to the ground level.

III. Civic Building is a structure specifically designed for a civic function. Buildings and structures for public or private assembly, including places of worship and schools, shall be considered civic buildings.

IV. Commercial Building is a single-use, one story structure with either office or retail use.

VI. Townhouse is a dwelling unit attached by a common wall to at least one other dwelling unit. A townhouse is generally a fee-simple unit, from ground to roof, with no units above or below. Structures containing townhouses must contain at least three townhouses.

VII. Flat-over-Flat (Duplex) is a structure with two dwelling units placed one above the other.

VIII. Paired House (Duplex) is a structure with two dwelling units placed one beside the other sharing a common wall.

IX. Single Family Detached House is one dwelling unit on its own lot, detached from structures on adjoining lots. An accessory unit may be located on the same lot as a single family detached house; the accessory unit may be attached or detached to the single family detached house.

X. Accessory Unit is a dwelling unit that is located over a garage on the same lot as the main structure.

An accessory unit may also be a single story dwelling unit, not associated with a garage, located on the same lot as the main structure. An accessory unit may be attached or detached from the main structure and is located to the rear of the lot

(Urban Design+ Architecture, 2009, 21).

7. Non-Residential Uses and Risk in a Mixed Use Development

▪ The least risky non-residential use to develop is community program space, which even though do not produces rent or revitalize commercial corridors, they can provide tremendous benefits to a supportive or affordable housing project.

▪ Developing space for a childcare center or as office space for the sponsoring agency or another non-profit group can be a reliable way to generate income from the commercial space, without taking on too much financial risk.

▪ Developing space for a for-profit office tenant in an affordable or supportive housing development can be difficult to market, depending on the nearby availability of comparable spaces for rent.

▪ The highest level of risk comes with trying to develop retail or restaurant space since location is a major determining factor in the success of a retail or food service establishment (www.nlihc.org/oor2004).

8. Where Are Mixed-Use Opportunities?

▪ Downtown

Regardless of the size of the downtown, it can be a good place for mixed use but must be designed to scale.

▪ Commercial Centers

Commercial centers, when developed or redeveloped, are good locations for mixing commercial, retail services, and employment.

- **Employment Centers**

When located outside of the core, employment centers are like office campuses. In suburban settings, they are often set off in an island of green surrounded by parking; the only mixing of use might be a drycleaner or concierge service. In more urban areas, an employment center could be a concentration of office buildings near a major intersection or off ramp. Most employment centers are housed in two story buildings. Because people will be at work and will travel to and from the site each day, the potential is there for expanding the activities that can be accomplished on site. Adding dining for lunch or dinner, or facilities for evening entertainment can expand the hours that the parking lot is used. Dense enough employment centers can be served by transit (bus or rail) which increases the opportunity for pedestrian-oriented amenities.

- **Main Streets**

Every community, even if it is without a historic downtown, has major streets that carry most of the traffic. Often these are older commercial corridors with underdeveloped properties. A focus on mixed use offers opportunities for making these areas more than just the place you drive past on the way to somewhere else.

- **Corridors or Nodes in Neighborhoods**

When neighborhoods are built, or when underused land can be found at major intersections, it is possible to carefully fit limited commercial or service uses into the neighborhood which can meet the everyday shopping needs of the residents without requiring additional car trips. The work must be done in a way that respects the existing character and does not create excessive traffic trolling through residential neighborhoods looking for parking.

- **Transportation-Efficient Development**

Transportation efficient development occurs at a density great enough to support transit which can be buses or even carpools (Community Design Committee, 2008, 4).

9. Successful Mixed Use Areas Can Be Achieved Through

- locating development within easy walking distance (400 metres) of high quality public transport corridors or other public transport operating at a frequency of four or more services per hour in the off-peak
- providing a range of development types that allow for a mix of day and night time activities supported by dense residential activity that aids with natural surveillance and provides a 'base load' of activity
- ensuring that surrounding transport networks and adjoining development is integrated with the new development
- providing high amenity open space and recreation areas especially for children,

and

- ensuring that lighting, street furniture, signage, footpath treatment and safe road crossings provide a safe and convivial urban realm for all users.

(Australian Government Department of Health and Ageing, 2009).

10. The Examples of Mixed Use Developments

The Marquette Block on East Hennepin Avenue in Minneapolis, Edinburgh and Centennial Lakes in Edina, the Phalen Corridor Initiative in St. Paul, and River City Centre in Shakopee. These projects illustrate vast differences in location, design, scale, ownership structure, and mixed-use orientation, yet they are all examples of mixed-use development.

10.1. Mission Bay

San Francisco, California

Mission bay is one of the most significant urban development projects in the United States. It sets new standards for innovative urban planning. It is a water-oriented community created by the leading minds in architecture, design and urban planning and encompasses more than 30 acres on San Francisco's historic waterfront.

Fig (1): Mission Bay site



a. The Entitlement Includes

- 6,000 residential units (28% of which are affordable)
- 5 million square feet of commercial space
- 100,000 square feet of retail space
- 500-room hotel
- Public school
- Police and fire station
- 50 acres of parks and open space
- Bio-tech campus for the University of California at San Francisco
- 1,000 linear feet of new roads
- 350,000 square feet of new parks
- Additional 400,000 square feet of new parks featuring recreational sports and boating facilities.

Infrastructure that included the deployment of a fiber optic, open-architecture network of broad band communications for high speed voice, data and video communications to residents and businesses.

b. Building Development Projects Include

- Residential
- Office

- Bio-Science
- Telecommunications facilities (www.catellus.com).

Fig (2): Mission Bay mixed land uses



10.2. Mueller Austin, Texas

a. Project Overview

The 711-acre Mueller site vacated when Austin's municipal airport relocated in 1999, is well on its way to becoming home to approximately 10,000 people, 10,000 permanent employees, 10,000 construction jobs, 4,600 homes (more than 1,100 affordable) and approximately 140 acres of public open space.

Fig (3): Mueller site



b. Project Summary

- One of the nation's most notable new urbanist communities
- 650,000 square feet of retail space
- 4 million square feet of commercial space, including Class A office space
- Broad variety of new home opportunities, both for-sale and for-rent
- Connections to public transportation
- 140 acres of parks and greenways
- A Town Center with lakes, shops, plazas and live/work space
- 5 miles of hike and bike paths

Fig (3): residential and commercial units



c. Mixed Use

- A town center planned to include at least 30 percent locally-owned businesses
- Up to 4.4 million square feet of commercial and institutional space including office, retail, medical and film production (the same).



Fig (4): Mueller's town center

11. Characteristics of Successful Mixed-Use Projects

1. Specific goals for both the housing and commercial components of the project, informed by careful market analysis that verifies the needs and assumptions underlying those goals.
2. Development teams with solid experience in mixed-use design, commercial leasing, housing & commercial financing, and property management.
3. Sites located within existing commercial districts with good visibility and access to transit and roads.
4. Architectural designs that accommodate specific needs for commercial uses into the project on the front end, while incorporating unique elements that attractively integrate the projects into their communities.
5. Careful selection of a strong and unique mix of commercial tenants.
6. Sufficient parking that will adequately serve the needs of commercial and housing tenants.
7. Partnerships with municipalities on site assembly and the financing of infrastructure improvements.
8. The use of phasing for large, multi-block projects when resources are not sufficient to undertake all activities at one time.
9. Creative financing opportunities for short, medium and long term investors that allow the commercial portion of the project to establish its customer base.
10. Realistic pro form as that include funds for tenant improvements, rents that are in line with the market, a healthy vacancy rate for the commercial, and tested assumptions for operating expenses.
11. Legal structures that separate the different uses when necessary to obtain financing.
12. Incorporation of civic uses, public or green spaces such as libraries, banks, community centers, urban parks, and creative landscaping (Joseph S. Rabianski & J. Sherwood Clements, November 2007).

12. Lessons Learned from Mixed-Use Projects

First, government support and involvement through public/private/nonprofit partnerships is critical to project success.

local government plays an important role in providing ongoing support, zoning flexibility, and/or creative financing for mixed-use projects.

Second, financing mixed-use projects can be complicated and requires a working knowledge and understanding of all the project components (www.minneapolisfed.org).

13. Types of Condominium in Mixed Use Development

Mixed-use developments create many interesting and vexing challenges for real estate lawyers. Traditional property boundaries do not exist in projects where multiple owners are stacked vertically above each other and share common facilities. Real estate lawyers must exercise particular care and creativity in structuring these compact and dense communities to ensure that residential, office, and commercial uses co-exist and thrive as vibrant communities. Lawyers can structure mixed-use developments in several different manners. Some possibilities include the following:

- (a) Single condominium;
- (b) Master condominium with master units that can each be a separate sub condominium structure;
- (c) Master property owners association with separately individually owned parcels; and
- (d) Multiple air rights condominium parcels subject to a reciprocal easement agreement.

Each of the foregoing legal structures has its own advantages and disadvantages.

Although not appropriate in every situation, developers are increasingly utilizing master condominiums to structure mixed-use communities, particularly communities with dense vertical structures.

a. Single Condominium Regime

- Works well when the nonresidential uses are minimal
 - Structure is simple relative to other approaches
 - No subdivision of the property into multiple uses
 - Master insurance policy on overall project
 - The easements inherent in a condominium reduce the need for separate complex easement agreements
- Disadvantage:

- Non-residential owners will be minority owners in an association dominated by residential owners
- Less flexibility to provide for future changes in use or ownership structure

b. Master Condominium with Sub-Residential Condominium

- Avoids division of property into separate parcels/lots
- Maximize density or yield on property
- Residential owners participate through one elected representative to the master condominium
- Unit boundaries can be described in reference to recorded floor plans
- Master insurance policy on project as whole obtained by master condominium association

The easements inherent in a condominium reduce the need for separate complex easement agreements

Disadvantage:

- Declarant cannot maintain long term control over the project
- Non-residential owners will be minority owners in an association dominated by residential owners
- More complex legal structure
- Not specifically contemplated in most condominium statutes

c. Master Property Owners Association with Sub-Residential Condominium

- Residential owners participate through an elected representative to the master association
- Gives developer ability to exercise long term control over the development
- Master structure to statutory limitations in condominium statute

Disadvantage:

- May be treated as subdivision of property
- Requires surveying of air rights parcels
- Typically requires more complex cross-easement agreement
- Potential complications for property casualty policies
- Need to draft numerous specific easements
- Make all outreach activities accessible to people with special needs (B. Curry, 2008, 3).

14. Education and Awareness

Participants agreed that educating the development, investment, real estate, government and resident communities on the benefits of mixed use development was a top priority.

- Increase awareness among developers and real estate agents of affordable housing needs in mixed use development.
- Create and publicize model projects.
- Increase public awareness about the need for affordable housing.
- De-stigmatize affordable housing and break down myths about low income housing.
- Help homebuyers learn about creative financing options and develop reasonable expectations.
- Coordinate education and advocacy for underrepresented groups with particular housing needs.
- Provide financial skills, budgeting, savings, and homeownership education to adults and youth.
- Create a central information clearinghouse to provide information about financing, availability of housing, and services available (www.tjpd.org).

15. Incentives

- Offer tax incentives including enterprise zone tax credits, real estate tax credits for affordable accessory units, and other tax incentives.

- Create incentives for developers to increase density by encouraging affordable dwelling units.
- Encourage public investments in infrastructure that supports affordable mixed use development (www.ci.livermore.ca.us).
- Local municipalities can support affordable mixed use development by donating land.
- Provide developers with density bonuses.
- Streamline the permit processes for plans to develop affordable mixed use development.
- Encourage employer assisted financing such as setting up individual development accounts and promoting fund matching by the city, counties, or university to match their employees' funds.
- Use housing authorities to access or underwrite financing (i.e. bonds).
- Promote flexibility in development (i.e. planned unit developments, single room occupancy).
- Local governments should be able to require impact fees from developers for the cost of public infrastructure and facilities (www.tjpd.org).

16. Conclusions

Although residential mixed use development has increased dramatically in the last 10 years, it still makes up a fraction of the total amount of new residential development constructed each year. There is no reason to believe that single use residential markets will not dominate the development sector for many years to come as well. However, home builders and land developers should not underestimate the growing opportunities within the mixed use sector, not just in large metropolitan areas, but also in smaller communities as well. Many of these communities have no mixed use development whatsoever, so lack of competing projects may prove to be financially lucrative.

As stated in this paper, residential components of mixed use development, as part of a

larger, diverse housing stock, can help achieve many of the goals espoused by the smart growth philosophy and whatever that is considerable in sustainable developments. If communities speak of smart growth as something they strive for, than they must take the actions necessary to allow it to happen.

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