

**Impact s of Increasing Building Density on Urban Roads:  
The Case of Riyadh**

**Prof. Khalid Alskait**

Chairman of the Master Program

in Real Estate Development

Urban Planning Department ,

College of Architecture & Planning, King Saud University

Email: [kalskait@ksu.edu.sa](mailto:kalskait@ksu.edu.sa)

Paper Presented in Track 9 (Spatial Policis And Land Use Planning) at the 3<sup>rd</sup> World Planning Schools  
Congress, Perth (WA), 4-8 July 2011

## **Impact s of Increasing Building Density on Urban Roads:**

### **The Case of Riyadh**

**Abstract** *The city of Riyadh has passed statues which allow plots fronting selected-width roads to increase in height and density. The statues allow existing density to increase by up to 75% across all areas of the city. As long as the plot is located along a road which is 30 to 36 meters in width then the statue applies regardless of existing zoning. The statue overrides all existing zoning regulations. While this policy has helped alleviated shortages in housing supply, it never the less, has resulted in a mix of developments and uses along the same strip. This paper is an attempt to uncover the impacts of this planning policy on land prices, parking, and the fabric of neighboring communities.*

### **Keywords**

*Building Height, Property Value, Land Use Planning, Municipal Councils , Community Development, Building Density and Road Width*

### **Introduction**

The city of Riyadh is the capital of Saudi Arabia and its most dynamic city. It houses about 4.9 million people and spreads over 2,400 square kilometers. The number of housing units within the city is 817,709 units with housing ownership at 56% (ADA, 2010). Vacancy rate is about 6% as of 2010. With increasing demand on housing and increasing pressure from property investors, policy makers have chosen to increase density on major roads. This policy has changed building height from two stories to 3.5 stories which means an increase in floor space by about 75%.

Recent international experiments confirms the importance of upholding the zoning system. In Russia, cities which adopted the system of zoning, as opposed to those using site specific regulations, appeared to be more responsive to the conditions of the after communist era (Truntev et al., 2004). In addition, and in most Western democracies changing zoning regulations can not be upheld without city council approval. However, the case in Saudi cities is different. The power lies at the hand of the Minister of Municipal and Rural Affairs as well as the Mayors. Town meeting and city councils have not been developed yet to meet such challenges. In 2005 the first municipal election has been held in Saudi cities where one half of the council members are elected and the other

one half is appointed. However, the new emerging councils have little if any legislative power. Some of these councils are chaired by the mayor of the city it represents, which weakens its own monitoring objectives.

Planning in Saudi Arabia is still evolving and it will take its time to mature. Effective town meeting has not been a common practice and societal appreciation of this field is not fully developed. In addition, the development of appropriate theoretical framework to guide planning is still in its early stages. However, attempts had been made to bridge the gap between theory and practice in this regard utilizing Western planning theory (Alskait, 1999, 2003, 2004). Participatory planning tradition has not been established yet and major planning decision is usually initiated by relevant governmental agencies in the form of regulations or statutes.

Over a decade ago, the Ministry of Rural Affairs MOMRA has passed a statute which allows plot owners to plat their properties regardless of existing zoning so long as the plot meets certain conditions relating to the width of the fronting street and plot size. This statute along with the more recent building height statute have both weakened the underlying principle of zoning and stretch it to its limit. Along with a lengthy and bureaucratic planning procedures, the result is a noticeable lack of the concept of community in Saudi cities.

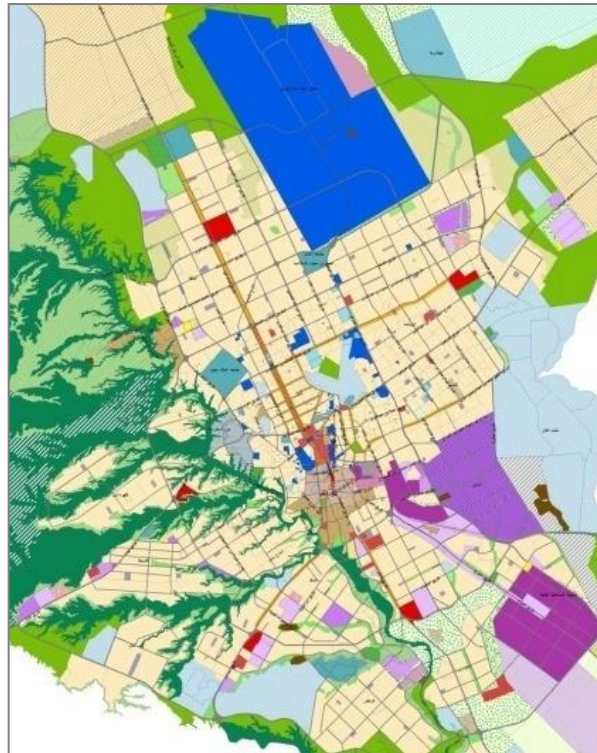
Since both statutes override existing zoning regulations, their application have literally changed the fabric of the socio-urban environment. While planning authorities suggest that these statutes are in correspondence with societal demand, many planners have a different opinion. Faisal Almubarak, an academic and an intellectual planner, had critiqued this policy in local news paper. Others, including the author have made similar statements likening increased density on major roads with high cholesterol level in human arterials. The more building density on traffic moving roads the more congested and clogged arterials. The problem is complicated with weak enforcement of building by-laws. For example, some multi-story buildings along these arterials do not provide for enough parking to its residents resulting in strip parking lanes along these roads. To complicate the problem, civil laws make it very difficult for local municipalities to evacuate any violating residential building after occupation. The proliferation of these

violations also contribute to the resulting urban fabric. Increased densities have been associated with negative consumers' responses even in neo-traditional designs. According to Hazel and others, higher density is less preferred on average in these designs (Hazel et al., 2004). The impacts of increased densities along commercial roads can be classified into three categories: physical, social, and economic. The physical impacts pertain to the urban fabric, the social impacts relates to the social mix, and the economic impacts relate to property values. The following pages will discuss each category of impacts in more detail.

## Physical Impacts

The physical change in some neighborhoods, due to these by-laws, is very noticeable and if the past few years can be an indicator of the coming future, Saudi cities will experience an un-recoverable changes. The problem relates to changes in density where the original neighborhood plans did not account for. The Riyadh master plan was developed in the 1960's & 1970's and revised in the 1980's & 1990's. It is a grid plan where major roads intersects at 2 kilometers intervals. Figure (1) shows the master plan of Riyadh till the year 2020.

Figure (1): Structure plan of Riyadh (Land Use 2020)

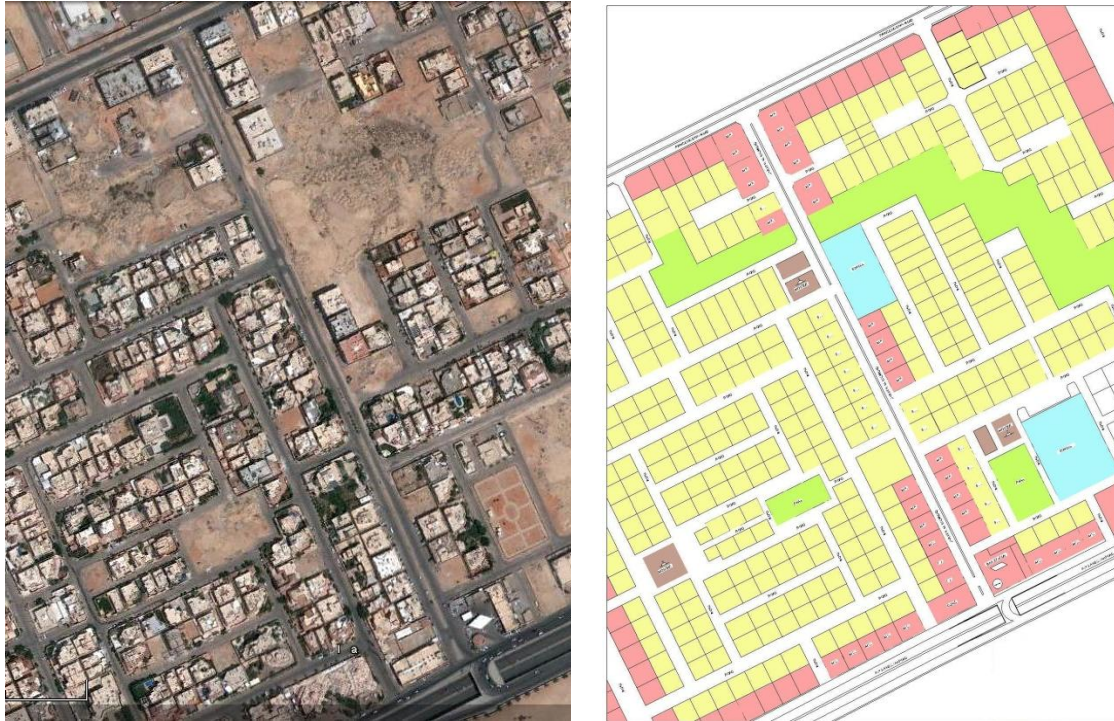


Source: Arriyadh Development Authority (ADA) 2008

While the plan envisions the future distribution of uses at the city wide level it nonetheless operates at a policy level with no enforceable provisions on how to deal new by-laws; the same dilemma apply to most Saudi cities. The following case of a typical

collector road (Jareer Al-balji Street) which penetrates a residential community is a good manifestation of the physical impacts.

Figure (2): Image & land uses of Al-Balji road



Source: Google Earth April 2011

source: Northern Riyadh Communities Atlas

Figure (2) shows a google image of the community and its corresponding land use plan. The major street which penetrates the community is called Jareer Al-balji. Al-balji street is 30 meters in width. Old zoning regulations permit two story buildings of mixed use (retail, office, and residential) along any road that is 30 meters wide or wider. Since new zoning by-laws have increased building density to 3.5 stories of residential uses, it is more profitable to build more housing units than staying with the old zoning of mixed uses. The result is a street of different buildings, uses, and people compined together.

Figure (3): A North-south look at the middle of Al-Balji Road



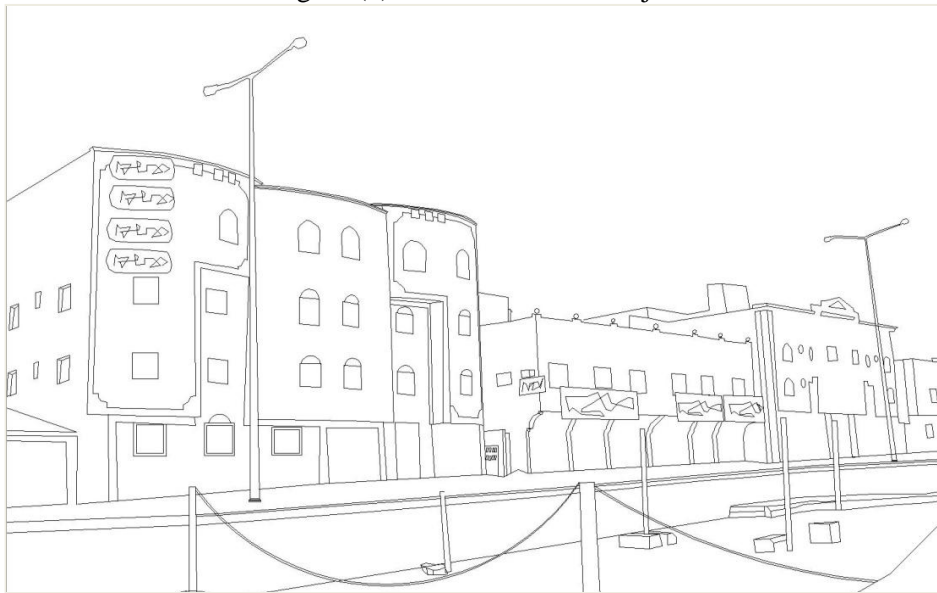
The diagram shows mixture of single family houses and multifamily apartments along Al-Balji road.  
Source: Author

The diagram (figure 3) shows apartment buildings to the left and a single family house afterward, while single family houses dominate the right side of road. The apartment buildings are newly developed after the enactment of the new by-laws. The above diagram represents the morning time where most people are at work. In the afternoon the left side of the street, fronting the apartment buildings, will be packed with parking cars. Local parking regulations are weak and loosely enforced which transform portion of similar streets to parking lanes. Automobiles of single family houses are usually parked in in-lot garages to protect from the harsh summer. Some of the owners of these single family houses are retired and posses multiple automobiles used by other family member. In non- working hours the street become packed with parked automobiles on both side of the street. Sidewalks do not exist along the apartment building side of the street because a 6 meters perpendicular parking is dedicated during the building permit process. In most cases these parking spaces are not enough and people tend to park along the middle peninsula.



The interaction between residents on both side of the street is weak. Most multifamily dwellers are renters and will leave the area soon. In addition, they tend to have small families with working parents. On the other hand, single family houses are owner-occupied and tend to have larger family and sometimes extended one. In addition, single family households have higher income than those of multifamily dwellings. Furthermore, the public realm and street furniture along Jareer road do not encourage people to walk or interact. Consequentially, there is little if any social relation between both sides of the street.

Figure (4): South side of Al-balji road



From the left clockwise: a furnished suites building, a retail/apartment building, and multifamily apartment building. Source: Author

In addition, transient dwellers tend to increase with the increase of furnished suites along such roads as shown in figure (4). These types of uses add to the social phenomenon mentioned above and contribute to the loss of sense of community.



## **Social Impacts**

The Social impacts of increasing building densities are enormous. First, the social fabric of neighborhoods have changed permanently. The concept of community which is weak in the first place has almost vanished. Since families of certain size and social strata tend to congregate with similar ones, the sudden changes of density has disrupted this form of social settings. In addition, such an increase in density means less homeownership in the community because most of the newly developed multifamily housing in this case is for renting. Less homeownership means less sense of community and loss of the social benefits that usually comes with higher home ownership rates. Housing studies, such as that of Coulson et al., have highlighted that higher homeownership rate make a neighborhood more desirable and higher in quality (Coulson et al., 2003)

The only place where the male population congregate on a daily basis is the local Masjed (a place of worship for Muslims). However, frequenting these places of worship has suddenly increased and people can not acquaint with each other easily. It is a typical way of life for most Saudi males to visit the Masjed several times a day. If the people one meets are limited then it is easier to know them and develop a relation with them. On the other hand if the number is large then people tend to leave after performing the prayers without social interaction. In other Muslim countries prayer places or Masjeds are the focal point of social interaction. When people know each other, at least by face, they tend to respect each other and develop norms for social behavior or what might be called “Code of Public Behavior”.

Figure (5): Typical building heights of affected roads



A mixture of single family & multi-family housing in the public realm.

Source: Author

On the other hand, if the public realm is socially not conducive for social interaction people tend to retreat back to their homes and consequentially their children develop in a form of isolation. This form of children way of life might not be of great help to the development of civil society. Children, in Riyadh, interact mainly in school and with their relatives while their neighborhoods are almost absent from their lives. It is the author believe that the personality and maturity of young people should go into three stages to fully develop as a civil society member.

These stages can be explained as follows: first, the family stage which starts from birth till the child go to school. In this stage parents mentor their children and teach them right and wrong. Children gain most of their values from their families and are disciplined by them . Second, the neighborhood stage which start at school age till early adulthood. Once a child go out and interacts with neighboring children they start to influence each other in different forms. As they grow the community contributes to their discipline (e.g. when a child throw garbage on the street an adult may correct his/her behavior) .Third, the city/town stage which starts after adulthood. In this stage the young man is governed

by local norms and disciplined by the law. If a child live in areas that are not conducive of social interaction he risks losing an important growing-stage of his life, the community stage. This is might be the case when changes in by-laws causes changes in population density which in turn causes changes in social development.

The lack of neighborhood associations and effective town councils made social participation in planning decision even weaker. Most single family households will not approve of increasing building density and land platting within their community for obvious reasons. In addition to lowering their property values, density increases in single family communities causes other social problems such as loss of privacy. When a three story building overlooks the courtyard of a single family house in a very conservative society, the garden of that house will be of less use to the family. In addition, the fact that a house is constantly overlooked or monitored by others increases its chances for burglary. This certainly does not mean that people who live in these higher buildings will harm their single family neighbors but some visitors, maintenance personnel, and others may convey what they see in a wrong way to the wrong people. Burglary is a problem in localities and any urban environment which facilitates overlooking single family homes will certainly increase it.

### **Economic Impacts**

The major economic impacts of these by-laws are the loss in property values of neighboring single family houses & plots. Based on contacts with local real estate agents and observed property values, single family homes which share a property line with a 3.5 stories apartment building lose up to 30% of their values. Vacant lots lose about up to 20% of its value. On the other hand, plots which are allowed to go up 3.5 stories in height increased in value by up to 35%. In short it can be said that the by-laws benefited property investors more than community residents but at the same time they contributed to alleviate housing shortages.



boxes. It is expected that homes on plot C will lose 10% to 25% of their values in the previous case. The amount of value depreciation depends on several factors. If the multi-family building is not accessed from the single family street as well as it does not overlook the single family homes then the negative affect will be minimal. On the other hand, if the residents, traffic, and garbage boxes of the multi-family building use the single family street and also overlook these homes then the negative impact will be maximum. Generally speaking, the negative impacts on property values of single family homes are exacerbated when neighboring plots have changed its density, land use, or egresses and ingresses. While the new by-laws have changed building density only, some plot owners do not fully comply and they try to get the maximum profit from their buildings at the cost of the community.

Given the weak enforcement of municipal regulations in this regards, some investors go even further and place more dwelling units than what was obtained in the building permit thereby complicating the issue. Lack of enforcement of land use regulations will certainly lead to decline in the quality of life of residents. The case of Port Harcourt in Nigeria is an example of such consequences (Ayotamuno et al., 2010).

Since existing laws require people who want to report a violation of building regulations to state their identity when informing local municipality, many residents decline to report these violations to avoid confrontation with their neighbors. The inevitable consequence is increased building violations in the city and losses in property value to neighboring single family houses.

Decline in property values due to these by-laws can be attributed to : crowded parking, increased garbage boxes (or barrels) in the street, and loss of privacy (if single family yards are overlooked). New home buyers can easily notice the number of vehicles parked before a property and the volume of its trash containers. This simple visual inspection of a street determines the values of the properties fronting it. In these streets, the rule of thumb is simple: higher values for multi-units properties and lower values of single family houses. These economic losses to affected properties contribute to the acceleration of the community aging which, in return, causes major economic losses. Once a community start deteriorating, the well-off will leave it and the new comers, who fill in

the place, will shape it. Eventually, communities will look like those who live in it and if they happen to be from a social group who do not appreciate the principles of community building the loss will be irrecoverable.

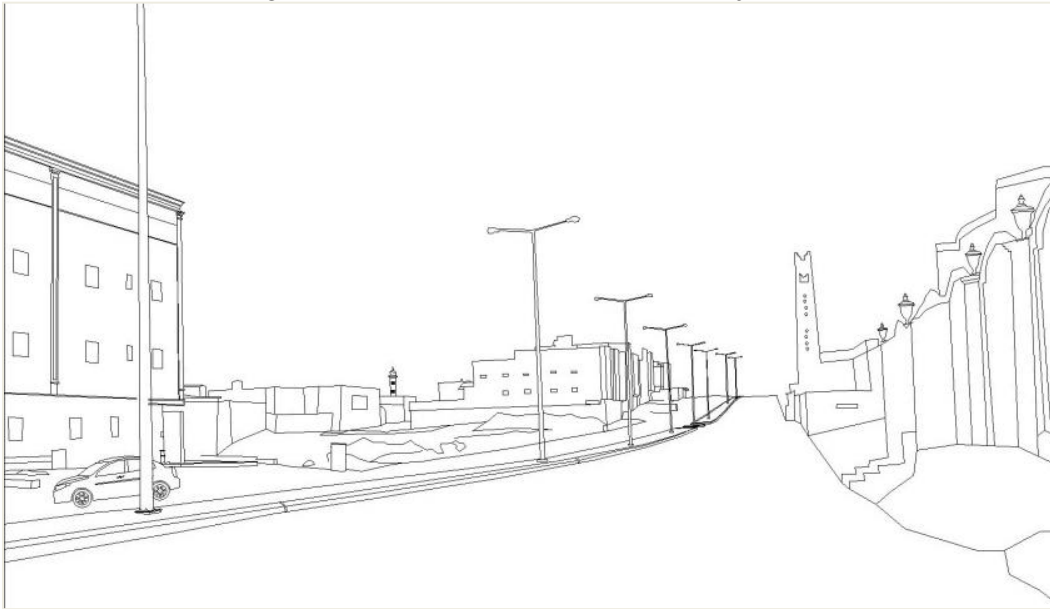
New suburbs will emerge to meet the demand of the well-off and the city will expand in all possible directions thus incurring more infrastructure cost and the cycle goes on. This phenomenon might explain some of the causes of urban sprawl in Riyadh. Zoning regulations are crucial in either directing communities to natural maturity or accelerated aging. A matured community is characterized by stable urban components (maintained houses, matured trees, stable families, and low turnover rate). On the otherhand, an aging community is characterized by run down houses, transient community, and high turnover rate. This process will lead to lack of sense of community which is a major factor in home value depreciation (Alskait, 2002).

However, it is important to state that the changes brought up by these by-laws are not the only cause of the aforementioned cycle, but they certainly contribute to the final outcome. Aging of Saudi neighborhoods is a noticeable phenomenon; in Riyadh for example, top neighborhoods 30 years ago comes in the lower half if ranked today. It is safe to say that without effective public participation in the planning process, the future will probably be a large mirror to what exist today.

### **Impacts on Street Facades**

Street facades are influenced strongly by these by-laws. Buildings which are higher and bulkier than each other are easily noticed in the visual landscape. The diagram below shows a single family villa opposite to a bulky, multifamily box containing over 20 units. Both buildings (the single family house and the apartment building) occupy exactly the same plot area (in this case 1,200 sq. m.). Consequentially, the difference in density has permanently changed the visual appearance of the street.

Figure (7): Southern Section of the Al-Balji Street



The changes in by-laws have very strong influence on street facades

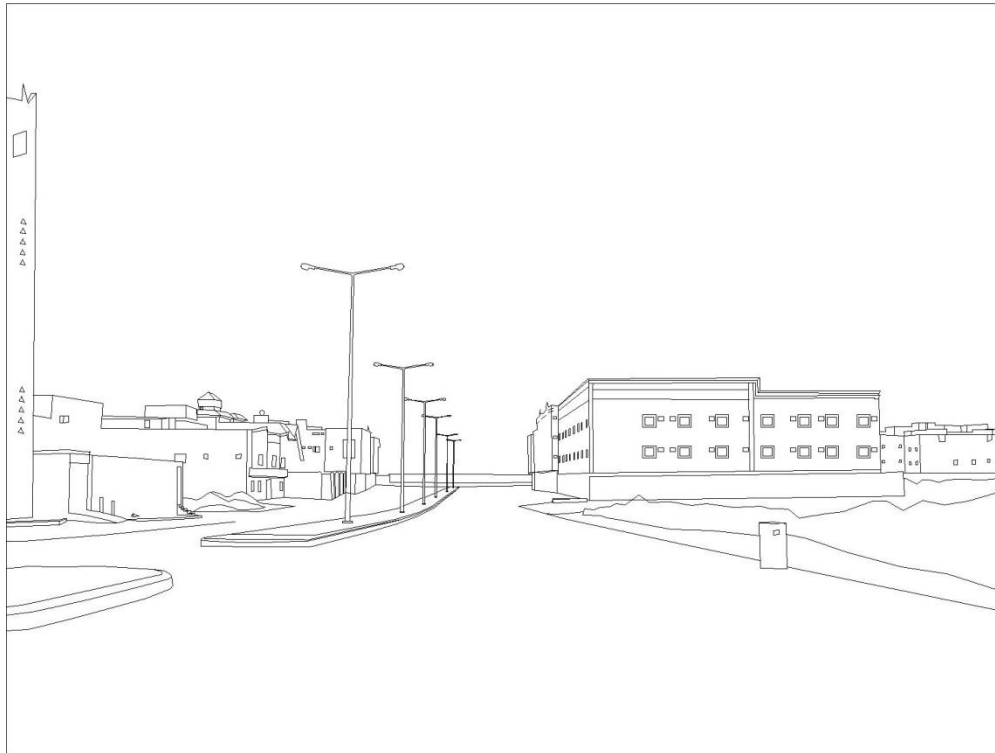
source: author

Lack of conformity in urban streets contribute to the loss of sense of community. When different people share a common space (the street in this case) which is not conducive to social interaction the outcome is deserted spaces. Desert spaces are the first step toward property depreciation and social deterioration. When people who live next to each other do not develop a minimum form of interaction the whole community slips into what may be called social deafness. In other words, people become deaf to any undisciplined behavior or code violations happens around them as long as it does not touch them directly. When people have less attachment to their community, the neighborhood life cycle accelerates and all other problems follow.

Street façade is an important element that contribute to neighborhood quality. Deterioration of this quality will eventually lead to deterioration in other neighborhood qualities. Research have shown that poor neighborhood qualities are associated with crime and physical decay (Greenberg, 1999).



Figure (9): North Facades of Al-Balji Street



The diagram shows Jareer street in the northern direction. The bulky building on the right is seen on the left on Figure (8). The Minerate--on the left is an a good orientational land mark—to relate previous Figures. The barrel on the lower right corner is a garbage box shared by surrounding buildings.

As the above diagram shows and previous discussions emphasize, the architectural identity of the street is greatly affected when buildings of different functions and sizes are mixed along a short strip of an urban street. Furthermore, developing street design guidelines are not an easy task in this situation due to different building heights and densities. Among the goals of street design guidelines are maintaining the quality of development and the visual appeal of urban streets. Property values are positively related to the quality of visual appearance of the public realm of which urban streets represent a major component.

## **A Proposed Model for Community Development**

Most of the problems, which have been discussed in the previous pages, cannot be addressed without proper, and effective town councils. In 2005 Saudi cities held their first ever municipal elections to elect council members. However, these councils did not have enough legislative power to bring about needed changes. Several years later, and in September 2011 another election to elect new councilmen is expected to take place. As of the last week of voters registrations, the turnover is relatively low. This might be attributed to past councils' performances where voters did not see changes in their communities. However, unless these councils have enough power to undertake its responsibilities effectively as in the case of most developed nations, there will be little if any change at the neighborhood level. The continuation of the status quo may accelerate the life cycle of local neighborhoods which means unstable communities and greater losses in property values. Given the fact that most Saudi cities are managed by a central municipality with branching sub-municipalities distributed evenly across the city, public participation from a planning vantage point is minimal. While the sub-municipalities alleviate the pressure on the central municipality, they did not have enough power to legislate or even approve of major projects within their jurisdiction. Therefore, there is a need for a new planning model which is suitable for local settings yet draws from successful cities around the world.

Public participation alone might not achieve its goals if not guided and helped by professional planning mechanism. Professional planners should help in diagnosing planning problems and articulating effective solutions. In most developing nations public demands in the planning field are not taken with great consideration if not backed by professional or scientific justification. Therefore, the involvement of planners in any proposed model in this regard is essential.

The proposed planning model is a process with the intention to improve planning outcomes at the neighborhood level. The model may also be looked at as a road map to

help local neighborhoods to move toward the proper path of community development. The following is the outline of the model:

1. Community elders and concerned planners should gather and establish a community council and obtain all necessary governmental approvals to keep it efficiently running.
2. The council, with the help of local planners, should carefully examine the status quo and determines all loopholes especially those contributing to community deteriorating.
3. If the existing planning system is conducive to achieve the aspired-to changes then the council should work within the system to achieve these changes.
4. On the other hand, if the planning system represent an obstacle to achieve these changes then the council must use local Islamic values and western planning experiments to legitimize the need for these changes.
5. Councilmen and relevant planners are expected to develop a transformation framework via which local communities become a major player in the planning and development of their neighborhoods.

These five steps process may represent a road map to move from an existing planning system that does not utilize local inputs into more participatory system that depends fully on local participation to maintain and upgrade existing communities. However, this model represents a strategic outline and a long term solution. But to halt the ongoing dynamics which contribute to community deteriorations and losses of property values, the following procedures may be used :

1. Neighborhood council should discuss and approve a 10-year master plan in line with the city structure plan.
2. Neighborhood council must approve any zoning changes or introduction of new-by-laws within their geographical jurisdiction.
3. Neighborhood council should report any building violation to the related sub-municipality which must take an action within seven days of reporting.
4. Violating buildings should be charged monthly payments via the same system used for traffic violators in Saudi cities (the newly adopted traffic violation

- system is connected to all civil agencies so that violators can not renew his/her passport, driving license, domestic maids' visa ..etc until penalties are paid).
5. People who report violations shall not be required to reveal their identity ... rather they are only asked to send a photograph of the violation by any means.
  6. The sub-municipality should be charged a constant annual fee for each violation uncovered by council.
  7. Penalties should equal the extra income made by building violators plus a violation charge.
  8. All users of buildings with serious violations such as change of use or adding non-permitted housing units, should be penalized in a similar manner if the violation is not corrected within one year.

Budget and full governmental support are probably the biggest obstacle toward the development of community councils within the framework of the proposed model. While budget might be drawn from several sources: donations, building violations' fees, and certain percentage of sub-municipality budget, full governmental support is essential for the proper functioning of community councils. Without such support these councils will have no legitimacy to operate, they will not be able to enforce any of the proposed penalties, and they will have difficulty to collect their revenues.

## **Conclusion**

This paper has discussed the impacts of local by-laws which increased building densities along +30 meters wide roads in Riyadh, Saudi Arabia. The discussion has shown how these changes resulted in physical, social, and economic changes in neighbourhoods. In terms of property values, single family houses are the major losers. Plots which witnessed height increase benefited the most, while abutting properties suffer the most. The concept of community also suffers as a result of such changes.

The mixture of different uses along the same street did not seem to be appropriate. Old theories of separations of uses still hold merits. Combined with weak enforcement, changing building density along affected streets has been shown to have more negative

impacts. Other than alleviating housing shortages, building density increases did not seem to add positively to Saudi cities. The paper concludes by proposing a model to alleviate the problem. The model suggests the development of community councils where people are encouraged to participate in planning decisions which affect their life. Councilmen along with professional planners are encouraged to cooperate to transform passive communities into more active societal machines.

## References

- ADA, "Land Use of Riyadh: Executive Summary" 2010
- ADA, "Housing Reality & Future in Riyadh", 2009
- ADA, " Structure plan of Riyadh (Land Use 2020)", 2008
- Alskait, K. "Planning Reforms in the Arab World: A Theoretical Model. The Scientific Publication of Urban Research; Issue # 4, 2004; Faculty of Urban & Regional Planning; University of Cairo.
- Alskait, K. & Hamid, G. "Shura and Decentralization: Urgently Needed Planning Tools in Arab Countries" APJ , Faculty of Architectural Engineering, Beirut Arab University, Lebanon; Vol 15, Issue # 2, 2003
- Alskait, K., (in Arabic) , "Home Values Depreciation in Riyadh's Communities: Causes & Remedies" Proceedings of the Sixth Saudi Engineering Conference, KFUBM, Dahrán , Dec. 2002.
- Alskait, K., (in Arabic) "Planning in the Arab World in Light of the Western Planning Philosophy". King AbdulAziz Journal (Eng. & Science), 1999.
- A. Ayotamuno, A.E. Gobo, and O.B. Owei, " The impact of land use conversion on a residential district in Port Harcourt, Nigeria" Environment and Urbanization, April 2010
- Coulson N., Hwang S., Imai S., "The Benefits of Owner-Occupation in Neighborhoods" Journal of Housing Research, 2003
- Hazel A., Morrow-Jones, Elena G. Irwin, and Brian Roe. "Consumer Preference for Neotraditional Neighborhood Characteristics" Housing Policy Debate, 2004
- Greenberg, M. "Improving Neighborhood Quality: A Hierarchy of Needs" Housing Policy Debate, 1999
- Eduard K. Trutnev, William Valletta, Mikhail O. Yakoubov, "Urban Land Use and Development Regulation in the Russian Federation" Urban Studies June 2004