

CULTURAL ADAPTATION TO HOUSING NEEDS: A CASE STUDY, RIYADH, SAUDI ARABIA

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ABSTRACT *Following the promulgation of the new nation-state in 1932, the Saudi Arabian government embarked upon modernizing its traditional society. Political stability and improved economic conditions made possible by the increasing oil revenues, resulted in unprecedented demographic increases and rapid urbanization. The government spearheaded the process of introducing modern building techniques and centralized financing supplanting the traditional methods of design and construction. However, since the drop in oil prices in the early 1980s, the central government has cut back on its commitment to housing. Due to the government's shrinking role in the housing market and underdeveloped housing private sector, custom built and owner financed housing has taken several forms in response to the increasing demand for new and affordable housing.*

In this paper, I shed light on historical developments and salient cultural attributes of the Saudi population. The emerging political economy and the national policy framework upon which the housing policy was established is briefly discussed. The paper evaluates housing policy application in Saudi Arabia and presents a typology of conventionally built housing forms and assesses their implications. I explore current regulatory policies and codes governing the construction and financing of contemporary dwellings. The paper identifies changes in type, form and design of contemporary dwellings and in the socio-economic characteristics of home building. I argue that a major element in a successful approach to housing policy must take into account salient cultural attributes, prevalent family structure and financing methods.

Introduction

Housing remains an *essential* necessity to man's livelihood. In traditional societies, housing was limited to the narrow definition of shelter. The house was strenuously efficient, environmentally compatible and socially adaptive; shelter was synonymous with survival. Housing and the land it occupied were mostly perceived as a social resource rather than a market commodity.¹ Ironically, albeit modern strides in technology and financing methods, as a society develops, housing becomes more complicated to provide rather than easier. A multitude of factors dictate the provision of efficient housing which caters to cultural needs, and is socially engaging. They include prevailing political ideology, economic resources, and the level of technological and institutional development, among others.

In Saudi Arabia, impressive improvements in economic conditions brought by the discovery of oil in commercial quantities in the late 1930s and the increasing market demand worldwide during the 1970s catapulted the traditional society to lifestyles comparable to that in many

¹ In dealing with property as a social resource, in traditional barter economies, the Islamic inheritance system, *Irth* stipulated that dwellings were subdivided between a deceased man or woman's dependents or relatives following a set formula. Compared to that of primogeniture in pre-industrial Western society in which only the eldest son inherits. Islam provided for a more fair division of property. Under Islam, as dwellings were subdivided, passages and pathways had to be made within the house to allow for private access. As property was also divided in a similar fashion, the application of Islamic *Irth* system contributed to the informal, organic form of preindustrial Islamic towns with their tortuous, meandering circulation space.

developed societies. Improved security and economic conditions resulted in rising standards of health care. The Saudi population multiplied and its major urban centers have since witnessed unprecedented growth. Between 1950 and 1992 the level of urbanization in Saudi Arabia increased from 10% to 75%. According to the 1992 census, the total population of the Kingdom was 16.93 million, of which Saudi nationals comprised 72.7%. An estimated 77.2% of the total population lives in settlements of 2,400 or more (1). Inevitably, the housing sector was the first to show the strain on urban services. The sharp increases in demand for new and “better” units meant the use of modern construction methods and the introduction of new design styles, paramountly, the detached “Western” villa, and the multi-story apartment buildings.

This paper sheds light on the short, yet relatively rich experiment of housing production in Saudi Arabia as shown in the case of its capital, Riyadh. I start firstly with a general background of the country and its culture. Secondly, I present a typology of traditional and contemporary housing. Thirdly, the paper outlines developments that marked the transition from traditional housing construction practices to the existing situation utilizing myriad building techniques, design styles and financing methods employed by the national government, that span a wide spectrum ranging from government housing to that of family organized.

Fourthly, I focus on demographic and housing characteristics followed by contemporary developments impacting the production of housing and the major role played by the central government in shaping modern housing practices. In the fifth part, I discuss Saudi housing policy and its implications, followed by an exploration of residents’ adaptation to the government’s shrinking role in the production of housing. Finally, the paper raises some general issues concerning housing policy in countries facing economic difficulties coupled with high rates of population growth and urbanization. It is hoped that the case will help reveal useful insights to the study of housing practices in developing countries

The Context

Riyadh’s history goes back to the pre-Islamic period, prior to the seventh century AD. Modern day Riyadh occupies what archaeologists believe was the site of scattered settlements, Mi’kal, Al Owed, and the surrounding farmland comprising the area known as Hijr. Hijr owed its historical past to the presence of limited ground and rainwater made possible by the confluence of several major wadis and the fact that Hijr lays at the locus of several major ancient trade routes. During the last six decades of the twentieth century, Saudi Arabian society has mutated from a predominantly rural and nomadic society to an urbanized one, characteristically centered in cities and towns.

In the traditional desert plateau of Najd, occupying central Saudi Arabia, inhabitants suffered perennial poverty, famines, plagues, and war. Accordingly, the construction of houses was limited and followed simple construction techniques employed in hot, arid regions since recorded history.

Traditionally, Najdi houses were constructed from load bearing, sun-dried mud-block walls while roofs were built of wooden rafters, over which was placed branches covered with a mixture of mud and hay sticks for reinforcement, in three layers. Occasionally, the foundation for walls was laid on rubble stone masonry. Flooring and rendering were also done in mud and plaster with decorative relief elements. Rooms opened onto a central courtyard, with a staircase leading to the roof which was used for sleeping during the hot summer. Interior design was typical. Several rooms opened to a colonnade surrounding the courtyard, creating a micro-climate of shade and cool air. A kitchen was built adjacent to a roofless area reserved for livestock (Figure 1).

This ancient building technique limited a room's size to a few meters and building heights to a maximum of three stories. Building materials were largely obtained from the surrounding environment and assembled according to traditional methods keeping production in line with limited demand, if any. The limitation of local building materials and the stern architectural design reflected the desert environment and dearth of technological know how. In 1968 mud houses comprised 46% of the total city blocks compared to 34% for blocks with cement houses. The proportion of blocks containing mud houses dropped down to 1% in 1992 (2).² This method of construction remained the prevailing paradigm for the majority of houses until the 1970s.

Under the combined effects of the improved economy and political stability, the traditional building industry could not match Riyadh's unprecedented population growth in the decades following the promulgation of the city as the capital of the new nation state in 1932. With increasing oil production came improved income, and prospects for growth in the nation's cities seemed inevitable. The oil company, the government, and wealthy merchants, anticipating rising demand for built structures, turned to external supplies for new building materials and modern techniques. Likewise, new architectural design concepts and styles were copied and sought, for such styles seemed suited to the new building materials and techniques. Social status was also increasingly associated with new, modern building methods and design. Government modernization programs and media encouraged the adaptation of Western architecture en masse (3). In developing cultures, the rejection of traditional values regarding habitability as old fashioned has been acknowledged (4). Peter Row contends, "with the superimposition of modern technology, old practices and building forms are regarded as being 'substandard'" (5, p. 317). This was also true for the new wealthy Saudi class.

Housing Typology

Under propitious political and economic circumstances, rapid urbanization ensued and with it emerged a new segmentation of residential types. The implication on the city spatial structure was logical, higher income inhabitants sought the periphery for larger and predominantly government subsidized, serviced land. Thus with the improvements of the national economy, residents started to experiment with new design styles and building materials. Gradually, the standard, essentially one-material, mud house was supplanted with new housing types, which are listed below.

Palaces and Mansions

Palaces constitute large residential units for the royalty and wealthy families. They comprise spacious reception areas, private quarters and auxiliary spaces. They are usually two or three

² Doxiadis, *Existing Conditions*, (1968), 171. Although the figure 1% refers to the whole administrative region, in the case of Riyadh, the figure may be even less, for smaller towns maintained their traditional stock due to less demolition (caused by massive private and government development in traditional urban fabric). In 1992, the population of Riyadh was 2,083,352 (57%) compared to the total population of the Riyadh administrative region (comprising a number of middle size towns and a large number of villages) which was 3,668,114.

FIG 1

Plan of a traditional (mud) house. Source: Rowe (1989).

FIG 2

Typical villa design. Source: author.

story buildings. They occupy large plots, some of which encompass an entire block. Prior to 1945, palaces were constructed of mud with rooms around a central courtyard without a plot or garden around them. Palaces that were built after 1945, were mainly constructed with contemporary technology, with the use of reinforced concrete, cement blocks, terrazzo tiles and equipped with modern sanitary fittings and electricity. Contemporary palaces comprise impressive reception spaces, larger and numerous rooms, servant quarters and annexes. They typically stand within large landscaped gardens, and are surrounded by compound walls. The number of palatial residences designated as palaces rose from 710 palaces in 1991 to 1,125 in 1996 (Table 1).

TABLE 1
Total Number of Residential Buildings by Building Type

Year	Shacks	Arab Houses	Villas	Apt. Buildings	Town Houses	Palaces	Mixed Use Apt Bld	Total
1987	619	46,968	80,240	17,032	1,280	na	5,824	151,963
1991	750	45,173	104,415	15,386	649	710	8,217	175,300
1996	6,914 ¹	44,294	138,883	17,846	4,126	1125	12,508	225,696 ²

Note: The number of apartment buildings does not show the number of units. 1. Sharp increase may also be attributed to incompatible definitions. 2. The difference between the total number of units in Riyadh of 433,598 and this figure (207,902 units) is largely attributed to the fact that the number of apartment buildings here refers to the entire building as opposed to the individual units. Source: Arriyadh Development Authority, courtesy of the Department of Research and Planning Services (March, 1999).

The villa

Although the villa became the popular housing solution for the upper middle-class in the 1960s and the aspiration of the remaining majority, it's precocious start dates back to the mid-1940s. Yet, it was due to the concomitant impact of Aramco's Housing Ownership Program in the oil producing Eastern province of the Kingdom, and the al Malaz suburb of Riyadh built by the government during the 1950s, that the villa has become the de facto residence style adopted by the majority of the Saudi population.³ Unlike the mud houses, introverted and built with outdated construction technology, the villa is a compact, detached house built within a garden compound and surrounded by a high wall, which provided religiously ordained privacy to its inhabitants. To the majority of Saudi households, the villa has become a liberal statement of the new era, both in style and construction method (6). It has come to symbolize prosperity, status and access. Contemporary building materials and imported design styles have become the new paradigm (Figure 2).

³ Following the transfer of government ministries to Riyadh in the late 1950s, the government sought to attract its employees to Riyadh. At the behest of King Saud, a 500-acre satellite suburb al Malaz, was inaugurated four kilometers to the north of the walled city. Extolled as the New Riyadh, the al Malaz housing development project encompassed 754 single family houses (villas), 340 apartment units, a municipal hall, a library, fire station, schools, markets and recreation and health facilities. The development signaled a departure from the old *laissez faire* attitude and heralded a new era of government intervention in the housing market as a major supplier, financier and subsidizer. The villas were sold to government officials on long-term loans while the apartment units were rented at a nominal fee. The al Malaz planners followed a gridiron network with a hierarchical organization of streets.

As compared to the traditional mud homes, reinforced concrete allowed for wider spans, hence larger rooms. It also allowed for larger, wider windows to be filled with the newly imported glass, uncommon in traditional construction. Electrical wiring and modern plumbing became synonymous with the imported architecture. Larger, “stylish” structures could not be realized by using traditional mud bricks, which constricted design to a few options. Modern technology substituted for passive cooling methods (e.g. the courtyard, wind towers, and shaded passageways and alleys, etc.). Now, large windows could be boldly made without concern for heat or sandstorms, thanks to the widespread use of modern air cooling systems.

Villas vary in size from mansion-like luxurious units comprising more than ten bedrooms, with additional auxiliary rooms, to smaller units consisting of 4-5 bedrooms. In addition to the lure of the villa, government zoning regulations determining height and setback restrictions effectively discriminated against the traditional mud house (7; 5). This has been a decisive factor in the overall adoption of the villa for once and all. Today, approximately 32 percent of the housing stock in Riyadh is that of the villa type (Table 1).

The Apartment Dwelling

Mid-size apartment dwellings are commonplace in Riyadh. As the urbanization tempo increased, demand for housing was met with the introduction of the apartment. Urbanization allowed for an alteration of the family structure as individuals left the traditional extended family to seek their fortune in the city. The nuclear family and single occupant household became common. These smaller, more mobile units sought smaller housing units, which typically in Riyadh are mainly for rent rather than for sale. Only in limited circumstance, do government regulations allow the partitioning of ownership of units sharing one land parcel. Moreover, foreigners are not allowed to own property in the Kingdom. Foreign households also tend to be smaller and more transient, as compared to the native population.

Ridiculed as “shoe boxes,” apartment buildings are mostly uniform two to three story structures containing a modest number of apartments. Apartments can be characterized as small villas without gardens, for they share the same typical, gender-specific floor plan as the villa, in which interior space is divided into male reception quarters (*majlis*) and the family-women inner space. The majority of apartment buildings line commercial streets and boulevards, with the ground floor preserved for commercial uses such as stores, offices, and the like, and the upper floors for residential apartments (Figure 3).

The ‘Arab’ house

Typically, Arab houses are courtyard houses built with modern building materials. They were traditional in design yet employed newly imported building techniques suited for the rising living standards. The shape of the house is invariably rectangular, equipped with basic electrical and sanitary fittings. The Arab house was built of cement blocks, wall bearing residential building. Early prototypes were covered by traditional mud roofing on wooden rafters, floored with terrazzo with wooden doors and windows. Subsequent models used reinforced concrete for columns and roofs (Figure 4).

The construction of Arab houses was the prevailing trend during the 1960s. The “Arab” house can be regarded as a compromise, a middle step and harbinger for the villa. For the less advantaged households, it was economical in terms of size (100-200m²), as well as climatically and socially compatible with its courtyard. This type seldom had rooms on the second floor. “Arab” houses were a pragmatic solution in times of rapid urbanization, for traditional adept mud builders and limited local materials could not cope with the increased demand for new units. Arab houses can be termed “budget” prototypes, with their small size, modified in terms

of their transitional period. In 1996, the total number of Arab houses in Riyadh was 44,288 comprising 20% of the existing housing stock in Riyadh (8). In Table 1, reduction in the number of this type is mainly attributed to demolition due to rezoning for apartment buildings.⁴

Shack Settlements

The transformation of the Saudi society from its primarily primordial rural and nomadic lifestyle to an urban one has resulted in burgeoning housing demand. Prior to the boom decade of the 1970s, shantytowns were commonplace. Immigrants flocked to the bustling towns seeking better work opportunities and social services. Unable to be accommodated by the local market, new comers constructed their own informal districts. Temporary structures were built in a speedy fashion with makeshift materials. Bedouins pitched their tents in undeveloped lands, while others erected rickety shacks with mud, wood, second hand sheet metal (e.g. zinc), cement blocks, and the like, in new poor communities called *ishash* or *sanadik* (tin or zinc structures).

Despite the government's aggressive approach to eradicate squatter settlements, some persisted due more to social rather than to economic circumstances.⁵ Current conditions of the high annual population growth rate of 9%, in addition to the shrinking government role in the national economy has been reflected in the substantial rise in the number of shacks. The number of shacks has risen from 619 in 1987, to 750 in 1991 to a dramatic increase of 6,914 in 1996 (Table 1).

Housing Policy Framework

Formal intervention in the production of housing in Saudi Arabia goes back to 1951. Typically, the national government followed two main approaches to housing development; direct and indirect. The direct approach involved the construction of high-rise public housing by the Ministry of Public Works and Housing.⁶ This approach was met with social apathy; due to the lack of cultural considerations such as the extended family structure, the relatively large number of persons per households and the stigma attached to living in public housing. The units did not

⁴ Unfortunately, without the listing of the number of apartment buildings, this comparison will be only indicative.

⁵ Government legislation concerning the development of squatter settlements has been ambivalent. On one hand, there has been a strong desire to obliterate shantytowns within the urban areas (e.g. Council of Ministers' Decision no. 977 dated 3/7/1388H (1968) empowered municipalities to demolish shantytowns). On the other hand, the government has been considerate toward the impoverished and "limited income" segments of the society. For example, Royal Decree no. 2410 dated 17/1/1386 H (1966) and no. 1003 dated 8/5/1386H and Circular no. 961 dated 21/4/1386H (waw) stipulated that squatters who owned no land were entitled to land free of charge. If such person constructed a building on private land then his/her dwelling would be demolished. However, if a person attempted building on public land, he or she was given the chance to buy it and abide by current zoning regulations. Circulars 218/5 dated 18/7/1402 (waw) and 1528/11 (meem) dated 16/11/1301 (1981) (both based on Royal Decree no. 24422 dated 16/11/1401H 961) authorized the creation of a special task force to review squatter settlements. Dwellings built before 1385H (1965) were ordered to be demolished and dwellers were given instead a 400-m² lot in a platted area. Royal Decree no. 24422 dated 11/10/1400H outlined measures to curtail the development of shantytowns.

⁶ In addition, the government has been providing housing for its civil and military personnel. In Riyadh, government "provided" housing comprised a substantial proportion of 12.2% of the total housing stock. Source: Arriaydh Development Authority, MESTAR, Vol. 6, *Housing* (1996).

FIG 3

Single-family subdivisions encircled by higher density apartment buildings. They are multi-story structures with commercial uses at the ground floor and apartments in upper stories.

Source: author.

FIG 4

The transitional “Arab” house. Source: author.

accommodate for the large families and people felt these homes were not socially acceptable. The second approach is the indirect in which the government-funded Real Estate Development Fund (REDF) offered cash installments to recipients according to construction phases. A similar approach was introduced by the Arab American Oil Company (ARAMCO) to house its Saudi labor force.⁷

⁷ Prior to the 1950s, single Saudi and foreign laborers were housed in dormitories while married workers occupied outlying areas of American “planned” oil towns and nearby traditional oasis towns. Shanty (“Arab”) communities sprouted and with their development the prospect of dissent, caused by a lack of proper housing for native workers, became inevitable. Consequently, in the early 1950s, the Saudi government and Arab American Oil Company (Aramco) decided to launch a housing program on government land in which Aramco would provide zero-interest loans to its employees either as a grant, or for a nominal price amortized out of the laborers’ monthly salaries. By 1999, the number of single-family residential units built under Aramco’s Home Ownership Program reached 41,400

With the improvement of the national economy, residents began to experiment with new designs and building materials. New construction methods and materials (concrete, cement tiles and bricks) were introduced at an increasing pace. The standard, essentially one-material, mud house was supplanted with the villa, built with reinforced concrete and adorned with glass, marble and other finishing materials forming the gingerbread facades of contemporary, stucco houses, commonly referred to as the villa (Figure 2). Inhabitants and developers sought the construction of villas, residential compounds and apartments with gaudy styles. “The relative lack of professional expertise within the kingdom resulted in the development of a catalog of standardized designs for single-family houses, largely by foreign architects.” (4, p. 313).

A study in 1978 concluded with alarming results on the situation of housing in Riyadh. It found that, “only 2 percent of all income earners in Riyadh’s area are able to buy a new detached house” (10). The distressing figures reflected the gap between demand and supply following the few years that followed the skyrocketing increases in oil prices worldwide. The construction boom of the 1970s was made possible by the swelling government treasury, thanks to increased world demand for oil output. During this decade, massive allocations in the built environment encouraged locals and foreigners alike to invest in the booming construction industry. This resulted in an increase in citizens’ earnings and accelerated migration, hence exacerbating the demand for more and better housing. Between 1968 and 1974, the population of Riyadh grew from 300,000 to 667,000. By 1997, the population of Riyadh rose to 3.5 million. The study attributed the 122 per cent increase in population to the fast increase of household formation, setup by young generations leaving parental home at earlier ages, improved hygienic standards resulting in reduced mortality rates, and the influx of rural migrants as well as foreign immigrants.

The private housing sector proved incapable of meeting the sharp demand for new housing. Several factors can be identified as contributing to the sluggish functioning of the housing market. Islamic teachings upheld by the conservative government and the majority of the population discouraged the development of a bona fide private housing sector using financing practices employed in the West, such as the interest-based mortgage system. Artificial restrictions, such as skyrocketing land prices due to the frenzied speculative real estate market, thwarted the production of new housing.

The Sixth National Five Years Development Plan (1995-2000) called for an active role on the part of the private sector to bridge the gap between supply and demand due to projected cuts in government subsidies for housing. Yet, central government regulations, which limit the number of years for amortizing mortgages on housing loans to seven years, have not been changed to accommodate the Plans’ promulgation. To date, banks are still not allowed to extend the time period of seven years.

In many Saudi cities, the average cost of land accounted for one third to one half the price tag of a new dwelling. Moreover, rapid urbanization and improved economic conditions both on the part of the government and citizens resulted in the leapfrog pattern of urban development characterizing Riyadh and many other Saudi cities’ contemporary urban forms. A lack of master plans as well as a lack of urban growth boundaries, and the like contributed to this highly costly growth pattern, which Saudi cities will continue to suffer for decades to come.⁸

(9). This approach of providing zero interest loans was to constitute the basis for future government intervention in the housing market.

⁸ This sporadic pattern of development started following the inception of the Kingdom in the 1930s, exacerbated in the 1950s and the 1960s, and took momentum in the booming decades of the 1970s and 1980s. This was encountered in 1989 when the Council of Ministers adopted the Urban Growth Domain (UGD) (CM no. 13,

The development programs of the 1970s were made possible by the sharp increases in oil revenues. Oil revenues multiplied from \$1.2 billion in 1970 to \$22.6 billion in 1974, and to a maximum \$102 billion in 1981. Active government intervention resulted in the influx of foreign firms and laborers to help build the new government projects, hence contributing to the already acute housing shortage.

Public Housing

The Ministry of Public Works and Housing (MPWH) was established in 1974. The creation of the MPWH marked the culmination of several efforts to achieve Council of Ministers recognition of housing as a national priority. Lacking direction and insufficiently staffed and responding to massive rural to urban migration, the ministry launched two major types of projects on the national scale. The first called the “Rush” or “Crash” housing” took the form of high-rise, tower blocks in large developments of one thousand or more units on the outskirts of the Kingdom’s major cities.

Fortunately, the Crash housing accounts for a relatively small percentage of the state housing supply. It constituted the most blatant departures from traditional architectural and planning practices. With an approximate site coverage of only 20%, the resulting open space between these towers was “inhospitable and alien.” (5) The building’s design valued efficiency over privacy, a serious prerequisite for a traditional society. For example, apartments were clustered around corridors leading to elevators units, which demand behavioral change on the part of prospective residents. Corridors and elevators encouraged unwanted contacts between men and women, for privacy was a subtle design consideration in the traditional built environment, not accounted for in the crash housing. The towers depended on sophisticated technologies, which demanded management and maintenance requirements that were beyond the purview and capacities of the MPWH. Finally, the units’ layout was influenced by Western counterparts rather than attempting to cater to local cultural determinants, which require gender specific areas as well as privacy for the family if there were guests. The “Crash” housing experiment was terminated due to several factors, including the concomitant launching of the REDF program and the continuous improvement in the national economy during the 1970s.

The total number of apartment units built under the MPWH “Crash” housing programs was 4,752, costing \$1.4 billion. Benefited by increased government revenues and the ostensibly negative experiment of the program, the MPWH shifted to construction of detached units in large suburban tracts. They were sold to residents on annual installments, following the REDF mortgage plan. In summary, the total number of detached units and apartments built through the MPWH are 11,016 and 14,686 respectively (11).

The Real Estate Development Fund

To alleviate this bottle-neck situation, the government established the Real Estate Development Fund (REDF) in 1974, a financing agency to enable Saudi adults and private developers the opportunity of participating in the production of new housing units and commercial uses. The REDF provided zero-interest loans up to \$100,000, due within 25 years. Loans were available to any married citizen, 18 years or older, or single and 21 years old or above. Applicants were required to provide legal title of land in an approved land subdivision. Recipients were

9/1/1406 (1986)) to put peripheral growth under check, which hitherto guaranteed free government public services and infrastructure regardless of location. The UGD was applied to 199 major cities and towns. Although, it slowed excessive subdivision of peripheral land, land continued to be subdivided at the peripheral area. By 1996, out of the currently undeveloped subdivided area of 58,000 hectares, 172,000 hectares were approved after the adoption of the UGD. In 1998, vacant subdivided land comprised 50% of the developed area of the city. It is estimated that the total area of the city can accommodate a population of 8 million inhabitants.

completely responsible for the design and construction of their units. To encourage amortizing loans, 20% of the annual payment is forgiven if paid within sixty days of its due time. And if the entire loan is redeemed in one payment, 30% of the loan value is forgiven.

The REDF also offered free-interest (investment) loans designed to establish modern private Saudi developers to build residential, office and commercial complexes. Loans could go up as high as \$3 million to qualified investors. Investment loans have largely contributed to increasing the number of rental units from 11% of the housing stock in 1974 to 39% in 1986, and to 42.2% in 1996. While old, dilapidated mud communities were largely occupied by mostly single expatriates, new rental housing in the form of apartment buildings were occupied and proliferated on major “commercial” streets. They have become the residences of low and moderate-income foreign households, as well as native households.

Increasing rental housing has been touted as a cost-effective approach, hence encouraged through policy such as the REDF programs. This corroborates Hansen and Williams who argue:

Increasing the supply of rental units by encouraging homeowners to rent out rooms and add rental units may be the most efficient way to increase shelter in third world cities (12, 316-17).

As such, the new state agency would become a housing facilitator and a financier of housing. Its functions would be to provide cash payments directly to recipients and to administer the subsidy program, a role it would oversee since it started. The REDF provided subsidies directly to individuals who would be responsible for the design and construction of their apartment buildings and compounds.

The Second National Development Plan (SNDP), set for the period between 1970-1980, allotted \$142 billion for the construction sector aimed at building housing units, industrial buildings, schools, hospitals, etc. The Plan envisaged the funding of 329,000 housing units nationwide at a cost of \$24.5 billion. Although the Second Plan earmarked Riyadh with a total of 92,000 dwellings, it was not until 1991 that the number of REDF-financed housing reached 85,878, costing \$6.67 billion. By 1997, the total number of housing units built under the REDF loan system amounted to 490,000, benefiting 411,711 persons at a total cost of \$28.8 billion. In addition, since its creation in 1975, the fund has also been responsible for issuing 2,482 investment loans with a value amounting to \$1.4 billion (11).

Lucrative subsidies with lax conditions resulted in the construction of 889,000 units between 1970 and 1990. This resulted in vacancy rates in the Kingdom’s major cities. In Riyadh alone, REDF contributed to the construction of 440,46 housing units comprising 67% of all residential units built between 1975 and 1989. In 1991, thanks to REDF loans, 67% of Saudi households owned their residence (13).

Land Grants (minah)

Another active role of the central government in shaping the contemporary housing market included the distribution of free lots to Saudi nationals. By 1986, at the apogee of the free land “rush,” 45 square kilometers, which by then constituted 49% of Riyadh total residential area of ninety-two square kilometers, were distributed by the municipality to mainly low income Saudis. Other, more preferred tracts in the north and east part of the city were distributed to a large number of inhabitants. This contributed en masse to the flight of inhabitants from the congested

older, mostly mud communities to the centrifugal waves of building activity toward the periphery.⁹

By 1996, the government had distributed free of charge more than 2 million urban plots nation wide, a substantial number for a country with a population of 12 million nationals. Riyadh alone has been the preferred location of 45% of currently requested land plots.¹⁰ In 1991, the compound impact of land grants and generous housing subsidies resulted in a vacancy rate of 15%. Such an increase in vacancy rates coupled with decreasing state coffers was highlighted by the Ministry of Planning:

The excessive overall housing supply, with a large number of vacant housing units, both public and private, particularly in urban areas has significantly decreased the real estate and rental values in the Kingdom. (13).

In summary, from 1974 up to 1996, a total number of 120,031 housing units were provided in Riyadh through the REDF and the public housing programs. Collectively, these units comprise 26% of the total current housing stock in the city.

Housing and Demographic Characteristics in Riyadh

In 1968, a household sample survey showed that 85% of Riyadh's household heads were born outside Riyadh, while 21% were of non-Saudi origin (14). Thanks to the central role played by the government, the capital's urban economy continued to reap the benefits of tremendous investment programs in public works, the expansion of the public sector and the great demand such functions generate. The high population growth of 9% persisted. By the year 1996, the city's population reached 3.1 million residents, from 1.6 million in 1986. Between 1990 and 1996, the number of housing units increased by 29%, whilst the population grew by 50%. During the same period, the city's population increase by an average of 18,000 households per annum.

However, construction of new housing units has been lagging. In Riyadh, the current average number of new housing units built annually is 17,000, with an average household size of 7.7 persons. Projections for the coming twenty years indicate that 850,000 new units are needed to meet the projected growth in the city's population. This means the production average of 38,000 new units per annum, way above the current rates of production (15).

In Riyadh, between 1987 and 1997, the number of households more than doubled from 204,844 to 433,598, of which 289,712 were Saudis and 143,886 were non-Saudis. The number of housing units increased from 297,859 to 543,357, during the same period. The average number of rooms per housing unit increased from 3.9 in 1968 to 6.0 in 1986; a direct indication of both

⁹ *Minah* are the Arabic term denoting land gifts authorized by the King. Ministry of Municipalities and Rural Affairs' (MOMRA) Circular No. 563/3 dated 26/2/1387 H (1967) (letter waw), gives municipalities development rights over undeveloped land falling within their jurisdictions. Royal Decree No. 11003 dated 5/8/1386 H (1966) authorizes municipalities to subdivide speedily and sell lots to citizens according to defined nominal prices. According to this Decree, municipalities are instructed to allot lots of 400 m² to "limited income" citizens free of charge. However, higher oil revenues caused government to distribute most of public urban land free. In 1987, the Council of Ministers passed resolution no. 153 increasing the minimum lot size to 625 square meter for all new land grants subdivisions, hence reducing the number of potential recipients and contributing to the already low city at large development density amounting to 50 persons per hectare.

¹⁰ According to an official in the Municipality of Riyadh's Land Department.

improved economic conditions of inhabitants and improved mortality rate.¹¹ Dilapidated units comprised 8% of the housing stock.

However, recent statistics reveal a changing picture. The annual growth of newly constructed residential units dropped from an average 14.7% in the period 1970-1985 to 4.8% for the period 1985-1990. Population projections also estimate that the city's Saudi population is expected to double in the coming 15 years. Assuming current trends to persist, by the year 2,000 a housing shortage was projected to be 3.6% (13). Currently, the vacancy rate is estimated at 5%, compared to 34% in 1986 (15). Worldwide economic stagnation coupled with regional conflicts and a lack of a resolve on the part of Saudi policy makers and planners stand as major factors behind the shrinking housing market. For example, GNP per capita fell from an estimated \$15,000 in 1982 to \$7,126 in 1999. (16).

Analysis and Evaluation

In the early formative decades of the Kingdom, centralized power was adopted to stave off political centrifugal forces, resulting from divergent loyalties of the newly unified country's regions, and to foster development and modernization. However, in the long run centralized power has its own shortcomings. Central power, "has also led to policy failures when central decision makers impose standardized programs without regard to local conditions and without sensitivity to the differential impacts of the programs in different local settings"(17, p. 25).

Typically, the provisions of the REDF paid no attention to household income, thus need. More often than not, the stipulation of owning land in an approved subdivision has been a discriminating element against the poor. Recipients were responsible for the design and construction of their units, which in many instances resulted in poorly designed and low quality structures. Due to lax requirements attached to loans, a large number of housing units were built for the purpose of profit-making, to attain better social status, and amass additional income, the house was sold for profit, as opposed to providing housing for the obtainee of the loan.¹² As such, "the REDF has been a component of the overall development plan to improve the standard of living and providing for greater equality in the distribution of primarily oil wealth" (18, p. 11). As such, the REDF program and its corollary *minah* (land gifts) have become forms of a divestiture of public assets to private ownership. In 1996, the number of REDF-financed housing units comprised 54% of the total stock in Riyadh of approximately 455,000, compared to a mere 5% through "private" agencies, and 40% through "personal" financing.¹³

It must be pointed out, however, that evaluating the effects of the REDF component on housing prices is complicated by the fact that there was a huge boom in housing construction between 1975 and 1985. The boom was partly due to the housing plan but was also closely linked with other elements of the national development plan: expanded government employment, massive

¹¹ Domestic help may explain the increase of household size. Improved household income encouraged large numbers of families to rely on housemaids to help in the new larger homes and meet resident's mostly traditional social obligations. Also, the conservative Saudi government does not allow women to drive cars, which resulted in bringing foreign drivers.

¹² Especially in rural and smaller towns, where the cost of the loan was more than enough to build relatively modest structures and lots are cheaper than those in large cities, extra money could be used to buy cars, for instance. This case of using subsidies to improve homes and buy cars by the middle-class, is also found in Colombia. See, for example, Alan Gilbert, "On Subsidies and home Ownership: Colombian Housing Policy During the 1990s." *TWPR* Vol. 19, No. 1 (February, 1997), footnote no. 8.

¹³ Data based on a 1997 household sample survey. Courtesy of the Department of Research and Planning Services at the Arriyadh Development Authority (1997).

allocation in the construction of physical infrastructure, social resources, and industrialization. According to Al Hathloul and Edadan, “the economic contribution of the construction sector, both in value added and employment, during the last 20 years has been very significant. The value-added share of the construction sector had increased from 3.2 in 1969 (at 1984 prices) to 13.4% in 1989, registering an annual compound growth rate of 11.6%.... The GDP contribution of the real estate sector had grown from 2.9% during 1975-80 to 3.7% during 1980-85. However, it decreased to 2.2% during the 1985-90” (19, p. 160).

In many developing countries, government intervention in the production of housing has overlooked renting as a decent and sensible housing solution. Alternatively, in many instances, government intervention in rental housing has tended to be counter productive.¹⁴ Likewise, building regulations have had a similar impact (20). Through its investment REDF loans, private Saudi developers are encouraged to apply for investment loans with free interest loans up to \$3 million, amortized in 25 years. The number of housing units constructed through REDF’s investment loans is 18,196. However, 7,451 units were provided as public housing, financed through the MPWH. Multi-family dwelling units currently comprise 49% of the total housing stock, with a 45% increase from 1991 compared to 33% in the number of single, detached dwellings. While only 30.3% of Saudi households are renters, 66.4% of foreign households rent their dwellings. As the government continues to pursue its “Saudization” goals, and presuming existing economic doldrums to persist, gradual substitution of foreigner with Saudi households will take place in the multi-unit market. Alternatively stated, even with a relatively low vacancy rate of 5%, the magnitude of the housing shortage may take sometime to develop into a crisis.

The implications of the government modernization programs, in general, and the REDF’s lax and lucrative regulations on Riyadh’s urban form have been significant. The loans included no building regulations or guidelines; the only requirement was proof of ownership of the land. Without intending to do so, the creators of the REDF hastened the decline of inner city residential areas, while fostering leap-frog growth at the periphery. The established system of approval of loans has contributed to the urban waste and sprawl due to the haphazard approval of building permits of the homes that then had to be serviced with roads, sewage and water as well as garbage disposal (Figure 5). Had the development been limited to designated subdivisions in a more concentrated fashion, the capitol outlays required by the municipality would have been significantly reduced.

Exurban residential development: includes second country homes, recreation properties, walled gardens, locally known as *istirahat*. The result is the emergence of an *urban field* at the outskirts of Riyadh in which urban residential activities compete with industrial services, commercial ribbon development and agricultural land uses. In his study of contemporary housing in Saudi Arabia, Fadan concluded:

Despite the fund’s [REDF] good intentions, its activities in combination with land speculators, surveyors and architects, resulted in chaos, waste and extravagance (2, p. 342).

Surely, overwhelmed by gigantic funds from the central government and the prospect of a housing crisis, the REDF policy designers acted pragmatically. Lacking a culturally based alternative, they envisioned a “utopian” housing situation in which all benefit regardless of income, gender, family size or location. To them, alleviating substandard housing conditions was more urgent than waiting for ideal solutions of good design and efficiency. A fundamental assumption underlying the REDF program was that less advantaged households that were unable

¹⁴ Because it limits control of one’s property, rent control has been a controversial issue in Islamic jurisprudence. Rent control was implemented during the housing crisis in the 1970s with limited effectiveness.

to obtain required land in the private land market or through land gifts would occupy units that vacated and “filtered down” as better off households move into new housing of higher standards. REDF loans enabled many nationals opportunities in the construction sectors which seemed more than a decade ago a mere dream.

Another successful aspect of the REDF policy was its nature of assimilation. REDF stipulates no conditions for location. Residents are free to choose the land where they would build the house, the apartment building or the compound. In essence, the REDF approach resembles ‘scattered-site housing’ employed in the U.S. (21). For it has successfully increased housing opportunities without locational restrictions. REDF units can be single-family houses, duplexes, townhouses or apartments earmarked for renting, or even courtyard residential units that are more prevalent in towns, rural areas, and nomad settlements, vis *hijar*. Typically, housing units are designed to blend architecturally into the surrounding community, hence freeing residents from the stigma associated with the super-block, high-rise projects marketed by the Ministry of Public Works and Housing (MPWH).

Adaptation to change

Prior to the 1990s, the compound impact of direct and indirect government intervention in the housing system in Saudi Arabia had decisively shifted housing accessibility from availability to affordability. However, during the 1990s, chronic economic downturns mainly due to fallen oil prices, forced the central government to abandon its leading role in subsidizing numerous development programs, including the REDF.

FIG 5

Lax REDF requirements coupled with government sponsorship of infrastructure and utilities contributed to scattered development at the periphery.

The dynamics of the housing market in Riyadh cannot be adequately assessed without adequate sufficient data. Likewise, existing building codes, land use and zoning ordinances need to be revised to allow for the prospect of a lean future. This corroborates Drakakis-Smith’s observation which states that, “the existing standards and regulations are both out of date and out of context, relating more to Western countries from which they originally adopted...”(4, p. 178).

Especially, since the slow down of the generous government subsidies of the last two decades, new trends have been in the making. They include the construction of more affordable multi-family dwellings such as the duplex and the apartment. Other adaptive measures to the shrinking role of the state include residents' partitioning of their villas into two stories and adding extra rooms, as well as building roof and ground annexes to allow for siblings and other family members to share the same house.

The duplex

The duplex is a multi-unit, attached dwelling currently in vogue due to the changes taking place in the housing market. Originally, duplexes were built to meet the lifestyles of high-income foreign expatriates. A number of compact attached dwellings were built within a garden compound surrounded with a wall. Duplexes and quadra-plexes, are rapidly sprouting in subdivisions. Duplexes are proliferating in low density suburban subdivisions, hence blending comfortably with its higher version, more socially sought, the villa (Figure 6). The number of duplexes rose from 649 units in 1991 to 4,126 in 1996. Existing regulations do not limit the number of units that can be attached. Similarly, regulations concerning their impact on streets' capacity, infrastructure and social services are moot. Especially, in the cases of subdivisions with narrow streets, the construction of duplexes has resulted in parking problems. With the automobile as the prime mode of transportation, excessive traffic has been a major source of discomfort to many residents (22).¹⁵ Consequently, this has been reflected on real estate prices and neighborhood quality.

Pressure for more affordable units and due to lax implementation of zoning regulations, more developers and private citizens are shifting to the construction of the duplex. Compared to the apartment, the duplex offers more privacy within a reasonable price. Yielding to market trends, municipal staff approves building permits for duplexes without officially ratifying existing subdivision zoning regulations.¹⁶ However, to obtain direction from a higher, ministerial level to ratify exiting regulations takes a long time to approve.

Family Compounds

In traditional communities, extended families occupied relatively larger dwellings that accommodated first and second generations of the extended family. The growth of the family was paralleled by a physical expansion of the house. Despite contemporary socio-economic imperatives, the extended family still serves as a viable institution, which supports its members. Consequently, family compounds are manifestations of economically stable extended families. Typically, parents play a major role in the materialization of family compounds (Figure 7). Family members contribute to the cost of his/her houses. In the higher middle income communities of Riyadh, 22% of its residents live in family compounds, while 19% in lower, middle income areas. Family members, especially the parents, help in defraying the cost of construction, which takes the form of several dwelling units in contiguous parcels (22).

In a recent study, 46% of residents in lower, middle income neighborhood (Al Shifa) of Riyadh expressed their need to build an additional story to two-story villas, compared to 29 in the high-

¹⁵ "Dangerous streets" ranked fourth (17%) after "poor landscaping" (27%), "Lack of neighborhood facilities" (22%), and "weak social relations" (18%). Source: Al Saif, 1994.

¹⁶ For example, memorandum letter from the Deputy Minister for the Ministry of Municipality and Rural Affairs (MOMRA) no. 20382/waw taa, dated 27/4/1416H./1996 requesting municipalities' opinions relating to the portioning of multi-unit apartment buildings in order to be sold individually.

middle income community of Olaya. The study found that the desire for extra living space was to provide accommodation for newly married sons, and their families.

Family compounds constitute residents' adaptation to changing economic trends. The construction of several units in one location helps to cut construction cost through utilizing manpower, lower building materials cost when purchased in large quantities, supervision and maintenance, and the utilization of common facilities. The compound approach also reflects the persistence of cultural attributes, most notably the extended family structure.

Portioning the villa

Saudi Arabian building regulations allow only 10% of the net built up floor area of a dwelling, not exceeding fifty square meters, for the construction of a roof annex. Owners can also expand their ground built-up area up to 10% of the whole parcel area for the construction of noncontiguous auxiliary rooms. The total ground floor built-up area must not exceed 60% of the

FIG 6

The duplex constitutes an adaptation with changing socio-economic circumstances. Source: author.

FIG 7

Two family compounds under construction. The family compound is a manifestation of persistent cultural attributes such as the extended family structure. Source: author.

lot's area. In 1997, petitions to increase the built up area on the roof from 10% to 20% were denied by the municipality of Riyadh, on the ground that such additional space would be used for rental purposes. Petitioners pointed to the increased number of individuals in the household, and the desire to provide living space for newly married siblings, and the like.

Residents' attempts at portioning dwellings start at the design stage. The organization of the interior space, entrances and staircase are set to allow for probable separation of the unit in the future, once need arises. In lower income extended families, partitioning the house and/or adding new rooms beyond the legal limits is sought to increase household income or provide extra space for a family member, a widowed or a divorced women. When asked about the rationale behind not encouraging residents to partition their dwellings, a number of sub-municipal mayors in Riyadh responded that such measures would result in lessening the quality of life in their neighborhoods, and ultimately negatively impact real estate prices.¹⁷ Municipal regulations also discriminate between the mostly rich north of Riyadh and the lower income south. Parcels in lower income communities can be subdivided into smaller lots with a minimum width of 15 meters, while the minimum width for parcels in most northern and eastern subdivisions of the city is set at 20 meters. However, in case of constructing a duplex, parcel frontage could be as narrow as 7 meters.

Conclusion

At a time of government retrenchment from its' previous commitment to ensure affordable housing, family financed and private banking has emerged, albeit hesitantly, to substitute for the diminishing role of government sponsored housing. Riyadh's demographic characteristics and housing conditions cannot be overlooked. During the decades following the unification of Saudi Arabia in 1932, oil wealth helped the central government overcome city-ward migration fleeing rural areas ravaged with poverty and lacking chances for upward mobility.

The majority of the existing housing stock was largely the product of the booming oil years of the 1970s. However, emerging socio-economic trends demand creative financing strategies. The current ambivalent stance on the part of the central state will only result in deteriorating housing conditions, infrastructure and social services. Shantytowns, squatter settlements and over-crowding will be an inevitable outcome. Without adopting liberal legislation aimed at alleviating institutional obstacles and red tape, private initiative cannot act miraculously on its own.

In this paper, I presented a typology of the available venues the private housing market has used to meet rising demand. The objective is also to draw the attention of policy makers to the different dynamics at work in the housing market.

One approach to alleviate future housing shortages is to encourage rental housing, portioning of larger detached dwellings and to allow for higher densities. The resultant increase in residential densities in developed subdivisions will counter the inevitable increase in vacant land prices in

¹⁷ Progress Meeting for Riyadh Municipality's heads of sub-municipalities, March 1996.

serviced subdivisions. Unless economic conditions veer toward improvement, the REDF must relinquish its lofty goal of concentrating on the construction of detached single dwellings. The previous approach by the REDF proved inefficient and contributed to waste and sprawl. Emphasis must be shifted to maximize moderate-size housing such as duplexes and multi-family dwellings.

Genuine architectural design and planning solutions conducive to the betterment of a contemporary urban environment must also be sought. Building codes and zoning regulations must address cultural, climatic and functional aspects of residential development and socio-economic changes. The zoning and land use maps of the city should be reconsidered to determine possible areas to increase residential densities. REDF and other government agencies involved in the production of housing must coordinate with the City's Municipality to assure efficient utilization of undeveloped land currently accounting for half of the approved subdivided land in the city. For example, priority should be given to loans lying in serviced subdivisions. Prospects for artificial increases in land prices must be also considered. Finally, leading government agencies involved in urban development must invest generously in research and the maintenance of updated statistics and database to guide decision-making.

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