PLANNING ARABIC TOWNS
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ABSTRACT. Urban form and settlement patterns have changed dramatically in Saudi Arabia as a result of increased wealth and a shift to an urban services-based economy. Traditional Saudi urban form reflected climatic and social-religious constraints. Recent developments have followed Western urban forms that largely ignore tradition. The gemeinschaft-gesellschaft model is proposed as an approach to unite traditional and recent urban forms into a coherent physical settlement.

URBANIZATION and economic development are closely related phenomena. As a society changes from rural to urban, its economic structure necessarily is altered. Primary and kinship relationships characterize a rural society, but secondary and instrumental ones distinguish urban society. Saudi Arabia in recent years has evolved rapidly from a traditional pastoral society to a highly urbanized, modernizing one. Wealth from oil exploitation was a principal impetus for this shift. Economic planning at the countrywide level began with a series of multiyear plans, the first of which was for 1970–75. Subsequent ones were for 1975–80, 1980–85, and 1985–90. In this article we assess the economic transformation that has occurred in Saudi Arabia since 1970 and the effects of the changes on physical development and environment. The last portion of the article contains a model for reconciling physical and environmental constraints with the pressures of rapid growth and increased development.

Between 1970 and 1975 Saudi Arabia emerged from economic undevelopment, although the important achievements of the period were chiefly “showcase” types of projects. They included construction of the Jizan Dam in the southwestern province of Asir, the completion of which marked the start of permanent water impoundment in the kingdom, the new airport at Jidda, and erection of primary and secondary schools as the foundation for comprehensive education.

Coordinated countrywide planning and development began with the initiation of the second five-year plan for 1975–80. Seven chief goals marked the investment policies of the planners. These goals were (1) to maintain the religious and moral values of Islam, (2) to assure the defense and internal security of the country, (3) to foster a high rate of economic growth by developing resources, maximizing earnings from oil over the long term, and conserving depletable resources, (4) to reduce dependence on export of crude oil, (5) to develop human resources through education, professional training, and improved health standards, (6) to increase the well-being of the population and to foster social stability in the face of rapid societal change, and (7) to install an infrastructure to support and achieve the first six goals.1


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Investments were made in many sectors, but especially in the communications infrastructure. For example, four seaports were constructed, including the huge port at Dammam that opened in 1979. The system of hard-surfaced roads was created during this period: approximately 15,000 miles of paved roads were built, augmenting all-weather roads, to link all large and middle-sized urban centers in the country. The magnitude of the project is suggested by the fact that the country had no paved roads in the mid-1950s. By 1980 the paved-highway network not only linked the principal cities but also connected with the earthen-surfaced roads that served the almost 7,000 villages in Saudi Arabia.²

Air transportation is particularly important in a vast country like Saudi Arabia. Hence investment in air transportation had a high priority in this planning period. International airports were built at Riyadh, Jidda, and Dammam, and twenty-two domestic ones were constructed or improved to create a dense network of air transportation for the country.

A second principal investment priority for this period was creation of two industrial centers: Jubail on the eastern coast and Yanbu on the western coast. Together these two projects represented the largest single investments undertaken by the Saudi government, or, for that matter, in the entire world. Lying approximately 325 miles northeast of Riyadh and 100 miles north of Dhahran, Jubail will eventually encompass an area as large as Greater London with a population of 350,000. Currently an oil refinery, a petrochemical plant, an industrial-chemical plant, and an iron and steel complex as well as a fertilizer-pellet plant are under construction at Jubail. The cost for Jubail may exceed US$60 billion.³ Central to the industrial base of Jubail as well as Yanbu is the installation of the Master Gas System (MGS), in which formerly burned gas will be used as a fuel for industries.

The 1975–80 and 1980–85 plans had the character of massive national investment activities. Approximately US$250 billion were spent on various elements of the two plans during the ten-year period. The total represents a per capita investment of almost US$35,000, a truly impressive figure. Qualitative improvements in the living standards of Saudi citizens were significant. Approximately 500,000 new dwelling units were completed between 1975 and 1985. Educational and health facilities are widely available throughout the kingdom. The highway system is one of the best in the world. In short, the Saudi people have shifted from a subsistent agricultural pastoral economy to an advanced-service one in two or three decades.

A slowing of pace has been evident in the Saudi developmental process since 1982. The worldwide oil glut has had tremendous effects on revenues, so that the objectives of both the 1980–85 and 1985–90 plans were revised downward. Nevertheless, on-going projects like Jubail and Yanbu will be

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completed. Saudi Arabia must move rapidly to meet a crucial developmental goal of lessened dependence on oil resources. Rapid growth created serious environmental and societal problems. The remainder of this article is devoted to one of them: urban development and a possible planning response.

THE EASTERN PROVINCE

The Eastern Province developed more rapidly than the rest of Saudi Arabia. Villages became large cities in the span of a generation, and entirely new cities were established. The general population is being urbanized. A completely new environment is in creation. The shifts offer opportunities to meet the educational, health, and housing needs of the inhabitants, but it also poses problems, especially cultural adjustment and environmental or ecological degradation. The issue of cultural incongruity manifests itself most dramatically in the urban-built form. A dwelling unit no longer accommodates traditional focus on privacy and family life. Urbanized areas are alien to the cultural experiences of most inhabitants. Traditional social relationships as expressed through buildings and urban design have been abandoned in favor of imported styles appropriate for a Westernized way of life.

Ecological degradation is apparent throughout the Eastern Province. Desert landscapes, possibly the most fragile on the earth, have been used as dumping grounds. The trees and other vegetation of the few oases are affected by a savage process of urbanization in which they are impediments rather than essential features of the regional landscape and economy. To cite only two examples, sewage effluents from the enlarged coastal cities destroy marine life, and unfortunate placement or lack of careful regulation of industrial facilities results in air pollution.

The cities of the Eastern Province are one of three important urban districts in the country. The other two are Jidda with an extension toward Mecca, and the Riyadh area in the center of the kingdom (Fig. 1). Phenomenal growth characterizes each district. Jidda and Riyadh each had fewer than 20,000 inhabitants prior to World War II; each now contains almost one million residents. The cities of the Eastern Province were insignificant fishing villages prior to the beginning of commercial oil extraction in 1937. Currently they are the nuclei of a metropolitan conurbation with Dammam, Al-Khubar, and Dhahran as the principal centers. The spread of urbanization in the province will soon result in a strip of urbanized settlement adjacent to the Arabian Gulf that extends from Al-Khubar on the south to Jubail in the north. Occupying the middle is the Qatif oasis where urbanization threatens to disrupt traditional agriculture.

CATEGORIES OF THE URBAN SPACE

A traditional Arabic town is a unique phenomenon molded by physical and religious factors. The hot arid conditions prevailing on the Arabian peninsula impose a certain introverted form on a town and its constituent
structures. They hover close to the ground, and high buildings are few. Structures are grouped together to provide shade and to create relatively cool microclimates. Few, if any, setbacks exist from a building line, and entry to a building is directly on the street. The relationship among houses creates a distinctive urban form—an almost continuous low-rise, high-density settlement. The street pattern is highly irregular, comprised of many narrow, winding, dead-end streets. The introverted character of the dwellings is reinforced by religious concerns that stress privacy of a family setting and seclusion of females (Fig. 2).4

Private space in Islamic societies is safe and secure, while public space is completely unsafe and must be avoided by females. The “social invention” of so-called semiprivate space is an attempt to create a protected area outside a dwelling unit where kinlike responsibilities and freedoms govern.

The traditional foci of a settlement—mosque, market, and governmental buildings—can be seen at the town or city level (Fig. 3). An interlocking, organized urban form is created by these foci and their ancillary activities. Distances among them were largely determined by pedestrian circulation. The urban center and the myriad activities that occur there constitute the environment for public activities. These spaces are the public ones of a town, where the disparate populations of the neighborhoods come together and mingle freely.

Principal concentrations of public facilities exist at both the neighborhood and the town levels. The semiprivate nature of a neighborhood results from the extension of the domestic milieu into exterior surroundings. Family life, in the traditional sense, revolves around religious observance and domestic routine. Both of these are satisfied through the neighborhood market and mosque. Neighborhoods possess a high degree of ethnic and religious homogeneity. Ethnic and religious segregation as the basis for identifiable districts is a long-standing morphological feature of an Arabic town. Thus an Arabic neighborhood is highly autonomous. Its streets, markets, and other public spaces possess the characteristics of semiprivate areas. Extended families, kinship groups, and related individuals move about a neighborhood freely, but an outsider is immediately recognized and frequently treated as an intruder. A neighborhood is often the physical locus for a large kinship group of which a family may be part. The female members of the family can move freely within the confines of a neighborhood, whose semiprivate nature both offers a release from domestic confinement and preserves the envelope of privacy, dictated by Islamic cultural life (Fig. 4).

Public character is evident at the town center, and the semiprivate nature marks a neighborhood or district. Complete privacy is the outstanding hallmark of an individual dwelling. Here privacy is sought from both the exterior natural and human worlds. Consequently a dwelling has few openings to the outside. Where they exist, screening is usually provided to divert direct sunlight and to prevent viewing from the outside. A house is usually no higher than two stories and without any setback. A typical site for a house in many old neighborhoods measures only approximately twelve by twelve meters. Walls rise directly at the property line and abut walls of

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adjacent structures. Interior spaces are frequently large with high ceilings and are connected to the outside through upper-level vents and wind channels to permit the outward flow of heated air from the interior. External exposures are provided through interior courtyards or by screened exterior windows. Orientation of building openings is away from the sun and toward the north or west whenever possible.

Much of the character of the traditional Arabic town derives from the design of individual houses, especially the layout and plan of a structure. During thousands of years, the residents of the Middle East have learned to appreciate the suitability of houses built around interior courtyards. In such dwellings, the courtyard not only provides a focal point for the residents but also aids in cooling the unit (Fig. 5). The most common form of courtyard housing is a centrally positioned interior court surrounded on all sides by the living space in a dwelling.
Less commonly encountered are houses in which the courtyard is off center. A plan may be L-shaped with a courtyard to one corner of a structure, or U-shaped, surrounding the courtyard only on three sides. A related, quite unusual courtyard house has much more limited use. In it a courtyard is divided into two parts, which correspond to the public and private entrances for the dwelling. Symbolically the arrangement preserves the important dichotomy between family life and public entertainment in a structure.

MODERN URBAN AND BUILDING FORMS

A typical new subdivision proposed for modern Arabic cities illustrates several changes from traditional forms (Fig. 6). Rectangular grid systems for streets have replaced the intricate curvilinear or irregular pattern of the old towns. No longer does the street benefit from the passive shading that is an inherent characteristic of the old towns. Uniform parcels contain detached dwellings with side and front yards. Thus the climatic benefit of attached dwellings is lost.

Beyond the loss of physical enclosure with its microclimate is the additional decrease of privacy within a dwelling. This change is especially important where buildings of different heights are erected adjacent to each other. Because of the hot climate, the orientation of structures without interior courts must be outward. The new buildings have lost their introverted character and are exposed to public view as well as to direct sunlight and consequent heating.

The other significant change that occurs in the new built form of the Arabic city is the general elimination of semiprivate space. In previous times the physically defined and separated character of an urban neighborhood allowed its open areas to become semiprivate spaces. These conditions no longer exist with a grid-street pattern and outward-oriented structures. An important element of social and cultural life in a community has thus been significantly altered. A traditional approach to building that harmonized with the culture of the inhabitants has been replaced by foreign-designed techniques with only minimal linkages to Arabic society.

The new urban forms increasingly employed in Arabic cities are wasteful of limited land resources. This feature is especially apparent in several rap-
idly expanding conurbations in Saudi Arabia. For example, the metropolitan strip along the Arabian Gulf is spreading over the remaining arable land in the Qatif oasis.⁷

Traditional solutions for urban design in the Arabic town were the product of a long period of experimentation in which the primary concerns were to mitigate the rigors of a hot arid climate and to foster a built form that provided an adequate environment for domestic and social life with attendant facilities for religious observance. The almost complete abandonment of traditional form in the onrush of modernization has not offered urban residents a satisfactory alternative. The circumstances in which Westernized urban designs became dominant had much to do with rapid urbanization. Old towns grew slowly, and required new sections were carefully added to them. However, modern growth was totally unprecedented. Under that pressure traditional methods of construction proved inadequate, and imported alternatives were not modified to accommodate the rationale behind the traditional forms.

The scale of rapid urbanization must not be underestimated. Recent urbanization in the Arab world was much more rapid than the process had

been earlier in the West. A consequence is the dilemma of dependence on Western-planning solutions. Western technology permits entire sections of a city to be laid out in a short time as well as erection of numerous multiunit residential structures to house large numbers of immigrants. The cost of such projects is enormous, and the residents are rarely psychologically comfortable in these dwellings.

The inadequacy or actual failure of Western-planning theories and designs in many Arabic cities has produced a strong negative response from many native architects and urban designers. Some of this response is rooted in an almost irrational fear of any challenge to or modification of traditional approaches, and some stems from an unwillingness to accept ideas, techniques, or methods not originating within the area or the culture. The largest single response comes from individuals who do not reject Western technology or practices, but who have recognized that they must be applied so that the underlying fabric of Arabic culture is not sundered in the process. Even in Western societies, planning methods have often produced unfortunate results, because cultural and societal patterns have not been considered adequately.

**Gemeinschaft-Gesellschaft Space**

The need is for techniques that reconcile Western-planning practices, on the one hand, and Islamic culture of Arabic cities, on the other. We address only one aspect of this problem: devising modern subdivision and building codes. Arabic Islamic towns should be developed in a manner that will retain certain important features. These include four basic components: privacy for each individual dwelling; small, intimate, neighborhood-based public spaces, where social mingling may occur without violation of principles of family privacy or religious observance; clustered commercial, governmental, and manufactural activities to meet the demands of modern economic existence; and a compact, low-rise overall character to retain features associated with climate and family privacy.

The creation of a hierarchy from the intimate, private space of a dwelling to the public space in the urban center is the most important underlying principle for proposed building regulations. In effect, we propose a dual or even tripartite network of urban spaces. The physical character of the units must be appropriate for their intended activities. The semiprivate space of a neighborhood would fit the Western concept of "gemeinschaft" space, and the public units in the urban center as well as the economic clusters would be akin to "gesellschaft" space. The concept of a gemeinschaft-gesellschaft continuum, rooted in nineteenth-century European social theory,

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9 Youssef Belkacem, Bioclimatic Patterns and Human Aspects of Urban Form in the Islamic City, in The Arab City, footnote 8 above, 10.
is an explanation of the transition from a rural small-town-based society to an urbanized one. In many respects a similar process is occurring in the Arab world.

Gemeinschaft society is organized around the family or kinship group, within which roles and responsibilities are defined by traditional authority, and in which social relationships are instinctive and habitual. Cooperation is guided by custom. Contrastingly, social and economic relationships are

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based on contractual obligations in a gesellschaft society. The principal groups that influence an individual are no longer restricted to kin; instead they include professional peers. Family associations become secondary, and social relationships are based on rationality and efficiency, not tradition.

Human society needs aspects of both gemeinschaft and gesellschaft organization for development and continuation. Western planners have tried for decades to propose solutions that would create settlement forms where both types of relationships coexist. The need for a dual set of relationships is especially great in an Arabic town where custom and religion isolate familial and kinship units from social intrusion. The neighborhood-unit concept, developed by American planners, can provide an instructive model for planners and designers of modern Arabic urban centers. The neighborhood unit is the focus of gemeinschaft relationships. Gesellschaft activities occur outside this unit. Schematically space is bifurcated (Fig. 7).

As Saudi planners actively seek to reconcile traditional and innovative approaches, they must develop building codes and other planning documents to ensure orderly, controlled development so that the largest number of persons enjoy the benefits. To implement this goal nine basic principles must be kept in mind. Internal and external spaces must reflect contemporary uses and contribute to the mental and physical health of residents. Islamic tenets of excluding public sounds and views from private places must be respected. Climatic conditions should be accounted for as should passive heating and cooling systems. Consumption of energy for transportation and air conditioning should be minimized. Development should foster simplicity, economy, and concentration. Two levels of movement should be emphasized: pedestrian for a neighborhood unit, and vehicular for interneighborhood circulation. The social environment should encourage religious, cultural, educational, physical, and recreational activities at both the neighborhood and citywide levels. Landuses should be controlled through regulations on zoning, subdivision, population densities, and structural heights. A hierarchy of space should range from private dwellings through neighborhood semiprivate units to public areas in the urban center.

Planning and urban development in Saudi Arabia are in a state of flux, but recognition of the need for comprehensive, environmentally sound urban development is emerging. A parallel emphasis on the limitations on development, imposed by cultural and social norms, is being widely recognized. The convergence of these two perceptions should result in a strong role for environmentally and socially balanced planning in Saudi Arabian society.

Conclusion

Geographers and planners in the Arab world are realizing that a solution to many problems associated with rapidly expanding urban areas must be found in a synthesis of Western technology and traditional Islamic concepts
of urban life. Importation of Western technology and practices like urban renewal, subdivision planning, or garden cities has not solved the problem. In many instances the procedures exacerbated the situation or created new problems. Adoption of a uniform code for subdivision and building would allow orderly development for the rapidly expanding Arabic cities and will preserve important traditions of a society that is being transformed.