

## **The Prominent Physical Structures as Structuring Elements in the Built Environment and the Wilderness of the Arabian Peninsula**

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(Received on **5/9/1417**; accepted for publication on **20/1/1418**)

**Abstract.** Villages, towns and wilderness of the Arabian Peninsula in the traditional era (before the establishment of Saudi Arabia in 1932) were characterized by prominent physical structures which were built for highly practical purposes. These include road and sacred place markers, warning and defense towers, ramparts and fortified gates as well as minarets. After the establishment of Saudi Arabia and the spread of security by the force of government, the structures which were built to support warning and defense of human properties were discontinued from production. Other structures in the form of landmarks emerged and continued till present time. The domain of a physical structure flourished as a result of dynamic cultural, political and ritualistic influences.

This study identifies and classifies the many kinds of prominent physical structures in presentday Saudi Arabia. It identifies the forces behind their initiation, transformation and evolution, and it attempts to supplement scholarship in the fields of architecture, urban design, and planning with regard to their role as structuring elements in the built environment and barren landscape. The investigation argues that prominent physical structures were found to physically organize the urban and architectural forms in a way to serve practical functions of surveillance, orientation and practice of rituals. They participate in setting up meaningful schemata which influence the human behavior as a cultural process.

### **Introduction**

The traditional settlements and landscapes of the Arabian Peninsula are distinguished by rich regional traditions in the form of physical structures which act as domains that control the arrangement of physical environment: visually and symbolically. These

include but not limited to varieties of structures in the form of road and space markers, ramparts, minarets, towers and gates representing a wide range of cultural and architectural motifs. Rudofsky, named such structures and alike by "architecture without architects"[1]. This research probes the widely distributed physical structures and examines their domains and symbolic importance within the overall spatial structure of the settlements and wilderness of the Arabian Peninsula.

Historic walls, towers, and fortified gates were used to hinder strangers and enemies while minarets and markers for roads and ritual spaces were used to guide and welcome worshippers, travelers and pilgrims to sacred places and paths of travel. Such structures are among the most important antiquities of Arabia [2,3]. They were erected, used and maintained for centuries as part of overall systems of ritual, orientation and defense. They predominantly relied upon a variety of indigenously developed architectural and construction techniques, leading to the development of various distinctive archetypes. Today such physical structures, though functioned as domains of yesterday still represent an important heritage for designers searching for regional identities in their struggle for authentic architecture and urban design contribution.

The tradition of building of historic walls, towers, and fortified gates developed during times of political instability that were characterized by intertribal raiding [4]. During those times, settled populations often had to show power and alertness as well as to fend off attacks from nomads, who roamed the Arabian peninsula. The fractiousness of tribal loyalties and changing allegiances contributed to a general flourish of defensive structures.

Other prominent structures are seen on the caravan roads and the boundaries of *Al-Haram* around Makkah as well as sacred places within *Al-Haram* which define the space of ritual such as those in *Al-Arafat, Mina and Al-Jamarat*. Minarets are prominent forms of towers which are attached to mosques or within their boundaries. The sacredness is linked to the place as in the case of tombs and mosques or to place and time as in the case of pilgrimage and *Omrah*.

The unification of Saudi Arabia in 1932 brought intertribal period to a close. Today, political stability, together with an attitude of modernization in Saudi society, has caused a drastic transformation in both the form and the perception of these physical structures. Traditional road markers as semiological system have been lost amid new patterns of roads and rerouting of caravan routes. Many of these structures have been neglected and destroyed. Wood notes that in the past, as in the modern times, ideas and techniques had their origins, were developed to a peak, and slowly declined as they lost relevance for the society which created them[5]. Even *murgabs*, the highest and most prominent architectural features of traditional settlements, have in most cases been left to crumble into the earth from which they grew. Traditional caravan and camel trails

were rerouted in favor of paved roads and new system of road signs. The markers that define sacred territorialities and places of *Al-Haram* around Makkah also have been subject for transformation too..

The domain of a physical structure is envisioned as the environment which can be identified by a territorial space dominated by an element of attraction in the form of either a physical structure or a space. This is a part of the urban design process which deals with the improvement of the physical quality of the environment. The domain of a physical structure extends territoriality from macro to micro-environment. The space between or around the structure is the domain of the structure itself.

The physical structure can function as a focal point of a place and space as in the case of minarets, landmarks or beautification sculptures. It is a key physical feature of the external space. Its form and image focus on the relationship of the domain represented by the external environment and the overall image and identity of the structure.

The domain of an environment pinpoints the boundary of very specific physical elements like mosques, tombs, sacred and worship spaces, squares, roads, and towers and the way of grouping them in space. Then the identity of the specific space is given unique importance to users and intruders. Since every domain has different physical characteristics, the range of specific form may vary extensively from one activity to another. The perception of the space defined by a domain, the internal and external form and image are strongly oriented toward the form-making aspects of the physical structure.

This investigation hypothesizes that "the physical structures" continue to motivate and supplement their viewers with meaning since these physical forms cannot be seen in isolation from the whole environment, and must be viewed as part of a domain within a total social and spatial system.

This study aims to identify and classify prominent physical structures and their domains and the forces behind their emergence, transformation and evolution in traditional and contemporary periods in Saudi Arabia. Some physical structures had their origins in the pre-Islamic era and others are in the process of design. The study also aims to supplement the profession and scholarship in the field of architecture, urban design and planning with regard to the role of prominent physical structures as structuring elements in the built environment and barren landscape.

### **Research Methodology**

The impetus for this study was a field survey of several archetypes of prominent physical structures in diverse settlements and the wilderness of Saudi Arabia, conducted from 1990 to 1997. Research took the form of an extensive field survey. The survey

included the settlements built before 1932, prior to the unification of Saudi Arabia. Most of those settlements were walled except those in *Asir* and *Tihama* (Fig. 1). Several research works were also consulted [6-16] along with several publications by explorers and scholars promoted in the form of monographs on more than forty-eight villages and towns.<sup>1</sup>

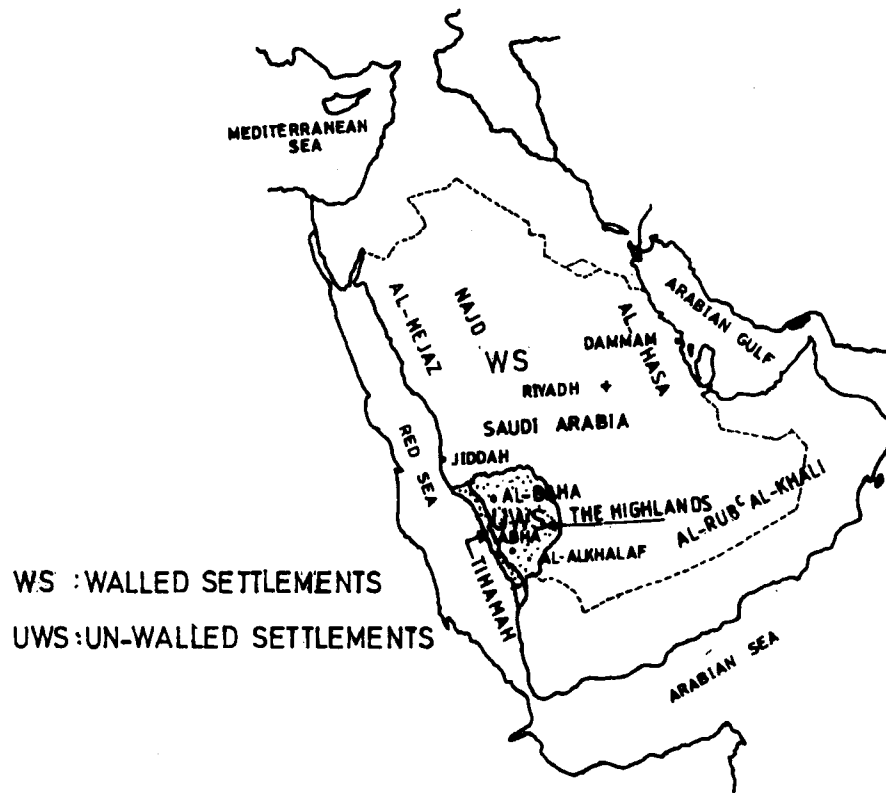


Fig. 1. Map of Saudi Arabia showing the location of investigated traditional prominent structures in walled and unwalled settlements.

<sup>1</sup>The General Presidency for Youth Affairs chose more than fifty local experts each of whom wrote about one particular place and covered the most important aspects of that place in terms of location, history development and points of distinctions. Such places covered a wide spectrum of villages, towns and cities in the Kingdom of Saudi Arabia.

### Origin and Taxonomy of Physical Structures as Bases of Regionalism

The physical structures in the form of minarets, road signs and sacred space markers, ramparts, towers and fortified gates were of the most prominent vernacular forms in the pre-state era in Saudi Arabia. These physical structures were capable of identifying space domains: physically, symbolically and ritually. In their traditional development, they provided an eloquent narration of local architectural, religious, socioeconomic, cultural and political history [17,18]. They were registers of social events and codifications of moral principles and cultural values that made life meaningful in the Arabian settlements and barren landscape.

Geographically, the Arabian Peninsula is divided into five distinct regions: *Najd* plateau; the heart of the peninsula, the *Hejaz*; the lowland between the Red Sea and *Najd* Plateau, *Al-Hasa*; the lowland between the Arabian Gulf and *Al-Dahna* sand dunes, *Asir*; the high lands in the south western part of the Arabian Peninsula and *Tihamah*; a strip that is parallel to the highland mountains and Red Sea. Such taxonomy provides a ground for regional architecture in these regions. Through their historical development, these regions witnessed the development of two types of defensible settlements; walled and unwalled. Wealthy settlements (economically or politically) were targets for nomadic raiding. The settlements and wilderness evidenced the construction of three types of prominent physical structures in the form of towers. The first type of towers is witnessed in the wilderness and known as the *rijjm*, a stone heap. These were related to the need to demarcate territorial space. Its earliest forms have been used as a semiological instrument by nomads to denote messages to passers-by of existing life in the wilderness (Fig. 2). They may have later evolved into permanent stone markers known as *amial* (column-like needles) (singular: *mil*), and *a<sup>c</sup>lam al-tarik*, signs of the road. *a<sup>c</sup>lam* would eventually become tremendously valuable to travelers crossing the barren lands of Arabia on pilgrimages to the Muslim holy places of Makkah and Madinah [19,20]. *Amial* is still used to define *Al-haram*: the territorialities of sacred areas in Makkah (Fig. 3). Another type of marker, *shahid*, was used to define lesser spaces such as graves or the heart of sacred areas as in mount *a<sup>c</sup>Arafat* or *Jamarat* in *Mina* (Fig. 4,5).

While the domain of *rijjm*, *mil* and *a<sup>c</sup>lam* gave the wilderness of the Arabian Peninsula distinguishable physical attributes, also served in directing intruders, travelers and pilgrims in the vast wilderness, macro and micro sacred spaces in the Arabian Peninsula to the right, safe and sometime short path of the domain of space.

The second important type of towers served the need of warning and defense of settlers (Fig. 6-10). The warning and defense towers were among the most influential factors of settlement patterns in the Arabian peninsula. These towers have characteristically distinguished the structure of many settlements. The political disintegration which prevailed in Arabia gave the regions as well as individual settlements distinct autonomy. This led to the need for a local system of self-defense. The system of towers was used for both defense and surveillance.



Fig. 2. *Al-Rijm* is one of the most important signage system in the wilderness of Saudi Arabia which indicates the existence of living people.

The allocation of towers established certain formalities such as the enhancement of approach to the traditional settlements as in the case of warning and defense structures. Defensive structures were often the first and most notable structures that faced strangers which might have stimulated their temper. This is in contrast to the minaret which stimulate the sense of peace and hospitality within the settlements. Most of the settlements which were inhabited by heterogeneous social groups were walled and enhanced with a number of fortified gates (*bawabih*) and towers (*migasir*) (Fig. 11,12). They were found in western, central and eastern regions of Saudi Arabia. Towers could be located on the rampart or at strategically defined points in the surrounding landscape.

The unwalled settlements were mostly inhabited by homogeneous social groups. They were mainly concentrated in *Asir* region, south western part of Saudi Arabia. The *husn* or *qasabah* took special and important form in such environment either in the landscape surrounding the villages or interwoven with their built form. Here settlements often lacked walls, and instead relied on natural features of the topography to establish a defensive posture.

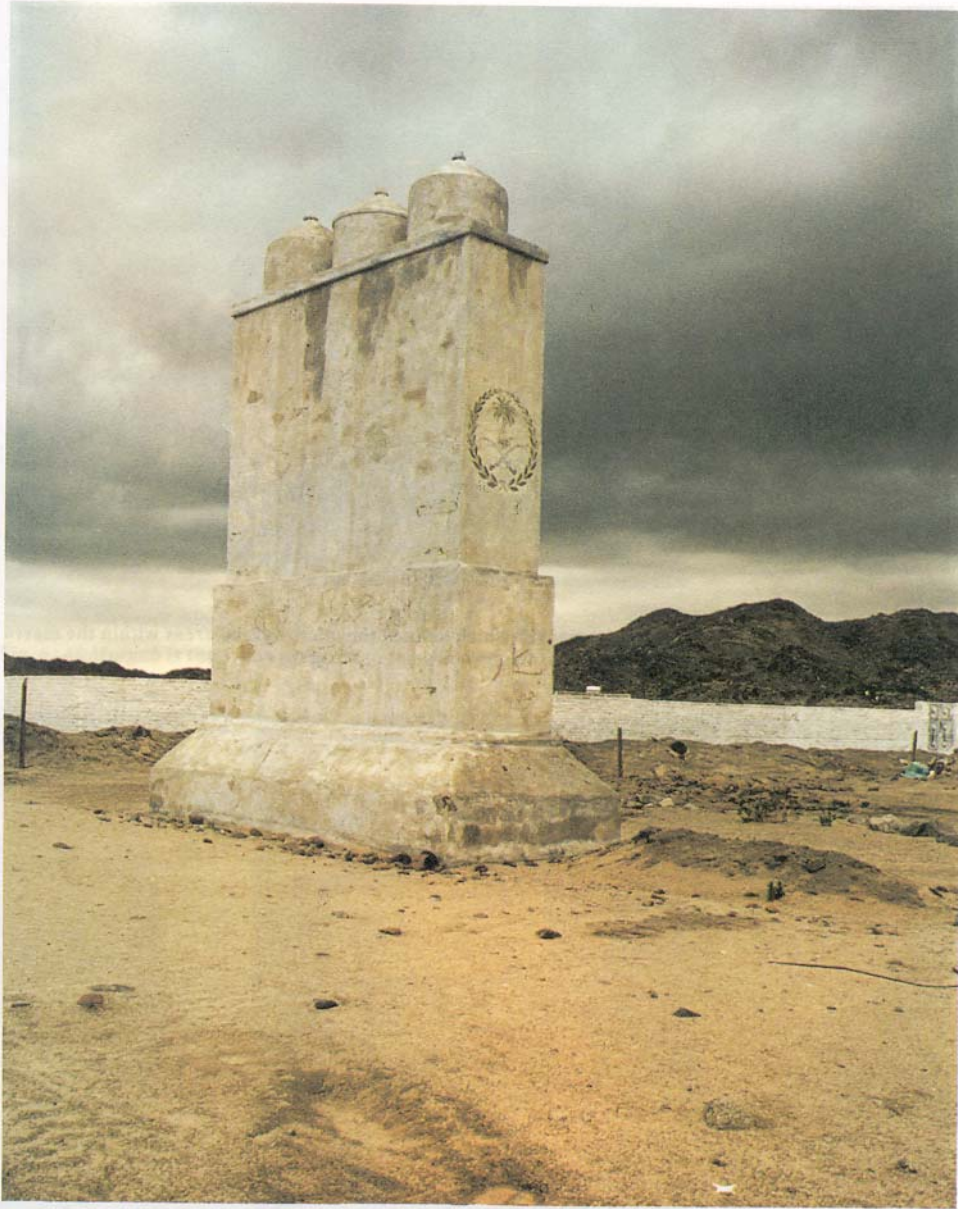


Fig. 3. *Al-Mil* or *Alam Al-Haram*; the marker which defines the macro-sacred area of Makkah.



Fig. 4. *Al-Shahid* on *Jabal Arafat* is the marker which defined the micro-sacred areas within the macro sacred area of Makkah.



Fig. 5. *Alamah* (marker) of an end of *Arafat* micro-sacred area.





Fig. 6. *Al-Murgab* is the synonym given to the "warning and defense tower" in the northern parts of the highlands of Saudi Arabia.

Fig. 6. *Al-Murgab* is the synonym given to the warning and defense tower in north/central Najd.



Fig. 7. *Al-Burj* is the synonym given to the "warning and defense tower" in the central parts of Saudi Arabia.

Fig. 7. *Al-Burj* is the synonym given to the warning and defense tower in central Najd.

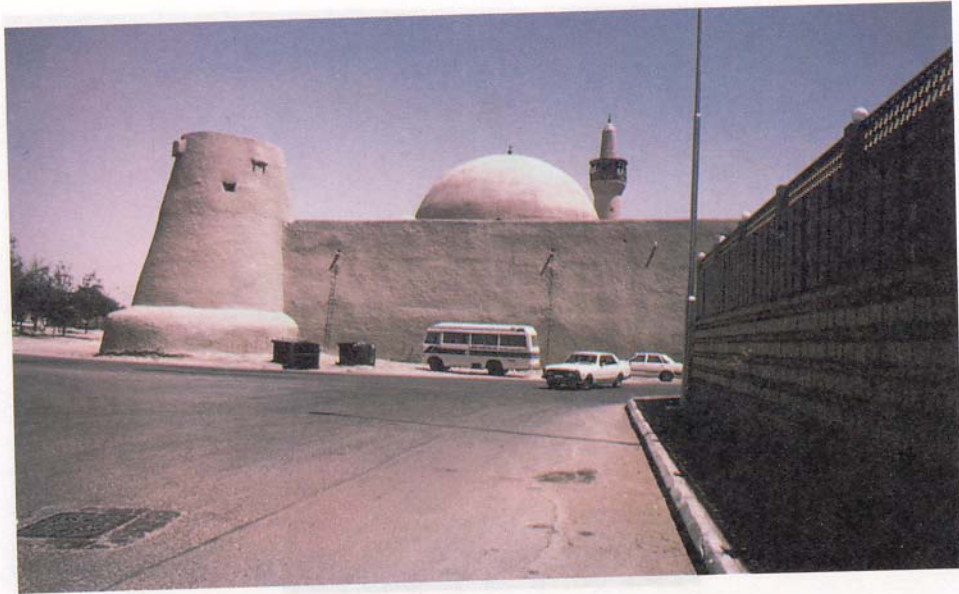


Fig. 7. Al-Qal'ah in Jeddah is the marker which defined the micro-sacred area within the macro-sacred area of the city.



Fig. 8. Al-Qal'ah is the classic name given to the fortress structure in Al-Hassa and Hejaz, eastern and western regions of Saudi Arabia.

Fig. 9. Al-Qal'ah in Jeddah is the marker which defined the micro-sacred area within the macro-sacred area of the city.



Fig. 9. *Al-Hush* is the synonym given to the “Warning and defense tower” in the northern parts of the highlands of Saudi Arabia.



Fig. 10. *Al-Qasabah* is the synonym given to the “warning and defense tower” in the southern parts of the highlands of Saudi Arabia.

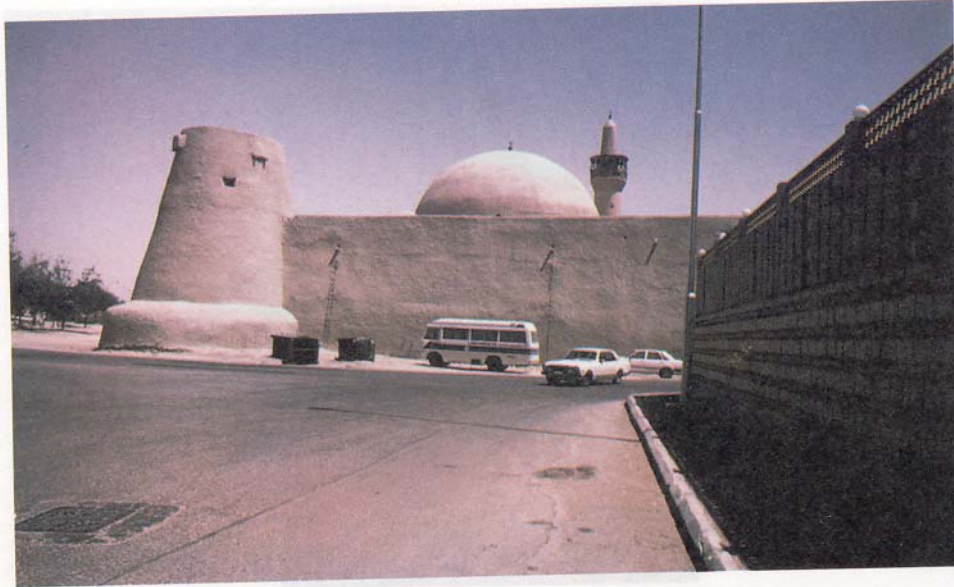


Fig. 7. *Shabab* (well) is the marker which defined the micro-sacred areas within the macro-sacred areas of the city of Medina. It is located in the center of the city and is a well-known landmark.



Fig. 8. *Al-Qal'ah* is the classic name given to the fortress structure in Al-Hassa and Hejaz, eastern and western regions of Saudi Arabia.



Fig. 11. The fortified gates of different walled settlements.



Fig. 12. The fortified towers were distributed strategically on the walls of settlements.

The minaret is the third important type of tower in the Arabian Peninsula. It was emerged and developed with the arrival of Islam in the seventh century. From a purely geopolitical point of view, the rise of Islam represents the most significant juncture in the history of the Arabian Peninsula [21]. Muslims added new physical forms to their worshipping space and called it *minars*; a synonym of lighthouse or landmark of a barren land. Its function was primarily to propagate the calling for prayer in sprawled neighborhoods as the distance between them were far (Fig. 13). The word minaret literally means “sign” which is true to its name. Later, the minaret has been used to symbolize the importance of the mosque and its central role in the Islamic society. The local master builders in every region of the Arabian peninsula contributed to the creation of original forms of minarets. By the end of the pre-state period, minarets had a highly symbolic role, sharing on the skyline of many walled traditional settlements.

Today, old ramparts and fortified gates, warning and defense towers though lost their primary function, possess special importance as they provide historical records narrated by their location, shape, size and character.

Social, political and economic changes not only rendered many of the warning and defense towers obsolete, but took their toll on road markers as well. The most spectacular historical achievement related to road markers was their use in relation to pilgrimage caravan routes that connect *Al-Haram*; sacred areas with the vast Muslim world.

This great system was eventually superseded with the invention and spread of the automobile on the Arabian Peninsula in the mid-1920s. The automobile necessitated the planning of new roads and the establishment of new road marking system. The traditional roads were abandoned as the car brought new transportation criteria, which called for avoiding natural obstacles and bypassing many traditional settlements.

### **Functional Uses as Configurational Modifiers**

The size, height, design, number, and location of historic and prominent physical structures in the form of minarets, road signs and space markers, ramparts, warning and defense towers and fortified gates in the settlements and wilderness of the Arabian peninsula reflected, to an extent, the importance and resources of their setting. Their construction involved ecological considerations, geometric orientation, ritual and symbolic implication.



Fig. 13. A group of traditional and modern minarets, resembled in a way the regional writing and defense towers. The newly designed minarets took the form of the traditional ones of that region.

It is important to examine the physical features of the minarets, road signs and space markers, ramparts, warning and defense towers, and fortified gates and the role each played in the structure of space domain inside settlements and wilderness of the Arabian peninsula. The locations of warning and defense towers and fortified gates were identified to support strategic objectives while the location of a minaret as a part of a mosque is identified to support proximity purposes so the person can reach the mosque after hearing the *athan* within reasonable time and crossing reasonable distance of about 250 meters. The height of the minaret can serve both visual and audio purposes. The road and space markers were subject to drastic changes. Stone posts still denote sacred areas in Makkah while road signs were replaced by metallic tablets and calligraphic lettering replaced indigenous semiology. The semiology provided by the post helps in communicating the message needed by travellers or pilgrims. The fortified gates could be placed in certain places on the wall of the settlement to support certain activities or orientation outside the wall. Every gate has had a name to denote that activity as *bab al-mathbah* in Riyadh which denote the slaughter place outside the wall or *bab al-hasa* which indicated the direction to *al-hasa* town east of Riyadh.

In the unwallled settlements, the warning and defense towers were never haphazardly constructed; on the contrary, they were carefully planned to afford the best possible protection to the settlement. The distribution of such towers throughout a settlement provided an effective and mutual defense and warning system, often enabling residents to resist attackers from a broad line that extended throughout the area of the settlement [22].

Traditionally, the location of warning and defensive towers within settlements of heterogeneous society were in the public domain, while those of homogenous societies like Al-Alkhalaf or Al-Malad were located within the domain of a kin-group. In the latter situation, each residential quarter would generally be protected by at least one *qasabah* or *husn*.

The width and height of the fortified gates were defined as to allow one heavy loaded camel to pass. Each gate had two leafs with one *Khokhah*; a small door within one leaf as to allow the pass of pedestrian and small animals like donkey, mule or horse. After 1932, the unification of Saudi Arabia, the walls, towers and fortified gates were in use for about 15 years. Gradually, the walls were punched in doors known as *Nokbah* or *Thoqbah* through certain houses.

Many of the qualities of the defensive towers set them apart from minarets. For example, minarets have internal stairs that lead to the roof platform, used by *moathen* (caller for prayer). But the roof platform of the minaret was not used as a lookout due to the concern for visual privacy. The *moathen* is prohibited from looking down when submitting *athan*.



Construction systems for such physical structures varied by region. In central Arabia, the *murgab*, ramparts and fortified gates were built of carefully selected and treated adobe with stone foundations. While in Al-Bahah *husns* were built completely of stone. Here the foundation was called *rabadh*, which can be literally translated as "sitting camel." While in central region it is called *baghlah* which can be literally translated as mule. These were metaphoric terms used to designate the ability of the structure to carry the load above.

*Husns* were constructed of rectangular rubble-stone blocks set without mortar [23]. Some *husns* were wide at the base and tapered toward the top, forming an elegant frustum shape. *Husns* were usually constructed to a height of five to six stories.

In Al-Alkhalaf in *Asir*, *qasabahs* were built of mixed stone and adobe. The stone was used for the foundation and the ground floor, while the adobe was used for the higher floors. The adobe courses were adorned with *ragaf*, pieces of slate that projected 15-25 cm. from the wall to deflect rain.

In central region, adobe walls for minarets, warning and defense towers, ramparts, and fortified gates were built in two ways. One was to dig down to a firm sub-base or rock, and then lay stone foundations. Adobe bricks of equal size, joined by wet mud, could then be built up into the walls. The walls were plastered on both sides with a mixture of clay and straw. The second way was to lay mixed adobe in a system of free courses, named *Curg*, instead of adobe bricks each about one cubit high. In this system, the higher the wall went the thinner it would become. Walls built in this way did not require plastering and may not have needed stone foundations. Inside, the multiple floors were often supported on columns built up of round stones held together with gypsum and then plastered to achieve greater strength and a more attractive appearance.

Construction materials were carefully selected and prepared. Stone, *ragaf*, and adobe in south western region of Saudi Arabia were chosen from a particular quarry or from designated places or fields [24]. Adobe was carefully mixed with water, straw, and animal dung for several days. Then it is believed that adobe reached its maximum strength.

One further characteristic of warning and defense tower construction was that often there was a sharp distinction between the inner structure and the outer facade of the tower. The inside was designed mainly to ensure stability and function, the outer structure might be to catch the eye by the carefully treated local materials and building technique adopted. When adobe or stone were used as a covering building material, they produced remarkable textures while the technique of *Curog* or *midmak* might have facilitated the tapered shapes and entasis. Thus, the changing role of master builder with the advent of new building materials and techniques is a part of the planning and design process practiced in the production of new physical structures.

### **Transformation in Physical Structures and Meaning**

Warning and defense structures flourished as dynamic political and social institutions for settlers. Though static in form but eligible to give more freedom for symbolic interpretation [25]. They were used to reflect public awareness and to promote collective action, since they were the most popular visible medium of expression and the most effective physical channel of communication to sound a warning of attack. The structures stimulated the villagers to surpass the nomad in gallantry and proved to them that courage is not the monopoly of nomads.

The builders of warning and defense towers and minarets sought to physically organize the architectural forms in a way to serve the practical functions of surveillance, orientation and rituals. Static objects give more freedom for symbolic interpretation. They succeeded in setting up meaningful schemata which may have been sub-conscious. From far away, the towers are seen piercing the skyline of the traditional settlements and wilderness hinting at both alertness and piety. Upon approach, the warning and defense towers seem to anthropomorphically grow in size, informing the intruder and continuing to feed information about the structure. The sense of verticality along the axis of gravity in towers gradually feeds the visual stimulus and the sense of meaning becomes overwhelming. The most striking feature of the traditional towers are their monumental or sympathetic character.

When the designers of such structures have to substitute adobe or stone with steel and concrete, they are faced with a challenge. They can either use the new technologies to superficially transfer the old images or they can transform them by re-inventing the architectural expression of the mythic values they represent. Both options work, but there is a difference. The process of transfer is facile but debilitating. Transformation, on the other hand, challenges society and renews it as well. This is the challenge, and the reward, that architecture represents in society every time the technology changes.

The unification of Saudi Arabia in 1932 ushered in the transitional stage whereby the communities were liberated from the pre-occupation of defense concerns after the establishment of a strong central political authority but the tower concept transferred to new form of towers. This stage brought the decline of the traditional defense towers and witnessed the rise of new types such as the water, seaport, telecommunication, or high-rise building towers (Fig. 14). The transformation also went beyond functional purposes to more symbolic as those seen in beautification elements and point of interests (Fig. 15).

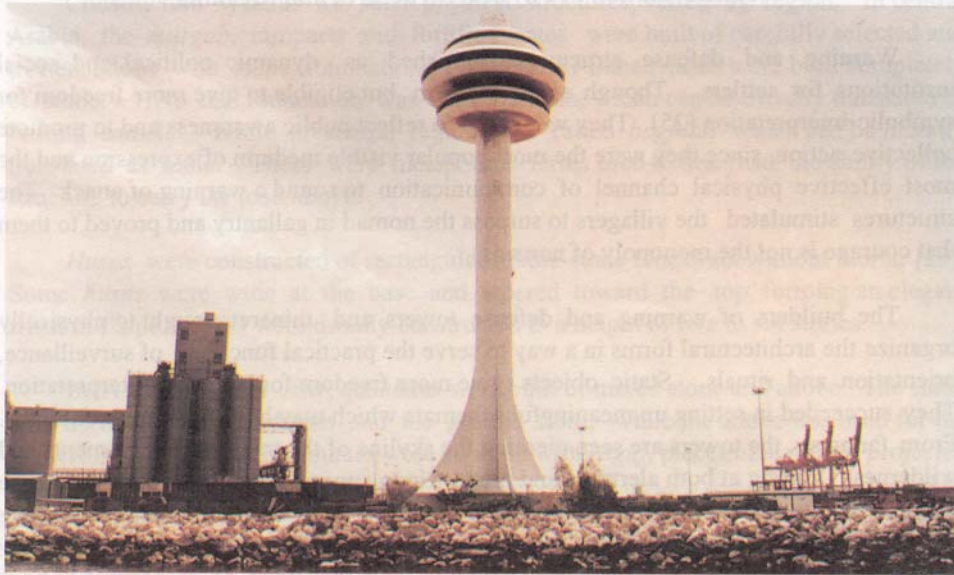


Fig. 14. Newly emerged towers are seen in the water towers, light houses and high-rise buildings.

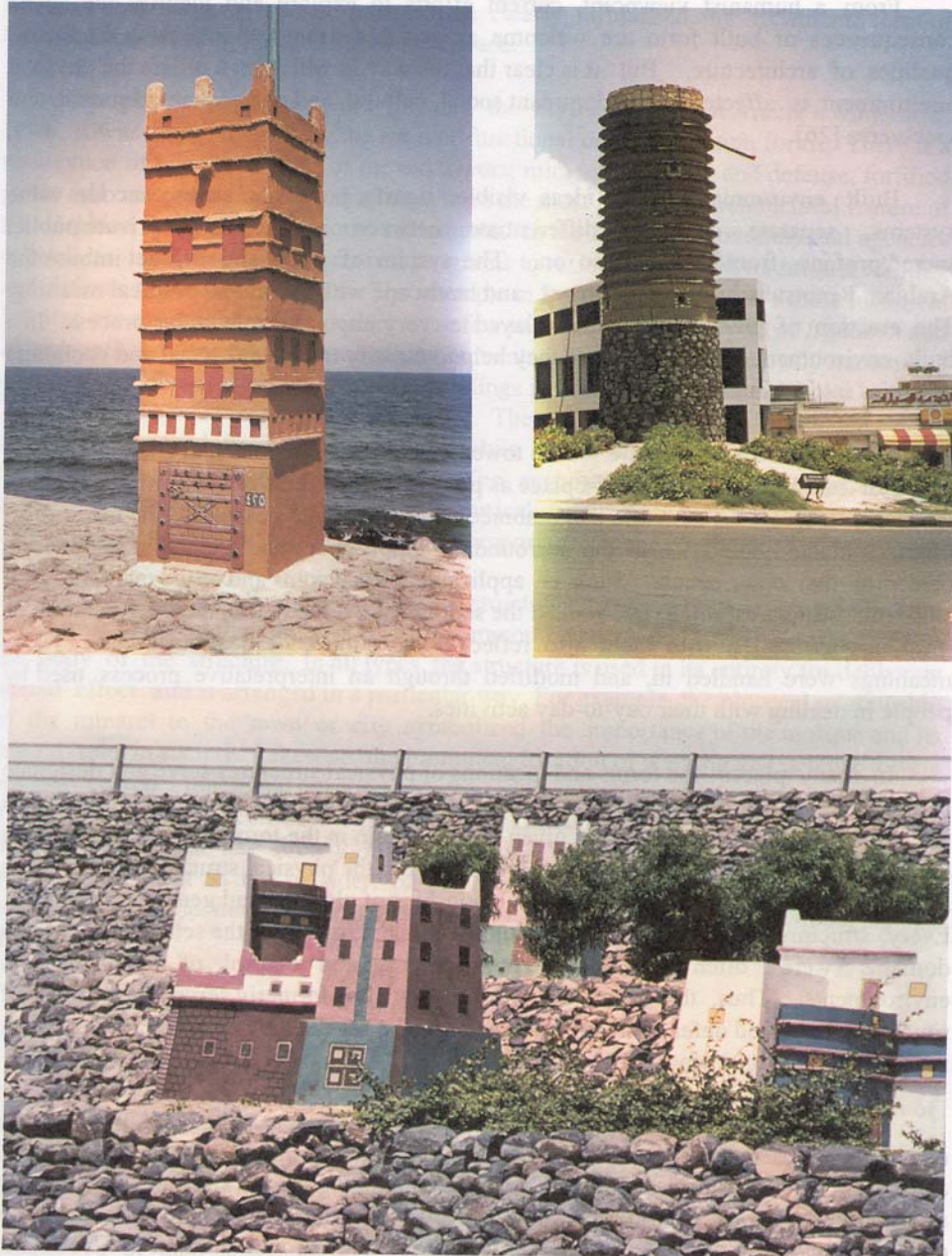


Fig. 15. Several miniatures of traditional physical structures have been used to beautify Saudi cities streets and squares.

From a humanist viewpoint, current efforts to explore and identify the social consequences of built form are welcome aspects of the renewed interest in the formal qualities of architecture. But it is clear that the way in which man orders the physical environment is affected by the dominant social, cultural, and political environment, and vice-versa [26].

Built environments make ideas visible, signify power or status, encode value systems, separate domains, differentiate between men/women, private/public, sacred/profane, front/back and so on. The system of place and artifact imbues the Arabian Peninsula built environment and landscape with social and political meaning. The erection of physical structures played a very important role in this process. In a built environment or vast landscape they help to classify traditional social and economic activities into various relevant domains.

The most striking feature of the tower was often its monumental character, in the sense of its ability to mark off a place as powerful while the slender form of a minaret tends to mark off the structure that embrace it as distinct and peaceful. The tower form often contrasted starkly with the surrounding empty space and seemed to stand in the center of that open space. Such is applicable to road signs and space markers. And since the structures often overlooked the settings of everyday life, the interpretation of meanings associated with them also reflected the culture of local inhabitants. These meanings were handled in, and modified through an interpretative process used by people in dealing with their day-to-day activities.

In many places the forms and locations of physical structures serve and designate local socio-spatial characteristics. The tendency of hierarchy can be observed in numerous variations in the names given to the domain in the form of an attribute which describe physically, genealogically or metaphorically the physical structure, whereby the setting expressed local identities and relationships of physical and genealogical nature. Every structure possess a name that denotes its builder, owner or the setting itself. Such domains were often essential to arrangements and control of local physical environments. Thus, the extent to which the domains formerly served the purpose of ritual, political and defense organization can only be revealed by ethnological studies in relationship to local history.

The influence of the domains of physical structures is perceived in the direct responses of users to the spatial settings of the settlement and landscape in terms of activities, cultural norms, political situation and lifestyles. They create a strong association between people and the constructed environment which lead to the development of an intimate feeling of human relationship with the space. Steeles has observed that man's sense of place is the result of physical, social and personal factors [27]. The arrangements of physical structures in the settlements and wilderness help to locate

domains that serve as social space which clearly influenced the extent and form of communication among people using such space.

New physical structures are piercing the skylines of Saudi Arabia's wilderness, cities, towns and villages in the form of functional or beautification forms. There is a resurgence of interest in some of the old towers; minarets, warning and defense, fortified gates and ramparts realizing that they were the most important architectural feature of the Arabian Peninsula's traditional settlements. In the Kingdom, governmental agencies as well as individuals began revival programs to restore significant traditional warning and defense towers and minarets. The attempts in Saudi Arabia to revive these historical features are encouraging though they were few in number. The *murgab* of *Irgahbeh* and *Al-Shinanih* are considered national monuments, so they are continuously maintained (Fig. 16). Other towers and fortified buildings in Riyadh, Al-Jubail, *Al-Robai'iah* and *oyon Al-Jiwa* were reconstructed (Fig. 17). The old adobe minaret of *Onaizah* Friday mosque was saved from the demolition while the mosque is being re-built with two reinforced concrete minarets (Fig. 18). The reconstruction implies slight changes in design, method of construction and physical appearance while the preservation, rehabilitation, or reconstruction enhance the importance of the structures.

If one compares the types of physical structures that have been investigated so far, it becomes apparent that the most distinct common feature is the formal independence of the body of the structure. In all types, the structure is used in its entirety for deliberate spatial effect and is arranged in a particular way. For example, the physical relationship of the minaret to the town or city symbolized the importance of the mosque and its central role in society. Likewise, the prominent location of warning and defense towers not only served a functional purpose, but stressed the significance of common defense as a part of almost all aspects of life in the region. The role of road markers as beacons in a barren environment has already been alluded to. And beyond these general symbols, which are evident to the outsider, particular settings for towers may have had further meaning to people not because of their physical attributes but because of events that took place there.

### Concluding Remarks

Prominent physical structures in the settlements and wilderness of the Arabian Peninsula are responses to the influence of varieties of forces. The resulted domains of such structures can be recognized as a part of the cultural heritage of the nation as is its art, literature and music. The master builders, architects, planners and municipal authorities had and still have a major role in this modifying process. The findings regard the existing built environment expendable and in need of the new physical structures, irrespective of their character and of what it represents. This is because emphasis is placed on the product and the physical condition, rather than historical continuity which is imperative.

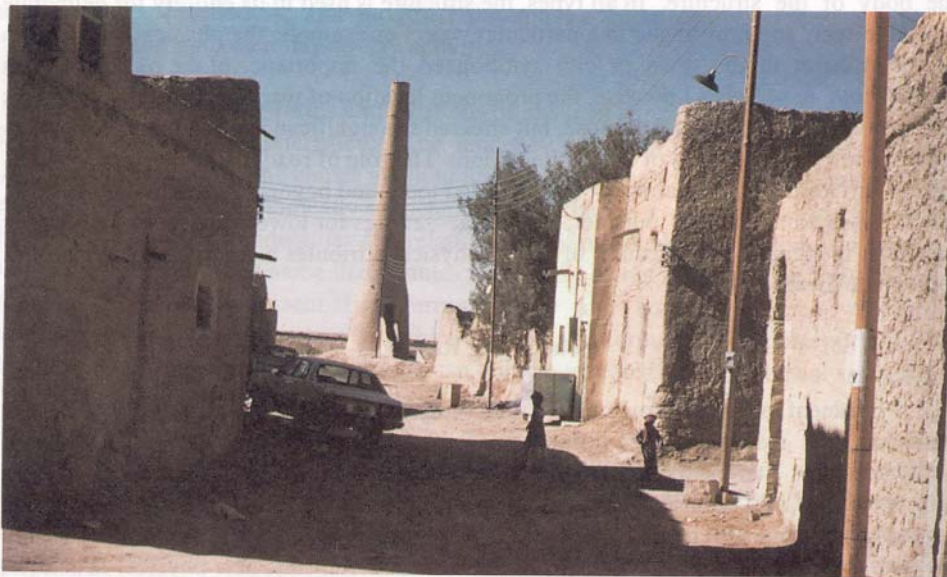


Fig. 16. *Al-Shinanih* and *Irgahih* towers are the tallest structures in the central region. They are maintained and considered national monuments.



Fig. 17. *Al-Masmak* fortified fortress was reconstructed and transformed into a point of interest. In early 1995, it was transformed into a national museum that narrates the history of Saudi Arabia.





Fig. 18. The Friday mosque circular minaret of old *Onaizah*. The recently newly designed mosque is enhanced by the old minaret. It is attached to the constructed mosque with two new minarets.

The originality of physical structure is often distinguished because invention actually connects new and old and involves renewal and transformation of the known. Eventually, the physical structure may motivate the creative mind to the things that must change and allow the professional as well as the user to participate in making meaningful forms.

The rapid development of Saudi villages, towns and cities as well as the roads that connect them in recent years has resulted in remarkable urban changes which influenced such physical structures. It is likely often to have harsh visual contrasts between them. In the past, the materials, the method of construction, and design formulate traditional features which not only had practical value but they authentically conveyed the features of an indigenous architecture and culture.

The old physical structures possessed significance in function and appearance, although the former uses may have changed or vanished. But when they lost their principal function, people were not ready to maintain their appearance. So, most of these structures were destroyed. However, the symbolic significance as an indicator of culture in Saudi Arabia has not faded, and became reminder of indigenous culture and a source of inspiration for future designers. The author has strong memories of the destruction in 1956 of the wall and squared, ten-story *murgab* in the center of Al-Russ settlement. This *murgab* was destroyed because the decision makers feared that it would fall on the *suk*.

Fortunately, there has been a beginning of preservation effort in Saudi Arabia emerged with the establishment of Department of Archaeology and Antiquity in the 1970s, which put some traditional physical structures and settlements under its supervision, and *Al-Jenadriah* yearly festival which put tradition into action. Municipalities and development authorities built an interest in preserving certain part of cities and re-constructing certain elements such as gates and part of town walls as in Riyadh and Jeddah (Fig. 19). Some municipalities considered the remaining warning and defense towers as National Sites and kept an eye on them in terms of reconstruction and maintenance. Since the towers employed building materials and techniques that were not permanent, many are indeed in danger of being destroyed due to weathering effect.

Today, all over Saudi Arabia, it is imperative to conserve the remaining of traditional architecture. One important way is through restoration of existed prominent physical structures whereby the contemporary planning, design and construction of new physical forms has largely been emphasized to landmarks; minarets, beautification artefacts, squares and prominent buildings. Though new forms are built in marble, concrete and steel, and are often given flavor and hints of traditional architecture, most are not indicative of the culture of the Arabian Peninsula which can be considered an unfortunate effort. Since the designs of traditional physical structures hold great symbolic importance, they are products of the history and culture of the people who synthesized and used them.



Fig. 19. Riyadh walls and gates were destroyed in the late 1940's. *Dukhnah's* gate and part of the walls were reconstructed in 1990. This reflects a new attitude towards such structures. Jeddah wall and gates were destroyed in 1947. *Al-Sham's* gate and part of the wall were reconstructed in 1986 as part of the city beautification program.

The physical structures seem to provide creative construction and creation of meaningful ideas. They reinforce the cultural identity of the built environment and wilderness. Structures like road markers and towers helped man to identify and explore the built environment and the wilderness whereby, through his awareness of cultural values, environmental conditions and knowledge of the areas, these seem to provide him with a living environment characterized with sense of local authenticity.

The physical structures are important intellectual and physical foci. Both the type of identity projected and the degree of integration with the built environment and wilderness are factors that influence success or failure of the relationship between the domain of the structure and environment. For symbolic, social, ritual and practical reasons, the physical structures link the man to the environment.

Identity, in physical, ritual, functional or social terms, foster the feeling of not being lost. The type of identity articulates the physical structure's contribution to the well-being of its users as well as providing social and intellectual stimulus.

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## المباني الأعلام كعناصر مؤثرة في بيئة المملكة الحضرية والقروية .

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(قدم للنشر في ١٤١٨/١/٢٠هـ، وقبل للنشر في ١٤١٧/٩/٥هـ)

**ملخص البحث.** تتميز القرى والمدن التقليدية والمفازات في المملكة العربية السعودية بمنشآت اعلام بنيت لتحقيق اغراض خاصه . وتشمل هذه ولا تقتصر على : علامات الطرق ، الأماكن المقدسة، ابراج المراقبة والدفاع ، الاسوار والبوابات وكذلك المآذن .

بعد تأسيس المملكة العربية السعودية واستتباب الأمن انتفت الحاجة الى الانشاءات ذات الصبغة الدفاعية وتوقف انشاؤها فيما انبثقت للوجود فيما بعد معالم ذات طبيعة متجددة مثل العمائر البرجية ، ابراج المطارات والمواني والاتصالات . ولا شك ان هذه المعالم تأثرت بالعوامل الثقافية والسياسية والشعائرية المتجددة.

تهتم هذه الدراسة بتحديد وتوصيف الانواع المتعددة لتلك الاعلام منذ قبل الاسلام وحتى الوقت الحاضر . وتهتم كذلك لبحث الحثيات وراء قيام مثل هذه الاعلام والتحويلات التي تجرى عليها مع الزمن .

تحاول الدراسة تدعيم المعرفة في مجال العمارة والتصميم الحضري والتخطيط بفهم دور تلك الاعلام كعناصر تأثيرية في البيئة الحضرية والقروية واهمية تلك الاعلام في ترتيب وتنظيم البيئة بأسلوب يخدم الوظائف التي من اجلها اقيمت وكذلك في بناء الصور الذهنية ذات المعاني والتي تؤثر على سلوك الانسان.