

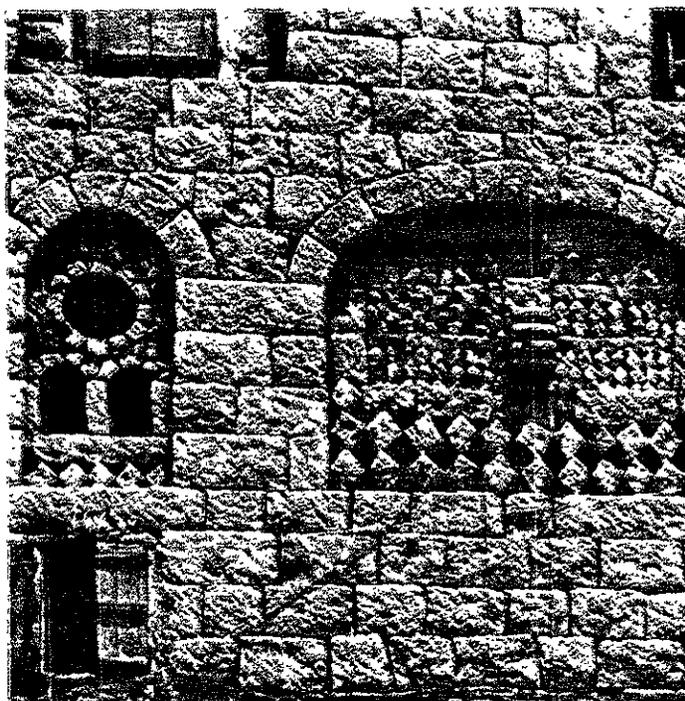
Twenty Years of Change in the Built Environment of Yemen (Part II)

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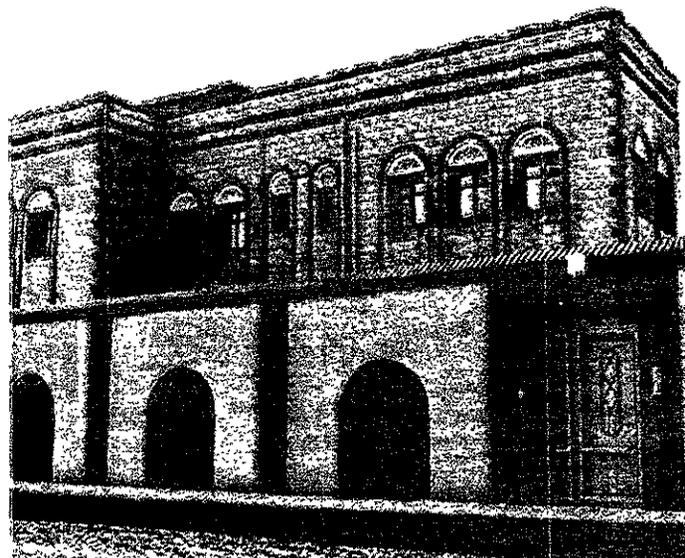
TRADITIONAL MATERIALS AND STYLES

Traditional materials and building techniques were related to the natural regions described above. Thus, thatch construction only existed in the Tihama, while stone construction (hajjar) prevailed over the central massif, alternating with construction in raw - earth blocks (libn). Raw earth - block construction appeared wherever the material was available, but the best examples may be found on the peneplains from north of Sana'a to the southeast of the country. Another type of raw earth construction - by layers, known as zabur - was characteristic of the north and the northeast. Use of baked bricks (ajur) appeared in the Tihama and in the major towns of the highlands : Sana'a Dhamar, Rada'a and, to a lesser extent, Ta'iz. Floors and roofs were made everywhere according to the same principle: joists or tree trunks were disposed at regular intervals' covered across with branches and a thick layer of sifted earth. In the interior, walls were subsurfaced in mud and rendered with lime or gypsum plaster, while roofs might be left with the earth exposed or waterproofed with lime plaster. Stone shafts and slabs might be used in the most primitive constructions instead of wood joists and branches.

Regional distinctions were affirmed through the choice of wall finishes, decorative options, and the treatment of openings. With the exception of brick houses in the Tihama which might have had their front elevations entirely plastered and carved, the decoration of brick and stone walls consisted basically of variations



Stone inlays, Rada



Villa in Sana'a, completed in 1990, with stone for the building and concrete blocks for the yard walls.

on diamond and zigzag reliefs. Otherwise, external decoration only appeared in two major forms : whitewashed geometric designs on stone walls in the western mountains, and bands of red and yellow ochre paint around the openings and roof lines of the zabur buildings of the Eastern Plateau.

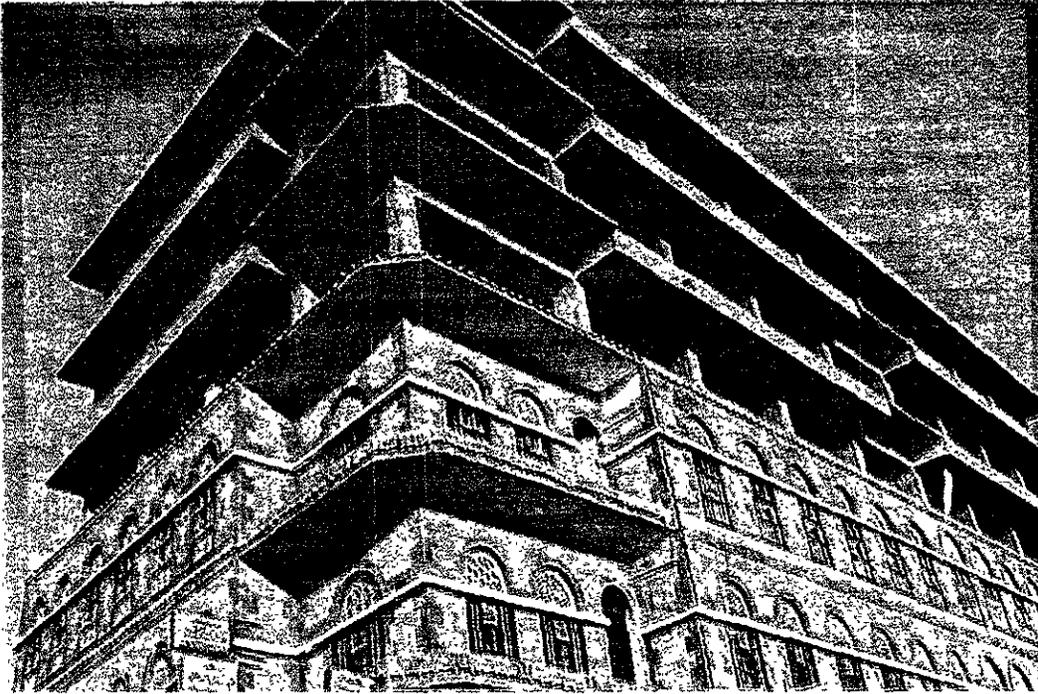
Interiors, however, which were generally rendered in lime or gypsum plaster, could be considerably embellished with carvings, especially around windows and fanlights. Alabaster, the original material for fanlights, had largely been replaced even before the Revolution through much of the country by takhrim - a combination of stucco tracery and colored glass panels that afforded the opportunity for a great variety of designs. Rooms also characteristically featured niches, built in cupboards, and plaster shelves which were usually also the object of decoration.

NEW PROFESSIONS

At the end of Civil War master mason (usta) still served as both designer and builder of three dimensional space.

His qualifications were guaranteed by a long process of apprenticeship and his subsequent acceptance into a professional league. For him, design of space was not predetermined by conventional drawings, but was developed in the act of building. Repetition of basic functional models was common and followed established stereotypes. The 'usta might also have served as contractor (muqqawal) within the restricted practices of the time.

Since the 1970s, however, new building - related professions have emerged, and by 1990 the role of the master mason had



Concrete frame and stone facing in construction, Sana'a, 1990

considerably changed. For example, the 'usta could not always meet the organizational challenges of new materials and programmatic demands. Consequently, many were relegated to working as concrete masons in buildings produced by contracting firms, affirming their skill and personality in the final stages of construction, when finishes were carried out in stone or brick. Contractors (*muqqawal*), on the contrary, represented in 1990 a well-developed category. Their work depended on economic profit derived from the act of building, regardless of the intrinsic quality of the design or the origin of the project. Ideally, this would require the assembly of industrial components and basic prototypes with a minimum of formal variation and with quality demands set by the market. The other group presently involved in construction are design professionals (*muhandis*), either civil engineers or architects. They were originally associated with roles in public administration and family enterprises, working occasionally with contracting firms for large-scale ventures. Their necessity was first justified by the bureaucratic

procedures of building permits. It is, however, in their work that a deliberate search for new models or interpretations of the traditional heritage can be recognized, however filtered by drawing-board discipline.

NEWTYPOLOGIES

Concrete-frame and concrete-block construction first entered the towns of Yemen through the influence of the Egyptians who came during the Civil War. With these new materials came two new dwelling types: the three- to four-story apartment building with shops on the ground floor, which first appeared in the main towns, but which was later adapted, with different textural treatments, to roadside development; and the single-story villa sited in the middle of a walled yard, which became favored by the new urban elite, and which has also appeared in impoverished versions in fringe areas around the country's main towns. Of the two forms, villas have offered the most fertile ground for the introduction of exotic plans, volumes and textures. But the first villas actually offered a fairly standard spatial organization, not much different from that of an apartment, with a reception

zone separated by a door from the central hall or corridor onto which family rooms opened.

In villas, a stair to the roof did offer the potential of expansion, and by 1990 many villas in Sana'a had expanded upward and assumed the bulk of pre-Revolution suburban houses. These had been set in the middle of orchards, and which offered two or three stories, with living quarters on the ground floor.

In rural mountain areas, expansion in height also followed an initial proliferation of single-story structures. The main difference between these and earlier mountain houses, once they have grown to the volumes of their predecessors, has been functional: the ground floor is now used as living quarters, not for storage or quartering of animals. Meanwhile, in the Tihama new houses have tended to adopt the volumes of the traditional brick houses, with baked-clay brick being substituted for concrete block. Such structures have infiltrated former zones of homogeneous reed construction. Variations of the provincial mountain type just described have also appeared in the foothills, built mostly in concrete block with characteristic painted decoration.

MATERIALS AND FORMAL COMPONENTS

In the early 1970s the poor quality of reinforced-concrete construction in the country initially worried both national leaders and foreign advisors. They recommended a reversion to construction in local materials, inspired by local forms, as exemplified by public buildings erected at the time. However, the scarcity and spiraling cost of timber eventually gave the pretext for the generalized adoption of concrete for floor and roof slabs and for window and door lintels. This occasionally allowed for the translation of traditional wooden features into elements of a new formal idiom. The combination of concrete frames with infill stone walls has now become generalized, especially in the main towns.

The countrywide acceptance of stone, now the predominant material for infill wall construction, may have in part been due to its identification with permanence and status. In corporate and institutional buildings the trend soon emerged to explore the possibilities of stone, following formal conventions more or less related to the "established tradition" or to models current in the Middle East.

"International Architecture" was scantily, although emblematically, represented. Religious buildings did for a time reveal the conventions of the country subsidizing their construction, causing concrete domes to become features of large new mosques. But by 1990 stone walls, and especially stone or brick minarets, were regarded as more in keeping with the formal standards of the local past, not with standing the acceptance of a wider range of textural variations.

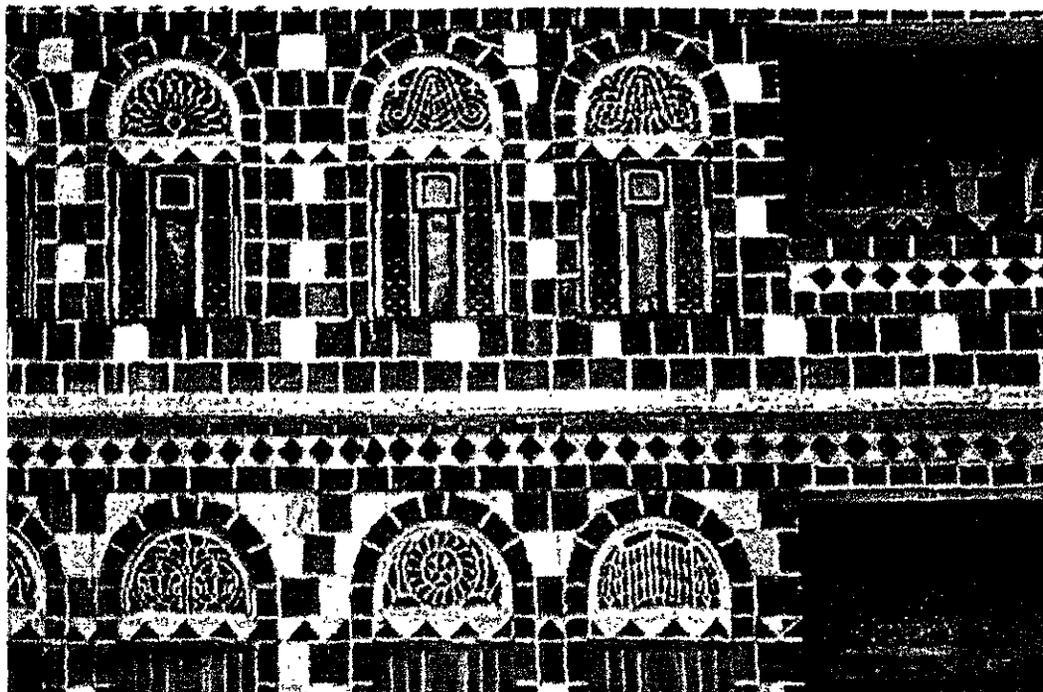
In the north a standard of stone architecture had been set at the time of the last Imams, especially in Sana'a and its effects were still being felt in 1990. It was characterized by a smooth finish and hairline joints, with a preference for black lava stone in quoins, friezes, and around openings. After the Revolution a northward migration of southern masons brought coarser but faster and more showy techniques to the

north's main towns. This contributed to the formation of composite styles, in which unusual cuts and treatment of joints were further enriched by the variety of colored stone available. Black basalt, white sandstone, and gray, green, orange, yellow, brown and pink lavas increased the possibilities for inlaid designs, juxtaposed courses, or random patterns of different colors on the same wall. Mechanically cut stone further facilitated this process, so that some new buildings became saturated with different techniques.

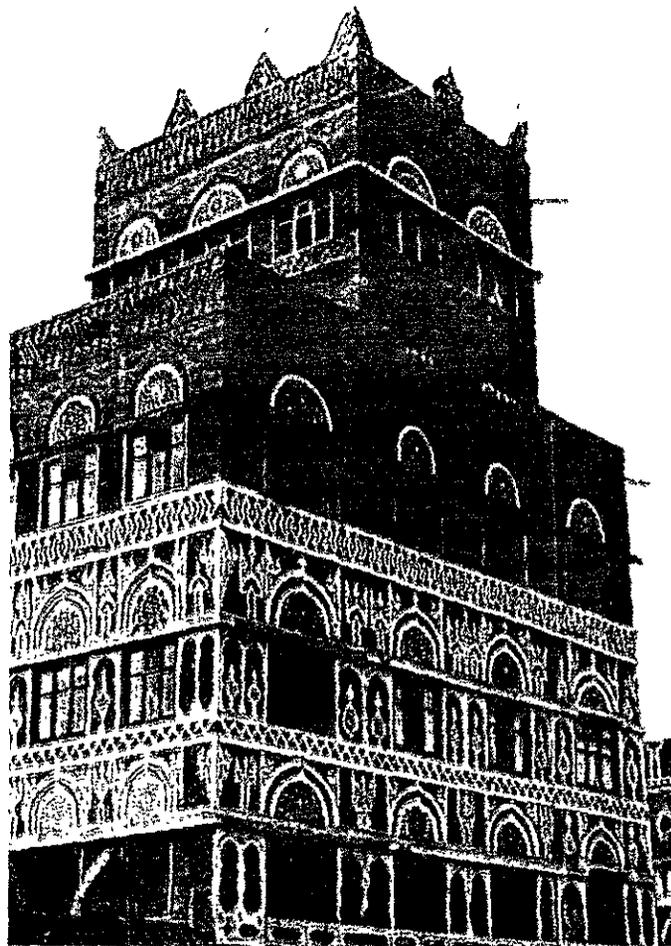
Machine-cut stone appeared around 1984 in the major towns and contributed to a revolution in construction methods and in the appearance of building. Thus, infill walls for concrete frames could now be made in concrete blocks instead of solid stone, with the whole covered with stone facing to maintain the "stone building" look. Decoration now borrowed both from traditional stonework and from themes that used to be specific to brick decoration. The effect was often closer to marquetry than to the woven patterns traditional stone or brick reliefs brought to mind. Stylization of the traditional vocabulary also tended to simplify the designs, both as a method of production and as an expression of taste, sometimes leading to the invention of new forms. And, with the new prevalence of machine-cut stone, hand-hewing (which in the main towns had for a time been considered too rustic) returned as a symbol of good workmanship affordable only by the rich. Thus, by 1990 it had become a signe of distinction to hand-finish the visible face of machine-cut blocks.

Of all techniques, earth construction was the most affected by the arrival of new materials, procedures and fashions. Although by 1990 construction in **zabur** was still common in the northern and northeastern highlands, the result was often debased by the concurrent appearance of concrete and stone.

The cost of **zabur** construction, if intrusted to a professional builder, was now as high or



Stone and concrete frame walls, Ibb, 1990



New building in traditional baked-brick style, Al Rhawdha, 1990

higher than that of construction in stone. The effect was even more severe on construction with earth blocks, **libn**. This has now been replaced by concrete blocks in all but the most remote areas, although in more costly buildings it has been replaced by stone and baked brick. Baked brick from traditional kilns has also returned to a limited extent in its traditional areas—alone and in combination with stone or concrete and often associated with a certain revivalist taste. And the use of industrialized brick was beginning to appear by 1990.

Changes in the building idiom were also well expressed by modifications in the proportions, dimensions and rhythms of wall openings. Windows became larger and more uniform, giving a more regular disposition to elevations. It was also part of the exuberance of some new buildings to display a variety of windows, glass surfaces, and plaster screens. However, lately the treatment of openings has manifested a more deliberate concern with sober composition.

Colored glass and stucco tracery fanlights (**takhrim**) have also contributed much to the appearance of new buildings. The

simplicity of this technique and the low cost and availability of the raw materials, together with the possibility for easy embellishment, have caused takhrim to become an expanding business, appearing to many as an exemplary adaptation of a traditional technique. A great diversity of shapes has been created to satisfy new decorative needs, with attempts at naturalistic representation, usually characteristic of provincial situations, being added to conventional patterns. Yet, at the end of the 1980s, possibly because of the fascination with new technology, the fashion had arisen of using aluminum for the tracery. The area of Ibb, in the southern highlands, is particularly representative of this trend, but Sana'a reputedly a city with a more conservative taste, had already acquired its share of examples by 1990.

The carpentry of windows and doors, which left a few remarkable examples, was in decadence well before the Civil War, especially because of the 1948 exodus of Jewish craftsmen to Israel. Instead, by the 1970s painted metal doors were appearing all over the country, offering a fertile new ground for individual creations. Mechanized carpentry was then almost exclusively applied to new types of window frames. Throughout the 1980s aluminum frames were becoming

common, at the same time that imported wood doors were becoming a sign of wealth. A traditional carpentry center was created in 1990 as part of the rehabilitation of Sana'a Old Town.

In terms of interiors, the greatest differences have concerned the proportion of rooms (which have tended to become wider and less elongated), and in the passage from exposed joist to flat ceilings. Thinner interior walls have also meant the suppression of niches and built-in cupboards. Rendering in cement and paint has to a certain extent replaced gypsum plastering; the older technique is still used in better-quality buildings, but only after adopting modern standards of surface regularity and smoothness. And, although carvings are still fashionable, they are now costly to produce and tend to be intricate in an effort to affirm the owner's status.

By 1990 new trends in the various areas of the country were not sufficiently well defined to allow definitive statements about the development of new regional styles, but some formal conventions had become clear enough to place a building in its regional context. The exploitation of new materials and forms has widely expanded the possibilities of personalizing a building. This has meant, at a certain point, the assemblage of a variety

of shapes and textures, with a conspicuous tendency to value polished, even glossy surfaces. Alternatively, as if in a reaction to this tendency, distinction has come to be associated with sobriety, quality being evinced by features requiring particular skill or cost of execution.

In the countryside, whimsical contributions of personal intervention have become important. Quite often marks of distinction have been introduced by the mason or by the owner. Most commonly these include the name of the builder or owner, or the date of construction. But they might also include the usual post-Revolution imagery (weapons, cars, planes) and simple calligraphic inscriptions. The use of color has also become a common feature in the decoration of buildings, both as the formal exploits rendered over metal doors and concrete surfaces and as the combinations of different stone inlays. Stone new formal patterns have appeared, with a rules of design and execution, but in most cases decoration is the result of personalized attempts at a new figurative imagery.

Thus, unaffected signs of distinction have come to punctuate the rural building scene, using the available materials and skill and unconcerned with formal stereotypes. ❀

Synopsis

* **Subject of the Issue**
Project of Developing the Area Surrounding the Holy Mosque.
 Prepared By: Dr. Abdelbaki Ibrahim

The Center of Planning & Architectural Studies was assigned to set propositions for a project to develop the area surrounding the Holy Mosque in the frame of all the related development projects. The detailed studies included the historical development of the area with its heritage & urban aspects and the possibility to link the past with the present and the future without harming the Islamic concept. These studies offered many alternatives in architectural design & planning in the frame of bases and criteria which suit the nature of the place to choose the most appropriate one and put the final concept for the comprehensive development of the region. (P. 14)

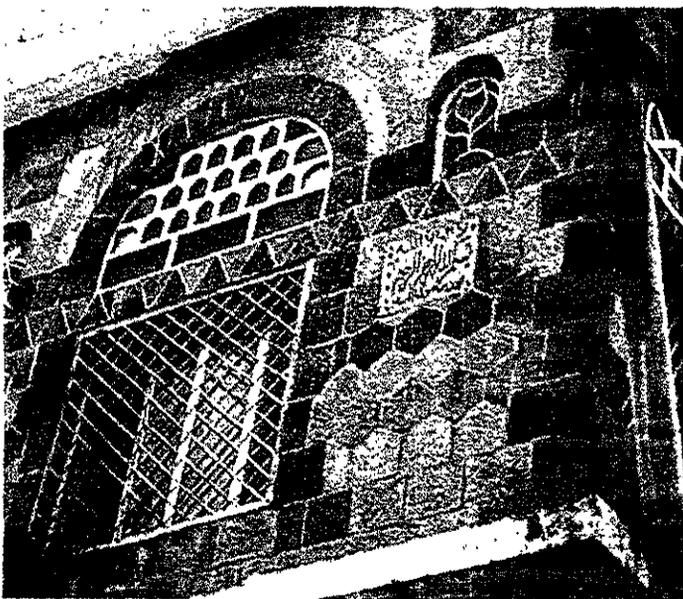
* **Projects of the Issue**
- Villa in Al-Agamy Region.
 Architect: Shehab Mazhar. (P. 20)
- Villa in Kabreet

Architect: Adel Mokhtar
 The project lies in Kabreet - Fayed on a rectangular area which affected the shape of the plan and the landscaping of the site. The project is not only a residential villa but a family house in the old concept. There are living rooms and common services, also semi-private suites inside the villa among which the main suite for the house owner and his wife, and another one for his son, besides two suites for his two daughters and their families. The servants are separated from the main house and the swimming pool. (P. 22)

* **Interior Design:**
Villa in El-Agamy Area - Alex.
 Architect: Shehab Mazhar

The villa is located in El-Agamy area in Alexandria. It was natural for the designer to focus on the inside because the villa doesn't overlook the sea, the fact that needs more care of all the elements which have a view on the inside yard. All the elements which are in the ground floor have a view on the yard and can be reached through it. The designer is concerned to create harmony in materials and colours. The designer tries to use same natural materials such as wood and clay and mix them with the green elements and water to enhance the feeling of comfort and familiarity with the building. (P. 26)

* **Technical Article:**
Construction of Swimming Pools Using Reinforced Concrete Bricks.
 Dr. Goudah Ghanim (P. 32)



Popular imagery painted on new concrete block wall shop (1990) Dahi, Tihama



Colored stone and aluminum frams and tracery. Ibb 1990