

DESIGN OF NATIONAL LIBRARY FOR IRAN IN TEHRAN

by

Mehdi S. Hussein

Thesis submitted to the Graduate Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
MASTER of ARCHITECTURE

APPROVED:

Harold S. Hill, Chairman

Robert N. S. Chiang

Ronald Daniel

May 1978

Blacksburg, Virginia

ACKNOWLEDGMENTS

The writer of this thesis would like to express his great appreciation to those who directly and indirectly contributed their valuable thoughts and concerns to the development of the design process. Special thanks are due to members of the thesis committee, Harold Hill, Robert Chiang, and Ron Daniel. Also much appreciation must be accorded to the constant help of M. Farahat, and my fellow classmates

. And finally many thanks to those who assisted me in the production of this paper.

TABLE OF CONTENTS

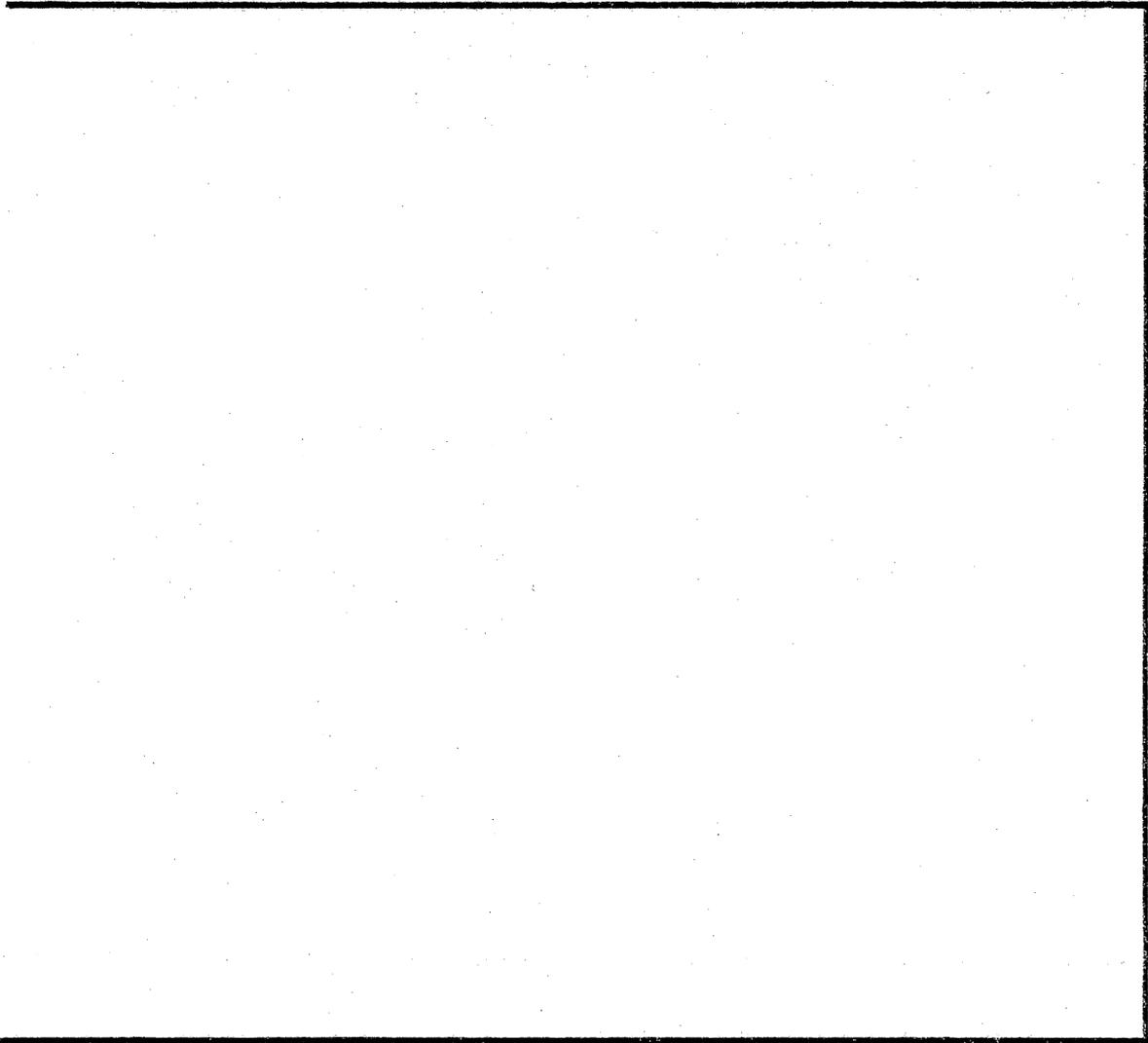
	Page
ACKNOWLEDGMENTS	ii
LIST OF FIGURES AND DRAWINGS.	v
INTRODUCTION.	1
 SECTION I	
AN EVALUATION OF ISLAMIC ARCHITECTURE IN IRAN	4
A. HISTORICAL BACKGROUND.	6
1. The Sassanian Period	6
2. The Samanid Period	7
3. The Seljuke Period	8
4. The Mongol Period.	9
5. The Timurid Period	10
6. The Safavid Period	11
B. ARCHITECTURAL PRIORITIES	14
1. Tradition in Architecture.	14
2. Building Types	17
C. THE USE OF ELEMENTS AND RELATIONSHIPS TO CREATE SPATIAL QUALITIES.	19
1. Transition	19
2. Natural Light and Air.	20
3. Water.	21
4. Order and Scale.	22
 SECTION II	
THE LIBRARY IN THE PAST, PRESENT AND FUTURE.	31
A. EARLY HISTORICAL PERSPECTIVE	34
1. Egypt.	34
2. Mesopotamia.	35
3. Assyria.	37

	Page
B. BYZANTINE AND MOSLEM LIBRARIES	40
1. Byzantine Libraries	40
2. Moslem Libraries	42
3. Greco-Roman Libraries	45
C. THE PRINTING ERA	49
D. NATIONAL LIBRARIES	50
1. European Libraries	51
2. Soviet Libraries	54
3. American Libraries	55
E. THE FUTURE OF THE LIBRARY.	58
1. Planning Objectives.	59
2. Contemporary Priorities.	61
 SECTION III	
PROGRAM ANALYSIS AND DESIGN.	67
A. MAJOR OBJECTIVES OF THE PAHLAVI NATIONAL LIBRARY.	68
B. LOCATION OF THE PAHLAVI NATIONAL LIBRARY.	70
C. DESCRIPTION OF THE PAHLAVI NATIONAL LIBRARY.	71
D. ARCHITECTURAL AND MECHANICAL OBJECTIVES.	79
1. Flexibility and Modular Design	79
2. Traffic Patterns	81
3. Typical Space Requirements	82
SOURCES OF FIGURES.	84
FOOTNOTES	85
BIBLIOGRAPHY.	86
APPENDIX--DESIGN DRAWINGS	89
VITA.	105
ABSTRACT	

LIST OF FIGURES AND DRAWINGS

Figure	Page
1. Site plan of Isfahan.	25
2. a) Plan and elevation of Shah's Mosque	26
b) Plan of Madar-yi-Shah's madreseh (school)	26
3. a) Chahar Taqeh (tomb)	27
b) Plan of domestic architecture	27
4. a) Illustration of spatial qualities	28
b) Illustration of scale and spatial transition.	28
5. Illustration of natural light and air sources	29
6. a) Illustration of water in architecture	30
b) Illustration of water in architecture	30
c) View of the city of Isfahan	30
7. a) Plan of public library.	64
b) Plan of Paris Bibliotheque Nationale.	64
8. a) Plan of New York Public Library	65
b) Plan of Harvard Medical Library	65
9. a) Plan of original British Museum	66
b) Plan of new addition to the British Meuseum	66
10. a) Map of P.N.L. location.	73
b) Map of land use	73
11. a) Map of regional roads	74
b) Map of distributor roads.	74
c) Map of regional access.	74
d) Map of local access	74
12. a) Map of natural land form.	75
b) Map of access and services to the site.	75
c) Map of road location strategy	75
13. a) Map of site analysis.	76
b) Map of zoning analysis.	76
14. a) Map of view and topography analysis	77
b) Map of movement analysis.	77

Drawings	Page
Site plan	90
-1 floor plan	91
1st floor plan.	92
Third floor plan.	93
East elevation.	94
West elevation.	95
South elevation	96
Section "AA".	97
Section "BB".	98
Typical bay plans	99
Typical section detail.	100
Main floor plan, site "B"	101
Third floor plan, site "B".	102
Isometry, site "B".	103
Section "CC".	104



INTRODUCTION

In the study of architecture we all too often treat the subject as if it existed in a vacuum; we fail to realize that historical* (cultural heritage) studies and the study of design should be closely linked. It is in this same spirit of isolation that we concern ourselves with the study of architectural history; we emphasize the works of men of genius. Yet in any period the work of an architect represents a small, often insignificant portion of the total building activity. Our ornament is in large part the result of the vernacular buildings* (which are the product of centuries of cultural evolution) surrounding us.

Amos Rapoport
The Architecture of Ispahan
Landscape 1964-1965

One of the major failures of today's architecture, especially in the developing countries, is caused, primarily, by the rapidly increasing chasm between architecture and cultural values. Man is a social animal, and needs to live and operate in an adaptive environment. This environment should not only respond to his physical protection, but it should also satisfy his psychological and social comfort.

This dilemma of disintegration of cultural value and architecture is clearly apparent in the fast developing countries in the Middle East. In Iran and her neighbor the sudden and quick shock of "modernization" has tended to bury years of cultural heritage under debris of so called advancement.

Iran has always acquired a great wealth of traditional architecture which offers opportunity to those involved in the field of architecture.

*author's addition

The primary concern of this thesis is to design a facility to house National Library in Iran, which not only will have an architectural interest, but will be also of interest from historical and cultural points of view.

Other essential considerations in the design of this library include: (a) flexibility in plan and thus adaptability to changing community needs; (b) an ability to serve both as an educational focal point and a social space for the community.

In addition to the drawings of the design itself, a written text summarizing the research on which the project was based is included. This written portion is organized in three major sections: (1) a study of traditional architecture in Iran; (2) a brief history of Libraries, their current status, and of future trends; and (3) the project requirements of the P.N.L. itself. It is hoped that both the research material and the design itself will be of use to others interested in designing in an Islamic culture.

SECTION ONE

**AN EVALUATION OF ISLAMIC
ARCHITECTURE IN IRAN**

From an historical point of view, it is vital that we alter the way in which we perceive architectural history. The architectural profession must develop an environmental sensitivity which considers relationship between buildings and spaces in conjunction and in context with man and his environment. This context includes relations between man and his culture; the urban texture and scope; the urban form and function; and the image and character of various spaces. In this way architectural history would become a part of our everyday thought process, as well as a special tool for design analysis and synthesis. It would then be possible to study and observe the total urban form as something articulated and crystalized; a collection of architectural evidence for present and future use.

A. HISTORICAL BACKGROUND

In both political and artistic senses, Persia, from ancient to modern times, is known as the crossroad of the world, civilization that absorbed influences from every quarter and then radiated them to all points of the compass. In many periods of her history, she was the hub of a wheel and the spokes were trade routes, converging from and diverging to every region of the Mediterranean and Oriental world. She was also a watershed for the human driftwood left behind by the waves of invaders who, from earliest times, have broken over this cultured land.

Prior to the beginning of the Islamic cultural evolution in Iran, the art and architecture of Achamanian was monarchical. In the capital of the great King of Kings, it reflected the fortunes of the empire; hence its dazzling magnificence under Cyrus, and thereafter, its long stagnation save for a brief revival under Xerxes. As a matter of architectural evidences of this period, one can say that architecture of this period is partially eclectic but original; perhaps its origin lies in art and architecture of Babylonian, Assyrians of Asia Minor, Armanian and even Egyptian.

1. The Sassanian Period

After the Arabs conquered Iran in 637, the continuity of Iranian life was not changed. The conquering force of Islam imposed no

architectural impact, because it had none to offer. However inventive, audacious, and impressive the architecture of the Sassanids had been, its somewhat elemental structural forms had relied heavily upon inert masses for stability. It was the achievement of Islamic Iran to redefine these powerful forms and to develop their potentials into an architecture of logic and beauty. The product was to be more light, more sensitive, more varied and more expressive than its antecedent.¹

2. The Samanid Period

Iran, in tenth century, experienced a great social and political movement. National aspirations were encouraged by the protecting wing of their sect, the Shia. During this dynasty, Persian literature flourished; major arts and sciences were pursued with a seriousness that is reflected in its contemporary poetry, which for nobility and force ranks with the world's greatest.

The architecture of this period in terms of its simplicity and impressive scale, its harmonious and thorough use of proportions, its vigorous and inventive ornamentations, combine to rank it among the masterpieces of the world's architecture. One of the principle architectural contributions of this period in the area of geometry and construction was the solution of setting a dome over a square chamber (Chahar Taque), in which the transition of form is carried beyond the simple solution of Parthian and Sassanian times. The renaissance of Persian culture which had begun under the Samanids was then transmitted

to their successors, the Ghaznavids, in the form of architectural ambitions. Mahmud of Ghazna (997-1030), an eccentric conquerer who gathered great wealth in his conquest, was a passionate devotee of architecture, on which he lavished immense sums and great energy, utilizing workmen from all quarters. Of his realm, of his sumptuous architecture, there remain only two victory towers and the impressive ruins of Lashkar Bazaar in Afghanistan.

3. The Seljuke Period

The Seljukes were Turkmanian nomads who entered Bukhara in Afghanistan and Persia, and settled there. With their rise to power the Turkish influence became dominant force in the Islamic lands.

Artistic activity of this period was lively in many of the princely courts set up at that time. Its greatest successes were in Persia. Here, in architecture, the strong influence was a feeling in favor of the old principles of construction and certain types of building of Persian origin such as the tower mausoleum. The Seljukes took up these traditions and interpreted them in a monumental fashion suited to the character of the art of the following epoch.

The architecture of this era was noble and powerful in character; it was structurally sophisticated; and it was neither sudden nor accidental. It was, rather, the culminating expression of a Persian Renaissance that had begun in the early 10th century with the Samanids. One can say that this period reached its apex under the Seljuke.

Although artistic production of a high order was conceived beyond the twelfth century, a perceptible decline in creative energy became evident. The architectural power and nobility of Seljuke period is best represented in Masjid-i-Jami Isfahan, one of the greatest pieces of architectural beauty in the world.

4. The Mongol Period

The advance of the Mongol invasion put to an end, along with much else, the remnant of the past glories of Seljukes. In the course of their five year invasion, they ravaged Transoxiana, Afghanistan, and northern Persia as far as today's capital Tehran. They obliterated cities and exterminated every living creature. History says, they slaughtered half a million citizens in the city of Merv alone, where the famous Library was totally destroyed.

After the Mongols conquest in Persia, two consecutive periods, with a short interruption between them, emerged. The first, the le-Khanid period wrought changes in Persian and production, while in the second period the art, already fully Iranianized, continued to develop into the 15th century as the Timurid style.

During the Iranianization period, they settled, absorbed indigenous culture, and began to rebuild. "Thank God," cried Huagu, Mongol's successor, "I am both a world conquerer and a world preserver." Indeed Huagu and his successors came forward as generous patrons, and were earnestly and successfully concerned to bring their lands to a new flowering culture.

The greatest of the Ilkhans were the brothers Ghazan Khan and Uljitu (1295-1316). The former on his accession became a Moslem, made Islam the state religion, and chose Tabriz for his capital. With the aid of his brilliant vizirs Rashid-ad-Din and his rival Rajad-Din Ali Sha, he created, wrote Rene' Grousset, "Probably one of the most beautiful cities the world has ever seen." Pope expands to call him "one of the greatest builders of Asia, possibly greater as a builder than Tamerlane, whose creations were regional.

5. The Timurid Period

Tamerlane and his successors (The Timurids) were great destroyers who later became builders. It may not be extraordinary that semi-barbarious nomads from the Central Asia should begin by flattering the cities through which they passed; it is surely extraordinary that they should systematically spare the lives of craftsmen during these wholesale massacres and so, by acting as catalysts to the very cultures they had apparently sought to extinguish, give rise to new and exciting art forms. The destroyer turned-creator remains one of those mysteries for which there appears to be no simple explanation.²

The most important Timurid contribution to architecture was the advancement of faience to adorn the surface of their buildings. The existing palette of self-coloured tile was enriched until in addition to turquoise, black, white and Lapizlazuli had been added various shades of yellow, emerald green and an aubergine which fluctuated through granite to a tone that was almost black.

The dread Tamerlane could not rest from his civilizing ambition until he had made his residence at Samarkand (Afghanistan) into the most splendid and grandiose metropolis of the Orient. He turned back to the ancient institution of public service in order to assemble craftsmen to work together on his buildings, and he gave new stimulus to the arts, without estranging them from their national individuality.

6. The Safavid Period

The Safavid reign was initiated by the Shah Ismail I (1499-1524) who launched his dynasty with a burst of cultural energy. The greatest artists of the day thronged his court, producing many buildings, most of which have been destroyed. But the architecture of this period in Isfahan provides a monumental opportunity to explore the crucial and important points in planning and the vital architectural elements.

The Safavid design was essentially a continuation of Timurid design and was preoccupied chiefly with the increasing refinement of mosaic detail. Shah Abbas, as A. Pope says "revived the tradition of building in the grand manner . . . and reaffirmed the Iranian ideals of the planned city and imperial magnificence in architecture."

Shah Abbas I was an outstanding monarch as well as a successful general and a powerful administrator. He was keenly interested in the commercial welfare and artistic creativity of his country. Early in his reign he moved his capital to Isfahan, and shortly thereafter he transformed the town into a magnificent city of incredible splendor.

Isfahan was the capital of the province and ancient kingdom of Fars, a town with an extensive history and of a certain importance, it possessed a magnificent Friday Mosque, and was to be further embellished by Abbas's successors; but if ever a city could be described as a creation of a single man, that city was Isfahan and that man Shah Abbas the Great.

What Shah Abbas achieved in Isfahan may be described as town planning. A magnificent bridge, the Allah Wardi Khan leads from the river by way of a broad and shady avenue to the palace grounds, beyond which is a vast open rectangular court (The Maidan) used in Shah Abbas's day for polo games, archery, animal combats, a weekly market, and other social activities. Commanding the Maidan on the palace side is a pavilion gateway (The Ali Qapu) with a terrace where the Shah entertained distinguished guests or used as a grandstand to watch the games. At the one end of the Maidan extends the Royal Mosque (Masjid-i-Shah) at the other entrance to the bazaars, while opposite to the Ali Qapu comes the smaller Lutfullah Mosque erected by the Shah (Fig. 1).

The Royal Mosque (Masjid-i-Shah) is undoubtedly the most important, not only for its splendor but for its architectural interest, although even here a slackening of concentration is already making itself felt. The connecting galleries provide the whole with only a loose coherence, and the three ivans seem almost like three separate domed buildings.

Isfahan also possesses the last great Madrasah built in Persia, the Madir-i-Sha, c. 1700. The four ivans are arranged around the rectangular court with two stories of cells and extended on the Qibla side to a large dome chamber. From the four corners of the court passages lead into smaller courts which also have several stories of cells. The whole plan is exceptionally monumental and harmonious in its proportion, connection and various diverse spaces (Fig. 2b).

The importance of these periods on the architecture of Iran today comes from their consecutive development of an architectural tradition. The priorities which controlled the development of Tabriz and Isphahan are still viable and important in contemporary form-making.

B. ARCHITECTURAL PRIORITIES

Sensible knowledge of this world that is, the world of becoming, is a symbol of the intelligible knowledge of that world. The physical world (Jesm) is the symbol and image of the spiritual (Ruh) world.

Afdal al-Din al-Kashani,³
Musarif, (14th Century)

The purpose of this study is to relate the spatial priorities which were traditional to Islamic architecture in Iran to the current Pahlavi National Library. Historically, form making in Iran has always been directly related to cosmological symbols, buildings were important for that which they represented. The elements which contained each space were carefully related to a higher image of the overall, a consistency of detail was maintained at each scale. The use of these elements was controlled overtime by a strong sense of tradition. This tradition has prevailed as the most influential factor in the identity of architecture in Iran.

1. Tradition and Architecture

The study of Islamic civilization reveals an extraordinary feature in which, the Culture in macro scale and religious concepts in micro scale are the determining and dominating factors in the Islamic world. It would be valid to state that in the past the impact of Islam upon its domains was not only based on physical domination as in wars but on the cultural power of its teaching. It was the universality of

this method which determined the speedy acceptance of its teachings. With the coming of the prophet, Mohammed, a new kind of community crystallized and found its fresh expression both in language and the arts.

Following the death of Mohammed, the cultural activities of the Islamic people were strongly affected by their common passion for religious confession, more so than was the case in the Christian world; they bridged differences of race and tradition and even forced the customs and manners of its components, as well as its spiritual concerns, into an extraordinarily clear and uniform mold. This process of assimilation was helped most of all by the Koran which was a guide in all of life's questions as well as in matters of faith. The propagation of the Koran, in the original language, made the absolute supremacy of the Arabic script a bond which help the whole Islamic world unified. The script was itself an important element in all artistic creation.⁴

Up to the end of the Middle Ages the Christian and Islam civilizations ran side by side. They borrowed freely from one another; they influenced each other; they shared and experienced much the same institutions, and both possessed a god-centered view of life. During the Renaissance they split: West went its own way and gave to science a progressively untrammelled sway over the conduct of life; the Islamic world remained more or less the same and maintained that science was subservient to wisdom.

Iranian civilization, unlike its European or other western counterparts, still retains a remarkable degree of unity which seems to thrive on the complexities of small-scale institutions such as abound in the bazaar. The sense of unity, or the oneness of all things, imposed by Islam, especially by its mystical branch, Sufism, still pervades much of everyday life and thought.

Tradition is the principle governing factor in all facets of Iranian civilization. It speaks of immutable principles of heavenly origin and their application to different moments of time and space. It also speaks of the continuity of certain doctrines and of the sacred forms which are the means whereby these doctrines are conveyed to men and the teachings of the tradition are actualized within men.⁵

Thus, tradition is accepted as the presiding principle of this society and the animating principle of the whole life of the people. In fact, all art is among the most vital and dire manifestation of the principles of this tradition; men live in forms and they must be surrounded by forms that echo transcendent archetypes in order to be drawn towards the transcendent.

In general, all the arts of Persia are closely interrelated and all express a common cultural inspiration. The great Islamic art of calligraphy, with its standard of rhythm, precision and expressive form instructs and disciplines other arts. Poetry, universal and indispensable in Persian life together with philosophy nourish all cultural expressions. Rhythm and rhyme, stress and resolution,

surprise and fulfillment merely head a long list of characteristics that have their counterpart in both art and poetry.

The Islamic architecture of Persia, like all traditional architectures, is intimately related to cosmology. Traditional man lives in a universe that is meaningful. The cosmos reflects the Divine Principle and so does man. Therefore, man is the microcosm and, like the cosmos, reflects the Metacosmic Reality.⁶

In all traditional art and architecture the meaning is none other than spiritual, as the word itself, the term (Ma na) conveys in both Arabic and Persian the sense of both "Meaning" and "the Spiritual."

2. Building Types

One of the early structures which identified the center of all Islamic activities was the mosque, which functioned as a political and social institution of encompassing influence and varying functions. Architecturally, it may be wholly an interior secluded court design, conceived to exclude the outer world and emphasize its inner concentration. The courtyard or the interior garden is always characterized by repetitive elements--arcades or columns--that give it coherence, coolness, and at the same time define its purpose: fulfillment of the deepest kind of unity (Fig. 2a).

Other forms of building are the caravanserais (inns), for the use of merchants and travellers, linking the desert trade routes with bazaars and market places in towns; the madresehs, institutes of

learning, usually associated with mosques. Plans are based on the mosque type or are formed around central courtyards (Fig. 2b).

Another sacred structure is the tomb or (Chartaqu) for great and holy men which have found their own very distinctive form. It basically explores the architectural formula of a cube surmounted by a polygon supporting a dome. The transition between a cupola and a rectangular base and between the planar and curved surfaces is a problem close to the heart of Islamic builders, and the articulation of muqarnas (squinched stalactites) within these zones of transition leads to stunning displays of virtuosity (Fig. 3a).

Domestic architecture in Persia reflects concepts of a sacred nature of family life and the seclusion of women. The house plans are inward-looking, with central courtyards acting as air and light sources as well as open space for general activities. Outside openings are minimal (Fig. 3b, 4a).

All three of the building types mentioned here develop their continuity from a mutual adherence to a set of traditions. The relationship of forms according to these guidelines has produced spatial qualities which have become the spirit of the Iranian culture.

C. THE USE OF ELEMENTS AND RELATIONSHIPS TO
CREATE SPATIAL QUALITIES

The traditional architecture of Iran developed several types of usage or relationships of elements to express desired spatial qualities. I have chosen five of these priorities which I have maintained as organizing factors in the P.N.L. Library design (1) transition and courtyards, (2) the use of natural light and air, (3) the use of water, (4) order, scale, and the influence of Sufism and the Cosmological Order.

1. Transition

One of the most important aspects of Islamic architecture, especially in Isfahan, is the principle of transition in series spaces (Fig. 1). The change of mood from street to courtyard is given importance in the mosque or madreseh (school). This change of mood is the essence of vernacular architecture of Iran, which even exists in the general organization of the city and landscape. This strong contrast between outside and inside describes the court behind its walls, the town in landscape, the oasis in the desert, the habitable valley in the midst of the vast series of mountain ranges. It is this transition from noise to quiet, from heat and glare to cool shade and water, which is stressed and elaborated in the mosque and madreseh plan, no doubt for the purpose of conscious separation (Fig. 4a).

The sound of prayer, the rustling leaves, the singing of birds, the murmur of water, and the tranquility of space, are in vivid contrast to the bustle of the street outside. The hot, noisy, sometimes squalid outside world is excluded; one is isolated from the din of the bazaar. This is the ultimate in differentiation, between inside and outside, and serves to prepare one for contemplation and the religious experience of mosque (Fig. 5b).

In an environment where towns and buildings are regarded as a single continuum of space differentiated into separate domains and hierarchies rather than as a collection of objects, the point of transition becomes very important. The entrance makes the transition clear, meaningful and deliberate (Fig. 2a, 4b).

2. Natural Light and Air

The primary and most general qualities by which corporeal matter is revealed in the sublunar world are symbolized by the Platonic Solids; fire--the tetrahedron, earth--the cube, air--the octahedron, water--the icosahedron and, as the symbol of cosmos--the dodecahedron.

Air is the direct manifestation of ether, the vehicle of light, exhibiting the qualities of heat and humidity. Its effect is to render things lighter, to verify, to make soft, giving matter the ability to express its character.⁷

The manifestation of light and dark, solid and void is a favoured technique to define the character of adjacent areas. A transitional

corridor may be densely shaded to emphasize the brightly lit courtyards (Fig. 4b) -- it connects, or a dome may have a clerestory band of openings to allow natural light to graze the surface of the squinches. The use of natural light occurs in three forms; an open interior (courtyard); a clerestory break between two forms, and as punctures in a wall or ceiling (Fig. 5a, b, c).

3. Water

Water, cold and wet, is symbolically the Giver of Life, who is merciful in sending down of rain, the element that purifies and returns life to its premordial state, the earth.⁸

In Iran a patch of green in the barren landscape has special significance: it is a symbol of life and of man's dominion of at least a part of the cruel landscape; the trees temper the relentless sun, the water cools and moistens. Because of tradition and harsh environment, water has special meaning in this extremely arid land where irrigation has always been necessary. The love of water makes it an essential element of architecture and of daily existence.

Occasionally, water is used in large shallow reflecting pools to reflect the sky or a wall behind it. The sound of its movement along steps, or dropping from above to overcome any noises from the outside streets, it reassures, heartens, and rejuvenates (Fig. 6a, 6b).

4. Order and Scale

Persian architecture for centuries particularly during the Islamic period, maintained a continuity of style that could hardly be mistaken for any others. Scale was constantly understood and skillfully exploited even though the Persians seemed to have made no general study of harmonious proportions. The result is that there are no trivial buildings, even garden pavilions have nobility and dignity, and humbled caravanserais generally have charm (Fig. 1, 6c). In expressiveness and communicability, most Persian buildings are lucid, even elegant.⁹

Unity in variety in the Islamic architecture of Iran is best described by N. Ardalan in the Sense of Unity. The development of Islamic principles to express unity through the organization of quantitative and qualitative space and shape in human settlements has assumed three observable systems of order: natural, geometric, and harmonic. They are the three fundamental ways by which man shapes his environment. Natural order is developed by those closest to nature: the nomad and the villager. Geometric order relates to the system of man's most ancient cities as a unity within a unity. Harmonic order creates multiplicity within unity, as in a mosque, geometric shapes linked in natural patterns within the framework of a superconscious geometry.¹⁰

Individual buildings are striking, but it is as a group that they are memorable. The Sense of Unity as a basic principle to the

Islamic religion is clearly expressed here. The single building is readily comprehended while the town consists of that same building, repeated many times X + X + X + X. Beyond this basic solution, there happend the marriage of logically simple and comprehensively complex (Fig. 1).

Variety is apparent in Unity, which is clearly expressed in unidentical buildings. Family likeness is immediately visible that every wind tower face is subtly varied. Variety within unity also occurs in the layout which is not a grid, but is assembled in a jigsaw of sidestepping narrow ways opening to small square and usually terminates by end stops. Continuity is provided by the ever present perspective of the walls (Fig. 3b, 4a).

This unity is the foundation of all avenues of life, and it is the variety permitted at all levels which provides the spirit.

On the whole, Persian Architecture like its poetry has been decried for its excessive formalism and adherence to tradition. One may seek in vain for the hidden purposes or message in the mind of the artist when one studies the intricate design of an object. The astonishing skill of the Persian craftsman for design and decoration are chief features of Persian art throughout the centuries. It is through design that the Persian genius for visual beauty has discovered its most sophisticated expression.

In conclusion, the general understanding and feeling about Islamic architecture of Iran is best expressed by A. V. Pope, "The architecture of Persia across the centuries displays great variety, both structural and aesthetic . . . its paramount virtues are several: a marked feeling for form and scale, structural inventiveness, especially in vaults and domes construction; a genius for decoration with a freedom and success not rivaled in any other architecture."

"There was a human character to all arts of Persia. The range of expressive effects ranged from the solemn and austere, to grandeur, magnificence, or fairy-like charm. Mosques were places of beauty, conducive to joy, contemplation and religious fever. As one inscription read, 'the mosques are the gardens of paradise,' and so the Persian builders and decorators made them . . ."11

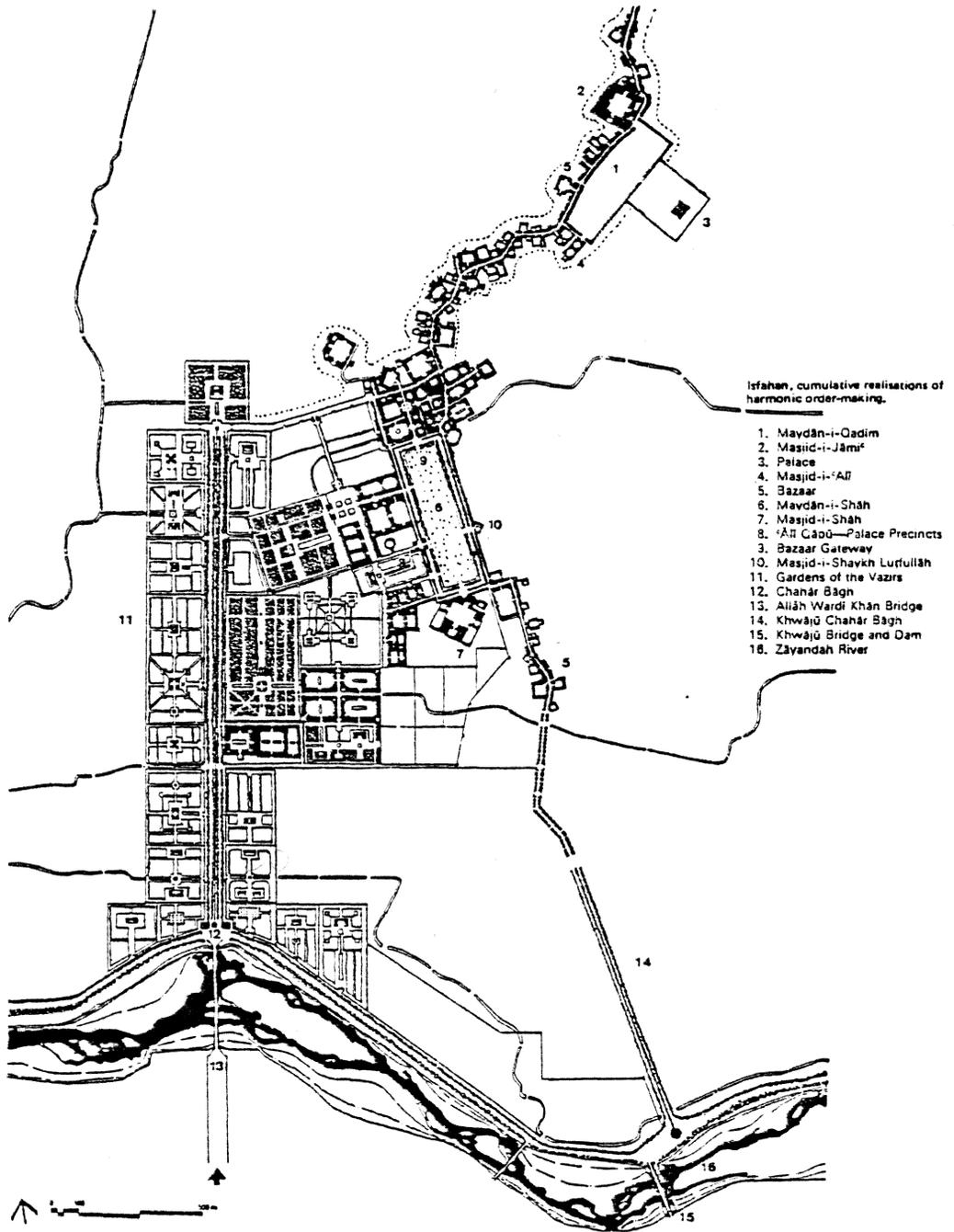


Figure 1. Site plan of Isfahan.

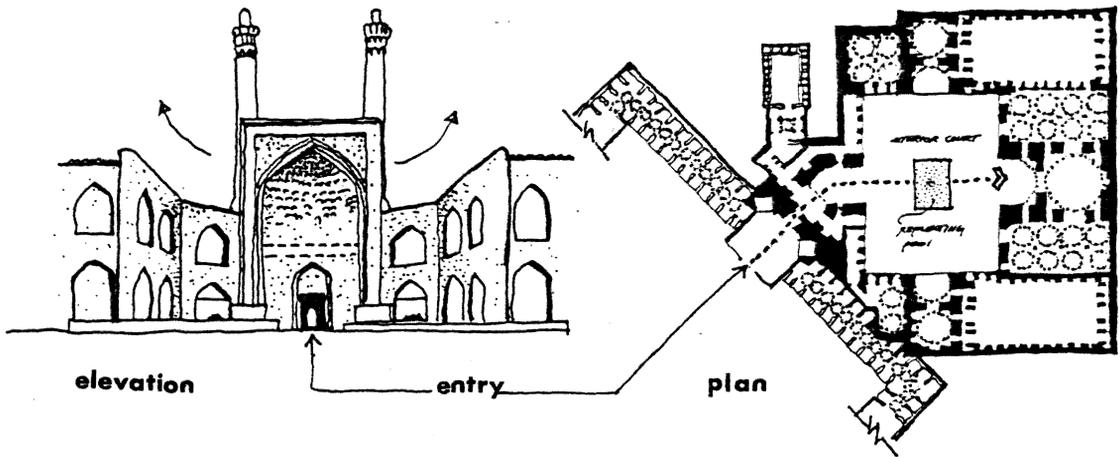


Figure 2a. Plan and elevation of Shah's Mosque.

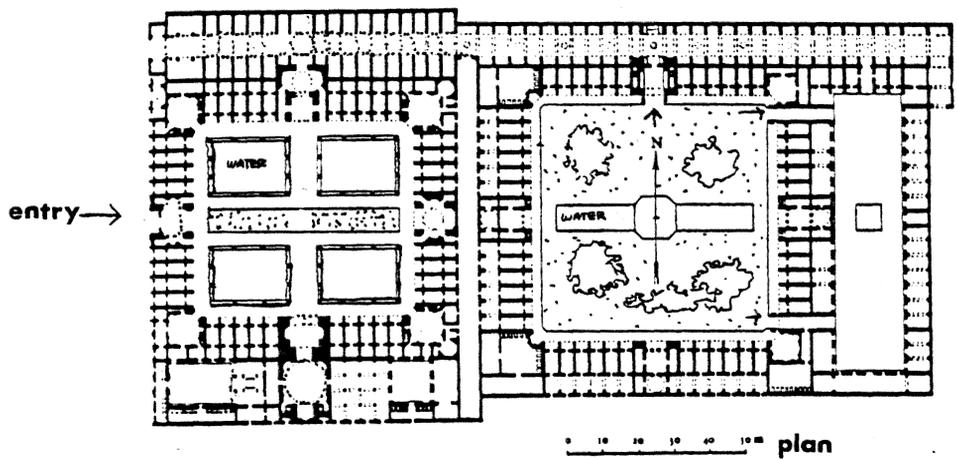


Figure 2b. Plan of Madar-yi-Madar-i-Shah's madreseh (school).

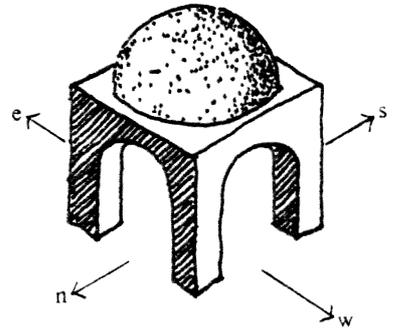
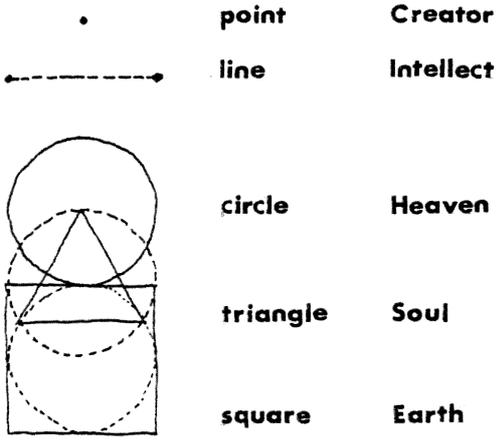


Figure 3a. Chahar Taque (tomb).

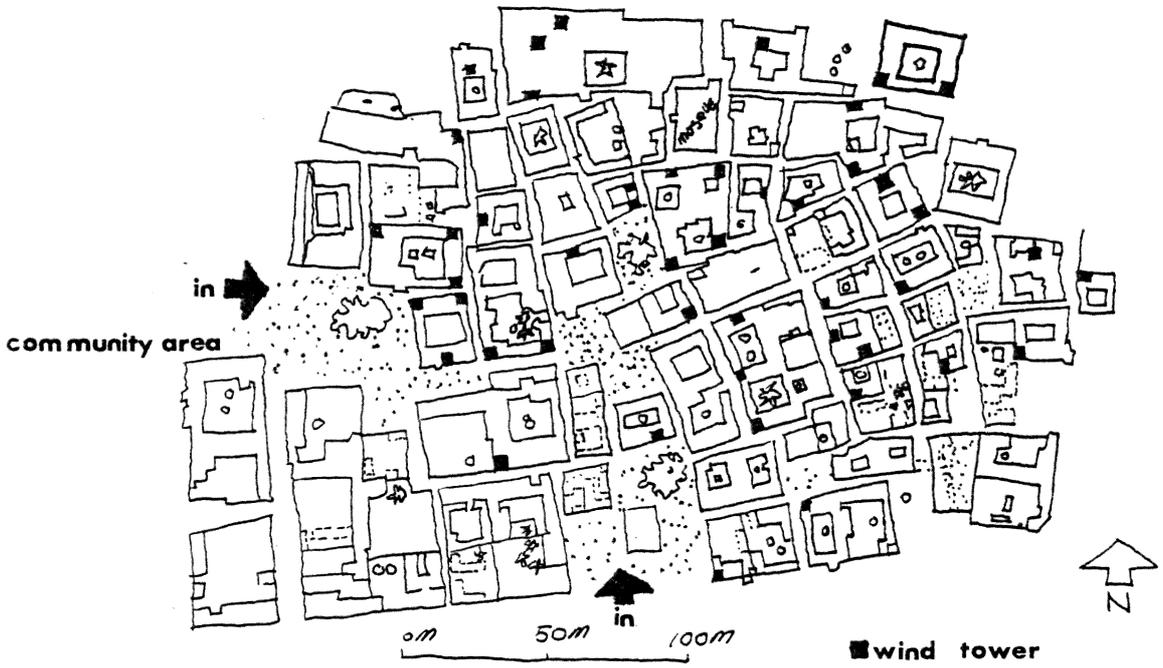


Figure 3b. Plan of domestic architecture.

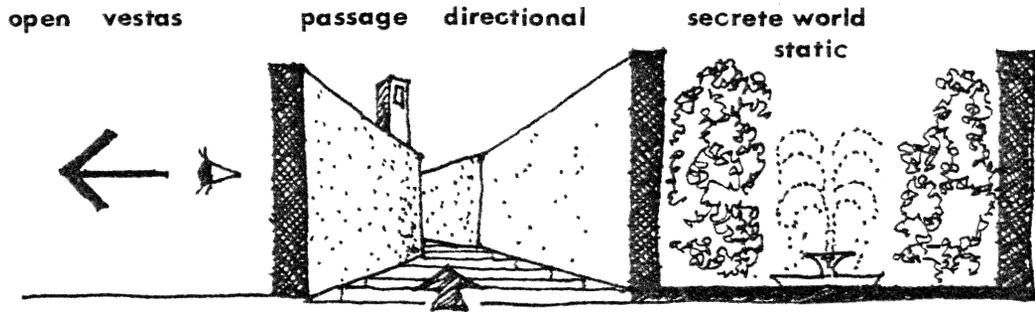


Figure 4a. Illustration of spatial qualities.

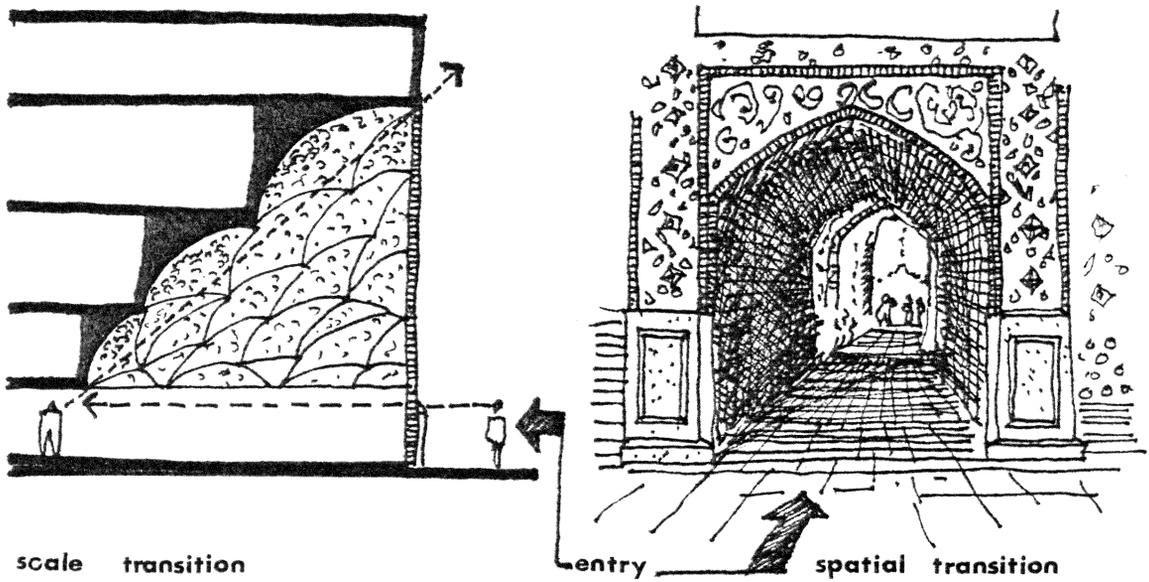
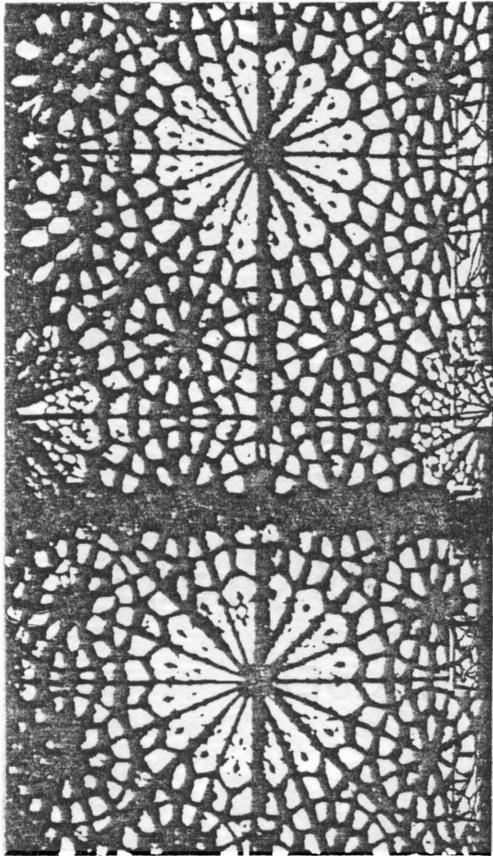
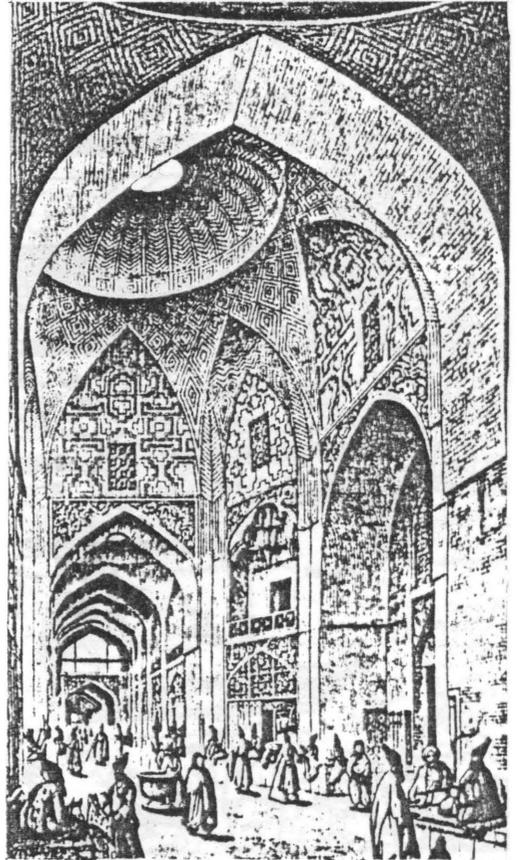


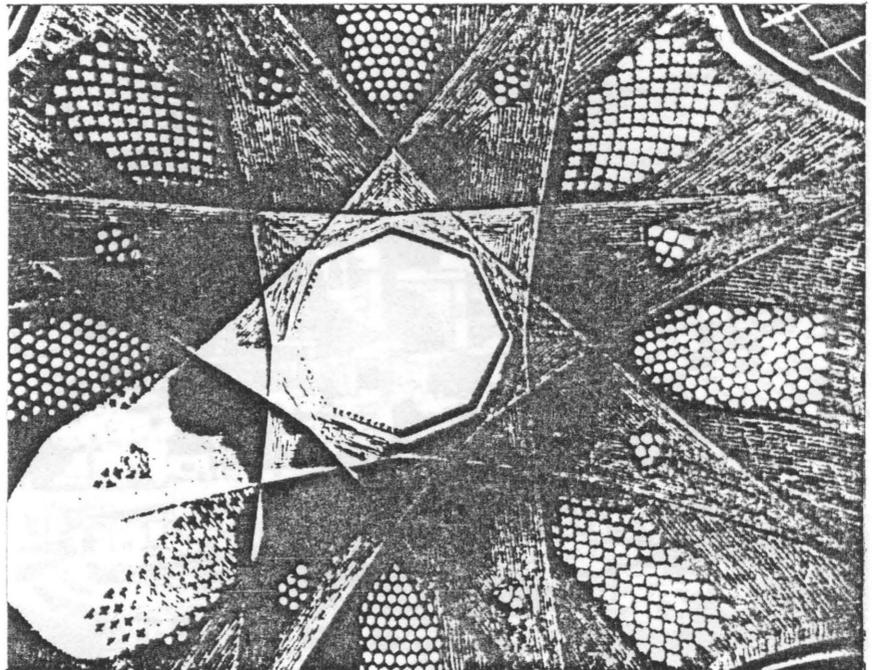
Figure 4b. Illustration of scale and spatial transition.



a

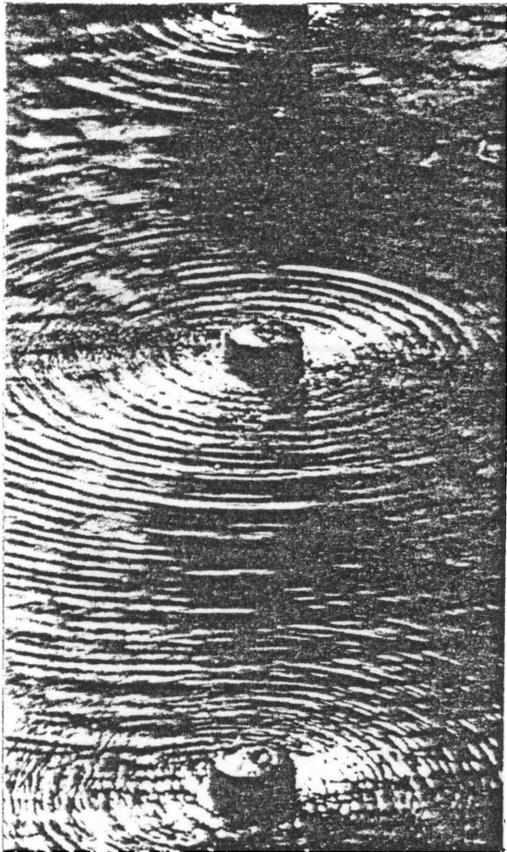


b



c

Figure 5. Illustration of natural light and air sources.

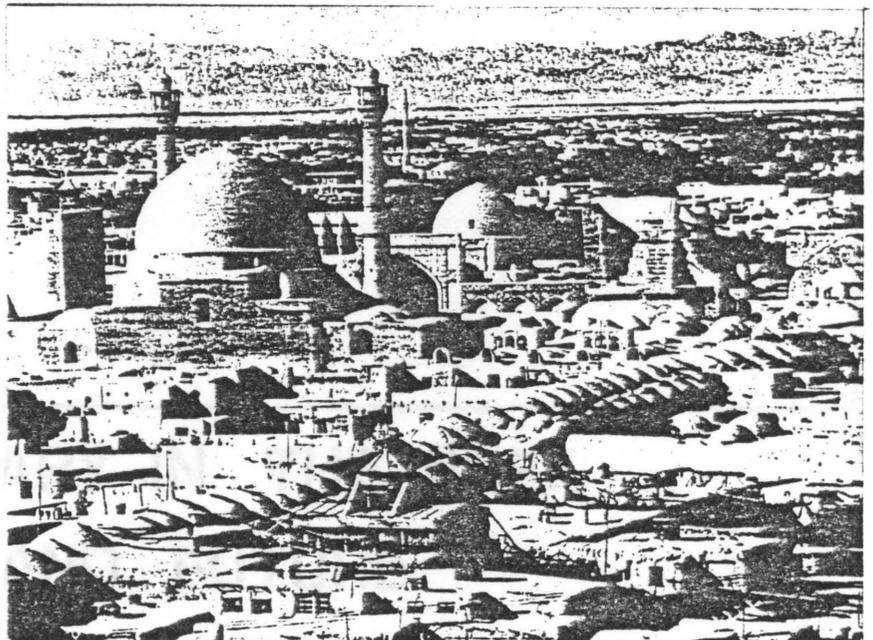


a



b

Figure 6a and 6b. Illustration of water in architecture.



c

Figure 6c. View of the city of Isfahan.

Attention Patron:

Page 31 omitted from
numbering

SECTION TWO

**THE LIBRARY IN THE PAST,
PRESENT, AND FUTURE**

If one defines history as that period of man's existence since he began to keep records, then libraries are almost as old as history. As man's civilization has progressed through history, so has his library. Regardless of the system and type of his records or printed material, whether clay tablets, papyrus rolls, parchment codex, printed books, computer cards, or microfilm reels, man has devised means of arranging, preserving and using them. Once arranged, preserved and used, they become libraries, museums, archives, and as such they paralleled the cultural state of Eastern and Western man.

It is extremely vital for social and physical planners to understand first the historical perspective of their concerns, and then to incorporate these findings in their objectives in order to provide a special synthesis rather than a mere result. As in the case of library planning, the architect must comprehend the development of library through the history of civilization. As Dr. W. A. Munsford suggests that the maturity of a profession may be judged--although there are of course other tests--by its pride in its own past.¹² Also, Dr. J. Shores believes that "it is necessary to look back more often; if for no other reason than to be sure that we are not repeating our old mistakes."¹³

A. EARLY HISTORICAL PERSPECTIVE

1. Egypt

Very little is known of the early libraries of Egypt, excepting through the labors of archeologists and the survival of clay tablets which have indicated something about the placement of temple libraries in these regions. According to these findings and other respected sources on ancient Egyptians, it can be argued that the beginning of library was purely functional. It came about only after the written language had been developed, the social structure with a complicated government and religious system had emerged, and a special group of inhabitants of this region had become literate. The library was functional because it was kept mainly to comprehend what had transpired in the past. It was vital to keep laws and decrees of former kings, the property ownership records of former generations, and the formal rituals of the religious centers. Because these records grew immensely, it became essential to classify and organize them for easy access and use. Once they had been arranged and preserved, they became a durable part of the cultural heritage, a stepping stone to further progress. With records of the past available, it was not necessary for each generation to make the same mistakes, rediscover experimental approaches to progress and arrive at the same solution for problems.

2. Mesopotamia

It is difficult to say whether the first library in the Western world was located in Egypt or in Mesopotamia, but it is certain that the civilization emerging in those two areas in the fourth and third millennia B.C., produced tablets and these were preserved in sufficient numbers to form libraries. In the Mesopotamian Valley, inhabited successively by Sumerians, Babylonians, and Assyrians, the process that gave rise to libraries was certainly under way during those periods. Writing in pictograph had developed as early as 4000 B.C. and by 3600 B.C. the Sumerians in the lower valley were developing a uniform "alphabet" of about four hundred signs or characters, commonly used by scribes in government, temples, and businesses. In the next few centuries, libraries, or at least well organized collections of records, were fairly widely established throughout the region. The organization of these collections is clearly apparent from the discovered tablets.

In the storehouse of clay tablets of the Babylonians and Assyrians, one element of story of cultural progress and library development is indicated. Some of the rulers of the Mesopotamian kingdom collected tablets with the notion of preserving all of what was known to man, not only the record of his experiences and observations but also the products of his reasoning and imagination--his philosophies, theologies and literature. These were kept for the passion of learning. Although much of the literature kept on the clay tablets was functional and utilitarian, there is evidence of effort to preserve all that had been

or could reasonably be committed to graphic form, whether business form or epic poem for educational purposes.

The Sumerians in the lower valley were non-Semitic people, but the upper section of the Tigris and Euphrates rivers were inhabited, about 2500 B.C., by a Semitic people known as Akkadians. About 2250 B.C., a Semitic leader, Argon I, united the whole valley into the old Babylonian Empire and built a powerful state that extended from the Persian Gulf to the Mediterranean. A thousand years later, while the Mesopotamian Valley was ruled by the Assyrians, a series of progressive kings brought literature and libraries to an even higher degree of development, but after 625 B.C. conquest of the Valley by Chaldeans, Persians and Greeks in turn put an end to an era of history that was to remain unknown for the next two thousand years.

One of the earliest finds in the clay tablets comes from Red Temple at Erech. This town had existed in the lower Valley of the Euphrates and the tablets dating from about 3000 B.C. More than a score of other collections of clay tablets, apparently the remains of temple or palace libraries, have been found in the valley along with many smaller collections that appear to have been private or public libraries contained diverse subjects for various professions.

One of the purest examples of this time, Hammurabis' reign, was noted for the codification of laws known by his name. It was not the first Babylonian code of laws, but it is the best known and it must have been compiled from a well-arranged collection of works of law. In fact, it presupposes an excellent legal archive or law library.

3. Assyria

The Assyrian libraries were large and well organized, but they were apparently open to the reading public and they were well used by general citizens. Particularly under Sargon II, who died about 705 B.C., the Assyrians developed a palace library at Khorsabad that was a notable beginning. Sargon's immediate successors increased the size of the palace's library, but it was his great grandson, Assurbanipal (ca. 668-627 B.C.), who developed the library into one of the greatest of the ancient world's archives. He moved the capital to Nineveh, and there, in his palace, he accumulated a library of over 3000 tablets. Under his personal direction, agents were sent to all parts of the Assyrian kingdom, which then had extended from the Persian Gulf to the Mediterranean, and even to foreign regions to collect written records of all kinds and on all subjects. Assurbanipal had his scribes taught to read early Sumerian and Babylonian texts in order to translate the ancient record into Assyrian. He was particularly interested in religious texts, incantations, and verbal charms, but his agents were instructed to bring back everything in writing. He is reported to have asked Nabu, the Assyrian god of writing, to bless his library and grant him the grace to erect it. Like the Alexandrian Library a few centuries later, the Library of Assurbanipal was built and had been open to scholars.

The temple libraries of these periods were quite different in nature and use from the government libraries. In the content they included histories of the gods, texts of formal rituals, hymns, incantations,

invocations, and prayers, as well as the sacred epics and scriptures. One of the earliest Babylonian librarians, known by name, was Amit Anu who was "Tablet Keeper" in the royal library at Ur nearly 2000 B.C. In the temple libraries the librarian-scribe was a priest, often a high ranking one, while in the palace libraries he was often an important official. In either case he was usually of the upper classes, often the younger son of a noble family.

Whatever their contributions to western civilization--and they were many--the chief claim of the Sumerian-Babylonian-Assyrian peoples to permanent fame lies in their contributions to communication. They developed a method of writing; an economical, readily available, and relatively permanent writing material; and a system of arranging and using this recorded information in archives and libraries.

With the exception of Hellenic Alexandria in the last three centuries B.C., and Rome in the first three centuries A.D., no region in the ancient world had such well developed libraries as those of Babylonia and Assyria. It can well be argued that the continuity of Sumerian-Babylonian-Assyrian civilization for three thousand years, despite many wars and conquests, can be largely attributed to its method of writing and its means of preserving records. Thanks to these records, each civilization was able to build upon the past.

These libraries were the evidences of past thousands of years of civilization. Also, it is quite obvious that without the remains of

those libraries and archives we would know virtually nothing today of that three thousand years of history in the Mesopotamian Valley.

B. BYZANTINE AND MOSLEM LIBRARIES

Of all the libraries of antiquity, those in Constantinople came nearest to surviving intact through the Middle Ages. In specific, the Imperial Library, founded by Constantine the great in the fourth century, varied in size and importance with the fortunes of Byzantine Empire, but in one form or another it survived until the capture of the city in 1453 by the Ottoman Turks.

1. Byzantine Libraries

The Constantinople Imperial Library, after its formation around 330 A.D., was supervised by Constantine himself. His agents searched for Christian books, throughout the Empire, to bring to his library. Also, he himself collected and preserved the writings of the Greek and Latin secular writers for his library, but it apparently grew very slowly. As a result there were reported to be only about seven thousand books in the library at Constantine's death in 337 A.D.

In the fifth century, the library of the Academy, a university or school of philosophy, was founded under Theodosius II (408-450 A.D.) in Constantinople. This school flourished for several centuries, particularly under the Emperor Justinian (527-565 A.D.).

Besides these two major libraries, there was usually a third major library in Constantinople, the library of the Patriarch, the head of the Eastern Church, and it, too, fluctuated in size and importance throughout the long history of Byzantium. Constantine the Great is

reported to have also started this library with a gift of fifty volumes, elegantly inscribed on parchment.

During the period of Eastern Church, monastic life flourished in the Eastern Empire even earlier than it did in the West, and many of these monasteries were founded in Asia Minor and Greece before the 6th century. For centuries these monasteries followed the laws of monastic life laid down by St. Pachomius of Egypt (d. 346) which encouraged study but did not attempt and encourage the formation of libraries. At about 825, Abot Theodor, a monastery near Constantinople produced a new set of monastic regulations that emphasized the scriptorium and the library, and outlined the studies of the librarian. After this, each monastery was encouraged to form a library of its own.

The period from 85-1100 saw a renaissance in Byzantine learning and literature. This birth of interest in knowledge and learning stimulated a revival of the university, and encouraged the work of a number of significant authors. Among the few examples of literature, as such, John Geometres' tenth century poems are as filled with references to classical authors as the works of his prose-writing contemporaries. As the general elite's feeling of learning moved positively towards knowledge, the love for book and library progressed as well.

An eleventh-century poet, John Mauropous, expressed his feeling for his library in a couplet:

Living among my books like a bee among flowers,
Nourished on words like a grasshopper on dew.¹⁴

After the fall of Constantinople, the capital of Byzantine was removed to Nicaea, where Emperor John III, in the 13th century, re-established the Imperial Library. It became the center of cultural civilization with churches, schools, libraries, hospitals and monasteries the equal of any in the western world.

Constantinople was not the only center of the cultural revolution in the Eastern Mediterranean during the Middle Ages. Close neighbors and long-time enemies of the Christian Byzantines, the Moslems, sprung into prominence in the seventh century. In a few decades after 622, when the Islam Empire was established, the religion of Islam swept the Arabic world and its fringes from Persia to Morocco. During the Moslem period, three major elements caused the cultural movement. The religion inspired military power and literary culture, the technique of manufacturing paper came to the eastern Moslems from China by way of Central Asia about 800, and the knowledge of the process spread gradually through the Moslem World, reaching Spain about 950.

2. Moslem Libraries

The first social and political center of the Moslem world was Damascus where the Umayyid ruled from 661 to 750. These rulers promoted learning and established a royal library that also included the archives of the church and state. In the end of the seventh century, the archives were separated from the library and religious work, the latter forming a palace library, and the former being relegated to a House of Archives. For the palace library copies of books from all parts of the

known world were obtained, and made both books and libraries available to the public. Great works of alchemy, medicine, history, philosophy, as well as literature and works on Moslem religion, were included among other subjects of the library.

The great period of Islamic civilization in culture and learning came under the Abbasid dynasty from the mid eighth century to early eleventh century. The capital of this dynasty was Baghdad, and during this era the power and influence of Islam spread to Persia and around the South Shore of the Mediterranean to Spain and even southern France. The early Abbasid caliphs, adopting a religious philosophy that encouraged learning and debate, promoted the organization of universities and libraries throughout the Moslem territories. Early beginnings were made under Al-Mansur (754-775), and Haroun-Al-Rashid (754-809) of Arabian Nights fame, but it was Al-Mamoun the Great (813-833) who brought the "House of Learning" at Baghdad into prominence. With libraries, laboratories, universities, subsidized scholars, a translating service and even an astronomical observatory were provided. This institution of learning attracted scholars from Spain to India. Interchange of philosophy and ideas between East and West continued throughout the Abbasid dynasty and it is quite possible that during this period the Islamic civilization received more from the West than it transmitted. In later years this trend was too noticeably reversed.

By the early tenth century, Baghdad was a center of learning that rivaled, if it did not exceed, Constantinople. It is said that the city of Baghdad alone had over one hundred booksellers in 891, and that

at the height of its cultural glory it had some thirty public libraries. Other university and public libraries were located all the way from Bokhara and Merv, deep in the heart of Asia on the land route to China, through Basra and Damascus, Cairo and Algiers, to Morocco and Spain in the West. There are some records of libraries in Cairo, at the height of the city's cultural development in the mid-eleventh century that contained over a million volumes of books.

Unfortunately, the history of Islamic libraries is too similar to that of their predecessors in the classical era, for they, too, ended in wholesale destruction. Many Moslem libraries suffered in civil wars and in the decline of interest of learning under various rulers at different times. Fire and flood also destroyed a great number of these libraries. The greatest destruction, however, resulted from the raids of Mongols in the thirteenth century. From the mountains of Central Asia came the hordes of Genghis Khan, conquering and destroying everything before them. In the first great sweep to the Caspian Sea and northern Persia, the cities of Bokhara, Samarkand, and Merv were destroyed along with many smaller towns. Samarkand had been a Moslem city for over a hundred years, and its schools and libraries were well endowed and well used. The libraries of Merv were justly famous, but all were destroyed along with many of the scholars who were using them.

It was in the books that came from Constantinople and from the Islamic libraries and booksellers that western Europe rediscovered the ideas and ideals of the classical world, and with them came the

intellectual ferment that marked the beginning of the Renaissance and heralded the downfall of modern history. Thus, in any study of library development in the West, it is necessary to remember that for a thousand years, much of the best in our literary heritage was preserved in the East--in the libraries of Byzantium and Islam.

3. Greco-Roman Libraries

With the Greeks the purely utilitarian record became supplemented by literary work, and the library began to preserve graphic materials for their literary value alone. The idea of starting a public library so that the correct texts of dramas can be preserved along with tax records or genealogies still serves a utilitarian purpose. In this sense, the early Athenian public libraries served purely as copyright offices and city record offices.

With the Romans, one begins to observe how cumulative cultural resources of societies distant in time or space bring forth the flowering of a new civilization. Certainly the Romans borrowed culturally--books and teachers and ideas--from the Greeks and others, whether from Alexandria or Pergamum, Carthage or Syracuse, or directly from Greece, itself. When books became spoils of war, and educated slaves came with them, a new Roman emerged. A literature began, a language was formalized, a wealthy cultural nobility arose and a republic became an empire.

However, the Roman Empire achieved a stable society, strong armies, and wealthy leaders before they acquired large libraries, but one can

assume the fact that libraries were the cause of strong development in society and these libraries reinforced and enlarged culture that was, in many respects, the sum total of all that had gone before. After all, under the Roman Empire the great libraries were open to general public, supported by the government, and free at least for reference use: they were truly the essence of a public library.

From the existing evidence through history of the Middle Ages, one can assume that at this era the true value of libraries and books was established. When the destructive sword and the flame of wars almost swept the entire Roman civilization out of existence, it was in the rolls and codices collected into a few isolated monasteries (or brought together at Constantinople by the Christian emperors) that the heritage of both the Christian church and classical civilization was preserved. Raymond Irwin identifies the relation between the ancient libraries and the libraries of the middle ages and he points out that the medieval libraries and scriptoria were influenced not only by Saint Benedict and his famous rule, but also by the world of his great contemporary, Cassiodorus, at the monastery he founded and called the Vivarium.

In the Byzantine civilization, centered in Constantinople for a thousand years after the decline of Rome, the works of early Christians joined the classics of Greece and Rome. Here they were copied, abridged and collated, but too often they were little understood or appreciated. In western Europe, from 500 to 1500 A.D., thousands of monks bent over their desks in secluded monasteries, copying old parchments that were

barely understood, embellishing them with ornaments, but seldom adding to them, or extracting from them any information. There were, of course, bright flashes of light in the Dark Ages, light that spread from the Isidors or an Alcium, a Carolingean renaissance or a brilliant thirteenth century; but on the whole, the Western World retreated rather than advanced. During the Middle Ages, the library--in monastery and Cathedral, in the occasional noble's study, in the scholar's room--truly fulfilled one of its functions, that of preservation; however, its greater function of communicating ideas was little realized. Many works of the classic era were lost but some survived and, like seed waiting for a favorable season, lay dormant awaiting the inquiring mind of the Renaissance, the mind that would comprehend them, translate them into action, and put them into use.

After the initiation of the Middle Ages of cultural movement, the Renaissance began in Italy, an era that had never been completely disjointed from the Byzantine, Jewish and Moslem civilizations of the eastern Mediterranean. It was usually from Italy that the crusaders took ships to the Holy Land, and it was usually through Italy that their remnants returned. It was the cities of Venice and Genoa and Florence that first became merchant Metropolises as a result of ferrying crusaders and carrying the trade that encouraged and financed the recovering, translating, copying and disseminating of the Greek and Latin classics. To their libraries came the manuscripts rediscovered in declining European monasteries, or purchased from Greece, Asia Minor or Constantinople. And it was in these Italians' private collections that the

classics were studied and preserved until the development of the printing press could make them available to the world.

C. PRINTING ERA

The introduction of printing by J. Gutenberg is probably the most important and vital event in the History of Library Development. But, in addition to this, two other major factors contributed to the advancement of library technology. One of these was the discovery of paper and the other was the new concept of the library as a special building type which was rare and uncertain during and before the monastic collection.

If history began with writing, modern history begins with printing. The printing press made thousands of copies available while only one volume was possible before this invention. This meant that the information of literature and learning could be made available to the majority rather than to a selected group of nobles. More copies of large numbers of books meant greater demand for storage and service, larger and more extensive libraries, more ideas and information available, and more people capable of making use of them. Finally, the library was on the verge of achieving its fullest purpose--that of making the heritage of the past fully available to all men all of the time.

D. NATIONAL LIBRARIES

The national libraries of the world came into existence in various ways and over a long period of time. Several of them did not begin as public libraries, but became so by decree. In modern Europe, since 1500, the library in its role of preserver has almost reached its ultimate goal as far as the printed word is concerned. The great libraries of Italy, France, Germany, and England have gathered and preserved virtually every important item in manuscript or print that survived the Dark Ages or came after them. On the whole, these libraries were available to only a few groups of the people--the collectors, librarians, teachers, a few students and scholars. But the concept of popular libraries, of mass culture, has been realized only in the twentieth century.

Of all the libraries of modern Europe, the most outstanding have been the national libraries. The rapidly growing collections dedicated to preserving every book and manuscript which is in any way related to the national heritage. National libraries, generally identified from the spirit of nationalism, often survived and even flourished while other libraries suffered in wars or depressions. Mostly, they had economic security, if not generous budgets, and well-trained staffs. Their collective success and survival have meant much to the entire history of libraries in the world.

The Bibliotique National Library in Paris ranks among the finest of European Libraries.

1. European Libraries

The growth of libraries in Europe since the sixteenth century has been extensive as compared with the pitifully small collections available during the Middle Ages. The primary cause of this remarkable growth was, of course, the development of printing which produced more books and cheaper books than could have been imagined a century earlier. Access to books also contributed to an enormous increase in literacy levels; a development that stimulated demand for books and encouraged the rise of a substantial book trade.

The earliest attempt to design a library in the modern sense was a proposal by Leopold della Santa in 1818. He proposed separate rooms for the staff, the readers, and the books. His proposal was never adopted. One of the earliest library buildings with a separate book room was the St. Genevieve library in Paris, designed by Henri Labrouste in 1843 and, later, the Bibliotheque National Library in Paris, which contained a book stock room.

After the beginning of the French Revolution in 1789, the library suffered at first from lack of interest and funds, but soon was designated the "Bibliotheque National" rather than the "Bibliotheque Royale" and thousands of volumes from the libraries of the fleeing nobility were added to it. Later on, libraries from monasteries, cathedrals and church schools were seized, and all books that were not duplicates were placed in the national library.

In the nineteenth century, the Bibliotheque National was one of the foremost libraries in the world. By 1818, it contained nearly a million volumes, and by 1908 there were over three million copies of books.

Not better, but equal to the Bibliotheque National in international importance, is the British Library, which remains the National Library of Great Britain. It has grown rapidly in its collections despite only two centuries of existence.

The British Museum is largely the product of the amalgamation of many private libraries. As early as the mid-sixteenth century, the scholar and scientist John Dee suggested to Queen Mary that a royal library should be collected from the scattered manuscripts of the monasteries closed by Henry VIII. The achievement of a truly national library for England came in the mid-eighteenth century. And the most important event, in 1823, the library of George III was added to the museum, literally doubling the size of its printed collections. Plans for a new structure began in 1828, at which time the library had over 200,000 volumes.

A similar consistent growth is evident in the history of the British Museum Library in the twentieth century. The imaginative creation of the British National Library has impressed the observers of national libraries. The new national library (1967-1977) consists of four main divisions: the Lending Division, the Reference Division, the Bibliographic Service Division, and Central Administration Division.

The smaller nations of northern Europe all have national libraries, as do those of eastern Europe and the Balkans. In many ways, their histories are inextricably linked to the great wars that swept Europe in the twentieth century. They collectively represent a magnificent cultural heritage in graphic form. By definition, their role is nationalistic in nature, and these libraries are devoted to collecting, organizing and preserving the graphic records and artifacts reflecting the history of their respective nations.

It should be noted that by the onset of World War I, the first of two wars that were to drastically affect the European library scene, the great national libraries were well established and could boast the most magnificent collections in Europe.

All of the other countries of Modern Europe have national libraries, although some few go by another name. In nearly every case these libraries represent the finest libraries in their respective countries and generally can boast of the largest collections, the most impressive quarters, and the best qualified and most influential staffs. Their charge is admittedly nationalistic, and as a result policies often characterized by restrictions that reflect the goals and political philosophies of their respective governments. Nearly all of these libraries are affected with serious space and staff shortages, and consistent rapid growth of their collections. Despite these obstacles, the national libraries of Europe represent a magnificent cultural heritage in graphic form, and they would appear to have a bright future in the years ahead.

2. Soviet Libraries

Perhaps the most extensive and largest national library in the world is that of Soviet Russia, the Saltykov-Shchedrin Library in Leningrad, formerly the Imperial Russian Library of St. Petersburg. Like the British Museum, this collection had its beginning in the eighteenth century and, like the Bibliotheque Nationale, it owes its origins to the spoils of war; in this case, a captured Polish library taken by the armies of the Empress Catherine. This library had been built up by the Counts Andreas and Joseph Zaluski before 1740. When Warsaw was conquered by the Russians in 1794 and Poland was divided between Russia, Prussia, and Austria, the national library went to the Russians and with it two hundred and fifty thousand books and ten thousand manuscripts. After the death of Catherine, the library remained inactive until Count Alexander Stroganoff was appointed its director in 1800. He added to it the various small collections owned by the Russian government and organized it into an effective library collection.

The Revolution of 1917, after the political and national chaos had subsided, resulted in the long run in the improvement of the national library. Under the new Soviet government, this enormously enlarged library was designated the Russian Public Library but it was later called the Saltykov-Shchedrin State Library. Its growth has continued and, today, its inventory indicates 20 million volumes. It is active in every aspect of library work; bibliographic and documentary services have been increased immensely.

The Lenin State Library in Moscow has recently replaced the Saltykov-Shchedrin State Library as the official national library and is even more extensive in size and complexity. Its predecessor was the collection of books housed in the Rumyantsev Museum, founded in 1862, which numbered closely one million volumes before the Revolution. Today it contains over 25 million cataloged items, including books, pamphlets, and periodicals. Taken together, the two major Russian "National Libraries" represent one of the largest and most progressive national library systems in the world, and their influence and control over library affairs in Communist Europe is unrivaled.

3. American Libraries

Since the mid-19th century, American libraries have grown significantly in number and scope. The rapid growth of American libraries was due to a number of positive factors: 1) the extensive natural resources of the country, which offered a continuing stimulus to the economy, thus generating great wealth which became available for the support of cultural institutions such as libraries, museums, schools, etc.; 2) the rapid increase in population which supplied the needs of American industry and, in return, provided an audience for education; 3) the industrialization which required even more sophisticated information resources for its continued development; and 4) the democratic caste of American life which encouraged the free flow of information and depended upon the "informed citizen" as the very foundation of its existence.

In the nineteenth century, however, the United States did not develop great libraries. Slowly, but surely, over a hundred years it developed from a frontier nation of a few books to the single most library-minded nation in the world. By 1900 the United States had the most libraries, the largest libraries, and certainly the most used libraries in the world. The government formed libraries, so cities formed libraries, schools and colleges formed libraries; and, at last, libraries were formed for use and not for mere preservation. Books and libraries in American society came to be meant for the reader, for educational, recreational, inspirational, and informational uses, and printed material came to be used in its ultimate form as a means of communication of thoughts and facts from one soul to another. The role and value of the library as an adjunct to education, as an advisor for information, as a partner to recreation, as a boon for business, or as an assistant to science has been widely acclaimed and, to a large extent, realized.

Using economic terms, the "take off" in the development of American libraries can be said to have occurred between 1850-1900 and, by the latter date, most of the library forms known to modern libraries were firmly established and their patterns of development clearly noticeable.

One can accept the fact that cultural progress comes from accumulated knowledge and experience; and that records of these events are best kept in graphic form--in the form of books in libraries. But the representation of graphically recorded knowledge is not automatic.

Records of knowledge do not become a usable library or archive without the conscious effort of some active persons. The accumulation of large collections of graphic materials, and organization of that material into libraries, seems to depend upon the collective activities of a relatively few people in a society that has reached a high degree of culture, an advanced civilization that is relatively peaceful and prosperous. Unfortunately, wars, poverty, famine, and ignorance are as much the enemies of books as they are of people. Despite the value of their contents, unfortunately, books and libraries are not indestructible and history shows that in the time of great crises, books are among the first items to be destroyed, whether intentionally or accidentally. It seems that libraries and cultural progress have an interdependent relationship rather than one of cause and effect.

E. THE FUTURE OF THE LIBRARY

What of the future of libraries, and how would the future libraries, archives, museums resolve the obstacles to growth of information in the near and distant future. With information increasing in geometric proportions, the task involved in collecting, organizing and making readily available this giant amount of material on paper, film, and tape seems insurmountable. Most of the nation's libraries are hard pressed for money to buy, and space to house, the torrent of books and journals pouring off the presses around the world.

Logically the answer to the problem of controlling this information bank lies in electronics and automation. Also, how to cope with it all is, by itself, a subject of prolific literature in the library world. Librarians themselves are the first to recognize that the solution is not simply more books, more buildings, and more librarians. What they look forward to and need is a change in the very concept of what a library is: beyond its function as a bank of books, the library must become a source of active information transfer. New technologies offer the long-range hope of realizing this concept, and librarians, above all, welcome it. Through computer storage and retrieval, microfilms, long-distance transmission, and the like, it may yet be possible to multiply the usability of every information unit, to transcend the physical and geographic limitations of the library building.

But somewhere in the midst of this supermechanization, this world of information storage and retrieval, let us hope that there will always

be a place for the ordinary book, and the librarian who knows books and enjoys the supreme satisfaction of bringing a book and a reader together. The human element has always been uppermost in the history of books and libraries; let us hope that it always remains that way. Besides, the experts in this field believe that for at least the next 30-40 years the book will remain an irreplaceable medium of information. The bulk of library negotiations will continue to be with books, although the science and technology section will gradually shrink. Remote retrieval of full texts in large amounts over long distances will not be generally feasible, and the continued use of a central library will still be necessary. Therefore, library planners can proceed at this time with confidence that technological development in the foreseeable future will not alter radically the way libraries are used. In planning library building today, we should start with the library as the institution we now know. Any departure in the future should be made from this firm base.

1. Planning Objectives

In terms of physical planning, the present state of library architecture based on modular principles which allow for interior flexibility, has until now provided that confidence. We know that such buildings, appropriately located, capable of expansion, and with provision for the addition of electric and air-conditioning loads, could serve as well in the years ahead as they do today. If the library built today is not to be condemned to early obsolescence by the new technology, the change

in storage requires a greater premium than ever be placed on the planning of buildings that are adaptable. The column system should be coordinated with lighting, stacks, and furniture modules so that the reorganization between shelving and seating are easy to make, and rearrangements of partitioning will be inexpensive. Perimeter and underfloor ducts should be provided in sufficient size and number to allow access to cable and electrical wiring at unpredictable locations on the floor, and to run easily down one floor to another. Air-conditioning shafts throughout the building should be oversized to provide room for additions to existing systems.

Thus, buildings planned now must be designed for flexibility and growth. Also, it is imperative that an added cost factor of three to five percent should be allowed in order to assume adaptability, especially in mechanical, electrical and air conditioning systems.

Finally, we need much more attention and consideration to the problem than has yet been given to the library user. Any application of technology to library activities will have to be engineered to be humanly acceptable, since there will be resistance to them all--to the use of microforms in place of books, to typed text instead of print, to engaging complicated interaction with a machine, to reading in a fixed place without moving around. The machines will breed their own resistance to the extent that they place restrictions on people now more than ever so it is important to design library buildings that will be inviting and comfortable to use. The library building itself will gradually change, but people who use libraries, are a constant factor.

In general, the obstacle which most recent library design has produced is how to provide an environment of high quality for large numbers of users and how to make the activity of using a library part of an every day existence while, at the same time, coping with the very considerable technical problems produced by the rapid increase in the quantity of information.

In the past, the library had to fulfill a definable function and, despite technical innovation, it continues to do so today. The main objective and concern is to provide information to the individual. Although there has been change in the method of recording and storing information, four individual operations can be distinguished in the primary function of a library which are largely independent of the means used to produce the information store. These four operations also constitute a cycle of use which could be described as follows:

1. location of information
2. the retrieval of the information from storage
3. the communication of the information to the user
4. the return of the information to the storage

This cycle is independent of the size of the library, though a certain part of it may increase in complexity with the increase in size of information stores.

2. Contemporary Priorities

Obviously, the library should house the library's collections, staff, and provide accommodations for the readers; but these alone are

not adequate concerns. Other problems must be dealt with in planning the new structure, and they can rarely be solved without deciding on priorities which, in turn, should be based on the objectives of the institution.

In planning a functional building, those who are responsible for the design must consider some of the major and critical issues.

1. Provision of quarters that will, as far as possible, insure the preservation of the collections. Proper atmospheric conditions; i.e., temperature, humidity control, and filtered air are important. The presence of rare and irreplaceable materials may make the answer obvious. Arrangements that will prevent their loss by vandalism and theft must not be neglected, and again planning is directly involved.

2. Comfort of the readers and staff. Comfort, to oversimplify, might be said to require conditions that enable the occupants to forget about problems of such matters as temperature, humidity, drafts, lighting, visual and auditory destruction.

3. Convenience. Planning should make it unnecessary for readers and staff to waste time in traveling unnecessary distances or waiting unduly for service. The design of traffic patterns, floor-level areas, stairs and elevators are involved issues in logical circulation patterns.

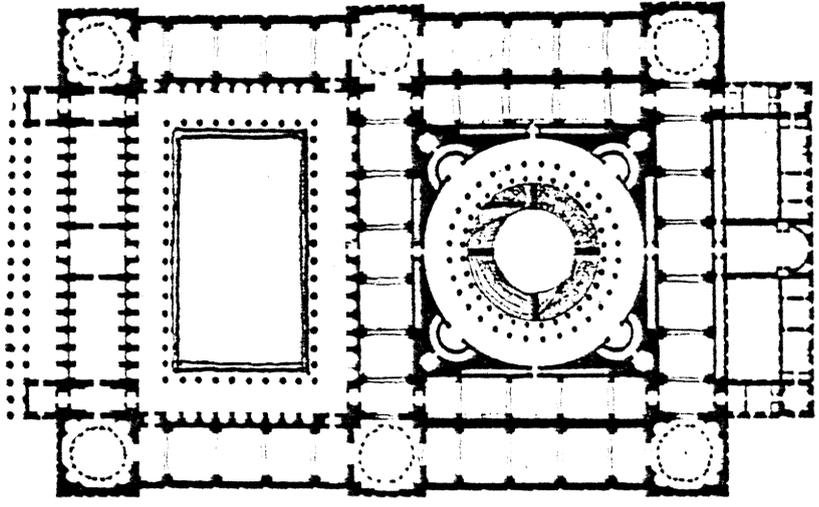
4. Space Utilization. The fundamental question is how much it will cost to house satisfactorily a given number of readers, service to readers, collections, and staff and how much it will cost to operate and maintain the building during the years to come.

Aside from technical and physical problems in the future, the library and its related institutions have a great task to perform in human relations, whether on the local, national, or international level. Modern means of transportation and communication have brought the peoples of the world closer together than ever before in the history of mankind. Close relationship of peoples of different cultures has, in the past, usually resulted in tragedy--in wars, in conquest of one people by another. Today we are confronted with cultural conflicts on all levels--from cold war on the international level to the generation gap at home.

It should be considered that through the tools of the library, graphic communication must be employed to bring the element of thoughtful contemplation into national and local problems. It must be used for human unity, to teach people to comprehend each other, to arbitrate and mediate differences. Books and libraries can play a most essential and vital role in the effort towards peace and unity by arousing man to fight ignorance, disease, intolerance, and poverty. It is obvious that they have contributed to the advancement of so-called universal civilization. What remains unclear is the direction and nature of library development in the years to come, but certainly the presence of the cumulative record of man's fears and hopes, achievements and failures, weaknesses and strengths as preserved, organized, and disseminated through libraries will continue to figure tremendously in the progress and process of civilization, particularly cultural evolution.

a. Public Library
(1787) by
J. Lefebure.

Scheme was used
by Sidney
Smirke in 1852 →
for the library
of the British
Museum.



b. First floor plan
of the Biblio-
theque Nationale,
Paris.

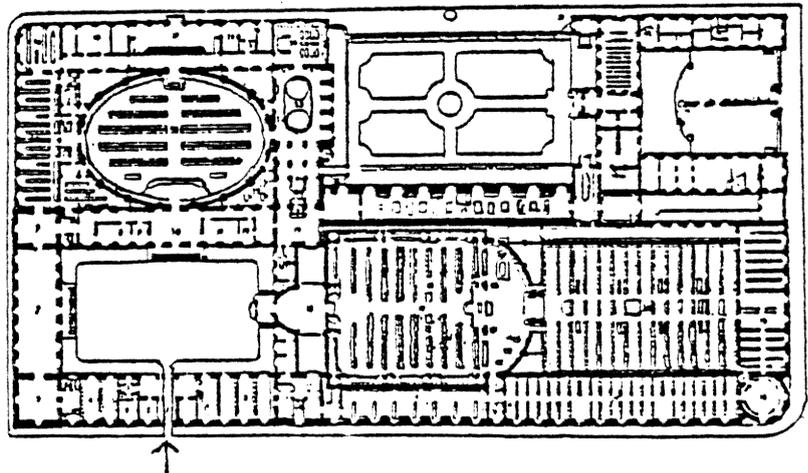
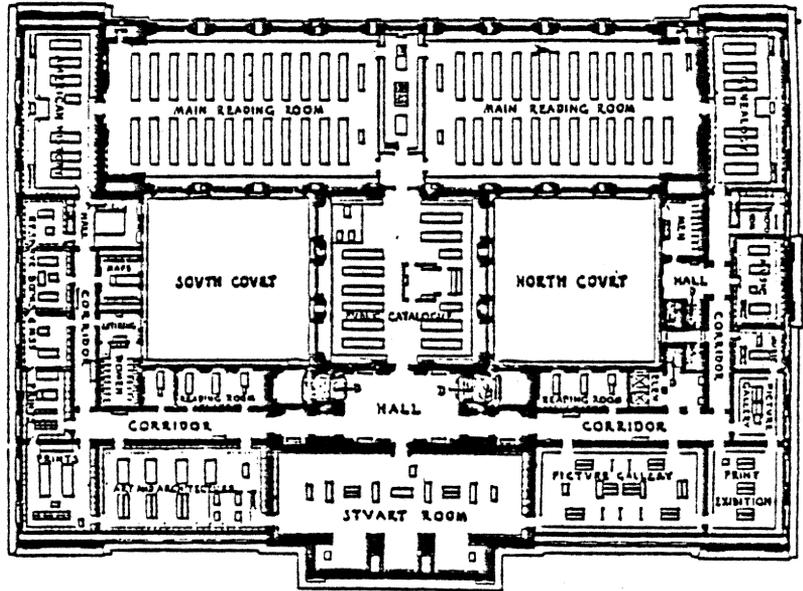


Figure 7.

- a. Third floor plan of the New York Public Library.



- b. Third floor plan of Harvard Medical School.
Hugh Stubbins & Associates

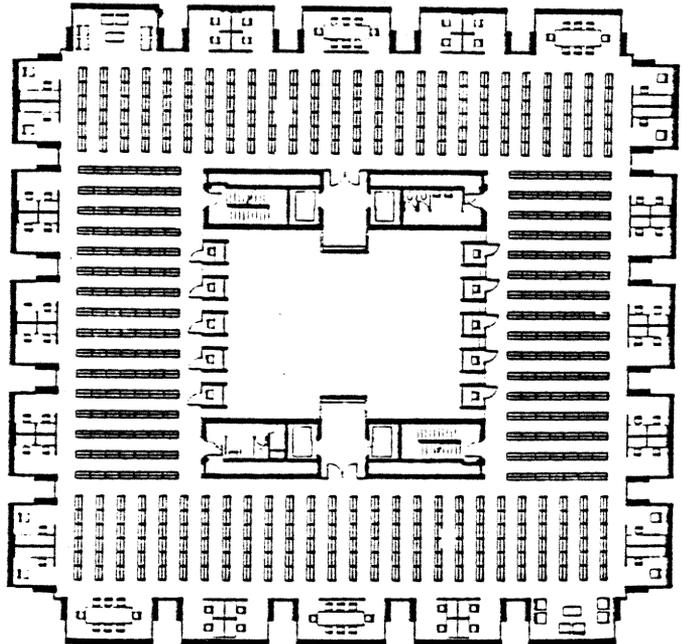
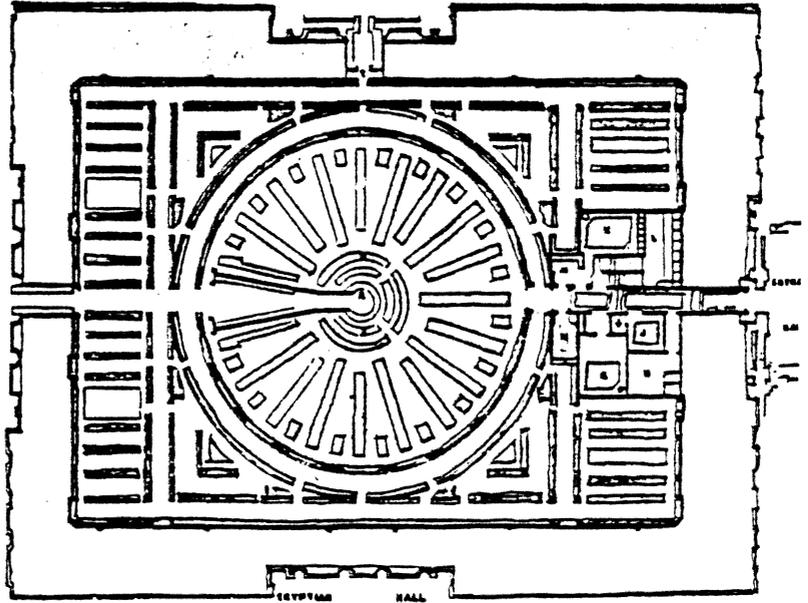


Figure 8.

a. Ground-Plan of
The New Reading
Room, etc.
British Museum



b. Ground Floor Plan
The British
Museum Library—
new addition.

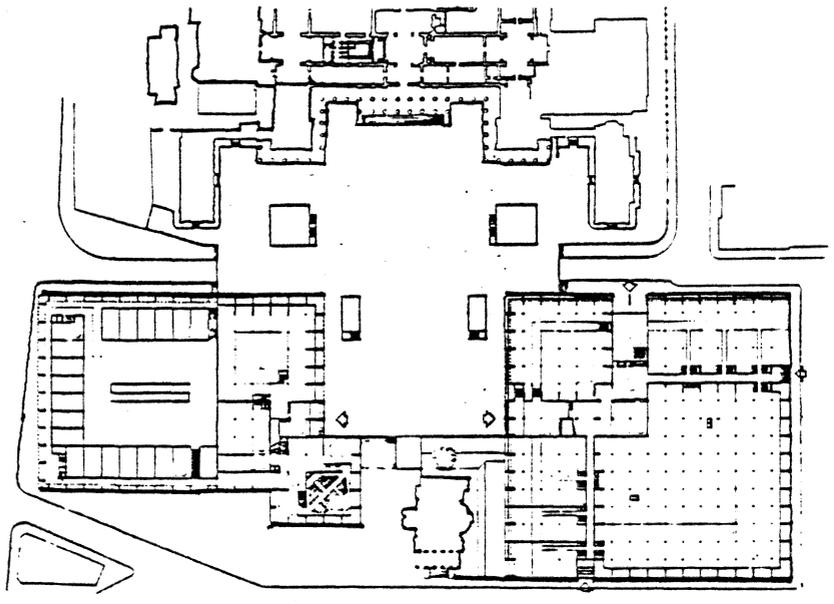


Figure 9.

SECTION THREE

PROGRAM, ANALYSIS, AND DESIGN

A. MAJOR OBJECTIVES OF THE PAHLAVI NATIONAL LIBRARY

The Pahlavi National Library has been created to serve both as a major cultural resource for Iran and as part of an international information network.

As the Iranian National Library, the P.N.L. will collect and preserve the printed and audio-visual production of the country as well as those materials relevant to Iran's culture and history. It will establish bibliographic control of such materials and provide centralized services for other Iranian libraries. The library will also collect, preserve, and make available all foreign publications which will serve the cultural, social and scientific needs of Iran.

As the center of science activities in Iran, the P.N.L. will be responsible for interpreting international library development and for making these developments accessible to Iranian library community. It will also be responsible for making library development in Iran accessible to the International Library community, and for cooperating with its international counterparts in development of services useful to library users around the world.

However, the P.N.L. will have responsibilities which extend beyond such basic library activities. The Center for Research in Iranology will serve as a library institute, providing exhaustive coverage of resources in the field of Iranic studies. The center will be an international club for research activity in this field.

The P.N.L. will also function as a center for other cultural activities, including public library with resources developed to serve the need of the general public in Tehran. The public library will include two special collections, one related to Islam and one related to Iran, both of particular interest to Iranian citizens. This part of the P.N.L. seeks to attract children, young adults, and general public, and to orient them to library use.

In summary, the Pahlavi National Library may be described as a catalyst in further cultural development of Iran.

B. LOCATION OF PAHLAVI NATIONAL LIBRARY PROJECT

The site selected for the P.N.L. building is located to the northeast of Shah and Nation Square in Shahestan Pahlavi, the projected new city center for Tehran.

Tehran lies at the foot of magnificent Alبرز mountains in the central province which stretches over 31,000 square meters on a high, dry sunny plateau. The relief of the city is formed by a number of north-south trending valleys which slope gently southward. The city elevation is around 2,000 meters at Darband in the northern part, and around 1,300 meters in central part of the city.

Tehran currently has a population of 4.5 million. The city area has increased five times its size since thirty years ago.

Sunshine drenches the plateau most days of the year, but there are definite seasonal changes. While summers are not (20°C to 35°C), humidity is low. Winters have short freezing periods which can reach 15° with a temperature range of 1°C to 11°C , with occasional snowfalls. Tehran's rainfall averages about 200 mm per year. The level of air pollution and dust is high most days, with air haze. Winds are not very strong (max. 50 km/h) and blow mainly from north and from the southeast.

Tehran is located in a seismic zone characterized by shallow high magnitude shocks ($M-7.0$) no significant earthquake has occurred in Tehran area within the last century.

C. DESCRIPTION OF PAHLAVI NATIONAL LIBRARY SITE

The P.N.L. will be built on a site of 40,660 square meters fronting the northeastern corner of Shah and Nation Square. This site is separated into two sections by Road J.

Site "A" Southern Section 26,160m²

Site "B" Northern Section 14,500m²

Bridges and tunnels can serve as functional links between the two sections of the site. However, construction above the Road J should be limited in height and width (covered areas above Road J should not exceed 50% of the road area.

The site is limited:

- on the South, by Shah and Nation Square, at level 1,382 m (this level is considered 0/00 level for the design);
- on the North, by a residential area, across a free space corridor 30 meters wide, at an average level of 1,396 m;
- on the West, by Shahbanou Boulevard, which climbs from level 1,382 m to level 1,395 m and which will have light traffic, limited in the future to public transportation;
- on the East, by Road U, climbing from level 1,378 m to level 1,394 m which will carry a heavy traffic, separating the site from public park.

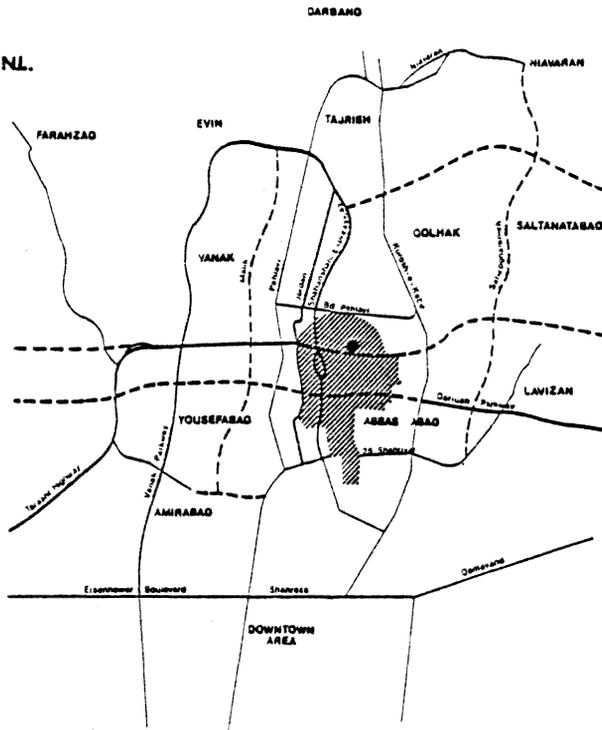
Geology, Hydrology, Geotechnical of the Site

The site contains pale colored, moderately cemented silty/sandy/gravels, steeply folded and faulted. The depth of the deposit on the site is probably in excess of 200 meters.

No seepage of water is found. The ground water table should be about 16 meters below grade.

The angle of shearing resistance of this soil varies between 30° and 40° but many near-vertical cuts remain stable for long periods of time. The material on the site is suitable for use as land bearing pressure of 400 KN/m².

a. LOCATION OF P.N.L.



b. LAND USE MAP

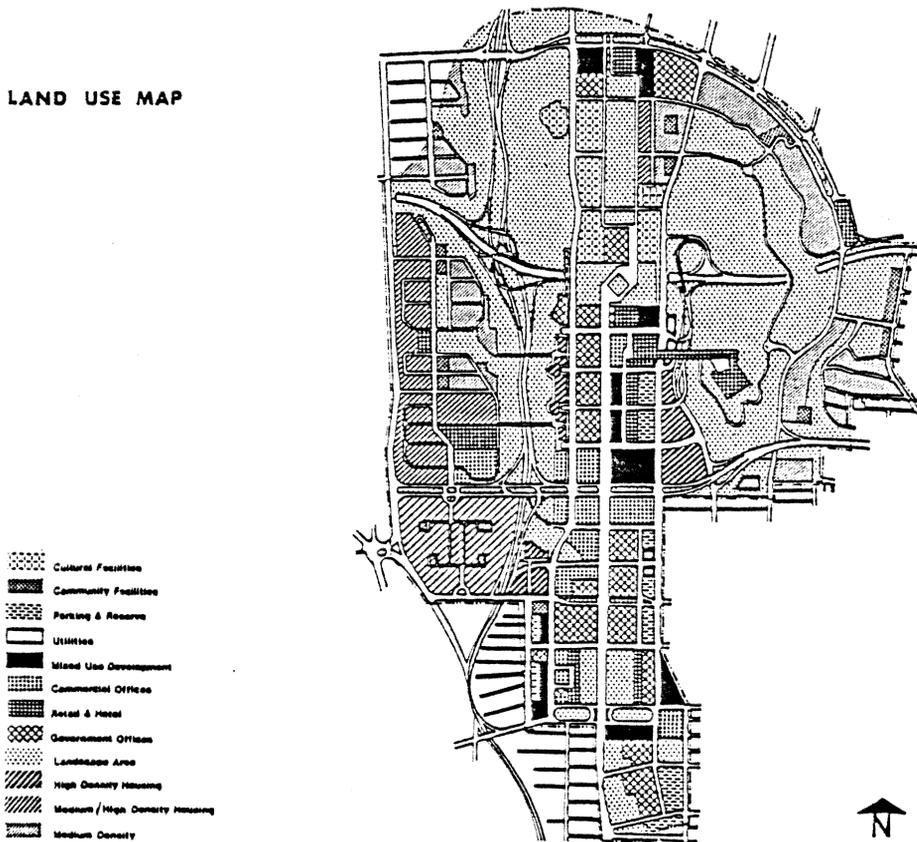
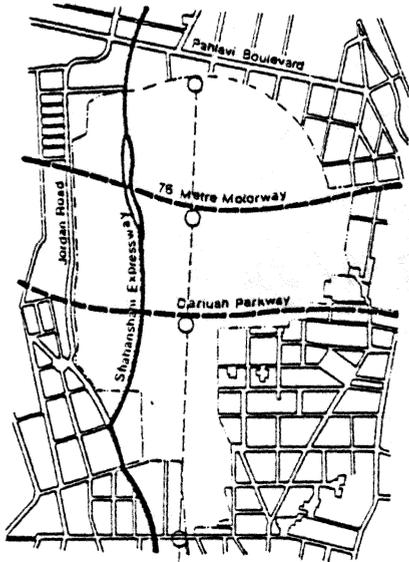
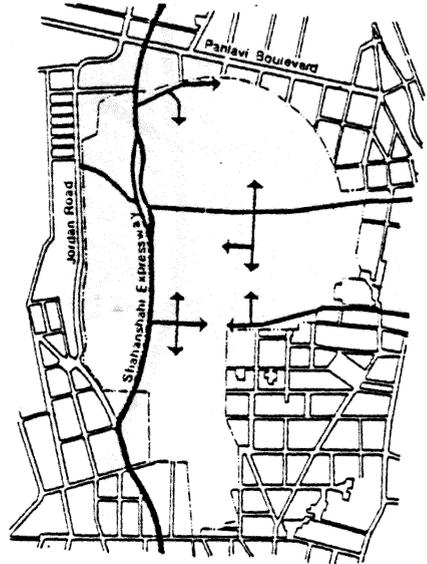


Figure 10.

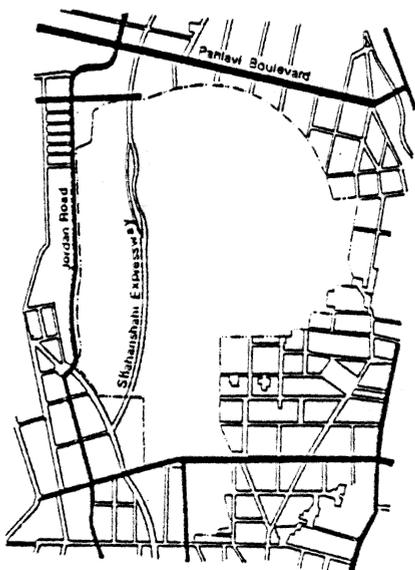
g. REGIONAL ROADS AND METRO



c. REGIONAL ACCESS



b. DISTRIBUTOR ROADS



d. LOCAL ACCESS

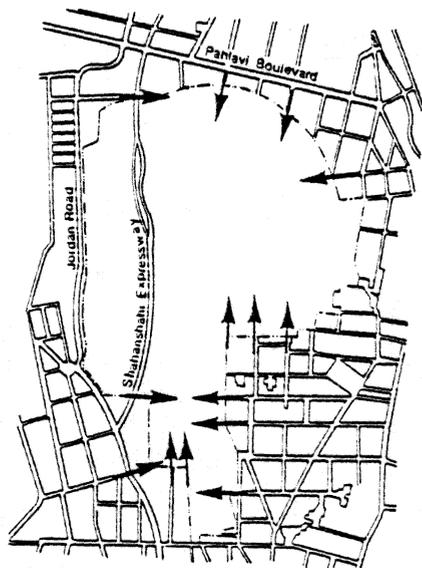
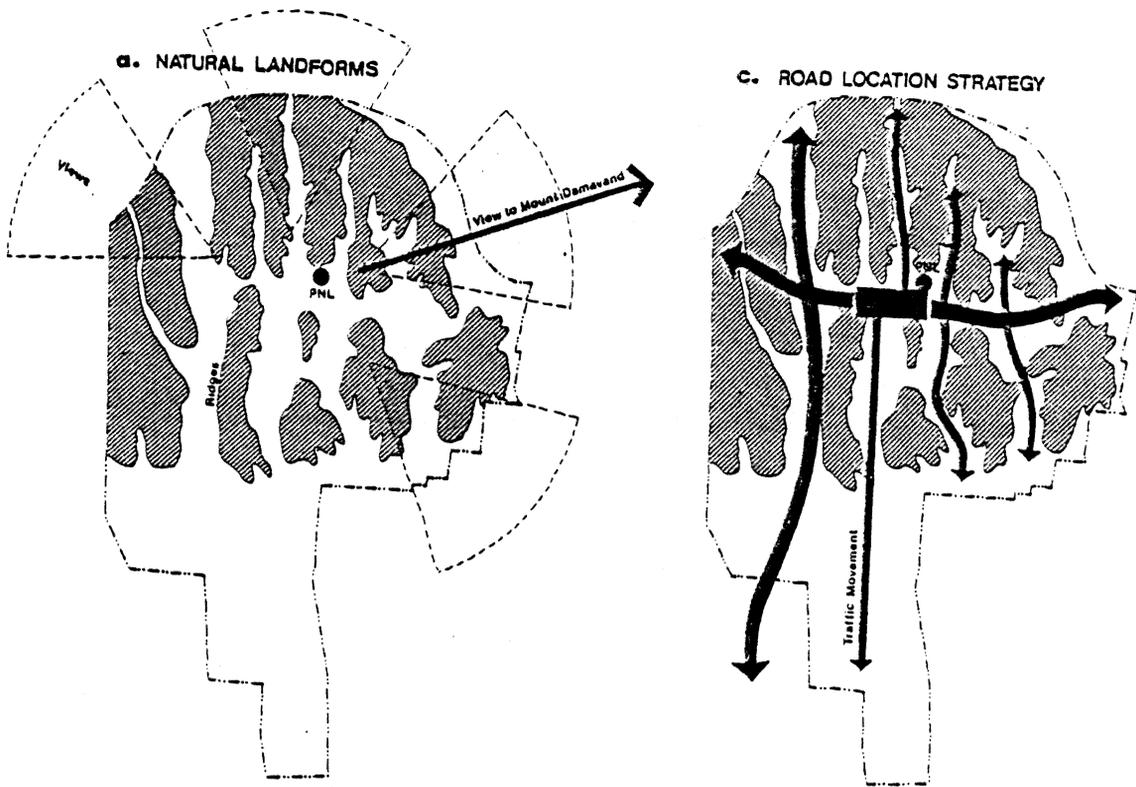


Figure 11.



b. ACCESS AND SERVICES TO THE SITE

-  PNL Site
-  Regional Roads
-  Primary Distributor Roads
-  Secondary Distributor Roads
-  Boulevards
-  Major Pedestrian Routes
-  Moving Pavements
-  Bus

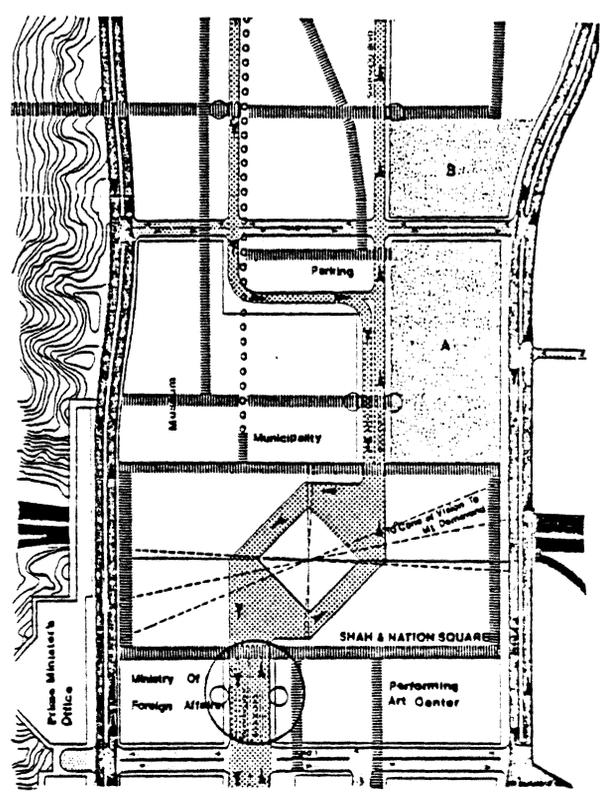


Figure 12.

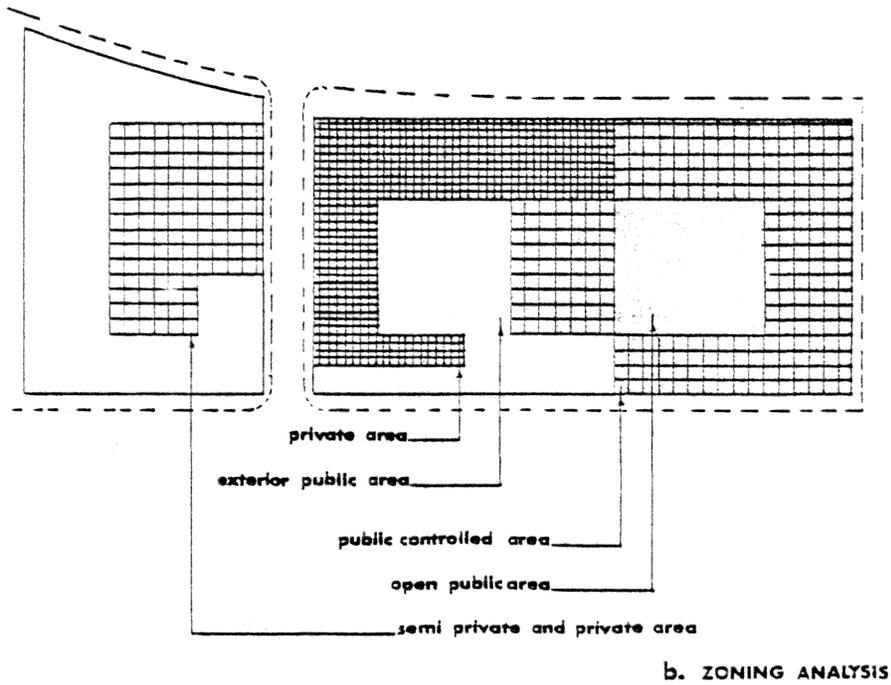
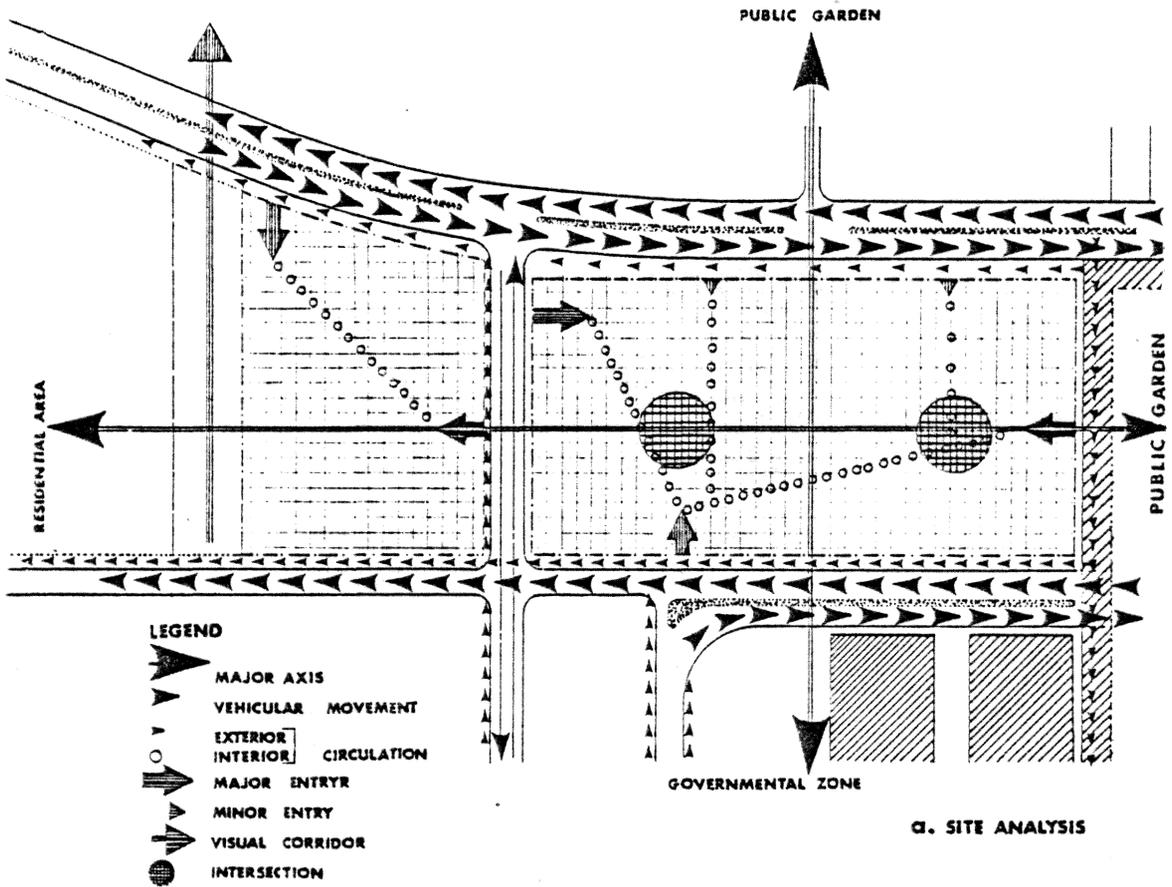


Figure 13.

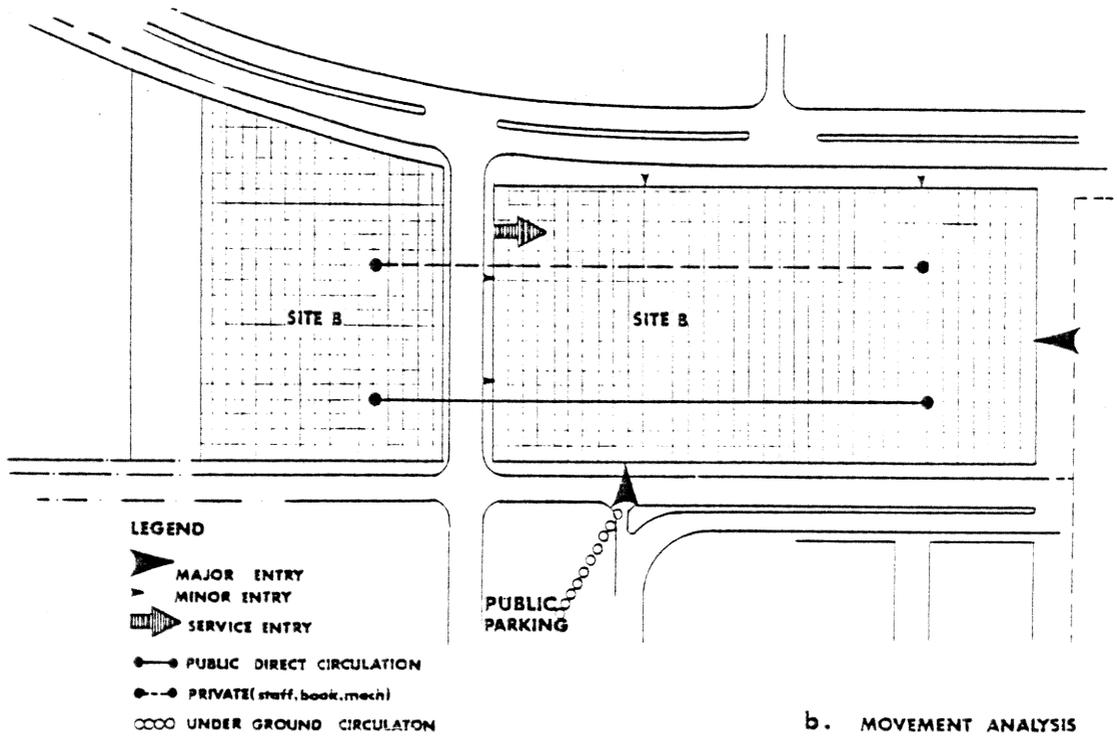
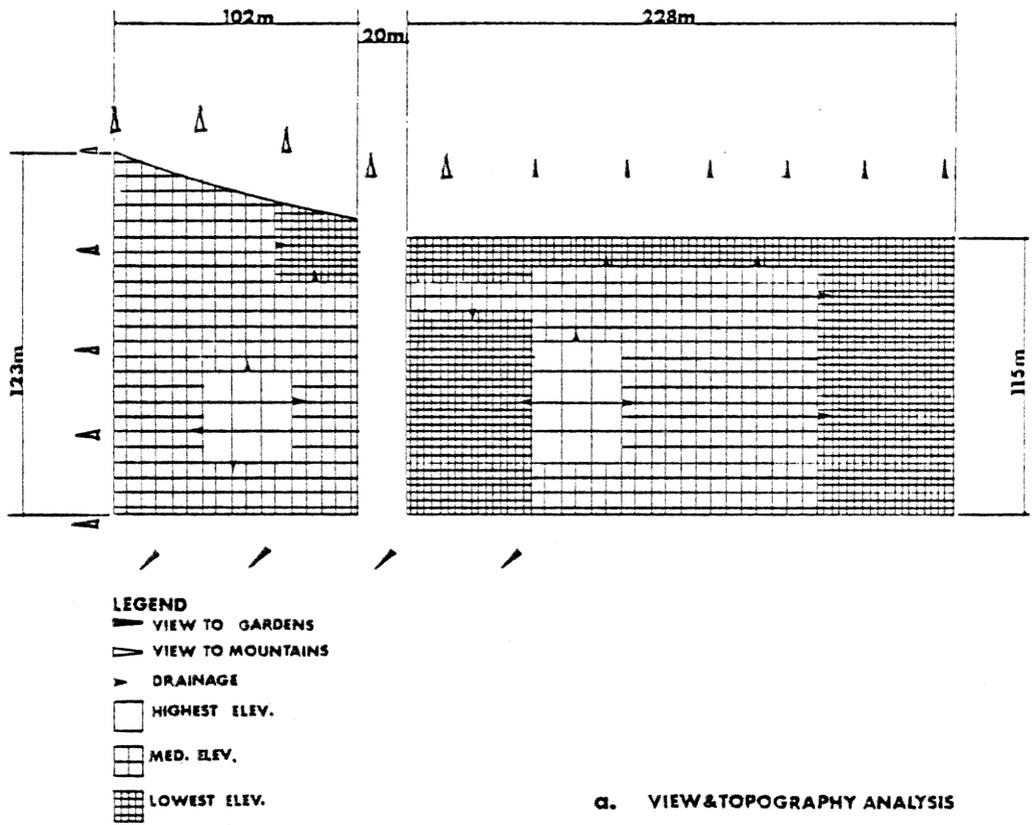


Figure 14.

Sizes of Components

Component	Public	Staff	Collection	Net Area m ²
Public Library	1,550	89	70,000 V. + 50 periodicals	6,785
Research Library	1,450	242	500,000 volumes + 15,500 period- icals + 100,000 msst 1,000,000 A-V + 300,000 maps	20,020
Operational Support Services	--	292	--	7,180
Central Administra- tion	770 (1)	427	--	9,885
Operation and Maintenance	--	306	--	10,435
Closed Stack	--	24	3,000,000 volumes	20,000
Center for Research in Iranology	225	88	15,000 V + 60,000 non-book materials	3,080
Living Facilities	90	4	--	4,100
Parking Facilities (500 cars)		--	--	12,500
	4,085	1,522	Total Net Area (2)	93,985

(1) Includes cafeteria and day care center.

(2) Does not include horizontal and vertical circulations.

D. ARCHITECTURAL AND MECHANICAL OBJECTIVES

1. Flexibility and Modular Design

One of the main criteria of the P.N.L. design is the flexibility of structure. This need for flexibility is based on probable variations in the quantities of materials, users and staff of the projected library. More importantly, future changes in overall library program may necessitate use of various spaces for functions different from those originally established.

The building shall be designed with:

- Structurally independent floors having a load bearing capacity of 650 kg/m², except where heavier capacities are indicated;
- A minimum clear ceiling height of 3 m, except where otherwise indicated;
- The building must be modular design, with a sub-module which will meet the requirements for the most efficient arrangements of books, office areas, reading spaces, lighting and partition systems. A good example to meet library needs is a sub-module of 1.5 meters and a bay size between 9 and 15 meters;
- An air conditioning system capable of adjustment for both the comfort of people and preservation of collection;
- Lighting system adaptable to office functions, reading rooms and bookstacks;

Technical and Mechanical Requirements

Space	Acoustics	Lighting	Temp. & Humidity	Supported Services*	Others
Reading Rooms	Good	Glare free Shadowless 500-600 lux	21°C-25°C 40%-45%		
Office Spaces	Same	Same	Same	Yes	
Auditorium & Studies	Sound Proofness 50-55 db	Artificial Lighting General Lighting Spot Lights Technical Grid	21°E 24°C	yes	Fresh Air Renewal Rate 10 v/h
Book Stack Areas and Vaults		500-600 lux	Constant 10°C 50% \pm 3%	Yes	10 v/h
Central Closed Stack			18°C-20°C 45% \pm 3%		
Audio- visual			5°C 30% \pm 5%		

*Toilets, meeting rooms, photocopying, supply storage, mail rooms 80-120 m².

- An underfloor duct system (or ceiling system) to allow access to power lines, telephones and computer cables;
- Partitions or screen systems of different heights to provide variations in office arrangements. Sub-module must match ceiling grid and lighting layout to facilitate use of a floor-to-ceiling movable partition system.

2. Traffic Patterns

Three main traffic systems must be taken into consideration in

P.M.L: Public, staff and equipment, book and materials.

Crossing Traffic should be minimized

- The public traffic pattern should lead users to consultation areas and public facilities. Orientation should be easy, and the system should permit controlling access and exits, and of closing some activities as required by different opening and closing schedules;
- Staff and equipment traffic patterns should link the various offices scattered in the building. Distances should be minimized where possible;
- And the books and materials traffic pattern should assure their quick transportation through the different activities without conflict or interference.

3. General Considerations for all Components

Typical Space Requirements

1. Reading spaces. Should be open plan, organized with multi-placed tables, dry and wet carrels, and using book stacks as acoustical and visual screens. The interior arrangement should permit the reader convenient access to the material he needs, yet provide an impression of privacy.

2. Office spaces. Two types of office facilities are required: private offices and work stations in large open areas.

Private offices will vary between 15 and 30 m² and work stations will have an average net area of 12 m².

3. Conference rooms. Will be used regularly by public and staff for lectures and discussions. They should be designed for high technical performances.

4. Auditorium and studios. These spaces will be used for theater, dance, music, and other cultural programs, equipped with very high technical performances.

5. Book stack areas and vaults. An important part of the building will be dedicated to the storage of books, manuscripts, maps and audio-visual materials; all of which requires specialized environmental conditions for their preservations.

6. Laboratories and workshops.

7. Outdoor spaces. A connection between indoor and outdoor spaces for library and other activities should be provided. In a library, however, such requirements as exit controls and use of air conditioning present a challenge for the design of outdoor spaces. Architectural and functional design should endeavor to solve this problem and provide outdoor spaces at the appropriate scale.

Five main categories of systems will be required to serve the building:

- Electrical supply system;
- Heating, ventilation, and air conditioning systems;
- Mechanical transportation (conveyor) systems;
- Communication systems (including computer system);
- Fire protection system.

These systems should be designed for economy and ease of maintenance, should avoid over sophisticated solutions, and should provide for efficiency of centralized operation.¹⁵

All information is taken from the National Library Architectural Program, Pahlavi National Library Project, Tehran, Iran, March 1977.

SOURCES OF FIGURES

1. Architectural Design, October 1974, No. 629.
2. a) Architectural Review, May 1976, p. 31.
b) The Sense of Unity, p. 103.
3. a) Author's Illustration
b) Architectural Review, August 1977, No. 460.
4. a) Architectural Review, August 1977, No. 460.
b) Author's Illustration
5. a, b, c) Architectural Review, May 1976.
6. a) The Sense of Unity, p. 60.
b) Islamic Art, p. 84.
7. a) Architectural History. The Journal of the Society of Architectural History of Great Britain, p. 36.
b) British Encyclopædia, Vol. L, p. 26.
8. a) British Encyclopedia, Vol. L. p. 27.
b) Libraries, Architecture and Equipment, by M. Brown, p. 19.
9. a) Libraries, Architecture and Equipment, by M. Brown, p. 19.
b) Ibid., p. 121.
10. National Library Architectural Program, Tehran, Iran, March 1977.
11. Ibid.
12. Ibid.

FOOTNOTES

1. Pope, A. U. Persian Architecture, p. 95.
2. Blunt, W. Splendours of Islam, p. 86.
3. Ardalan, N. and Bakhtiar, L. The Sense of Unity, p. 2.
4. Kuhnel, E. Islamic Art and Architecture, p. 23.
5. Guenon, R. and Schoun, F. Traditional Studies, p. 49.
6. Ardalan, N. and Bakhtiar, L. The Sense of Unity, Foreword by S. H. Nasr.
7. Ibid., p. 58.
8. Ibid., p. 59.
9. Pope, A. U. Persian Architecture, p. 18.
10. Ardalan, N. and Bakhtiar, L. The Sense of Unity, p. 79.
11. Art and Architecture. Iran Yesterday, Today, Tomorrow, International Edition, p. 14.
12. Olle Fla, J. G. Library History, p. 9.
13. Ibid., p. 9.
14. Harris, M. H. History of Library in Western World, p. 15.

BIBLIOGRAPHY

Books

- Atil, Esin. Art of the Arab World. Washington, D.C.: Smithsonian Institute, 1975.
- Ardalan, B., and Bakhtiar, L. The Sense of Unity. Chicago: University of Chicago Press, 1973.
- Association of Research Libraries and Association of College and Research Libraries. Planning Academic and Research Library Buildings. New York: McGraw-Hill Book Company, 1965.
- Blunt, Welfried. Splendor of Islam. England: Agnus and Robertson (UK) Ltd., 1967.
- Browne, Michael. Library, Architecture & Equipment. New York: Praeger Publishers, Inc., 1970.
- Bushnel, G. The World's Earliest Libraries. London: The Bookman's Journal, 1930.
- Benge, R. C. Libraries and Cultural Changes. Hampden, Conn., 1970.
- Butler, P. An Introduction to Library Science. Chicago, 1933.
- Cooper-Hewitt Museum. Man trans Form. Washington, D.C.: Smithsonian Institute, October 1976.
- Educational Facilities Laboratories. The Impact of Technology on the Library Building, 477 Madison Avenue, New York 10022.
- Fathy, Hassan. Architecture for Poor. Chicago & London: The University of Chicago Press, 1973.
- Fiore, S. Voice from Clay: A Study of Assyrio-Babylonian Library Culture. Norman, Oklahoma, 1965.
- Hoag, J. D. Western Islamic Architecture. New York: G. Brazeller, 1963.
- Johnson, E. D. History of Libraries in Western World. New Jersey: The Scarecrow Press, Inc., 1970.

Johnson, E. D. Communication: An Introduction to the History of Writing Books and Libraries. New Jersey: The Scarecrow Press, Inc., 1973.

Kuhnel, Ernst. Islamic Art and Architecture. Ithaca, N.Y.: Cornell University Press, 1966.

Langmead, Stephan, and Langmead, Beckman. New Library Design. John Wiley & Sons, Canada, Ltd., 1970.

Landheer, B. Social Function of Library. New York, 1957.

Mez, Adam. The Renaissance of Islam. London: Luzac and Company, 1937.

Macdougall, Elizabeth, and Ettinghausen, ed. The Islamic Garden. Washington, District of Columbia, 1976.

Olmstead, A. T. History of the Persian Empire. Chicago: University of Chicago Press.

Olle Fla, J. G. Library History: An Examination Handbook. Arction Books, Clive Bedgley, 1967.

Pope, A. U. Persian Architecture. New York: George Brazeller, Inc.

Shaw, R. R. The State of Library Art. New Brunswick, N.J.: Graduate School of Library Service, Rutgers University, 1960.

Trezza, A. F. ed. Innovation for Changing Needs. Chicago: American Library Association, 1973.

Wilber, Donald N. The Architecture of Islamic Iran. New Jersey: Princeton University Press, 1955.

Wilber, Donald N. Iran Past and Present. New Jersey: Princeton University Press, 1967.

Articles:

Art & Architecture, International Edition. "Iran Yesterday, Today, Tomorrow. #18-19, June-Nov. 1973 (printed in Iran)

Architectural Design. "The Sense of Unity," K. Critchlow, October 1974.

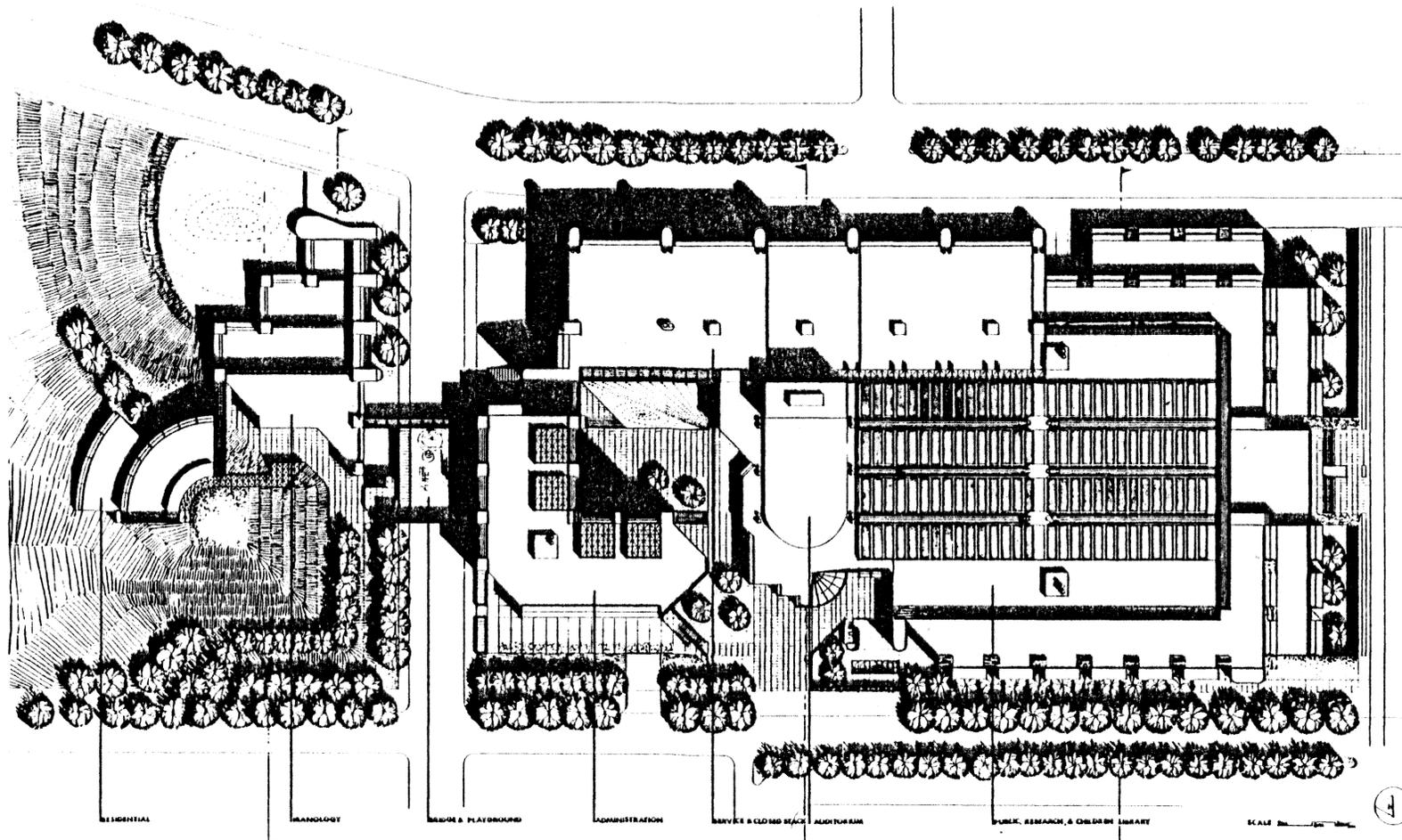
Architectural Design. "Indigenous Buildings and The Third World," A. Kain, F. Afshar, J. Norton, April 1975.

Architectural Design. Islamic Architecture and Decoration, D. Petherbridge, June 1976.

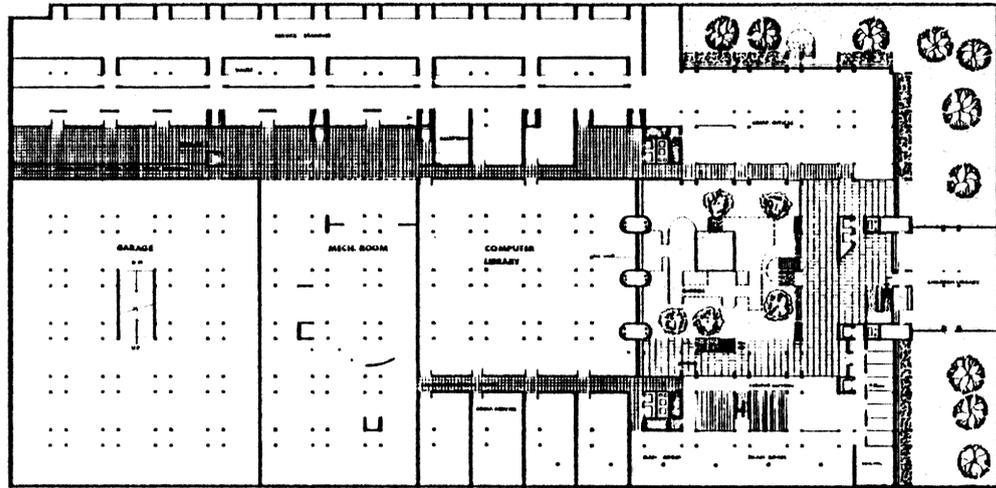
- Architectural Record. "The Oil-Rich Mideast." June 1975.
- Architectural Record. "Future Trends in Library Design and Planning."
April 1973.
- Architectural Review. "Iran." May 1973.
- Architectural Review. "More Light." May 1976.
- Architectural Review. "Sense & Unity." June 1977
- Architectural Review. "Stirling Connexions." May 1975.
- Forum. "Within the Folds of Construction." October 1973.
- Landscape. "The Architecture of Isfahan." Winter 1965-66.
- Progressive Architecture. "Negative Space Gives Form to Library."
July 1969.
- Progressive Architecture. "Middle East: Iran." October 1976.

APPENDIX

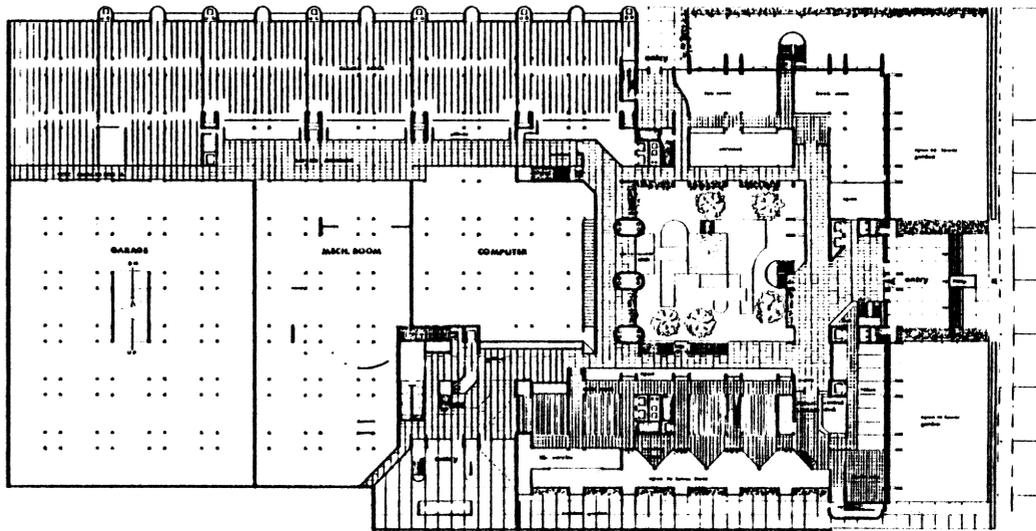
DESIGN DRAWINGS



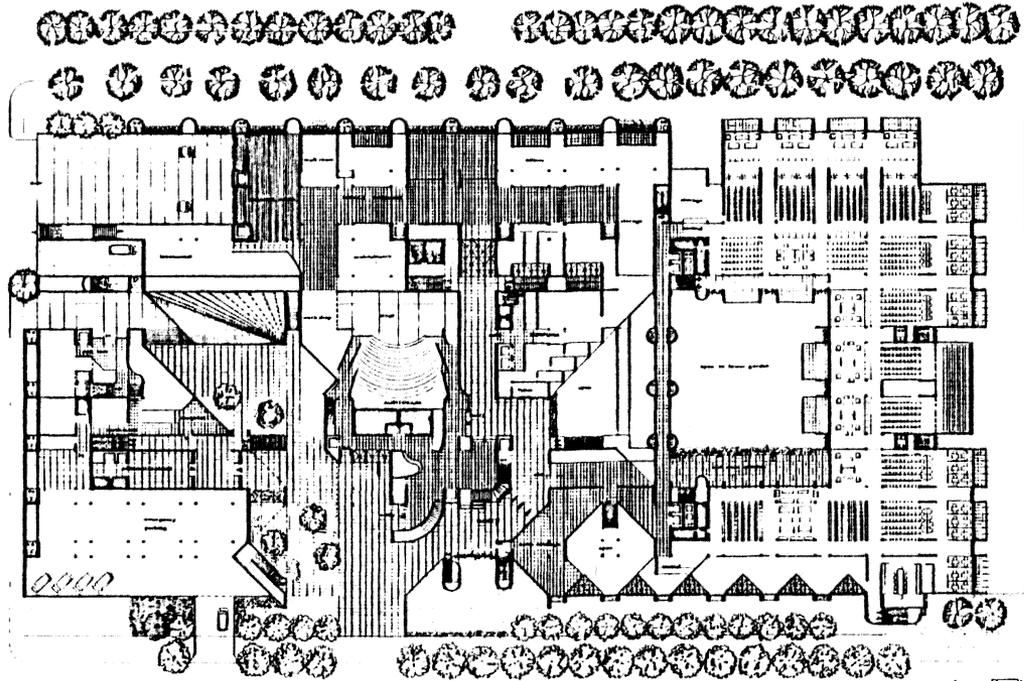
4
 SITE PLAN



1 FLOOR PLAN

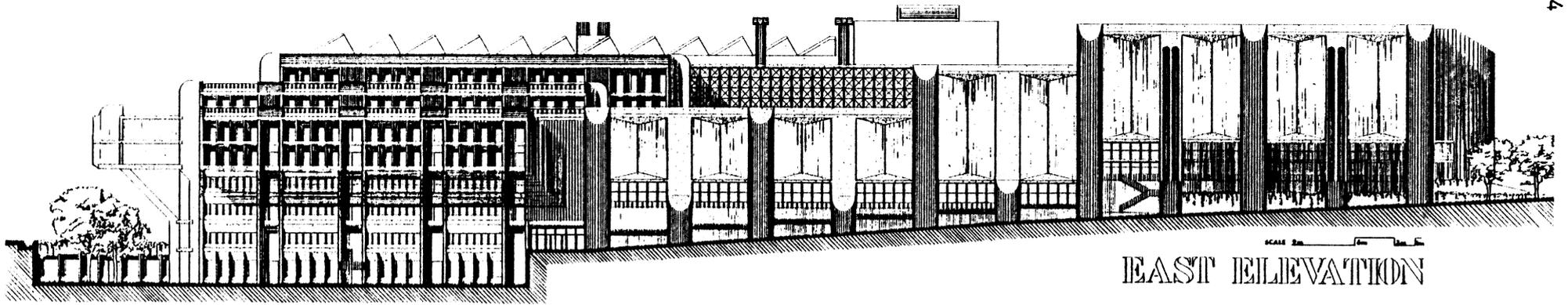


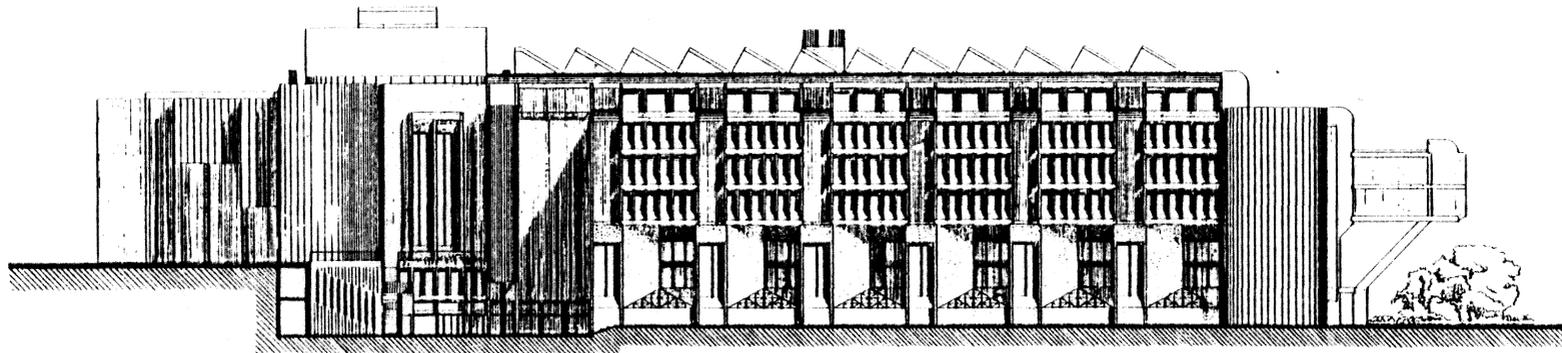
1ST FLOOR PLAN



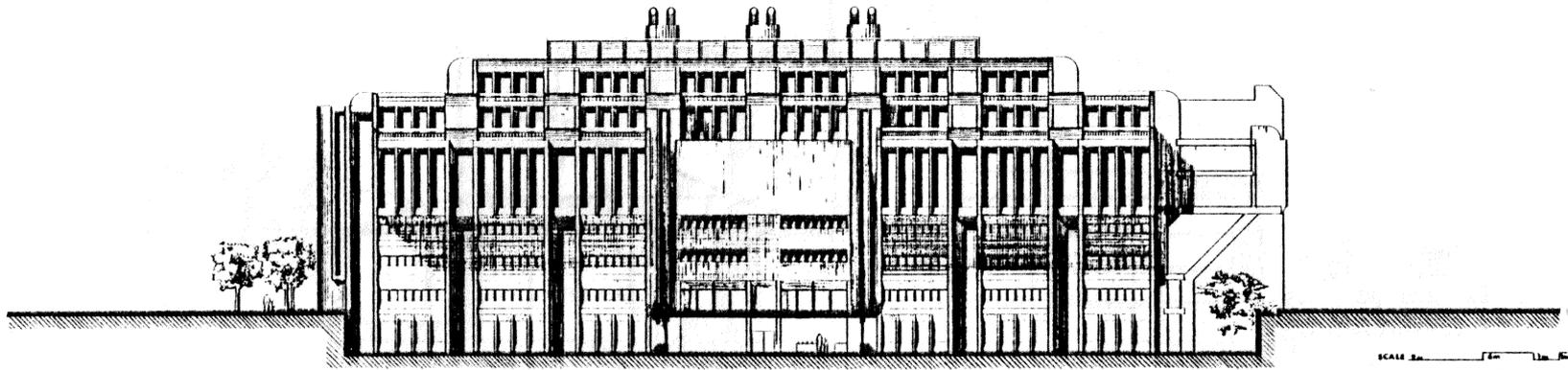
0000

3RD FLOOR PLAN

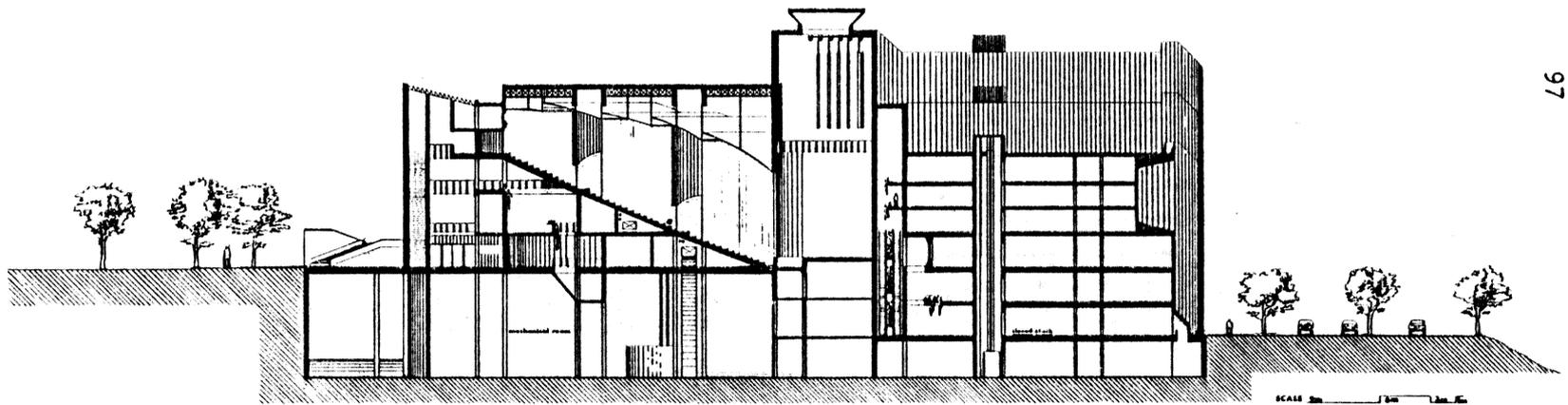




WEST ELEVATION

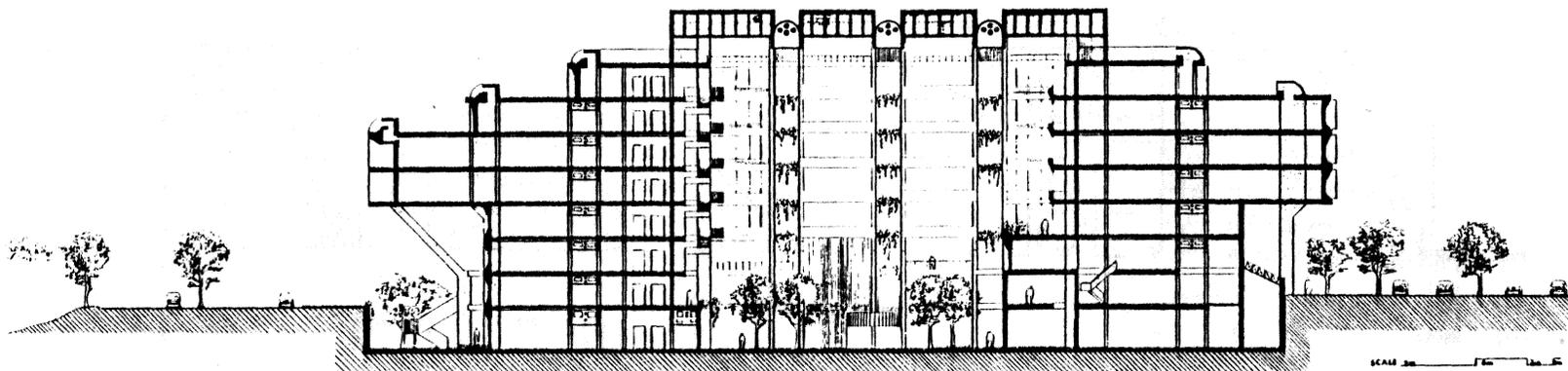


SCALE 1/4" = 1'-0"
SOUTH ELEVATION

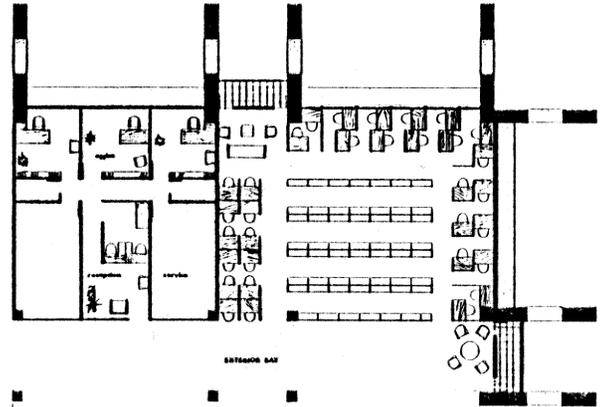
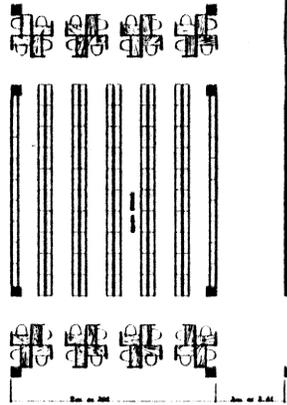
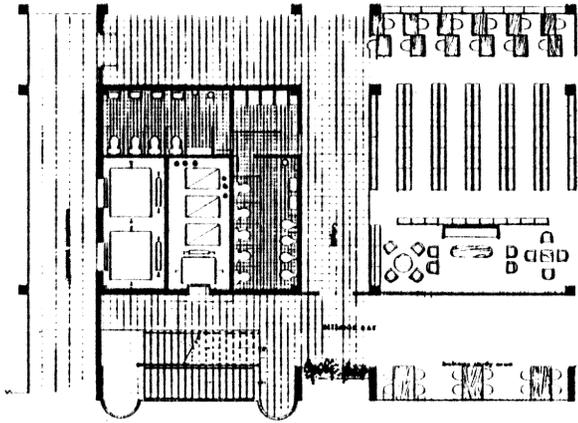


SCALE 1/8" = 1'-0"

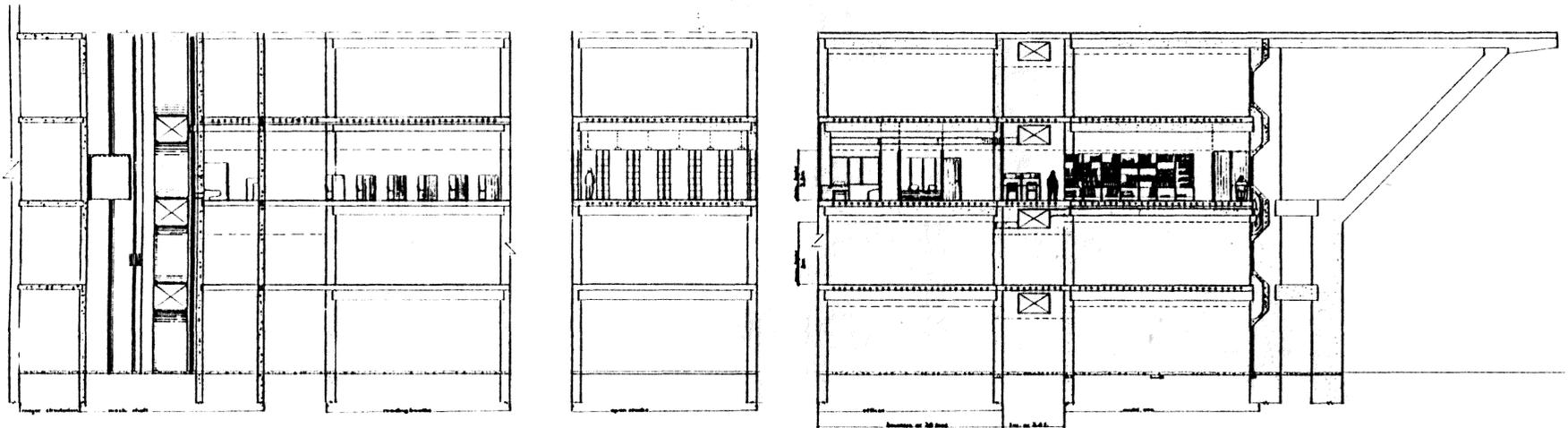
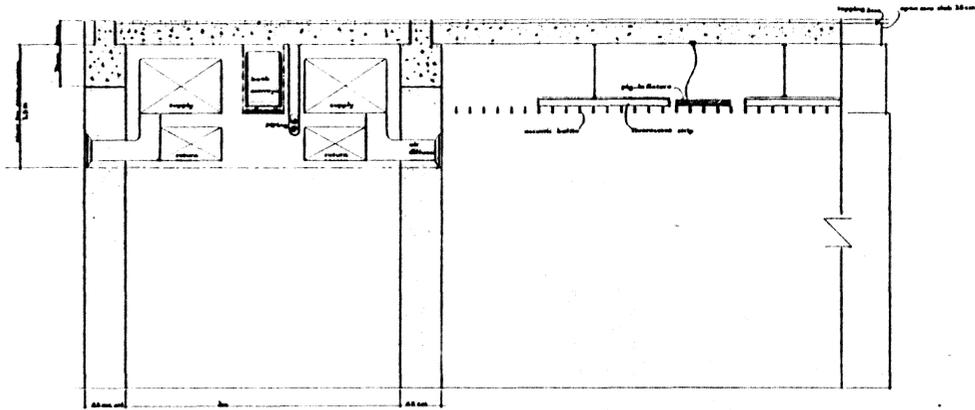
SECTION AA



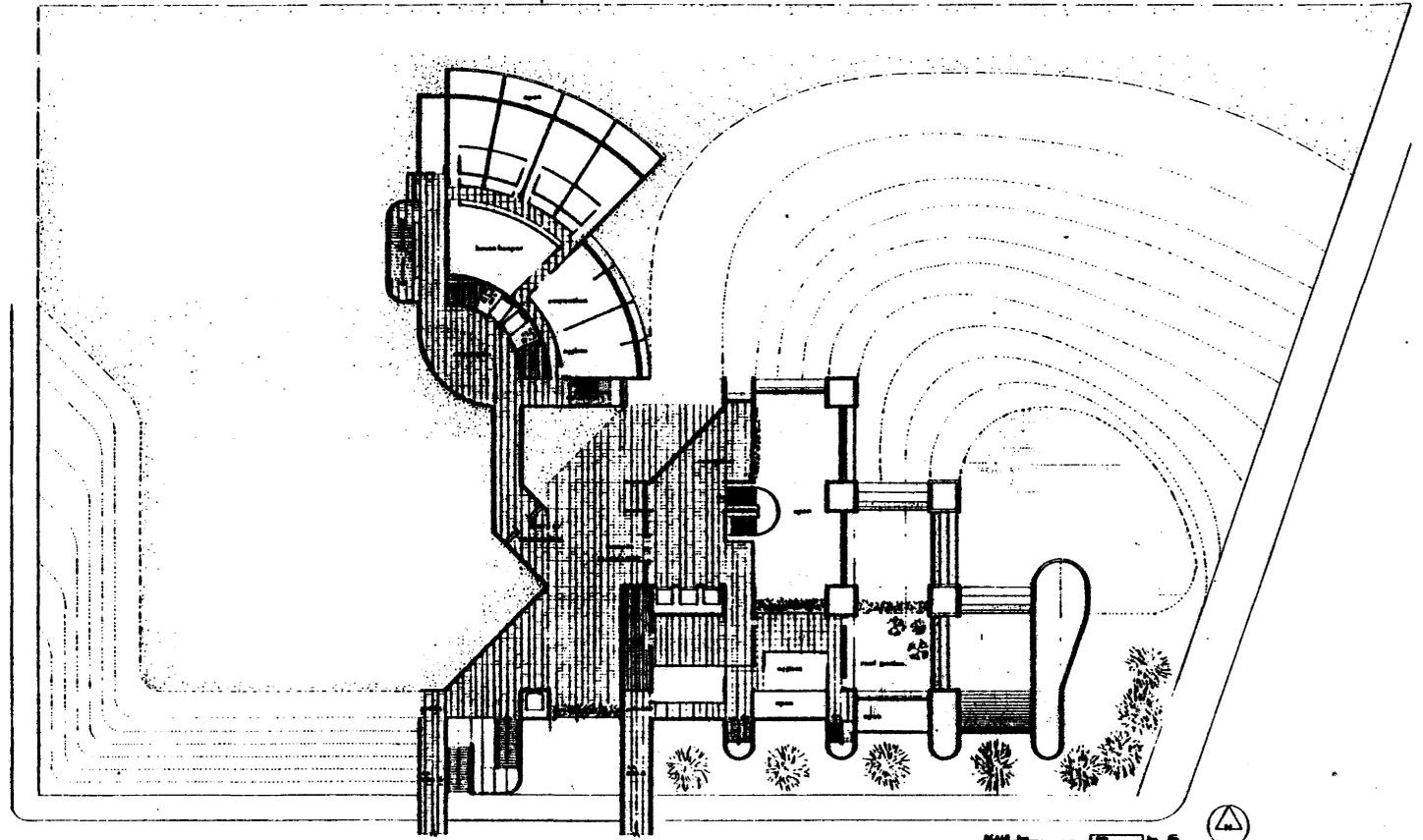
SCALE 1/8" = 1'-0"
SECTION "BB"



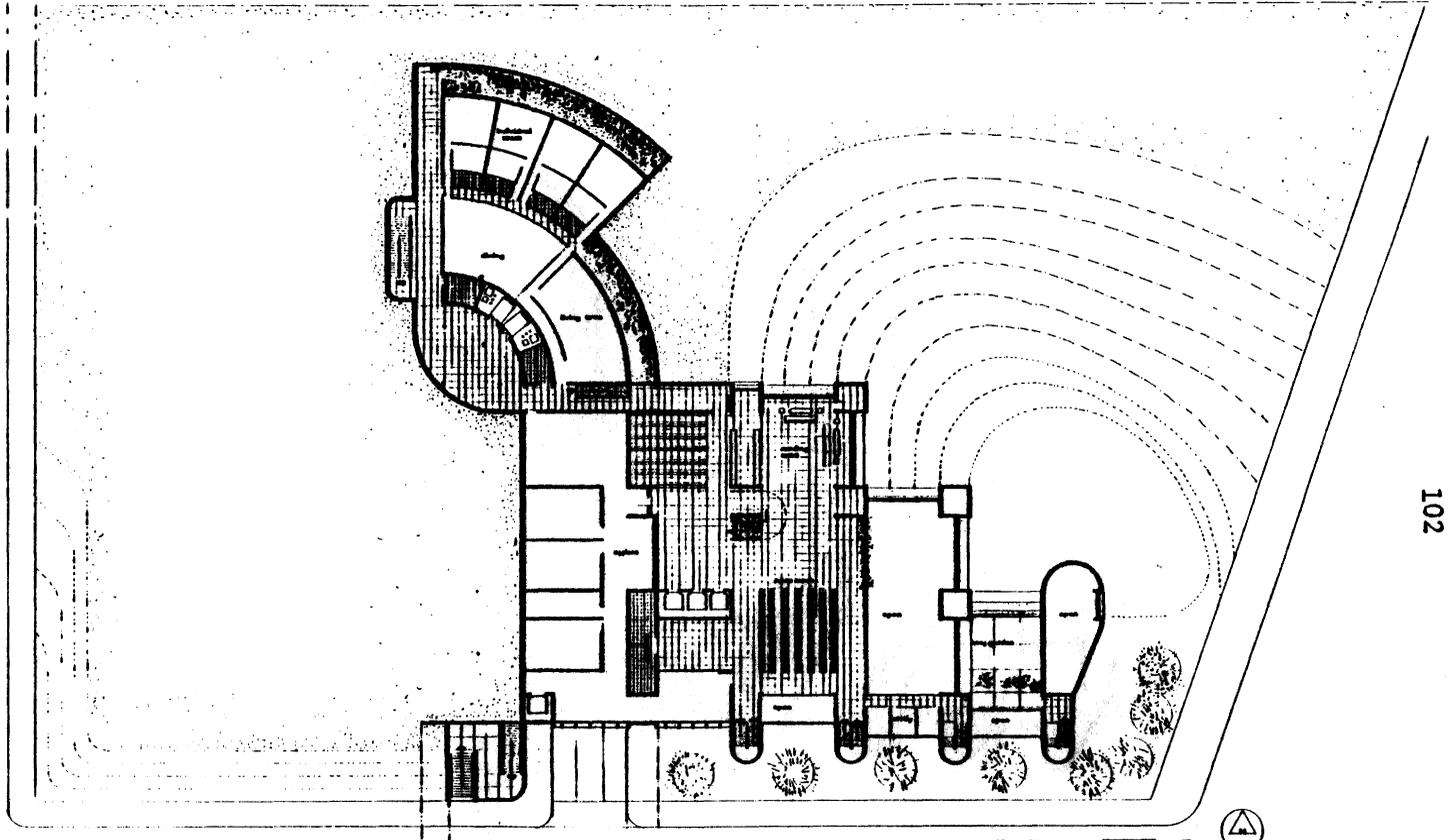
TYPICAL BAY PLANS



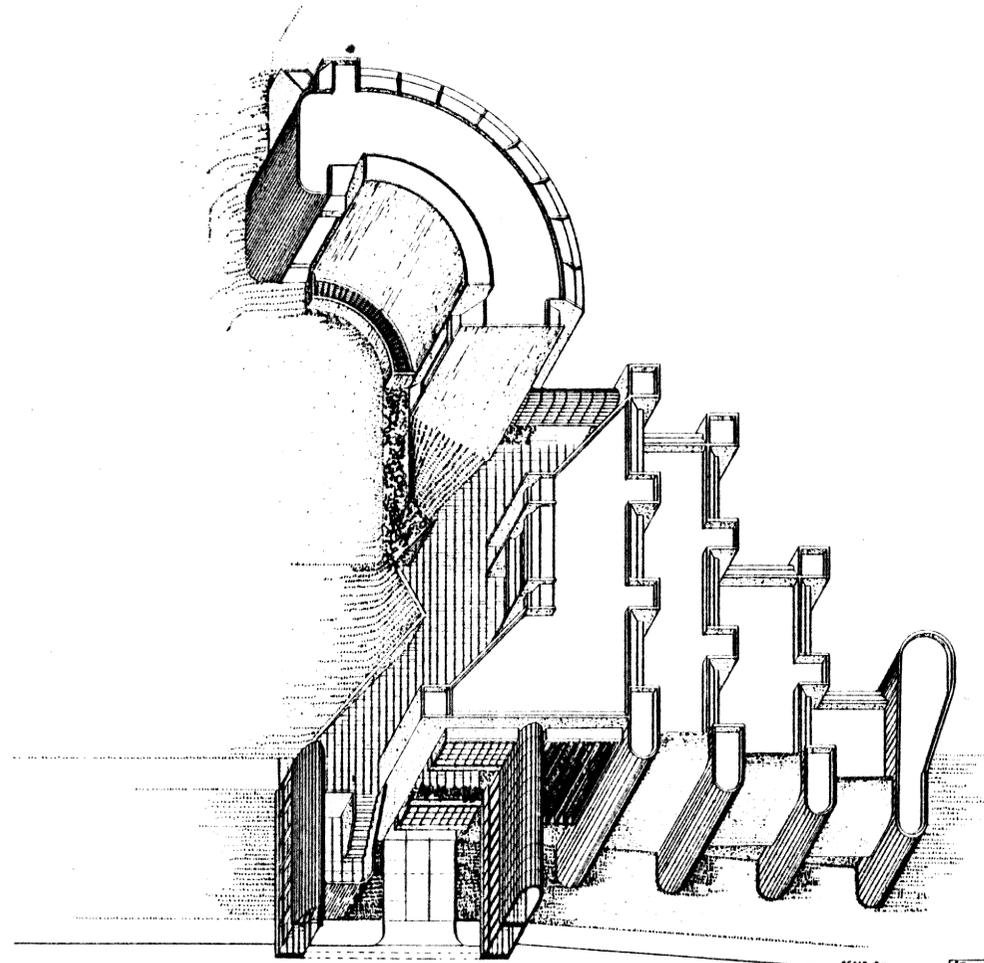
TYPICAL SECTION DETAIL



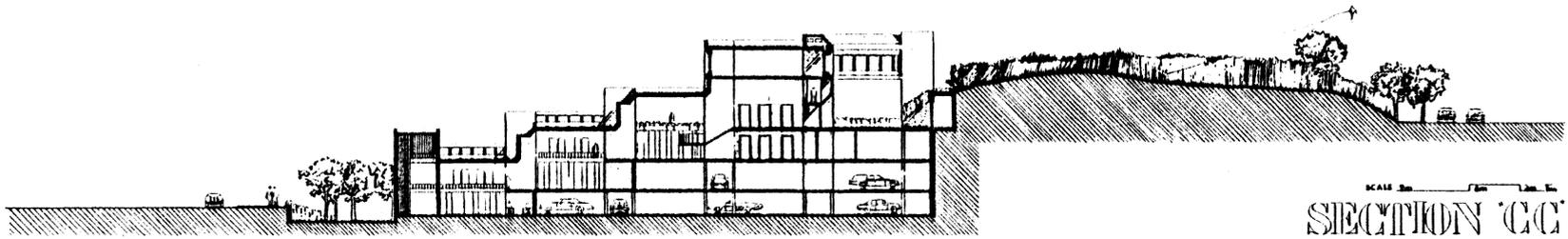
MAIN FLR. PLAN, SITE 'B'



3RD FLR. PLAN. SITE 'B'



ISOMETRIC VIEW "B"



SCALE 1/8" = 1'-0"
SECTION 'CC'

**The vita has been removed from
the scanned document**

THE PAHLAVI NATIONAL LIBRARY PROJECT

by

Mehdi Sayed Hussein

(ABSTRACT)

This thesis is a documentation of research, evaluation, and design for the Pahlavi National Library project for Tehran, Iran.

The written section of the thesis externalizes the most critical issues and concerns gathered from the evaluation of traditional architecture in Iran and the examination of the needs of libraries in general. These two factors were combined with the given program to generate the design of the library. A conceptual framework of what a National Library should be is established in conjunction with a set of architectural criteria employed for decision making.

The project requires a solution at three different levels: that of the building itself as a library; the building's adaptability in the context of a culture, and, especially, the building's relationship to the climate.

On the whole, the design of this thesis has mainly generated from two major objectives. Primarily, to design a functional and social environment whose plan incorporates and reflects an understanding of traditional architecture--a facility that is adaptive for its purpose, its users, and its environments. Secondly, to document the process which has led to the design solution.