Work/teaching around the globe: Teaching history by searching for emics and etics

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This article describes a course in history and theory which the author has developed and taught while teaching architecture in Saudi Arabia. Although its conception and pedagogy was in response to local conditions, it has nevertheless the potential of worldwide applicability. The American Institute of Architects (AIA) selected this course to award it the 1990 Education Honors Award for 'its significant achievement in the formulation, implementation and outcome of architectural instruction and for its potential to be transferred to other instructional settings in architecture.'

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THE CHALLENGE

> 'Theory, criticism, and history of architecture . . . become crucial in societies experiencing change. Where new technologies are purposefully developed, and where dissatisfaction with the past either occurs naturally or is promulgated in the social system . . . They are crucial because societies in change force individuals to make decisions. Appropriate decisions cannot be made without the identification of goals, and an understanding of processes operating in the society . . . Change can occur productively, rather than at random, when there is an awareness of theory, history and criticism.' Wayne Attoe in Chapter 2 'Theory, criticism and history of architecture,' *Introduction to architecture*, (eds Snyder and Catanese), 1979, p. 43.

The above quote reflected the concerns of this author when asked to teach the foundation course in the History and Theory sequence at the College of Architecture, King Faisal University, Dammam, Saudi Arabia. The rapid change which has occurred in this country over the last fifteen years reinforces the issues expressed in the quote. Alongside these developments is the constraint posited to the architectural educator by the educational background of the students pursuing architectural studies in this country. They come from the 'scientific' branch of the last two years of high school, where history is not taught. In fact the scope of all the history courses taught at pre-university level schooling in Saudi Arabia is confined to documentation of events and some scant mention of history in other Islamic countries.

Given this extremely limited background in history

and the fact that the teaching methods employed in most public schools encourage memorization of facts rather than in-depth understanding and critical thinking, the design of the History and Theory course sequence takes on particular importance.

According to the current curriculum requirements, the History and Theory I course (3 credit hours), should cover the ancient civilizations in the Middle East region and around the Mediterranean basin, namely, Mesopotamia, Egypt, Greece, Rome and Byzantium. Constrained by this requirement within a time frame of a 14-week semester, the challenge was to devise a course which addressed the following issues:

- How to communicate historical events related to man's activities in shaping his built environment, covering a time span of approximately 5000 years, to the average student who is primarily interested in passing a mandatory course
- Is it possible to capture the average student's interest and imagination in historical material, given that they have had little or no history background?
- Can history be taught in a way to make it directly relevant to contemporary issues, so that the student can appreciate clearly the relevance and importance of the material?

I feel, that the above issues are universal, especially facing architectural educators and indeed many other design educators of similar courses at the undergraduate level. Thus the insight and lessons gained from this experience ought to be of interest to those teaching in the West or elsewhere[1]. And it is for this reason that this article was written with the hope that others interested in developing this approach can establish contact and share their experience[2].

SCOPE AND PEDAGOGICAL APPROACH

How can we deal with the above issues, and at the same time view the large amount of material covered in the course, as a potential rather than a constraint? The approach taken in designing the course was influenced by a group of theorists whose work allows us to make cross-cultural observations regarding both historic and current building practice. One of these individuals, Amos Rapoport, makes an important observation which underscores the goals and achievements aspired to by the course.

> . . . why should we study the remote past and all sorts of 'primitive' peoples when many of us are concerned with problems of the future?
>
> The broader our sample in space and time, the more likely we are to see regularities in apparent chaos, as well as to understand better those differences that are significant. Thus the more likely we are to see patterns and relationships, and these are the most significant things for which to look. Being able to establish the presence of such patterns may help us deal with the problem of constancy and change, and establish certain baselines that will guide environmental design.
>
> Also, if apparent change and variability are an expression of invariant processes, this is extremely important because the reasons for doing apparently different things remain the same[3].

The course design thus relies on searching for recurrent principles in history by using the concepts of *emics* and *etics*. Cognitive anthropologists developed these concepts, which they commonly use in cross-cultural analysis. Etics are generalizations valid for most cultures, whereas emics are the units and categories which are valid within a given culture and which need to be derived from it[4]. Accordingly the verb 'search' is used in the title to underscore the importance of this activity during the teaching and learning process.

The pedagogical method and procedure followed is briefly outlined as follows: the first four weeks are utilized to introduce and discuss selected phenomena, principles and patterns resulting from the interaction of man with his environment in shaping his built world. These cover issues related to man's cognitive order and the impact of values, norms and criteria in shaping a specific cultural construct and its mediating effect[5]. Principles related to the way built environments are shaped as a result of ongoing processes where change is viewed as an important phenomenon[6]. These are supplemented by issues explaining how 'quality' is achieved in built form and how it might be possible to isolate its components[7]. Figure 1 contains a representative selection of these phenomena, principles and patterns.

In essence the material covered during the first four weeks of the course constitutes a set of hypotheses which are tested, verified, and amplified during the search process followed by the instructor in reviewing the civilizations covered during the semester. These hypotheses can also be viewed as generalized themes (etics) for which variations on the theme (emics) are identified in the built products of the specific culture reviewed.

To reinforce this crucial aspect of the course an assignment is required of every student which consisted of analysing the distributed handouts of the concepts and issues which are stressed by the course[8]. They are asked to augment these by specific examples cited in the material as well as from examples covered by the instructor in the classroom. Specific emphasis is placed on examples from the region's history, namely the ancient civilizations of Mesopotamia and Egypt, traditional Islamic settlements and architecture and contemporary developments in Saudi Arabia[9]. An interesting part of the assignment is an article describing the bedouin Arabs' mobile tent settlements and their functions during the early decades of this century[10]. The assignment is required to be submitted during the nineth week, allowing time for its evaluation and discussion in class so that students are better prepared for the final exam. College regulations require that this exam constitute at least 50% of the final course grade.

The problem arose of a suitable text for this approach.

FIGURE 1

A sampling of the phenomenon, principles and patterns which are inherent and/or reflected in the built environment and which are searched for in the study of various civilizations.

1 **The human mind and cognitive order**

1.1 The human mind has the need to differentiate – to classify, name and distinguish among places

1.2 Order is thought before it is built. Spatial and social relations are not random but ordered

1.3 Distinctions are first known, then described through language, then made or built. Language and architecture are related. Both express the cognitive process of distinguishing among places

1.4 Thought orders space, time, activity, status, roles and behaviour. This process is always the same – although specific *forms* of ordering and the *means* used to express it physically are culturally specific

1.5 Taxonomies and domains are a basis to cognition, to make the world meaningful, and to humanize it by imposing order on it, resulting in a specific *schemata*

2 **Values, conventions and culture**[14]

2.1 Values, conventions, norms and assumptions are used in making choices. These are often embodied in ideal schemata. Built environments reflect and encode these schemata and order

2.2 Culture manifests itself in the design of settlements and buildings in terms of the most common choices made, specifically as (1), a way of life that typifies the group; (2), a system of symbols, meanings and cognitive schemata; and (3), a set of adaptive strategies for survival linked to ecology and resources

2.3 The use of certain building typologies and systems of arrangements in developing the built environment represents the culture's concept and attitude to built form and its uses – regardless of geographic location

2.4 Traditional culture manifests the sacred (religious and ritual requirements) at all levels of its built environment

2.5 Two primary ordering systems are evident in the built environment of traditional cultures: (a), geometric order – related to the sacred; (b), an order related to social relationships

2.6 Significance of non-shelter, primarily religious, constructions reflected in (a), vast resources, labour and effort; (b), special symbols are often used; and (c), long lasting building materials

2.7 Architectural influences from earlier times – the architectonics of earlier periods as shaped by the materials and technology of the time is often imitated in later periods by materials and technology which are different

2.8 Borrowing ideas from other cultures – history of concurrent and successive civilizations indicate a recurrent phenomenon of borrowing ideas for the layout of settlements, building design, architectural motifs and techniques of construction

2.9 Cultures in the past which were not in contact with each other due to time and/or geography, sometimes arrive at similar architectural solutions to impulses with like motivations

3 **Principles derived from the nature of the building process and the way built environments exist**[15]

3.1 A morphological system is a set of elements related to one another according to rules

3.2 Variants are possible from the same system when a number of observable elements follow the system's rules

3.3 Any system has a structure and variants. The structure exists in the human mind. It defines: (1), elements; (2), relationships between elements; and (3), relationships of elements to the site

3.4 An element exists once it has a name. The name is a matter of agreement. Thus elements exist because people agree

3.5 The ability to change physical reality is power. Every change of the site by human action is the exercise of power

3.6 Powers tend to: (1), expend their domain; (2), improve its quality; and (3), seek stability in their domain

3.7 Relationships between powers depends on the (1), order of form; (2), order of place; and (3), order of understanding

- The relationship of *form* is basically a relation that has to do with distribution
- The relationship of *place* is the control of spaces and the rules for the crossing of elements across boundaries of one space into another

FIGURE 1 (continued)

- The relationship of *understanding* is the way in which styles and fashions are recognized. It is a relation that has to do with both selection and distribution

3.8 Relative strength of powers – i.e. the implication on built form of the strength of the lower or upper level powers in the (1), order of form; (2), order of place; and (3), order of understanding

3.9 Change is a continuous phenomenon. It reflects specifically the relationship between powers, and in more general terms it reflects social processes

4 **Built form contains physical 'patterns' which are the result of agreements and/or consensus, and a reflection of conventions.** According to C. Alexander's research findings, the existence of some type of patterns ensures a positive quality in the environment

The following illustrative patterns are selected from the collection in *A pattern language*, because it is felt that historical examples can reinforce and illuminate their significance and vice versa. Each pattern's number, as appears in the book, is indicated here for facilitating cross-referencing[16]

(21) Four-storey limit
(24) Sacred sites
(37) House cluster
(38) Row houses
(53) Main gateways
(61) Small public squares
(62) High places
(66) Holy ground
(101) Building thoroughfare
(102) Family of entrances
(106) Positive outdoor space
(112) Entrance transition
(118) Roof garden
(119) Arcades
(122) Building fronts
(125) Stair seats
(130) Entrance room
(133) Staircase as a stage
(135) Tapestry of light and dark
(158) Open stairs
(164) Street windows
(169) Terraced slope
(173) Garden wall
(180) Window place
(188) Bed alcove
(197) Thick walls
(202) Built-in seats
(205) Structure follows social spaces
(206) Efficient structure
(209) Roof layout
(219) Floor-ceiling vaults
(220) Roof vaults
(223) Deep reveals
(224) Low doorway
(249) Ornament

For visual material and general background about the civilizations covered, Fletcher's *A History of Architecture*, 18th edition (1975) was used due to its availability to students individually on a semester-long loan basis. By now it is obvious to the reader who is familiar with this text that it is not suitable. The instructor's responsibility was to extract material from a number of other sources and present it in class in a form compatible with the goals set for the course[11]. Figure 2 is a partial selection of examples indicating how the historical data is used to emphasize and amplify the issues and concerns set by the pedagogical approach followed.

As mentioned earlier the instructor attempts to link the historical issues and examples discussed in class to the contemporary built environment in Saudi Arabia and elsewhere, by the use of analogies and actual cases. And it is this linkage that excites and captures the imagination of the students and makes them appreciate positively the study of history. In this context the following quote is very relevant: 'One should never try to memorize a fact if he doesn't know its significance; and if he understands its significance, it is almost impossible to forget the fact.'[12]

Figure 3 graphically represents the method used in deriving the etics, or the generalizations which are valid for most cultures. These are illuminated for the students as forming the basis for a valid architectural theory.

METHOD FOR DERIVING ETICS

The following are sketchy and abbreviated examples to illuminate the method employed. In lieu of presenting the material in a chart form, I have cited below three examples at the level of temples, houses and details respectively. The number of the relevant principles and patterns from Figure 1 are indicated after the topic heading of the example. This is followed by a brief account of the phenomenon as it occurred in each of the civilizations selected to illustrate the topic. Those are the emics. Finally generalizations are made which are valid for most cultures. This is the etic findings.

Temples: Their prominence in the city (1.2, 1.4, 1.5–2.1, 2.4, 2.5, 2.6, 3.7, 3.8, 4/24, 4/66)

Mesopotamia: Temples were the source of communal organization and authority which each community required to achieve the status and permanence of a city. Temples were set high in the best location on a superimposed platform so that they became visually dominant.

Islamic city: The mosque was the first building to be erected in a newly founded Islamic city. It was usually

FIGURE 2

The civilizations of Mesopotamia and Ancient Egypt are included here for illustrative purposes. The information is grouped under *settlement*, *temples*, *houses* and *details*. It is cross-referenced with the material in Figure 1[17]

MESOPOTAMIA

Settlement

- Initial settlements on the River Euphrates due to its regular flooding pattern and gentler current (1.2, 1.4, 2.2)
- Over the millennium, architecture adhered to a limited repertory of formal types. Buildings of all types were arranged around large and small courts, rooms narrow and thick walled, carrying brick barrel vaults and sometimes domes. Cities were enclosed by walls and surrounded by villages and hamlets. Two monumental centres in the city (a), Ziggurat complex with its own defensive wall; and (b), the Palace of the King (2.3, 2.5, 2.6)
- Towns are usually named after the deity to whom they are dedicated. Even walls, gates, streets and canals are sacred entities bearing religious names of symbolic implication (1.1, 1.3, 3.4)

Temples

- Mainspring of growth of cities – source of communal organization and authority which each community required to achieve the status and permanence of a city (2.4, 2.6)
- Temple structures were set high in the best locations on a superimposed platform so that it became visually dominant, as a landmark in the city and out of reach of possible threat of floods (1.4, 2.2, 4/24, 4/62)
- Main temple of the 'Lord of the Town' is the focus of the urban layout. Public chapels appear along the streets, numbering as many as fifty at Lagash (3rd millennium BC) (2.2, 2.6, 4/66)
- Temple complex was the hub of an economic system that has been described as 'theocratic socialism' (2.2)
- Ziggurat appears in 3rd Dynasty of Ur (2050 BC). It is in the form of a stepped tower – itself the sacred 'mountain' (2.4, 2.6)
- Similar stepped, mountain-like structures appeared in South America around AD 600, such as the Mayan temple at Uxmal in Yucatan. As far as is known there was no contact between these regions during those periods of history (2.9)
- Ziggurat and other religious structures oriented by their corners to the cardinal points (2.5)

Houses

- The only significant evidence of the scanty representations of Mesopotamian houses is provided by the typical terracotta offering stand from the 3rd Dynasty of Ur (2065–1955 BC) found at Assur in the shape of a model of a house, and also shown on seals and reliefs. The original 2-storied structure seems to be on a squarish plan with an upper floor covering only the rear of the terrace, and numerous windows open up on the facade. The articulation of walls is an imitation of the earliest wattle-and-daub construction using reeds and mats. This model represents the *image* of the house in Mesopotamian society. It helps reinforce itself in society (1.1, 1.3, 1.5, 2.3, 2.7, 3.3)
- Houses of the rich bordered main streets. Poorer people lived at the back of clusters, along narrow lanes and alleys (2.2, 2.5, 3.7, 3.8)
- In the process of renewal, the foundation configuration of older houses was used to rebuild on (2.1, 2.2, 2.3, 3.7/3, 3.9)
- Houses often changed to other uses, e.g. house to classrooms, house to smithy (3.9)
- The idea of air right structures (room bridging public-right-of-way) was used (3.6/1)
- Use of simple furniture and multi-use rooms (2.1, 2.2, 3.7/3)

FIGURE 2 (continued)

Details

- Wall reliefs – example from Assyria: deeds in war and the chase, their rituals and dress were illuminated by a succession of reliefs in palaces. Also shows military architecture, defenses of cities and methods of warfare (1.3, 1.4, 2.2, 2.6, 4/249)

- Burnt brick was used sparingly for facings or where special stress was expected. Where communication of meaning was desired, then change of or use of special material is employed, such as polychrome glazed bricks which was introduced by the Assyrians (1.3, 1.4, 2.2, 2.4, 2.6, 3.3, 4/249)

- Most public through streets destined to public buildings and locations were 3 meters maximum width – because the ass was the animal used for transport. Service carts with wheels and chariots were also in use. A low flight of steps against a building wall was commonly used for mounting. Street corners were regularly curved (1.4, 2.1, 2.2, 2.3, 2.5, 2.9, 3.1, 3.2)

EGYPT

Settlement

- Nile river swells at a fixed date each year, and covers low-lying lands during 3 months from July–September leaving deposit of rich black silt. Inhabitants called their valley 'Black' (Kemet), and the surrounding desert 'The Red' (Desheret), or the land of the god of evil (1.1, 1.3, 1.5)

- An elaborate system of dykes and canals was developed since protodynastic times to regulate the flood and supply water to the urban settlements lying inland at some distance from the river. The hieroglyphs that stand for the words 'garden, estate, home',  and 'canal, river, irrigated land, boundary season',  ,  actually represent either an orthogonal or parallel system of canals or one single water course. As Herodotus remarks 'this was perhaps the way in which geometry was invented,' from the necessity of checking the position of the boundary stelae and surveying land property anew after the annual inundation (1.1, 1.2, 1.4, 1.5, 2.2, 3.3, 3.4)

- The regularity of the inundation and the early invention of geometry underlie the sense of order and regularity pervading Egyptian culture and particularly the rhythm and harmony in its art (1.2, 1.4, 1.5)

- Herodotus said that during inundation 'water transport is used all over the country, instead of merely along the course of the river.' Building materials from quarries from various parts of the country were transported to other parts on barges. Craftsmen and labourers were shifted to various points, artifacts traded and social contacts established along the Nile artery (2.2, 2.3, 3.7/3)

- Religion was strongest stimulus in the life of ancient Egyptians (2.4)

- Cities of the dead grew west of the Nile in an orthogonal pattern of streets around the royal pyramid. This location reflected the solar destiny of the deceased as determined by the setting sun in the west (1.1, 1.4, 2.1, 2.2, 2.4, 2.5, 2.6)

- Community life began in the Neolithic period in such settlements as Merimde, Hierakonpolis and Naqada. These formed the embryos of the later urban settlements. They began on the Nile or a canal at a location significant for trade and military activities (2.2)

- The concept of a politico-urban entity, similar to the Sumerian city-state, is corroborated in the early hieroglyph for 'town' that shows a circular enclosure surrounding an orthogonal system of streets, or two arteries crossing at right angles (1.1, 1.2, 1.3, 1.5, 2.1, 3.4)

- Pyramid cities were preplanned settlements built in the desert for the labourers and craftsmen working on royal tombs or for the funerary priests. The small artisan's town of Akhetaten (Amarna East) dating from 1364 BC is the best preserved. Its enclosure wall is a perfect square oriented to the cardinal points, with one gateway in its south side next to a shrine. Streets service single rows of attached houses of uniform type (5 m × 10 m). Easy control of these self-contained towns was necessary because some of the workmen were foreigners and their work on the pyramids or tombs had to be kept secret (1.2, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 3.3, 3.5, 3.8)

Temples

- The 'Castle of the God' in hieroglyph () implied that gods lived in castles similar to that of the pharaoh, which was () representing a rectangular enclosure with one gateway in a corner (1.1, 1.3, 1.5, 2.1, 2.2, 2.3, 2.4, 3.4)

- Temple derived many of its features from domestic architecture, mainly concept of the tri-partite plan, showing following similarities:

FIGURE 2 (continued)

Temple	*House*
Pylon and courtyard	Entrance vestibule for reception
Hypostyle hall	Columned hall as living area
Sanctuary	Bedrooms as private quarters

(1.2, 1.3, 1.5, 2.3, 2.4, 2.5, 2.7, 4/112)

- Since temple is abode of the god, it is built of 'materials of eternity.' Either soft stone (limestone, alabaster, sandstone), or hard stone (granite, basalt, diorite) (2.6)

- Graduation of natural light penetration accentuated the major zones of the temple, culminating in controlled and subdued light in the sanctuary area. This was reinforced by the use of the characteristic gradual rise in the levels of the floors from the outer court to the rear and the corresponding decrease in the heights of the ceilings and the intensity of the light (1.1, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 4/135)

- Colossi of pharaohs set in front of the pylons were used not only as mediators, to listen to the prayers of the populace, but also as a means of political propaganda. A good example is the rock-cut temples in Nubia, as the 21.3 m colossi at Abu Simbel and 100 m ones at Gebel Barkal (1.2, 1.4, 2.1, 2.3, 2.4, 2.6, 4/66)

- The use of the obelisk symbolizes the sun's rays and functions as the connecting link between the sun and the worshippers (1.4, 2.2, 2.3, 2.4, 2.5/a, 2.6)

Houses

- The origin of the word house is clear in the hieroglyph representation of the plan of a simple rural homestead in the shape of a rectangular courtyard surrounded by an enclosure wall (). Other hieroglyphs represent in elevation – a wickerwork partition (), or the facade of a columned portico (), or the cross-sectional elevation of a flat-vaulted hypostyle hall (), or beehive granaries () (1.1, 1.2, 1.3, 1.5, 2.1, 2.2, 2.3, 2.7, 3.1, 3.2, 3.3, 3.4, 3.7/3)

- Most of the forms and some of the materials used are derived from reeds and other plants, though brickwork must have been the most common material (2.7, 3.3)

- Texts describe 'ideal' houses – all emphasize the importance of a garden with fruit trees and a pond surrounded by a high wall. This was usual for suburban houses of middle class in all periods. See typical villa at Amarna 1364–1350 BC (1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.3, 3.4, 4/106, 4/173)

- Concept of house was clear enough that models were made to be buried with deceased, intended to replace his actual house in the afterlife (1.3, 1.5, 2.1, 2.2, 2.3, 2.4)

- The concept of lifestyle was clear for a specific group of society in the house type they commonly used. See the example of Thutnefer's townhouse in Thebes 15 Century BC (1.2, 1.4, 2.2, 2.5, 3.7/3)

- The idea of the centre of the house is evident in the use of the roofed central 'living' room (1.5, 2.3)

Details

- Most of the life of the Neolithic Egyptian was spent on boats either fishing or trading. The design and construction of the cabins on these boats influenced much later architectural designs and details. For example the upper edge of the cabin is decorated with a row of semicircular or upright elements formed from the upper ends of the vertical reeds of the wall bent into a crenelation of loops or bound into bundles. This shape was the basis for the standard decorative frieze painted or carved along the top of the walls and called 'kheker', meaning 'adorned, ornament' (1.3, 2.2, 2.7, 2.8)

- The sloped walls commonly used as part of temple entrances in later periods, was originally in the Gerzean Period of 3700–3200 BC the battered clay wall which was the result of the gradual increase in the thickness of plaster applied to a wattle-and-daub wall till the inner framework became superfluous. The time frame between these developments is approximately 2000 years (2.7, 2.8)

- The ceiling, made from bundles of reeds set side by side in the very early periods, is copied in stone ceilings in the Old Kingdom period with semicircular ribs. The tradition of Egyptian architecture is deeply rooted in the earliest civilization, which dawned far back in the Neolithic Period (2.7, 2.8)

- Arrangement of a bedroom in a large mansion row house in El-Lahun from the 19th Century BC. Two bedrooms were selected for examination and they show an alcove at the end of the room raised one step and slightly narrower than the room itself. Above the alcove is the outlet of the roof ventilator, or 'malkaf' which would face north at roof level to capture the cool breeze (1.2, 2.2, 2.3, 4/188)

FIGURE 2 (continued)

- The covered or colonnaded portion of courtyards usually faced north to capture the breeze. This was also the case of roof terraces (2.2, 2.7, 4/188)
- In the small artisan's town in Akhetaten (Amarna East), from 1364 BC, we find the concern for privacy reflected in the location of the front doors of the houses. They were located in a staggered fashion so that no overlooking was possible across the alleyways (1.2, 2.1, 2.2, 2.3, 2.4, 2.5/b, 3.3, 3.7/3)
- Much of the architectural stylistic details in stone in the predominant periods of Egyptian architecture, such as the design of columns and their capitals, originate in the early periods when the materials used were reeds, palm fronds and papyrus. The learned priesthood enforced the role of tradition in architecture as well as in other aspects of Egyptian life (2.3, 2.4, 2.5/a, 2.6, 2.7, 2.8, 4/249)

located in a central position. A city was acknowledged as such if it had (a), a mosque for the Friday communal prayer; (b), a permanent market; and (c), a judge. The mosque was accessible by all major roads converging on its central location. Its minaret was visible from most locations in the city.

Contemporary Saudi Arabia: Mosques for Friday communal prayer are located in prominent and central sites within the city and suburban areas. Their location is discerned visually by the minarets and audibly by loudspeakers during prayer times.

Generalizations

(a) The ideology and belief system of a society is reflected in its decisions affecting the built environment.

(b) The most important buildings in the society, such as temples and mosques, are centrally located and are designed to be easily accessible and visually prominent.

Houses: The concern for privacy (1.2, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5(b), 3.1, 3.3, 3.7(3))

Mesopotamia: Most of the literature which describes housing in ancient Mesopotamia clearly indicates that there were minimum window openings towards the streets, and the rooms relied on the inner private courtyard for light and ventilation. Privacy seems to have been the central motive. Good examples are found in the reconstruction studies of Ur, 2000 BC.

Egypt: The concern for privacy is clearly evident in the design of the artisan's compound in Akhetaten (Amarna East) from 1364 BC. This is reflected in the location of the front doors of the houses, which are in a staggered fashion so that no overlooking was possible across the alleyways. It is suggested that this is evidence of an established convention in the Egyptian society of that period.

Islamic city: A predominant feature in the neighbourhoods of traditional Islamic cities is the concern for privacy. This is evident for instance in the location of windows, doors, and local shops. They were not allowed

FIGURE 3. Method for deriving etics

	Emics: Phenomenon as occurring within a specific cultural context				Etics: Generalizations valid for most cultures and which can form the basis of theory
Civilization / Level	(1) Mesopotamia	(2) Ancient Egypt	(3) Other civilization	(4) Other civilization	
Settlement	(–), (*), (–), (–)	(–), (–), (–)			
Temples	See Figure 2 for examples		The information which falls here is not included in Figure 2. For reason see reference 17		
Houses	(–), (–), (–)	(–), (–), (–)			
Details	(–), (–), (–), (–)	(–), (–)			

* Numbers in brackets refer to material in Figure 1

to overlook the private domain of adjacent neighbours. Roof terraces were always screened by high parapets to prevent overlooking. Strong conventions were followed supported by the legal system in the event of disputes over this issue.

Contemporary Saudi Arabia: The concern for privacy continues to be a major issue in the design of housing in this country. Since the mid-sixties the villa type of housing spread, i.e. the house built in a square lot with set-backs from all sides. The setback regulation was imported and is viewed as a technical necessity. As a consequence of the resulting outward looking structures, the people responded by developing a variety of protective devices to counteract visual penetration into adjacent private domains.

Generalizations

(a) Certain values which are shared by the majority of a society are usually reflected in the form of the built environment. This phenomenon is particularly evident at the level of housing clusters.

(b) The concern for privacy seems to have been an important consideration of a number of civilizations in the Middle East region. This is evident in buildings since 2000 BC or earlier, and continues to the present.

Details: Imitating architectonic details from past periods in contemporary materials (1.3–2.1, 2.2(2), 2.7, 2.8, 3.4, 3.8(3), 4/249)

Mesopotamia: A number of archaeologists have concluded that the idea of mud-brick arches and vaults originated in the marshlands of Mesopotamia or Lower Egypt. The prototype was a structure built of bundles of reeds, which were placed upright in the ground, bent inward and tied together at the top to form a roof. This technique has survived to our contemporary period in southern Iraq and is practiced by the Marsh Arabs who live in that area. There is evidence of the use of sun-dried mud-brick arches and vaults in Mesopotamia since 2900 BC (From: 'Arches and vaults in the ancient near east' by G.W. Van Beek, *Scientific American*, July '87).

Egypt: There is abundant evidence from the literature on ancient Egyptian architecture, that much later periods using permanent materials such as stone imitated architectonic details from the much earlier periods in Lower Egypt, when the predominant building material was reeds. This is evident in the design of columns and their capitals made of stone, imitating reeds, palm fronds and papyrus formations. Examples of stone ceilings in the Old Kingdom period with semi-circular ribs imitated the ancient idea of ceilings made of bundles of reeds set side by side. The role of tradition in architecture as in other aspects of Egyptian life was enforced by the learned priesthood.

Contemporary Saudi Arabia: After the dust settled from the recent building boom in this country, i.e. the period from the early seventies to the mid-eighties, a gradual awakening has been taking place since the early eighties concerning the loss of traditional architectural values. Due to this 'awakening' to the rich repertoire of traditional Islamic architecture and urbanism, we witness today the design of buildings using the most contemporary building materials imitating aspects of traditional mud architecture in this country. Details such as small triangular windows for ventilation, crenelation of roof edges and others are being imitated. Contemporary interior decorative features also manifest this tendency.

Generalizations

(a) Ancient building methods influenced structural and construction techniques of later periods using different building materials.

(b) Respect for tradition is manifested in decorative symbolic architectural details borrowed from the past which provide meaning to the current architecture of a period.

RESULTS AND FUTURE REFINEMENTS

The final exam, mentioned earlier, is viewed as a vehicle to evaluate the student's level of understanding, and is also utilized to reinforce the learning that took place, by synthesizing the concepts and issues covered in the course by way of reinforcing principles for which examples are required from the civilizations studied. Figure 4 contains sample of questions from the final exam.

I have conducted this course twice, during the first and second semesters of the 1986/1987 academic year, and was recently asked to teach it again in the second semester of the 1988/89 academic year. During the second offering of the course improvements were made in the material used by the instructor and the nature of the students' assignment. During the first attempt, the class was divided into groups of three or four students, and each group was assigned to summarize the characteristics of one of the civilizations covered by the course in terms of the issues and outlook which was stressed. Students were then asked to share these assignments. However this was not successful as the material produced was on the whole unreliable and in some instances not useable. There was also the problem of some members in the groups not contributing adequately to the assignment.

The results of the second round, however, were more successful. Every student was asked to write a paper which highlights the phenomenon, principles and patterns stressed in the course as extracted from the hand-

FIGURE 4

A representative sampling of final exam questions.

1 In traditional settlements, religion and ritual are central, and the organization is often based on the sacred. Elaborate briefly with examples from two civilizations.

2 The following factors affected the formation of architecture throughout history: culture, climate, technology, materials and economy.
   a. What is your understanding to date, based on the knowledge acquired in your studies, of the interplay of these factors in explaining the form of settlements and buildings?
   b. Are any of these factors given more attention in your experience of architectural studies in this College?

3 Language and architecture are related; both express the cognitive process of distinguishing among places. Language is used to describe distinctions among places, and building is used to make them. Explain briefly this relationship and provide one example.

4 People think environments before they build them. Building the ideas makes them useful devices to remember, that is built ideas help behavior by reminding people of how to act and behave and what is expected of them. Provide one example from history and one from contemporary times.

5 The built environment represents physical expressions of ordering systems and schemata, a basic property of the human mind. This process is always the same, although the specific *form* of ordering and the *means* used to express it physically are culturally specific. Provide two examples from your study of history.

6 The use of certain building typologies and systems of arrangements in developing the built environment represents the culture's concept and attitude to built form and its uses, regardless of geographic location and climatic influences. Provide one example from history and one from contemporary times.

7 The purpose of studying history as indicated in the aims of this course is to learn from it in interpreting and understanding phenomenon of urbanism and architecture in our contemporary times. Indicate by an example how this has helped you in:
   a. developing an attitude to your study of architecture.
   b. developing an understanding of the processes of urbanism and building activities taking place today.

8 The study of the history of concurrent and successive civilizations indicate a recurrent phenomenon of borrowing ideas for the layout of settlements, architectural motifs and building design, and techniques of construction. Provide a minimum of two examples from civilizations you studied this semester to illustrate this phenomenon.

9 The development of building technology and the use of certain materials influenced the development of architectural responses to people's requirements. Provide examples of how this occurred in two civilizations.

10 The quality and design attributes of building materials used in the early years of a civilization's history affected the development of certain stylistic tendencies of later developments by other materials. Discuss two examples from the civilizations you studied.

outs, reading material and class presentations/ discussions. In effect every student was making a mini-summary of the course. This proved most beneficial in achieving a deeper understanding and appreciation of the course and what it sought to achieve. The results of the final exam in the second semester were more convincing with a higher profile of accomplished final grades[13].

There is of course always room for refinement and adjustments in a course of this type, particularly in the preparation of the material to be used by the instructor. This is where I will concentrate on in the third round starting February 4, 1989. Needless to say such preparation is time consuming and often very frustrating due to the lack of information which is directly useable within the framework and approach set by the course. Thus a major gap in the literature has been revealed, i.e. a history book written with this specific approach in mind. Although to write such a text could be viewed as a major undertaking, it might, however, be more manageable in the form of a series of books addressing different civilizations but following a generalized framework such as the one discussed here. I venture to say that the demand and appeal of such a text would be instant and global, with the potential for translation into a number of languages. This would be one way of integrating the achievements of various civilizations into the body of a yet to emerge architectural theory. Once this is achieved, a sound basis for architectural criticism would also have been created. This would usher in a new era of architectural maturity based on cross-cultural and historical knowledge with unforseen benefits to the future quality of the built environment.

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REFERENCES

1 Peggy Maddox, an eighth-grade English teacher in a U.S. public school, wrote about the necessity to reintroduce history and literature in the early grades so that high school students can develop the appreciation for it. She says that American high school students 'regard the study of history and literature as boring 'stuff' that has nothing to do with them . . . And they exhibit remarkable ingenuity and strength of will in keeping the doors on their cages locked.' She also says that 'Just about all of the children I teach resist learning about people who lived in the past. To them, dead is not relevant. American children are the slaves of immediate relevancy.' . . . they 'grow in the conviction that anything not current, not easy, not contemporary, not familiar, not like themselves, is not worth their time.' From the article 'Giving students something to build on' by Peggy Maddox in *The Christian Science Monitor*, Thursday edition, January 5, 1989

2 I would appreciate hearing from others who are sympathetic to the approach outlined here. My current mailing address is given at the head of the paper. Please use airmail postage for correspondence. If you do not receive my response, then please check with ACSA headquarters in Washington DC for the latest address.

3 From Chapter 1 'Cultural origins of architecture' by Amos Rapoport in *Introduction to architecture* (Eds J C Snyder and A J Catanese), McGraw-Hill Book Company, NY, 1979, pp 17 and 18

4 See Chapter 3 'Culture and the urban order' by Amos Rapoport in *The city in cultural context* (Eds J Agnew, J Mercer and D Sopher), Allan and Unwin, Boston, 1984, p 53

5 These are derived from the reference cited in note 3, and from Chapter 2 'On the cultural origins of settlements' by Amos Rapoport in *Introduction to urban planning* (Eds A J Catanese and J C Snyder), McGraw-Hill Book Company, NY, 1979

6 Two publications by N J Habraken are used for this purpose: (1) *General principles about the way built environments exist*, Open House Blue Cover Booklet Series, No 1, March 1979, published by SAR, Eindhoven, The Netherlands, and (2), *Transformations of the site*, Awater Press, Cambridge, Massachusetts, 1983

7 For this purpose material is used from Christopher Alexander's *The timeless way of building*, Oxford University Press, NY, 1979, and *A pattern language*, Oxford University Press, NY, 1977

8 The handouts are based on material extracted from the references cited in notes 3, 5, 6, 7 and 9

9 Two of this author's publications are used as a basis for discussion and examples. They are: (1) *Arabic-Islamic cities: building and planning principles* by Besim S Hakim, Kegan Paul International, London/Routledge, Champan & Hall, New York, 1986, and (2), *Sidi Bou Sa'id, Tunisia: A study in structure and form*, edited by Besim S Hakim, Technical University of Nova Scotia, Halifax, Canada, 1978

10 The article distributed to the students is an Arabic version translated from pp 66–83 of the book: *The Arab of the desert* by H R P Dickson, George Allen and Unwin, London, 1949

11 The primary sources from which material is extracted are listed chronologically, (1) *A history of architecture* by Banister Fletcher (18th edn), Charles Scriber's Sons, New York, 1975. A new revised 19th edn was published by Butterworth, London in 1987, (2) *Architecture in ancient Egypt and the near east* by Alexander Badawy, The MIT Press, Cambridge, MA, 1966, (3) *Meanings in western architecture* by Christian Norberg-Schulz, first English translation published in the UK in 1975, revised edition published by Rizzoli International Publications, New York, 1980, (4) *A history of architecture: settings and rituals* by Spiro Kostof, Oxford University Press, New York, 1985, (5) *The story of western architecture* by Bill Risebero, The MIT Press, Cambridge, MA, 1985

12 Quote from *Studying history: how and why* Robert V. Daniels, Prentice-Hall, Inc, Englewood Cliffs, NJ, 1972, p 34

13 The percentages of the grades achieved during the first and second semesters of the 1986/1987 academic year are as follows:
First semester (out of a total of 16 students) = A (0%), B (44%), C (44%), D (12%).
Second semester (out of a total of 17 students) = A (18%), B (47%), C (35%), D (0%)

14 Most of the observations of phenomenon listed under item (1) *The human mind . . .*, and (2) *Values, conventions . . .*, were synthesized from various sources, particularly from the references cited in notes 3 and 5 above

15 These principles are derived from material in the two references cited in note 6 above

16 See note 7 above for the full reference

17 The material in Figure 2 is extracted from the references cited in note 11. For a complete and thorough presentation the civilizations of ancient Greece, Rome, Byzantium, Islam and examples from contemporary Saudi Arabia and other countries should be included and supported by adequate illustrations. Cross referencing and evaluation between civilizations can then be undertaken to extract generalizations (etics), which can form the basis of theory. Such a full presentation is beyond the scope of this paper