

The Cathedral and the Bicycle Shed

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I believe that the call for papers to this session is intended to help bring the understanding of vernacular architecture into the mainstream of architectural thought. The need to do this arises because of an attitude that is exemplified by Pevsner's famous statement at the beginning of *An Outline of European Architecture*. This sentence—"A bicycle shed is a building; Lincoln Cathedral is a piece of architecture"—is representative of an intellectual tradition that until very recently has divided the world of building into two quite separate parts.

"Architecture" has included buildings that have been built by ruling elites, important civic and institutional buildings, buildings that have been built to last, and primarily, buildings built for explicitly religious or spiritual reasons. It also includes buildings that have been able to demonstrate a good deal of architectural innovation, that can usually be attributed to particular people or particular periods.

By and large, domestic buildings have not been included in this category, especially houses built before the Renaissance when architects who are now well-known began to design large houses and palaces for wealthy patrons and clients. The vast bulk of building in the world—the ordinary building fabric of cities and towns, houses and workshops and farms and minor civic buildings—has not been considered fit subject for study, and is barely covered in the most well-known books about architectural history.

What I want to do, with just a few simple examples, is to discuss what contemporary research is recognizing: that this distinction has very little meaning in scholarship, and that the boundary between "building" and "architecture" is not a clear one at all.

One might downplay the importance of this recognition. Of course the worlds of architecture and of building are not separate, since every building, vernacular or not, has to be built. Architecture is just that aspect of a building that causes it to rise above the ordinary, that allows it to cross the line out of the realm of mere building. But what I am hoping to show is that because there are so many overlaps and continuities between architecture and "mere building," such a classifica-

tion is not only hard to make, but in fact may prevent the development of important understandings about the nature of the built world, understandings about how it gets built, and what the implications of such understandings might be for practice.

These overlaps and continuities happen in various ways.

There are continuities of type, in which buildings share characteristics of organization, style or construction. These come about because there are also continuities of process, in which buildings that are architecture, and buildings that are just buildings, are all done within a building world that is itself continuous, in which most of the various players—craftsmen, building inspectors, architects, masons—do not themselves make the same distinction that Pevsner did.

And buildings are complex enough that different parts of them may have come about in different ways, or that different aspects of them are understood in different ways. A building's plan might have one origin; some of its construction details another; other of its construction details yet another.

SANTORINI

Take a rather simple example: a village on the island of Santorini, the kind of example we use to define for students what vernacular architecture is. Here are buildings that have been built in similar ways for thousands of years, with the plastered stone walls that are so typical of the Greek Aegean, and the vaulted roofs that are typical of volcanic and forestless Santorini. House plans consist of one major room, with smaller rooms and alcoves adjacent, all behind an entrance courtyard. The buildings are so clearly "of their place," "indigenous," even "timeless."

Now given this, what are we to make of the buildings at the top of the hill? Here are classical facades in this extremely "vernacular" place. The facades are on houses built for shipowners after the middle of the nineteenth century, and include aspects of the neo-classical planning that was reintroduced to Greece, from Europe, following the independence of Greece from the Ottoman Empire. (Ron Walkey

makes a similar point regarding buildings of northern Greece.) Here is professional influence on the buildings, and what was essentially a stylistic import (which is indeed an odd thing to say regarding classical architecture in Greece).

But at the same time, they are built in the same way as buildings lower down the hill, with the same materials and techniques. Architects may not have been directly involved, but the tools of architects-plans and elevations- may very well have been (and certainly were for larger buildings of similar style). Are these vernacular buildings or not? The more salient question is, Does that question matter?

WOODEN BUILDINGS OF UKRAINE AND EASTERN EUROPE

In a large geographical swath that extends from Scandinavia east and south through Russia, eastern Europe and Ukraine, there is a long history of domestic buildings with walls made of wooden logs. The most basic building is made up of a single room roughly square in shape, with sides equal in length to that of available logs. More complex buildings and building groups are based on repetitions of this unit. Many traditional Norwegian farms, for example, are made up of a collection of such one-roomed buildings, each serving a different function. Many traditional Ukrainian houses are made up of a linear sequence of square rooms.

One kind of typical, traditional Ukrainian farmhouse, built up to this century, has three rooms arranged in a line: a central **entrance/passage**, with a multi-purpose living room on each side of it. In some cases the house is extended to four or five rooms, with storerooms at the extremities. Although construction techniques may vary from region to region-with all log buildings in the uplands, frame-and-mud buildings in the lowlands, composite systems in regions in between-the basic plan configuration tends to be the same, occasionally modified by porches or galleries that protect walls and foundations from the rain. There are similar traditional building types in Hungary.

Now, there are simple, wooden Ukrainian churches that are very similar in plan and construction to the houses. For one of these churches, David Buxton points out "Were it not for the miniature stalked dome perched on the principal roof it might almost be mistaken for a house." In the plans of these buildings, the three main parts-narthex, nave, sanctuary (with the iconostasis separating the nave from the sanctuary)- indeed seem to correspond to the three rooms of the basic house.

The wooden church of modest size is related typologically both to smaller domestic buildings as well as to larger religious buildings, which are **often** of masonry and often influenced by foreign styles. This chart shows the variety of plan types for churches alone, but clearly demonstrate the continuous variation that such plan types exhibit. Such **three-unit** plans were easily adapted to the tripartite arrangement of Orthodox churches; with the addition of two more units one could easily obtain a cross; and once the overall arrange-

ment was there, the precise shape could be elaborated and differentiated to conform to a particular stylistic requirement.

HOUSES, PALACES AND MOSQUES OF CAIRO AND TUNIS

The courtyard buildings of north Africa and the middle East have had continuous development over several thousand years. These buildings predated classical civilization, were fundamental to urban domestic architecture during the civilizations of Greece and Rome, were maintained in modified form through the various Islamic dynasties and caliphates, and survive to the present day in communities all around the edge of the Mediterranean. These buildings therefore offer us a very large, and in some cases very well documented sample, to learn from.

Here is a big courtyard house built for well-to-do merchants in Cairo in the 17th/18th centuries. It has an overall plan that is asymmetrical, because it is on an irregular site, but like many Parisian *hotels*, is organized around a courtyard that has considerably more symmetry than the house as a whole. Off this courtyard is a main reception room called the *qa'a*, three stories tall, that is very "architectural" in its organization, proportions, and symmetries. It does not exactly fit what we usually think of as the vernacular: there was a high degree of specialized craft involved, for example, and the symmetries seem very carefully planned. In addition to the *qa'a*, the courtyard has two outdoor rooms adjacent to it that are typical of houses of this type: one is called the *taktaboosh*, and is in between the courtyard and the garden, and the other is a porch on the second floor, above the entrance and opposite the *taktaboosh*.

This house is somewhere in between the very simple houses that are clearly of purely vernacular origin - shown for example in these plans of ancient Fustat, in what is now modern Cairo- and much more elaborate and "architectural" buildings. Now if we look at larger religious buildings in Cairo, like the Madrasa of Kalaoun or the Mosque of Sultan Hassan, they are clearly much more significant in the eyes of architectural historians. But they have very similar typological features. They are organized around courtyards that have bilateral symmetry. Their main rooms are on the axis of the courtyard. The *iwān* of the mosque or madrasa- that is the covered porch at the center of the sides of the courtyard - corresponds to the *taktaboosh* of the large house. There are many correspondences, in plan and construction, between the buildings that are clearly "vernacular," the ones that are clearly "architectural" and the ones that stand somewhere in the middle.

We can be more systematic about this **kind** of observation by looking at a larger number of buildings. We can begin with the plans of 28 houses of the sixteenth and seventeenth centuries in Tunis. The plans are at the same scale, and are arranged roughly in order of their size; that might be some indication of the wealth of their owners.

Traditional houses in Tunis, as in many other north

African and middle eastern cities, are closely packed with each other, with party walls on boundaries and courtyards containing the only private space available to the house. Lots are irregularly shaped, and access to houses is provided by alleys that branch off of through streets.

Certain attributes are present in most if not all of the houses. These include at least one courtyard as a primary spatial organizer of the plan, a complex path inside the street entrance that results in the courtyard being well-hidden from the street, rooms that communicate directly with the courtyard (on all four sides of the courtyard, in the vast majority of cases), a hierarchy of sizes of architectural spaces (including the courtyard, rooms, and sections of passages).

Other attributes seem to show systematic variation through the range of plans: the shape of the courtyard(s), the existence of arcades around the courtyard, the symmetrical disposition of rooms on one or another axis of the courtyard, the symmetrical disposition of secondary rooms and alcoves with respect to those rooms.

The relationship between large and small houses, noted by Revault, confirms the idea that very humble buildings may be similar to large ones except for the elaboration and intensification of detail and symmetry.

The Dar Belhaouane is an example of outlying houses that can be occupied by families of humble artisans. This one shows, in rue Sidi el-Benna, a simple door, sparingly nailed on dark green wood and lightly sculpted in its stone frame. *The interior plan does not adopt any less than the bourgeois houses examined above, the essential arrangements of the large houses of the city. The main difference appears in the inferior proportions and the total absence of ornamentation.* [Italics mine]

And this house contains an alcove that is a "timid imitation of the central alcove of a room."

What is the nature of the systematic variation? In smaller houses, the courtyard will not necessarily be a rectangle, but its sides may be parallel to the sides of the property (whose sides are not necessarily parallel to each other); as houses get larger, the courtyard is more likely to be rectangular; for the largest houses, the courtyard is always rectangular (and often square). Arcades tend not to be present in the smallest houses; are *always* present in the largest houses, and are sometimes present, to different degrees, for houses of sizes in-between. Virtually all of the houses shown have at least one room that has its door directly on one axis of the courtyard, but larger houses tend to have more such rooms. But in the same way that all houses reinforce the symmetry of the courtyard by putting such rooms on their axes, the largest houses reinforce the symmetry of *these rooms*, by putting smaller rooms on *their* axes. So what happens as houses get larger is an intensification of the basic symmetries of the house, through a recursive process that reinforces the symmetries of smaller and smaller parts of the house.

In terms of construction there is a similar variation in existence of ornamentation and fineness of detail. In the

house described above, the walls are "only whitewashed," the courtyard is of "irregular shape but carefully paved with stone," but the stone pattern itself is not described.

This order, and use of detail and ornament to elaborate symmetries and architectural compositions, becomes most intense not in houses, but in mosques, madrasas, and other religious buildings.

Using the traditional Islamic city may perhaps be criticized as a means to make a general point about the similarity between major and minor buildings. Much more so than the architecture of the west, Islamic architecture and urbanism are characterized by the use of just a few architectural elements (courtyard, iwan or similar rooms adjacent to courtyard, vault, *skifa* or covered passage leading to the courtyard) as primary organizational features for many different functional types, at different scales. Indeed, legend has it that the first mosque was itself the house of Mohammed. So these buildings might seem like a special case, with principles that are so consistent, that they are not applicable to other situations.

PALLADIO AND THE VILLAS OF THE VENETO

So to extend the point we turn to the domestic architecture of the Italian Renaissance. This is often described in ways that epitomize the idea of *architecture* as opposed to *building*. According to mainstream architectural history, the Renaissance was the time in which reason came to prevail over the spirit, in which logical and mathematical systems began to control the design of buildings, and in which the architect began to become separate from, and exert dominance over, the builder.

This view of history tends to emphasize the visual and stylistic aspects of buildings, as opposed to functional and organizational issues; in the case of villas in the country, it emphasizes the building as an isolated object, as opposed to the building as part of an agricultural complex; and it pays little attention to the possibility that the long tradition of vernacular building in Italy may have influenced what architects did.

In the Veneto, as in other parts of Italy, the vernacular form of farms had developed over hundreds of years. On smaller farms, all of the functions were included under one roof. On larger farms, the central buildings were connected to each other, and included living quarters for the owner as well as supervisors, servants and employed workers; hay loft; granary; sheds for animals and implements; a cool place for storing wine, and a threshing floor. These buildings often included a portico to help provide shade from the hot sun of the Veneto, and put the living quarters on the first floor, that is the floor above the ground floor. The hayloft was typically above the living quarters. They often have rectangular plans, in which various functions are included together under the same roof, but where one must go outside, under the portico, to get from one of these functions to the other. However, they often have few of the symmetries that are evident, for

example, in Palladian houses .

Palladio recognized these vernacular roots both in his writings and in his buildings. We get the first hint of this in the Preface to the *Four Books*, where he explained the structure of his treatise:

"...I thought it would be very convenient to begin with private houses, because one ought to believe, that those first gave rise to publick edifices; it being very probable, that man formerly lived by himself; but afterwards, seeing he required the assistance of other men, to obtain those things that might make him happy, (if any happiness is to be found here below) naturally sought and loved the company of other men: whereupon of several houses, villages were formed, and then of many villages, cities, and in these publick places and edifices were made."

In the second book, Palladio wrote both about the location of villas and their "compartment or disposition." He wrote about the need to place buildings near good water (and how to find such water); the importance of not placing buildings in confined valleys where either standing water might become unhealthy, or where the wind might be too strong; the importance of avoiding places where reflected sunlight might cause things to get too hot.

He went on to describe the arrangement of villas themselves. In these descriptions, he does not say specifically that his recommendations are based on observations of vernacular buildings. But looking at vernacular buildings of the Veneto and Po Valley-contemporary buildings as well as those described in old paintings and drawings-it is possible to pick out many of the features that Palladio described. So it seems reasonable to assume that Palladio was basing his recommendations at least partly on his own observations.

For example, Palladio writes about the *functional* importance of porticoes "joined to the master's habitation, that he may be able to go every place under cover, that neither the rains, nor the scorching sun of the summer, may be a nuisance to him, when he goes to look after his affairs; which will also be of great use to lay wood in under cover, and an infinite number of things belonging to a villa, that would otherwise be spoiled by the rains and the sun."

He writes about the importance of putting workers' quarters near the gates "for the safeguard of all the other parts;" placing stables away from the house; placing the wine cellars underground, with detailed instructions for their arrangement; the importance of placing granaries and other storerooms toward the north and haylofts toward the south.

In one instance, he does write specifically that local custom should be followed: "The places for breeding animals, as hogs, sheep, pigeons, fowls and such like, are to be disposed according to their quality and nature: and in this the custom of different countries ought to be observed." This passage implies that the architect should not blindly follow a model, but that he should base certain arrangements on local traditions and customs.

Just before Palladio, the architect and theorist Sebastiano Serlio wrote a treatise on architecture, *The Five Books of Architecture*. A sixth volume, on domestic architecture was written but not published until recently.

This volume seems to make clear that Serlio believed in the importance of architects learning from the vernacular, perhaps to an extent even greater than Palladio did.

Rosenfeld suggests that Serlio was influenced by the writings of Alvise Cornaro, who in a treatise on urban architecture, wrote:

"But above all, the beauty and comfort of houses, dwellings and abodes of citizens are important, because these are of an infinite number and they make up the city. For without them, there would be no city. However, architects have written so little about these [dwellings] in order to inform citizens, not architects. I am not writing about theaters, amphitheaters, and how to make a new city, because this never happens and because these other types of buildings cannot be useful [to the ordinary citizen]. The divine Vitruvius and the great Leon Battista Alberti have not written sufficiently about these [dwellings]."

Serlio begins the plates to this sixth book with two illustrations of very humble buildings indeed. One has a two-room plan, with one room larger than the other and a porch across the two, with a single square hipped roof over the whole. The second has a four-room plan, with each room a different size, also with a porch across the front and a hip roof. In both cases the roofs are thatch. The suggestion is clearly made that these buildings were connected typologically to larger buildings, and that this sixth book of Serlio was an influence on Palladio.

Palladio's own villas were designed for wealthy Venetians who were establishing agricultural/economic footholds in the *terrafirma* as a means of counteracting the decline of the Venetian trading empire. These villas were in the context of farms that had already been established by Vicenzians and others. In some cases, this involved the reclamation of a good deal of land from swamp and the introduction of more intensive farming methods. The agricultural system of the Veneto was based on large landholders who maintained estates that employed many people. At the center of these estates were clusters of farm buildings that included residences for the landowner and workers, as well as the working buildings of the farm.

Typical Palladian villas and typical farmhouses of the Veneto share some formal characteristics and differ in others. They share building elements such as the *barchessi*, dovecots, granaries, wine cellars and other rooms for the farm, windows for ventilation of granaries, and the enclosed court in front of the house. They share functional relationships such as orientation to the sun, connection of various functions under cover, and views from the loggia at *piano nobile* level. They share construction techniques such as ••• brick walls, stuccoed exteriors, and wooden roofs with tiles.

But Palladian villas and Venetian farmhouses also differ in ways that have to do with compositional symmetries and classical motifs. The loggias of farmhouses are likely to be asymmetrically placed; those of Palladian villas will be in the center of the facade. The outbuildings of Palladian villas will be symmetrically placed on either side of the main house; those of earlier farmhouses will not. The facades of Palladian villas are composed, of course, with Renaissance versions of the classical orders; those of earlier farmhouses may not be. These architectonic techniques were used on the Palladian villa to help establish the status of the Venetian moneyed families, who needed such architectural symbols to make clear their foothold on the *terraferma* as the supremacy of Venice in world trade began to decline.

And it should not be surprising to learn that within Italy, the close relationship between the vernacular and buildings designed by architects is not restricted only to the Veneto. Claudia Lazzaro pointed out that a different rural building tradition, consisting of a rectangular hipped-roof block, with a dovecot at its center projecting above the main roof, and a tripartite plan, was typical of Tuscany and Latium. It is conjectured that during the sixteenth century, Vignola invented an architectural type that was based on these vernacular elements (and used it for the two pavilions at the Villa Lante among other places), that this type became common for landowners' houses during the seventeenth century, and that it then reverted to vernacular usage, and as dwellings for farmworkers. The interaction was strong enough to "[illustrate] the difficulty of distinguishing between monumental and vernacular traditions in the countryside... Because of the fluid interaction between the houses of owners and those of workers, neither can be understood without reference to the other."

The north African urban buildings discussed before and the rural Italian villas of the Veneto exhibit similar phenomena. In both cases the larger and more "architectural" buildings maintain the basic architectural elements of the smaller building as well as the construction techniques of the smaller building. But the larger building represents an elaboration, an intensification of their arrangement, with higher orders of symmetry and the use of basic elements in more overtly symbolic ways. In both places, perhaps somewhat more so in north African cities, there seems to be a continuous gradient of compositional rigor, of deliberateness with which symmetries are introduced, of use of explicit ornamental motifs—ranging from simple and humble buildings, in which few of these techniques were used, to buildings with an important presence, in which many of them were used.

The examples described so far have served to illustrate the typological continuities that exist among buildings that are of highly different function or economic class. My final example is intended to illustrate how such continuities may actually come about: what are the human mechanisms through which the worlds of architecture and of building meet each other?

HAWKSMOOR AND HIS CRAFTSMEN

This is Christ Church **Spitalfields**, designed by Nikolas Hawksmoor as one of the fifty new churches commissioned to replace churches lost in the London fire of 1666. The church sits at the end of a street now called Fournier Street, in a neighborhood that now happens to house a large number of south Asian immigrants. The church is a wonderful example of early 18th century architecture, and there is no doubt about Hawksmoor's role as an architect, in today's sense of the word, in the design of this building. Next to this building is a large house: the minister's house of the church. It was also designed by Hawksmoor. In this case, the plan has little to do with the plan of the church. But there are some similar features. One which is obvious just walking down the street is the cornice, which is very similar to that of the church.

No doubt there are similar features in the things that can't be seen from the street, as well. The carpenter for the house was Samuel Worrall, who was also the carpenter for the church. The mason for the house was Thomas Dunn, who was also the mason for the church. The plasterer for the house was Isaac Mansfield, as well as for the church. The painter for both buildings was James Preedy.

As a house for the minister of an important parish church, the plan was more elaborate than that of most houses built at the time. The projecting bays in the rear are particularly unusual, as is the full two-bay plan. There was considerably more joinery than usual. These differences can be seen if we look at some other houses in Fournier Street, which are much simpler than the minister's house. These have plans similar to those I've already talked about, with a front room, a back room, and some kind of circulation zone along one party wall. In these cases, the stairs were at the back. Many of these houses, by the way, were built for Huguenot weavers, who had migrated to England to escape religious persecution. To meet their needs, the houses have rooms with many windows at the top, to provide good daylight for silk weaving.

It turns out that Samuel Worrall was also the carpenter for some other houses on Fournier Street; in fact he was the developer of some of them, as was the practice for craftspeople—particularly carpenters and bricklayers—of that time in London. It is likely the case that some of the other craftspeople I mentioned were also working on those smaller houses. So this one carpenter, Samuel Worrall, worked on the church, the large house, and smaller ones that he himself built on speculation. The architect worked on both the church and the large house. And some of the other craftspeople worked on a range of buildings as well.

In fact, the building culture of early eighteenth century London was one that was still largely based on guild and craft traditions, and in which there was a good deal of movement of craftsmen and interrelationships among craftsmen from building to building. There was practically no steady employment—the expectation of steady employment only came about a century later with the advent of general contracting on a large scale, and the subsequent rise of labor unions—and

depending on their trade, craftsmen could expect to work on a relatively large number of buildings in a particular year. What this meant in terms of the buildings is that the work of a particular craftsman would appear in many different places, and would not necessarily be restricted to buildings of a particular size or type.

A FEW OTHER EXAMPLES

The recognition of the kinds of connections that I am describing among different sorts of buildings within the building culture is certainly not new, and one can point to many more examples, from different areas. We could look at:

- the influence of the Greek revival on American domestic architecture of the nineteenth century, and its transmission to the building trades through various sorts of popularizations;
- the ways in which contemporary architects like Geoffrey Bawa in Sri Lanka, or Abdel Wahed El-Wakil in the middle East, or Duany and Plater-Zyberk in this country have deliberately based their work on vernacular types;
- the ways in which an architect like Carlo Scarpa worked with traditional materials of Venice, and transformed its traditional attitudes toward detailing, in buildings that otherwise have modernist sensibilities;
- the ways in which all contemporary architecture, even those buildings considered to be the most canonical, depend on the contemporary building culture, and overlap with other buildings produced through it, in the same way as early eighteenth-century London;
- and many others.

CONCLUSION

There are several different implications of this broader way of looking at the built world.

- It implies that the vernacular need not be seen as a phenomenon apart from the monumental and professional - an attitude that has afflicted both "high-style" scholars and vernacularists alike - but instead, as intimately and necessarily connected to it, in a world of building that is continuous.
- It implies that we can take a very broad view of professional responsibility, recognizing that the task of improving the built world does not belong only to architects, nor only to "society-at-large," but that all have a critical role to play in a culture of building production that is very large and necessarily very complex.
- And it implies that in our schools, architectural history might be taught in ways that more firmly anchor the exemplary buildings of history in the framework not only of their social and artistic culture, but in that of their building culture as well.

So if we think again about Lincoln Cathedral and a bicycle shed, we may imagine things a little differently from the way Pevsner did. The cathedral shares features with the parish church for a very simple reason: the same people, trained in

the same craft, were working on them both. The parish church shares features with a smaller manor house. The manor house shares features with a merchant's house. The merchant's house is similar in some ways to an artisan's house, similar to a farm building, and so on, down to the bicycle shed, which itself was not to be built for that specific purpose before the invention of the bicycle, several hundred years later.

NOTES

- ¹ Nikolaus Pevsner, *An Outline of European Architecture*. Harmondsworth: Penguin, 1963 p. 15.
- ² Undoubtedly the most well-known of these, which has gone through many editions-and is still in print- since its first publication in 1896 is Banister Fletcher's *A History of Architecture on the Comparative Method*, which is notable for its extensive visual documentation of historic buildings.
- ³ Many of these Hungarian examples may be seen at the outdoor museum at Szentendre, outside Budapest, and are illustrated in the guidebook to the museum, Peter Kecskes, ed., *The Museum of the Hungarian Village at Szentendre*. Corvina, 1990. This guidebook also contains a bibliography of Hungarian vernacular building.
- ⁴ David Buxton, *The Wooden Churches of Eastern Europe*. Cambridge: Cambridge University Press, 1981, p. 101.
- ⁵ The possibility that the church actually evolved from the form of the house is suggested by Titus D. Hewryk: "...some students of Ukrainian timber architecture postulate that the traditional tripartite-plan wooden churches are based on earlier pagan and early Christian prototypes or that they evolved from the simple three-compartment peasant dwelling of the ancient past (like the tripartite church building, the traditional Ukrainian dwelling consists of three rooms and both have an analogous layout, architectural features, and southern orientation of the entrance). Other writers point out Byzantine influences..." Titus D. Hewryk, *Masterpieces in Wood: Houses of Worship in Ukraine*. New York: The Ukrainian Museum, 1987, p 17.
- ⁶ This chart is from Titus D. Hewryk, *Masterpieces in Wood: Houses of Worship in Ukraine*. New York: The Ukrainian Museum, 1987.
- ⁷ These plans are taken from Jacques Revault, *Palais et Demeures de Tunis (XVI et XVII siècles)*. Paris: Editions du Centre National de la Recherche Scientifique, 1967.
- ⁸ A good English introduction to this typology is found in Besim Hakim, *Arabic-Islamic Cities: Building and Planning Principles*. London: Routledge and Kegan Paul, 1986.
- ⁹ Translated from Revault, *Palais et Demeures de Tunis*, p. 300.
- ¹⁰ Jacques Revault, *L'Habitation Tunisoise: Pierre Marbre et Fer Dans La Construction et le Decor*. Paris: Editions du Centre National de la Recherche Scientifique, 1978.
- ¹¹ Denis Cosgrove, *The Palladian Landscape: Geographical Change and its Cultural Representations in Sixteenth-Century Italy*. University Park: The Pennsylvania State University Press, 1993.
- ¹² Aldo Castellano, *La casa rurale in Italia*
- ¹³ This arrangement was carried forward into relatively recent times. A 19th century traveller's account of a farm in the Veneto comments that...., *A Doge's Farm....*
- ¹⁴ Andrea Palladio, *The Four Books of Architecture*, English edition published by Isaac Ware, London, 1738. New York: Dover Publications, 1965, second page of Palladio's preface.
- ¹⁵ In Palladio's time, the word 'villa' meant not only the rural residence, but the entire agricultural complex that might have been associated with the residence.

- ¹⁶ The quotes from the *Four Books...* are taken from the Dover edition of 1965, which "is an unabridged and unaltered reproduction of the work first published by Issac Ware in 1738." New York: Dover Publications, Inc., 1965.
- ¹⁷ *Four Books...*, p. 48.
- ¹⁸ Sebastiano Serlio, *The Five Books of Architecture: An Unabridged Reprint of the English Edition of 1611*. New York: Dover, 1982.
- ¹⁹ *Sebastiano Serlio On Domestic Architecture: Different Dwellings From the Meanest Hovel to the Most Ornate Palace*. Text by Myra Nan Rosenfeld. Cambridge and London: The Architectural History Foundation and The MIT Press, 1978. This was published as a translation of a manuscript in the possession of the Avery Library at Columbia University, with commentary by Myra Nan Rosenfeld.
- ²⁰ Quoted in Rosenfeld, *op.cit.*, p. 44, from Giuseppi Fiocco, *Alvise Cornaro, il suo tempo e le sue opere*, Vicenza, 1965.
- ²¹ Rosenfeld writes: There are many interrelationships between both rural and urban building types. The typology of Serlio's houses confirms recent suggestions that the Renaissance villa and town house were composites and variations of many different types. One can observe in Renaissance depictions of cities how often rural building types were adapted to the city, as in the manors found on the Giudecca in Jacopo da Barbari's map of Venice or the town houses outside the walls of Feurs in Auvergne. Rosenfeld, *op.cit.*, p. 50.
- ²² Rosenfeld, *op.cit.*, p.69.
- ²³ The 15th and 16th centuries saw both the Ottoman conquest of Constantinople and the beginning colonization of the Americas.
- ²⁴ Claudia Lazzaro, "Rustic Country House to Refined Farmhouse: The Evolution and Migration of an Architectural Form." *Journal of the Society of Architectural Historians* XLIV, December 1985, pp. 346-367.
- ²⁵ The idea that that different buildings, and parts of buildings, may be looked at in terms of the *intensity* of their symmetries and order is explained more fully in Artemis Anninou, *The Unified Building Process*, Ph.D. dissertation, University of California, Berkeley, 1986.
- ²⁶ This of course is not unusual. But we have already seen, in the Arabic-Islamic world, the similarity of plan between domestic buildings and religious buildings. Similarly, there are traditional wooden churches in Ukraine and other parts of eastern Europe that have linear, two- and three-unit plans that are very similar.
- ²⁷ Names of craftsmen for the house are from Dan Cruickshank and Neil Burton, *Life in the Georgian City*; names of craftsmen for the church are from *The Queen Anne Churches: A catalogue of the papers in Lambeth Palace Library of the Commission for Building Fifty New Churches in London and Westminster 1711-1759*, compiled by E.G.W. Bill.