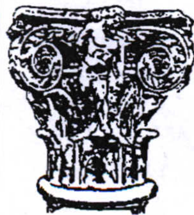


Environmental & Architectural Phenomenology Newsletter

Vol. 6, No. 1 *Winter 1995*

With this issue of *EAP*, we begin our sixth year. We thank readers who have renewed their subscription. Those who have not yet responded will find another renewal form tucked inside. As of late fall, we have had 71 renewals from a 1994 subscriber list of 141. Many of you have forgotten! **Please renew.**

Last year, our financial situation ended satisfactorily, particularly because of several generous donations. For safety's sake, however, we could use more subscribers. One way in which readers could help *EAP* is to ask their university or college libraries to order an *EAP* subscription. Currently, only five universities subscribe. Library copies increase our readership and bring in new members.

We draw your attention to the comments of architect **Andrew Cohill** in this issue's membership news. He asks what the relationship between *EAP* and computer communications might be. He volunteers to establish an electronic mailing net for *EAP* members. Are readers interested in such a venture and, if so, how should things proceed? One possibility is to place an older issue of *EAP* "on line" so that potential new members might learn of our interests and become involved.

Unintentionally, this issue has largely come together as a focus on architect Christopher Alexander's Pattern Language. We include a review of his recent book on early Turkish carpets, *Toward a Twenty-First Century Art*, as well as shorter reviews of commentaries about his work or articles written by former students and associates. We also include an essay by architect Alfred Bay, a recent Berkeley master's student who worked with Hajo Neis, a co-author of Alexander's *A New Theory of Urban Design* (NY: Oxford, 1987).

We also include poems by landscape architect **Gwendolyn Scott** and geographer **Miles Richardson.**

From Alexander's Foreshadowing of 21st Century Art: *The Byzantine-Timurid prototype, a Turkish-rug pattern.* *See p. 5.*

EAP SESSIONS AT EDRA

As announced in the last *EAP*, the 1995 Environmental Design Research Association's annual meeting will be held in Boston, March 1-5. *EAP* members **Ingrid Leman Stefanovic** and **Duncan Case** have both organized *EAP*-sponsored sessions for the events. Stefanovic's full-day intensive session will focus on "Recovering Sense of Place: Research in Environmental and Architectural Phenomenology." Case's workshop will emphasize "Qualitative Research and Pattern Language: Toward the Design of More Humane Living Environments." Tentative participants in the two events include **Margaret Boschetti, Herb Childress, Catherine Howett, Sara Ishikawa, Clare Cooper Marcus, C. Thomas Mitchell, Douglas D. Paterson, David Seamon,** and **Fran Violich.**

A more complete description of these EDRA sessions appears on p. 15 of this issue.

The body of Silverstein's essay explores these three periods in detail, with each section concluding with a set of implications as to what the period meant in terms of the theory-practice interplay. Ultimately, Silverstein suggests that a certain balance of theory and practice is crucial, though he also points out how readily one can err toward one side or the other:

> When theory is continuously expanded to cope with the conflicts of the real world, it runs the risk of becoming ever more utopian and isolated, its projects hot-house creations whose success is contingent upon a whole fabric of never-to-be conditions in the world. On the other hand, where practice is continuously beaten down and forced to compromise by the exigencies of program and circumstance, it loses its theoretical moorings, and becomes so enmeshed with the 'world as it is', that it loses vision and intellectual content, becoming a mindless response to existing conditions. These are the dangers we've been trying to steer a course between while struggling with the contingent happenings of a developing practice. Over time, our work seems less theoretical--less, that is, the *product* of theory--but still needful of the clarity and vision that theory has to offer (p. 26).

Silverstein then describes this "clarity and vision" in greater detail:

> [This theory informed by practice] not only describes the ideas which drive past work; it also moves practice toward greater content, greater clarity, as it challenges the practitioner to *reabsorb*--more thoroughly, more elegantly--the lessons of past work...[P]ractice-derived theory can become like a flashlight that helps the practitioner see deeper into his own work--its range, its motivations and potentials--and to appreciate more in the work of others. *One needs fresh theory, in short, to make on-going sense of practice* (p. 27).

SPECIAL SECTION ON PATTERN LANGUAGE: BOOK REVIEW

Christopher Alexander, 1993. *A Foreshadowing of 21st Century Art: The Color and Geometry of Very Early Turkish Carpets*. NY: Oxford University Press. ISBN 0-19-520866-8 (cloth).

To read Christopher Alexander is, regularly, to feel a sense of vision and hope. In all his books and designs, the aim is the search for understanding, beauty, and wholeness. He has spent his life, he says, "trying to find forms for buildings in which people may feel themselves at home" (p. 7).

This search has involved the design and building of several significant buildings as well as the creation of a remarkable theory of seeing, designing, and building that has been most often identified as the "Pattern Language." Alexander has set forth this theory in a series of books "intended to provide a complete working alternative to our present ideas about architecture, building, and planning" (p. 2).[1]

The seventh book in this series focuses on a topic that, at first glance, may seem considerably removed from the built environment--Turkish village carpets of the 14th-17th centuries. Many years ago, Alexander became a collector of these carpets and now owns one of the finest collections in the world. He surmises that the weavers of most of these carpets were probably *Sufis*--Islamic holy men and women who sought to encounter God through mystical rapture. The carpets were woven as one means to "reach union with God" (p. 21). Each carpet tries to express "the ultimate oneness of everything" and "a pattern which is the infinite domain" (p. 21).

Alexander admires the carpets because of their great sense of beauty and spirit, which, when he began his collection, he could only understand dimly. He began studying the carpets, sensing they could teach him much about one of his major research and design interests--wholeness and genuine order:

> I began to realize that carpets had an immense lesson to teach me: that as organized examples of wholeness or oneness in space, they reach levels which are only very rarely reached in buildings. I realized, in short, that the makers of carpets knew something which, if I could master it, would teach me an enormous amount about my own art (p. 15).

CENTERS AND WHOLENESS

This book presents the lessons he has learned from 74 of these carpets, all illustrated in color photographs at approximately one-tenth scale. The book is divided into four parts. The longest sections, parts II and III, present Alexander's dating method and then discuss each of the 74 carpets. Part IV uses the contrast of 12th- and 19th-century carpets to demon-

strate how their quality has degenerated over time, probably because the weavers gradually lost touch with the spirituality of their work.

EAP readers will be most interested in part I of the book, which presents Alexander's understanding of why the earlier carpets are so powerful. At the start, he emphasizes that this power and wholeness is not a matter of personal preference or taste but, rather, "a definite, tangible, and objective quality which really does exist to a greater or lesser degree in any given carpet" (p. 26).

The heart of this quality, he believes, lies in the color and, especially, the *geometry* of the carpets. "It is the geometry," he writes, "the interlock of the shapes, the very striking boldness of the geometric shapes, and the way that figure and ground reverse, and the many, many levels of scale, which bring the softly shining color to fruition" (ibid.).

Alexander develops a language and a way of looking at the carpets that he hopes will offer common agreement as to which carpets are more and less powerful. "To study wholeness," he says, "we must have an empirical way of distinguishing it from preference" (p. 27). In this sense (though he would not phrase it this way himself), he develops an implicit phenomenology of carpet geometry, drawing on personal discoveries made after studying the carpets for "1000s of hours" (p. 17).

He immediately points out that an accurate judgement of a carpet's relative beauty and wholeness is not easy but requires experience and many years of disciplined looking and seeing. He believes, however, that newcomers can begin to sense the relative power of carpets if they can find a way to bypass personal preferences and look at the carpets in a broader way.

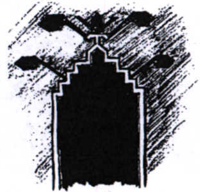
This relative strength of a carpet is partly related to its "staying power": "if you had to look at the thing over and over... which one stays the longer?" (p. 30). One tool he uses to train a wider awareness is to show people two carpets and then to ask:

> If you had to choose one of these two carpets, as a picture of your own self, then which one... would you choose? Which seems better able to represent your whole being, the essence of yourself, good and bad, all that is human in you? (p. 28)

THE NOTION OF CENTERS

Ultimately, however, a clearer understanding of carpet geometry requires practice, and the first part of Alexander's book is a guide to looking and seeing. The crux of Alexander's argument is what he calls *centers*--smaller or larger gatherings of pattern that are seen as units or wholes. Centers are "local configurations that appear whole in the design" (p. 32) or, again, "a psychological entity which is perceived as a whole, and which creates the feeling of a center in the visual field" (ibid).

Typically, but not always, centers are bounded units that the eye reads as a larger or smaller visual whole. The drawing, below left, illustrates the most obvious kind of center: a mandalalike pattern that looks like a round blossom. To the right of this example is another center--an archlike pattern with projecting arms and "lily" at the top.



As can be seen in both of these examples, a crucial characteristic of a center is that *it is composed of other centers* and, in turn, *may be an element of some larger center or centers*. In the blossom fragment, for example, the flower form, as a whole, is a center, but so are the five small white hexagons, the four small squares, the central eight-pointed star, the eight surrounding dark octagons, and so forth. In turn, this blossom is but a small part of a much larger carpet.

This nesting possibility leads to a first central criterion for the relative force of a center: It does not get its power from its shape or elements alone but, also, from the gathering of other centers that this center contains or is part. There is, in other words, a potential synergy among centers that in the best carpets supports a density of pattern and connection:

...every carpet contains hundreds, in many cases even thousands of centers, strewn, packed, and interlocked, throughout its structure.... The degree of wholeness which a carpet achieves is directly correlated to the number of centers which it contains. The more centers it has in it, the more powerful and deep its degree of wholeness (p. 36).

ASPECTS OF CENTERS

The notion of centers is the crux of Alexander's theory and, at first glance, may seem rather obvious and without extensive interpretive power. In the rest of part I, however, Alexander probes the notion from several different angles and, overall, provides powerful evidence for the way centers can help the reader look at carpet geometry in a deeper, more informed way. He identifies four key qualities that contribute to the relative strength of a carpet and its centers: (1) symmetry; (2) positive and negative space; (3) levels of scale; and (4) distinctiveness.

He first examines the strong connection between centers and symmetry. By far, he says, most centers are symmetrical, with at least one bilateral symmetry (for example, the two centers above). There are some centers, however, that are not symmetrical, though, crucially, these centers, first, are almost always composed of smaller symmetrical centers; and, second, almost always contribute toward forming a larger symmetrical center.

Another crucial aspect of powerful centers is a strong use of positive and negative space so that every part of the carpet, from small to large, contributes to geometric pattern and interconnection. Particularly important is whether the ground space supporting a figure has its own sense of form and thus generates its own sense of center around the center that the figure itself makes. Alexander writes:

In a really good carpet, there is no distinction between figure and ground; every single piece of space, or almost every single piece, is a center; and the resulting density of centers is enormous, since there are centers everywhere, intertwining, interlocking, overlapping, and side by side (p. 53)

It is an almost infallible rule that the presence of beautifully organized centers in the 'negative' space is the clue to the beauty of a carpet. When the negative space is powerful, well-organized, we almost always have a design of power and beauty. When the negative space is poorly organized, shapeless, and lacks centers, we almost never have a carpet of any artistic value (p. 55).

RANGE OF SCALE AND DIFFERENTIATION

Alexander points out that much local symmetry and good figure-ground relationships do not necessarily guarantee a powerful carpet. For example, an infinite chessboard of black and white squares has many symmetries and a strong sense of figure-ground yet poorly bears repeated viewings and quickly becomes uninteresting. This fact leads to a third central quality of strong centers--that they contain a range of scale--in other words, "a cascade of levels or steps in size" (p. 61). He explains:

...the real depth of any center comes from the fact that it exists, and works, at many levels simultaneously. In such a center symmetries and positive space do not occur only at a single level, but at many different levels, each one nested in the one above it, each being detailed, or 'having children' in the ones below it (p. 62).

One reason why later carpets are not as forceful as earlier carpets is because the weavers, no longer feeling a deeper sense of order, simplified this multileveled structure so that the careful weaving of many steps of scale gave way "to designs which have many fewer levels in them" (p. 62).

Alexander is definite about the amount of change these steps best involve to be most effective: each center must be roughly *one-third to one-half* the size of the next largest center. In this way, the range of levels provides a set of parts that are, at each scale, readily legible yet also part of a larger network that has its own cohesion and pattern. The result is an "ambiguous web where large and small are united to form a complete and seamless unity" (p. 62).

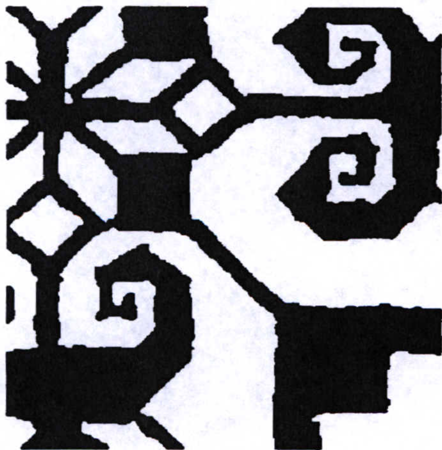
The fourth aspect of a powerful carpet relates to its centers being distinct: that each center is distinguishable and, therefore, set apart from the other centers around it. A design does not work, Alexander argues, unless it is made "of a number of distinct, identifiable entities, each with its own identity" (p. 63). Ways whereby the weavers created a strong distinctiveness include boldness of shape, contrast with adjacent centers, and strong color differences.

AN EXAMPLE

Having sketched out Alexander's argument, I want to illustrate it with a specific example drawn from a pattern that he calls the Byzantine-Timurid prototype.

At one level, Alexander's general argument may seem obvious and even simplistic. Or, because of its circular quality (i.e., for a center to exist it must be part of other centers), one may find it difficult to grasp the argument in a way whereby it can used to evaluate particular carpets.

I was discouraged by the book until chapter eight, which discusses the relationship of positive and negative space. I could not understand how some centers could be more dense and full than others. The discussion of the Byzantine-Timurid prototype opened something for me, especially the significance of positive and negative spaces that can readily reverse their roles and, therefore, make continuous interest for the eye. Suddenly--and I must say the moment was revelatory--I understood what the density of a center could be. Something in me realized that, yes, this book has much of the force and vision that so much of Alexander's other work has.



We begin with a small portion of the Byzantine-Timurid prototype shown above. Readers should use this pattern as a kind of phenomenological exercise--that is, what does one see and does that seeing change? What are the parts and patterns that contribute to this seeing?

Immediately, one notices that what is seen can shift: first, the black patterns seem to be the "substance" of the pattern, but then one notices that the white patterns offer "substance" also. Negative and positive spaces are reversible. No space is wasted in the sense that every piece is contributing to the pattern seen.

As was explained above, Alexander argues that, crucial to wholeness, is the presence of many different centers of various scales, packed together to create a sense of density. What centers are present in this fragment? The smallest are the white diamonds that, together, make up the eight-pointed star in the upper left. On the right side of the star are black squares above and below. These squares are also centers, as are the black lines separating the diamonds that make up the star.

In turn, the black forms join together to make another large center that runs horizontally from the center of the white star to create an arrowlike structure with black spirals turned inward at its base. Further, these black spirals become "negative" space for an even larger white arrow that points diagonally toward the white star. Yet again, the black "negative" space between the white spirals of the white arrow becomes yet another center (a kind of flower upside down with a black diamond at the base of its stem).

In this small bit of pattern, then, we find several differently-sized centers that might be said to work at three levels of scale: the smallest, diamonds, squares, and spirals; next, the white star, black arrows, and black flower; and, largest, the white arrowheads pointing toward the star.

This density and hierarchy of centers, all interlocked so that positive and negative spaces readily reverse, is what Alexander calls *density*--a thickness of pattern and relationship. What is so striking is that this small portion--already quite full with centers--is part of a larger design (see front page) that is much more laden with centers. The reader might take time to study this larger pattern and work out at least a few of its centers, at different levels of scale.[2]

WHY A 21ST CENTURY ART?

One might wonder why the Sufi weavers could create such dense patterns of centers in their carpets and why we, as moderns, have such difficulty in seeing the carpets as systems of centers. The answer

to the first question relates to the weavers' seeking to use craft as a way to find "union with God" (p. 89). In this sense, the most important value of the carpets is not in their beauty but, rather, involves their ability to penetrate more deeply "into the human soul than other carpets do... their special worth is spiritual and religious--no only aesthetic" (p. 90).

At the same time, Alexander suggests that we 20th-century people are typically oblivious to the power of centers because of a Renaissance-inspired, anthropocentric view of the world that reduces all its contents and situations to what we can know and control as human beings. In regard to seeing the carpets, this perspective leads us to look for things and parts in the carpets rather than interlinkages and wholes:

> Since "man" became elevated as the center of things [at the time of the European Renaissance], a sharp focus of attention on figure without ground became more and more common, while the unifying spiritual vision of the Middle Ages and of the Islamic world, in which every point of space was a spirit-carrying center, became forgotten (p. 274).

Thus, the title of Alexander's book: that the carpets of the past might become a harbinger of the art of the next century. He hopes that his understanding of the carpets will encourage artists, designers, and others to make things of equal completion and beauty.

LINKS WITH DESIGN

Alexander believes that the heart of such 21st-century art will be *density*, since this is what the best and most beautiful carpets (or for that matter, any well-designed thing) possess. In all of his work, the aim is to understand the nature of density and to use that understanding for design and building. He explains that such understanding in architecture is not easy:

> There, too, in making a building, one is searching for just such a center or pattern of centers--which contains within itself the full range of the relationships which I have been talking about--dense and self-sufficient. It may sometimes take weeks, months to find the necessary structure of a particular center. It is hard work--not at all the kind of thing where shapes merely drop off the pencil--instead it is hard wrought structure, found with pain and difficulty (p. 70).

Other than this comment, Alexander says little in *Foreshadowing* about how practically an understanding of carpet geometry might contribute to better architectural design. Rather, his main aim is to explore the carpets he loves and to allow them to open yet another path toward his interest in wholeness and beauty. He does mention several times in passing that his much longer work, *The Nature of Order,* will shortly be published and explore the nature of centers in much greater detail and demonstrate more direct significance for design and building.

It should also be mentioned that, in his earlier *A New Theory of Urban Design* (1987), Alexander has already applied the themes of density and centers directly to the making of urban neighborhoods. There, his description of the most beautiful towns and cities closely parallels the qualities of his finest carpets:

> Each [town and city]... grew as a whole, under its own laws of wholeness... and we can feel this wholeness, not only on the large scale, but in every detail: in the restaurants, in the sidewalks, in the houses, shops, markets, roads, parks, gardens and walls. Even in the balconies and ornaments (1987, p. 2).

In *A New Theory*, Alexander draws heavily on the notion of centers to facilitate such environmental wholeness in our own time. He writes that any new element in the urban-design process, be it a building, open space, or outdoor furnishing unit, "must be a 'center' in itself, and must also produce a system of centers around it" (1987, p. 92). In *New Theory*, he presents a conceptual approach that might facilitate such centers, thus grounding the notion as it can have practical meaning for the making of places and buildings.

COMMENTARY

How effective is *Foreshadowing* in getting the reader to accept Alexander's interpretation of the carpets? Overall, quite powerful, though, as I said above, the full sense of the argument does not become clear until midway through part I when the reader can really begin to see that some carpets are much more rich in centers than others and that this richness has a strong impact on what one sees in the carpet and how long its geometry holds his or her

attention.

At the same time, the book has its problems. When Alexander first introduces the notion of center, he does it rather sketchily, and readers are not sure what the very smallest unit to comprise a center might be (p. 37)--in fact, as far as I can determine, Alexander never really provides a clear answer to this question. Another problem is that, especially in his early discussion, he does not provide enough interpretation to help readers see how the centers he claims to be present are really there (e.g., p. 37, pp. 80-81, p. 156).

What I'm suggesting is that, because Alexander's way of seeing is innovative, the book would be better if the pace were a bit more slow and all carpet interpretations were better spelled out, at least the first several. Perhaps what is needed is an accompanying workbook with graded exercises that would begin with the most elementary sorts of centers and then proceed to more complicated examples. Also useful would be a set of exercises that examine weak carpets vs. carpets with dense systems (a task that is begun in the last part of the book).

In fact, a few times Alexander mentions exercises that he does with his design students--for example, having them draw a complex border pattern, which is almost impossible to do because they do not know how to pay attention to centers (p. 177).[3] How helpful it would be to have such exercises laid out directly so that the reader could have direct experience in looking and seeing!

When reading Alexander, the reader remembers the art works, objects, and places that have given happiness, wonder, and joy--some deep quality of presence and grace that makes life worth living. For Alexander, this quality in the carpets is "a feeling of an archaic soul produced in the shape alone" (p. 80). For the built environment, this feeling is much the same--a sense of relationship and rightness that makes one feel more full and whole. The obligation, says Alexander, is that the thing built must work "to create a continuous structure of wholes around itself" (1987, p. 22).

Foreshadowing is an integral contribution toward understanding wholeness and translating that understanding into practice. In this sense, it is central to Alexander's aims and is as stunning, at the level of looking and explication, as the other volumes are in their efforts at praxis. What is perhaps most hopeful about the book, as with all of Alexander's work, is that if offers such well-argued evidence for the possibility of learning what genuine order is and someday transforming that learning into a concrete world, through a spiritualized design and policy.

--David Seamon

NOTES

1. The other books in the series are: *A Pattern Language* (1977), with Sarah Ishikawa and Murray Silverstein; *The Timeless Way of Building* (1979); *The Oregon Experiment* (1975); *The Linz Café* (1981); *The Production of Houses* (1985) with Howard Davis, Julio Martinez, and Don Corner; *A New Theory of Urban Design* (1987), with Hajo Neis, Artemis Anninou, and Ingrid King. They are all published by Oxford University Press.

2. To describe all the centers in this larger design would require lengthy discussion, and, here, I highlight only a few. Note at the largest scale, the white Greek cross with spadelike arms; this cross is part of a larger center marked by the diamond in which it fits. At the next level of scale, one notes the many centers within the Greek cross. Besides the centers already highlighted above, there are the four black squares surrounding the white star, which, in turn make their own larger center of a black square behind the star.

There is also the black buglike pattern repeated in the four arms of the star: the bug's head is either diamond-shaped (horizontal) or hexagonal (vertical) with four legs (two spiralled, two right-angled). Note, crucially, that the white "negative" space around each bug also has its positive qualities: two white wafers in the middle of which each bug rests. also within the large diamond containing the Greek cross are four white birdlike forms. The black space containing these birds is a triangle, yet another center.

In regard to overall scale, there is at least a threefold hierarchy: the largest centers of diamond and Greek cross; the next largest centers of white "wafers" and "bugs," black triangles and white birds, and central white star and black square; finally, the smallest centers: the diamonds of the star, the small black squares comprising the larger black square; the various parts making the "bug." In turn, the center of the large diamond interlocks with surrounding centers: for example, the black triangles with the white birds become arrow tips of a black spadelike center projecting diagonally inward toward the center of the Greek cross.

In short, there is a richness of centers, and all spaces of the whole work to create a great density of pattern.

3. "Even when they are trying to see centers, they often fail to see them all, and are not able to grasp how many centers there are in the design, how densely packed with centers it is" (p. 177).