Kim Williams | *Environmental Patterns:
Paving Designs by Tess Jaray*

Kim Williams discusses the pavements for urban centers and public spaces designed by British Artist Tess Jaray. Jaray's patterns are derived from the proportional properties of the bricks she uses, and are inspired by the centuries-old masonry tradition. Jaray's designs are a geometric link between architecture and mathematics.

Introduction

There is no greater opportunity for mathematics and architecture to interact than in paving designs. Where walls are often broken by windows, doors and pilasters, or are covered by paintings, and ceilings (especially modern ceilings) are occupied by lighting fixtures, air vents and smoke alarms (once called "ceiling acne" by architect Robert Stern), floors are usually large unbroken surfaces. For this reason, pavement design has flourished from ancient times. At its best, however, pavement design is not mere ornamentation, but is rather a way of engaging the spectator in the experience of the space. It can help define our experience of the shape of a space, and our movement through it. It can determine the velocity of our walk, the direction in which we move, the direction our eyes follow. Pavement design acts as a two-dimensional map of a three-dimensional space. In the best pavement designs of all epochs of architectural history, the patterns were an abstraction in two dimensions of the architect's three-dimensional ideas about the space he was creating.

At the same time, the two-dimensional expanse that is the floor surface is an opportunity to develop and apply pattern designs. Instinctively, humans seek patterns in their environment, for this is a way of establishing order in the midst of chaos.¹ Regular geometric designs particularly lend themselves to pavements. A simple two-color checkerboard, for example, acts both as a decorative pattern and a measuring device, for when we know how big one of the units of the patterns is, then we need merely count the number of units to determine the dimensions of the space.

Our tradition of architectural ornament is sadly impoverished today, in spite of the interest in recent years in the more richly ornamented architecture of the past. That is why it is particularly encouraging to hear that one artist has been dedicating her energies to pavement design. Tess Jaray is an abstract painter who began working with pavement patterns in public spaces and

urban centers in the 1980's. Her artistic concerns for color, pattern and rhythm were combined with a new awareness of the possibilities of pavement designs to create a sense of place. Jaray has articulated quite a number of urban spaces with her creative paving patterns: Paradise Bridge, Central Birmingham (Figure 1); Midlands Arts Centre (Figure 2); Centenary Square, Central Birmingham (Figure 3 and Figure 4); Wakefield Cathedral Precinct (Figure 5 and Figure 6); a terrace for the Chairman's office, Arts Council of England (Figure 7); the Forecourt for the newly completed British Embassy in Moscow (Figure 8).

Jaray's Philosophy of Pattern Design

According to Tess Jaray's philosophy of pavement design, "paving is always just a contributing part to a whole, and can only help towards creating a sense of place if everything else is taken into account as well".² One of the factors that she takes into account is the choice of material. While many pavement designs are executed in such a way that the materials must be adapted to the patterns, and shapes cut to fit, in the projects where Jaray has used bricks, her patterns actually grow out of the shape of the bricks themselves, sometimes with surprising results. Jaray explains that the shape of standard bricks naturally gives rise to certain proportional relations. As she relates,

The most common brick (although of course they vary) is used in the proportion 3:1, i.e., three bricks on their side can be fitted into the length of one. Most bonding has developed using these proportions, although half-bricks and 'headers' (the end of or a

Figure 1.
Paradise Bridge, Central Birmingham.

Figure 2.
Midlands Art Centre

cut half of a brick) have also been used. (I am not concerned with any 'specials' made for specific purposes, but only with the decorative result of structural bonding). In order to achieve ornamental patterning with this proportion, a high degree of skill was needed to infer any overall movement that was not only vertical or horizontal, but implied a diagonal that gave the surface a sense of dynamic...With the new production of the brick 'pavers', however, a new visual dynamic was made possible, at least for paving on the horizontal. In order to provide a brick with stronger structural properties that would allow for vehicular as well as pedestrian traffic, they were produced with the proportion 2:1. This allows for a very different geometry to be brought into play...With this new proportion it is possible to imply a curving pattern, without any actual curve in the structure. There is always something intriguing about a thing that appears to be doing something that it doesn't naturally seem able to do. The visual expectation of the use of brick is that the patterns resulting from its use will reflect the proportions of the brick itself; when curves seem to appear this expectation is confounded, and our perception of the surface itself is intensified. The result is a heightened degree of awareness of our surroundings, and of ourselves in direct proportion to those surroundings.³

Jaray has also studied the use of bricks in pattern design of the past.

I discovered not only a whole vocabulary for bricks and their uses...there was a large number of bonds, some with exotic names...Stretcher Bond, English Bond, Flemish

Figure 3.
Centenary Square, Central Birmingham.

Figure 4.
Centenary Square, Central Birmingham.

Figure 5.
Wakefield Cathedral Precinct.

Figure 6.
Wakefield Cathedral Precinct

Figure 7.
Terrace for the Chairman's office,
Arts Council of England

Figure 8.
Forecourt, British Embassy, Moscow.

Bond, Dutch Bond, Basket Weave, Header Bond, Monk Bond, Rat Trap Bond, Dog Tooth Bond, Chevron Bond, Flying Bond. Was there a relationship between the name of the bond...and one's response to that particular pattern?...Was there in fact a psychology of this pattern that went back to earliest history? After all, it is boring to walk along the side of a building made in Stretcher Bond in dull bricks, and very rewarding, not to say entertaining, to walk round the walls of, say, Hampton Court Palace, with its embroidery-like brick work, or a back street in Oxford, with rows of vernacular decorated brickwork, every one different.⁴

She also discovered that not all artists shared her attitudes about how pavement design is a part of a harmonious whole: "I have seen so many wonderful ones in Italy in particular, where there seemed to be little obvious relation to the space, that I tend toward the belief that the artists who designed the paving were very competitive about what they were doing, and their attitude was more likely to be, 'I'll show you what quality really is, and how without me you are nothing...' or Italian words to that effect."⁵

In his *Ten Books of Architecture*, Leon Battista Alberti wrote of pavement designs, "And I would have the Composition of the Lines of the Pavement full of Musical and geometrical Proportions; to the Intent that which-soever Way we turn our Eyes, we may be sure to find Employment for our Minds."⁶ Tess Jaray certainly follows Alberti in this belief.

Artists' understanding of the abstract visual language inherent in the geometry of brick building has been insufficiently used. Bring them in to invent ways of re-humanizing the use of materials when production becomes mechanised and standardised. But there are times when standardisation can actually encourage new direction...This requires more thought and more attention but can at least avoid those prosaic acres of herringbone which blight some of our urban centres. A dynamic or harmony beneath our feet will also create a heightened awareness of our surroundings.⁷

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Notes

1. For a discussion of this theme, see Nikos A. Salingaros, "Architecture, Patterns and Mathematics", *Nexus Network Journal* 1 (1999), pp. 75-85.
2. Letter from Tess Jaray to Kim Williams, 26 October 1999.
3. Tess Jaray, "Brick Bonding and Decorative Patterning". Unpublished.
4. Ibid.
5. Letter from Tess Jaray to Kim Williams, 26 October 1999.
6. Leon Battista Alberti, *The Ten Books of Architecture*, 1755, reprint New York: Dover Publications, 1986, Book VII, chapter X, 150.
7. Tess Jaray, "The Expressive Power of Brickwork", *Architects Journal*, 6 November 1997, pp. 6-7.

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The Artist

Tess Jaray studied at St. Martin's School of Art and the Slade School of Fine Art. She was awarded the Abbey Minor Travelling Scholarship to travel to Italy in 1960 and in 1963 had her first individual exhibition of paintings at the Grabowski Gallery, London. Since then she has exhibited regularly in Britain and abroad. The 1980's were marked by her designs for large-scale public places, notably Victoria Station (1980); Stoke-on-Trent Garden Festival (1986); Midlands Art Centre Birmingham (1987); the precinct of Wakefield Cathedral (1989-94); Jubilee Square, Leeds (1995-99); Forecourt, British Embassy, Moscow (1996-99).