

# URBANOGRAPHY

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## ABSTRACT

This study aims to review the visual notation techniques that are commonly applied in the field of urban design for both analytical and design purposes. It also tries to identify some criteria for assessing the efficiency of these notation techniques according to the visual qualities of the area at issue.

*Keywords: Urbanography, Visual city forms, Urban environment.*

## INTRODUCTION

Urbanography, or the notation of visual city forms, is the topic of this study. Notation systems intrigue designers for two main reasons: as a way of becoming more sensitive to the subtle aspects of the designed environment and as a method of communicating design proposals without the constraints of specific recommendations [1].

There have been spectacular changes in the last four decades, which have had dramatic effects on the urban environment. The 1950s saw fundamental changes in the complexity of design opportunity. The automobile became the dominant means of transportation, and the metropolis grew rapidly as new highways opened land for urban development. The environment was viewed not as a collection of parts but as a total fabric susceptible to design at a regional as well as a local scale. Despite unprecedented construction, the visual quality was not noticeably improving. However, professional and public interest in urban aesthetics was revived. Most of the approaches, then, followed the Beaux Arts notion of applying theories of building design to large urban areas. The vocabulary of scale, balance, proportion, colour, harmony and unity was considered appropriate for urban design. But as larger areas became subject to design and as dynamic factors of movement were introduced, the static Beaux Arts approach became noticeably inadequate for analyzing design problems and representing design solutions. Subsequently, in the 1960s a fresh look was taken at the other arts - particularly the film - might contribute to a new vocabulary. The

sciences and philosophies of perception and behaviour have played their role in this respect. Contributions from critics like Gyorgy Kepes, Susanne Langer, and Hans Blumenfeld; designers such as Sydney Williams, Philip Thiel, Edmund Bacon, Gordon Cullen and Kevin Lynch began to alter old ways of viewing and designing the environment.

The 1970s saw more progress in this respect through studies carried out by designers such as David Gosling, Christopher Alexander and Donald Appleyard. Most of Appleyard's work was carried out in a simulation laboratory, at the University of California, in which he used sophisticated video systems and very large-scale models to simulate movement through space on the model and compare it with parallel video films taken on the existing highway route to be designed. During the last few years, computer-generated graphics have become more sophisticated and influencing. Three-dimensional programmes have been developed to allow the generation of sequential perspectives for urban purposes.

Most of the preceding contributions to urban design have developed various systems or techniques for visual notation, which are not only seen to be exclusively applicable to a particular environment, but also are of a cross-cultural spirit.

A selection of three well-known notation techniques will be made in order to put more light on their detailed features and illustrative characteristics. These are the techniques developed and used by Edmund Bacon, Kevin Lynch and Gordon Cullen.

## BACON'S NOTATION

The notation technique used by Bacon in analyzing and dealing with problems and growth processes in the urban environment may be classified into three categories [2,3]:

- (I) A code of colours when dealing with site plans and general layouts.
- (II) Coloured photographs to illustrate sequential visions through a channel of movement.
- (III) Black and white sketched perspectives for representing eight spatial qualities. These eight qualities (Figure (1)) play an important role in the awareness of space by engendering involvement through experience:

1. Meeting the Sky: Since the skyline of the city has long been a dominant element in urban design, it should be recognized as a major determinant in city building.
2. Meeting the Ground: The way in which a building rises out of the ground determines much of the quality of the building itself and the space in front of it.
3. Points in Space: When a point reaches to point across a void, tensions are set up between them, and as the observer moves about in a composition the points glide and move in relation to one another in a continually changing harmonic relationship.
4. Recession Planes: This is the proscenium effect and the establishment of a frame of reference to give scale and measure to the forms behind.
5. Designs in Depth: There is a sense of movement in depth established, where architectural forms are related to each other, while being seen through one another.
6. Ascent and Descent: The use of varying levels as a positive elements in design compositions.
7. Convexity and Concavity: The interplay of two forms, the positive and the negative, the massive and the spacious.
8. Relationship to Man: This means the relationship of the designer to the individual he is seeking to house. The forms must be carefully scaled to involve the people within the building itself and among the buildings in the urban space.

## LYNCH'S NOTATION

In Lynch's approach to urban design the notation technique itself is the basis for the developed concept, whereas in Bacon's work, the notation system is concluded from the way in which he represents his analysis. Lynch has reduced the image of the city to five main elements: Path, Edge, Node, District and Landmark. Lynch believes that these are simply the raw material of the environmental image at the city scale, and that they must be patterned together to provide a satisfying form.

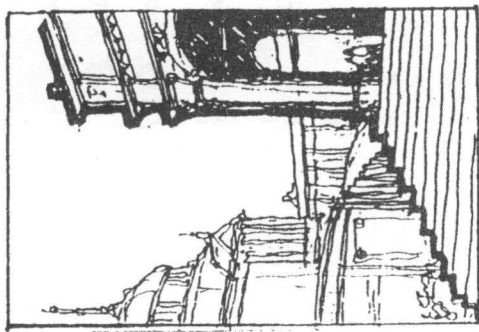
In the notation technique each of these five basic elements is represented by a certain symbol. Moreover, each element is broken down into two categories according to their effect on the visual image, whether this effect is major or minor (see Figure (2)).

Finally, Lynch indicates that there seem to be sets of images, which more or less overlap or interrelate, rather than a single comprehensive image for the entire environment.

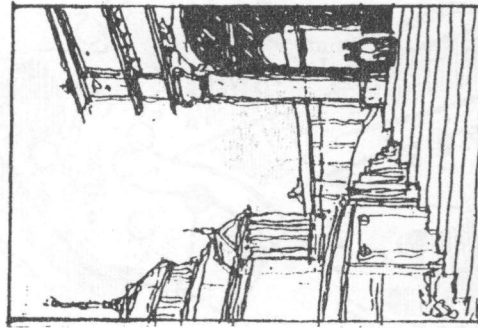
In fact, Kevin Lynch's research and this notation system has gained wide acceptance as a simple way of recording and designing the image of the city.

The five elements, which appear in many types of environmental images; are defined by Lynch, as follows [4]:

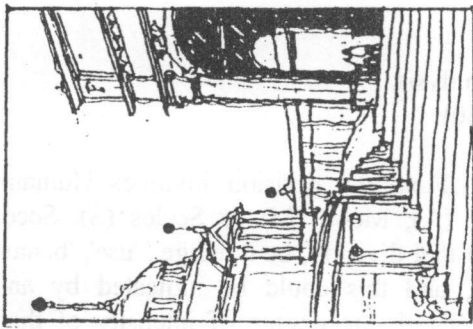
- (i) Paths: Paths are the channels along which the observer customarily, occasionally or potentially moves. They may be streets, walkways, transit lines, canals or railroads.
- (ii) Edges: Edges are the linear elements not used or considered as paths by the observer. They are the boundaries between two phases or are the linear breaks in continuity, such as shores, railroad cuts, edges of development or walls.
- (iii) Districts: Districts are the medium-to large sections of the city, conceived of as having two-dimensional extent and which are recognizable as having some common identifying character. Always identifiable from the inside, they are also used for exterior reference if visible from outside.



Recession planes ④



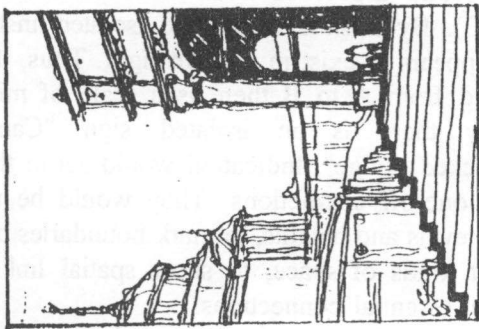
Relationship to man ⑧



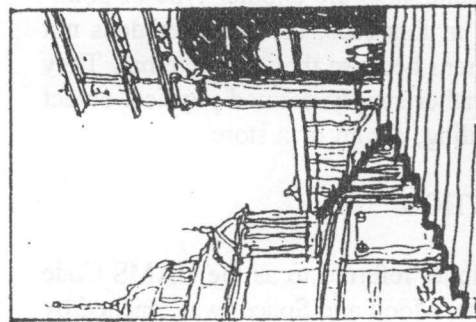
Points in space ③



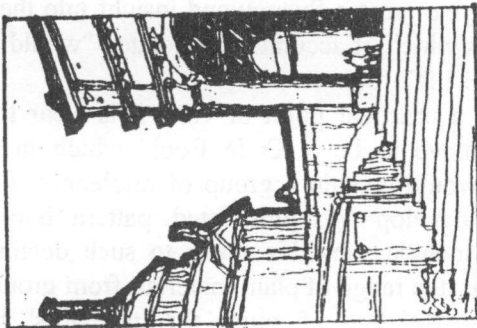
Convexity and concavity ⑦



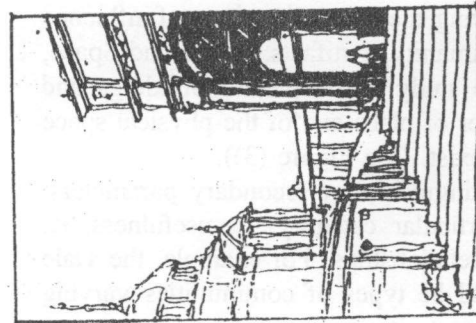
Meeting the ground ②



Accent and descent ⑥



Meeting the sky ①



Depth ⑤

Figure 1 : Bacon's eight qualities of space .  
( Source: Bacon, E.N., 1967 )

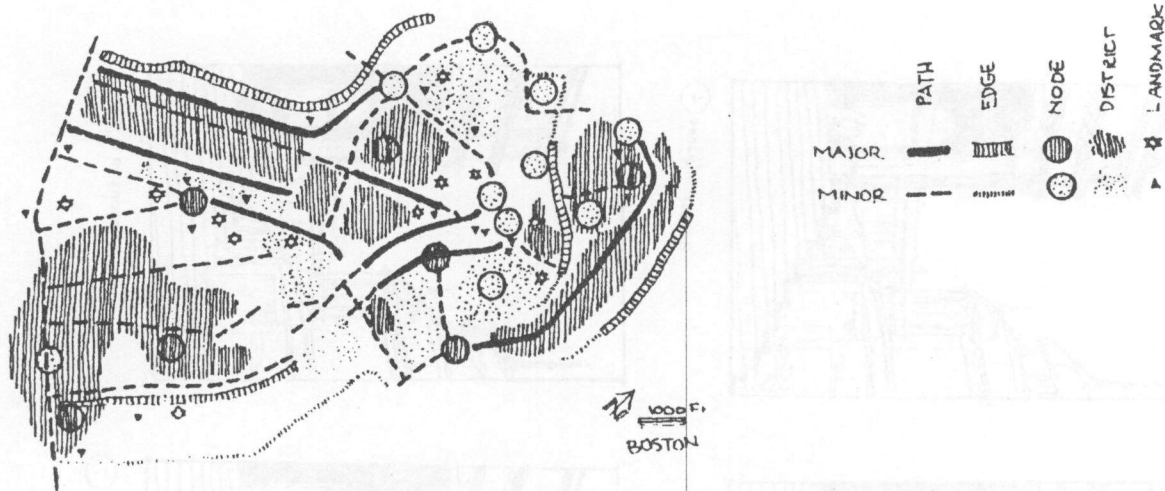


Figure 2. Lynch's visual analysis.  
(Source: Lynch, K., 1960)

- (iv) Nodes: Nodes are points, are strategic spots in a city into which an observer can enter, and which are the intensive foci, to and from which he is travelling. They may be primarily junctions, places of break in transportation, a crossing or convergence of paths.
- (v) Landmarks: Landmarks are another type of point-reference, but in this case, the observer does not enter within them because they are external. They are usually a rather simply defined physical object such as a building, a sign or a store.

CULLEN'S NOTATION

A notation technique, referred to as the HAMS Code (Humanity, Artifacts, Mood and Space) was reached by Cullen. This code generally consists of two parts: Scales and Indicators [5,6,7]. The first part, the Scales, is based on classifying the planner's sphere of influence into four parts: Humanity, Artifacts, Mood and Space, that is to say: the study of people, of buildings and objects, of character of place and of the physical space in which they all exist. (see Figure (3)).

We can also distinguish four secondary parameters: the range of a particular category, its usefulness, its behaviour and its relationships. For example, the scale of Humanity would be types of communities varying from a croft to a great city.

Thus, there would be three references to any given





notation: First, the division involves Humanity (H), Artifacts (A), Mood (M) or Scales (S). Second, the aspect of that division, be it 'range', 'use', 'behaviour' or 'relation', and this could be indicated by an agreed symbol. Third, the degree of intensity of that aspect which would be a number from 1 to 9.

The second aspect of notation is 'Indication' (see Figure 3). By this, is meant the isolated instruction which appears to exist in its own right. Thus, if one is travelling from A to B there is a scale of miles but suddenly there is an isolated sign "Caution - humpbacked bridge". Indication would act in this way to give one-off instructions. They would be used to explain levels and heights, to mark boundaries between different kinds of space, to show spatial links or to point out essential connections.





In fact, the intention behind such a notation, in addition to what already has been mentioned, is that it would give greater fluency and insight into the reading of plans which, if accurately annotated "would virtually come to life" [6].

From a practical point of view it is clear that there would have to be a 'Code Book' which in the first place, would contain a group of references. From this would develop a 'sophisticated pattern book' which would include sub-titles down to such details as, for instance, the range of plant material, from ground cover to forest tree. And, of course, the 'Indicators', similarly, would grow in sophistication.

**SCALES**

Primary divisions	<b>H</b> humanity	<b>A</b> artifacts	<b>M</b> mood	<b>S</b> space
Secondary divisions	(1)	(1)	(1)	(1)
 RANGE	(9)	(9)	(9)	(9)
 USE	(1)	(1)	(1)	(1)
 BEHAVIOUR	(9)	(9)	(9)	(9)
 RELATION	(1)	(1)	(1)	(1)
	(9)	(9)	(9)	(9)

**Indicators**

<b>CONNECTORS</b>		
pedestrian access		
essential sight line		
<b>POINT OF REFERENCE</b>		
<b>SPACE ENTITY</b>		
		<b>GROUPS</b>
		random
		architectural
		<b>GROWTH</b>

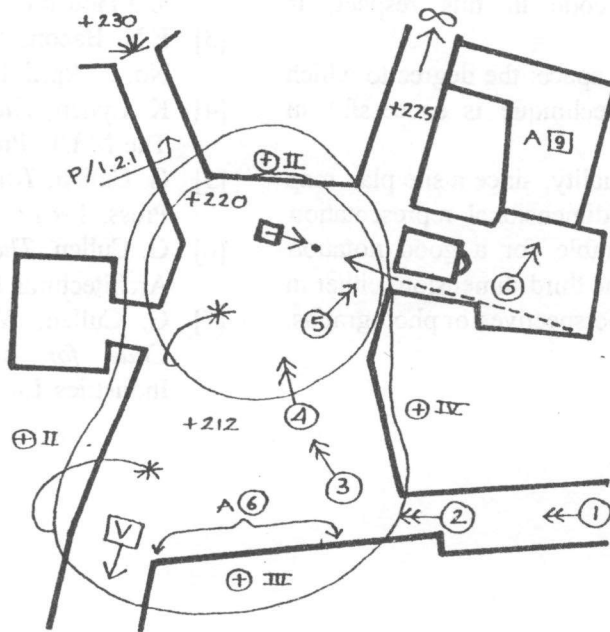


Figure 3: Cullen's notation system (HAMS).

( Source: Cullen, G., 1968)

## CONCLUSION

### *Evaluation Criteria*

Having considered the main features of performance regarding each one of the three notation techniques, it is apparent that a set of evaluation criteria might stem from the preceding discussion:

- (i) **Scale:** A notation technique should match the area to which it is applied. A small scale might be achieved by a plan covering a street or a square; whereas, a medium scale is achieved in areas comprising a larger number of these two components, i.e. the street and the square, and having common characteristics when seen from inside as well as from outside.
- (ii) **Pattern:** The pattern of urban fabric in the area that a plan covers. This pattern may be informal or formal. A specific notation system is preferred to be adopted, when the vocabulary it comprises is seen to be matching with the urban pattern of area it is applied to.
- (iii) **Readability:** The degree to which the way of representation of a particular notation technique is readable and easy to perceive. This seems to be dependent upon the range of symbols and indicators involved in a particular technique, as well as upon the degree of clarity when relating those symbols to a base map of an area. The role of a simple colour code in this respect, is extremely important.
- (iv) **Three basic qualities in space:** the degree to which a particular notation technique is successful in representing:
  - (1) The three-dimension quality: since a site plan map allows only for a two-dimensional representation of an area, it is desirable for a good notation system to provide for the third-dimension, either in a form of hand-drawn perspectives or photographs.

- (2) **The intangible quality:** It is necessary for a proper visual notation technique to illustrate the intangible qualities of an urban environment as well as its physical ones. This is because, it is not only necessary to convey to the reader of an annotated plan what is seen through a visual experience, but also to transmit what is felt in such an experience. This means the use of symbols on the map to represent such qualities as a sense of enclosure, continuity or curiosity, taking in consideration that the perception of these qualities might vary from one individual to another.
- (3) **The dynamic quality:** An annotated plan should represent the visual experience through motion. It is necessary to represent where and how changes take place during such an experience, when walking in a street or a square. This may take, for example, a form of serial or sequential visions or photographs, with reference points on a base map.

The criteria identified above can guide the urban designer and help him to select the right notation technique for the right urban area; be it a street, a square, a district or a whole city.

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