Below is an attempt to extend a general statement of visibility in large urban areas. The form is one which would make it useful to designers (thus classification by physical element).

As a preliminary, it will be substantially modified by analytical studies, since it is now largely based on intuition. But it suggests the organization of the analyses as well as the probable final form (if not content) of our conclusions which will be developed more fully illustrated with examples.

Elements of the cityscape that facilitate visibility:

Introduction
The elements below are grounded in physical character but to some extent depend on the situation of the observer. Thus a spatial reference to one observer may be a point reference to another travelling at a greater speed; or a by-pass road may be a path of movement to one at a leisurely pace.

1. All the elements noted below enhance visibility in two general ways:
   a. By facilitating recognition, which may range along a continuum with three characteristics:
      1. The element is generally familiar as to type and structure — we have a previously formed mental image.
      2. It is recognizable through being familiar, and thus has a sense of home or identity.
      3. It is so familiar that it has a powerful identity of character even on first sight.
   b. By aiding orientation, furnishing the
The relative location of self and other objects (a condition which possesses as well as practical connotations).

This may again range among:

1. A sense of general direction, such as gained from the sun, a compass, distant mountains, street guides, the inland-sea system, etc.

2. A sense of connectedness (as follows y, or is close to x).

3. A ultimate (and rare) conceptual model giving distance and direction between all facts.

3. The listing below is leaves out two general classes of factors:

a. Internal deals with knowing operating independently of the external environment. It takes as its sources to perception of gravity, the asymmetrical axes of the organism itself, and urban environment of memory. This obviously brings out the centrality of the dynamics. It seems to have some extent between individuals, and seems to be weak or ineffective when operating independently of external reference. But it may be very useful when associated with a restriction of choices imposed externally, (as in the memory of left-right turns when moving through a regular grid).

b. The reinforcement of visibility which arises from meanings and associations. This is extremely powerful over a long period of time, and is quite difficult to separate from the factors of physical form, but is here put aside whenever possible. The analysis of these effects would be the next step after an study of visibility. Meaning, however,
is an important reinforcement for the reference power of physical elements.

The basic elements of visibility may be classified as lines, forms, points, distances, and levels. They are identified and their characteristics discussed, below:

**Lines** - these are the linear reference element, experienced and conceived as a sequence of visual events. There are two types, each quite different in character:

1. **Paths** - these are lines which for the absence (in reality or in conception) are lines of movement, have which organizes the city as from a coordinate viewpoint. They may be important single lines, or may be a simple structure of lines, which can be retained in all its individual continuity. Alternatively, a more complex set may become a network, not retained in the individual, but conceived as a general set of relations between paths.

Single lines gain their sense of path continuity from the traffic flows channelled within them; from the intensity, if it is a characteristic activity; from physical continuities of plane facade, floor, door; from light and articulation; from a name itself; and from consistency of direction (but not necessarily absolute straightness). Note that very clear changes of direction may be retained without difficulty, but that a gradual turning can be quite ambiguous and confusing.
Secondly, these lines may have a sense of direction, which comes from some progressive sequence of events along the line, or from the importance of origin or destination or from a directed character in the traffic, or from visible differences between the two sides of the channel. This publicity adds greatly to the meaning power of the line.

Finally, the line may also be able to confer a sense of position along its length, as from a differentiated sequence of parts, or from modulation of direction or spatial form, or from continuing gradients of these qualities. Such harmonic effects also strengthen the basic unity of the line, by giving it a "melodic" form.

Line structure must generally be very simple to be retained. The number of lines involved must be small (3, 4, 5?), and their connections must be clear and definite. Our familiarity with the right angle can be noted here, as well as the orientation problem of intersections of small angle or of more than four entering paths. The consistency of direction & interaction must only be simple in a topological sense, however there the person can readily generalize such relations. Thus A is a more powerful reference system than B.
Networks, or sets of retained relationships, are the individual paths, or core features, of areas. They have an obvious biocultural significance but often lack emotional power if they are devoted for more tangible reference devices. They may be useful either because they have:

- Directional consistency
- Topological regularity
- Regular interposing
- Any combination of these (the regular is of course all three).

2. Edges - these are the linear element, not used or considered as paths by the observer, and hence taking the character of dividers or lateral references rather than coordinate axes. They may include roads, railroads, river lines, mountain lines, etc. Note that an edge, for example, may be a path for one and an edge for another or even for the same person at different times. In their smaller and broken forms (such as a grass strip or a sea boundary), they act primarily as the features defining districts - but when large or strong they become reference features in themselves.
Such edges are like paths, also strengthened by continuities of physical form, as well as by exact spatial prominence. The ability to get a broad transverse view of them. Again, a general consistency of direction is helpful, although some change is allowable. Agglomeration, turning, or complete enclosure, defines the locational sense to one of inside-outside. The power of the edge is strengthened if it is difficult to cross, "impenetrable" seems to be barriers. Such an effort, of course, may increase the discontinuities in the larger pattern.

When edges become large and distant, as in the case of a mountain chain invisible from within the city, they become external references which set up an abstract, invariant system of directions.

Forms - faces and solid objects, which are not only of coherent and recognizable shape, but also large enough and sufficiently continuous to differentiate so that there is a sense of individuality and relation to the various parts - the observer can tell where within a whole the form lies. In a city, the most important are the:

1. Spatial Forms - Words which have a continuous, recognizable form, not only recognizable in itself, but allowing the observer to make definite locations.
within the space & often to locate physics outside as well (due to the directional quality & force linkages of the matter sphere). Forces are made apparent by surface patterns (texture, color, light gradients), by light & shadow patterns, by motion, sounds, by hand & by experience, by visual transparencies, overlapping forms, perspective. To the degree that they are articulated & have compelling form they are powerful reference & resultant features. At least as strong as the internal line of movement.

Often a formal urban space in the above sense is an isolated one, having visibility, significance within & for a short distance without its own confines. Most usefully, a city may contain a linked set of such distinctive spaces, the linkage being articulated by intervisible symbolic ways, or brief paths. In such case the observer is oriented from one space to another and total visibility is very high. Very rarely, the spatial form may itself embrace a whole urban district so that the observer moves continuously within coherent, if complex, space. Most often experienced in large openings such as river areas.
...this is sometimes seen in the unusual form of an intricate but formed sequence of spaces, as at Venice or Peking. Does it also exist as an area network, as well as this type of linear sequence? This is difficult to achieve but extremely strong.

2. Solid forms - coherent forms in the same sense as above but solid and therefore sensed from without rather than from within. This class is generally unusual in our cities, but includes striking topographic features of some extent; panoramic views of whole urban masses, which is a seldom experienced but greatly satisfying sight of a city; and clusters of buildings or very large & stilling single structures. As again, it is the unity that establishes the boldness of the whole that makes it important, although the panoramic view has a peace that seems to act in spite of the particular form.

Points - visual events, referred to from outside, as in solid forms above, but not so large nor coherent, differently treated as to indicate to the observer where he is in relation to parts of the reference element. Rather, the element occupies a single point, conceptually. Perhaps the most common unity element in our cities, along with the path. The class may include objects ranging from building, or even smaller or incoherent...
Leaves down to such details as signs or individual plants. Essentially, this class involves the singling out of one element from a complex of possible elements for some reason of significance.

Points become significant when they have a clear form or some aspect that can be regarded as unique or memorable in the context.

Contrast, an articulate object-background relationship (such as a bold tower against the sky, or flowers against a stone wall, or a church among trees) seems to be fundamental to the role. Secondly, a certain prominence of spatial location (which in itself is another kind of contrast) seems to be essential. These are the basic physical characteristics of strong point REFERENCES.

Point references are in general of two types:

1. Distinctly visible, to which orientation is made radically.

2. Locally visible; smaller clues, which are come upon only in a particular context, and which trigger new decision or simply reassure the observer as well as giving a sense of location & identity. These again may be:
   a. isolated points
   b. clustered points
   c. a sequence of points, along a path
[Such physical characteristics are, of course, very powerfully reinforced by associations, so that once a history or station attaches to a building, for example, its role as a point of reference becomes much stronger. A name, a sign, can in itself bolster the effort.]

[To the classes of locally visible points, it should be noted, isolated points, unless long visible or compelling, are weak references, and cause the observer constant strain as he searches for them. Thus, the heavy traffic light or single street name requires concentration, and where they are clustered in association, however, the search is simplified. In the quantity of reference and where the association follows a pattern in progressive street numbering or the ‘signs of a gathering storm,’ the orientation is clearer and the elements are better suited to the dynamic nature of perception and action in the city. To be noted here is the greater power to manage new details which are related, and to better to recognize a vast quantity of points, when experienced in a familiar sequence. This is of importance in traversing a system, although such recognition may require experience of similar systems occurring in reverse or scrambled order.]

Clusters of point references may also
give a sense of location by a sort of crude triangulation process (are?).

Possibly we may be given visibility clues while in motion, not so much by particular points, or even their interrelations at any moment of time, as by the pattern of change of point constellations (their thinning, thinning, parallax, motion, perspective, etc.).

Point references are not always visual. Sounds may act as such landmarks, in the direct sense of a point source which can be located, as a peacock whistle. mobile phone ringing, electric buzz, traffic noise, etc. Smells, though less easy for human observers to localize, can sometimes also be traced to a precise source. Often occurs as local event along with other such smell of beer from a tavern.

As in the case of Edges, where point references become large & distant, they act as anchors of an abstract direction system, seem to have constant bearing. This may be true even of a mobile point, such as the sun, whose motion is sufficiently regular.
Districts - These are recognizable areas within a city, which have individual character, and tell an observer when he is inside them, without revealing where inside. Internally, they are basically recognizable features, while externally they may become lost in references if they are visible or well retained in the mind. Thus we may go "around Beacon Hill" or "towards the North End." The pure type, then, is homogeneous, without internal structure. Certain districts, however, have some internal structure, as from gradients of use, activity, surfaces or forms, or simply from the overall form of better point lines or space references. In this case, therefore, the observer may be able to locate himself within the district.

As in the case of spatial forms, districts may be:
1. Isolated
2. Comprising a limited structure, facing within the city
3. Comprising the entire city, or a large section of it.

The latter case is that which is referred to as the "character" of certain distinctive cities such as central Rome or Paris, which gives a strong identity to the whole. It is questionable...
however, whatever this homogenous quality can operate over an area larger than a small to medium city, or a large urban district.

The isolated districts, of course, the normal case in our cities, a distinctive area set in a grey and formless urban sea. Where a limited structure is achieved, however, the visibility is very high, and the entire city is easily and forcefully organized in this manner. Central Boston and central London have this quality to some extent.

Districts are formed physically by similarities and harmonies of plane pattern, space pattern, detail, symbols, building type, activity shapes, vegetation, water, and topography. They are also formed by external discontinuities (i.e., boundaries of all kinds), and by external centrals (such as the unity of a village which is created by it, contrast to a mountain.

They are formed equally, or perhaps even more, by historical and personal associations which are beyond the scope of this study. A distinctive name may often have an important crystallizing effect. Characteristic sounds and smells also help to weld the whole.
These are not the only devices,
however. A strong phase or use focus may
radiate its influence for some distance, so that
a district is formed by association (as the Central
Square district), which may be viable despite
its lack of internal homogeneity or external
boundaries. Or a district may gain its continuity
via a consistent gradient of use, etc., rather than
by homogeneity.
Even in default of a highly visible linkage of distinct and separate zones, people are prone to use them (in the sense of vague, named, conceptual areas) as the chief devices for organizing the larger city. They may even be unable to recognize in the field the conceptual area which is basic to their organization of the city. At any event the concepts lack formal definitions.

It will be important to study the meaning whereby such linked sets of visible areas may be constituted, and whether it can be done without overwhelming control over homogeneities, or precise boundaries.

levels – Not the perception of visible coherent piece of topography (see solid forms), but the simple orienting sense of “up,” “down,” or “along.” This is sensed visually, kinesthetically and actually. It refers to the sensation of moving in these various vertical gradients, to the sensation of being seen or under and also to the more static quality of certain locations being felt to be higher than others. Usually it does not operate in broken terrain (except to mitigate), but in rather simple
situations, as in a general down-slope, a hill, a ridge, or a valley. The frequency of these words in giving directions (even without the physical fact of level difference may not exist), illustrates the power of these references in building a whole within the designer's control. It may yet be used to reinforce other structure in the city.

Finally, it will be necessary to describe how these various elements work together in the perception of the city. And how they work over time, in place of this first necessarily static analysis. The time would be both the sense of the meaning, living observer, also in the historical sense of how the city, the observer's perception of change over time.

(There are bones, of course, without any meat, or sense of the emotional meaning of these elements. It also leaves out the vital general discussion of what visibility is & means—a discussion being developed elsewhere.)