Greek Theater
A Paradigm of Ecologically Conscious Architecture

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This paper studies the development of ancient Greek theater design and its attitude towards landscape. It focuses upon the interrelations between its layout, space, form and the specific spaces, forms and meaning of the surrounding landscape. This analysis produces some ecologically conscious architectural principles (landscape interlocking builtscape, creative utilization of slope, building’s attachment to land) that may be useful for a wider range of current architectural problems.

Keywords: landscape-builtscape, ancient Greek theater design, third dimension, steps, meaning.

The rites performed in honor of Dionysus by dancing and singing masked worshippers, who drove themselves into a frenzy merging with nature and the god, gave birth to Greek drama. It all probably started on a threshing floor during Dionysian harvest celebrations. As drama gradually evolved out of these rites, reaching more and more elaborated forms in the process, so did the place where the drama was performed.

DEVELOPMENT OF ANCIENT GREEK THEATER DESIGN

Around the circular threshing floor, the earliest orchestra (dancing place), the theatron (instrument of seeing) was built to accommodate those who came to watch. That consisted of rows of seats on a slope rising above the flat orchestra and enclosing it on three sides in a hollow, concave surface (koilon). As the drama developed, further provision had to be made for the performers. Their need to change costumes in the shortest possible time turned the earliest skene (tent) in a sacred wood nearby into a wooden and later a stone building, sheltering dressing rooms and storage space, built directly behind the orchestra. The orchestra, the koilon, and the skene are the three basic architectural constituent elements of the Greek theater. By the fourth century B.C. the Greek theater had reached its typical form, which was not to change significantly thereafter.

Virtuvius gives us an extended account of how theaters should be designed and equipped, putting emphasis on its visual and acoustical properties (Virtuvius, 1960: 138–139):

In short, it should be so contrived that a line drawn from the lowest to the highest seat will touch the top edges and angles of all seats. Thus the voice (and view) will meet with no obstruction ... the voice executes its movements in concentric circles ... not only horizontally, but also ascends vertically be regular stages ... Hence the ancient architects, following in the footsteps of nature, perfected the ascending rows of seats in theaters from their investigations of the ascending voice, and, by means of the canonical theory of the mathematicians and that of the musicians, endeavoured to make every voice uttered on the stage come with greater clearness and sweetness to the ears of the audience.

To improve the acoustical behaviour of a theater, the use of bronze or clay vessels is employed, as Virtuvius again prescribes (Virtuvius, 1960:143):

In accordance with the foregoing investigations on mathematical principles, let bronze vessels be made, proportionate to the size of the theater.... Then, having constructed niches in between the seats ... let the vessels be arranged in them, in accordance with musical laws... On this principle of arrangement, the voice uttered from the stage as from a center, and spreading and striking against the cavities of the different vessels, as it comes in contact with them, will be increased in clearness of sound, and will make an harmonious note in unison with itself.
GREEK THEATER AND LANDSCAPE

Vitruvius also underlines the basic differences between Greek and Roman theaters. Though the latter is an offspring of the former, there is a definite break between the two. Apart from geometrical variations in the designs of the plans, the difference of decisive importance is that of their attitudes towards the immediate and farther landscapes. While in the Roman theater, the seats of the auditorium (koilon) form a precise semicircle directly connected to a stage-building (skene) which is as high as they are, in the Greek theater the koilon extends beyond the semicircle and does not touch the skene, which is set farther back and is low in height.

As a result, in Roman theaters, space is entirely enclosed, the orchestra has little importance and the emphasis is focused on the stage and stage-building. In Greek theaters, space is never entirely enclosed, the koilon and the skene stand free on either side of the orchestra and the emphasis is focused on the orchestra and the surrounding landscape.

In that manner, the significance and sacredness of landscape are recognized, and characteristic landforms (points of reference) are activated and interlocked within the theater, integrating it with the landscape. The emanating dynamic balance between the clearly abstract, human theater form and the natural order of landscape secures and enhances the vividness, legibility and humanness of the place. The Greek theater provides a place within which natural landscape forms could be experienced and from which human builtscapes projected themselves into the landscape.

This attitude formulates a fundamental principle for an ecologically conscious architectural design: A building should never be designed as an isolated, egoistic entity. Nature, immediate and farther landscapes should be treated as important constituent elements of architectural design. Trees, slopes, rocks, mountain crests, raindrops, humidity, clouds, winds, shadows, murmurs of foliage are some of nature’s innumerable happenings that may and should be used by architectural design in the same way as walls, opening, stone, concrete, steel and wood are used. The way in which these natural elements are understood and introduced into architectural design may enhance or diminish their natural properties, physical appearances and symbolic meanings.

The relationship of a building with the landscape is crucial and decisive on every scale. An important part of this relationship is how a building meets the land. In the case of Greek theater, this meeting constitutes the very building itself: rows of seats carved out of a hillside that follow its slope upwards to the third dimension.

THE THIRD DIMENSION

Human reactions to variations in levels are colored by the peculiar sensitivity human beings have in relation to their position on the earth. Every place has its datum-line, and one may be on it, above it, or below it. To be above the datum produces feelings of authority and privilege, exhilaration, command and superiority. It is not only the view you get from being high, it is the feeling of advantage. Surely, there is something very playful and instinctive in this, for it is just the same as a child’s love of walking on walls. The awareness of relative height is engrained in human nature; whether its significance is derived from primitive hunt or battles strategy, or from life-and-death doctrines; it cannot be denied that even in the humdrum modern town, awareness of level stimulates the citizen.

The nature of the ground, that is the surface relief, determines the particular character and spatial properties of any landscape. Greek landscape, due to a dramatic surface relief (coastline, skyline), pronounces an intelligible synthesis of distinct elements: highly individualized landscapes clearly delimited by hills and mountains, sea and sky. These landscapes, easily apprehended due to their distinct structural properties, are almost archetypes for builtspaces of human settlements. The surface relief creates the prevalence of the sloping site and the preciousness of the horizontal plane (koilon and orchestra correspondingly in the case of theater). A sloping site allows an irregular juxtaposition of visually identifiable and individual units (spectators in theaters, buildings in hilltowns) within the unity of the overall form of a builtscape and is totally dependent upon “terraces”.

R. Martienssen acknowledges (Martienssen, 1964:4) “the terrace ... as an external or extending element in the conscious arrangements of structural forms for spatial definition” in ancient Greek builtscapes. The notion of “terrace” is relative to the notion of “step”. They assist each other, by devoting their different dimensions and proportions to the experience of the third dimension. A terrace may be taken as a step on the larger scale and vice versa on a smaller scale.

Steps, by their nature, have a dynamic substance: They are, simultaneously, transitory paths (Gestalt principle of continuity) and sitting places (Gestalt principle of enclosure). This innate complementing polarity, that is fully ap-
plied in the *koilon* of the theater, could also be taken into the urban builtscap to enhance its dynamism and excitement. Steps help to create the drama of movement. This movement from level to level is defined solely by human dimensions. Steps, then, become the experiencing medium of third dimension and the link to human scale. Steps held to create visual suspense by bridging vistas or hierarchies of spaces, cause human beings to experience, consciously or unconsciously, surprise and excitement again and again, however familiar the sequence may become.

The third dimension (steps, ramps, terraces), testifies for the gradual organization of important areas into regular plane surfaces and suggests a quality of greater activity and surprise in the urban builtscape. In this way, the purely physical dimensioning of steps (e.g. rise, tread, energy output) communicates the rhythm of movement (direction and vistas) to the character of a particular place. The third dimension, through a multitude of steps, ramps and terraces may become a contribution to the diversity, behavioral support, identity, spatio-temporal legibility and the meaning of modern urban builtscapes.

**CONCLUSIONS**

Theater is a genuine Greek inspiration and creation being inherited by humanity. The word *theatron* in Greek is derived from *thea* (action of seeing, sight) and the ending *-tron* denotes an instrument. Its original meaning, therefore, is an instrument of seeing. Greek theater epitomizes the Greek idea of builtspace under an endless interchange with landscape. The prevailing preference of Greek culture for a tangible existence on this earth rather than on some future paradise, supports the interlocking of the drama of space (landscape) with the theater of place (builtcape) into a healthy, dynamic ecological balance. Human beings and nature coexist creatively (without losing their limits and identities). Landscape and builtcape complement each other justifying, thus, the existence of Cosmos. Or, to put it in Yannis Ritsos’ words:

They took the plow to the field
they brought the field into the house -
an endless interchange shaped
the meaning of things.

**REFERENCES**


