

Descartes' and Modernism an Architectural Movement

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Abstract—It may sound surprising on stating present modern architectural style spring from ideas' emanated by Descartes' considered to be a philosopher with strong theoretical underpinnings on rationalism. It is noted that the philosophy of thinking and deriving inferences spring from the classical modes such as pragmatism; rationalism and empiricism. Although, the overriding philosophy of rationalism tends to predominate our modern thinking style. As it is been reiterated the rationalism manifested as abstractionism in arts; reductionism in modern science and so on in the process of journey to modern world.

This paper would discuss various philosophers and architectural and landscape theorists who laid the modern architectural movement that has spread around the world as a strong response to ever-growing demand for human habitat to satisfy personal cultural and socio political needs of the people.

1. INTRODUCTION

A grand idea is a vision through which we en-vision our future course of actions. As it is noted that vision visual sense and the visual systems being the dominant component in understanding our surroundings. It is widely agreed that 80% of our surroundings comes from sight. We have, the long history of mapping the existing and map those interventions to achieve a better human habitat to satisfy personal cultural, socio-political needs of the mankind. So the drawings, engravings, paintings, sculpting etc. were showcase the process of perceptions visualizations and communications, which was the route to fundamental process towards modernism in man's history. So geometry and perspective had a greater significance than as it is seen merely as a method to realistic landscape painting or 3dimension design representation technique. So in understanding philosophy of Descartes' Cartesian Geometry and others, who were in the pursuit of drawing forms, objects in environment, and inherent spaces around and within, in a perfect way, can be an interesting insight as an intellectual discourse.

2. THE HISTORY OF PICTURISATION

Traditional way representations in planning and design disciplines are plans, sections, sketches, perspective drawings, photomontages and physical models. 3D representation such

perspectives still are the best requisite of these disciplines at present as well. On the other hand, a representational mapping known to have commenced 8000 years ago. Such as mappings of Turkey, dated 6200 BC interpreted as a portrayal, of the old settlement of Catal Huyuk. Further, later known examples of topographic maps, such as town of Nippur (ca.1500 BC) shows that the Babylonian cartographers practiced the essential principles of mapmaking as we know them today. The over riding observations is that all were in the pursuit of interpreting an idea as realistic as possible.

Though, two dimensional representational techniques were refined along with expanding knowledge of the world cartographers were in the pursuit 3 dimensional interpretations to an extent are the pseudo three-dimensional representations since renaissance (fig 1.1).

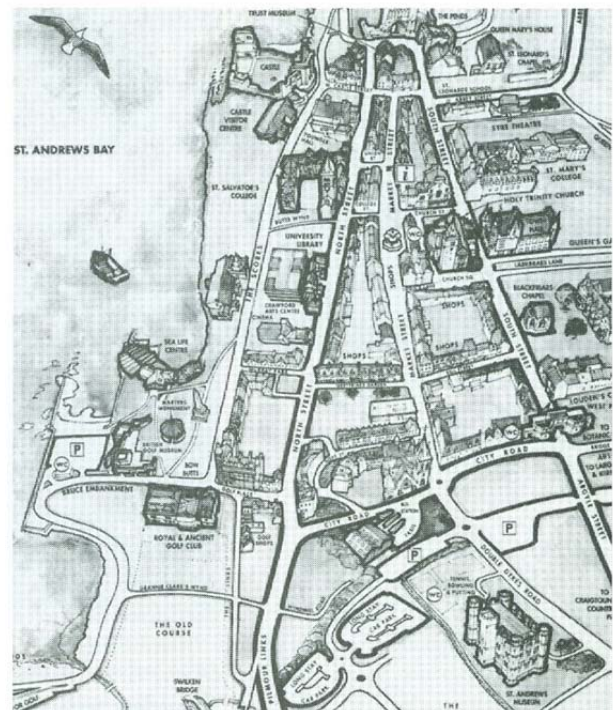


Fig. 1.1

The technology of perspective though initiated around in Greece 465 BC added impact in the early 15th century and later reinvented in the Renaissance, as a tool for visualization and communications(fig 1.2)..

3. THE PURSUIT OF THREE DIMENSIONAL REPRESENTATION AS ART AND SCIENCE

As observed Plato's notion of ideal forms emerged from Socrates dialogue/defense on craftsmen's having in mind the ideal form for a purpose maybe 'ideal in certain degree and by no means the ideal ' as per Socrates conclusion. So, the pursuit of ideal form by Socrates and his philosophical descendents led to rationalizing in the pursuit of pure geometry.

Dialogue on perfect form and its realistic representation since Renaissance gave two aspects. One on search for pure and simple forms and the Techniques and Methods of achieving realistic depth and perceptivity. Leonardo' Da Vinci's writings signify the importance of perspective as cited by Cosgrove,

“ Among all the studies of natural causes and reasons light chiefly delights the beholder- and among Perspective must therefore be preferred to all the discourses and systems of human learning.”

As for Leon Battista Alberti, well known for his visual triangle concept predominating the seventeenth century 'way of seeing' an area (Fig. 3.1)by the present geographers., looks art itself as science for its foundations strongly hinged on mathematics of geometry and perspective.

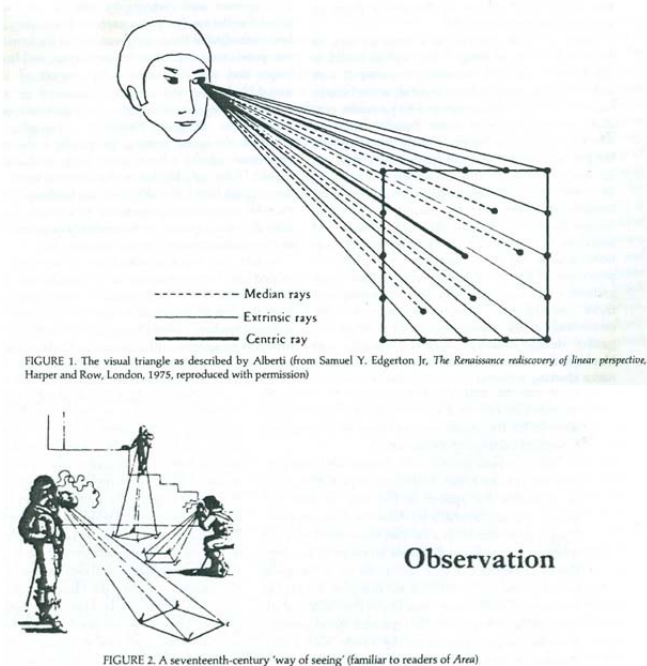


Fig. 3.1

When, Filippo Brunelleschi brought in “vanishing point” as a key in achieving realism in percept drawings. Imaginary single point on the page at which all the parallel lines meet or appear to meet. So the first step to simplicity, abstractionism and reductionist approach as in the case of science, that reduces complex nature and natural phenomena on to component parts to understand measure. Citing, other disciplines like physics with gravity, motions, force etc. and chemistry with components, structures, stability, reactions etc. In climate science reducing into components parts as temperature humidity wind velocity etc. parallel architecture design moved into its component parts such as points, lines , planes and forms and the defined space character.

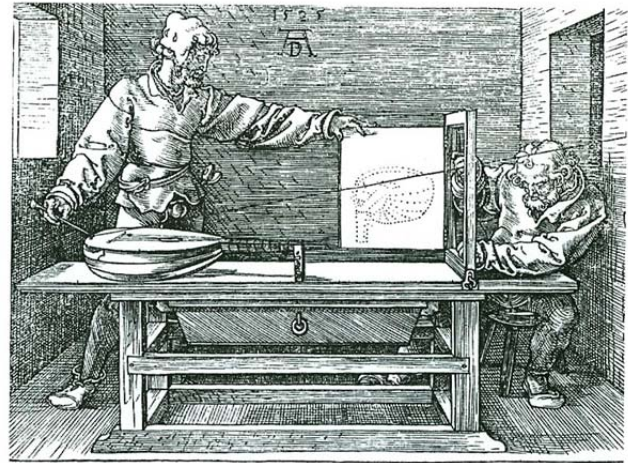


Fig. 1.2

4. MODERN MOVEMENT AND DESCARTES

The protagonist of the modern movement like Frank Loyd Wright, Phillip Johnson Marcel Breuer and Mies Van Der Rohe and others proponents of Modern Architecture believed in simplicity which was argued by Peter Blake 1958 on misplaced interpretation on 'simplicity ' as easy, which in reality would often mean difficult On the other side simplicity and complexity are still an unresolved dialects today and centuries ago.

Though, Robert Ventury contended within “Ambiguity”, “Complexity” and “Contradiction” as fundamental to architecture as oppose to modernists rule of simplicity order and harmony. On the other hand, agreed that the challenge on simplicity exists in developing a synthetic whole. May be referring to simplicity in the right sense as Black noted.

Form and function was in parallel and important concept in modern architecture. Function was a term primary relating to tectonics of buildings as a meaning. Later had its second meaning as meaning describing as social material where the action of society in determining the form of a building.

As a mathematical metaphor, biological metaphor function which had its multiple metaphors borrowed from at least two and perhaps three different fields. Mathematics from biology and may be from sociology where the mathematical metaphor a critique of the classical system of ornamentations where biological metaphors describe the purpose of the parts that relates to each other and to the whole and later in the mid 19th century relating to spaces for convenience or social comfort as modernism dialogues predominantly argue on form and function the space it defines as a major component of the movement where reductionist approach of simplicity driving to it simple forms irrespective of its cultural baggage's facilitated further by few noting by 'form follows function' by Louis Sullivan and 'less is more' by Mies Van Der Rohe and 'House is a living Machine' by Le Corbusier. Further, aggravated by the demands of dire demands of housing needs post 2nd world war period. From the above arguments and technologically driven architecture on a "Cartesian grid" that was dominantly so orthogonal one as a guiding reference. Then paved its way for Modern Movement as a style which are easily interpreted, represented and communicated.

So, the argument here is Renee Descartes Cartesian grids with Brunelleschi's invention of vanishing points has cleared several ambiguity on depth and scale of elements portrayed by the landscape painters in their creations. Perspective grids laden with vanishing points facilitated realistic 'pictures for the painters as well as the architects as a new technique in their creations in Renaissance period. These grid has acted as main references or guiding lines in the process of design to visualize the immediate environment 'landscape' and its elements in scale and depth. And so for the architects, as well, to present their building design as realistic as possible on a ground plane. As stated by Cosgrove (1985)"this alerts us to the fact that perspective and its geometry had a greater significance than nearly its employment as a painting technique", so does the movement of Modernism as architectural style and modern city layouts reflects the orthogonally. Modern style that can be observed in most of the modern buildings.

5. DISCUSSION & CONCLUSION

Geometry was associate with mathematics, were relevant to land survey its market, to warfare and navigation in the past. On the other hand The idea of orthogonal grid geometry and diagonal concentric forms may have long association with mankind time immemorial. One interesting notion being that most civilizations as an agrarian nature in the beginning before evolving as a complex political structure. Being an agrarian groups who were hunters to cultivators and tamers the idea of orthogonality may have arisen from tilling the lands as parallel lines over tilled ones and its division on ownerships later must

had an immense influences on grid pattern layouts of cities on plains that we observe. The other, diagonal formation and concentric patterns depicting their past imagery of tamed cattle brought to the center encircled by fences after fences to protect it from wild and its escape. It may be argued and agreed upon that the orthogonal form and pattern of our buildings and city layouts are well reasoned, considering the immediate goal of building cities at rapid phase. Building the then futuristic modern motor able city with orthogonal grid layouts have led to orthogonal plots. Inline with rectangular plots and so the Architecture of cubic forms Buildings boxes aligned within the frame work of simplicity convenience and comfort. Furthermore, considering the dynamics of spaces that are predominantly perceived along a path 'kinesthetics' which were again linear one with straight roads and lanes that had its influence on modern architecture that were to be placed in between this grids. Further it is also noted adaptation of these linear perspective as a 'guarantor- of pictorial realism' So Descartes invention of Cartesian grid geometry along with Brunelleschi's perspective theory with "vanishing point" had strong significance. Henceforth it may be observed concluded that Renee Descartes' can be one among the main proponent of modernism and his theory of Cartesian Grid geometry with perceptivity is still influence the modern art and the art of building modern cities and Architecture. For the reason that linear perspective organizes and controls spatial coordinates and regarded as the discovery of inherent properties of space itself where space and spatial quality being an important commodity of modern architecture.

Equally in same strength the Post modernist's theory philosophies contrast this with an understanding of complexity of the world as synthesis to their creations, to that of modern rationalists who are in line with order coherence simplicity and purity as their guiding principle.

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