



Forms of Rationality in Modern Architecture

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Abstract-- It can be said without doubt that the twentieth century Rationalist Architects dealt with innovative geometrics of the buildings they imagined, explored new social ideas, with massing based on pure forms like cubes and cylinders, rather than empiricism and historical eclecticism. In the age of architecture acting as servant to Commercialism and high-tech gimmicks and glitz, it is essential that we seek for the introduction of an evolutionary rationalism as the basis of our design. We are still very much in the need of a rationality, rooted in the quality of life criteria and not merely a mechanistic rationality based on technology alone.generation.

Keywords—neo rationalism, rationality

I. INTRODUCTION

Although Rationalism, or Rationality in Architecture has been bracketed by Architectural Historians within three phases as: the 17th century, early 20th century and late 20th century, truly speaking, it is as old a subject as civilization itself. Professor Henrique Skolimowski (Skolimowski,1966), in his writings on Architectural design process has said that ‘Architecture is in a state of crisis and the crisis is of the criteria of validity. This crisis is ultimately the crisis of Rationality.’ In fact, the concept of Rational Architecture was felt or conceived even by the ancient Greeks as expressed by Aristotle, who proposed that. since humans are rational creature, they designed architecture to fit their needs. The ancient Romans, Egyptians and Indians too, certified architecture into a consistent discipline and asserted that architectural forms could be rationally deduced. So, rationality in architecture has a noble heritage and from ancient times, rationality and reason are appreciated, and constituted a formal ideology.

II. RATIONAL ARCHITECTURE

In the 17th and 18th century, in the era of ‘Enlightenment’, the progressive architectural theorists and thinkers started to appreciate the value of ‘reasons’ behind every work, and Rationality was the ideologies of the ‘Enlightenment’. Buildings emerged that encouraged human logic and rationality, viz. buildings by Nicholus Ledoux. The buildings revived classical styles, rejected the extreme fancy of ornate ‘Baroque’, and ‘excesses’ were being stripped off. Moreover, Rationality was the means to oppose the dominance of the Church or religion.

In the 19th century, Rationality was the other name of Science and Technology to a great extent. With the advent of

power production, the machine acquired new value as something more than an implement, in the sociological, industrial sphere. And it is this value which made the new order--- the machine age. The new emphasis on the product and the discovery of machine-aesthetic contributed for the new kind of rationalistic order or technological evolution. Anything, what was scientifically and technologically efficient, was considered rational.

The phrase ‘Form follows Function’ coined by Louis Henry Sullivan (Sullivan, 2009), an American Architect and one of the founding Fathers of ‘Modernism’ in the early 20th century, started the concept of ‘Functionalism’; and yet another ‘Rationale’ came into practice. The principle in brief states that, above all else, the building should function well for its intended purpose, and any design aesthetic should not interfere with that.

This along with the writings of Adolf Loos (Loos, 2019) saying ---‘Ornament is Crime’ were adopted by Modernists in rejection of decorations, promotions of industrial aesthetics, influencing to develop new building types of skyscrapers, with advanced Building-technology, and of building materials viz. steel, concrete and glass. The ‘International Style’ emerged in the late 1920s, during the early decades of Modernist architecture. It derives from an acknowledgement of a common aesthetic preference for ‘Rational’ or ‘Functional’ design characterized by fine proportion and radical simplification of ‘Form’, reduction of ornament and use of high-quality materials. Le Corbusier’s statement that a ‘House is a machine for living’ also found expression in the concept of Rationalism.

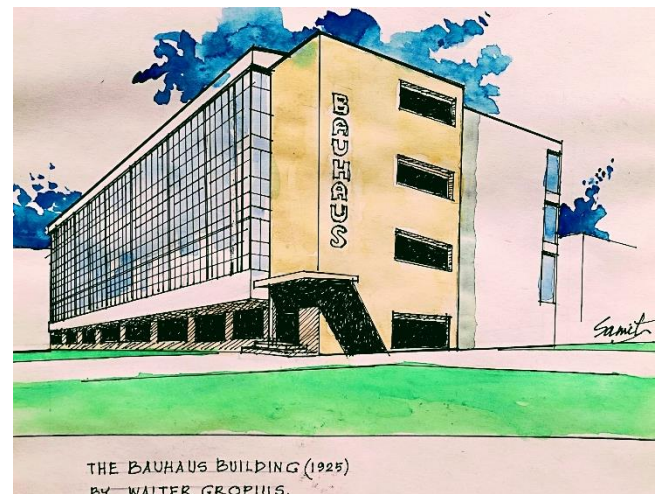


Fig. 1. The Bauhaus Building (Picture courtesy: author)

The term ‘International Style ‘ was introduced by Hitchcock , Philip Johnson and Brar in a book launched in an exhibition at New York, where latest architectural developments in Europe and the U.S.A. were shown up as a very recognizable functionalist attitude to architecture ,that had emerged in the 1920s. Hitchcock and Philip Johnson ,in an essay titled ‘The International Style ‘ wrote : ‘ It is particularly the early works of three men --- Walter Gropius in Germany, Oud in Holland and Le Corbusier in France, that the various steps in the inception of the new style must be sought. These three, with Mies Vander Rohe in Germany remain the great leaders....’ In addition to the Rationality of the Functionalism, Brar also characterized Rationalism by emphasizing the volume of space, regularity, along with of course, reduction of ornament. But they also believed that the idea of functionalism was sufficiently elastic, and so therefore is Rationalism. The Neo-classicists drew inspiration from both Greek and Gothic architecture, both temple as well as cathedral, and adopted an aesthetic expression based on structure and function. In all the past original styles aesthetics is related to and dependent on functionalist arguments. The so-called rationalism of architects like Schinikel was a type of functionalism.

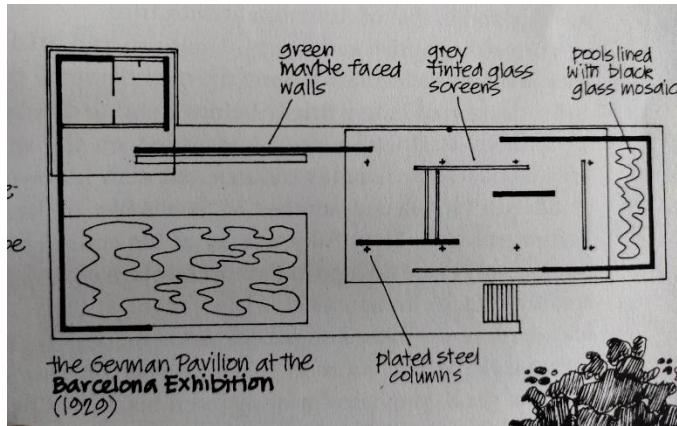


Fig. 2. The Barcelona Pavilion (Picture courtesy: author)

Again, from another point of view, modern construction’s straight forward look also owed to the fact of standardized parts that avoided unnecessary ornamental details, as it was considered that, any applied decoration would add to the cost of the building. Hence one of the reasons of anti-aesthetic functional rationalism of the modernists, was economical rather than ethical.

Professor Scolimowsky argues that Rationality is found to be a changeable phenomenon. It is a set of permanent abstract principles which may differ from culture to culture and from epoch to epoch. He goes further to say that the term ‘Rationality’ is an abused term and so much so, that it has been woven into quite different contexts and made subject to different criteria. The decay of our environment is exactly the decay of our reason and rationality. The constraining grid of science and technology may produce marvels of technical virtuosity, but nevertheless cripples and suffocates social and human points of view. To quote him saying --- ‘Unless we change our paradigm of thinking, reasoning and action, the present conceptual straight-jacket will compel us to produce

inhuman environments which are all right technologically and economically.’

Therefore, Rationality is not a set of timeless abstract principles. The visual perceptions of built environment are altered by us in accordance with the shifts of our conception of rationality. The tower- point or the geometric city planning was once considered progressive and rational. But later, these tower- point was considered monstrosity and the linear geometric city planning to be a fundamental mistake, resulting in lifeless neighborhoods and in the final analysis, as anti-human. Therefore, it is our culture that ultimately justifies the changes in both our perception and conception of Rationality. He doesn’t hesitate to say in this context that, ‘What Corbusier postulated as sane and noble, we may now consider as insane and ignoble. ‘He points out that the architects with the slogan ‘Form follows Function ‘should not make the perception of rationality a slave to industrial and commercial efficiency. He also questions whether we could create more with less. The fundamental coordinate of the architectural system is man in evolution. What may be deemed rational in the context of the Caveman, is not necessarily rational for the man in an industrial society. Similarly, what may be deemed rational for the industrialist man may turn out not to be so for the post-technological man.



Fig. 3. The Empire State Building (Picture courtesy: <https://www.britannica.com/topic/Empire-State-Building>)

Geoffrey Broadbent points out that the rational man applies logical thought to every situation often at the expense of spontaneity or intuition, feeling or human impulse. ‘He will be a scientist than an artist. A functional object on the other hand will be one which serves its purpose simply and directly. The efficiency with which it does the job certainly will not have been compromised for the sake of appearance , although if it has been designed properly , it will undoubtedly look functional.’ In an ideal world of course ,’rational’ designer would produce ‘functional ‘ objects. In the development of architecture also, attempts have been made to make it more rational, and therefore more functional.

John Lang on the other hand, has made the comparison mainly between the Rationalists and the Empiricists. He opined that architectural movements can be broadly classified as, Empiricists or Rationalists, although, individual architects may have switched from one mode of thinking to the other

during their career. Philip Johnson, Le Corbusier, Louis Kahn are examples from the western world, while Doshi, Kanvinde, Charles Correa are among Indian Luminaires. Jang adds that, Rationalist architecture gave India simple designs, large buildings, point skyscrapers all harnessing modern technology. Horizontal lines, fenestration, suggest that Indian architects kept themselves updated with contemporary European Rationalist concept of architecture. Habib Rahaman's New Secretariat Building in Calcutta showed the architect's brilliantly simple form with remarkable structural dexterity. Among other examples is Achyut Kanvinde's design for the Ahmedabad Textile Industries Research Association Building, which shows clear influence of the 'Bahaus'. He has also mentioned Correa's Gandhi Smarak Sangrahalaya Building in Ahmedabad and Hashmukh Patel's designs in this context.

III. NEO RATIONALISM

In the later part of the 20th century, amidst growing dissatisfaction with the contradictions and failed promises of Modernism, an Italian movement, also called 'Tendenza' emerged in the 1960s and 1970s. It opposed excessive dependence on technology and insisted on social and cultural importance of existing urban structures and reasserted historical forms as a source for creations. The orthodoxy of the Modern Movement was offended. Important writings on Neo-Rationalism were written by Aldo Rossi (Architecture of the city - 1966), and Grassi (Logical and collaborated construction in Architecture). The most famous work of the movement was the Cemetery of Modena by Rossi himself. Rossi argued that over the course of history, Architecture has developed certain continuous forms and ideas, to the point that these are standard types in the collective memory that move beyond the scope of style and trends. Modern city is the 'artefact' of these architectural constants. Rossi insisted that architects must respect the contexts of a city. This is termed as Neo-rationalism. Rossi was also sometimes classified as a Post-modernist as he rejected aspects of Modernism and utilized historical styles.

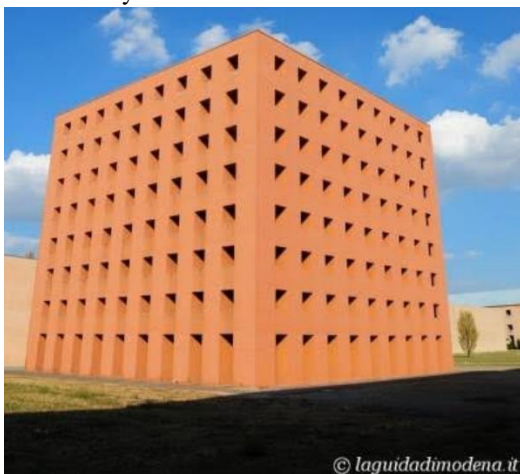


Fig. 4. Madena Cemetery by Aldo Rossi

His Cemetery in Modena (1971 – 1984), Italy, a heavy cube standing on square pillars with raw square windows,

stripped architecture down to its essence. Income ways reminiscent of the Greek and Renaissance models, it had a severity and total lack of ornamentation. The building fit into the context reflecting in many elements the style of local factories. Rossi 's Gallarate Housing Scheme (1969 -1973) in Milan, is an enormous concrete structure built to house 2400 people. Simple primary forms, structural uniformity and timelessness again made it fit into the urban fabric. Rossi received the Pritzker prize in 1990.

IV. CONCLUSIONS

As clarified by Marcel Brewer --- If we look back impartially and without prejudice, we shall find that the pioneers of Modern Movement had succeeded in establishing a very broad intellectual basis, in harmony with their own works. They vowed to be unfettered by tradition and placed themselves in the immediate objective of a given task ---- a problem or a form. They were not out to create anything 'New' necessarily, but something suitable, intrinsically right, and as rationally perfect as may be. In his own words: 'We have no fear of what is new; novelty is not our aim. We seek what is definite and real, whether old or new. What about the aesthetic of the New Architecture (read Modernism), the dogmas are the kind that cannot be formulated? The important thing for me is that this New Architecture exists, and that it fulfils a vital need for all of us.



Fig. 5. Ronchamp Chapel (Picture courtesy: author)

During the end of the 20th century, Modernism and Rationalism started to lose its popularity for various reasons. Meaningless imitation of works of Modernist stalwarts brought frustration about the main aim of Modernism. It became more fashionable to design in the styles of the past. The modernist agenda with its roots in Rationalism and Positivism was said to be at an end. Postmodernism started to affect all branches of culture. New groups of styles like Vernacular-popular, Historicist-Regionalist, Pluralists etc. were said to have emerged. Charles Jencks, Robert Venturi were critical of Modernism in their writings. The serious purpose of modernist rationalism was reacted against and started to be replaced by tongue in cheek sophistication, through a deliberately eclectic and unabashedly banal system,

as expressed by Bill Risebero.

It can be said without doubt that the twentieth century Rationalist Architects dealt with innovative geometrics of the buildings they imagined, explored new social ideas, with massing based on pure forms like cubes and cylinders, rather than empiricism and historical eclecticism.

In the age of architecture acting as servant to Commercialism and high-tech gimmicks and glitz, it is essential that we seek for the introduction of an evolutionary rationalism as the basis of our design. We are still very much in the need of a rationality, rooted in the quality of life criteria and not merely a mechanistic rationality based on technology alone.

Let me conclude this discussion with a famous quote of Le Corbusier, made in the later stage of his life ‘Functional Architecture? That’s a journalist’s gossip.... It is a redundancy. Architecture is Functional. If it is not functional, then what is it? Rubbish ‘

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