

## BUILDING REGULATIONS PERFORMANCE IN ARCHITECTURAL DESIGN: A SURVEY OF BRYAN LAWSON'S VIEWPOINTS

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### ABSTRACT

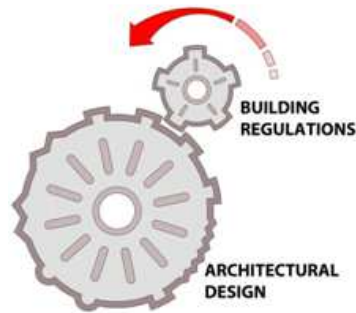
In this paper the relationship of architectural design and building regulations from Bryan Lawson's perspective is examined. Lawson is one of the prominent scholars who since about four decades ago have suggested that design research be used in drawing up building regulations for architectural design. In this research it was attempted to summarize his attitudes towards this issue. According to Lawson the structural tensions between architectural design and building regulations stem from three factors: over specific regulations, badly framed regulations, and the challenge of anticipation. In order to cope with this problematic characteristics building regulations should be general rather than specific, should focus on performance objectives, and should provide the designers with sample deemed to satisfy solutions.

**KEYWORDS:** Relationship of Architectural Design, Building Regulations, Bryan Lawson's Perspective

### INTRODUCTION

Writing building regulations for being used in architectural design is a challenging task. A glance over the current criticisms leveled at the performance of building regulations in architectural design makes the point clearer. From the viewpoint of many architects building regulations are inflexible tools that can hinder creative behavior and encourage conservative and passive designs (see: Carmona and Magalhaes, 2009, 520; Gann, Wang and Hawkins, 1998; Imrie and Street, 2011, 138; Punter, 1999, 1; Saint, 2001, 159).

Drawing from various commentators, Carmona and his colleagues provide an overview of the pros and cons of design coding among the weaknesses which some items are mentioned like being standardized, restrictive, and formulaic (Carmona, Marshal and Stevens, 2006, 237). Another criticism of building regulations is their incapability of assuring environmental quality (see: Street, 2006, 20). They may be viewed by many designers as "an additional burden with which they have to conform" (Gann, Wang and Hawkins, 1998, 280) or may be seen as an "add-on" outside the creative process of design (Imrie and Street, 2011, 140).



**Figure 1: This Research Aims to Explore the Tension between Architectural Design and Building Regulations**

The current research aims to find out the reasons behind these probable tensions between architectural design and building regulations. The current literature on the design of building regulations is not well-developed (Imrie, 2004, 435). One of the few commentators who undertook a theoretical discussion on the design of building regulations was Baer. He believes that general systems theory and cybernetics "seem to provide the best theoretical foundation for regulation design" (Baer, 1997, 48). In this regard, he points to the theorem by Conant and Ashby that says "Every good regulator of a system must be a model of that system" (ibid). They argued that "any regulator that is maximally both successful and simple must be isomorphic with the system being regulated" (Conant and Ashby, 1970, 89). According to this principle, it can be argued that the simplest optimal regulators for architectural design must be a model of it and reflect its inner processes.

So, in order to identify the characteristics of good building regulations, it is necessary to investigate its structural relationship to architectural design. Therefore, referring to design research becomes essential. In fact, since many years ago Bryan Lawson has intelligently noticed and emphasized the great potential of design research to help architectural legislation (see: Lawson, 1982, 83). It seems that the relationship between architectural design and building regulations has been one of the permanent concerns of Lawson which demonstrates itself here and there in his works.

In current research, it is attempted to identify and formulate Lawson's viewpoints toward the connection between architectural design and building regulations, the reasons behind the probable tension between them and the good form of building regulations.

## RESEARCH METHODOLOGY

Based on the Groat and Wang's book (2002), the current research is classified as a qualitative research. In this research challenges of building regulations for architectural design have been studied by referring to Lawson's views. To this end some of his works have been selected and used. The first one is a paper entitled "upside down and back to front: architects and the building laws" which was published in 1975. Although it's a rather old paper, it still offers an original and interesting way of thinking about the connection between building regulations and architectural design and Lawson has referred to this paper in some of his major subsequent works (see: Lawson, 2004 and 2005). In addition to this paper, two other books have been used to identify Lawson's attitudes: "how designers think" (2005) and "what designers know" (2004). A rather constant and integrated attitude towards building regulations is displayed in these works which have been developed in a period of three decades.

According to Groat and Wang (2002, 194) the final stage of a qualitative research is "drawing conclusions and verifying" In this stage "the researcher gradually moves toward identifying patterns, providing explanations, and evaluating

the findings" (ibid). In its final stage, the current research tries to reach a model that improves our understanding of the intricacies of the relationship between architectural design and building regulations.

## **GENERAL ASSESSMENT OF THE STATUS OF BUILDING REGULATIONS IN ARCHITECTURAL DESIGN**

Lawson believes that "It is increasingly difficult for the designer to maintain a sensibly balanced design process in the face of necessarily imbalanced legislation" (Lawson, 2005, 73). This statement can summarize Lawson's main perspective about the function of building regulations in architectural design. The image that is offered here of the way designers interact with building control system often lays stress on the inevitable conflict and tension between them:

"There is no point in disguising the tension which exists between designers and those who administer the legislation within which society has determined they must work. The designer may, at times, see the legislator as mindlessly inflexible, while to the legislator the designer may appear willful and irresponsible" (ibid, 89)

Regarding the effects that buildings have on people's health, welfare and safety, he accepts that "we must legislate to control these effects" (Lawson, 1975, 25). But immediately warns that:

"Legislating in a complex environmental system is like applying medication to human body. One can never entirely eliminate the side effects, which can sometimes cause more discomfort than the disease" (ibid).

Also, it seems that in Lawson's point of view building regulations have a close relationship with some of the design traps. Probably the closest trap is the number trap. Generally it refers to the misconception of the meaning of numbers in design thinking. Its most tricky aspect is "the assumption that larger numbers represent things which are bigger, better or more desirable!" (Lawson, 2005, 227). In addition, it appears that building regulations can have close relationship with puzzle trap (see: ibid, 221) in which the designer's conception of the design problems is led to that of well-defined problems such as puzzles.

Based on these arguments, architects at best will inevitably accept that building regulations must exist and they have to come to terms with them. Lawson states that (ibid, 238):

Conventionally we have the image of the designer and legislator locked in battle, with the designer often representing the unstoppable force and the legislator the immovable obstacle... However, it is not always so. Sometimes the architect, taking a wider urban view, may have considerable sympathy with such restrictions.

In sum, by reviewing Lawson's works it can be inferred that with regard to its side effects and limitations, he has generally a negative and disappointed attitude to the function of building regulations in architectural design.

## **INTERPRETATION OF TENSIONS BETWEEN BUILDING REGULATIONS AND ARCHITECTURAL DESIGN**

By studying Lawson's works three major factors can be identified that cause the tension between architectural design and building regulations.

### **Over Specific Regulations**

Lawson believes that "excessive attention to detail may be encouraged, or even demanded, however, by over

specific legislation" (Lawson, 1975, 25). This characteristic can interrupt the balanced and reasonable flow of thoughts in the designer's mind. Specifically, when the fact is considered that requirements of building regulations are mandatory and "unlike almost all other sections of the brief" (ibid, 26) have absolute value and are not permitted to be compromised. The quantitative approach of building regulations can have deleterious effects on the normal course of design thinking which usually starts from qualitative and vague dimensions of design and progresses into more quantitative and accurate aspects (ibid).

### **Badly Framed Regulations**

The next problem of building regulations "perhaps not so serious in itself but still capable of causing great irritation" (Lawson, 1975, 27) is their evaluative framing. Lawson explains this concept as:

"Regulations are written to help those whose job is to evaluate buildings, rather than those who produce them. They fit the psychological task of the building inspector and not of the architect" (ibid).

As a result, "the architect is forced into an evaluative mode of thought" (ibid) which forces him into "unnecessarily tedious synthesis and evaluation loops" (ibid, 28).

Therefore, Lawson (1975) views the relation of building regulations and architectural design as "upside down and back to front". In sum, since quantitative details are at the center of attention of building regulations, he finds them upside down in relation to architectural design and because their requirements are framed with an evaluative mentality, he sees them as "back to front" to design.

### **The Challenge of Anticipation**

Lawson explains this challenge as:

"It is in fact very difficult to draw up legislation to regulate design. First, you have to embody all the values and requirements into a set of standards. Next, you have to imagine the way designs that must later satisfy these standards might be conceived. Finally, you have to set criteria and attach them to attributes of these as yet unimagined designs." (Lawson, 2004, 24)

Although Lawson doesn't give a specific name to this characteristic, in this paper for the purpose of convenience it is entitled "the challenge of anticipation". Based on previous designs, Building regulations try to formulate the physical characteristics of buildings which are going to be designed in future and the legislators naturally may not have any ideas about. So, they may not work reliably in all future cases.

## **SUGGESTIONS FOR THE GOOD FORM OF BUILDING REGULATIONS**

Lawson indicates that "from the designer's point of view, legislation should be general rather than specific, and should clearly communicate objectives, showing how to attain them" (Lawson, 1975, 28). Concerning the first statement, a basic question can be posed: how building regulations can be general rather than specific? It may mean that building regulations should enjoy a systemic view to buildings and for example determine the overall performance of a whole building in terms of energy saving and so on rather than just focusing on its specific parts. Or it may mean that building regulations should be qualitative and general. Maybe it can be expected from design guidelines and similar documents to

enjoy a general qualitative language but it appears impossible to collect the accuracy and objectivity required from building regulations with being general and qualitative.

Focusing on objectives rather than means, is an important point that has been pursued seriously in performance-based regulations for several decades. Regarding the focus of building regulations on the deemed to satisfy solutions, it can be said that this approach can best be followed in the guides for the regulations not the regulations themselves.

## CONCLUSIONS

In this paper the relationship of architectural design and building regulations was examined from Bryan Lawson's perspective. Lawson is one of the prominent scholars who since about four decades ago have suggested that design research be used in drawing up building regulations for architectural design. In this research it was attempted to summarize his attitudes towards this issue. According to Lawson the structural tensions between architectural design and building regulations stem from three factors: over specific regulations, badly framed regulations, and the challenge of anticipation. In order to cope with this problematic characteristics building regulations should be general rather than specific, should focus on performance objectives, and should provide the designers with sample deemed to satisfy solutions.

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