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Jonathan Hill

*The Bartlett School of Architecture, University
College London, UK*

To understand research as new to architectural design is to ignore the history of the architect. Research—as the drawing forth of ideas—has been fundamental to the practice of the architect since the Italian Renaissance. The term ‘design’ comes from the Italian *disegno*, meaning drawing, suggesting both the drawing of a line on paper and the drawing forth of an idea. *Disegno* enabled architecture, painting and sculpture—the three visual arts—to be recognised as liberal arts concerned with ideas, a position they had very rarely been accorded previously. Alongside the traditional practice of building, architects acquired two new means to practise architecture—drawing and writing—as important as building. Since the Italian Renaissance, independently or together, drawing, writing and building have all been examples of architectural research and means to develop architectural design and the architectural discipline.

Introduction

Although the education of architects now regularly occurs in the university, often architectural design is either considered unacceptable as academic research because it deals with ideas in the ‘wrong’ way or is made to conform to one of the principal research models accepted in universities, notably science. The authority of scientific research is based on the assumption that its methods are rigorous, consistent, transparent and objective, but even scientists may recognise this as a myth. The history of science is littered with discarded theories falsified by other theories that may some day suffer a similar fate.

The research methods of science are justifiably part of architectural research but no description can fully explain an architectural object, its design process and reception by users. Scientific research is expected to be logical and communicable so that an experiment can be repeated with the same

result. With regard to architecture communicability is only ever partial because the design and experience of an architectural object are subjective and irreducible to rational analysis alone. But to understand research as new to architectural design is to ignore the history of the architect. Research—as the drawing forth of ideas—has been fundamental to the practice of the architect since the Italian Renaissance.

Designing the architect

Before the fifteenth century the status of the architect was low due to association with manual labour and dispersed authorship. Of little importance to building, the drawing was understood to be no more than a flat surface and the shapes upon it were but tokens of three-dimensional objects. The Italian Renaissance introduced a fundamental change in perception, establishing the principle that a drawing is a truthful depiction of a

three-dimensional world, and a window to that world, which places the viewer outside and in command of the view. Due to printing developments, cheaper paper and new means of representation, the drawing became an optical device essential to architectural practice. The command of drawing not building unlocked the status of the architect. The architect and the architectural drawing are twins. Interdependent, they are representative of the same idea. That architecture results not from the accumulated knowledge of a team of anonymous craftsmen working together on a construction site but from the artistic creation of an individual architect in command of drawing who conceives a building as a whole at a remove from construction. Thus, the architectural drawing depends on related but contradictory ideas. One indicates that drawing is an intellectual, artistic activity distant from the grubby materiality of building. Another claims that the drawing is the truthful representation of the building, indicating the mastery of architects over building production.

The histories of the architect and of the drawing are interwoven with that of design. The term 'design' comes from the Italian *disegno*, meaning drawing, suggesting both the drawing of a line on paper and the drawing forth of an idea. *Disegno* implies a direct link between an idea and a thing. As Vilém Flusser remarks: 'The word is derived from the Latin *signum*, meaning "sign", and shares the same ancient root.'¹ The sixteenth-century painter and architect Giorgio Vasari was crucial to its promotion: 'one may conclude that this design is nothing but a visual expression and clarification of that concept which one has in the

intellect, and that which one imagines in the mind'.² Accordingly, rather than eternal and transcendent, an idea could be the product of creative thought. As Erwin Panofsky remarks: 'In the middle of the sixteenth century it even became customary to designate not only the content of artistic imagination but also the capacity for artistic imagination with the expression "idea", so that the term approximated the word *immaginazione*.'³ In 1563 Vasari founded the first art academy, the Accademia del Disegno in Florence. A model for later institutions in Italy and elsewhere, it enabled painters, sculptors and architects to converse independently of the craft guilds, and replaced workshop instruction with education in drawing and geometry. Asserting the pre-eminence of the intellect, *disegno* is concerned with the idea of architecture not the matter of building. Alberti notably states that 'It is quite possible to project whole forms in the mind without recourse to the material.'⁴ Since the Italian Renaissance, the architect first experiences a building as a drawing and, in the studio and on site, often sees not mass and matter but form and proportion.

Disegno enabled architecture, painting and sculpture—the three visual arts—to be recognised as liberal arts concerned with ideas, a position they had very rarely been accorded previously. Associated with intellectual rather than manual labour, the new status of the drawing and the architect increased the status of the building. Architecture became a more fitting expression of social status in an expanding mercantile society. The architectural drawing established a new etiquette of communication between the various parties involved in architecture, allowing

architects to communicate with patrons as learned equals, who acquired prestige through each other's support.

In the new division of labour evident in the fifteenth and sixteenth centuries, design, conducted in two dimensions rather than three, was distinct from construction and the construction site. The degree and value of design undertaken before construction created new sites for architectural investigation not necessarily dependent on the building site. Alongside the traditional practice of building, architects acquired two new means to practise architecture—drawing and writing—as important as building. To affirm their status as exponents of intellectual and artistic labour, architects began increasingly to theorise architecture in drawings and books. The purpose of such books was to further the knowledge and status of the architect, but not just among architects. The first thorough investigation of the architect as artist and intellectual in the Italian Renaissance, Leon Battista Alberti's *Ten Books on Architecture*, published around 1450, addressed the education of the patron rather than the architect. Less than fifteen years later, Antonio de Piero Averlino Filarete wrote *Treatise on Architecture*. Notably, as Adrian Forty remarks, 'Many of the Renaissance treatises, from Filarete onwards, laid particular stress on the importance of drawing as the first skill to be acquired by anyone aspiring to be an architect', a principle evident in the work of 'Sebastiano Serlio, whose *Tutte l'opere d'architettura e prospettiva* was the most popular of all sixteenth-century architecture books.'⁵ The convergence of printing developments and architectural discourse in the sixteenth century allowed Serlio to be the first

architect to take full advantage of the conjunction of words and images. Mario Carpo writes that 'Unlike their ancient and medieval predecessors, Renaissance theorists had the means of simultaneously broadcasting both text and illustrations. The new multimedia approach existed in a complex dialectical relationship (in which causes and effects could not be distinguished) with a paradigm shift of some importance to the architectural culture of the early modern era.'⁶ Serlio and Andrea Palladio are notable early exponents of this tradition, Le Corbusier and Rem Koolhaas more recent ones.

Often a design does not get built and an architect must be persuasive to see that it does. Sometimes a building is not the best means to explore an architectural idea. Consequently, many of the most interesting and best-known architects write and draw as well as build. If, as Manfredo Tafuri contends,⁷ the project of modernity began in the fifteenth century not the twentieth, the claim that the critical manipulation of mass media is a defining characteristic of the modern architect applies to Palladio as much as to Koolhaas.

Independently or together, drawing, writing and building are all examples of architectural research and means to develop architectural design and the architectural discipline. The relationships between them are multi-directional. For example, drawing may lead to building. But writing may also lead to drawing, or building to writing and drawing. If everyone reading this text listed all the architectural works that influence them, some would be drawings, some would be texts, and others would be buildings either visited or described in drawings and texts. Studying the history of architecture since the Italian

Renaissance, it is evident that researching, testing and questioning the limits of architecture occurs through drawing and writing as well as building.

Conclusion

The meaning of design changed somewhat in the eighteenth century, which, seeing reason in all things, favoured the collection, analysis and ordering of information and labour according to a logical system. Opposed to utility, the classification of the fine arts—notably poetry, music, painting, sculpture and architecture—is primarily an invention of the eighteenth century. Associated with utility, the design disciplines that proliferated due to industrialisation, such as product design, are categorised as applied arts at best. In the Renaissance a form was synonymous with an idea. But, especially since the nineteenth-century codification of formal type, a form can be without meaning and ready for mass production. Among the fine arts, which include the three visual arts, only in architecture is the term design regularly referred to today. Many people associate design with the newer design disciplines, which affects how architectural design is understood. But in the discourse of architects, the older meaning of design, as drawing ideas, and the newer meaning of design, as drawing appliances, are both in evidence.

Today it is often assumed that it is natural for the architect to be a professional. But the professions acquired prominence only in the nineteenth century due to the fluctuations of a rampant industrialised economy. To the apparent benefit of practitioners, consumers and the state, organisations such as the professions are a response to the

desire to contain capitalism's excesses and reduce the threat of economic and social disorder. In return for the safe management of unsafe knowledge, the state offers a profession legal protection and a potential monopoly. Professionals offer competence. They are neither expected nor paid to generate ideas. Seen in this light, doctoral research by architectural design is not new. It affirms the original meaning of *disegno*, in which the architect is a researcher of ideas as well as images and objects, but it sits uneasily with professionalism.

The concept of design established with the promotion of *disegno* in the Italian Renaissance states that first an idea is conceived in the mind, second it is drawn on paper, and third it is built. To design is, therefore, to draw (forth). There are problems with this model, however. First, it suggests that creativity is a one-way street and fails to recognise the creativity of the user and others involved in the conception and production of architecture. Second, it promotes the superiority of the intellect and denigrates the manual, material and experiential. But, the original meaning of design, as the drawing of a line and the drawing forth of an idea, remains invaluable to architectural practice and research as long as its limitations are acknowledged.

Notes and references

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