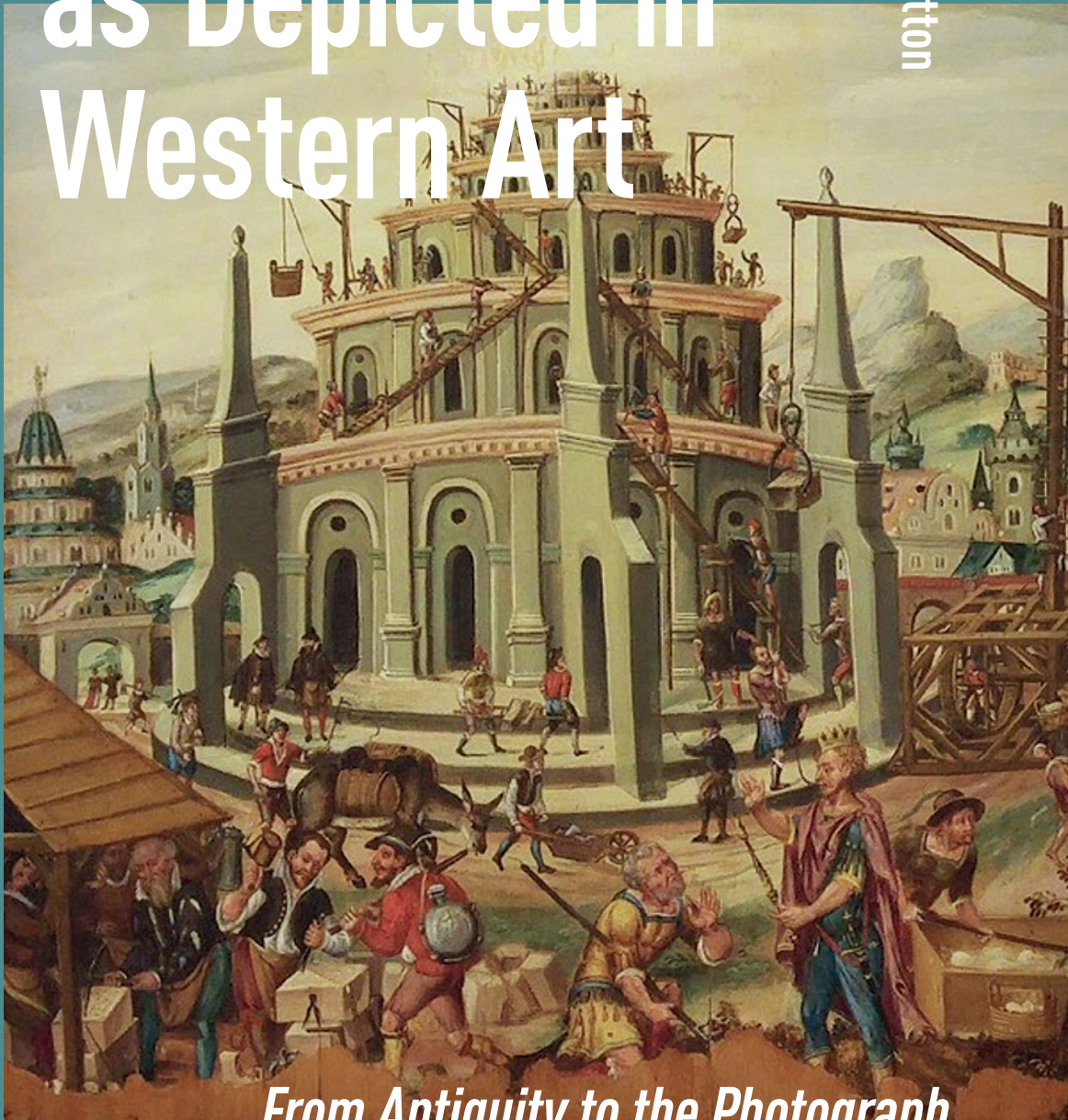


# Construction as Depicted in Western Art

Michael Tutton



*From Antiquity to the Photograph*

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For Catherine, Emma and Samuel



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# Introduction

The aim in writing this book is to provide a comprehensive handbook for the professional, academic and general reader interested in art, architecture, construction and the process of building as it has been depicted in Western or European Art. The origins lie in my own deep-seated interest in art and my professional involvement in working on the repair and maintenance of historic buildings. The genesis goes back to the exhibition *The Art of Invention* at the Science Museum, London, which ran from October 1999 to April 2000.<sup>1</sup> Particularly two images relating to Filippo Brunelleschi's dome of Florence cathedral, Santa Maria del Fiore. These are Biagio di Antonio's (attributed), c.1470, *Tobias and the Archangels*,<sup>2</sup> where in the distant background is seen the dome with scaffolding around the lantern, and Gherardo Mechini's 1601 drawing showing scaffolding and hoisting machines used in that year to repair lightning damage to the lantern. (Fig. 1)

## Scope

The scope of the book explores how the process of building, with all its various trades and operations, has been depicted. This exploration into 'The Art of Building' addresses a gap in research by focusing on the history of building construction from antiquity to the advent of widespread photography at the end of the nineteenth and the beginning of the twentieth centuries. It investigates the representation of the building construction process, trades and materials as depicted in paintings, illuminated manuscripts, watercolours, prints, drawings and sculpture, although the latter is limited to the Roman period only. Building operations and activities are analysed and explained including appropriate technical terms in the glossary, with descriptions of the works and, here and there, insights into the artists' sources of inspiration. Not many paintings are entirely or principally devoted to construction sites, but many give tantalizing glimpses of such activity within the composition. How do these images carry meaning, how much is imagined and how much can we interpret as being taken from reality? Why do artists depict buildings under construction and what can this tell us about their perception and rendering of this process? What can it tell us about how the process has changed over time? Images of building construction in art are not common but there are more than readily meet the eye when looked for. Those selected here, and it is only a selection, will hopefully give a comprehensive picture of the genre available.

There are limitations in researching and writing the book: It is not an intrinsic history of building, does not cover architectural styles, or architectural and technical





drawings; nor does it attempt to cover architectural treatises, building accounts or contracts, or the various Guilds and their rules. Many images and models in the *The Art of Invention* exhibition were of construction machinery, however these works are deemed technical drawings and models rather than artistic creations. The nearest images to purely technical representations are the progress drawings and watercolours produced by Sir John Soane's pupils and assistants and George Scharf's sketches,<sup>3</sup> nevertheless these works lean more heavily towards, and should be considered as, works of art rather than technical representations.

Many images of construction are biblical scenes from Medieval and later manuscripts, where paintings or illuminations depicting the construction of the Tower of Babel, the rebuilding of the Temple of Solomon, the construction or reconstruction of cities such as Rome or Troy are common. Such subjects were generally accepted as historical fact, however it must have been accepted as common knowledge that these constructions took place a millenia earlier and their physical form would have been unknown so how else would these artists have been able to illustrate such a scene without recourse to their own experience? This is aptly summarised by Francis B Andrews:

[F]or there can be no question that the artist who used the costume and other items of his common daily experience, gave also the current practice in building operation as he saw it being done.<sup>4</sup>

## Current Literature and Sources

Together with *The Art of Invention* exhibition, and the accompanying catalogue with its plentiful references and extensive bibliography,<sup>5</sup> the other source of inspiration was Günther Binding's 2004 English edition of *Medieval Building Techniques*, a copiously illustrated book with some 650 line drawings copied from Medieval manuscripts together with 26 monochrome photographic plates.<sup>6</sup> This was a result of decades of painstaking research by Binding and his team from the University of Cologne where he was Professor of Art History. Other notable texts that I have made use of are: Andrea Louise Matthies's unpublished 1984 Ph.D., thesis *Perceptions of Technological Change: Medieval Artists View[s] [of] Building Construction*<sup>7</sup> and Dr Frieda Van Tyghem's 1966 *Op en Om de Middeleeywse Bouwwerf*,<sup>8</sup> written in Flemish, where the 286 plates speak eloquently. Other texts that I should mention here are L F Salzman's 1952 *Building in England Down to 1540 A Documentary History*<sup>9</sup> and among John Harvey's many books his *Medieval Craftsmen* of 1975.<sup>10</sup> Salzman's work is essential for anyone wanting to delve deeper into building contracts and accounts in the Medieval and early Renaissance periods and Harvey for craftsmen, including

the building crafts, in general. In addition many other sources are recorded in the notes and bibliography.

Images for the works reproduced were gathered together from prior knowledge, visiting galleries and museums and online databases. Of particular note in the latter category are the British Library resources<sup>11</sup> and the French website 'Enluminures', devoted to images of illuminations in manuscripts held in French municipal libraries, where every image has been examined.<sup>12</sup>

## Definitions

A note on terms is essential, what craftsmen called their tools and processes varied enormously, they differ from country to country, from region to region, from workman to workman and from period to period. Technical terms were generally in Latin in documents up until the seventeenth century, but these were typically Latinised versions of local terms. Therefore for simplicity, and those unfamiliar with Latin or the many scripts to be found in early documents and manuscripts,<sup>13</sup> the terms used in this book are modern English usage.<sup>14</sup> The reader is referred to the full glossary which gives definitions of technical and unusual terms.

The terms architect, clerk of works and foreman are used loosely. These terms before, and well into, the Renaissance are controversial as they did not really exist as separate and distinctive jobs or professions. With the master carpenter or master mason, they morph into what appears to be a 'person in charge' in many images. This is not to mention the owner or person paying for the work, however we can be sure that one or other responsible for these duties was present to advise, take responsibility, or oversee the work.

The terms primitive and naïve are used in the text, but these are not used in their art historical categorisations but because in comparison to contemporary or similar images of better or higher quality they are simply just that in the literal sense.

## Layout of the Book

Images are arranged broadly chronologically: Roman practice is seen before Medieval, and in turn, Medieval before Renaissance and later. Although where it is convenient for comparison this chronology is not strictly adhered to.

The first chapter is on the work of the carpenter and is divided into two parts. Part One deals with temporary access scaffolding, formwork (also temporary) and the permanent timberwork incorporated into the building. The second part looks at cranes and other lifting devices, largely made of wood or timber and also

temporary; although some lifting machines were left inside larger buildings such as cathedrals and survive today. Much of this temporary carpenters work was used almost exclusively by masons; it was built by the carpenter to aid them. Scaffolding is the backbone of the construction site and little is achieved without it. Some will argue that scaffolding is little understood because of its temporary nature; it starts to disappear towards the end of a project and is soon forgotten. However the scaffold structure is removed to the scaffolder's yard for use elsewhere. It is self-resurrecting equipment, is moved from one site to another and so on. Individual elements may wear out or get damaged and be discarded but the basic process is rotational. The hardware is too valuable to abandon at the completion of a building project, whether it be poles or other products from the management of woodland, or today's steel and timber products. Many large cathedral and castle building projects had their own permanent scaffold yards. Formwork is temporary wooden or timber structure erected to support masonry whilst construction proceeds and the mortar cures.<sup>15</sup> Masons depended on it when building arches, door or window heads and vaults. It would often need to be in place for several days, or even weeks. On dismantling it would be set aside for alternative uses. These components when finally finished with, particularly in remote areas where transport was expensive, may well have been sold on as fire wood or for other rural purposes such as fencing. Finally cranes and lifting devices were invariably made by the carpenters, either at the point of use or in the yard and then moved to where they were needed.

The second chapter deals with masonry and this includes both stone and brick. Masons and their ancillary workers are the most widely depicted workers in this particular genre of art works. The crafts of the stonemason and brickmason go back to early antiquity. The basic raw materials are however quite different. Stone is a natural geological product, which is part of the structure of the earth's crust. It is quarried at the surface or mined, depending on how and where it outcrops or is found. Virtually any stone that is easily accessible above ground, has been used as a building material in the past.<sup>16</sup> Brick however, is a manufactured product, albeit also from a geological material, clay. It is formed into blocks, or bricks, allowed to dry and then fired in a kiln.<sup>17</sup> In antiquity, before kiln technology was perfected, bricks would have been fired in direct sunlight. The masons other vital material is mortar; in the time-line of this book all mortar would invariably have been produced by firing limestone in a kiln,<sup>18</sup> although in antiquity and the pre Roman world, clay-earth mortars would also have been used.<sup>19</sup>

Following these two excursions into carpentry and masonry the third chapter looks at the role of the blacksmith, without whom neither the carpenter or mason could work, for they depended on the blacksmith for their tools and indeed transport. There are images of blacksmiths in art but very few relating directly to the construction site.

This book comes at a time when the representation of architecture in painting is becoming more widely and intensively researched. Recent scholarship over the last twenty five years or so has led to important exhibitions on the depiction of buildings in art. Recently at the National Gallery in London was 'Building the Picture – Architecture in Italian Renaissance Painting'. This was preceded by four other recent exhibitions exploring different aspects of architectural representation in art. Those in Madrid in 2010; in Princeton also in 2010; in Lisbon in 2012 and Urbino in 2012.<sup>20</sup> These in turn followed the earlier exhibition *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture*, which toured Venice, Washington, Paris and Berlin in 1994-1995. In the forward of the accompanying book, Feliciano Benvenuti wrote, '[t]he exhibition [...] is therefore, as always, not merely a gift to its visitors, but a prompt to scholars and historians to carry their personal enquiries a stage further, and thereby raise awareness of our cultural and scientific legacy.'<sup>21</sup> It is in the furtherance of this legacy that the current book has been researched, for it is a natural and logical progression to include not only the buildings but also their very mode of construction.

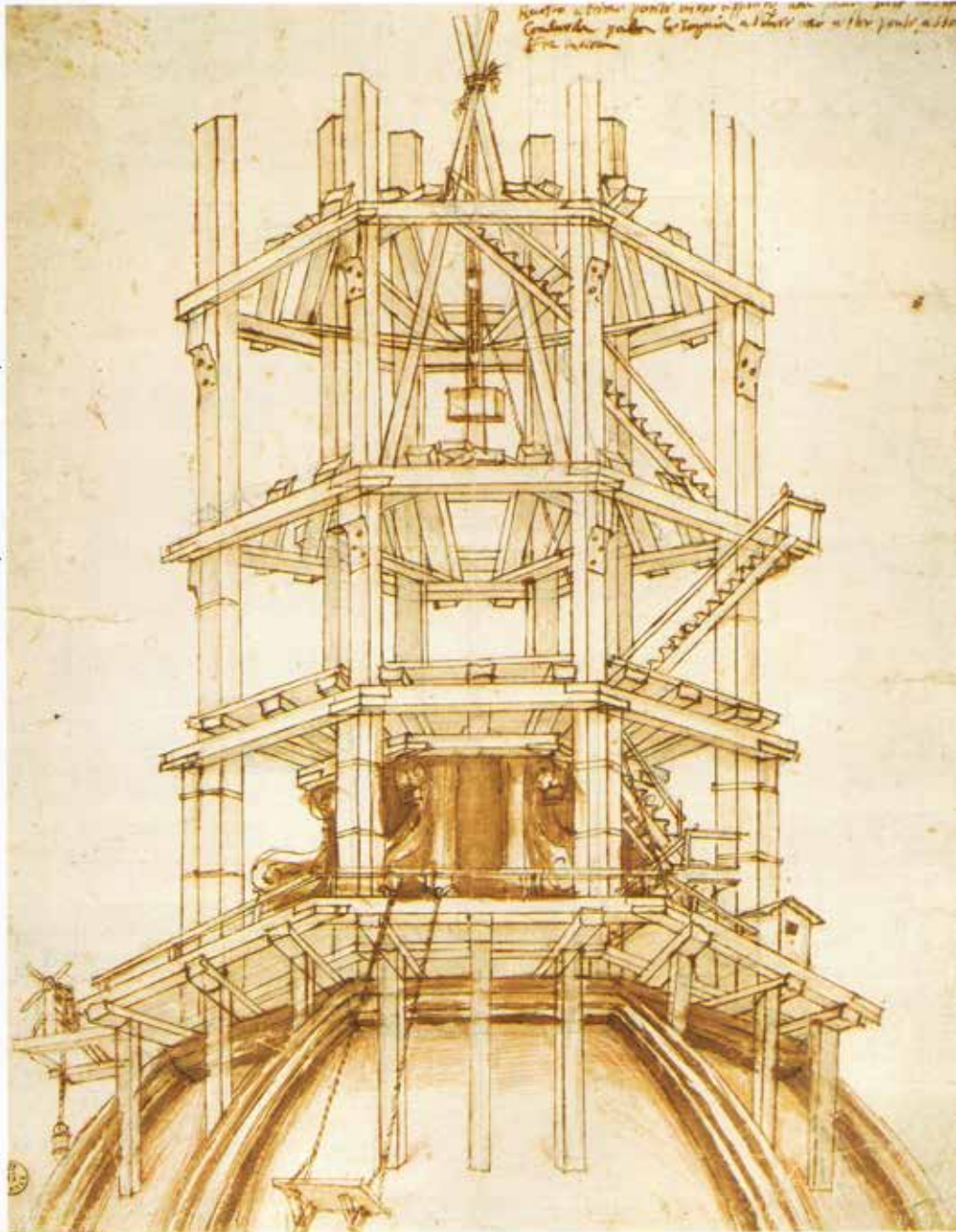


Figure 1: Gherardo Mechini (?), 1601, The dome of Florence cathedral: Scaffolding and hoisting devices used in 1601 to repair lightning damage to the lantern, drawing, pen, brown ink and wash, 248A, Gabinetto Disegni e Stampe, Galleria degli Uffizi, Florence. (Courtesy of the Uffizi Galleries)