

Lecture 1: Introduction: Drawings, numbers, and the power of (printed) images.

Transcribed by Chris Muskopf.

Immediately we find the professor amending the title of the course to include an additional twenty centuries of the history of digital design than the students have signed on for.

The course will take into account several thousand years and multiple circuits through a feedback loop in architectural history in order to trace the ideal of digital design. This feedback loop is important in the transmission of architectural ideas as a tradition--a body of knowledge that is passed across place and time. The feedback loop poses two questions; "what can technology provide" and "what will be received by culture". It is important to note that there is no universality or neutrality in the modes of transmission and these aspects come to influence the product. As an example, consider the medium of black and white photography; the absence of polychromatic transmission ostensibly makes the transmission of color much less important, even to the point of banishment into cultural oblivion. In a public discipline such as architecture, there is generally no point in creating something no one will see.

While medieval master masons served as both construction supervisor and architect on-site and in real-time, Leon Battista Alberti first posited and theorized that architectural design and building site may exist many miles apart, and that architecture may--or should--be built by remote control. The examination of the watershed event of Alberti will receive many reprisals in the course. The course will also posit two hypotheses:

1. We are in the process of moving from an analog past to a digital future. As an aside to this, we have witnessed a retreat from the original digital enthusiasm of the last few years, especially in accordance with the rising and falling of world economic markets and indicators. What could reasonably be expected next is a "where we went wrong" period of self-doubt from the digital enthusiast camp. The professor prefers to see the long duration of digiteracy that is a slow upward curve beginning after the renaissance.
2. The 16th century was dominated by printed images and it is in this time that the struggle between digital methods of design and geometric methods can be observed in an especially fruitful manner. Architectural treatises are evidence of a two-century battle between drawings and numbers.

The humanists of the 16th century were particularly devoted to all things antique, and this manifest itself also in a strange way through the continued use of Roman numerals, which proved quite clumsy for computing. In fact, two advanced technologies of the time were overlooked by humanists and were instead the domain of the less refined circles. At this time, the merchant class can be observed using the Hindu-Arabic number system, a

far more compact and efficient way of counting as well a system that accounts for zero. Concurrently, makers of ephemeral materials (playing cards, textiles and devotional materials) employ mass produced printed images for widespread distribution. In both cases, the humanists were slow to upgrade their software.

The decimal notation is introduced to Europe by Simon Stevinus in 1585 but was not employed by such architects as Palladio, Michelangelo, Vignola and Serlio. Michelangelo, for his other liberal talents, proves himself to be a very poor handler of numbers. All of these architects operated on a modular system in which, for instance, diameters of column are used as the measurement of the rest of the order's components. In fact no treatise tried to decimalize the orders until a pathbreaking 1844 effort in the Ecole des Beaux Artes (of Belgium). While the importance of this decimalization of the orders did not prove to constitute one of the seminal moments of architectural history, one can observe a general rise in numeracy in architectural drawings in the 17th and 18th centuries. Numbers eventually gain supremacy as the favored bearers of information in architectural drawings. Digital communication is not new. Our current moment has experienced a case of much more of the same steady digitization, and at some point a change in scale is a change in nature, not merely relation. A further aim of the course will be to ask what this digital future may look like.

Printed images constitute a watershed moment in the history of architectural theory. The new process of xylography (the woodcut) can produce hundreds of reliable copies from a single image before the original loses fidelity. While the technology crystallized in this particular form, other similar reproductive technologies were extant at or before this time in the form of coins and seals of antiquity.

>1390-1430 Cennini's Libro dell'Arte contains a chapter on printing.

>1410 The tapestry of Sion, which was produced in Northern Italy, exhibits a repetitive printed pattern.

>1416-18 Devotional images in Flanders of the Madonna surrounded by saints still exist in several copies.

>1430's Archival evidence in Florence and Venice of printed playing cards.

The curious route of the technology as it relates to the printed and illustrated architectural treatise can be observed from the situation of Alberti. Alberti lived in an environment where printed images were already present and possibly conspicuous. His own architectural treatise De Re Aedificatoria, written in manuscript form around 1450 does not rely on the use of images, but instead takes great pride in verbal description of visual material. Alberti made only passing reference to printing with movable types late in his life, exhibiting a "wait-and-see attitude." Images, whether printed from woodcuts or copied by an amanuensis, were not part of Alberti's program. Hand copying is untrustworthy and mechanical imaging is not imagined. Alberti did not immediately know of Gutenberg's almost coeval invention of the printing press with moveable type.

Not only was the mechanical reproduction of words a novelty to the Florentine humanists, but also the printing of both words and images on the same page was even more remote. The first architectural books are printed in Rome with the publication of De Architectura by Vitruvius. The first architectural work with cohabiting printed image and printed text debuts in Regensburg in 1486 in the manifestation of Matthias von Roriczer's Gothic quasi-treatise on how to build a spire. This timeline demonstrates that Alberti, modern as he was, produced an architectural treatise without intention to engage two potent technologies for disseminating his ideas: the printed word and the printed image. To use the term "media savvy" before its time requires an introduction of Sebastiano Serlio into the discussion. He would arise as the first theorist to write specifically for the medium of printing and mass reproduction.