Critical Studies

Computation Thinking and Critical Practice

Week 5

21031188 -Runqi Zhao
04/11/2021

From Turning—the father of the computer—to the first computer ENIAC, computation has changed dramatically over the decades, transforming our lives in every field. There is no doubt that the emergence of computation has brought great contributions to our society. If we lived in ancient times, perhaps we could not imagine that we could see our families thousands of kilometers away through something called "the Internet". It's possible that people in two different countries or even on two different continents share their lives with each other.

Nowadays, computation is developing rapidly in all fields of society, and AI is also doing better and better.

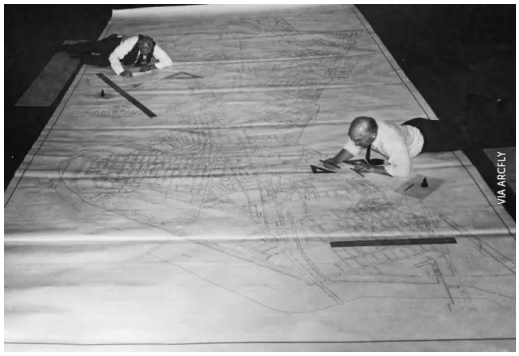
The impact of computation on architecture design

For me, as my undergraduate major is architectural design, I deeply know how much computational can help the people who design architecture.

In the past

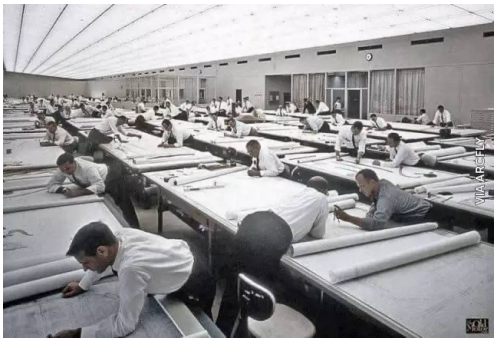
Problem 1: Drawing time is too long and the amount of work is huge

In the era of no computers, no matter the layout of the city, even the smallest element was drawn out piece by piece by the designer. Once，I tried to draw in this way to feel the charm of architecture. But before long, I could feel the pain in my eyes and the stiffness in my back. Even my sleeves showed signs of wear.



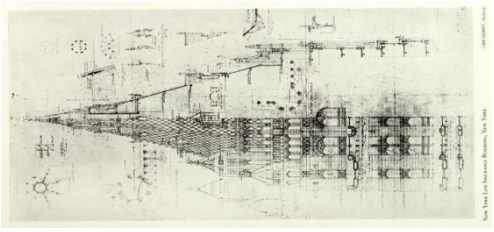
Problem 2: Difficult to change, low efficiency

The architectural drawings of the time may been huge, it was difficult to avoid change in drawings during the design process. It is not difficult to imagine that if a piece needed to be changed or was drawn incorrectly, it would be terrible and the whole drawing would have to be redrawn.



Problem 3: the sense of three dimensions is not strong, and it is difficult for the layperson to feel the experience

Because most of the plans are drawn in a single dimensional, it is difficult for others to imagine the three-dimension form of the building.



Now

However, these problems can be easily solved. Relying on computation, we have 3D modeling software that allows you to see the structure of the building very clearly. The graphics card allows us to quickly render the effect of the building immediately. Electronic architectural design can be changed at any time, the emergence of computers has made the construction industry full of vitality.

Some thoughts:

But as I said before, does computation take away some of the flavor of the building itself? The designers like me rely on computers now, and all the steps are completed by computers. We only have an electronic understanding of our buildings, and we do not have "close" contact with buildings like previous draftsmen, so are we missing a deeper understanding of buildings?

For the future:

We hope that computers can be used to make us closer to buildings. For example, we can wear VR to design buildings and personally enter visual buildings.