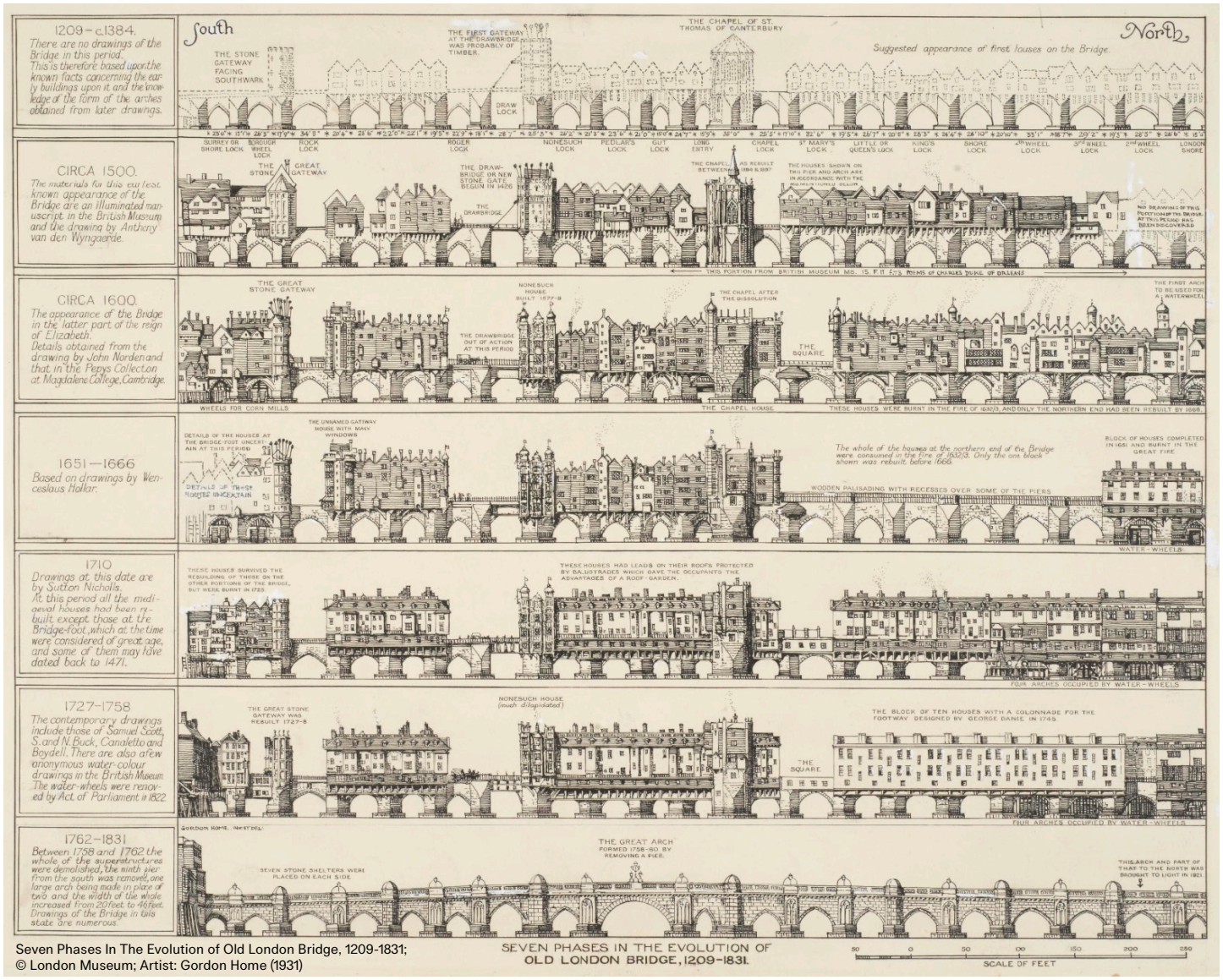

Seven Phases In The Evolution of Old London Bridge, 1209-1831;

Sustainable Design

Lecturer: Dr. sc. ETH Fabian Kastner, Bachelor's Program, 2 ECTS, once a year, in English, taught in 24 units of 45min, 42 hours of self study time. Grading: final oral exam.

LCA (Life cycle analysis)

The current climate crisis presents an unprecedented period of time. While the built environment and associated practices represent a critical field of action, national decarbonisation efforts have been documented to be largely off-track. To this end, higher-income nations tend to be responsible for higher material consumption and higher climate impacts per capita.

This situation necessitates architects as caretakers who take on responsibility for the built environment. Therefore, architectural responses with greater understanding, imagination, and articulation are needed. However, a potentially vast set of meanings related to the term sustainability – understood as an overall objective, framework or notion – can lead to misunderstandings. In parallel, buildings as the longest lasting man-made products in combination with a vast range of potentially available construction technologies can feel overwhelming.

In this course, we will delve into the world of LCA to find truly sustainable building design approaches for the twenty-first century. LCA is a quanitative method that **allows for systematically extending time horizons related to building analysis.** Thus, it offers the vc to holistically assess environmental impacts related to construction. To approach this potential of understanding built environment dynamics, we will ask relevant questions. How can architects leverage LCA to respond to the climate crisis? How can we effectively inform design strategies with LCA? How can LCA help to achieve a nexus between low material intensities and energy efficiency? By systematically integrating LCA into a design task and by articulating associated outcomes, answers to these questions will be explored.