Thermal standards exert an ever-increasing impact on architecture. What used to be a minor issue in planning processes a mere three decades ago has become a rigid determinant in the design practice of architects. Recent building legislation has begun to limit the spectrum of possible solutions to the extent that thermal standards increasingly govern the concept, structure and form of buildings. The imperative to insulate building envelopes with little regard to maintaining a diversity of microclimates in the interior is just one prominent example. These developments can be traced to how thermal standards have been triumphed as a silver bullet by Western societies on their path towards energy transition and sustainable architecture.

“Green goes mainstream” (Raymond J. Clark / Peter Ellis) has in particular seen a proliferation of thermal standards, regulations and labels. Agencies like the US-American LEED, the British BREEM, the German Passivhaus or the Swiss Merinie, 2000-Watt Society, and SNBS offer certifiable solutions for thermal comfort in combination with the promise of sustainability in architecture and for cities. These “green-mainstream” standards are successors to the passive rationale of the bioclimatic architecture of the 1970s, promoting “the use of architecture as a primary energy device” (American Institute of Architects, 1978). Today, worldwide comfort in buildings increasingly relies on the import and export of thermal standards. This has resulted in their global circulation and a competition between the various agencies promoting them. However, such standards emerge out of specific local cultural circumstances and architectural traditions. This area of conflict between a globalised rationale and the need for local adaptation is the subject of the conference. Based on case studies from Switzerland and various international contexts, the conference examines the ways in which the global circulation of thermal standards affects and translates into local design and building practices.

The conference addresses thermal standards by following an implementation-oriented and multi-disciplinary approach. “Regulations only exist in and through practice” (Imrie / Street 2011) and the researcher needs to follow them “through society” (Latour 1988). Thermal standards result from complex social negotiation processes involving actors from government departments, research institutions, investment companies and architectural offices. As a result, the circulation and promotion of standards are driven by architectural, political and economic agendas. The impact of translating thermal standards into building techniques hence extends beyond the mere single house to encompass whole urban contexts and the entire global challenge of sustainability. The conference will be held in three panels followed by a round-table discussion.

I. THERMAL UNIVERSALITY

Panel I explores the underlying assumptions and objectives of thermal standards. The panels lists discuss the current implementation of thermal knowledge as emerging from globally oriented architectural practice, whereby thermal comfort has become a measurable standard calculated by heating, cooling, ventilation, air-conditioning experts. This panel offers an overview on the guiding of overall concepts for regulating indoor microclimates such as “passive climate control”, “energy efficiency”, “comfort” and “sustainability”. Further, it addresses the problem of industry standards of thermal comfort in as far as they potentially conflict with the aims of social, economic and ecological diversity.

II. THERMAL STANDARDS AND THE ARCHITECT

Panel II inquires into the ambiguous relationships between architects and thermal standards and regulations. Although this combination can undoubtedly promote engagement, at the same time it can also diminish a sense of responsibility in that goals are delegated to set norms and certifying institutions. The participants of this panel critically discuss their experiences with certified and non-certified building practices in terms of the autonomy of the architect. Place-based, low-tech thermal solutions challenge the omnipresence of global thermal standards through a direct engagement with local climatic contexts.

III. THERMAL GOVERNANCE AND THE CITY

Panel III reflects on thermal governance as part of a broader understanding of thermal regulations in urban contexts. While scrutinising the role of thermal standards at the building scale, architects and urban planners encounter new challenges at the neighbourhood and the city scales, which represent the predominant forms of organisation in today’s urbanised societies. At the heart of the epistemological transformation of energy efficiency is the “city climate”, entailing new methods of thermal governance. To this end the panel questions whether the energy-source supply of cities can be taken simply as a private matter.
I. THERMAL UNIVERSALITY

Chair: Walter Kalb

CONCEPTS AND CONTEXTS OF ENERGY EFFICIENCY

When sustainable planning and construction entered mainstream architecture in the 1980s, it took the form of a call to rethink. For critics it was crucial to reposition the practice, they needed to be quantifiable. As a consequence, benchmarks for technical standards, especially the performance of buildings, began to be set. In the early days, buildings were being designed in buildings codes more readily than for larger social or economic activities. Over time, the actor changed from being local to global actors, and in the design of the thermal environment, the experience of the thermal environment gave way to calculations by external bodies. Overall, climate design lost the local impact inherent in historically conceptual concepts. Climate in building standards then were first to be confined as part of the environmental pressure, and in the design of the standards, many of these standards spread globally, being inspected and super- visioned, and have been applied in climate contexts from those for which they were conceived.

By comparing the increase— and what follows—of primary energy use in different countries and geographic regions with the emergence of different thermal standards in architecture, the practice of thermal standards is a basicquestion to validate the understanding of long-term energy-conscious decisions and sustainable possibilities.

SUSTAINABLE GOALS VERSUS STANDARDEISED TEMPERATURES

Mats Larson, Milan Faber / Larsen + Quistgaard (SE) The 2006 report of the IPCC, co-authored by Al Gore, made it obvious that the world is getting warmer. This is not just a change in temperature, but also in the pattern of heat and cold spells. If we do not act, then a world with stable and neutral winter temperatures will be nearly impossible to achieve. In this dilemma we find relief in easily understandable and quantifiable performance to create a new vision of what a designer could do. Energetic solutions look like? What scope do different energy standards provide for projects— and solutions. Which uses of technology makes sense? Which do not? What do alternative tools, making them understandable and easily applicable. We think that rather than scientifically valid climate design, and be.

II. THERMAL STANDARDS AND THE ARCHITECT

Chair: Thaleia Von Frach

THERMAL STANDARDS AND PRACTICE

Prof. Muck Petzet, Università della Svizzera italiana (CH)

Thermal standards are a means of surviving and adapting to the environment around the building— and with a view to the future. They are part of the process of development of standardization of energy and climate regulations, as well as a result of the development of urbanization, and quantified performance to create a new vision of what a designer could do.

We developed a study tool for students, which allows them to perform their own studies. The tool is called the “thermal standards system”, involving six simple steps, by which the students were empowered to certify buildings for 150 people for the housing association mehr als wohnen (2007–2015) to understand the concept of thermal standards. These evolve from and are related to the work of the architect, and we ourselves are keen to potentiate low-tech concepts and regulations in the work of our office and in teaching the next generation of architects.

III. THERMAL GOVERNANCE AND THE CITY

Chair: Sascha Roesler

THERMAL REGULATIONS IN SANTIAGO DE CHILE

Prof. Jonathan Sergison, Architect and urbanist (UK)

The 2006 report of the IPCC, co-authored by Al Gore, made it obvious that the world is getting warmer. This is not just a change in temperature, but also in the pattern of heat and cold spells. If we do not act, then a world with stable and neutral winter temperatures will be nearly impossible to achieve. In this dilemma we find relief in easily understandable and quantifiable performance to create a new vision of what a designer could do. Energetic solutions look like? What scope do different energy standards provide for projects— and solutions. Which uses of technology makes sense? Which do not? What do alternative tools, making them understandable and easily applicable. We think that rather than scientifically valid climate design, and be.