

# Abstracts

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## → Computational Design Thinking

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The new computational design paradigm indicates a shift from representation to simulation with a special focus on creating integrated systems. Material properties, performative qualities, natural evolution and other important knowledge is being integrated into highly interdisciplinary design processes. Designer-authored generative systems enable us to conceive and manage the design process as a dynamic ecosystem rather than fragmented practices of form-finding, analysis and production. All of these developments entail transformations both in design education and practice. However, we can see an unequal pace of developments in both fields. A select group of pioneering schools and firms is pushing and developing the notion of computational design thinking, whereas a large section of both are struggling with the concept or altogether dismissing it. In schools, non-Euclidean geometries produced by the new media are embraced enthusiastically by the students, but mostly it needs to be incorporated in

an educational pedagogy. The question of how to prepare graduates as “computational designers” remains unanswered from both schools and practice. The distinction between computation and computerisation in design education is critical in this sense, since the real potential of computational design lies in its conceptualization as a way of thinking. Within this framework, this track calls for innovative and thought-provoking work around the following 5W1H questions:

1. What is computational design thinking?
2. Why is computational design thinking important in design education?
3. How is computational design thinking employed in practice and design education?
4. Where and when is computational design thinking best employed in practice and education? What does the transformed practice/ curriculum look like?

5. Who is responsible for teaching and managing computational design?

This track would like to explore, but is not limited to, the following topics:

- Material-based design
- Digital fabrication
- Computational making
- Biologically inspired design through computational methods and tools
- Shape grammars
- Parametric design
- Performative design; performative architecture
- Responsive design; responsive architecture
- Coding education
- Computational thinking in the design studio

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