

# Facade 2018 - *adaptive!*

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# Proceedings of the COST Action TU1403

## Adaptive Facades Network Final Conference

Proceedings of the COST Action TU1403 – Adaptive Facades Network Final Conference:

Facade 2018 - Adaptive!

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# Facade 2018 - Adaptive!

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## What is an Adaptive Façade? – Analysis of Recent Terms and Definitions from an International Perspective

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*Adaptive façades can improve the building's energy efficiency and economics, through their capability to change their behaviour in real time according to indoor-outdoor parameters, by means of materials, components, and systems. Therefore, adaptive façades can make a significant and viable contribution to meeting the EU's 2020 targets. Several different types of adaptive façade concepts have already been developed, and an increase in emerging, innovative solutions is expected in the near future. According to recent research, the word 'adaptive' in the context of building façades is often associated in the literature with a long list of similar words. Moreover, there is no consistent definition of façade adaptability, although studies exist in relation to characterisation issues, design parameter, and classification. Even within the discipline of architecture and engineering, words such as 'smart', 'intelligent', 'interactive', 'adaptive', or 'responsive' have been used loosely and interchangeably, creating confusion as to their specific meaning and their conceptual relationship to building performance and design. In response to this, the goal of this paper is to build a provisional lexicon, or descriptive, behavioural, and methodological words, to assist researchers and designers in navigating the field of high-performance façades that incorporate materially innovative and feedback-based systems. It offers a brief overview of current advances in this nascent and rapidly evolving field and articulates a broader conceptual territory for the word 'adaptive', used in many cases to describe the technological systems that interact with the environment and the user by reacting to external influences and adapting their behaviour and functionality. The objective of this paper is to contribute to these developments by presenting the findings. Furthermore, common definitions will be proposed, based on the characterisation design parameters, classification approaches, and real case studies.*

**Keywords:** Adaptive Façade, Energy Efficiency, Comfort, Passive Design, Intelligent Buildings, Sustainable Architecture

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