Dynamic façades and computation
Towards an inclusive categorization of high performance kinetic façade systems

Rodrigo Velasco¹, Aaron Paul Brakke¹² and Diego Chavarro¹

¹Universidad Piloto de Colombia
²Whiteknee
{rodrigo.velasco, aaron.brakke, diego.chavarro} @gmail.com

Abstract. This chapter provides a panorama of the current state of computationally controlled dynamic facades through a literature review and a survey of contemporary projects. This was completed with an underlying interest in understanding how innovative design solutions with the capacity to ‘react to’ and/or ‘interact with’ the varying states of climatic conditions have been developed. An analysis of these projects was conducted, and led to the identification of tendencies, which were subsequently synthesized and articulated. While most classifications are limited to describing the movement or structure needed to achieve morphological transformation, an important recommendation is to also consider control as a determining factor. For this reason, the culmination of the investigation presented here is a proposal for a classification structure of dynamic facades, developed according to the functional modus operandi of each structure in terms of movement and control.

Keywords: Dynamic Facades, Kinetic Architecture, Computational Control, High Performance Building Envelopes