Description

The SDCA tool can be used by architects when designing for maximum solar radiation incident (SRI) upon building envelope for increasing solar energy electricity generation via photovoltaic (PV) technology. The script utilizes parametric optimization and generative cellular automata to automatically produce vast pool of three-dimensional volume configurations during the early-stage form exploration process. The script is computationally efficient, capable of generating suggestive building forms in a quick manner. Additionally, the tool is flexible in terms of location, building height, surrounding buildings, period of time to optimize for, and building volume granularity. The Grasshopper code contains many directions and examples to encourage its implementation and allow for ease of use. The SDCA tool has used various existing codes including, Ladybug, Anemone, and Rabbit. Users are required to receive permission separately for using this code. The SDCA code is not open-sourced unless permission is granted by the provider. No fees are charged for the permission. Please contact us through email address provided at www.urbiilab.com.

Seth Luitjohan, Mehdi Ashayeri, Narjes Abbasabadi