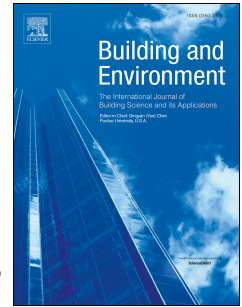


# Accepted Manuscript

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PII: S0360-1323(17)30304-9

DOI: [10.1016/j.buildenv.2017.07.018](https://doi.org/10.1016/j.buildenv.2017.07.018)

Reference: BAE 4997

To appear in: *Building and Environment*

Received Date: 4 May 2017

Revised Date: 10 July 2017

Accepted Date: 11 July 2017

Please cite this article as: Cao J, Metzmacher H, O'Donnell J, Frisch J, Bazjanac V, Kobbelt L, van Treeck C, Facade geometry generation from low-resolution aerial photographs for building energy modeling, *Building and Environment* (2017), doi: 10.1016/j.buildenv.2017.07.018.

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# Facade Geometry Generation from Low-resolution Aerial Photographs for Building Energy Modeling

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## Abstract

In the Architecture, Engineering, Construction, Owners and Operators (AECOO) industry, geometry modeling of the Building Energy Modeling (BEM) project is often carried out by mechanical engineers and others who because are not versed in issues of building geometry definition and are not experts in the use of CAD software, often resulting in geometry definitions that do not adequately represent the true geometry of the modelled building and may result in failure or abandonment of the needed BEM and simulation project.

In order to resolve the problem, this paper presents an automatic geometry modeling procedure of existing building facades, based on low-resolution aerial urban photographs, in order to recover their semantic structure as well as to synthesize geometric models for reuse in the BEM process. An iterative approach for building facade parsing is developed through the detection of facade structures.

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