

[The development of polygon shift method for visualization of three-dimensional view maps of building](#)

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The author developed a new method called the “Polygon Shift Method” (so named by the author) that enables the generation a 3D view map of building using a simplified raster based procedure to shift a polygon and check the overlap between the original and shifted polygon. Boolean operations are applied with a newly defined “Foreward or Aft” side and a “Depth Distance” that functionize the visibility criteria or hidden point processing in the 3D view.

The “Polygon Shift Method” can be applied to generate shadow of building by integrating two full-screens of “Depth Distance” buffer of view and shadow shift, which results in the simplification of a complicated algorithm for 3D view maps with shadow.

Several case studies were implemented to evaluate the algorithm and computation with respect to building height, direction of view and shadow shift. The results of the implementation proved that the newly developed “Polygon Shift Method” was much effective in terms of simplicity of algorithm as compared with the existing algorithms for 3D view visualization