Using a Shading Tool to Reform Window designing due to Solar Radiation

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***Abstract*— Sun is the significant criterion that plays the most important role in architectural design. The sun's heat and radiation interact with the designed components of form and façade. These shading elements exhibit different expressions according to the structure orientation and the sun position. According to the climate of structure's location, the expressions are being used to better respond to the environment in sustainable architecture. In order to get to this point, it is very important to calculate the shading geometry and solar energy during the day and to provide more suitable systems in glass and window designing. According to this, in order to arrive at more suitable shading systems by supporting MATLAB program, the software is written by taking the previous works as basis and closing some of their mistakes. According to the climate data, this program takes the plan drawings of window's zone and some other information of window, the annual shading simulations are presented. Due to these simulations incident solar radiation of window, essential element of cooling load increasing in summer calculated. Furthermore window designing will be occurred by these simulations. So for the future works the user can import the glass or other datum of window or shading monument to design more efficiency.**

***Index Terms*— MATLAB program, shading, radiation, function, zone.**

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