



TECHNICAL NOTE

467 - Implementing A New Method For The Design Of Bioclimatic Buildings

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A tool for support the design of bioclimatic buildings is under development. This tool is also specially adapted to the particular needs of buildings in the portuguese territory, since it includes the possibility of doing evaluations according to the requirements that are imposed by the new regulations of thermal performance for buildings (RCCTE). This tool will allow designers of bioclimatic architecture to easily extract reports of different energy simulation programs, such as energy Plus, Radiance and RCCTE thermal code. The system is provided with a 3D Editor that shares multiple interfaces with the different simulation programs above mentioned.

A particular method for the conception of bioclimatic architecture is assumed, however different types of evaluations can be performed with this interface program.

A particular method for the conception of bioclimatic buildings is here suggested. It begins with the evaluation of the compliance with the portuguese thermal codes. Once the shape and construction for the building under design are conformant with regulations, other evaluations are suggested. The system provides the possibility of automatically generate a geometric definition for future energy plus simulation that matches the previous RCCTE definition, however with some simplification assumptions. This can bring closer the evaluations of the thermal code requirements with the energy Plus evaluations, and so to take advantage of a large number of energy plus features in a detailed analysis.

The program under development provides automatic generation of some particular features of Energy Plus that were found very useful for design tasks of bioclimatic buildings, such as the generation of; adjacent zones, trombe walls zones, earth tubes, detailed window variables, etc.