

Evaluation of four building energy analysis computer programs against ASHRAE standard 140-2007

Stefan Szewczuk, Dr Dirk Conradie

ABSTRACT

Agrément South Africa was established for the assessment and certification of innovative non-standardised construction products, systems, materials, components and processes, which are not fully covered by a South African Bureau of Standards (SABS) standard or code of practice. Agrément requested the CSIR to evaluate a range of building energy simulation computer programs. The standard against which these computer programs were to be evaluated was developed by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE). The standard that was available at the start of these evaluations is known as ASHRAE Standard 140-2007. This paper describes the CSIR's evaluation of four building energy simulation computer programs against ASHRAE Standard 140-2007. These computer programs are; BSIMAC, DesignBuilder, IES and Carrier. The results of these evaluations were compared against the BESTEST suite of results.