

PAPER TITLE

Large public buildings air tightness in Poland

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ABSTRACT

Large public building airtightness specification, implementation and verification, as a part of investment process is described in the paper. Poznan University of Technology new building called Mechatronics, Biomechanics and Nanoengineering Centre, with internal volume of almost 50.000 m³ (1.800.000 cu ft), was used as a case study. Erected in 2010-2011 turned out to be the first large public building to be airtightness measured in Poland.

Centre was financed with respect to public procurement law, which influenced the design and construction process. Airtightness measurement requirements were formulated in tender conditions, what is very rare in Poland, yet. Lack of consciousness, knowledge and experience among designers and contractors was perceived during design and construction process. Thanks to strong investor awareness in the field of energy efficiency, a very good airtightness ($n_{50} = 0.3$ ACH) was achieved, much better than required by law ($n_{50} = 1.5$ ACH). During construction process a lot of positive effects like workmanship quality improvement and contractor awareness rise were observed. Airtightness ensuring techniques and solutions were precisely described together with the measuring procedure. As a typical heavy construction building, mechanically ventilated and raised with use of common materials it could be a good case study for airtightness concerned investors in Poland.

Two other large building case studies were generally described in this paper.