

## BUILDING THERMAL QUALITY INSURANCE

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Economical reasons force the world to produce more and more energetic efficient buildings. Building envelope's thermal parameters are the mostly important parameters which define this efficiency. For several recent years some methods were created to monitor the envelope state using infrared methods. Primarily this can be used to monitor defects on the surface of the envelope.

Due to different reasons the heat engineering parameters of the construction's materials change with time. After several years of exploitation not only the envelope's structural defects determine the thermal resistance value. As the material is aging its modified heat engineering parameters must be taken into account.

Thermal NDT of multilayered building envelopes leads on the first stage to the solution of the inverse problem of nonstationary heat conductivity, which is the determination of thermal characteristics (specific heat, density and thermal conductivity) of materials of layers constituting the object by means of examination of thermal response of the object. Second stage of thermal NDT of buildings is based on a thermal imaging of all surfaces of the building envelopes. The received data is processed using special created software. This method was used for inspection of more than 500 buildings by request of Moscow Government.