

STRUCTURAL APPRAISAL OF EXISTING BUILDINGS, INCLUDING FOR A MATERIAL CHANGE OF USE

Part 4: Additional considerations and information sources

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This Digest gives guidance to professional engineers on the structural appraisal of existing buildings, including making a structural appraisal for a material change of use.

Part 4 provides additional coverage on sources of information; on the characteristics of materials; on defects, deterioration and damage mechanisms (physical, chemical, biological, electrochemical and electromagnetic); and on through-life management in a low-carbon future (refurbishment of existing buildings, timing of decisions, through-life value, sustainability). It then looks to the future, with the extension of the Eurocodes to existing structures, and the influence of climate change.

An extensive bibliography provides references and sources of information on building regulation- and safety-related guidance, current design codes, previous standards and design guidance, general construction and building defects, renovation of existing structures, loading and actions, the various types of construction, appraisal of existing structures and structural load testing.

1 GATHERING INFORMATION

The gathering of information about an existing building can involve many sources. The documents and other details concerned with the design and construction of the building are a particularly valuable source of existing information. Section 1.3 in Part 3 of this Digest discusses the gathering and reviewing of existing documentation,

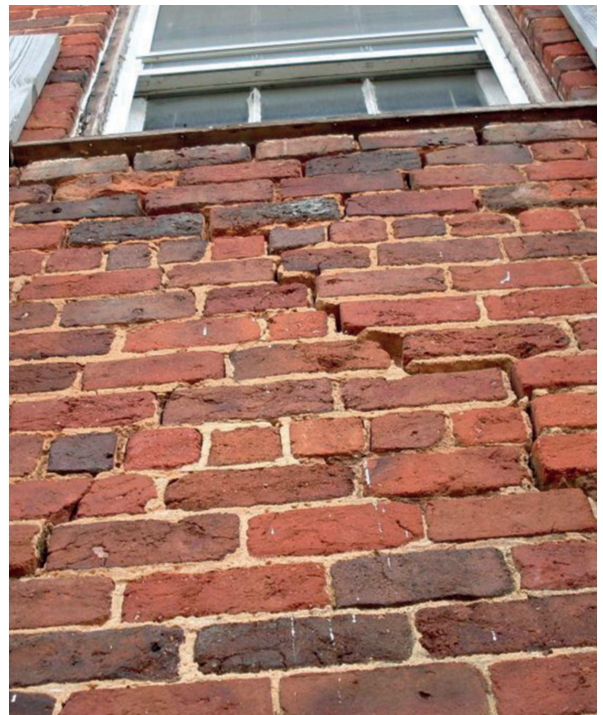


Figure 1: Diagonal cracking and damage to brickwork

and gives some basic guidance on such activities. Other useful sources include existing information relating to previous maintenance works and alterations to the building, reports on previous testing and investigation works (eg surveys, inspections, non-destructive testing) and activities such as structural load testing or other verification procedures. Personnel involved in such activities can also have relevant insights and recollections.