

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

Part 1: Requirements for a structural appraisal

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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 1 considers the overall regulatory requirements, and in particular the disproportionate collapse issues associated with Requirement A3 of the Building Regulations Approved Document A: Structure. It describes what constitutes a material change of use and reviews the Building Classes (see Section 5 of Approved Document A: Structure). It also examines means of reducing sensitivity to disproportionate collapse in respect of Building Classes 2A, 2B and 3, as defined in Table 11 of Approved Document A. The provisions in the structural Eurocodes for reducing sensitivity to disproportionate collapse are also discussed.

1 INTRODUCTION

This Digest describes the general processes that may be applied when making a structural appraisal of many types of building and structure, but there is a particular focus on the requirements associated with making a material change of use to part or all of an existing building, as defined in Part 2 of the Building Regulations 2010⁽¹⁾ for England and Wales (hereafter 'the Building Regulations').

Although Scotland and Northern Ireland are governed by separate legislation, the general objectives and requirements are similar, but there



Figure 1: Intricate masonry façade of a Victorian building employing 'traditional' forms of construction

are subtle differences. For example, Scottish Building Regulation 12 concerning conversions poses more onerous requirements. The fundamental principles of structural appraisal described in this Digest, though, will be generally applicable in all three legislatures.

In the context of the Building Regulations, a structural appraisal in respect of a material change of use must assess compliance with the requirements of Part A, Structure, of Schedule 1 of the Building Regulations. The primary concerns are structural safety, strength and stability of the building under normal loads and actions (Requirements A1 and A2), as well as reducing its sensitivity to disproportionate collapse under accidental loads and actions (Requirement A3). In many