

Appendix VIII

Glossary of Building Inspection and Related Terms

adaptation: Any work to a building over and above maintenance to change its capacity, function or performance. In general terms adaptation means the process of adjustment and alteration of a structure or building and/or its environment to fit or suit new conditions (Douglas, 2006). However, more specifically it is also considered as work accommodating a change in the use, size or performance of a building, which may include alterations, extensions, improvements and other works modifying it in some way (Douglas, 2006).

aetiology: The study of causes of things.

ageing: Degradation due to long-term influence of agents related to use (ISO 15686-1:2000).

alteration: Modifying the appearance, layout or structure of a building to meet new requirements (Watt, 2007). It often forms part of many adaptation schemes rather than being done on its own.

anomaly: An indication (or symptom) of a possible defect (CIB, 1993).

beam-filling: A crude masonry infill about 600 mm high found in traditional pitched roofs of Georgian and Victorian buildings to provide a degree of fire stopping and draughtproofing at the eaves (Douglas, 2006).

bressmenter: A large timber beam found in older buildings. It spans a wide fireplace or a bay window. The built-in ends of this wooden loadbearing member are highly prone to fungal attack (Douglas, 2006).

building pathology: The systematic investigation and treatment of building defects, their causes, their consequences and their remedies (CIB, 1993). It involves a holistic approach to understanding the various mechanisms by which the material and environmental conditions within a building can be affected (Watt, 2007).

building survey: A Scheme 3 survey that provides an investigation and assessment of the construction and condition of a building, but will not normally include advice on value. The survey will generally include the structure, fabric, finishes and grounds, but the exposure and testing of services are not usually

covered. The report will include reference to visible defects and guidance as appropriate on maintenance and remedial measures (RICS, 2002).

carbonation: The transformation in concrete or cement mortar of the free alkali and alkali-earth hydroxides in the cement matrix into carbonates, due to attack by carbon dioxide in the atmosphere (CIB, 1993).

condition: Level of critical properties of a building or its parts, determining its ability to perform (ISO 15686-1:2000).

condition survey: Inspection of a building or other structure, at a certain date, to determine its state of repair and any requirements for maintenance. It is often carried out on a regular basis for certain types of property, for example quinquennial inspection of church buildings (Haverstock, 1999; Dallas, 2003). Usually it is presented in the form of a schedule of condition.

conservation: Preserving a building purposefully by accommodating a degree of beneficial change. It includes any 'action to secure the survival or preservation of buildings, cultural artefacts, natural resources, energy or other thing of acknowledged value for the future' (BS 7913: 1998).

consolidation: Basic renewal and maintenance works to ensure a building's ongoing beneficial use (Douglas, 2006).

cryptoclimate: The climate created by the building and influencing its fabric (Harper, 1978). Adapting an existing building can change its cryptoclimate (Douglas, 2006).

dampness: Condition of being slightly wet – usually not so wet that liquid water is evident – such as wetness caused by condensation on a porous substrate or water transmitted up a porous wall by capillary action (CIB, 1993). Dampness can be said to occur when an atmosphere or material is wetter than 85% relative humidity (Oliver, 1997).

defect: Non-conformity with standard or shortfall in performance (CIB, 1993). Also known as a fault, or deviation from the intended performance of a building or its parts (ISO 15686-1:2000).

degradation: Changes over time in the composition, microstructure and properties of a component or material, which reduce its performance (ISO 15686-1:2000). It also usually refers to the deleterious effects of the weather such as sunlight, in particular on organic materials. Strictly speaking degradation is defined as the conversion of a complex molecule into simpler fragments.

degradation agent: Whatever acts on a building or its parts to adversely affect its performance (ISO 15686-1:2000).

degradation mechanism: Chemical, mechanical or physical path of reaction that leads to adverse changes in a critical property of a building product (ISO 15686-1:2000).

- design life:** The period of time over which a building or a building subsystem or component (e.g. roof, window, plumbing) is designed to provide at least an acceptable minimum level of performance (Iselin & Lemer, 1993). It is the period of use as intended by the designer – for example, as stated by the designer to the client to support specification decisions (BS 7543).
- deterioration:** A reduction in ability to perform up to the anticipated standard (CIB, 1993).
- dew point:** The temperature at which condensation occurs (Trotman *et al.*, 2004).
- diachronic survey:** A diachronic survey is a way of studying buildings in terms of how they change or evolve over time. This is the way architectural historians (and building maintenance surveyors) appraise buildings (Brand, 1994). Maintenance surveys as well as conservation plan inspections and other record surveys are methods of studying buildings diachronically.
- diagnosis:** An impartial assessment of all the data and evidence available to determine the root cause of a problem. Deciding the nature of a fault from its symptoms (Watt, 2007).
- dilapidations survey:** Inspection of a property to ascertain the damage sustained to it during the period of a lease (Seeley, 1985). It lists the defects usually prepared at the end of a lease in relation to the repairing covenants in the said lease. According to Hollis (1988) ‘dilapidations’ refers to a state of disrepair in a property where there is a legal liability for the condition of disrepair. It is normally presented in the form of a schedule of dilapidations.
- durability:** The ability of a building or its parts to perform its required functions over a period of time and under the influence of internal and external agencies or mechanisms of deterioration and decay (Watt, 2007). It is also a measure of a building’s ability to resist deterioration. ‘Durability is not an inherent property of a material or component, although the term is sometimes erroneously used as such’ (ISO 15686-1:2000).
- economic life:** The period of time over which costs are incurred and benefits or disbenefits are delivered to an owner; an assumed value sometimes established by tax regulations or other legal requirements or accounting standards not necessarily related to the likely service life of a facility or subsystem (Iselin & Lemer, 1993).
- extension:** Expanding the capacity or volume of a building, whether vertically by increasing the height/depth or laterally by expanding the plan area (Douglas, 2006).
- failure:** The loss of the ability of a building or its parts to perform a specified function (ISO 15686-1:2000). It can also be classed as the consequence or effect of a defect.

fault: State characterised by an inability to perform a required function, excluding the ability during preventative maintenance or other planned actions, or owing to a lack of external sources (Watt, 2007). An unexpected deviation from requirements, which would require considered action regarding the degree of acceptability. It is also considered as a departure from good practice.

homebuyers valuation and survey: A Scheme 2 survey that, along with an indication of a property's open market value, provides basic feedback on its condition including advice on actions that should be followed. It is presented in a proforma format that comprises 11 standard sections.

improvement: Bringing a building and/or its facilities up to an acceptable or higher standard as required by the Building Regulations or the occupier (Douglas, 2006). Beneficial improvement entails replacing something with a new item on a like-for-like basis. Substantive improvement, on the other hand, involves the replacement of an element or component with a new item having a higher performance rating.

industrialised building: This term is not necessarily synonymous with 'non-traditional' construction (Douglas, 2006). Industrialised processes could be used with traditional building, although generally more extensively with more non-traditional forms. Industrialisation is a wider term than non-traditional because it is primarily concerned with the rationalisation of the building process itself. In building operations it implies the use of mechanical plant and the replacement of *in situ* work by prefabricated units (Douglas, 2006).

life cycle: The sequence of events in planning, design, construction, use and disposal (e.g. through sale, demolition or substantial renovation) during the service life of a facility; may include changes in use and reconstruction (Iselin & Lemer, 1993).

life-cycle cost: The present value of all anticipated costs to be incurred during a facility's economic life; the sum total of direct, indirect, recurring, non-recurring and other related costs incurred or estimated to be incurred in the design, development, production, operation, maintenance, support and final disposition of a major system over its anticipated life-span (Iselin & Lemer, 1993).

loss: The consequences of a defect or failure, expressed in terms of costs, injuries, loss of life, etc. (CIB, 1993).

maintenance: A 'combination of all technical and administrative actions, including supervision actions, intended to retain an item in, or restore it to, a state in which it can perform a required function' (BS 3811: 1993). Maintenance involves routine work necessary to keep the fabric of a building, the moving parts of machinery, etc. in good order (BS 7913: 1992). The word comes from the French verb 'maintenir', which means to hold (Douglas, 2006).

modernisation: Bringing a building up to a standard prescribed by occupiers, society and/or statutory requirements (Douglas, 2006).

mortgage valuation survey: A Scheme 1 survey that provides an indication of a property's open market value and gives cursory feedback on its condition.

non-traditional building: This form of construction may use unfamiliar products or the same basic traditional materials in new ways, employing new techniques in fixing and erection, which differ, for instance, from the traditional method of laying by hand one brick or concrete block on top of another. It is a narrower concept than 'industrialised building' but also uses prefabricated elements (Douglas, 2006).

obsolescence: The condition of being antiquated, old-fashioned, or out of date, resulting from a change in the requirements or expectations regarding the shelter, comfort, profitability or other dimension of performance that a building or building subsystem is expected to provide. Obsolescence may occur because of functional, economic, technical or social and cultural change (Douglas, 2006).

performance: The degree to which a building or other facility serves its users and fulfils the purpose for which it was built or acquired; the ability of a facility to provide the shelter and service for which it is intended (Douglas, 2006). It is a quantitative expression of behaviour of an asset or product in use (BS 6019).

physical service life: The time it takes for a building, subsystem or component to wear out. It is the time period after which a facility can no longer perform its function because increasing physical deterioration has rendered it useless (Douglas, 2006).

preservation: Arresting or retarding the deterioration of a building or monument by using sensitive and sympathetic repair techniques. Preservation means 'the state of survival of a building or artefact, whether by historical accident or through a combination of protection and active conservation' (BS 7913: 1998). It also can be defined as 'the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property' (Weeks & Grimmer, 1995). Preservation focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. It includes protection and stabilisation measures (Douglas, 2006).

prognosis: An impartial, technical assessment of the probable course and outcome of a building deficiency. Predicting or forecasting the course of a fault from its symptoms (Watt, 2007).

protection: The legal use of this term involves the provision of legal restraints or controls on the destruction or damaging of buildings, etc. with a view to ensuring their survival or preservation for the future. Physical protection may be either temporary (e.g. tarpaulins over an exposed roof surface undergoing refurbishment) or permanent (e.g. over-roofing scheme).

redundancy: The consequence for a building when it becomes superfluous or excess to requirements (Douglas, 2006). It is often triggered by obsolescence.

refurbishment: Modernising or overhauling a building and bringing it up to a client's requirements (Douglas, 2006). It is usually restricted to major improvements primarily of a non-structural nature to commercial or public buildings. However, some refurbishment schemes may involve an extension.

rehabilitation: Extending the life of a building and making it suitable for habitation and use. It is a term that strictly speaking is normally confined to housing (Douglas, 2006). Rehabilitation can also be defined as 'the act or process of making possible a compatible use for a property through repair, alteration, and additions while preserving those portions or features which convey its historical, cultural, or architectural values' (Weeks & Grimmer, 1995). It acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

rising dampness: Moisture rising up masonry walling or solid flooring as a result of capillary action (Trotman *et al.*, 2004). True rising dampness is relatively rare – when it does occur it is usually where the soil is persistently damp and the wall and floor at ground level construction lacks a damp-proof course/membrane. Bridging moisture is the main cause of indirect rising dampness.

service (or working) life: Actual period of time during which no excessive expenditure is required on operation, maintenance or repair of a component or construction – as recorded in use (BS 7543).

settlement (contrast with 'subsidence'): A downward movement of a building, caused by above ground factors – such as overloading, differential movement.

stabilisation: Substantial adaptation works to ensure a building's long-term beneficial and safe use. It often includes strengthening works such as stitching and underpinning.

subsidence (contrast with 'settlement'): A downward movement of a building, caused by below ground factors – such as desiccation of clay soils, mining collapse, landslide.

subsystem: Functional part of a system, and often used interchangeably with that term – e.g. heating subsystem being part of HVAC system (Iselin & Lemer, 1993).

sustainability: A set of processes aimed at delivering efficiently built assets in the long term (DETR, 1998). 'Eco-renovation' occurs where sustainable issues are deliberately and explicitly incorporated into an adaptation scheme (Harland, 1998).

synchronic survey: A synchronic survey is a snapshot assessment of a building and the way it all fits together at a particular moment in time. This usually means the present, but buildings can be studied in terms of how they worked at one time in the past. In other words, it is about studying buildings in terms of immediacy and is the preference of building surveyors as well as 'city planners

and architects looking for design ideas' (Brand, 1994). Building surveys, condition surveys and dilapidation surveys are typical examples of this kind of appraisal.

system: Collection of subsystems, components or elements that work together to provide some major aspect of shelter or service in a constructed facility (e.g. plumbing system, heating system, electrical system and roofing system). Also, a set of building components specifically designed to work together to facilitate construction, such as an integrated building system (Iselin & Lemer, 1993).

system building: This form of construction usually relies on both non-traditional and industrialised methods (Douglas, 2006). It takes these a stage further by producing a combination of materials and methods for a design and construction package. A system building provides both a design and technique (often with specially made plans and components), available from one design (and possibly one construction) organisation. System building therefore is synonymous with proprietary forms of construction, such as 'Airey', 'Bison', 'Orlet', 'Skarne', etc.

technology: This can be defined simply as the systematic study and application of how artefacts are made and used (Douglas, 2006).

traditional construction: Traditional methods are basically on the principle of an on-site operation where all the materials traditionally required for the building are first gathered together, such as bricks, cement, sand, ballast, timber, tiles and plaster. It predominantly involves the use of relatively small-scale units such as bricks and blocks, which are assembled or installed on site.

Turnerization: The term used to describe a proprietary system of applying a bituminous coating to slated or tiled roofs to enhance their weathertightness.

upgrading: Enhancing the performance characteristics of a building's major elements, components and/or services.

whole life-cycle cost: Generic term for the costs associated with owning and operating a facility from inception to demolition, including both initial capital costs and running costs (Watt, 2007).