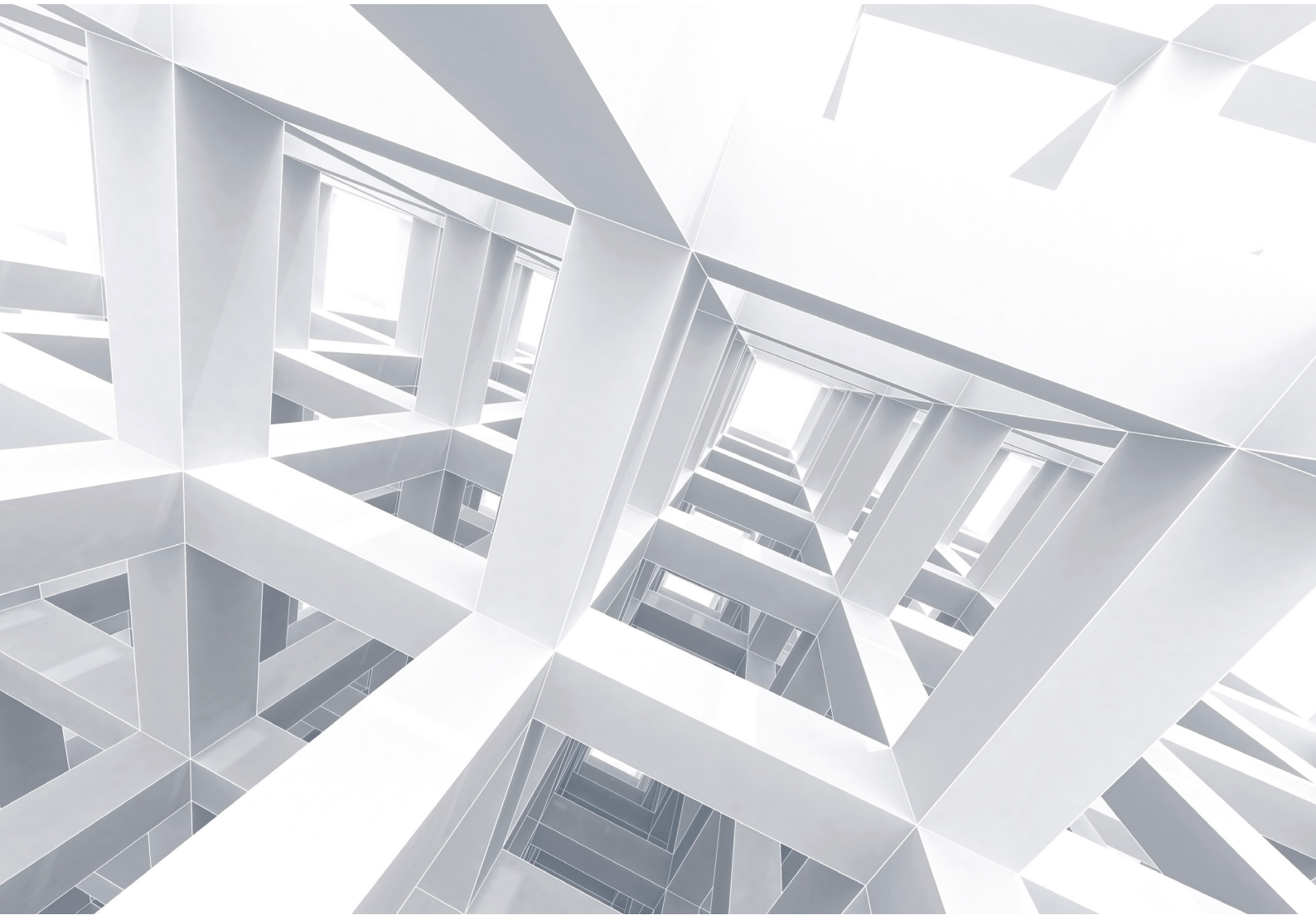
RICS guidance note

RICS professional standards and guidance, UK

# Depreciated replacement cost method of valuation for financial reporting

1st edition, November 2018



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# RICS professional standards and guidance

## RICS guidance notes

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| Type of document | Definition |
|---|---|
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# 1 Introduction

**1.1** The purpose of this UK guidance note is to draw attention to matters relevant to the use of the depreciated replacement cost (DRC) method of valuation. The 'cost approach' and DRC method are regarded as synonymous terms; both are in common use around the world to describe a method of valuation of all types of assets. This guidance note also highlights the reporting requirements outlined in *RICS Valuation – Global Standards 2017 – UK national supplement* (RB UK) that are particularly relevant when the DRC method has been used.

**1.2** It is important to understand that the word 'depreciation' is used in a different context for valuation than at the accounting stage of financial reporting. In a DRC valuation, 'depreciation' refers to the reduction, or writing down, of the cost of a modern equivalent asset to reflect the subject asset's physical condition and utility together with obsolescence and relative disabilities affecting the actual asset. In financial reporting, 'accounting depreciation' refers to a charge made against an entity's income to reflect the consumption of an asset over a particular accounting period. These are distinct usages of the word. For the purposes of this guidance note, the terms 'valuation depreciation', which equates to obsolescence, and 'accounting depreciation' will be used to clarify meaning and context. See RB UK VPGA 1.10 regarding depreciation accounting.

**1.3** The intention of this guidance is to provide guidelines that better ensure:

- involvement and understanding of the instructing client and, where not one and the same, the reporting entity
- valuations are appropriate to the needs of both public and private sector reporting entities
- transparency and
- year-on-year consistency in the approach taken to asset valuation, including where there is a change of valuer.

**1.4** Section 13 contains a checklist that will assist the valuer in checking that all the matters to be considered within this guidance have been addressed.

**1.5** Where DRC is used for valuations in the public sector, there are specific requirements within the rules governing those valuations that amend specific parts of this guidance, and must be followed. Such specific requirements take precedence over this guidance note. RB UK VPGA 1.5 and UK VPGAs 4 to 6 provide further guidance.

**1.6** This guidance note is effective 3 months after publication.

# 2 Definition of depreciated replacement cost

**2.1** There are three principal approaches to valuation that are generally recognised internationally:

- **a.** market approach
- **b.** income approach and
- **c.** cost approach.

**2.2** These approaches may all be used to arrive at a valuation under whichever basis of value is applicable. This guidance note focuses on the use of the DRC method.

**2.3** The DRC method is a form of cost approach that is defined in the *RICS Valuation – Global Standards 2017* (RB Global) Glossary as:

> 'The current cost of replacing an asset with its modern equivalent asset less deductions for physical deterioration and all relevant forms of obsolescence and optimisation.'

**2.4** The DRC method is based on the economic theory of substitution. Like the other forms of valuation listed in paragraph 2.1, it involves comparing the asset being valued with another. However, DRC is normally used in situations where there is no directly comparable alternative. The comparison therefore has to be made with a hypothetical substitute, also described as the modern equivalent asset (MEA). The underlying theory is that the potential buyer in the exchange would not pay any more to acquire the asset being valued than the cost of acquiring an equivalent new one. The technique involves assessing all the costs of providing a modern equivalent asset using pricing at the valuation date.

**2.5** In order to assess the price that the potential buyer would bid for the actual asset, valuation depreciation adjustments have to be made to the gross replacement cost of the MEA to reflect the differences between it and the modern equivalent. These differences can reflect obsolescence factors such as the physical condition, the remaining economic life, the comparative running costs and the comparative efficiency and functionality of the actual asset. Land required for the MEA will be separately assessed as described in section 7.

**2.6** This guidance note discusses factors that may need to be taken into account in assessing both the cost of a modern equivalent asset and the valuation depreciation adjustments applied to the actual asset.

# 3 When depreciated replacement cost is used

**3.1** DRC is used where there is no active market for the asset being valued – that is, where there is no useful or relevant evidence of recent sales transactions due to the specialised nature of the asset – and it is impractical to produce a reliable valuation using other methods.

**3.2** The DRC method may be used for the valuation of specialised property, which is defined in the RB Global Glossary as:

> 'A property that is rarely, if ever, sold in the market, except by way of a sale of the business or entity of which it is part, due to the uniqueness arising from its specialised nature and design, its configuration, size, location or otherwise.'

This definition is broad and can apply to properties or assets that may be of conventional construction, but become specialised by virtue of being of a size or in a location where there is no relevant or reliable evidence of sales involving similar property.

**3.3** The market for assets can change over time. Assets that might previously have been identified as having no market may have an active market that has recently emerged. For example, within the healthcare and leisure sectors, evidence of market transactions is growing. Therefore, before adopting the DRC method the valuer will need to be satisfied that there are no transactions involving similar buildings in similar use or location that could provide sufficient evidence to use an alternative valuation method.

**3.4** The value of a specialised property (or a specialised plant and equipment asset) is intrinsically linked to its use. If there is no demand in the market for the use for which the property is designed, by the current owner or any other market participant, the specialised features will either be of no value or may have a detrimental effect on value as they represent an encumbrance. If the specialised property is not to be retained for the delivery of a product or service because there is no longer demand for it, it follows that the use of DRC would be inappropriate. No hypothetical buyer would consider procuring a modern equivalent asset if this would immediately be redundant.

**3.5** Some buildings (or specialised plant and equipment assets) have a conventional basic design that is superficially similar to other buildings that are regularly bought and sold in the market, but on closer inspection have specialised features or extensive adaptations designed to meet the requirements of the actual occupier. Typical examples, which may be purpose built or adapted, include an office building with enhanced security features such as thickened walls, toughened glazing and extra stand-off land, or an industrial building with structural alterations to accommodate a particular production process.

**3.6** Where the entity has significantly adapted an existing asset to its requirements, it may elect to treat the cost of specialised adaptations as a separate item in its financial statements. In such a case, the valuer would need to value the interest in the asset on the special assumption that the adaptations do not exist. If detrimental to value, it may also be appropriate to state that no account has been taken of the costs associated with their removal and reinstatement.

**3.7** If the entity does not treat the costs of specialised adaptations separately, the latter will then be valued as part of the property interest. The valuer will have to decide whether the adaptations are sufficiently extensive for the property to meet the definition of a specialised property. The valuer will also have to decide whether there is no other reliable method of assessing the value plus adaptation, before using the DRC method. In respect of buildings and site improvements this decision will reflect the market in the locality. In one location there may be sales evidence of other similarly adapted buildings, thus using the DRC method would be inappropriate. However, the same building in another location may properly be valued using the DRC method because there is no remotely comparable property bought and sold in that location.

**3.8** The DRC method is conceptually unsuitable for use as the sole or primary valuation method for secured lending purposes but may in appropriate circumstances provide a useful cross-check to help inform where other methods have been applied.

# 4 Valuer qualifications

**4.1** It is fundamental that DRC is recognised as a valuation to which the RB Global and UK national supplement apply, and not a solely mathematical cost estimation exercise in isolation from wider valuation principles and considerations. Each valuation must be prepared by, or under the supervision of, an appropriately qualified valuer – see RB Global PS 2 section 2.

**4.2** The valuer's task includes consideration of the key elements of a market transaction involving the specialised asset. The specialised knowledge required to properly undertake a DRC valuation includes:

- an understanding of the asset, its function and its environment
- knowledge of the specification that would be required for an equivalent asset in the current market, and the cost of acquiring or procuring that asset
- sufficient knowledge of the asset and its marketplace to determine the remaining physical and economic life of the asset and
- sufficient knowledge of the sector in question to assess functional, technical or economic obsolescence.

**4.3** Although a single valuer may not have all the knowledge or skills required, RB Global PS 2 section 2 paragraph 2.5 confirms that these can be met in aggregate by more than one valuer. RB Global PS 2 section 2 paragraph 2.6 requires that if the valuer proposes to employ another firm to provide valuation advice, as opposed to providing information to assist the valuer in preparing his or her own valuation, the instructing client's approval must be obtained.

# 5 Setting the client terms of engagement and discussions

**5.1** The discussion of the terms of engagement provides an essential link between the valuer and their instructing client that will help to establish whether the use of the DRC method is appropriate.

**5.2** RB Global VPS 1 sets out matters that must be addressed by the terms of engagement. In addition to these matters, the following points may need to be addressed:

- the type of property and how it is used
- classification of the asset for accounting purposes by the entity
- the entity's componentisation policy and
- the entity's position on modern equivalent asset (MEA) issues such as building size, site location and site size.

**5.3** If the asset is specialised it may be necessary to define what is to be included in the valuation. The identification of assets that are classified as part of the property interest and those that are classified as plant and equipment is often unclear in a specialised property. Many specialised assets comprise separately identifiable components, and the valuer will need to discuss with the entity whether it is appropriate to value these as separate items, or to what degree it would be appropriate to regard them as aggregated into a single asset, and valued accordingly. The entity's accounting policies may influence this decision.

**5.4** The valuer will need to establish with the reporting entity how the asset is used and confirm that there is ongoing demand for that use by the current owner or any other market participant for that same use. For a specialised property it may be necessary to establish the extent of the land occupied for the purposes of the specialised asset and distinguish this from any other land that is either associated with a non-specialised use that may be separately valued or which qualifies as being surplus.

**5.5** With specialised assets the valuer may have to place greater reliance on information provided by the entity, or its other advisers, than would be the case with more conventional assets. This information can include material about the cost, design features and performance of the asset. Since the asset is specialised it follows that detailed knowledge of these matters may be outside the knowledge and expertise that could normally be expected of a valuer in that sector.

**5.6** In determining the nature of the modern equivalent asset, it is therefore essential to seek and record the views of the entity, whose knowledge of the specialised features and requirements of the asset are likely to be greater than those of the valuer. It may be important to discuss and agree with their client if different the extent to which the valuer may rely on such information provided by the entity or, if further specialist input is to be obtained by the valuer, the source and cost of that further advice.

**5.7** It is important that the valuer also engages with the entity to discuss a range of other matters that are critical to the valuation process, including:

- the potential location of the modern equivalent asset
- factors that may impact on the remaining economic life and
- details of previous capital expenditure incurred on the replacement of different parts of the asset or otherwise on its improvement, refurbishment or reconstruction.

Details of proposed future capital expenditure may also be helpful, as may separate information on expenditure incurred on routine repair and maintenance.

**5.8** Where the valuer has not provided an earlier valuation it is recommended that information be sought from the entity as to the previous reported figures and any other relevant background information which may be available as to the details of the approach to the valuation previously adopted.

**5.9** It is essential that throughout the task the valuer maintains accurate and comprehensive records of all discussions with the instructing client and, if different, reporting entity, including their outcome and the reasons for the conclusions reached.

# 6 Assessing replacement cost

**6.1** The general principle is that the costs reflect those of a modern equivalent asset that offers an equivalent service potential to the actual asset. Although the actual or estimated cost of reproducing the actual asset may be relevant in this assessment if it represents the modern equivalent, there will be many cases, especially with old or obsolete assets, where this information requires careful review.

**6.2** The principle can be illustrated by considering the value of an item of machinery that is a few years old. If technological advancements mean that the same output can now be achieved with a smaller and more efficient machine, the actual machine would most likely not be replaced as is. The modern equivalent is defined by its comparative performance and output.

**6.3** In assessing the cost of the replacement asset, due account should be taken of all the costs that would be incurred by a potential buyer on the valuation date unless there is applicable direction to the contrary, such as the instant build (or 'overnight') concept as prescribed for much of the UK public sector. Examples of costs that may be expected to be incurred in replacing the asset include:

- delivery and transportation
- installation and commissioning
- any unrecoverable duties or taxes
- setting up costs, where appropriate, such as planning fees and site preparation works
- professional fees related to the project
- a contingency allowance, if appropriate and
- finance costs, taking into account the likely pattern of payment.

Where the instant build concept applies no provision is required for finance costs, there being no build period, nor for a contingency allowance, but valuers should be familiar with how such costs are accounted for in the relevant industry sector.

**6.4** When considering specialised property, the current gross replacement cost of the asset is assessed. This comprises the cost of replacing the land plus the cost of replacing the improvements to the land. For the latter, the approach is to assess the cost of their replacement with a modern equivalent and then make valuation depreciation adjustments to reflect the differences between it and the actual asset when compared with a modern equivalent. Once the gross replacement cost has been derived, the valuation depreciation factors are applied as a further and separate calculation.

**6.5** The asset being valued may take a considerable period, often years, to replace. In assessing the replacement cost of the modern equivalent asset, based on current prices, the prospect for cost fluctuation and related issues that may occur over such a prolonged period may be taken into account except where the instant build concept applies.

# 7 The site value of a specialised property

**7.1** Although the ultimate objective of the DRC method is to produce a valuation of the actual property in its actual location, the initial stage of estimating the gross replacement cost should reflect the cost of a site suitable for a modern equivalent facility. While this may be a site of a similar size and in a similar location to the actual site, if the actual site is clearly one that a prudent buyer would no longer consider appropriate because it would be commercially wasteful or would be an inappropriate use of resources, the modern equivalent site is assumed to have the appropriate characteristics to deliver the required service potential. The fundamental principle is that the hypothetical buyer for a modern equivalent asset would purchase the least expensive site that would realistically be suitable and appropriate for its proposed operations and the envisaged modern equivalent facility. How the actual site was obtained is irrelevant to the valuation. The valuer will need to discuss and agree with the entity the possible locations for the current defined service requirement.

**7.2** The property being valued may be located in a situation that would now be considered unnecessarily expensive. This may be due to changes in the way in which the service provided is delivered, or to changes in the market for the product it produces. An example could be a hospital that was originally constructed in the centre of a city that might now be better situated in the suburbs because of changes in the transport infrastructure or the migration of the population it served. Another example could be where a specialised industrial facility was originally located close to a source of raw materials that are now imported, thus rendering the original location irrelevant.

**7.3** Other factors need to be considered in addition to establishing the location of the modern equivalent site, for example the modern equivalent asset may not require a site as extensive as the actual site. In this respect land is no different to any other asset. If, for example, three hectares are now sufficient to provide the same service, the modern equivalent site will be three hectares, even if the actual site in operational use is five hectares. Unless there are areas of clearly identifiable vacant land at the actual site, no surplus land will be present to be valued.

**7.4** There may also be geographical limitations on where the modern equivalent site might be located, imposed by physical or practical considerations. For example, a specialist industrial operation may require a site located next or close to a dock if material has to be imported by sea. In the public sector, particular issues can arise with specialised property that provides a service to a defined local community, such as schools, libraries and health centres. One characteristic of such property is that the service requirement may be attached to a tightly defined geographical area, which places greater geographic constraint on the selection of alternative sites.

**7.5** Sites of specialised properties often include areas of vacant land. This may be held for possible future expansion or as a safety or security cordon. The valuer will need to enquire as to the purpose of any vacant land at the actual property in order to assess whether this would be a necessary feature of the notional replacement site. If not, it is not reflected in the DRC calculation. Where land is categorised as surplus, it is valued as a separate asset as required by accounting standards.

**7.6** Once the extent and location of the site that would be necessary to create the modern equivalent asset has been discussed and agreed with the entity, the next step is to estimate what it would cost to acquire that site in the market at the valuation date. Because many specialised properties will be sui generis uses under planning legislation, there can be practical difficulties in determining from what planning use it is appropriate to draw the sales comparison. In the case of a specialised industrial property, it would usually be appropriate to assume that land with an industrial planning consent (or where such permission could be anticipated) would provide the best comparable evidence.

**7.7** The valuer has to determine with what other uses a buyer for the hypothetical site would need to compete in the market in the chosen location. This would be the range of uses that prevail in the locality of the chosen location. This will mean competing against other users.

**7.8** Prevailing use involves the valuer in considering the mix of planning uses in the chosen locality, not just that with the highest value, and also having regard to the general philosophy of the Planning Authority for the particular area. Planning permission for the proposed hypothetical development of the site can be assumed. The overriding objective is for the valuer to establish the lowest amount that a prudent purchaser would pay to acquire a site for an equivalent development in a relevant location at the valuation date. If land could be made available by using statutory powers, this might indicate the appropriate approach to the valuation.

**7.9** A particular problem that arises with schools, within either the public or private sector, is when they have playing fields within the curtilage. This land will be considered separately from the land on which the buildings are constructed, as no prudent purchaser would buy land with consent for residential or commercial development for use as a playing field. The potential on the existing site is not relevant in the DRC calculation, as the purchaser of the equivalent asset would acquire land for which playing field use would be the only permitted form of development. There are many examples of schools, universities and private businesses that have their main facilities within a town, but have their associated playing fields in an out-of-town location that is outside the permitted development boundary.

**7.10** In some circumstances the actual site may be leasehold. The consideration of the land value will therefore reflect the terms of the existing lease.

**7.11** Incidental costs, such as fees and carrying costs, are restricted to those costs associated with the normal acquisition and development of land.

# 8 Calculating the cost of buildings and site improvements of a specialised property

**8.1** When valuing a specialised property, it is often difficult to distinguish between what may be classified as a building or structure and what may be classified as plant. In the specialised industrial sector, many structures effectively only provide support and weather protection for process plant – if the plant was removed, the 'building' would not exist. In such cases there should be discussion with the entity as to whether a distinction needs to be made between buildings and plant and, if so, what items fall under each heading.

**8.2** Because of the diverse nature of the buildings, structures and plant that may form part of a specialised property, the term 'site improvement' refers to all additions to the land. These are buildings, structures or some modifications to land of a permanent nature involving expenditures of labour and capital, and they are intended to enhance the value or utility of the property. Improvements have differing patterns of use and economic lives.

**8.3** Site improvements will include all site works associated with the development, including services, fencing, paving and any other items of a permanent nature that support the specialised use. The following paragraphs provide guidance on calculating the cost of buildings and site improvements. Although they refer specifically to buildings, the same principles apply to all improvements.

**8.4** In order to assess the cost of a modern equivalent building, the valuer needs first to establish with the entity the size and specification that the hypothetical buyer would ideally require at the valuation date in order to provide the same level of productive output or an equivalent service. The size required may be the same as the existing building but, particularly where the actual building is old, it may be the case that the modern equivalent building could be smaller yet still provide the same level of service. For example, a modern building will often be able to offer more efficient space, as it can provide open plan or clear span areas that have a greater capacity than an older building with fragmented accommodation and a poor net to gross floor area.

**8.5** Having established the size of the modern equivalent to be costed, the valuer may need to determine with the entity an appropriate specification for the building that would deliver the same economic service potential. It cannot be assumed that this would be the same as the actual building, especially if it is not new. The design and construction of a modern equivalent may differ from the existing building because features of the latter are now unsuitable or just irrelevant for the needs of the entity. In other cases, the existing materials may still be suitable but are simply unavailable, or only available at a cost that would be uneconomic. Care has to be taken to consider the service that is being provided within the building, and to price for a specification that would be compatible with the service potential of the subject building.

**8.6** For example, the specification that would be appropriate for a high security government department (for example, a defence weapons establishment) will be different from that appropriate for a specialised, but not security-sensitive, use. Similarly, the specification required for a general care, private sector hospital will be different from that for a specialised, high-dependency unit within public sector provision.

## Historic buildings

**8.7** Historic buildings can present particular valuation difficulties. The principle that the cost is based on a modern equivalent asset still applies, but there may be situations where the only way that a replacement asset could provide equivalent service potential would be if it reproduced the actual building. However, reproduction will be very rare. In most cases the fact that the entity currently occupies a historic building is incidental to the service provided and would be totally irrelevant when specifying a modern equivalent.

**8.8** Only where the historic nature of the building itself creates an intrinsic part of the benefit or service potential of the asset would it be correct to reflect the cost of reproducing the actual asset in the cost of the modern equivalent. An example could be an art gallery housed in a building that itself is as important as the exhibits it contains in attracting visitors. Another example provided in International Public Sector Accounting Standard 17 (IPSAS 17, *Property, Plant, and Equipment,* paragraph 47) published by the International Accounting Standards Board (IASB), is of a parliament building that may be reproduced rather than replaced with an alternative because of its significance to the community. In cases where it would not be possible to reproduce the actual building, it may be appropriate to assess the cost of constructing a building with a similarly distinctive design and high specification.

**8.9** Some historic or heritage assets may be impossible to replace because a modern reproduction could never recreate the historic significance of the asset. The decision of whether a historic asset is to be capitalised is a matter for the reporting entity, although the valuer may be asked to comment upon the practicability or otherwise of valuing the asset.

## Sources of cost information

**8.10** Having determined the nature, size and specification of the modern equivalent building and all other necessary improvements, the cost of providing these may be

assessed by reference to published building cost data. However, published construction price data may be of limited assistance where the replacement building or structure is highly specialised. Instead, the valuer may have to rely on actual costs involved in the creation of the current asset, or discuss with their instructing client the need to conduct external cost research and/or commission specialist cost advice.

**8.11** If the valuer has access to the actual costs incurred in constructing the asset, those costs may need adjusting to reflect differences between these costs and those that would be incurred in constructing the modern equivalent.

**8.12** The most obvious of these differences is the date on which the price is fixed. The cost of the modern equivalent will reflect the cost that would be incurred if the works were commissioned on the valuation date. Various cost indices are published for construction and engineering work that show typical historic price fluctuations, and they can be used to adjust historic cost data to the valuation date. However, as such indices are based on a historical cost amount, they may not reflect the cost of replacing a particular asset's service capacity using modern technology and materials, particularly if the original cost being indexed is historic. Indices should be used with caution in the absence of a direct replacement cost estimate, particularly if, in the interim, technology or other factors influencing the asset has resulted in the modern equivalent asset being different to that being indexed.

**8.13** Other factors that may result in the cost of creating the actual asset to differ from that of a notional replacement include:

- **Site preparation:** work may have been undertaken to prepare the actual site for development that would not be necessary for the assumed equivalent site. For example, costs actually incurred in levelling a site or providing services to the site boundary may already be reflected in the cost of acquiring an equivalent site in the market if the available evidence was for level, serviced land.
- **Phasing of work:** a large site may have been developed in phases, whereas the cost of the modern equivalent reflects the cost that would be incurred in replacing the whole asset at the valuation date let as a single contract. This could create economies of scale and reduce contract overheads, for example, on preliminaries work.
- **Optimal working conditions:** if the cost of the equivalent site is based on a site that is assumed to be free of any difficulties or constraints on development, any additional costs incurred because of abnormal conditions on the actual site are ignored.
- **Contract variations:** any additional costs incurred in constructing the actual building caused by design or specification changes during the progress of the contract are ignored.
- **Planning changes:** when the actual asset was constructed it may have had deemed planning consent. As the planning legislation has changed, the cost of obtaining consent for a modern equivalent may need to be taken into account.

Two other related factors are the additional cost of footings for heavy machinery (where specialised plant and equipment is required) and additional costs arising from extending an existing property.

**8.14** Incidental costs, such as fees and carrying costs, are to be restricted to those costs associated with the assumed procurement of the building. Allowance for VAT is made only where this is an irrecoverable cost. Although it would not normally be appropriate to make an addition to the cost to reflect developer's profit (because the purchaser is deemed to be procuring the building for owner occupation), it may be appropriate to add for management time if this were a significant cost that would be incurred in constructing a modern equivalent.

**8.15** The entity may require the valuer to provide an estimate of the cost of components within the actual building for depreciation accounting as part of the valuation instruction. These costs are not to be confused with the cost of creating an equivalent component in the modern equivalent building, but are intended to reflect a realistic allocation of the end value attributed to the building in exactly the same way as if the asset had been valued using a sales comparison or income method.

# 9 Assessing valuation depreciation

**9.1** Having established the replacement cost of a modern equivalent asset, it is then necessary to adjust or depreciate all costs incurred to provide the modern equivalent asset to reflect differences between this modern equivalent and the actual asset being valued. The underlying principle is that the hypothetical buyer has the option of procuring either the modern equivalent or the actual asset. If the modern equivalent provides the ideal facility for the buyer, the price paid for the actual asset is expected to reflect all the disadvantages that it suffers in comparison.

**9.2** Applying valuation depreciation is primarily a process of replicating how the market would view the asset. Depreciation rates and estimates of the future economic life of an asset are influenced by market trends and/or the entity's intentions. It is recommended that the valuer identify these trends and intentions, and be capable of using them to support the depreciation rates applied. The application of DRC should replicate the deductive process of a potential buyer with a limited market for reference.

**9.3** Three principal types of depreciation allowance, or obsolescence, may be identified as:

a. physical deterioration
b. functional obsolescence and
c. economic obsolescence.

## Physical deterioration

**9.4** Physical deterioration is the result of wear and tear over the years, which may be combined with a lack of maintenance. The valuer compares the decline in value of an asset of a similar age with the value of new assets in the same market.

**9.5** The asset is valued in its existing condition, with the valuer fully taking into account any physical deterioration arising from a lack of maintenance or other causes, and the recognition that a lack of adequate maintenance can accelerate the rate of depreciation. Thus, depreciation caused by inadequate maintenance is to be reflected in the allowance made, just as a deduction for disrepair would be made from a valuation based on sales comparison. Physical deterioration is frequently measured by reference to the anticipated physical life of the asset, having regard to the differing rates at which its constituent parts will wear out.

**9.6** Although an assumption of routine repair and maintenance into the future is allowed, an assumption cannot be made that components or elements of the asset will be replaced or refurbished in the future.

**9.7** The physical deterioration of the asset is to be viewed not in absolute terms, but within context. In some markets and for some types of asset, a degree of physical deterioration will not adversely affect the value, while in other cases it will. It would be inappropriate to determine the effect of physical deterioration on valuation depreciation only in purely mechanistic terms.

## Functional obsolescence

**9.8** Functional obsolescence arises where the design or specification of the asset no longer fulfils the function for which it was originally designed. An example would be a building that was designed with specific features to accommodate a process that is no longer carried out. In some cases functional obsolescence is absolute, i.e. the asset is no longer fit for purpose. In other cases the asset will still be capable of use, but at a lower level of efficiency than the modern equivalent, or may be capable of modification to bring it up to a current specification. The depreciation adjustment will reflect either the cost of upgrading or, if this is not possible, the financial consequences of the reduced efficiency compared with the modern equivalent.

**9.9** Functional obsolescence may also arise because of advances in technology. A machine may be capable of replacement with a smaller, cheaper equivalent that provides a similar output, or a modern building may be more efficient because of superior insulation and modern services.

**9.10** The modern equivalent asset may be cheaper to recreate than the current asset, and so the replacement cost already reflects that of an 'optimised' asset, thus making further adjustment under this heading unnecessary. An example would be where the modern equivalent reflects a smaller building because there is no need for it to reflect historic or redundant features that exist in the actual building. Further depreciation to account for these features would be double counting.

**9.11** There will be situations where the asset being valued is too small, as technological advances now make it possible to achieve economies of scale. An example would be an aircraft terminal, designed to cater for a maximum number of passengers per plane, which is now too small to handle larger modern planes.

**9.12** Another cause of functional obsolescence is legislative change. In the industrial sector an existing plant may be incapable of meeting current environmental regulations, or in some cases the product it was built to produce is now illegal. In the service sector, the need for occupiers to comply with current regulations on health and safety or disabled access may also give rise to differing degrees of functional obsolescence.

## Economic obsolescence

**9.13** This arises from the impact of changing economic conditions on the demand for goods or services produced by the asset. However, care has to be taken to distinguish

these factors that are due to economic conditions, from factors that are specific to the entity. Any writing down of a valuation derived solely from the DRC method to reflect the profitability of the business is a matter for the occupier at the accounting stage after receipt of the valuation.

**9.14** A common example of economic obsolescence is where over-capacity in a particular market reduces the demand and therefore value for the actual asset, regardless of how modern or efficient it may be. In the industrial sector, falling commodity prices have seen periods when excess market capacity has made the production of commodities such as oil or steel uneconomic. During such periods, this would have had a significant impact on the demand, and therefore on the value, of specialised facilities used to produce these products. In these particular examples, the cyclical nature of the markets might mean that a purchaser may be willing to buy and hold the facility in anticipation of a return to profitability, but the price would need to reflect the risks involved. It is recommended that when considering economic obsolescence the valuer consult with the entity in order to identify their expectation of future service potential in the light of these issues.

## Measuring obsolescence

**9.15** The three principal categories of obsolescence identified are not the only reasons why it may be necessary to adjust the cost of the modern equivalent asset in order to establish the value of the actual asset. Depreciation rates may be all encompassing or analysed separately. The three main categories simply illustrate common reasons for the actual asset being worth less than the modern equivalent. Frequently it will not be possible to identify a separate adjustment under each category; in other cases, the distinction between the categories may be blurred. It is important to ensure that separate consideration of depreciation under each heading does not result in double counting.

**9.16** There will be cases where obsolescence is total. Examples include:

- **Physical obsolescence:** if the cost of repairing, reconditioning or refurbishing the actual asset to render it useable has exceeded the cost of a modern equivalent, the asset would have no value.
- **Functional obsolescence:** the introduction of new technology may render obsolete a relatively new asset with an otherwise long anticipated life, with the result that there would be no demand for it other than any value for salvage or an alternative use.
- **Economic obsolescence:** if demand for the product or service provided by the asset has collapsed and is not expected to recover, there would be no demand for the asset other than for any salvage value or alternative use.

**9.17** Total obsolescence is often clear from the outset of the instruction, and the asset in question is classified accordingly as surplus or redundant by the entity. However, if the valuer concludes that an asset is completely obsolete during the course of the valuation exercise, this matter should be discussed with the entity before proceeding, as reclassification as surplus will indicate that a different approach to the valuation is required.

**9.18** The DRC method is therefore used where obsolescence is not total. Where there is partial obsolescence the actual asset will not be in the same condition, as efficient or as technically advanced as a modern equivalent, but it will still have a remaining life and will therefore have a value for that use. Assessing the appropriate remaining life of the asset is therefore usually an important aspect of the DRC method.

## Remaining economic life

**9.19** A key step in the estimation of valuation depreciation to reflect obsolescence is the assessment of the lifespan and anticipated remaining life that is attributable to the asset being valued, having regard to the impact of its different constituent parts, this then being applied to the modern equivalent asset that has been selected.

**9.20** For valuation depreciation purposes, lifespan and remaining economic life are assessed on the basis of the lower of the physical life or the economic life, although these will often coincide. Remaining life may additionally be impacted by any functional obsolescence that is present. Physical life is how long the asset, having regard to its constituent parts, could be used for any purpose by a succession of owners including the current entity, ignoring the impact of any potential replacement of parts, refurbishment or reconstruction. Economic life is how long a succession of owners including the current entity could derive economic benefit from using the asset for its designed purpose, having regard to its constituent parts and ignoring the impact of any potential replacement of parts, refurbishment or reconstruction. An asset that is expected to have a remaining life of 20 years will be worth a higher percentage of a new replacement than one with an expected remaining life of 5 years.

**9.21** It is recommended the valuer takes into account any guidance that exists regarding the economic lifespan of assets and their constituent parts produced by other specialists in the industry.

## Lifespan

**9.22** When assessing the target lifespan of an asset, it is important to take into account that the asset comprises many different parts, each with their own lifespan, some of which will be much shorter than the period over which the asset may be used for service delivery. The impact of capital expenditure on replacing parts whose economic service delivery potential has been exhausted cannot be reflected until that expenditure occurs. The projected lifespan of an asset when new is therefore not the lifespan of the asset's longest life part nor the period over which the entity intends to remain in occupation delivering services from it but rather should reflect the varying lifespans of the in situ constituent parts. Approximation or other techniques, such as weighting the impact of the lifespans of different parts by value, will be necessary to arrive at a lifespan for the overall asset that faithfully reflects the varied individual lives of the asset's parts.

## Remaining life

**9.23** The remaining economic life of the asset (and its pattern of valuation depreciation) determined as part of the DRC valuation is not the same as the estimate of the remaining 'useful life', the latter being determined by the reporting entity for depreciation accounting as discussed in RB UK VPGA 1.10.

**9.24** However, similar principles apply when assessing the initial lifespan and remaining life for both valuation depreciation and accounting depreciation purposes in so far as for both purposes the possibility of materially extending the life of the asset by significant refurbishment or the replacement of components should be disregarded. It can be assumed that routine servicing and repairs are undertaken.

**9.25** For some classes of asset a regular pattern of depreciation can be determined over the whole life of an asset, although the value will reflect the remaining life available of the constituent parts in situ at the valuation date. Where this is the case, the percentage of the current replacement cost remaining at the valuation date may be estimated using a 'straight-line', 'reducing balance' or an 'S-curve' method. These are described in the following paragraphs.

**9.26** It will be helpful to discuss with the entity how it deals with accounting depreciation in its financial statements and explain the valuer's approach to valuation depreciation.

**9.27** It is logical that the remaining economic life set against the assessment of lifespan which has determined the valuation depreciation should also act as a cap on the useful life used for accounting depreciation purposes. These remaining life periods will often coincide unless, for instance, the entity has early closure plans. For example, if a remaining life of 25 years has been assessed for the valuation this assumes, all other things being equal, that the asset will decline in value at the rate of 4 per cent per annum over the next 25 years – assuming a straight-line depreciation concept is used. That being the case, it is logical to adopt depreciation for accounting purposes at the rate of 4 per cent per annum.

## Straight-line

**9.28** The straight-line basis tends to be the most commonly adopted method for calculating depreciation of buildings because of its simplicity and relative ease of application. Straight-line depreciation assumes the same amount is allocated for depreciation for each year of the estimated life.

**9.29** The weakness of this method is the very simplistic assumption of the uniform erosion of the asset's value over its total life, compared with the equivalent replacement asset. The assumption is clearly correct at two points in the life – the beginning and the end – but it would be entirely fortuitous if it were correct at any intermediate point, which is when a valuation is most likely to take place. However, this effect may be mitigated by frequent valuations.

## Reducing balance

**9.30** The reducing balance method of depreciation assumes a constant percentage rate of depreciation from the reducing base. The reduction of the balance at the end of each period by a fixed proportion of itself creates a sagging depreciating value curve over the life of the asset. This method effectively 'compounds' the total depreciation. This may match reasonable expectations of declining value over time better than the straight-line method.

## S-curve

**9.31** The S-curve is recommended where sufficient data is available for the valuer to be confident that the curve represents the likely reality. In some cases it presents the most realistic representation of an asset's depreciation by assuming that depreciation is at a low rate in the early years, then accelerates in the middle years and reduces again in the final years. However, some assets, such as plant, may have a different depreciation pattern (high at first rather than low).

**9.32** Although it is normally accepted that the S-curve realistically represents the pattern of depreciation over the life of most assets, the percentage for any given year will depend on decisions made as to the rates of depreciation at different times and when these change. In the absence of empirical evidence in support of these inputs, the exact pattern of the curve may depend on subjective inputs and may be no more relevant than the other methods discussed.

**9.33** Figure 1 compares the patterns of each of the methods where it is assumed that an asset has an original cost of £100,000, which reduces to a value of £1,000 over 20 years. Two types of S-curve are shown to illustrate the possible range of differences, as it is recognised that the pattern of depreciation will differ between, for example, buildings and plant and equipment.

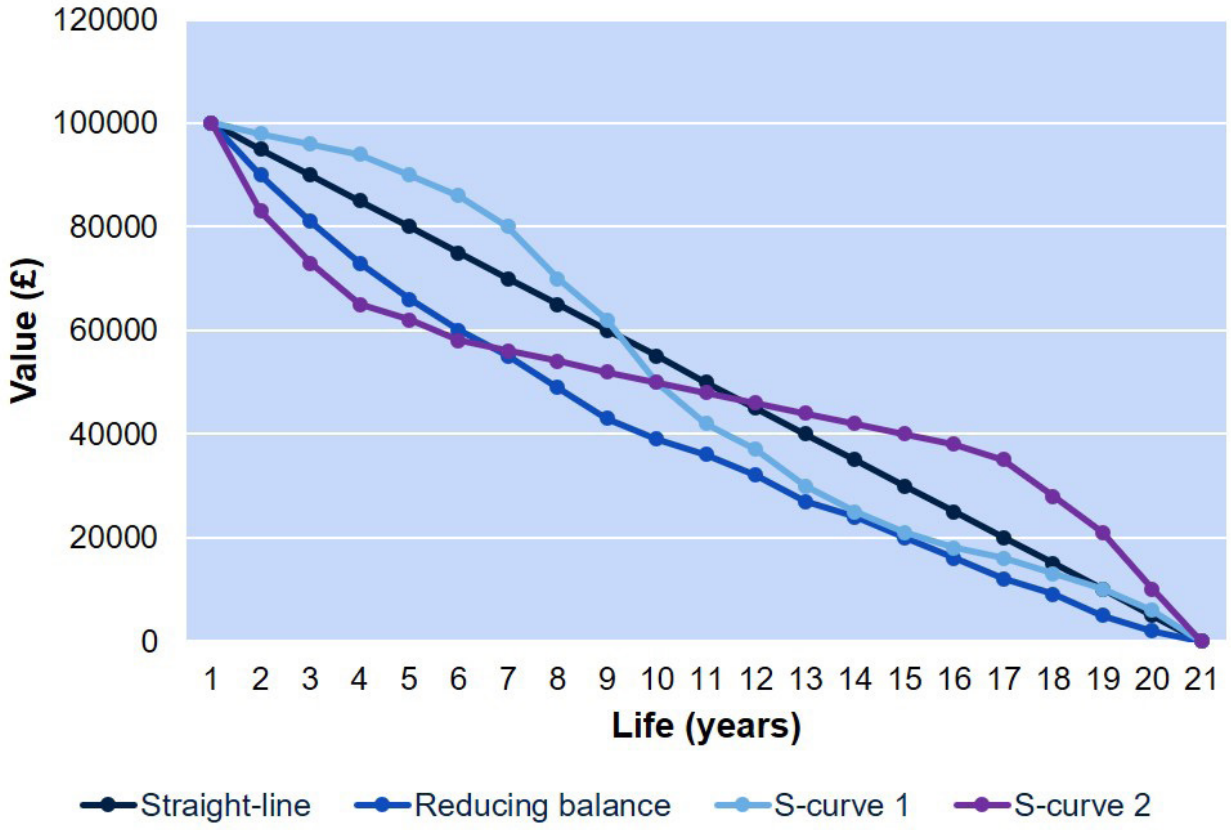


**Figure 1: Comparison of depreciation methods**

**9.34** The three methods outlined are all in common use. Of these, the straight-line approach has the advantage of simplicity. However, it does not represent the way in which asset values are normally reflected in the marketplace. The reducing balance method may also be open to similar criticism that it does not reflect market perceptions. The S-curve attempts a surrogate for market behaviour and is appropriate where there is empirical evidence available.

**9.35** Other forms of depreciation curves are available, and where they are used by a particular market the valuer is expected to reflect them. In making adjustments for depreciation and obsolescence the valuer is advised to rely on professional knowledge, judgement and market experience, and to take due account of the nature of the asset and the type of use to which it is put.

# 10 Other considerations

**10.1** It is not normally appropriate to make any deduction for depreciation from the cost of acquiring a modern equivalent site in the market, because freehold land rarely depreciates. When valuing specialised property, the normal practice is to assess the cost of the improvements separately, assess the appropriate valuation depreciation and then add this to the cost of replacing the land in order to arrive at the final valuation.

**10.2** Where a multi-block site comprises more than one specialised building, each building will have its own remaining life (reflecting the lesser of their respective physical or remaining economic lives) except in the rare circumstances of there being a strong interdependency such as potentially in the case of an oil refinery.

**10.3** It is recommended that the valuer engages with the entity on this aspect as it is possible that although a complex may contain a small number of assets of more recent construction than the remainder, these would be demolished much sooner than their normal remaining life if the remainder of the complex is likely to be redeveloped as a whole much sooner. This aspect is likely to be determined by the substance and location of the assets concerned within the complex.

**10.4** There will be situations where the valuer can readily identify that the site of a specialised property could be redeveloped for an alternative, and more valuable, use if the current use was to be discontinued. In assessing the cost of the equivalent replacement site as part of the DRC calculation, this potential has to be disregarded.

# 11 Final reconciliation

**11.1** The DRC calculation usually involves the consideration of many separate elements, and an essential final step is for the valuer to ensure that the resulting valuation conclusion is consistent with the underlying valuation objective – that is, to establish the price that would be paid in an exchange between a willing seller and willing buyer in an arm's length transaction.

**11.2** The valuer is advised to 'stand back and look' at the overall conclusion, taking particular care to check that the process of adjusting for valuation depreciation has not resulted in any factor being either double counted or ignored. An attribute of the actual asset may be identified that has not been reflected in the process of depreciating by comparison with the hypothetical modern equivalent. In the case of a specialised property this could include an adjustment for any additional value in the land in its current location, which could lead to a buyer of the specialised facility for its continued use to bid more for this property than it would for a modern equivalent with no such potential.

# 12 Reporting

**12.1** The report must comply with RB Global VPS 3. The matters that must be covered in all valuation reports are listed in VPS 3 section 2, while RB UK VPGA 1.5 imposes additional requirements when the DRC method is used. A summary is given in the following paragraphs.

**12.2** A statement that the DRC method has been used is necessary (see RB Global VPS 3 section 2 paragraph 2.2 (l)). If the valuation is being undertaken for inclusion in accounts prepared under International Financial Reporting Standards (IFRS) or UK Generally Accepted Accounting Principles (UK GAAP), the value is reported as being on the basis of fair value (or current value where that is the basis applicable to parts of the UK public sector). However, in order to comply with RB Global VPS 3 section 2 paragraph 2.2 (l), a statement is required explaining that because of the specialised nature of property, the value is estimated using a DRC method and is not based on the evidence of sales of similar assets in the market. This statement matches a requirement in International Accounting Standards (IAS) 16 and Financial Reporting Standard (FRS) 102 for the reporting entity to include a similar statement in the published accounts.

**12.3** For assets held in the private sector, to comply with RB UK VPGA 1.5 a statement that the valuation is subject to the adequate profitability of the business paying due regard to the total assets employed must be included. This issue should be agreed at engagement stage, and may require liaison with auditors and/or other professionals.

**12.4** For assets held in the public sector, to comply with RB UK VPGA 1.5 a statement that the valuation is subject to the prospect and viability of the continued occupation and use should be included. If the valuer was readily able to identify that the asset has a higher value for an alternative use, then in addition to providing the current value of the asset for public sector financial reporting purposes, the valuer should additionally, for information purposes only, also provide that higher alternative use figure, together with a statement that the value for alternative use takes no account of matters such as business closure or disruption and any associated costs that would be incurred. This is most likely to arise in connection with a specialised property, where the land may have a higher value for redevelopment than the DRC value.

**12.5** Alternatively, if the valuer considers that the value of the asset would be materially lower if the business ceased, the report must also contain a statement to this effect (see RB UK VPGA 1.5). The valuation standards do not require the valuer to provide an actual figure for this purpose. If the instructing client wishes to establish the impact of possible closure of a specialised facility on the value of the assets employed, it may commission valuations to reflect the 'break-up', salvage or alternative use value of the asset. This would be a separate exercise and not part of the DRC valuation for inclusion in the financial statements. Any valuations provided would need to be on the special assumption that the entity had ceased operations (see RB Global VPS 4 section 9).

# 13 Checklist

This checklist is intended to provide the valuer with a simple way of confirming that all the matters discussed in this guidance note have been considered.

Where large numbers of properties are to be valued it may be helpful for a separate list and a schedule to be prepared for groups of properties. The schedule could indicate against each entry the matters that have been discussed and agreed. It may be helpful to attach such a schedule to the report so that any reader will be fully aware of the approach to the valuation taken. This will also help ensure that consistency is achieved when a revaluation is undertaken.

| | Item for consideration | Ref in GN | Comments |
|---|---|---|---|
| 1 | Appropriate to use DRC | 3.1 – 3.8 | |
| 2 | Valuer qualifications | 4.1 – 4.3 | |
| 3 | Client terms and discussions | 5.1 – 5.9 | |
| 4 | Assessing replacement cost | 6.1 – 6.5 | |
| 5 | Site value | 7.1 – 7.11 | |
| 6 | Building size and costs | 8.1 – 8.6 | |
| 7 | Consideration of historic buildings | 8.7 – 8.9 | |
| 8 | Sources of cost information | 8.10 – 8.15 | |
| 9 | Assessing valuation depreciation | 9.1 – 9.3 | |
| | a. Physical deterioration | 9.4 – 9.7 | |
| | b. Functional or technical obsolescence | 9.8 – 9.12 | |
| | c. Economic obsolescence | 9.13 – 9.14 | |
| | d. Measuring obsolescence | 9.15 – 9.18 | |
| | e. Remaining life considerations | 9.19 – 9.27 | |
| 10 | Depreciation method | | |
| | a. Straight-line | 9.28 – 9.29 | |
| | b. Reducing balance | 9.30 | |
| | c. S-curve | 9.31 – 9.35 | |
| 11 | Other considerations | 10.1 – 10.4 | |
| 12 | Final reconciliation | 11.1 – 11.2 | |
| 13 | Reporting | 12.1 – 12.5 | |
| | a. All items under RB VPS 3.2 | | |
| | b. Statement that DRC used | | |
| | c. RB UK VPGA 1.5, 3 to 7 (private sector) | | |
| | d. RB UK VPGA 1.5, 8 to 9 (public sector) | | |
| | e. RBUK VPGA 1.5, 10 to 17 (alternative values) | | |

Ensure file contains all relevant information on the decisions taken during the DRC process.

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