

## Discussion Document

### The Depreciated Replacement Cost method of valuation (DRC)

Strict adherence to International Valuation Standards is essential for determining market value

March 2023

#### Author:

Kenneth Ray Davies  
B.COMM., MBL., FIV(SA), MDP. (UNISA).  
Registered Professional Valuer (2051/4)  
[daviesk@global.co.za](mailto:daviesk@global.co.za)  
083 327 4405

#### Index

	<u>Pages</u>
References	i-ii
Important Notes	ii
Relevant Definitions	ii-iii
Key Points	iii-iv
1.0 Introduction and problem statement	1-2
2.0 The modern equivalent asset (MEA)	2-4
3.0 Identifying and quantifying economic obsolescence	4-7
4.0 Applying the test of adequate profitability	7-9
5.0 Concluding remarks	9-10
Annexure 1: Assessing functional obsolescence	11-13

#### References:

##### **1. International Valuation Standards Seventh Edition 2005**

**1.1** International Valuation Guidance Note No. 8 (GN8)  
The Cost approach for Financial Reporting (DRC) Revised 2005  
**1.2** International Valuation Guidance Note No. 12  
Valuation of Specialised Trading Property (STP)

##### **2. RICS Valuation Standards**

###### **Global and UK – May 2011. IVS Compliant**

**2.1** GN6 Depreciated Replacement Cost method of valuation for financial reporting (GN6)

##### **3. Technical Information Paper 2**

The Cost Approach for Tangible Assets 2012 International Valuation Standards Council (TIP 2)

##### **4. International Valuation Standards 2013**

IVS 310 Valuation of Real Property Interests for Secured Lending

##### **5. Australian Property Institute and Property Institute of New Zealand Technical Information Paper**

## **Market Value Of Property, Plant And Equipment In A Business.**

Reference ANZVTIP 2 Effective 1 July 2015

### **6. International Valuation Standards (IVS) Effective 31 January 2022**

#### **7. The Appraisal of Real Estate: Eighth Edition**

American Institute of Real Estate Appraisers

#### **Important Notes:**

Although GN8 is headed “The Cost Approach for Financial Reporting – (DRC)”, the basis of valuation is market value.

Likewise, RICS GN6 para. 2.2, p.103 states “This guidance note focuses on the use of DRC to derive market value. When used to assess market value, the objective is to establish the price that would be paid between a willing buyer and a willing seller acting at arm’s length”.

Any doubt that DRC properly applied can be used to establish market value was removed with the adoption of Technical Information Paper 2, under Bases of Value para. 9, p.2 “The cost approach can be used to give an indication of value on a variety of bases. If the purpose of the valuation requires a market basis, such as market value or fair value for financial reporting purposes, the application of the cost approach should replicate the deductive process of a typical market participant”.

#### **Relevant Definitions**

##### **International Valuation Standards Seventh Edition 2005**

**Market Value:** The estimated amount which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm’s-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently, and without compulsion. para. 5.2, p.27.

##### **IVS 7<sup>th</sup> Edition GN8**

**Depreciated Replacement Cost:** The current cost of reproduction or replacement of an asset less deductions for physical deterioration and all relevant forms of obsolescence and optimisation. para. 3.1, p.237.

**Modern Equivalent Asset (MEA):** A structure similar to an existing structure and having equivalent productive capacity, which could be built using modern materials, techniques, and designs. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset. para. 3.6, p.238.

**Adequate Profitability:** When an asset has been valued by reference to depreciated replacement cost, adequate profitability is the test that the entity should apply to ensure that it is able to support the depreciated replacement cost conclusion. para. 3.4, p.238.

**Optimisation:** The process by which the least cost replacement option is determined for the remaining service potential of an asset. It is a process of adjustments reducing the replacement cost to reflect that an asset may be technically obsolescent or over-engineered, or an asset may have greater capacity than that required. Hence optimisation minimises rather than maximises, a resulting valuation where

alternative lower cost replacement options are available. In determining the depreciated replacement cost, optimisation is applied for obsolescence and relevant surplus capacity. Para. 3.8, p.238.

### **Technical Information Paper 2 (2012):**

**Depreciated Replacement Cost Method:** A method under the cost approach which indicates value by calculating the current replacement cost of an asset less deductions for physical deterioration and all relevant forms of obsolescence p.1.

**Replacement Cost:** The current cost of a similar asset offering equivalent utility p.2.

**Reproduction Cost:** The current cost of recreating a replica of the asset p.2.

**Modern Equivalent Asset:** An asset which provides similar function and utility to the asset being valued, but which is of current design and constructed or made using current materials and techniques p.2.

**Utility:** An expression of the degree of an asset's usefulness p.2 (The Concise Oxford Dictionary defines utility as the condition of being useful or profitable).

**Functional Obsolescence:** A loss of utility resulting from inefficiencies in the subject asset compared to its replacement that results in a loss of value p.2.

**Bases of Value:** **The cost approach can be used to give an indication of value on a variety of bases. If the purpose of the valuation requires a market basis, such as market value or fair value for financial reporting purposes, the application of the cost approach should replicate the deductive process of a typical market participant. p.2.**

### **IVS 2022**

#### **140. Premise of Value – Highest and Best Use**

**140.1** Highest and best use is the use, from a participant perspective, that would produce the highest value for an asset. p.28

### **Key Points**

#### **I Modern Equivalent Asset**

**In order to assess the cost of a modern equivalent building, the valuer needs to establish the size and specifications that the buyer would ideally require at the date of valuation in order to provide the same level of productive output or equivalent service. If the actual building is old, it will usually be the case that a new building could be smaller and 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 poor net to gross floor area.** RICS GN6 para. 8.4, p.110.

Either the replacement cost or reproduction cost of an asset can be used as the starting input. **In theory however, the replacement cost is the cost that is relevant to determining the price that a market participant would pay as it is based on replicating the utility of the asset. It is the utility, or functionality, of an asset that normally determines economic value, not the physical properties.** TIPS 2 (2012), p.4.

**In practice there may be significant differences in size, in one instance estimated to be 50% smaller than the current buildings. If the starting point of the cost exercise is significantly overstated, it follows that the cost and hence “value”, applying the cost approach/DRC method, will also likely be proportionately overstated.**

## **II Economic Obsolescence**

**Economic obsolescence resulting from external influences may affect the value of the asset.** External factors may include changed economic conditions, which affect the demand for goods and services and the **profitability** of the business entities. IVS 7<sup>th</sup> Edition GN8 para. 5.4.5, p.240.

A valuation that reflects the impact on value of all forms of obsolescence (including economic obsolescence) will result in an opinion of market value. **By implication therefore a valuation that does not consider and reflect economic obsolescence or service potential will not result in an opinion that represents market value until such tests have been completed.** ANZV TIP 2 (2015), p.10.

## **III The Test of Adequate Profitability**

**In reporting the Market Value, the Valuer shall disclose that the method used is depreciated replacement cost and that the value can only be adopted in the accounts of the entity if the relevant test of either adequate profitability or service potential is applied and met.** IVS 7<sup>th</sup> Edition GN8 para. 5.12.2, p.242.

**For assets held in the private sector to comply with VS 6.5, 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.** RICS GN6 para. 12.3, p.118.

**Economic obsolescence may be observed for some assets (predominantly real estate) by considering whether the business could afford to pay a market rent and still return a profit.** ANZV TIP2 (2015) para 4.2.3 (d), p.8.

When assessing market value under the cost approach, assessing the impact of economic obsolescence has traditionally been the responsibility of the entity’s directors or auditors. **However, given the requirements of IVSC TIP2, members should seek to address economic obsolescence rather than reporting a value subject to the test of adequate profitability being completed by others.** IVSC TIP2 provides guidance on how economic obsolescence can be addressed. ANZ TIP2 (2015) p.10.

**Note:** The valuer has been appointed to assess the market value. It is the valuer’s valuation, not that of the auditors or the entity, and in many instances it will be possible for the valuer to apply the test without difficulty. It is however recommended that in complex valuations, the test be undertaken in consultation with the entity and its auditors, or if necessary, an independent accountant. In all circumstances, the valuer, at the very least must be part of the process of carrying out the test of adequate profitability, and be satisfied with the result before certifying the value as market value.

## The Depreciated Replacement Cost method of valuation (DRC)

### Strict adherence to International Valuation Standards is essential for determining market value

#### 1.0 Introduction and Problem Statement

##### 1.1 Introduction

In June 2005 at the South African Institute of Valuers National Executive Meeting, the 7<sup>th</sup> Edition of International Valuation Standards (2005) were adopted as the standards of the South African Institute of Valuers.

In the introduction to this seventh edition, John Edge, Chairman International Valuation Standards Committee, stated the following:

- This is perhaps the most important edition of the IVS to be published to date.
- The International Valuation Standards Committee (IVSC) is the leading international authority on valuation methods to be adopted in relation to IFRS.
- Valuation for financial reporting purposes is only one area covered by International Valuation Standards. The IVSC has followed the development of the new Basel Accord (Basel II), by the Basel Committee for Banking Supervision.
- It is not surprising that the Basel Committee stresses the adoption of internationally accepted valuation standards in the published guidance for national supervisors planning the transition to Basel II.

Fast forwarding to International Valuation Standards IVS, effective 31 January 2022, under “Introduction”: “The International Valuation Standards Council (IVSC) is an independent not-for-profit organisation committed to advancing quality in the valuation profession. Our primary objective is to build confidence and public trust in valuation by producing standards and securing their universal adoption and implementation for the valuation of assets across the world. We believe that International Valuation Standards (IVS) are a fundamental part of the financial system, along with high levels of professionalism in applying them”. p.1.

Further, under “**Framework**”, we note “**Compliance with Standards**”.

**10.1** When a statement is made that a valuation will be, or has been, undertaken in accordance with the IVS, it is implicit that the valuation has been prepared in accordance with all relevant standards issued by the IVSC.

**10.2** In order for a valuation to be compliant with IVS the valuer must comply with all the requirements contained within IVS.

**10.3** A valuer can only depart from International Valuation Standards (IVS) as described in section 60 of this Framework.

## 60. Departures

**60.1** A “departure” is a circumstance where specific legislature, regulatory or other authoritative requirements must be followed that differ from some of the requirements within IVS.

### 1.2 Problem Statement

Non-adherence to International Valuation Standards, either wholly or in part, has led to vastly differing values of the same property when applying different approaches to the valuation. It is particularly evident that application of the cost approach/DRC often yields extremely high and unrealistic values compared with values determined by applying the income and market approaches.

**This discussion document examines three principle reasons as to why DRC value estimates are so often unrealistically high, and which can be attributed to valuers, not:**

1. Establishing the cost of the Modern Equivalent Asset (MEA)
2. Identifying and qualifying economic obsolescence
3. Applying the Test of Adequate Profitability

Guidance on 1-3 above are to be found in the 7<sup>th</sup> Edition International Valuation Guidance Note No.8: The Cost Approach for Financial Reporting – (DRC) (Revised 2005) – Effective date 31 January 2005.

**Note:** “The three principal elements of International Valuation Standards, i.e. the standards, application and guidance notes, have equal weight, and all valuations prepared in compliance with IVS must conform to the principles and procedures elaborated throughout the entire document”. IVS 7<sup>th</sup> Edition, p.13.

## 2.0 Costing the Modern Equivalent Asset

### 2.1 IVS 7<sup>th</sup> Edition GN8

It was then in 2005 that many valuers were first made aware of the Modern Equivalent Asset (MEA), which is defined below:

**Modern Equivalent Asset (MEA):** A structure similar to an existing structure and having equivalent productive capacity, which could be built using modern materials, techniques and designs. **Replacement Cost is the basis used to estimate the cost of constructing a modern equivalent asset.** para 3.6, p.238.

Unfortunately, the requirement to estimate the cost of constructing a MEA has largely been ignored by most valuers in South Africa. In 2011/12 TIPS 2 and RICS GN6 clearly explained the critical importance of determining the replacement cost of the MEA, i.e. the “why”, and the “how to”.

### 2.2 TIPS 2 (2012)

#### **Replacement Cost and Reproduction Cost**

The “why” is to be found in para. 18, p.4, below:

Either the replacement cost or reproduction cost of an asset can be used as the starting input. **In theory however, the replacement cost is the cost that is relevant to determining the price that a market participant would pay as it is based on replicating the utility of the asset. It is the utility, or functionality, of an asset that normally determines economic value, not the physical properties.**

These are rare exceptions when one uses the reproduction cost, and the explanation is to be found in para. 20, p.4:

If an asset's exact design and features were an integral part of the benefit that would accrue to an owner, then the equivalent utility could only be provided by a reproduction of the subject asset. An example would be an iconic building where the design was of greater importance than the functionality of the accommodation within it. In the circumstances, reproduction cost would be applicable. Such situations are quite rare in practice.

## **2.3 RICS GN6 May 2011**

### **Assessing the replacement cost of the MEA**

The "how to" is explained in paras 8.4 (p.110) below:

**8.4 In order to assess the cost of a modern equivalent building, the valuer first needs to establish the size and specifications that the buyer would ideally require at the date of valuation in order to provide the same level of productive output or equivalent service. If the actual building is old, it will usually be the case that a new building could be smaller and 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 poor net to gross floor area.**

**Commentary:** We note from 2.2 and 2.3 that it is the utility/functionality/level of productive output that determines value not physical properties. "If the actual building is old, it will usually be the case that a new building could be smaller and still provide the same level of service". The loss of utility resulting from inefficiencies in the subject property (functional obsolescence) can only be identified by comparing it to the MEA.

Although the valuer assesses the cost of modern equivalent building or buildings, the actual buildings being valued are usually old, and the cost of the modern equivalent building(s) must be subject to physical deterioration/obsolescence, otherwise the cost will be overstated (Refer para 5.4.2, GN8, p.239-240, quoted under 3.0).

**In practice there may be significant differences in size, in one instance estimated to be 50% smaller than the current buildings. If the starting point of the cost exercise is significantly overstated, it follows that the cost and hence "value" (not market value), applying the cost approach/DRC method, will also likely be proportionately overstated.**

Whilst reference is made to the valuer establishing the size and specification that the buyer (or existing operator/owner) would ideally require, this is not always possible without assistance. In many instances, especially for larger, older industrial complexes, the valuer will require significant input from the

plant/production engineers, architects, etc., with in-depth knowledge of the specialised buildings and processes.

**If the MEA is far smaller, the required site size and infrastructure to accommodate the MEA will also likely be far smaller. Importantly, it is not only size, but the layout or location of the buildings and plant on site that makes it of critical importance to establish the MEA, especially where buildings and plant were developed/erected on the site over many decades, and the production/layout “flow” is no longer optimal.**

Functional obsolescence is defined as “a loss of utility resulting from inefficiencies in the subject asset compared to its replacement (MEA) that results in a loss of value”, **and only once the “size and specifications” of the MEA are established can this comparison be made.**

Considering the critical importance of assessing functional obsolescence in the valuation process, it is more fully dealt with in Annexure 1.

### **3.0 Identifying and quantifying Economic Obsolescence**

It appears to be common practice for valuers to determine the reproduction costs of the existing buildings and then determine/quantify physical obsolescence/deterioration, to which a land/site value is added to determine “market value”. Very few valuers determine the size and specifications of the MEA, which allows for the determination of functional obsolescence, and fewer make any attempt to consider economic/external obsolescence. Again, the necessity of considering economic obsolescence is clear from the 7<sup>th</sup> Edition of IVS in 2005, as shown below:

#### **3.1 IVS 7<sup>th</sup> Edition GN8**

p.239-240

**5.4** In applying the depreciated replacement cost methodology, the valuer shall:

5.4.1 When valuing specialised property, assess the value of the land applying the market value principles, but recognising the constraints, if any, on the use of the land imposed by existing improvements.

5.4.2 Assess the current gross replacement cost of the asset, or in the case of specialised property, improvements to the land and deduct allowances for:

- Physical deterioration
- Functional or technical obsolescence
- Economic or external obsolescence

5.4.4 **Economic obsolescence resulting from external influences may affect the value of the asset.** External factors may include changed economic conditions, which affect the demand for goods and services and the **profitability** of the business entities.

As with MEA, further guidance is to be found in TIP 2 (2012):



### **3.2 TIP 2 (2012)**

#### **Definitions**

**Economic Obsolescence:** A loss of utility caused by factors external to the asset, especially factors related to changes in supply or demand for products produced by the asset that results in a loss of value, p.2.

Examples of economic obsolescence include adverse changes to demand for the product or service produced by the asset or the disruption or loss of a supply of labour or raw materials. These factors may be specific to a particular location or may be generally experienced throughout an industry sector, para 60, p.10.

**The economic obsolescence adjustment is deducted after physical deterioration and functional obsolescence because economic obsolescence is independent of the asset(s).** para 61 p10.

Economic obsolescence may also be assessed for some assets by considering whether a going concern business **could afford to pay a market rent for the assets and still generate a market rate of return having regard to the value of the asset.** para 62 p10.

If the whole business or business unit is affected by adverse economic factors, this will be evident in the associated cash flows and therefore **the overall measure of economic obsolescence can be determined by reference to the performance of the business or business unit.** para 65 p.10.

### **3.3 ANZ TIP 2 (2015)**

Practical guidance is to be found in ANZ TIP 2, which is intended to provide guidance in a situation where a market valuation of property, plant and equipment forming part of a business is required. p.4.

“This TIP recognises the International Valuation Standards prepared by the International Valuation Standards Council. The guidance in this paper presumes that the reader is familiar with the IVSc”. p.5.

1. It is important when investigating the impact of economic obsolescence, that members understand and consider the connection with the **profitability** of the business. para 4.2.3 (c) p.8.
2. **Economic obsolescence may be observed for some assets (predominantly real estate) by considering whether the business could afford to pay a market rent and still return a profit.** para 4.2.3 (d), p.8.
3. **As a basic premise, the market value of specialised property, plant and equipment in a business should be supported by the cash flow of that business.** p.10.
4. When assessing market value under the cost approach, assessing the impact of economic obsolescence has traditionally been seen as the responsibility of the entity’s directors or auditors. **However, given the requirements of IVSC TIP 2 Members should seek to address economic obsolescence rather than reporting a value subject to that test (adequate profitability) being completed by others. IVSC TIP 2 provides guidance on how economic obsolescence can be addressed.** p.10.

5. A valuation that reflects the impact on value of all forms of obsolescence (including economic obsolescence) will result in an opinion of market value. **By implication therefore a valuation that does not consider and reflect economic obsolescence or service potential will not result in an opinion that represents market value until such tests have been completed.** p.10
6. Economic obsolescence relates to a decrease in the value of an asset due to influences that are external to the subject asset (sometimes referred to as external obsolescence) and occurs **when he asset owner can no longer earn an appropriate rate of return on the ownership/operation of the subject asset.** p.10.
7. Because economic obsolescence is usually a function of external factors that affect an entire going concern business (i.e. all tangible and intangible assets) rather than individual assets, **it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic factors that may be having an impact on value.** p.10.

Whilst economic obsolescence can be identified and quantified in new or relatively new properties, examples being sports stadia, conference centres, theme parks, etc., in South Africa, a number of secondary industries are in various stages of decline, and we have seen both the decline and even closure of steel mills, sugar mills, and an aluminium smelter. When entrusted with the valuation of properties within these industries, especially these properties that have often developed over many decades, it is incumbent on the valuer to investigate economic obsolescence. The decline, for example, of the steel industry, is well documented, and the financials of those listed companies are freely available. If necessary, as is often the case, the advice of accountants/financial experts may be required.

Clearly declining profits/EBITDA<sup>1</sup> and actual losses must influence the operator's/lessee's ability to pay rent for the property, taking into consideration that the operator/lessee requires a return on total assets employed to generate profits, and that for many large industrialists, plant and machinery is a far greater percentage of total assets than the property.

One is not suggesting that a steel, paper, sugar mill, or aluminium smelter for example, are Specialised Trading Properties (STP's)<sup>1</sup> such as a hotel. However, the quantum of EBITDA can give an indication of the lessee's/operators/owners ability to pay a market related rental and still show a profit to enable the business to survive as a going-concern. This is dealt with in more detail in the Test of Adequate Profitability, which follows.

The valuers must however be mindful that they are valuing the properties and not the businesses. Therefore the Reasonably Efficient Operator (REO)<sup>1</sup> is the benchmark to use to gauge the profitability of the business, not the actual operator, which may be inefficient.

### **3.4 Appraisal of Real Estate: Eighth Edition**

Before moving on, we need to consider the measurement of external/economic obsolescence, and here we turn to the **Eighth Edition** for guidance.

---

<sup>1</sup> IVS 2005 7<sup>th</sup> Edition. International Valuation Guidance Note No.13 Valuation of Specialised Trading Property

“An appraiser can use either of two methods to measure external (economic) obsolescence. The appraiser uses the method that is supported by the best market evidence.

The two methods are (1) **capitalising the rent loss attributable to the negative influences**, or (2) **comparing sales of similar properties, some of which are subject to negative influences, and some of which are not**. If pertinent sales data is abundant, the second method is preferable to the first.

It is important to note that the valuer must first establish the size and specification of the MEA and calculate its costs, and in the process consider and quantify all aspects of functional obsolescence. The valuer then estimates physical deterioration/obsolescence. A site value is added to determine a value/cost before estimating/calculating economic obsolescence.

If the above steps are correctly taken, the “measure” of external (economic) obsolescence not initially considered, i.e. the difference between the income value and market value of the property, and the initially estimated value/cost of the property described above, will be the correct “measure” of economic obsolescence.

However, should the reproduction costs of the existing buildings, often significantly larger, be calculated, the measure of economic obsolescence would include that percentage of functional obsolescence not identified and quantified by costing the MEA.

**The fact that the measure of economic obsolescence may include in part functional obsolescence, does not detract from the income or market approach values, but highlights the shortcomings of the application of the DRC method, and the need to calculate the replacement cost of the MEA and not reproduction cost of the existing buildings.**

#### **4.0 Applying the Test of Adequate Profitability**

##### **4.1 IVS 2005 7<sup>th</sup> Edition GN8**

As with the Modern Equivalent Asset (MEA), many valuers were first made aware of the Test of Adequate Profitability in May 2005, with the adoption of the 7<sup>th</sup> Edition of IVS as the standards of SAIV. The importance of the test of adequate profitability cannot be over-emphasised, as it is the test that should alert the valuer to the fact that an unrealistically high DRC value may have been determined. Adequate Profitability is defined in para 3.4, as set out below:

**3.4 Adequate Profitability.** When an asset has been valued by reference to depreciated replacement cost, adequate profitability is the test that the entity should apply to ensure that it is able to support the depreciated replacement cost conclusion. p.238.

Further:

5.12 The valuation conclusion shall be reported in accordance with IVS3 (p.110), Valuation Reporting.

5.12.1 The valuer reports the results as **Market Value** subject to the test of adequate profitability or service potential, a test which is the responsibility of the entity.

5.12.2 **In reporting the Market Value, the Valuer shall disclose that the method used is depreciated replacement cost and that the value can only be adopted in the accounts of the entity if the relevant test of either adequate profitability or service potential is applied and met.**

It is important to note that the test is one of adequate profitability, and it has sometimes been confused with affordability, i.e. the operator/lessee can “afford” to pay a rental, provided the total assets employed to generate a profit are not considered. As stated previously, property is often a relatively minor portion of total assets used to generate profits for a steel, paper, or sugar mill, or an aluminium smelter and other large industries processing raw materials. Logically, a return is required on all assets that contribute towards the profitability and sustainability of the business. Para 12.3 of GN6, set out below, explains.

#### **4.2 RICS GN6 May 2011**

12.3 For assets held in the private sector to comply with VS 6.5, 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. p.118.

#### **4.3 ANZ TIP 2 (2015)**

As we see from ANZ TIP 2, quoted in 3.0 above, economic obsolescence is inextricably linked with the profitability of a business (refer 1-7 under ANZ TIP2).

Whilst we note from 5.12.1 above that it was the responsibility of the entity to apply the test of adequate profitability, TIP 2 (2012) made it the responsibility of the valuer. Whilst the valuer may need to rely upon input from the accountants, this is not always the case. What is important is that it is the valuer’s valuation, not that of the auditors or the entity, and the valuer must of necessity be involved in the process of applying the test of adequate profitability, as the valuer is the person certifying that the value is market value. Unless this test is applied, the valuer cannot certify that the value is market value, and hence the value cannot be adopted in the accounts of the entity as market value. For clarity, 1-7 from 3 above (ANZ TIP 2 2015) are repeated hereunder.

1. It is important when investigating the impact of economic obsolescence, that members understand and consider the connection with the **profitability** of the business. para 4.2.3 (c) p.8
2. **Economic obsolescence may be observed for some assets (predominantly real estate) by considering whether the business could afford to pay a market rent and still return a profit.** para 4.2.3 (d), p.8.
3. **As a basic premise, the market value of specialised property, plant and equipment in a business should be supported by the cash flow of that business.** p.10.
4. When assessing market value under the cost approach, assessing the impact of economic obsolescence has traditionally been seen as the responsibility of the entity’s directors or auditors. **However, given the requirements of IVSC TIP 2 Members should seek to address economic obsolescence rather than reporting a value subject to that test (adequate**

profitability) being completed by others. IVSC TIP 2 provides guidance on how economic obsolescence can be addressed. p.10.

5. A valuation that reflects the impact on value of all forms of obsolescence (including economic obsolescence) will result in an opinion of market value. **By implication therefore a valuation that does not consider and reflect economic obsolescence or service potential will not result in an opinion that represents market value until such tests have been completed.** p.10.
6. Economic obsolescence relates to a decrease in the value of an asset due to influences that are external to the subject asset (sometimes referred to as external obsolescence) and occurs **when the asset owner can no longer earn an appropriate rate of return on the ownership/operation of the subject asset.** p.10.
7. Because economic obsolescence is usually a function of external factors that affect an entire going concern business (i.e. all tangible and intangible assets) rather than individual assets, **it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic factors that may be having an impact on value.** p.10.

Clearly the test of adequate profitability, the final step in the DRC valuation, is critical as it will immediately highlight any shortcoming in the previous steps of the valuation process:

- Was the size and structure of the MEA determined and functional/technical obsolescence identified and quantified?
- Was physical deterioration accurately assessed?
- Was economic obsolescence correctly identified and quantified?

## **5.0 Concluding Remarks**

Should the application of the DRC method adhere to IVS standards, including the Test of Adequate Profitability, all three valuation approaches, i.e. Market, Income, and Cost, should yield similar answers which can be reconciled. **Without strict adherence to IVS, it is highly probable that the DRC method will yield an overstated and meaningless value estimate.**

In the glossary of IVS 2022, p.9, reference is made to “weighting”. The word “weighting” refers to the process of analysing and reconciling differing indications of value, typically from different methods and/or approaches. This process does not include the averaging of valuations, which is not acceptable (para. 20.32).

Further reference to RICS GN6 May 2011 is very important:

“Although the DRC method may be used for the valuation of different types of specialised assets, **particular complications arise when applying the DRC method to specialised property, which is defined in the 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 p.104.

As we see in 3.3 below, the DRC method is often referred to as the method of last resort (when all else has failed):

3.3 However, **DRC is often referred to as a method of last resort and is only to be relied on if it is impractical to produce a reliable valuation using other methods.** The classification of an asset as specialised should not automatically lead to the conclusion that a DRC valuation must be adopted. If sufficient direct market evidence exists, it still may be possible to undertake a valuation of the specialised property using the sales comparison and/or the income capitalisation approach. p.104.

The opinion of many senior valuers is that the income approach is the preferred approach, if possible supported by the market approach. The market values of specialised properties are required for a number of reasons, including the transfer of properties separate from the operating company, for rating purposes in terms of the MPRA, and importantly for secured lending. In respect of secured lending, it is important to note, from **IVS 310 Valuation of Real Property for Secured Lending** (IVS2013), which under **Valuation Approaches G4**, states the following:

“All valuation approaches used for developing and supporting an indication of market value are based on market observations. Although the three approaches identified in the IVS Framework can be used to provide an indication of market value for secured lending, if the property is so specialised that there is insufficient evidence to use either the Market Approach or the Income Approach, it is unlikely that the property would be regarded as suitable security. Therefore the cost approach is seldom used in valuations for this purpose except as a check on the reasonableness of the value using another approach. P.109.

**Notwithstanding the above, and the fact that sufficient market evidence usually exists to allow the application of the income approach and/or market approach, valuers often apply the cost approach/DRC method (the method of last resort), to the exclusion of the income and market approaches, which is patently wrong.**

## Annexure 1:

### Assessing Depreciation and Functional Obsolescence

#### RICS GN6 May 2011

##### Assessing Depreciation

Having established the size, specification, and replacement cost of the modern equivalent asset/buildings, the next step is to assess depreciation. Paras 9.1 and 9.2, p.112 give guidance.

**9.1** Having established the replacement cost of a modern equivalent asset, it is then necessary to adjust or depreciate it 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 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. The valuer is recommended to identify these trends and intentions, and to 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.

##### Functional Obsolescence

**Functional obsolescence arises where the design or specification of the asset no longer fulfils the functions for which it was originally designed. 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.** p.113.

**9.9** 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. p.113.

**9.10** 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. p.113.

**9.11** Another case 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. P.113

## ANZVTIP 2 (2015)

### 4.1 Functional Obsolescence Explained

**48. Functional obsolescence is loss of utility resulting from inefficiencies in the subject asset compared to its replacement (modern equivalent), that results in a loss of value. p.8.**

49. There are two forms of functional obsolescence, namely:

- Excess capital cost, which can be caused by changes in design, materials of construction, technology or manufacturing techniques resulting in the availability of modern equivalent assets with lower capital costs than the subject asset
- Excess operating costs, which can be caused by improvements in design or excess capacity resulting in the availability of modern equivalent assets with lower operating costs than the subject asset p.8.

50. Functional obsolescence can therefore arise due to either:

- The design or specifications of the asset no longer being the most appropriate for delivering of the service for which it was originally intended as it may be inadequate or over-engineered in that it exceeds market norms,
- The technology used in the asset having been superseded, or
- A combination of both of the above factors p.8-9.

51. Some valuers differentiate between functional obsolescence and technical obsolescence and treat them separately

52. Examples of functional obsolescence for **real property include:**

- An industrial building with a clear ceiling height that is significantly higher or lower than is currently required by most industrial users.
- An office building with many individual rooms separated by structural walls resulting in an inflexible layout that would limit the number of occupiers who could use the building efficiently.

53. For inadequate items, functional obsolescence is measured by considering the cost of correcting the inadequacy compared with the value gained. For over-engineered or “super adequate” items, functional obsolescence is measured by the excess capital cost compared with the modern equivalent asset.

54. Excess capital cost is often addressed by using the replacement cost as the basis of the calculation. **The modern equivalent asset should represent the most efficient, i.e. cost effective, way of replacing the utility provided by the subject asset.** Care should therefore be taken to avoid double counting if redundant features of the subject asset are already excluded from the replacement cost.

55. Examples of excess operating costs in respect of **machinery and equipment include:**

- The subject asset may require more operators compared to a modern equivalent asset,
- The subject asset may have a lower rate of productivity compared to a modern equivalent,
- The subject asset may produce more scrap or waste material compared to a modern equivalent



**56. In the case of a building,** excess operating costs that would not necessarily be reflected in the cost of the modern equivalent asset include higher energy costs and loss of productivity due to an inefficient building layout or configuration.

**57.** In each case the present value of the excess operating costs in terms of labour, inefficiency or consumption of raw materials can be used to arrive at a measure of the **functional obsolescence**.

**58.** In some cases the subject asset's performance may be limited by the performance of another related asset. If the assets are being valued as part of an operational unit rather than as separate items for removal the functional obsolescence caused to the subject asset may be measured by the cost of replacing or upgrading the related asset.

(51-58, p.9)