International Valuation Standards

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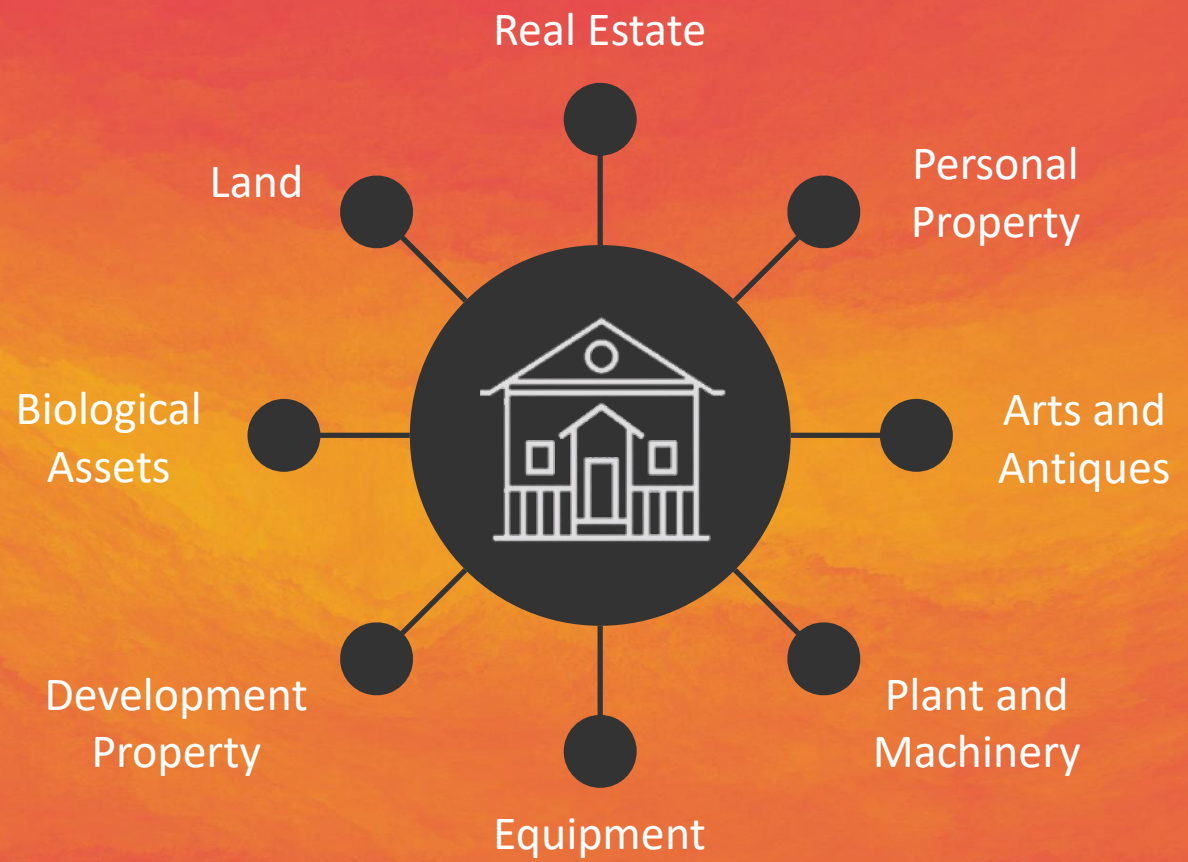
Tangible Assets Valuation



IVS 400:

Real Property Interests

Revisions

- *Restructured as per General Standards.*
- *New section on Data and Inputs.*
- *New section on Valuation Models.*
- *Reporting Section now includes documentation.*

IVS 400 – Real Property Interests

Property interests are normally defined by state or the law of individual *jurisdictions* and are often regulated by national or local legislation. In some instances, legitimate individual, communal/community and/or collective rights over land and buildings are held in an informal, traditional, undocumented and unregistered manner. Before undertaking a *valuation* of a real property interest, a *valuer must* understand the relevant legal framework that affects the interest being valued.

Intangible assets fall outside the classification of real property assets. However, an intangible asset may be associated with, and have a material impact on, the value of real property assets.

It is therefore essential to be clear in the scope of work precisely what the valuation assignment is to include or exclude.

For example, the valuation of a hotel can be inextricably linked to the hotel brand. In such cases, the valuation process will involve consideration of the inclusion of intangible assets and their impact on the valuation of the real property and plant and equipment assets. When there is an intangible asset component, the valuer should also follow IVS 210 Intangible Assets.

IVS 400 – Real Property Interests

A real property interest is a right of ownership, control, use or occupation of land and buildings. A real property interest includes informal tenure rights for communal/community and or collective or tribal land and urban/rural informal settlements or transition economies, which can take the form of possession, occupation and rights to use. There are three main types of interest:

(a) the superior interest in any defined area of land. The owner of this interest has an absolute right of possession and control of the land and any buildings upon it in perpetuity, subject only to any subordinate interests and any statutory or other legally enforceable constraints,

(b) a subordinate interest that normally gives the holder rights of exclusive possession and control of a defined area of land or buildings for a defined period, eg, under the terms of a lease contract, and/or

(c) a right to use land or buildings but without a right of exclusive possession or control, eg, a right to pass over land or to use it only for a specified activity.

IVS 400 – Real Property Interests

Although different words and terms are used to describe these types of real property interest in different *jurisdictions*, the concepts of an unlimited absolute right of ownership, an exclusive interest for a limited period or a non-exclusive right for a specified *purpose* are common to most. The immovability of land and buildings means that it is the right that a party holds that is transferred in an exchange, not the physical land and buildings. The *value*, therefore, attaches to the legal interest rather than to the physical land and buildings.

To comply with the requirement to identify the *asset* to be valued in IVS 101 *Scope of Work*, para 20.3.(d) the following matters *must* be included:
(a) a description of the real property interest to be valued, and
(b) identification of any superior or subordinate interests that affect the interest to be valued.

IVS 400 – Real Property Interests

To comply with the requirements to state the extent of the investigation and the nature and source of the information to be relied upon, the following matters *should* be considered:

(a) the evidence, if available, required to verify the real property interest and any relevant related interests,

(b) the extent of any inspection,

(c) responsibility for information on the site area, site characteristics and building floor areas,

(d) responsibility for confirming the specification and condition of any building,

(e) the extent of investigation into the nature, specification and adequacy of services,

(f) the existence of any information on ground conditions and soil conditions,

(g) responsibility for the identification of actual or potential environmental factors,

(h) legal permissions or restrictions on the use of the property and any buildings, as well as any expected or potential changes to legal permissions and restrictions.

IVS 400 – Real Property Interests

Typical examples of special assumptions that *may* need to be agreed and confirmed include:

(a) that a defined physical change had occurred, eg, a proposed building is valued as if complete at the valuation date,

(b) that there had been a change in the status of the property, eg, a vacant building had been leased or a leased building had become vacant at the valuation date,

(c) that the interest is being valued without taking into account other existing interests, and

(d) that the property is free from contamination or other environmental risks.

IVS 400 – Real Property Interests – Market Approach

Property interests are generally heterogeneous (ie, with different characteristics). Even if the land and buildings have identical physical characteristics to others being exchanged in the market, the location will be different. Notwithstanding these dissimilarities, the market approach is commonly applied for the *valuation* of real property interests.

In order to compare the subject of the *valuation* with the *price* of other real property interests, *valuers should* adopt generally accepted and appropriate units of comparison that are considered by *participants*, dependent upon the type of *asset* being valued. Units of comparison that are commonly used include:

(a) price per square metre (or per square foot) of a building or per hectare for land,
(b) price per room, and
(c) price per unit of output, eg, crop yields.

IVS 400 – Real Property Interests – Market Approach

Specific differences that *should* be considered in *valuing* real property interests include, but are not limited to:

(a) the type of interest providing the price evidence and the type of interest being valued,

(b) the respective locations,

(c) the respective quality of the land or the age and specification of the buildings,

(d) the permitted use or zoning at each property,

(e) the circumstances under which the *price* was determined and the *basis of value* required,

(f) the effective date of the price evidence and the valuation date, and

(g) market conditions at the time of the relevant transactions and how they differ from conditions at the valuation date.

IVS 400 – Real Property Interests – Income Approach

Various methods are used to indicate *value* under the general heading of the income approach, all of which share the common characteristic that the *value* is based upon an actual or estimated income that either is, or could be, generated by an owner of the interest. In the case of an investment property, that income could be in the form of rent; in an owner-occupied building, it could be an assumed rent (or rent saved) based on what it would cost the owner to lease equivalent space.

For some real property interests, the income-generating ability of the property is closely tied to a particular use or business/trading activity (for example, hotels, golf courses, etc). Where a building is suitable for only a particular type of trading activity, the income is often related to the actual or potential cash flows that would accrue to the owner of that building from the trading activity. The use of a property's trading potential to indicate its *value* is often referred to as the "profits method".

When using a DCF or Income technique you need to also consider the guidance in Business Valuation Standards.

IVS 400 – Real Property Interests – Cost Approach

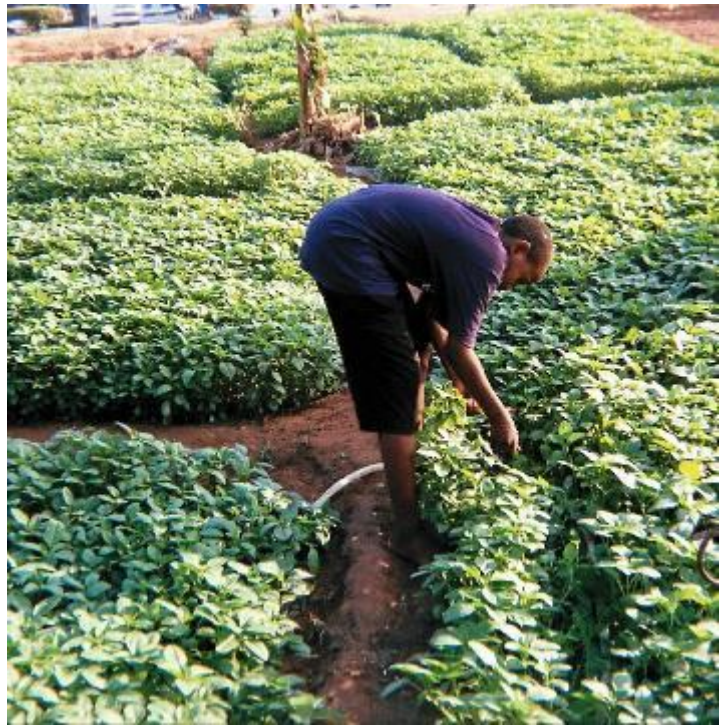
This approach is generally applied to the *valuation* of real property interests through the depreciated replacement cost method.

It *may* be used as the primary approach when there is either no evidence of transaction prices for similar property or no identifiable actual or notional income stream that would accrue to the owner of the relevant interest.

In some cases, even when evidence of market transaction prices or an identifiable income stream is available, the cost approach *may* be used as a secondary or corroborating approach.

The first step requires a replacement cost to be calculated. This is normally the *cost* of replacing the property with a modern equivalent at the relevant valuation date. An exception is where an equivalent property would need to be a replica of the subject property in order to provide a *participant* with the same utility, in which case the replacement cost would be that of reproducing or replicating the subject building rather than replacing it with a modern equivalent. The replacement cost *must* reflect all incidental costs, as appropriate, such as the *value* of the land, infrastructure, design fees, finance costs and developer profit that would be incurred by a *participant* in creating an equivalent *asset*.

"Market Value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion" (IVS 2021)



- A community obtains benefits from legitimate individual and communal rights over their land, including the right to fish, raise livestock, grow and harvest crops, collect wild foods, fuel wood, timber and thatching grass.
- These rights allow collection of products needed for subsistence and livelihood, and often generate additional income by selling surplus to the market.
- Rights that generate sales can be valued using the *comparison approach* and rights that generate income can be valued using the *income approach*.
- It may also be possible to estimate the market value of some products that are consumed 'internally' within the community.
- The value of some benefits, though, cannot be estimated using market value approaches. For example, some produce, herbs for example, may be medicinal and not traded in a market, so there is no price evidence.

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Holding Real Property

- Real property interests might be defined formally or informally, registered or unregistered
- **IVS 400 para 20.1:**

  "Property interests are normally defined by state or the law of individual jurisdictions and are often regulated by national or local legislation. In some instances, legitimate individual, communal/community and/or collective rights over land and buildings are held in an informal, traditional, undocumented and unregistered manner. Before undertaking a valuation of a real property interest, a valuer must understand the relevant legal framework that affects the interest being valued."

Concepts of Property Value

- Value refers to the importance people place on the benefits that are derived from holding real property
- Economic values:
  - Use values (direct and indirect) and non-use values
  - Markets facilitate exchange and so people's preferences (values) are revealed. Hence, the focus on **market value**
  - Markets are good at revealing direct use values but not so good at revealing indirect use values and option values, and terrible at revealing non-use values
- Socio-cultural values
- Ecological values
- Plurality of values: disparity between market value and 'accounting' value. Difference = **non-market value**

Valuing Real Property Interests

- Amongst valuers, **market value** is a widely understood basis of value
- **Non-market value** is rarely encountered in conventional valuation, mainly in expropriation work
- But valuers are familiar with the concept of **Investment Value**:

  "Investment value is the value of an asset to a particular owner or prospective owner for individual investment or operational objectives."

  "Investment value is an entity-specific basis of value. Although the value of an asset to the owner may be the same as the amount that could be realised from its sale to another party, this basis of value reflects the benefits received by an entity from holding the asset and, therefore, does not involve a presumed exchange. Investment value reflects the circumstances and financial objectives of the entity for which the valuation is being produced. It is often used for measuring investment performance."

  (IVS 104 para 60.1 and 60.2)

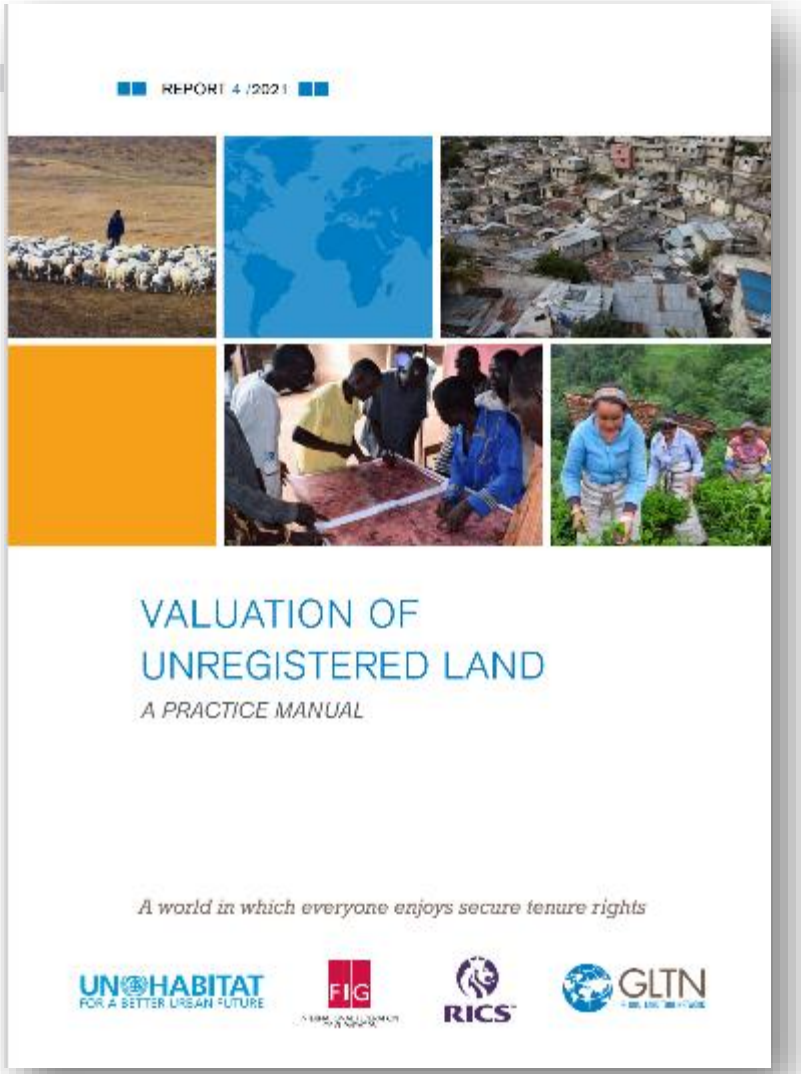
Methods of Estimating Non-Market Value

•Are values **revealed** in some way: transfers, exchanges, leases, licenses, etc. If so, what is the medium of exchange, the numeraire?
•If not, can stakeholders be persuaded to **state** their preferences in some way, either to acquire (willingness to pay for) or relinquish (willingness to accept the loss of) real property?
•Can the different concepts of value be reduced to one **metric** or will several be needed?
•How will **risk** and **uncertainty** associated with holding and using real property be handled in a valuation?

A Role for Valuers?

Download the manual:

[Valuation of Unregistered Land –
A Practice Manual –
Global Land Tool Network (gltn.net)]



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IVS 410:

Development Property

Revisions

- *Restructured as per General Standards.*
- *Increased references to land.*
- *New section on Data and Inputs.*
- *New section on Valuation Models.*
- *Reporting Section now includes documentation.*

IVS 410 – Development Property

In the context of this standard, development properties are defined as interests where redevelopment is required to achieve the highest and best use, or where improvements are either being contemplated or are in progress at the valuation date and include:

(a) the construction of buildings,

(b) previously undeveloped land which is being provided with infrastructure,

(c) the redevelopment of previously developed land,

(d) the improvement or alteration of existing buildings or structures,

(e) land allocated for development in a statutory plan, and

(f) land allocated for a higher *value* uses or higher density in a statutory plan.

IVS 400 – Development Property

Specific differences that *should* be considered in *valuing* real property interests include, but are not limited to:

(a) the type of interest providing the price evidence and the type of interest being valued,

(b) the respective locations,

(c) the respective quality of the land or the age and specification of the buildings,

(d) the permitted use or zoning at each property,

(e) the circumstances under which the *price* was determined and the *basis of value* required,

(f) the effective date of the price evidence and the valuation date, and

(g) market conditions at the time of the relevant transactions and how they differ from conditions at the valuation date.

IVS 410 – Development Property

Valuations of development property *may* be required for different *purposes*. It is the *valuer's* responsibility to understand the *purpose* of a *valuation*. A non-exhaustive list of examples of circumstances that *may* require a development valuation is provided below:

(a) when establishing whether proposed projects are financially feasible,

(b) as part of general consulting and transactional support engagements for acquisition and loan security,

(c) for tax reporting *purposes*, development valuations are frequently needed for ad valorem taxation analyses,

(d) for litigation requiring valuation analysis in circumstances such as shareholder disputes and damage calculations,

(e) for financial reporting *purposes*, *valuation* of a development property is often required in connection with accounting for business combinations, *asset* acquisitions and sales, and impairment analysis, and

(f) for other statutory or legal events that *may* require the *valuation* of development property such as compulsory purchases.

IVS 410 – Development Property

When *valuing* development property, *valuers must* follow the applicable standard for that type of *asset* or liability (for example, IVS 400 *Real Property Interests*).

The residual value or land value of a development property can be very sensitive to changes in assumptions or projections concerning the income or revenue to be derived from the completed project or any of the development costs that will be incurred. This remains the case regardless of the method or methods used or however diligently the various inputs are researched in relation to the valuation date.

This sensitivity also applies to the impact of *significant* changes in either the *costs* of the project or the *value* on completion. If the *valuation* is required for a *purpose* where *significant* changes in *value* over the duration of a construction project *may* be of concern to the user (eg, where the *valuation* is for loan security or to establish a project's viability), the *valuer must* highlight the potentially disproportionate effect of possible changes in either the construction costs or end value on the profitability of the project and the *value* of the partially completed property. A sensitivity analysis *may* be useful for this *purpose* provided it is accompanied by a suitable explanation.

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IVS 410 – Bases of Value

The *valuation* of development property often includes a *significant* number of assumptions and special assumptions regarding the condition or status of the project when complete. For example, special assumptions *may* be made that the development has been completed or that the property is fully leased. As required by IVS 101 *Scope of Work*, *significant* assumptions and special assumptions used in a *valuation must* be communicated to all parties to the valuation engagement and *must* be agreed and confirmed in the scope of work. Particular care *may* also be required where reliance *may* be placed by third parties on the valuation outcome.

Frequently it will be either impracticable or impossible to verify every feature of a development property which could have an impact on potential future development, such as where ground conditions have yet to be investigated. When this is the case, it *may* be appropriate to make assumptions (eg, that there are no abnormal ground conditions that would result in significantly increased *costs*). If this was an assumption that a *participant* would not make, it would need to be presented as a special assumption.

IVS 410 – Bases of Value

In situations where there has been a change in the market since a project was originally conceived, a project under construction *may* no longer represent the highest and best use of the land. In such cases, the *costs* to complete the project originally proposed *may* be irrelevant as a buyer in the market would either demolish any partially completed structures or adapt them for an alternative project. The *value* of the development property under construction would need to reflect the current value of the alternative project and the *costs* and risks associated with completing that project.

For some development properties, the property is closely tied to a particular use or business/trading activity or a special assumption is made that the completed property will trade at specified and sustainable levels. In such cases, the *valuer must*, as appropriate, also comply with the requirements of IVS 200 *Business and Business Interests* and, where applicable, IVS 210 *Intangible Assets*.

IVS 410 – Approaches

There are two main approaches in relation to the *valuation* of the development property. These are:

(a) the market approach, and
(b) the residual method, which is a hybrid of the market approach, the income approach and the cost approach. This is based on the completed "gross development value" and the deduction of development costs and the developer's return to arrive at the residual value of the development property.

The valuation approach to be used will depend on the required *basis of value* as well as specific facts and circumstances, eg, the level of recent transactions, the stage of development of the project and movements in property markets since the project started and *should* always be that which is most appropriate to those circumstances. Therefore, the exercise of judgement in the selection of the most suitable approach is critical.

IVS 410 – Market Approach

Some types of development property can be sufficiently homogenous and frequently exchanged in a market for there to be sufficient data from recent sales to use as a direct comparison where a *valuation* is required.

In most markets, the market approach *may* have limitations for larger or more complex development property, or smaller properties where the proposed improvements are heterogeneous. This is because the number and extent of the variables between different properties make direct comparisons of all variables inapplicable though correctly adjusted market evidence *may* be used as the basis for a number of variables within the *valuation*.
For development property where work on the improvements has commenced but is incomplete, the application of the market approach is even more problematic. Such properties are rarely transferred between *participants* in their partially-completed state, except as either part of a transfer of the owning entity or where the seller is either insolvent or facing insolvency and therefore unable to complete the project. Even in the unlikely event of there being evidence of a transfer of another partially-completed development property close to the *valuation* date, the degree to which work has been completed would almost certainly differ, even if the properties were otherwise similar.

The market approach *may* also be appropriate for establishing the *value* of a completed property as one of the inputs required under the residual method, which is explained more fully in the section on the residual method.

IVS 410 – Cost Approach

Establishing the development costs is a key component of the residual approach.

The cost approach *may* also exclusively be used as a means of indicating the *value* of development property such as a proposed development of a building or other structure for which there is no active market on completion.

The cost approach is based on the economic principle that a buyer will pay no more for an *asset* than the amount to create an *asset* of equal utility. To apply this principle to development property, the *valuer must* consider the *cost* that a prospective buyer would incur in acquiring a similar *asset* with the potential to earn a similar profit from development as could be obtained from development of the subject property. However, unless there are unusual circumstances affecting the subject development property, the process of analysing a proposed development and determining the anticipated costs for a hypothetical alternative would effectively replicate either the market approach or the residual method as described above, which can be applied directly to the subject property.

IVS 410 – Cost Approach

Another difficulty in applying the cost approach to development property is in determining the profit level, which is its "utility" to a prospective buyer. Although a developer *may* have a target profit at the commencement of a project, the actual profit is normally determined by the *value* of the property at completion. Moreover, as the property approaches completion, some of the risks associated with development are likely to reduce, which *may* impact on the required return of a buyer. Unless a fixed price has been agreed, profit is not determined by the *costs* incurred in acquiring the land and undertaking the improvements.

IVS 410 – Residual Approach

The residual method is so called because it indicates the residual amount after deducting all known or anticipated *costs* required to complete the development from the anticipated value of the project when completed after consideration of the risks associated with completion of the project. This is known as the residual value.

The residual value can be highly sensitive to relatively small changes in the forecast cash flows and the practitioner *should* provide separate sensitivity analyses for each *significant* factor.

Caution is required in the use of this method because of the sensitivity of the result to changes in many of the inputs, which *may* not be precisely known on the valuation date, and therefore have to be estimated with the use of assumptions.

The models used to apply the residual method vary considerably in complexity and sophistication, with the more complex models allowing for greater granularity of inputs, multiple development phases and sophisticated analytical tools. The most suitable model will depend on the size, duration and complexity of the proposed development.

IVS 410 – Residual Approach

In applying the residual method, a *valuer should* consider and evaluate the reasonableness and reliability of the following:
(a) the source of information on any proposed building or structure, eg, any plans and specification that are to be relied on in the *valuation*, and
(b) any source of information on the construction and other *costs* that will be incurred in completing the project and which will be used in the *valuation*.

The following basic elements require consideration in any application of the method to estimate the *market value* of development property and if another basis is required, alternative inputs *may* be required.
(a) Completed property value,
(b) Construction costs,
(c) Consultants fees,
(d) Marketing costs,
(e) Timetable,
(f) Finance costs,
(g) Development profit,
(h) *Discount rate*.

IVS 410 – Residual Approach – Value of Completed Property

The first step requires an estimate of the *value* of the relevant interest inthe real property following notional completion of the development project.

Regardless of the methods adopted under either the market or income approach, the *valuer must* adopt one of the two basic underlying assumptions:
(a) the estimated *market value* on completion is based on *values* that are current on the valuation date on the special assumption the project had already been completed in accordance with the defined plans and specification, or
(b) the estimated value on completion is based on the special assumption that the project is completed in accordance with the defined plans and specification on the anticipated date of completion.

IVS 410 – Residual Approach – Value of Completed Property

Market practice and availability of relevant data *should* determine which of these assumptions is more appropriate. However, it is important that there is clarity as to whether current or projected values are being used.

If estimated gross development value is used, it *should* be made clear that these are based on special assumptions that a *participant* would make based on information available on the valuation date.
It is also important that care is taken to ensure that consistent assumptions are used throughout the residual value calculation, ie, if current values are used then the *costs should* also be current and *discount rates* derived from analysis of current prices.

If there is a pre-sale or pre-lease agreement in place that is conditional on the project, or a relevant part, being completed, this will be reflected in the *valuation* of the completed property. Care *should* be taken to establish whether the *price* in a pre-sale agreement or the rent and other terms in a pre-lease agreement reflect those that would be agreed between *participants* on the valuation date.

If the terms are not reflective of the market, adjustments *may* need to be made to the *valuation*.

IVS 410 – Residual Approach – Construction Costs

The *costs* of all work required at the valuation date to complete the project to the defined specification need to be identified. Where no work has started, this will include any preparatory work required prior to the main building contract, such as the *costs* of obtaining statutory permissions, demolition or off-site enabling work.

Where work has commenced, or is about to commence, there will normally be a contract or contracts in place that can provide the independent confirmation of *cost*. However, if there are no contracts in place, or if the actual contract costs are not typical of those that would be agreed in the market on the valuation date, then it *may* be necessary to estimate these *costs* reflecting the reasonable expectation of *participants* on the valuation date of the probable *costs*.

The benefit of any work carried out prior to the valuation date will be reflected in the *value but* will not determine that *value*. Similarly, previous payments under the actual building contract for work completed prior to the valuation date are not relevant to current value.

IVS 410 – Residual Approach – Construction Costs

In contrast, if payments under a building contract are geared to the work completed, the sums remaining to be paid for work not yet undertaken at the valuation date *may* be the best evidence of the construction *costs* required to complete the work.

However, contractual costs *may* include special requirements of a specific end user and therefore *may* not reflect the general requirements of *participants*.

Moreover, if there is a material risk that the contract *may* not be fulfilled, (eg, due to a dispute or insolvency of one of the parties), it *may* be more appropriate to reflect the cost of engaging a new contractor to complete the outstanding work.

When valuing a partly completed development property, it is not appropriate to rely solely on projected costs and income contained in any project plan or feasibility study produced at the commencement of the project. Once the project has commenced, this is not a reliable tool for measuring *value* as the inputs will be historic.

Likewise, an approach based on estimating the percentage of the project that has been completed prior to the valuation date is unlikely to be relevant in determining the current *market value*.

IVS 410 – Residual Approach – Timetable

The duration of the project from the valuation date to the expected date of physical completion of the project needs to be considered, together with the phasing of all cash outflows for construction costs, consultants' fees, etc

If there is no sale agreement in place for the relevant interest in the development property following practical completion, an estimate *should* be made of the marketing period that might typically be required following completion of construction until a sale is achieved.

If the property is to be held for investment after completion and if there are no pre-leasing agreements, the time required to reach stabilised occupancy needs to be considered (ie, the period required to reach a realistic long-term occupancy level). For a project where there will be individual letting units, the stabilised occupancy levels *may* be less than 100 percent if market experience indicates that a number of units *may* be expected to always be vacant, and allowance *should* be considered for *costs* incurred by the owner during this period such as additional marketing costs, incentives, maintenance and/or unrecoverable service charges.

IVS 410 – Residual Approach – Finance Costs

These represent the *cost* of finance for the project from the valuation date through to the completion of the project, including any period required after physical completion to either sell the interest or achieve stabilised occupancy. As a lender *may* perceive the risks during construction to differ substantially from the risks following completion of construction, the finance cost during each period *may* also need to be considered separately. Even if an entity is intending to self-fund the project, an allowance *should* be made for interest at a rate which would be obtainable by a *participant* for borrowing to fund the completion of the project on the valuation date.

IVS 410 – Residual Approach – Development Profit

Allowance *should* be made for development profit, or the return that would be required by a buyer of the development property in the market place for taking on the risks associated with completion of the project on the valuation date. This will include the risks involved in achieving the anticipated income or capital value following physical completion of the project.

This target profit can be expressed as a lump sum, a percentage return on the *costs* incurred or a percentage of the anticipated value of the project on completion or a rate of return. Market practice for the type of property in question will normally indicate the most appropriate option.

IVS 410 – Residual Approach – Development Profit

The amount of profit that would be required will reflect the level of risk that would be perceived by a prospective buyer on the valuation date and will vary according to factors such as:

(a) the stage which the project has reached on the valuation date. A project which is nearing completion will normally be viewed as being less risky than one at an early stage, with the exception of situations where a party to the development is insolvent,

(b) whether a buyer or lessee has been secured for the completed project, and

(c) the size and anticipated remaining duration of the project. The longer the project, the greater the risk caused by exposure to fluctuations in future *costs* and receipts and changing economic conditions generally.

IVS 410 – Residual Approach – Development Profit

The following are examples of factors that *may* typically need to be considered in an assessment of the relative risks associated with the completion of a development project:

(a) unforeseen complications that increase construction costs,
(b) potential for contract delays caused by adverse weather or other matters outside of developer's control,
(c) delays in obtaining statutory consents,
(d) supplier failures,
(e) entitlement risk and changes in entitlements over the development period,
(f) regulatory changes, and
(g) delays in finding a buyer or lessee for the completed project.

The risk of the estimated value of the completed development project changing due to changed market conditions over the duration of the project will normally be reflected in the *discount rate* or capitalisation rate used to value the completed project.

IVS 410 – Residual Approach – Special Matters

Matters that typically need to be considered for specific investigation when undertaking a *valuation* of a development property before a project commences include:

(a) whether or not there is a market for the proposed development,

(b) is the proposed development the highest and best use of the property in the current market,

(c) whether there are other non-financial obligations that need to be considered (political or social criteria),

(d) legal permissions or zoning, including any conditions or constraints on permitted development,

(e) limitations, encumbrances or conditions imposed on the relevant interest by private contract,

(f) rights of access to public highways or other public areas,

(g) geotechnical conditions, including potential for contamination or other environmental risks,

IVS 410 – Residual Approach – Special Matters

(h) the availability of, and requirements to, provide or improve necessary services, eg, water, drainage and power,

(i) the need for any off-site infrastructure improvements and the rights required to undertake this work,

(j) any archaeological constraints or the need for archaeological investigations,

(k) sustainability and any *client* requirements in relation to green buildings,

(l) economic conditions and trends and their potential impact on *costs* and receipts during the development period,

(m) current and projected supply and demand for the proposed future uses,

(n) the availability and *cost* of funding,

(o) the expected time required to deal with preparatory matters prior to starting work, for the completion of the work and, if appropriate, to rent or sell the completed property, and

(p) any other risks associated with the proposed development.

IVS 300:

Plant, Equipment, & Infrastructure

Revisions

- *Restructured as per General Standards.*
- *Valuation Approaches and Methods (Market and Income).*
- *New section on Data and Inputs.*
- *New section on Valuation Models.*
- *Reporting Section now includes Documentation.*

IVS 300 – Plant and Equipment

Items of plant and equipment (which *may* sometimes be categorised as a type of personal property) are tangible *assets* that are usually held by an entity for use in the manufacturing/production or supply of goods or services, for rental by others or for administrative *purposes* and that are expected to be used over a period of time.

For lease of machinery and equipment, the right to use an item of machinery and equipment (such as a right arising from a lease) would also follow the guidance of this standard. It *must* also be noted that the "right to use" an *asset* could have a different life span than the service life (that takes into consideration of both preventive and predictive maintenance) of the underlying machinery and equipment itself and, in such circumstances, the service life span *must* be stated.

IVS 300 – Plant and Equipment

Assets for which the highest and best use is "in use" as part of a group of *assets must* be valued using consistent assumptions. Unless the *assets* belonging to the sub-systems *may* reasonably be separated independently from its main system, then the sub-systems *may* be valued separately, having consistent assumptions within the sub-systems. This will also cascade down to sub-sub-systems and so on.

Intangible *assets* fall outside the classification of plant and equipment *assets*. However, an intangible *asset may* have an impact on the *value* of plant and equipment *assets*. For example, the *value* of patterns and dies is often inextricably linked to associated intellectual property rights. Operating software, technical data, production records and patents are further examples of intangible *assets* that can have an impact on the *value* of plant and equipment *assets*, depending on whether or not they are included in the *valuation*. In such cases, the valuation process will involve consideration of the inclusion of intangible *assets* and their impact on the *valuation* of the plant and equipment *assets*.

IVS 300 – Plant and Equipment – Factors to be considered

Therefore, all plant and equipment *valuers should* normally inspect the subject *assets* to ascertain the condition of the plant and also to determine if the information provided to them is usable and related to the subject *assets* being valued. Examples of factors that *may* need to be considered under each of these headings include the following:

(a) Asset-related:

1. the *asset's* technical specification,
2. the remaining useful, economic or effective life, considering both preventive and predictive maintenance,
3. the *asset's* condition, including maintenance history,
4. any functional, physical and technological obsolescence,
5. if the *asset* is not valued in its current location, the *costs* of decommissioning and removal, and any *costs* associated with the *asset's* existing in-place location, such as installation and re-commissioning of *assets* to its optimum status,

IVS 300 – Plant and Equipment – Factors to be considered

6. for machinery and equipment that are used for rental *purposes*, the lease renewal options and other end-of-lease possibilities,

7. any potential loss of a complementary *asset*, eg, the operational life of a machine *may* be curtailed by the length of lease on the building in which it is located,

8. additional *costs* associated with additional equipment, transport, installation and commissioning, etc, and

9. in cases where the historical costs are not available for the machinery and equipment that *may* reside within a plant during a construction, the *valuer may* take references from the Engineering, Procurement, Construction ("EPC") contract.

IVS 300 – Plant and Equipment – Factors to be considered

(b) Environment-related:

1. the location in relation to the source of raw material and market for the product. The suitability of a location *may* also have a limited life, eg, where raw materials are finite or where demand is transitory,
2. the impact of any environmental or other legislation that either restricts utilisation or imposes additional operating or decommissioning costs,
3. radioactive substances that *may* be in certain machinery and equipment have a severe impact if not used or disposed of appropriately. This will have a major impact on expense consideration and the environment,
4. toxic wastes which *may* be chemical in the form of a solid, liquid or gaseous state *must* be professionally stored or disposed of. This is critical for all industrial manufacturing, and
5. licences to operate certain machines in certain countries *may* be restricted.

IVS 300 – Plant and Equipment – Factors to be considered

(c) Economic-related:

1. the actual or potential profitability of the *asset* based on comparison of operating costs with earnings or potential earnings,
2. the demand for the product manufactured by the plant with regard to both macro- and micro-economic factors could impact on demand, and
3. the potential for the *asset* to be put to a more valuable use than the current use (ie, highest and best use).

IVS 300 – Plant and Equipment – Factors to be considered

(c) Economic-related:

1. the actual or potential profitability of the *asset* based on comparison of operating costs with earnings or potential earnings,
2. the demand for the product manufactured by the plant with regard to both macro- and micro-economic factors could impact on demand, and
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IVS 300 – Plant and Equipment – Factors to be considered

***Valuations* of plant and equipment *should* reflect the impact of all forms of obsolescence on *value*.**

Consideration *must* be given to the degree to which the *asset* is attached to, or integrated with, other *assets*.
For example:

(a) *assets may* be permanently attached to the land and could not be removed without substantial demolition of either the *asset* or any surrounding structure or building,

(b) an individual machine *may* be part of an integrated production line where its functionality is dependent upon other *assets*,

(c) an *asset may* be considered to be classified as a component of the real property (eg, a Heating, Ventilation and Air Conditioning System (HVAC)).

In such cases, it will be necessary to clearly define what is to be included or excluded from the *valuation*. Any special assumptions relating to the availability of any complementary *assets must* also be stated.

IVS 300 – Plant and Equipment – Factors to be considered

Plant and equipment connected with the supply or provision of services to a building are often integrated within the building and, once installed, are not separable from it.

These items will normally form part of the real property interest. Examples include plant and equipment with the primary function of supplying electricity, gas, heating, cooling or ventilation to a building and equipment such as elevators.

If the *purpose* of the *valuation* requires these items to be valued separately, the scope of work *must* include a statement to the effect that the *value* of these items would normally be included in the real property interest and *may* not be separately realisable.

When different valuation assignments are undertaken to carry out *valuations* of the real property interest and plant and equipment *assets* at the same location, care is necessary to avoid either omissions or double counting.

IVS 300 – Plant and Equipment – Bases of Value

The *value* of most plant and equipment is particularly sensitive to different premises of value.

An example of forced liquidation conditions is where the *assets* have to be removed from a property in a timeframe that precludes proper marketing because a lease of the property is being terminated. The impact of such circumstances on *value* needs careful consideration.

In order to advise on the *value* likely to be realised, it will be necessary to consider any alternatives to a sale from the current location, such as the practicality and *cost* of removing the items to another location for disposal within the available time limit and any diminution in *value* due to moving the item from its working location.

IVS 300 – Plant and Equipment – Cost Approach

The cost approach is commonly adopted for plant and equipment, particularly in the case of individual *assets* that are specialised or special-use facilities.

The first step is to estimate the *cost* to a market *participant* of replacing the subject *asset* by reference to the lower of either reproduction or replacement cost.

The replacement cost is the *cost* of obtaining an alternative *asset* of equivalent utility; this can either be a modern equivalent providing the same functionality or the *cost* of reproducing an exact replica of the subject *asset*.

After concluding on a replacement cost, the *value should* be adjusted to reflect the impact on *value* of physical, functional, technological and economic obsolescence on *value*. In any event, adjustments made to any particular replacement cost *should* be designed to produce the same *cost* as the modern equivalent *asset* from an output and utility point of view.

IVS 300 – Plant and Equipment – Cost to Capacity Method

Under the cost-to-capacity method, the replacement cost of an *asset* with an actual or required capacity can be determined by reference to the *cost* of a similar *asset* with a different capacity.

The cost-to-capacity method is generally used in one of two ways:

(a) to estimate the replacement cost for an *asset* or *assets* with one capacity where the replacement costs of an *asset* or *assets* with a different capacity are known (such as when the capacity of two subject *assets* could be replaced by a single *asset* with a known *cost*), or
(b) to estimate the replacement cost for a modern equivalent *asset* with capacity that matches foreseeable demand where the subject *asset* has excess capacity (as a means of measuring the penalty for the lack of utility to be applied as part of an economic obsolescence adjustment).

This method *may* only be used as a check method unless there is an existence of an exact comparison plant of the same designed capacity that resides within the same geographical area.

It is noted that the relationship between *cost* and capacity is often not linear, so some form of exponential adjustment *may* also be required.