# Chapter 1 HKAS 16 Property, Plant and Equipment

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| **LEARNING OBJECTIVES**  1. Define property, plant and equipment (不動產，厰房和設備).  2. Explain all the cost elements and initial measurement of property, plant and equipment.  3. Discuss the requirements of HKAS 16 in respect of the recognition criteria for property, plant and equipment.  4. Account for the exchange of assets.  5. Discuss the accounting treatment of revaluation, diminution in carrying value and depreciation of property, plant and equipment.  6. Describe the disclosure requirements under HKAS 16. |



**1. Scope and Definition**

1.1 HKAS 16 addresses the following issues:

(i) recognition criteria for property, plant and equipment;

(ii) costs which can be included in the value of a non-current asset;

(iii) exchange of assets;

(iv) transfer between different types of assets, e.g. between non-current assets and inventories;

(v) revaluation;

(vi) acceptable depreciation methods; and

(vii) the accounting treatment of diminution in value of assets.

1.2 The Standard does not apply to:

(i) PPE classified as held for sale in accordance with HKFRS 5;

(ii) biological assets related to agricultural activity (HKAS 41 “Agriculture”), other than bearer plants;

(iii) the recognition and measurement of exploration and evaluation assets;

(iv) mineral rights and mineral reserves such as oil, natural gas and similar non-regenerative resources.

1.3 However, the Standard applies to property, plant and equipment used to develop or maintain the assets described above in (ii) and (iv) above.

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| 1.4 | Definitions |
|  | (i) **Property, plant and equipment** are tangible assets that:  (a) are held by an enterprise for **use in the production or supply of goods or services, for rental to others, or for administrative purposes**; and  (b) are expected to be **used** during **more than one period**.  (ii) **Cost** is the amount of cash or cash equivalents paid or the fair value of other consideration given to acquire an asset at the time of its acquisition or construction.  (iii) A bearer plant is a living plant that:  (a) is used in the production or supply of agricultural produce  (b) is expected to bear produce for more than one period  (c) has a remote likelihood of being sold as agricultural produce except for individual scrap sales.  (生產性植物是指，用於供應農產品的植物，其預計出產農產品的壽命超過一個會計期間，且主體將其作為農產品出售的可能性極低。)  (iv) **Residual value** is the net amount which the enterprise expects to obtain for an asset at the end of its useful life after deducting the expected costs of disposal.  (v) **Fair value** is the price that would be (1) received to sell an asset or paid to transfer a liability in an (2) orderly transaction between (3) market participants at the measurement date.  (vi) **Carrying amount** is the amount at which an asset is included in the statement of financial position after deducting any accumulated depreciation and accumulated impairment losses.  (vii) **Recoverable amount** (可收回價值) is the higher of an asset’s net selling price and its value inuse. |

**2. Recognition of Property, Plant and Equipment**

**2.1 Recognition criteria**

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| 2.1.1 | Recognition criteria |
|  | HKAS 16 states that an item of property, plant and equipment should be **recognized** as an asset in the balance sheet when:  (i) it is **probable** that **future economic benefits** associated with the asset will **flow to the enterprise** (satisfied when risks and rewards have passed to enterprise); and  (ii) the**cost** of the asset to the enterprise can be **measured reliably**. |

2.1.2 The **first criterion** is satisfied when there is a high degree of certainty attached to the flow of future economic benefits at the time of the initial recognition. It is **satisfied** generally **when the risks and rewards incident to the ownership of the asset have passed to the entity**.

2.1.3 The **second criterion** is easily **satisfied** for items of property, plant and equipment **acquired from the market** because of the existence of an external transaction. For **internally constructed** items of property, plant and equipment, a **reliable measurement** of the costs **incurred in the construction** is also often readily available.

**2.2 Specific types of asset**

2.2.1 **Small separate assets**

Smaller items, such as tools, dies and moulds, are sometimes classified as consumables and written off as an expense. If these are classified as PPE, it is useful to aggregate similar items together and treat them as one.

2.2.2 **Spare parts and stand-by equipment**

Spare parts, stand-by equipment and servicing equipment are generally not recognized as PPE but are often carried as inventory. They are recognized in the income statement as consumed.

Major spare parts and standby equipment to be used for more than one period may be recognized as PPE instead.

2.2.3 **Safety and environment equipment**

When items of safety and environmental equipment are acquired they will qualify for recognitionwhere they enable the entity to obtain future economic benefits from related assets in excess ofthose it would obtain otherwise.

**3. Initial Measurement**

**3.1 Component of costs**

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| 3.1.1 | Component of cost by purchase |
|  | The cost of an item of property, plant and equipment comprises:  (i) its **purchase price**, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates;  (ii) **any costs directly attributable to bringing the asset to the location and condition**necessary for it to be capable of operating in the manner intended by management; and  (iii) the**initial estimated of the costs of dismantling and removing the item and restoring the site on which it is located**, the obligation for which an entity incurs either when the item is acquired or as a consequence of having used the item during a particular period for purposes other than to produce inventories during that period. |

3.1.2 In most cases, the purchase price is easily determinable, given that there is a purchase transaction. However, where the purchase price is not quoted or payable in cash, “cash price equivalent” of the purchase price would be relevant.

3.1.3 Where items of property, plant and equipment are purchased and to be paid for **beyond normal credit terms**, the concept of “**cash price equivalent**” should again be used. The cash price equivalent will be **equal to the present value of the cash payments**. The **difference between** the **cash price equivalentand** the **total payment** is recognised**as interest** cover the period of credit unless such interest is recognised in the carrying amount of the item in accordance with the allowed alternative treatment in HKAS 23 “Borrowing Costs”.

3.1.4 **Directly attributable costs**, for example, are:

(i) costs of employee benefits (as defined in HKAS 19 “Employee Benefits”) arising from the construction or acquisition of the item of property, plant and equipment;

(i) the cost of site preparation for land;

(ii) initial delivery and handling costs for plant;

(iii) installation costs of plant;

(iv) professional fees such as for lawyers, architects and engineers; and

(v) costs of testing whether the asset is functioning properly, after deducting thenet proceeds from selling any items produced while bringing the asset to thatlocation and condition (such as samples produced when testing equipment).

3.1.5 The Standard specifically provides that the **following are not the costs of an item** of property, plant and equipment:

(i) costs of opening a new facility;

(ii) costs of introducing a new product or service;

(iii) costs of conducting business in a new location or with a new class of customer; and

(iv) administration and other general overhead costs.

3.1.6 Land and buildings are usually purchased together and the total cost must be apportioned between the land account and the building account. Sometimes land and buildings are acquired together when the purchaser’s real purpose is just to acquire the land. In this case the entire cost should be charged to the land account and the buildings are to be demolished. The cost of the demolition should be charged to the land as these costs are necessary to get the asset into the desired condition.

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| 3.1.7 | Example 1 |
|  | Cost of land may comprise:   |  |  | | --- | --- | |  | $ | | Purchase price of land and buildings | XX | | Removal cost of existing buildings | XX | | Attorney’s fee | XX | | Broker’s commission | XX | | Stamp duty | XX | |  | XX | |

3.1.8 When machinery or equipment is purchased, the cost normally includes the purchase price, tax, freight charges and installation costs. The testing cost should also be included in the purchase cost if the equipment needs to be tested before proper operation. Moreover, any discount or rebate should be deducted from the acquired cost.

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| 3.1.9 | Example 2 |
|  | Cost of equipment may comprise:   |  |  |  | | --- | --- | --- | |  | $ | $ | | Gross invoice price | XX |  | | Less: cash discount | XX |  | |  |  | XX | | Incidental expenditures |  |  | | Freight charges | XX |  | | Installation charges | XX |  | | Testing of installed equipment | XX |  | | Insurance charges | XX |  | |  |  | XX | |  |  | XX | |

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| Question 1 |
| ABC Ltd purchased a new machine during the year. The related costs were as follows:   |  |  | | --- | --- | |  | $000 | | List price | 100 | | Installation costs | 20 | | Pre-production testing | 10 | | Insurance premium | 2 | | Warranty | 2 | | Maintenance | 3 |   The company received a 10% trade discount on the list price and then a further 3% discount for payment on delivery. The supplier offers three months’ credit, but ABC Ltd chose to take the settlement discount. The installation should have cost of $18,000 but ABC Ltd wasted $2,000 on installing the wrong machine supports at first. The maintenance occurred after the start of production and was required by the warranty. Both the warranty and the insurance were for one year only.  Calculate the initial cost at which ABC Ltd should recognize the machine. |

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| **Solution:** |

3.1.10 In the case of a self-constructed asset, a reliable measurement of the cost should be made. Construction cost **includes the cost of raw materials, consumables and other direct costs of production** (such as labour). In addition, a reasonable proportion of indirect production costs and the **interest on borrowed capital to finance the production** of that asset may be added, **but** only in so far as they **relate to the period of production**.

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| Question 2 |
| An entity started construction on a building for its own use on 1 April 2007 and incurred the following costs:   |  |  | | --- | --- | |  | $000 | | Purchase price of land | 250,000 | | Stamp duty | 5,000 | | Legal fees | 10,000 | | Site preparation and clearance | 18,000 | | Materials | 100,000 | | Labour (period 1 April 2007 to 1 July 2008) | 150,000 | | Architect’s fees | 20,000 | | General overheads | 30,000 | |  | 583,000 |   The following information is also relevant:  (a) Materials costs were greater than anticipated. On investigation, it was found that materials costing $10 million had been spoiled and therefore wasted and a further $15 million was incurred as a result of faulty design work.  (b) As a result of these problems, work on the building ceased for a fortnight during October 2007 and it is estimated that approximately $9 million of the labour costs relate to this period.  (c) The building was completed on 1 July 2008 and occupied on 1 September 2009.  **Required:**  You are required to calculate the cost of the building that will be included in tangible non-current asset additions. |

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| **Solution:** |

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| Question 3 |
| Answer the following questions with reference to HKAS 16 “Property, Plant and Equipment”.  (a) Explain:  (i) the meaning of property, plant and equipment and the criteria for recognition of property, plant and equipment as an asset; and (4 marks)  (ii) how the initial cost of property, plant and equipment should be measured.  (4 marks)  (b) The following schedule of the movement of plant has been drafted for Hanford Ltd the year to 31 December 2016:   |  |  |  | | --- | --- | --- | |  | Cost | Depreciation | |  | $’000 | $’000 | | Balance at 1 January 2016 | 1,624 | 650 | | Additions at cost (note 1) | 460 |  | | Depreciation for the year |  | 396.8 | | Disposal (note 2) | (100) |  | | Balance at 31 December 2016 | 1,984 | 1,046.8 |   Notes:  (1) The addition to plan is made up of the following:   |  |  |  | | --- | --- | --- | |  | $’000 | $’000 | | Basic list price of plant | 420 |  | | Less: Trade discount | (63) |  | | Early settlement discount | (7) | 350 | | Refundable sales tax |  | 10.5 | | Ancillary costs: |  |  | | Shipping and handling costs |  | 4.5 | | Installation costs |  | 10 | | Pre-production testing |  | 12.5 | | Three-year maintenance contract |  | 34 | | Site preparation cost |  |  | | Electrical cable installation | 21 |  | | Concrete reinforcement | 6.25 |  | | Own labour costs | 11.25 | 38.5 | |  |  | 460 |   Hanford had incorrectly specified the power loading of the original electrical cable to be installed by the contractor. The company incurred $9,500 to correct this error; this is included in the above figure of $21,000.  The plant is expected to last for 10 years. At the end of this period compulsory costs of $20,000 will be incurred to dismantle the plant and $5,000 to restore the site to its original condition.  (2) The disposal figure of $100,000 is the proceeds from the sale of an item of plant during the year. The plant had cost $300,000 on 1 January 2013 and had been correctly depreciated prior to disposal.  (3) Hanford charges depreciation of 10% per annum on the cost of plant held at the year end.  **Required:**  (i) Calculate the amount at which the initial cost of the addition to the plant should be measured. (10 marks)  (ii) Calculate the accumulated depreciation on the plant disposed of. (1 mark)  (iii) Prepare a corrected schedule of the movements on the cost and depreciation of plant.  (6 marks)  (Total 25 marks) |

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| **Solution:** |

**3.2 Subsequent costs**

3.2.1 After the date of acquisition/exchange/construction, additional (subsequent) cost relating to property, plant and equipment will normally have to be incurred. For example, after a motor vehicle is acquired, cost on the replacement of motor oil and tyre, installation of air-conditioning system, and major overhaul might have to be incurred. The basic question arises is whether such cost should be recognised in the carrying amount of the asset, or in profit or loss as an expense when incurred.

3.2.2 In accordance with HKAS 16, circumstances in which **subsequent expenditure** on those assets being **capitalized** should depend on whether the expenditure incurred will result in a **probable future economic benefit in excess of the amount originally assessed** for the asset. All other subsequent expenditure should be recognized in the income statement as it is incurred.

3.2.3 Examples of circumstances where subsequent expenditure should be capitalized are:

(i) A modification to the asset enhances the production capacity of an asset.

(ii) The upgrading of an asset that will improve the quality of production or output.

(iii) An improvement of the existing production process which results in cost savings.

(iv) A major component of an asset that has been treated separately is replaced or restored; for example, new engines for a machine.

(v) A major overhaul of an asset that restores its previous life; therefore, the consumption of the previous economic benefits has been reflected by past depreciation charges.

(a) Day-to-day servicing costs

3.2.4 The Standard provides that an entity should **not recognize** in the carrying amount of an item of property, plant and equipment the **costs of the day-to-day servicing** (often referred as “repair and maintenance”) of the item. Rather, these costs are **recognised in profit or loss** as incurred.

(b) Major components requiring regular replacements

3.2.5 Parts of some items of property, plant and equipment may require replacement at regularintervals. For example, a furnace (火爐) may require relining after a specified number of hours of use,or aircraft interiors such as seats and galleys may require replacement several times during thelife of the airframe. Items of property, plant and equipment may also be acquired to make a lessfrequently recurring replacement, such as replacing the interior walls of a building, or to make anon-recurring replacement.

3.2.6 Under the general recognition principle, an entity recognises in the carrying amount of an item ofproperty, plant and equipment the **cost of replacing part** of such an item when that cost isincurred **if the recognition criteria are met**. The carrying amount of those parts that are replacedis derecognised in accordance with the derecognition provisions.

(c) Major inspections or overhauls (大修)

3.2.7 A condition of continuing to operate an item of property, plant and equipment (for example, anaircraft) may be performing regular major inspections for faults regardless of whether parts of theitem are replaced.

3.2.8 When each major inspection is performed, its cost is recognised in the carrying amount of theitem of property, plant and equipment as a replacement if the recognition criteria are satisfied.Any remaining carrying amount of the cost of the previous inspection (as distinct from physicalparts) is derecognised.

3.2.9 This occurs regardless of whether the cost of the previous inspection was identified in thetransaction in which the item was acquired or constructed. If necessary, the estimated cost of afuture similar inspection may be used as an indication of what the cost of the existing inspectioncomponent was when the item was acquired or constructed.

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| 3.2.10 | Example 3 |
|  | Entity A purchases a new ship for HK$40 million. This ship will be required to undergo a drydock overhaul every five years to restore its service potential. At the time of purchase, the costof the existing inspection component, estimated by the cost of an inspection if it had beenperformed at the time of the purchase of the ship, was HK$4 million. Therefore, the cost of HK$36 million, excluding the overhaul cost of HK$4 million, will be depreciated over the whole estimated useful life of the ship, for example 30 years, resulting in an annual depreciation chargeof HK$1.2 million. The cost on overhaul of HK$4 million will be depreciated over 5 years, resulting in an annual depreciation of HK$0.8 million. In year 6 when a dry-docking is carried out, the inspection expenditure is capitalised (assuming that the recognition criteria are satisfied), which is then depreciated over the period of five years to the next overhaul. If Entity A is not able to estimate reliably the cost an existing inspection when it acquired the new ship, the whole of HK$40 million should be depreciated over 30 years. |

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| Question 4 |
| In each of the following cases justify whether or not the expenditure should be capitalized and be included in the carrying amount of an item of property, plant and equipment:  (a) A new engine is fitted to a machine which will increase its production capacity from 100,000 units a year to 140,000 units a year.  (b) Replacement of rotting windows in the head office.  (c) Replacement of an aircraft engine every five years. |

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| **Solution:** |

**4. Exchange of Assets**

**4.1 General principles**

4.1.1 When an item of property, plant and equipment is acquired in exchange for a non-monetary asset, the cost of the asset acquired should be **measured based on the fair value** unless

(a) the exchange transaction **lacks commercial substance** or

(b) the fair value of **neither the asset received nor the asset given up** is **reliably measurable**.

4.1.2 If an entity is able to **determine reliably the fair value of either the asset received or the asset given up**, we first look to the fair value of the asset(s) given up.

4.1.3 However, in a trade-in, **quite often the fair value of the new asset is more clearly evident** than the second-hand value of the asset traded in. We recognize a gain or loss for the difference between the fair value of the asset given up and its book value.

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| 4.1.4 | Example 4 |
|  | Assume that City Ltd trades in the truck for an office equipment (a dissimilar item). At the time of the exchange, the truck has a book value of $5,000 as follows:   |  |  | | --- | --- | |  | $ | | Cost of truck | 10,000 | | Accumulated depreciation | 5,000 | |  | 5,000 | |  |  | |  | $ | | Cost of new office equipment | 15,000 | | Trade-in allowance for old truck | 5,500 | | Cash payment | 9,500 |   The trade-in value constitutes part of the sale price of the new office equipment and generates a gain of $500 ($5,500 – $5,000). The fair value may refer to the cost of new office equipment in this case and the accounting entries to record such an exchange would be:   |  |  |  | | --- | --- | --- | |  | Dr. ($) | Cr. ($) | | Office equipment | 15,000 |  | | Accumulated depreciation – truck | 5,000 |  | | Cash |  | 9,500 | | Gain on disposal of fixed assets |  | 500 | | Truck |  | 10,000 | |

**4.2 Exchange lacks commercial substance**

4.2.1 If an exchange **lacks commercial substance** or **fair value cannot be measured reliably**, the acquired item in the exchange is not measured at fair value and is **measured at the carrying amount of the asset given up**.

4.2.2 To **preclude the possibility** of a company **exchanging appreciated assets solely to recognize gain**, fair value can be used only in gain situations that have commercial substance.

4.2.3 A commercial exchange is considered to **have commercial substance** if **future cash flows will change as a result of the exchange**. Most exchanges are for legitimate business reasons and would not be transacted if there were no anticipated change in future cash flows.

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| 4.2.4 | Example 5 – Gain situation |
|  | Suppose a company owned a tract of land that had a book value of $1 million and a fair value of $5 million. The only ways to recognize the $4 million appreciation are to either sell the land or to exchange the land for another nonmonetary asset for a legitimate business purpose. For example, if the land were exchanged for a different type of asset, say a building, then future cash flows most likely will change, the exchange has commercial substance, fair value is used and the $4 million gain can be recognized.  On the other hand, if the land were **exchanged** for a tract of land that has the **identical characteristics** as the land given, then it is **unlikely** that **future cash flows would change**. In this case, the exchange **lacks commercial substance** and the **new land is valued at the book value** of the old land. |

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| 4.2.5 | Example 6 – Lack commercial substance |
|  | ABC Co traded a tract of land to BBB Co for a similar tract of land. The old land had a book value of $2.5 million and a fair value of $4.5 million. To equalize the fair values of the assets exchanged, in addition to the land, ABC Co paid BBB Co $500,000 in cash. This means that the fair value of the land acquired is $5 million. The following journal entry records the transaction, assuming that the exchange lacks commercial substance:   |  |  |  | | --- | --- | --- | |  | Dr. ($) | Cr. ($) | | Land – New (book value + cash paid: $2.5m + 0.5m) | 3,000,000 |  | | Land – old (account balance) |  | 2,500,000 | | Cash |  | 500,000 |   The new land is recorded at $3 million, the book value of the old land, $2.5m, plus the cash given of $500,000. No gain is recognized. |

4.2.6 **Loss situation**

In Example 6, what if the fair value of the land given was less than its book value? It is unlikely that a company would enter into this type of transaction unless there was a legitimate business reason. The IASB’s intent in including the commercial substance requirement for the use of fair value was to avoid companies trading appreciated property for no legitimate reason other than to recognize the gain. This means that when a loss is included in a nonmonetary exchange, it is **acceptable to record the loss and we use fair value to value the asset acquired**.

**5. Measurement after Recognition**

**5.1 Introduction**

5.1.1 After recognition as an asset, an entity should choose either the cost model or the revaluation model as its accounting policy and should apply that policy to an entire class of property, plant and equipment.

**5.2 Cost model (成本模式)**

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| 5.2.1 | Cost Model |
|  | After recognition as an asset, an item of property, plant and equipment should be carried at its **cost less any accumulated depreciation and any accumulated impairment losses**. |

**5.3 Revaluation model (重估價模式)**

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| 5.3.1 | Revaluation Model |
|  | After recognition as an asset, an item of property, plant and equipment whose fair value can be **measured reliably** should be carried at a **revalued amount**, being its fair value at the date of the revaluation **less any subsequent accumulated depreciation and subsequent accumulated impairment losses**. |

**5.4 Basis and frequency of valuation**

5.4.1 If revaluation is adopted, the asset should be valued at its fair value. The fair value of land and buildings is usually determined from **market-based evidence** by appraisal that is normally undertaken by professionally qualified valuers, and the fair value of other items of property, plant and equipment is usually their market value determined by appraisal.

5.4.2 In compliance with the Standard, items of property, plant and equipment that experience significant and volatile movements in fair values would have to be revalued annually. However, for property, plant and equipment with only insignificant movements in fair values, annual revaluations would be unnecessary. Instead a revaluation every three or five years may be sufficient.

5.4.3 **Items within a class** of property, plant and equipment should be **revalued simultaneously**. Alternatively, a class of assets may be revalued on a rolling basis, provided that the revaluation of the class of assets is completed within a short period of time and that the individual revaluations are kept up to date.

**5.5 Accounting for revaluation**

5.5.1 Revaluation surpluses or deficits are measured as the difference between the revalued amounts and the carrying amounts at the date of the valuation.

5.5.2 Upon an initial revaluation, an increase in net carrying amount (revaluation surplus) should be credited directly to equity under a separate heading, “**revaluation surplus (or reserve)**”, and a decrease in net carrying amount (deficit on revaluation) should be recognised in profit or loss.

5.5.3 However, upon a subsequent revaluation, a revaluation surplus should be recognised in profit or loss to the extent that it reverses a revaluation decrease in respect of the same asset previously recognised in profit or loss.

5.5.4 On the other hand, a deficit on revaluation should be debited directly to the revaluation reserve to the extent that of any credit balance existing in the revaluation reserve in respect of that (same) asset.

5.5.5 It is important to note that the term “that same asset” refers to an individual item of property, plant and equipment. A portfolio approach to revaluation is therefore precluded.

5.5.6 To record the effects of the revaluation, the Standard provides for two methods:

(i) both the gross carrying amount and the accumulated depreciation are restated proportionately in order to give a net carrying amount equal to the net revalued amount. This method is often used when an asset is revalued by means of applying an index to its depreciated replacement; and

(ii) the**accumulated depreciation is eliminated** and the **net revalued amount** is treated **as the new gross carrying amount**.

5.5.7 The general accepted practice in Hong Kong is to use the second method. The rationale for this method is that after revaluation, the asset is deemed to be a “new” asset.

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| 5.5.8 | Example 7 |
|  | Assume the followings:   |  |  | | --- | --- | | Cost of machine at 1.1.2005 | $80,000 | | Depreciation method | Straight line 40 years | | Revalued amount in 31.12.2014 | $120,000 |   The accounting entries to record the revaluation would be:   |  |  |  | | --- | --- | --- | | 31.12.2014 | Dr. ($) | Cr. ($) | | Machine | 40,000 |  | | Accumulated depreciation ($80,000/40 ×10) | 20,000 |  | | Asset revaluation surplus |  | 60,000 | |

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| 5.5.9 | Example 8 |
|  | The cost and fair value of land is given as follows:   |  |  | | --- | --- | |  | $m | | Cost of land | 100 | | Fair value of land |  | | At 2012 | 200 | | At 2013 | 90 | | At 2014 | 150 |  |  |  |  | | --- | --- | --- | |  | Dr. ($m) | Cr. ($m) | | 2012 |  |  | | Land | 100 |  | | Revaluation reserve |  | 100 | | 2013 |  |  | | Profit and loss account | 10 |  | | Revaluation reserve | 100 |  | | Land |  | 110 | | 2014 |  |  | | Land | 60 |  | | Revaluation reserve |  | 50 | | Profit and loss account |  | 10 |   Note that $10m previously been recognized as an expense, is now reversed. |

**5.6 Depreciation of revalued assets**

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| 5.6.1 | Depreciation of Revalued Assets |
|  | The depreciable amount of an item of property, plant and equipment for the purposes of depreciation is defined as its cost, or other amount substituted for cost, less its residual value. Thus, **when an asset has been revalued**, the **revalued amount**, instead of its cost, will **form the basis for calculating the depreciable amount**.  An **annual reserves transfermay be made** (revaluation reserve to retained earnings) **for extra depreciation** on the revalued amount compared to cost (measured as the difference between depreciation charge based on revalued amount and the charge based on historic cost). It depends on the company policy.  Journals   |  |  |  | | --- | --- | --- | |  | $ | $ | | Dr Depreciation charge – P&L | X |  | | Cr Accumulated depreciation |  | X | | (The following is optional entries, depends on company policy) |  |  | | Dr Revaluation reserve | X |  | | Cr Retained earnings |  | X | |

5.6.2 Also, the **residual value** of the asset should be **reviewed at least at each financial year-end**.

5.6.3 Therefore, when an **asset** is **revalued**, the **depreciable amount has to be recalculated**, based on the revalued amount and the newly estimated residual value. The new depreciable amount thus calculated is then allocated over the remaining useful life of the asset.

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| 5.6.4 | Example 9 |
|  | AB Ltd bought a building at a cost of $5,000,000. The building was expected to have a useful life of 50 years with no residual value, and was depreciated using the straight-line method. After ten years, when the building was carried in the books at $4,000,000, it was revalued to its fair market value of $8,000,000. At the date of revaluation, the building was estimated to have another 40 years of useful life and no residual value.  In this case, the depreciation charge for the building for each of the next 40 years would be $200,000 ($8,000,000/40). Note that before the revaluation, the annual depreciation charge for the building for each of the first ten years had been $100,000 ($5,000,000/50). |

**5.7 Disposals of revalued assets**

5.7.1 The **revaluation reserve included in equity** may be **transferred directly to retained profits when the reserve is realized**. The reserve may be realized on the retirement or disposal of the asset. However, part of the reserve may be realized as the asset is used by the enterprise; in such a case, the amount of the reserve is the difference between depreciation based on the revalued carrying amount of the asset and depreciation based on the asset’s original cost. The **transfer from revaluation reserve to retained profits is not made through the profit and loss account**.

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| 5.7.2 | Example 10 |
|  | Assume the followings:   |  |  | | --- | --- | | Cost of machine at 1.1.2005 | $80,000 | | Depreciation method | Straight line 40 years | | Revalued amount in 31.12.2014 | $120,000 | | Disposed in 31.12.2015 | $130,000 |   The accounting entries would be:   |  |  |  | | --- | --- | --- | | 31.12.2014 | Dr. ($) | Cr. ($) | | Machine | 40,000 |  | | Accumulated depreciation ($80,000/40 × 10) | 20,000 |  | | Assets revaluation reserve |  | 60,000 | |  |  |  |  |  |  |  | | --- | --- | --- | | Year 2015 |  |  | | Depreciation | 4,000 |  | | Accumulated depreciation ($120,000/30) |  | 4,000 |   Note that additional $2,000 ($60,000/30) depreciation is charged to retained earnings account due to revaluation. The revaluation reserve included in equity may be transferred directly to retained earnings (and is distributable) when the reserve is realized.  The accounting entries on disposal would be:   |  |  |  | | --- | --- | --- | |  | Dr. ($) | Cr. ($) | | 31.12.2015 |  |  | | Assets revaluation reserve | 2,000 |  | | Retained profits |  | 2,000 | |  |  |  | | Bank | 130,000 |  | | Accumulated depreciation | 4,000 |  | | Machine |  | 120,000 | | Gain on disposal of assets |  | 14,000 | |  |  |  | | Revaluation reserve | 58,000 |  | | Retained profits |  | 58,000 |   Note that the total gain on disposal of assets based on the historical cost value should be $72,000 ($58,000 + $14,000) and the assets revaluation reserve is realized on disposal of the asset. |

**6. Depreciation**

**6.1 Depreciation methods**

6.1.1 HKAS 16 does **not specify the use of any method** in particular, but states that the methods used should reflect the pattern in which the asset’s economic benefits are consumed by the entity.

6.1.2 Depreciable amounts are allocated to accounting periods using various systematic methods of allocation, of which the three most commonly used methods are:

(i) The straight line method, under which periodic depreciation is computed by dividing the depreciable amount of the asset by the expected number of accounting periods during its useful life;

(ii) The reducing balance method, under which periodic depreciation is computed as a constant proportion of the asset’s historical cost or substituted amount, less accumulated depreciation; and

(iii) The production or service output method, under which periodic depreciation is computed by reference to the use or output of the asset period by period.

6.1.3 Other methods include the sum of the years digits method and the sinking fund and annuity methods, which include the imputed interest in the computations.

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| 6.1.4 | Example 11– Machine hours method (or output method) |
|  | The useful life of a motor vehicle is estimated to be 100,000 miles, with a nil residual value at the end of this mileage. The purchase cost of the vehicle is $60,000. The depreciation charges are as follows:   |  |  |  |  | | --- | --- | --- | --- | | Year | Mileage |  | Depreciation ($) | | 1 | 35,000 | (35,000 ÷ 100,000) 🞨 $60,000 | = 21,000 | | 2 | 30,000 | (30,000 ÷ 100,000) 🞨 $60,000 | = 18,000 |   and so on in later years. |

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| 6.1.5 | Example 12– Sum of the year digits method |
|  | |  |  | | --- | --- | | Cost of assets | $10,500 | | Residual value | $500 | | Estimated useful life | 4 years | |  |  | | Sum of year digits: | 4 + 3 + 2 + 1 = 10 | |  |  | | Depreciation, year 1 = 4/10 🞨 ($10,500 – $500) | 4,000 | | Depreciation, year 2 = 3/10 🞨 $10,000 | 3,000 | | Depreciation, year 3 = 2/10 🞨 $10,000 | 2,000 | | Depreciation, year 4 = 1/10 🞨 $10,000 | 1,000 | |  | 10,000 | |

6.1.6 The **depreciation method** applied to an asset **should be reviewed at least at each financial year-end**. If there has been a significant change in the expected pattern of consumption of the future economic benefits embodied in the asset, the method should be changed to reflect the changed pattern. The Standard provides that a change in depreciation method should be accounted for as a change in an accounting estimate in accordance with the provisions of HKAS 8.

**6.2 Not to depreciate**

6.2.1 A frequently asked question is whether there is a need to provide for depreciation if the fair value of the asset concerned is greater than its cost. This question arises because depreciation is often misconstrued as a valuation process.

6.2.2 It should be noted that **depreciation is defined as simply a process of allocating the depreciable amount of the asset to the various accounting periods during which the asset is used to earn revenue**. It is not a process of accounting for the change in the value of assets.

6.2.3 If the value of an asset is greater than its cost (or net carrying amount) and it is decided that the value of the asset be taken into account, then what needs to be done is a separate revaluation exercise. After the revaluation exercise, depreciation would still have to be accounted for to allocate the revalued amount over the remaining life of the revalued asset.

6.2.4 However, it is possible that, at a certain point in time, the residual value of the depreciable asset may be larger than its carrying amount, such that the depreciable amount is zero or negative and therefore no depreciation is required.

6.2.5 The above argument is taken into account in the Standard. The residual value of an asset may increase to an amount equal to or greater than the asset’s carrying amount. If it does, the asset’s depreciation charge is zero unless and until its residual value subsequently decreases to an amount below the asset’s carrying amount.

6.2.6 Another argument commonly used to support not to depreciate an asset is that if an entity has an effective repair and maintenance policy, the useful life of the asset may be extended indefinitely and/or the residual value will increase. The Standard specifically provides that repair and maintenance of an asset do not negate the need to depreciate it. Thus, depreciation should be continued, notwithstanding an effective repair and maintenance policy.

**7. Land and Buildings**

**7.1 Freehold land**

7.1.1 In countries other than HK, land is normally freehold land and has indefinite useful life and, in most cases, it retains its value indefinitely; it is accordingly not regarded as a depreciable asset.

**7.2 Leasehold land and buildings**

7.2.1 Leasehold land is to be depreciated. Buildings have limited useful lives and therefore are depreciable assets.

**7.3 Land and buildings in the course of development or re-development**

*(a) Held for re-sale*

7.3.1 Where land and buildings in the course of development or re-development are held for re-sale, they should be regarded as inventories of an enterprise and as such, should be accounted for in accordance with HKAS 2 “Inventories”.

*(b) Held for other purposes*

7.3.2 Where land and buildings in the course of development or re-development are held for production, rental or administrative purposes or where no decision has yet been taken to re-sell the land and buildings, they should be included in the financial statements as property, provided that the recognition criteria for an asset are satisfied.

**8. Disclosure Requirements**

8.1 The financial statements should disclose, in respect of each class of property, plant and equipment:

(i) the measurement bases used for determining the gross carrying amount. When more than one basis has been used, the gross carrying amount for that basis in each category should be disclosed;

(ii) the depreciation methods used;

(iii) the useful lives or the depreciation rates used;

(iv) the gross carrying amount and the accumulated depreciation at the beginning and end of the period;

(v) a reconciliation of the gross carrying amount and the accumulated depreciation at the beginning and end of the period showing:

(a) additions;

(b) disposals;

(c) acquisitions through business combinations;

(d) increases or decreases resulting from the revaluations and from impairment losses recognized or reversed directly in equity under HKAS 36;

(e) impairment losses recognized/reversed in the profit and loss account under HKAS 36;

(f) depreciation charge;

(g) the net exchange differences arising on the translation of the financial statements of a foreign entity;

(h) the net exchange differences arising on the translation of the financial statements of a foreign entity;

(i) transfers between different types of assets;

(j) transfers between different classes of property, plant and equipment; and

(k) other movements.

8.2 The financial statements should also disclose:

(i) the existence and amounts of restrictions on title, and property, plant and equipment pledged as security for liabilities;

(ii) the accounting policy for costs of restoring the site of items of property, plant or equipment;

(iii) the amount of expenditures on account of and the amount of borrowing costs capitalized on property, plant and equipment in the course of construction;

(iv) the amount of commitments for the acquisition of property, plant and equipment; and

(v) the gains or losses arising from the retirement or disposal of property, plant and equipment, and how the amounts are arrived at.

8.3 When items of property, plant and equipment are stated at revalued amounts, the following should be disclosed:

(i) the basis used to revalue the assets;

(ii) the effective date of the revaluation;

(iii) the names and qualifications of persons making the revaluation;

(iv) whether the valuer was independent of or connected to the enterprise concerned;

(v) the nature of any indices used to determine replacement costs;

(vi) the carrying amount of each class of property, plant and equipment that would have been included in the financial statements had the assets been carried under the treatment in paragraph 28; and

(vii) the revaluation reserve, indicating the movement for the period and any restriction on the distribution of the balance to shareholders.