Property, Plant and Equipment

(HKAS 16)

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Before HKAS 16 ……

Case

- Accounting policy (2004/05) on "leasehold improvements, furniture, fixtures and equipment":
  - All additions are charged and proceeds on disposals are credited to the general fund in the statement of operations and fund balances.

- Accounting policy (2003/04) on "property, plant and equipment":
  - Property, plant and equipment are written off to the income and expenditure account during the year of acquisition.

- SSAP 17 exempted charitable, government subvented and not-for-profit organisations from compliance of SSAP 17 but now ……

From SSAP 17 to HKAS 16 – Summary

1. Objective and Scope	• Exempted entities deleted, some properties excluded
2. Definitions	• Cost and residual value revised
3. Recognition	• Same recognition principle applied to all costs
4. Measurement at recognition	• Element of cost extended • Measurement of assets from exchange of assets revised
5. Measurement after recognition	• Commencement and cessation of depreciation revised • Annual review of residual value needed
6. Derecognition	• Sections of transfer, retirements and disposals eliminated • Derecognition rule introduced
7. Disclosure	• No exemption on disclosure of comparative figures (comparative on reconciliation needed)

1. Objective and Scope

- The objective of HKAS 16 is
  - to prescribe the accounting treatment for property, plant and equipment (PPE)
  - so that users of the financial statements can discern information about an entity's investment in its PPE and the changes in such investment.

- The principal issues in accounting for property, plant and equipment (PPE) are:
  a) the recognition of the assets, **Recognition**
  b) the determination of their carrying amounts and **Measurement**
  c) the depreciation charges and impairment losses to be recognised in relation to them.

1. Objective and Scope

- HKAS 16 shall be applied in accounting for PPE
  - except when another standard requires or permits a different accounting treatment.

- HKAS 16 does not apply to:
  a) property, plant and equipment classified as held for sale in accordance with HKFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*;
  b) biological assets related to agricultural activity (see HKAS 41 *Agriculture*);
  c) the recognition and measurement of exploration and evaluation assets (see HKFRS 6 *Exploration for and Evaluation of Mineral Resources*); or
  d) mineral rights and mineral reserves such as oil, natural gas and similar non-regenerative resources.

  However, HKAS 16 applies to PPE used to develop or maintain the assets described in (a) and (d).

1. Objective and Scope

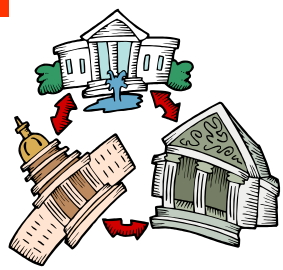
- Other HKFRSs/HKASs may require recognition of an item of PPE based on an approach different from that in HKAS 16.
  - For example, HKAS 17 *Leases* requires an entity to evaluate its recognition of an item of leased PPE on the basis of the transfer of risks and rewards.
  - However, in such cases other aspects of the accounting treatment for these assets, including depreciation, are prescribed by HKAS 16.

1. Objective and Scope

Example 1

Are the following assets PPE?

- Copier acquired under an operating lease ✕ → HKAS 17
- Motor vehicle acquired under finance leases √
- Owned property used for rental purpose ✕ → HKAS 40
- Investment property under re-development ✕ → HKAS 40
- Property held for a currently undetermined future use ✕ → HKAS 40
- Leasehold land separated from the leasehold building ✕ → HKAS 17



1. Objective and Scope

- An entity shall apply HKAS 16 to property that is being constructed or developed for future use as investment property but does not yet satisfy the definition of 'investment property' in HKAS 40 *Investment Property*.
  - Once the construction or development is complete, the property becomes investment property and the entity is required to apply HKAS 40.
  - HKAS 40 also applies to investment property that is being redeveloped for continued future use as investment property.
  - An entity using the cost model for investment property in accordance with HKAS 40 shall use the cost model in HKAS 16.

1. Objective and Scope – Implication

Exemption for not-for-profit entities eliminated

- The exemption in SSAP 17 for charitable, government subvented and not-for-profit organisations was eliminated in HKAS 16 → Implies that all such entities are required to depreciate its PPE from the financial period beginning from 1 Jan. 2005
- Specific transitional provisions for this elimination additionally introduced in Nov. 2005 → Those entities that have previously taken advantage of the exemption under SSAP 17 are permitted
  - to deem the carrying amount of an item of PPE immediately before applying HKAS 16 on its effective date (or earlier) as the cost of that item

More to be discussed later ….

2. Definitions

- Property, plant and equipment (PPE) are tangible items that:
  a) are held 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.

2. Definitions

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, or
- where applicable, the amount attributed to that asset when initially recognised in accordance with the specific requirements of other HKFRSs

  e.g. HKAS 39, HKFRS 2

Residual value

- Revised but …… discussed later

3. Recognition

- The cost of an item of PPE shall be recognised as an asset if, and only if:
  a) it is *probable* that *future economic benefits* associated with the item will *flow to* the entity; and
  b) the *cost* of the item can be *measured reliably*.

Recognition Criteria

- Major spare parts, servicing equipment, replacement and inspection can also be qualified as PPE.

- If the recognition criteria is met, such cost is recognised; the carrying amount of the replaced parts or previous inspection is derecognised.

3. Recognition – Principle Change

Recognition criteria (capitalisation) for		Initial Cost	Subsequent Expenditure
In SSAP 17	Criteria not the same	• Probable that future economic benefit of the asset will flow to the enterprise • Cost measured reliably	• Probable that future economic benefits in excess of the *originally assessed standard of performance* of the existing asset will flow to the entity
In HKAS 16	Same criteria	• Probable that future economic benefit of the asset will flow to the entity • Cost measured reliably ***Same criteria applied to both costs***	

Expenditure not fulfilling the recognition criteria will be charged to income statement

Clearer approach on so-called **Component Accounting**

3. Recognition – Principle Change

Case

香港公益金
THE COMMUNITY CHEST

Accounting policy on fixed assets (annual report 2004/05):

- Major items of expenditure representing leasehold improvements and computer development are depreciated on a straight line basis over three years.
- Other fixed assets are written off in the year of purchase.
- Subsequent expenditure relating to a fixed asset that has already been recognised is added to the carrying amount of the asset when it is probable that future economic benefits, in excess of the originally assessed standard of performance of the existing asset, will flow to the Chest.
- All other subsequent expenditure is recognised as an expense in the period in which it is incurred.

Would be affected by HKAS 16

3. Recognition – Principle Change

Case

Esprit Holdings Limited

- Adopted HK GAAP to 30 June 2003
- Begin to adopt all the new/revised IFRS in 2004 Annual Report
- Accounting policy on property, plant and equipment
  - **Subsequent costs**
    are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when
    - it is probable that future economic benefits associated with the item will flow to the Group and
    - the cost of the item can be measured reliably.

Capitalise

  - **All other repairs and maintenance**
    are charged to the income statement during the financial period in which they are incurred.

Expense

Clearer approach on so-called **Component Accounting**

3. Recognition – Principle Change

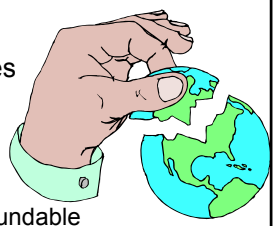
Case

Hong Kong Exchange and Clearing Limited (HKEx)

- Consolidated financial statements of 2004 early adopted all HKFRSs issued up to 31 Dec. 2004, including HKAS 16, 17, 32, 39, 40 ……
- Accounting policy on fixed assets states –
  - Subsequent costs are included in the asset's carrying amount or recognised as separate asset, as appropriate, only when
    - it is probable that future economic benefits associated with the item will flow to the Group and
    - the cost of the item can be measure reliably
  - All other repairs and maintenance are charged to the profit and loss account during the year in which they are incurred

4. Measurement at Recognition

Element of cost extended



- An item of property, plant and equipment that qualifies for recognition as an asset shall be measured at its cost.
- The cost of an item of property, plant and equipment comprises:
  a) its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates;
  b) 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.
  c) the initial estimate 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.

Also refer to HKAS 37

New element of PPE cost

4. Measurement at Recognition

Example 2

Element of cost extended

- Examples of directly attributable costs are:
  a) costs of employee benefits (as defined in HKAS 19 *Employee Benefits*) arising directly from the construction or acquisition of the item of PPE;
  b) costs of site preparation;
  c) initial delivery and handling costs;
  d) installation and assembly costs;
  e) costs of testing whether the asset is functioning properly, after deducting the net proceeds from selling any items produced while bringing the asset to that location and condition (such as samples produced when testing equipment); and
  f) professional fees.

4. Measurement at Recognition

Example 3

Element of cost extended

- Examples of costs that are not the costs of an item of PPE are:
  a) costs of opening a new facility;
  b) costs of introducing a new product or service (including costs of advertising and promotional activities);
  c) costs of conducting business in a new location or with a new class of customer (including costs of staff training); and
  d) administration and other general overhead costs.

4. Measurement at Recognition

Element of cost extended

- Recognition of costs in the carrying amount of an item of PPE ceases when the item is in the location and condition necessary for it to be capable of operating in the manner intended by management.
- Therefore, costs incurred in using or redeploying an item are not included in the carrying amount of that item.
- For example, the following costs are not included in the carrying amount of an item of PPE:
  a) costs incurred while an item capable of operating in the manner intended by management has yet to be brought into use or is operated at less than full capacity;
  b) initial operating losses, such as those incurred while demand for the item's output builds up; and
  c) costs of relocating or reorganising part or all of an entity's operations.

4. Measurement at Recognition

Example 4

- Several same air-condition plants have been installed by GV in several leasehold properties. When the properties are returned to the landlord in 4 years, the plants should be removed.
- The properties include service apartment (3 plants installed), admin. office (1 plant installed) and head office (2 plants installed).
- The purchase cost of each plant is $1,000. The installation cost is $1,000 for each plant. Present value of removal costs of the plant include $400 resulted from installation only and $400 from the usage during the 4 years.
- What is the cost of each plant to be recognised?

In accordance with HKAS 16

- the cost of each plant installed in the apartment is $2,400 (the purchase cost, installation cost and present value of removal cost from installation).
- the cost of each plant installed in the admin. office and head office should be $2,800 (including the present value of all removal costs)
- Since the removal costs of such plants are incurred as a consequence of having used the machine during a particular period for purposes, other than to produce inventories (this case, service apartment) during that period

4. Measurement at Recognition

Example 5

- Entity A operates an offshore oilfield where its 20-year licensing agreement requires it to remove the oil rig at the end of production and restore the seabed.
- Costs of removal of the oil rig and restoration of the seabed include:
  - 75% relates to damage caused by building the oil rig
  - 10% relates to damage caused by regular maintenance of the oil rig
  - 15% arises through the extraction of oil

85%

- The cost of the oil rig
  - includes the best estimate of **85%** of the eventual costs
  - a provision in the amount of that cost will be recognised when the oil rig has been constructed.

removal of the oil rig and restoration of damage caused by building it

for purposes, other than to produce inventories during that period

recognised as a liability when the oil is extracted

4. Measurement at Recognition

Example 6

- Reel had purchased a significant amount of new production equipment during the year.
- The cost before trade discount of this equipment was $50 million.
- The trade discount of $6 million was taken to the income statement.
- Depreciation is charged on the straight line basis over a 6-year period.

ACCA 3.6 2002 Dec.

- HKAS 16 states that any trade discounts and rebates shall be deducted from the cost of an asset and not taken to the income statement.
- Hence this practice is reversed with the resultant decrease in the depreciation charge and net profit.

4. Measurement at Recognition

Element of cost extended

Same amendment in HKAS 38 and HKAS 40

Rule on Exchange of Assets Revised

Cost of PPE acquired in exchange is measured at fair value

But not required if:

In SSAP 17

– it is an exchange for similar assets

In HKAS 16

Commercial Substance

– the exchange transaction lack of Commercial Substance, or

Fair Value of Exchanged Asset

– the Fair Value is not reliably measurable (both asset received and given up)

- If the acquired item is not measured at fair value, its cost is measured at the carrying amount of the asset given up.

4. Measurement at Recognition

To determine Commercial Substance

- considering the extent to which its future cash flows are expected to change as a result of the transaction

Commercial Substance exists if:

a) the configuration (risk, timing and amount) of the cash flows of the asset received differs from that of the asset transferred; or

Commercial Substance

b) the entity-specific value of the portion of the entity's operations affected by the transaction changes as a result of the exchange; and

c) the difference in (a) or (b) is significant relative to the fair value of the assets exchanged.

4. Measurement at Recognition

- Even comparable market transactions do not exist, Fair Value of an asset is reliably measurable if
  a) the variability in the range of various reasonable fair value estimates is not significant for that asset, or
  b) the probabilities of the various estimates within the range can be reasonably assessed and used in estimating fair value.
- If an entity is able to determine reliably the fair value of either the asset received or the asset given up
  - ➢ then the fair value of the asset given up is used to measure the cost of the asset received
    - unless the fair value of the asset received is more clearly evident.

Fair Value of Exchanged Asset

5. Measurement after Recognition

- An entity shall choose either:

Cost Model

Revaluation Model

as its accounting policy and shall apply that policy to an entire class of PPE.

5. Measurement after Recognition

Cost Model

After recognition as an asset, an item of PPE shall be carried at *its cost less any accumulated depreciation and any accumulated impairment losses*

Revaluation Model

After recognition as an asset, an item of PPE, *whose fair value can be measured reliably*, shall 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*.

Revaluations shall be made with sufficient regularity to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the balance sheet date.

5. Measurement after Recognition

Revaluation Model

- Fair value is the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction.
- The fair value of
  - land and buildings ⇒ is usually determined from market-based evidence by appraisal that is normally undertaken by professionally qualified valuers.
  - items of PPE ⇒ is usually their market value determined by appraisal.
- If there is no market-based evidence of fair value because of the specialised nature of the item of PPE and the item is rarely sold, except as part of a continuing business
  ⇒ an entity may need to estimate fair value using an income or a depreciated replacement cost approach.

5. Measurement after Recognition

Example 7

- An entity's non-current assets have been revalued by one of the directors of Issue who holds no recognised professional qualification and has used estimated realisable value as the basis of valuation.
- The plant and equipment is of a highly specialised nature and is constructed by the company itself and is mainly computer hardware.

ACCA 3.6 2003 Jun.

- The tangible non-current assets have been valued by one of the directors of Issue.
- HKAS 16 gives guidance on who should perform valuations by saying that the value should be determined by 'appraisal normally undertaken by professionally qualified valuers' and the director is not a qualified valuer.
- This fact places doubt on the values placed on the tangible non-current assets.

5. Measurement after Recognition

Answers

- The plant and equipment is of a specialised nature and is, therefore, difficult to value, especially as it has been constructed by the company itself.
- It could be argued that the director is perhaps the best person to value such assets.
- However, the lack of independence in the process and the lack of compliance with HKAS 16 enhances the risk of reliance upon the figures for tangible non-current assets.
- Additionally HKAS 16 states that the fair value of land and buildings and plant and equipment is usually market value not an estimate of realisable value.
- Further where there is no evidence of market value for plant and equipment because of its specialised nature (as is the case in this instance), then they are valued at depreciated replacement cost.
- Assets other than properties are easily valued and therefore there is suspicion as to the underlying reasons for the valuation of plant and equipment and the authenticity of the figures for tangible non-current assets.

5. Measurement after Recognition

Revaluation Model

- The frequency of revaluations depends upon the changes in fair values of the items of PPE being revalued.
  a) When the fair value of a revalued asset differs materially from its carrying amount, a further revaluation is required.
  b) Some items of PPE experience significant and volatile changes in fair value, thus necessitating annual revaluation.
  c) Such frequent revaluations are unnecessary for items of PPE with only insignificant changes in fair value. Instead, it may be necessary to revalue the item only every 3 or 5 years.

5. Measurement after Recognition

Revaluation Model

- When an item of PPE is revalued, any accumulated depreciation at the date of the revaluation is treated in one of the following ways:
  a) restated proportionately with the change in the gross carrying amount of the asset so that the carrying amount of the asset after revaluation equals its revalued amount.
  This method is often used when an asset is revalued by means of applying an index to its depreciated replacement cost.
  b) eliminated against the gross carrying amount of the asset and the net amount restated to the revalued amount of the asset.
  This method is often used for buildings.

5. Measurement after Recognition

Example 8

- At year end, a class of motor vehicles has:
  – Cost of $100,000 and accumulated depreciation of $40,000
  – Revalued amount of that class of motor vehicles is $90,000
- Show the revaluation effect

- Accumulated depreciation restated proportionately with the change in the gross carrying amount of the asset so that the carrying amount of the asset after revaluation equals its revalued amount.
  – Cost restated ($100,000 x 90,000 / 60,000) $ 150,000
  – Accumulated depreciation restated ($90,000 x 90,000 / 60,000) ($ 60,000)
- Accumulated depreciation eliminated against the gross carrying amount of the asset and the net amount restated to the revalued amount
  – Cost $ 100,000
  – Accumulated depreciation eliminated ($40,000 - $30,000) ($ 10,000)

5. Measurement after Recognition

Revaluation Model

- If an item of property, plant and equipment is revalued, the entire class of PPE to which that asset belongs shall be revalued
- If an asset's carrying amount is increased as a result of a revaluation, the increase shall be credited directly to equity under the heading of revaluation surplus.
  - However, the increase shall be recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss.
- If an asset's carrying amount is decreased as a result of a revaluation, the decrease shall be recognised in profit or loss.
  - However, the decrease shall be debited directly to equity under the heading of revaluation surplus to the extent of any credit balance existing in the revaluation surplus in respect of that asset.

5. Measurement after Recognition

Revaluation Model

- The revaluation surplus included in equity in respect of an item of PPE may be transferred directly to retained earnings when the asset is derecognised.
- However, some of the surplus may be transferred as the asset is used by an entity.
  - In such a case, the amount of the surplus transferred would be the difference between depreciation based on the revalued carrying amount of the asset and depreciation based on the asset's original cost.

Dr Depreciation (depreciation based on the asset's original cost)
Dr Revaluation reserves (difference)
Cr Acc. depreciation (depreciation based on the revalued carrying amount)

- Transfers from revaluation surplus to retained earnings are not made through profit or loss.

5. Measurement after Recognition

Example 9

- Argent values its remaining properties independently on the basis of 'existing use value', which is essentially current value.
- The directors have currently opted for a policy of revaluation in the financial statements with the annual transfer of the depreciation on the revalued amount from revaluation reserve to accumulated reserves.
- Local GAAP requires a full valuation every three years with gains and losses taken to income when the asset is available for sale.
- Discuss the implications for the Argent Group financial statements of a move from using local GAAP to using HKFRS.

ACCA 3.6 2003 Dec.

5. Measurement after Recognition

Answers

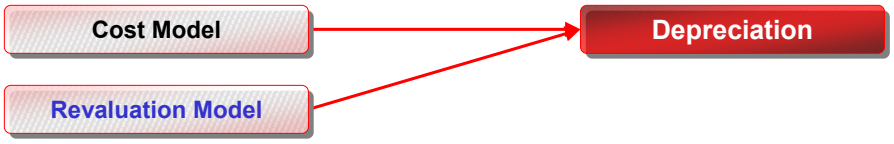
- There is a fundamental difference of principle between HKAS 16 and local GAAP.
- Where the company opts for a policy of revaluation, HKAS 16 requires revaluation to fair value whereas at present the company utilises a policy of revaluation to current value.
- The use of 'existing use value' (EUV) for the properties is in accordance with local GAAP.
- HKAS 16 states that the fair value of land and buildings is usually market value.
- Open market value can be greater or smaller than EUV especially where the property may be developed for an alternative use or the property has been adapted for the needs of the owner and there is little prospect of finding a buyer because of these alterations.

5. Measurement after Recognition

Answers

- Both local GAAP and HKAS 16 expect that if a policy of revaluation is adopted, asset valuations should be reasonably current at each balance sheet date.
- Local GAAP requires three yearly full valuations by an external valuer but HKAS 16 does not specify a maximum period between valuations, simply stating that valuations should be undertaken as frequently as is necessary.
- The requirements and guidance in respect of the basis of valuations are not as detailed as many local GAAPs.
- Finally, the reporting of gains and losses under HKAS 16 will be different to local GAAP.
- Under HKAS 16 revaluation gains are credited directly to equity under the heading of 'revaluation surplus' except where a revaluation loss exceeds an existing revaluation surplus, when the excess is charged to the income statement.
- Similarly if the revaluation gain reverses a revaluation loss on the same asset then it shall be recognised as income. Gains are not recognised in income until the asset is sold.

5. Measurement after Recognition



- ***Depreciation*** is the systematic allocation of the *depreciable amount* of an asset over its *useful life*.
- ***Depreciable amount*** is the *cost* of an asset, or *other amount* substituted for cost, less its *residual value*.
- ***Useful life*** is:
  a) the period over which an asset is expected to be available for use by an entity; or
  b) the number of production or similar units expected to be obtained from the asset by an entity.
- The ***residual value*** of an asset is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

5. Measurement after Recognition

Depreciation

- *Each part* of an item of PPE with a cost that is significant in relation to the total cost of the item shall be *depreciated separately*.
  - e.g. it may be appropriate to depreciate separately the airframe and engines of an aircraft
- The depreciation charge for each period shall be recognised in profit or loss unless it is included in the carrying amount of another asset.

Each significant component shall be depreciated separately
(not clearly required in the past)

Clearer approach on so-called **Component Accounting**

5. Measurement after Recognition

Example 10

Depreciation

At 1 Jan. 2005, AX bought a laser printing machine of HK$50 million

- The machine will be used for 5 years (maximum useful life) and then dispose of at zero value
- The machine's laser head can operate 500 hours, after that replacement of a new laser head is needed
- The cost of a new laser head was HK$10 million at that time and its residual value is zero.

- Cost of each part is significant in relation to the total cost of the parts
- Each part should be depreciated separately

Laser machine other than laser head is depreciated over 5 years

Laser head is depreciated over 500 hours

Under usage methods of depreciation, the depreciation charges can be zero while there is no production

5. Measurement after Recognition

Example 11

Depreciation

At 1 Jan. 2005, AX bought a laser printing machine of HK$50 million

- The machine will be used for 5 years (maximum useful life) and then dispose of at zero value
- The machine's laser head can operate 500 hours, after that replacement of a new laser head is needed
- The cost of a new laser head was HK$10 million at that time and its residual value is zero.

- Assume the laser head can operate 500 hours or 5 years, which is shorter.
- If the machine has not been used in the 2nd year, calculate depreciation on the laser head under different depreciation methods

If the laser head is depreciated	Depreciation for 2nd year
• over 500 hours (unit of production)	➢ *zero*
• 5 years on a straight-line basis	➢ *$2 million*

5. Measurement after Recognition

Depreciation

Residual Value ← **Depreciable amount**

- The *depreciable amount* of an asset shall be allocated on a systematic basis over its useful life.
- The *residual value* and the *useful life* of an asset *shall be reviewed at least at each financial year-end*
  - if expectations differ from previous estimates, the change shall be accounted for as a change in an accounting estimate in accordance with HKAS 8

5. Measurement after Recognition

Depreciation

Residual Value ← Depreciable amount

- As stated before, definition of Residual Value is revised as
  - the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset
    - were already of the age and
    - in the condition expected at the end of its useful life
  - Inflation may be incorporated in residual value
- New requirements *(on both residual value and useful life)*
  - shall be reviewed at least at each financial year end
  - if expectations differ from previous estimates, the change shall be accounted for as a change in an accounting estimate in accordance with HKAS 8
  - No such requirement in SSAP 17

5. Measurement after Recognition

- PPE's residual value may increase to an amount equal to or greater than the asset's carrying amount
  - If it does, the depreciation charge is zero
  - unless and until its residual value subsequently decreases to an amount below the asset's carrying amount

Be careful

- By referring to the definition of residual value
- It is still limited to the estimates that it would receive currently for the asset if
  - the asset were already of the age and
  - in the condition expected at the end of its useful life

Implication:

- If
  estimated residual value > carrying amount
  ⇒ no depreciation is required
- But feasible only if
  - the management clearly intends to dispose of the PPE before the end of its physical usage life
  - otherwise, the estimated residual value is
    - minimal or even zero

5. Measurement after Recognition

Example 12

Same laser machine example as before

At 1 Jan. 2005, AX bought a laser printing machine of HK$50 million

- The machine will be used for 5 years (maximum useful life) and then dispose of at zero value
- The machine's laser head can operate 500 hours, after that replacement of a new laser head is needed
- The cost of a new laser head was HK$10 million at that time and its residual value is zero.

- At 31 Dec. 2005, the price of a new laser machine increases to HK$75 million
- No change in cost of a new laser head and estimated maximum useful life
- Shall AX revise the residual value at 31 Dec. 2005?

No!

- AX has not changed its usage plan and the residual value after the estimated useful live would still be zero

5. Measurement after Recognition

Example 13

Another one

- At 1 Jan. 1985, Entity A bought a flat in Tai Koo Shing at HK$ 500,000.
  - Entity A aimed to use it for 50 years until the end of its estimated useful life
  - The original estimated residual value is zero
  - Depreciation is calculated on a straight-line basis
  - At 31 Dec. 2004, the depreciated historical cost (and carrying amount) of the property was HK$0.3 million

- Now, the price of a similar flat in Tai Koo is about HK$ 3M
- Shall A revise the residual value?

No!
A has not changed its usage plan and the residual value after the estimated useful live would still be around zero

- If A changes its intention and aims to dispose of the flat in 10 years (i.e. 2015)
- Shall A revise the residual value?

Yes!
If A can demonstrate that it has an intention to dispose of it before the end of its economic life

5. Measurement after Recognition

Example 14

- Handrew, a listed company, is adopting HKFRS in its financial statements for the year ended 31 May 2005.
- Its directors are worried about the effect of the move to HKFRS on their financial performance and the views of analysts. The directors have highlighted some 'headline' differences between HKFRS and their current local equivalent standards and require a report on the impact of a move to HKFRS on the key financial ratios for the current period.
  - Previous GAAP requires the residual value of a non-current asset to be determined at the date of acquisition or latest valuation.
  - The residual value of much of the plant and equipment is deemed to be negligible. However, certain plant (cost $20 million and carrying value $16 million at 31 May 2005) has a high residual value.
  - At the time of purchasing this plant (June 2003), the residual value was thought to be approximately $4 million.
  - However, the value of an item of an identical piece of plant already of the age & in the condition expected at the end of its useful life is $8M at 31.5.05 ($11 M at 1.6.04). Plant is depreciated on a straight line basis over 8 years.
- Write a report to the directors of Handrew discussing the impact of the change to HKFRS on the reported profit and balance sheet of Handrew at 31 May 2005.

ACCA 3.6 2005 Jun.

5. Measurement after Recognition

Answers

- Previous GAAP requires the residual value of a non-current asset to be determined at the date of acquisition or latest valuation.
- However, HKAS 16 requires residual values to be reviewed at the balance sheet date.
- HKAS 16 requires increases in an asset's residual value, based on current prices, to be reflected in the depreciation charge, thus reducing the expense in the income statement. If the residual value exceeds or equals the asset's carrying value then the depreciation charge is reduced to zero.
- Thus under previous GAAP residual value increases are reflected in disposal profits rather than in lower depreciation.
- The effect on the financial statements will be that the depreciation charge for the year will decrease.
- The residual value of the asset should be based on the current price for an identical piece of plant already of the age and in the condition expected at the end of its useful life.
- Any change in the residual value should be accounted for as an adjustment to future depreciation.

5. Measurement after Recognition

Depreciation

Depreciable amount

- Depreciation of an asset begins when it is available for use
  - i.e. when it is in the location and condition necessary for it to be capable of operating in the manner intended by management.
- Depreciation of an asset ceases at the earlier of the date that
  - the asset is classified as held for sale (or included in a disposal group that is classified as held for sale) in accordance with HKFRS 5 and
  - the date that the asset is derecognised
- Land and buildings are separable assets and are accounted for separately, even when they are acquired together.

Implied that depreciation still required even PPE

- becomes idle or
- is retired from active use

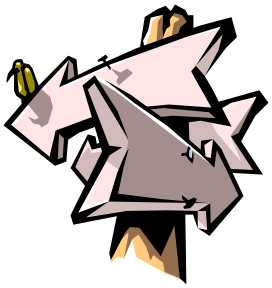
5. Measurement after Recognition

Depreciation

Depreciable amount

Depreciation method

- The depreciation method used
  - shall reflect the pattern in which the asset's future economic benefits are expected to be consumed by the entity
  - shall be reviewed at least at each financial year-end and
  - such a change shall be accounted for as a change in an accounting estimate in accordance with HKAS 8
- Other than the above, that method is applied consistently from period to period
  - unless there is a change in the expected pattern of consumption of those future economic benefits.



5. Measurement after Recognition

HKAS 16 states that:

- A variety of depreciation methods can be used to allocate the depreciable amount of an asset on a systematic basis over its useful life.
- These methods include:

Depreciation

Depreciable amount

Depreciation method

Straight Line → results in a constant charge over the useful life if the asset's residual value does not change

Diminishing Balance → results in a decreasing charge over the useful life

Units of Production → results in a charge based on the expected use or output

5. Measurement after Recognition

- 2 broad schools of thought on the meaning of "*consumption of economic benefits*" of an infrastructure asset:

Time Based View

Supporters argue

- for the component approach and primarily straight-line depreciation method
- as they consider the passage of time determines the consumption of economic benefits for most components of toll roads.

Usage Based View

Supporters argue

- for the integral asset approach and units-of-usage depreciation method
- as they consider the usage or traffic flow determines the consumption of economic benefits for entire toll roads.

5. Measurement after Recognition

Example 15

Depreciation

Depreciable amount

Depreciation method

- A machine costs HK$600,000 with an estimated useful life of 3 years?
- Calculate deprecation for the years under difference depreciation methods.

	Year 1	Year 2	Year 3	**Total**
Straight-line basis	200	200	200	**600**
Reducing balance (at 70%)	420	126	38	**584**
Sum-of-year-digit	300	200	100	**600**

5. Measurement after Recognition

Example 16

Depreciation

Depreciable amount

Depreciation method

- A machine costs HK$600,000 with an estimated useful life of 3 years?
- Estimated residual value is $150,000.
  - Depreciable amount = $450,000
- Calculate deprecation for the years under difference depreciation methods.

	Year 1	Year 2	Year 3	**Total**
Straight-line basis	150	150	150	**450**
Reducing balance (at 70%)	315	95	28	**438**
Sum-of-year-digit	225	150	75	**450**

5. Measurement after Recognition

- To determine whether an item of PPE is impaired, an entity applies HKAS 36
- Compensation from third parties for items of property, plant and equipment that were impaired, lost or given up shall be included in profit or loss when the compensation becomes receivable

Depreciation

Depreciable amount

Depreciation method

Impairment

5. Measurement – Impairment

Triggering events

At each reporting date, an entity shall assess whether there is any indication that an asset may be impaired.

Recoverable Amount

If any such indication exists, the entity shall estimate the recoverable amount of the asset.

It is the higher of an asset's

Fair value less costs to sell and Value in Use

Impairment Loss

If, and only if, the recoverable amount of an asset is less than its carrying amount

- The carrying amount of the asset shall be reduced to its recoverable amount.
- That reduction is an impairment loss.

5. Measurement – Impairment

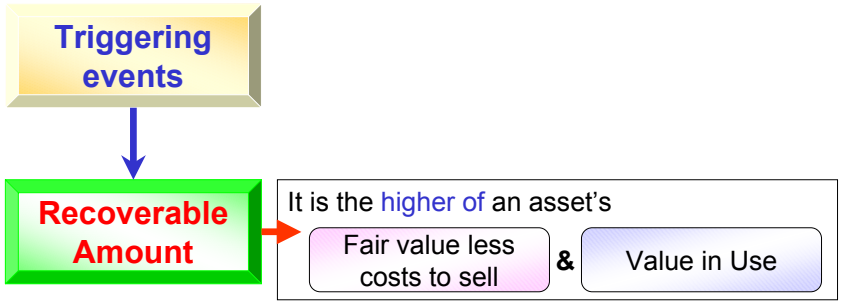
Triggering events

- An entity shall assess at each reporting date whether there is any indication that an asset may be impaired.
- If any such indication exists, the entity shall estimate the recoverable amount of the asset.

5. Measurement – Impairment

- In assessing whether there is any indication that an asset may be impaired, an entity shall consider, as a minimum, the following indications:
  - **External sources of information**
    - a) an asset's market value declined significantly more than would be expected
    - b) significant changes with an adverse effect on the entity in the technological, market, economic or legal environment
    - c) market interest rates or other rates increased that likely affects the discount rate used in calculating an asset's value in use
    - d) the carrying amount of the net assets of the entity is more than its market capitalisation
  - **Internal sources of information**
    - e) evidence is available of obsolescence or physical damage of an asset
    - f) significant changes with an adverse effect on the entity in which, an asset is used or is expected to be used.
    - g) evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected.

5. Measurement – Impairment



5. Measurement – Impairment

- HKAS 36 defines recoverable amount as the higher of an asset's or cash-generating unit's

Fair Value Less Costs to Sell and **Value in Use**

- Recoverable amount is determined for an individual asset
  - unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets.
- If this is the case, recoverable amount is determined for the cash-generating unit to which the asset belongs

5. Measurement – Impairment

Fair Value Less Costs to Sell

- It is the amount obtainable from the sale of an asset or cash-generating unit in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal.
  - **The best evidence**
    - ⇒ is a price in a binding sale agreement in an arm's length transaction, adjusted for incremental costs to the disposal
  - **If no binding sale agreement but an asset is traded in an active market**
    - ⇒ the asset's market price less the costs of disposal
  - **If there is no binding sale agreement or active market for an asset**
    - ⇒ based on the best information available to reflect the amount that an entity could obtain, at the balance sheet date, from the disposal of the asset in an arm's length transaction between knowledgeable, willing parties, after deducting the costs of disposal

5. Measurement – Impairment

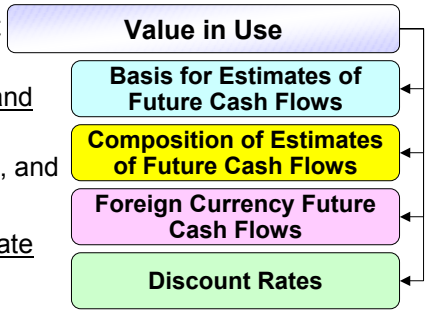
Value in Use

- Value in use is the present value of the future cash flows expected to be derived from an asset or cash-generating unit.
  - The following elements shall be reflected in the calculation of an asset's value in use:
    - a) an estimate of the future cash flows the entity expects to derive from the asset;
    - b) expectations about possible variations in the amount or timing of those future cash flows;
    - c) time value of money, represented by the current market risk-free rate of interest;
    - d) price for bearing the uncertainty inherent in the asset; and
    - e) other factors, such as illiquidity, that market participants would reflect in pricing the future cash flows the entity expects to derive from the asset.

⇨ (b), (d) and (e) can be reflected as adjustments to either
- future cash flows or
- discount rate

5. Measurement – Impairment

- Estimating the value in use of an asset involves the following steps:
  a) estimating the future cash inflows and outflows to be derived
     - from continuing use of the asset, and
     - from its ultimate disposal; and
  b) applying the appropriate discount rate to those future cash flows.



5. Measurement – Impairment

Example 17

- Desolve committed to close one of its subsidiary by the year-end, 31 July 2001.
- An equipment of the subsidiary was carried at
  - a value of $10 million at 31 July 2001.
- It was anticipated that
  - the equipment would generate cash flows of $7 million up to 30 November 2001 and
  - that its fair value less costs to sell at 31 July 2001 was $8 million.
- The equipment was sold on 30 November 2001 for $6 million.

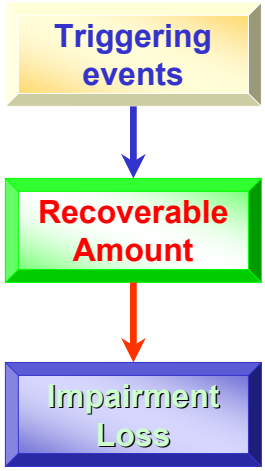
ACCA 3.6 2001 Dec.

5. Measurement – Impairment

Answers

- The commitment by Desolve to close the operations would be an indicator of possible impairment.
- The equipment has a carrying value of $10 million, a value in use of $7 million and a fair value less costs to sell of $8 million as at 31 July 2001.
- Thus the carrying value is compared with the higher of the fair value less costs to sell and value in use and as a result the equipment is deemed to be impaired in value to the total of $2 million ($10 million - $8 million).
- The question arises as to whether the sale proceeds of $6 million on 30 November 2001 should be taken as a fairer measure of the equipment's value. This post balance sheet event could be taken into account in the impairment review.
- For example, the income being generated after the year-end could be taken as the disposal proceeds of $6 million plus the cash flows of $7 million, i.e. $13 million.
- This figure would then be the equipment's recoverable amount, which would mean that the asset is not impaired.

5. Measurement – Impairment



5. Measurement – Impairment

- If, and only if, the recoverable amount of an asset is less than its carrying amount
  - the carrying amount of the asset shall be reduced to its recoverable amount
  - That reduction is an impairment loss.
- An impairment loss shall be recognised immediately in profit or loss, (i.e. the income and expenditure account)
  - unless the asset is carried at revalued amount in accordance with another Standard
    - for example, in accordance with the revaluation model in HKAS 16 *Property, Plant and Equipment*
  - any impairment loss of a revalued asset shall be treated as a revaluation decrease in accordance with that other Standard.

6. Derecognition

- The carrying amount of an item of PPE shall be derecognised:
  a) on disposal; or
  b) when no future economic benefits are expected from its use or disposal.
- The gain or loss arising from the derecognition of an item of PPE shall be included in profit or loss when the item is derecognised (unless HKAS 17 requires otherwise on a sale and leaseback).
- Gains shall not be classified as revenue.

6. Derecognition

- Derecognition on replacement
  - If, under the initial recognition principle, an entity recognises in the carrying amount of an item of PPE the cost of a replacement for part of the item, then it derecognises the carrying amount of the replaced part regardless of whether the replaced part had been depreciated separately.
- The gain or loss arising from the derecognition of an item of PPE shall be determined as the difference between
  - the net disposal proceeds, if any, and
  - the carrying amount of the item.

7. Disclosure

- The financial statements shall disclose, for each class of PPE:
  a) the measurement bases used for determining the gross carrying amount;
  b) the depreciation methods used;
  c) the useful lives or the depreciation rates used;
  d) the gross carrying amount and the accumulated depreciation (aggregated with accumulated impairment losses) at the beginning and end of the period; and ……

7. Disclosure

- Detailed information and reconciliation of the carrying amount of PPE are required
- The reconciliation of the carrying amount of PPE for prior period, i.e. comparative reconciliation is now required

The carrying amount of the PPE → net book value of PPE

- In HK SSAP 17, the requirement is "a reconciliation of the gross carrying amount and the accumulated depreciation at the beginning and end of the period ……"

7. Disclosure

香港交易所 HKEx

Case

	Leasehold buildings $'000	Computer trading and clearing systems $'000	Other computer hardware and software $'000	Leasehold improvements, furniture, equipment and motor vehicles $'000	Total $'000
Net book value at 1 Jan 2003					
– as previously reported (note ii)	117,000	444,232	105,304	71,572	738,108
– effect of adopting HKAS 17	(98,500)	–	–	–	(98,500)
– as restated (note i)	18,500	444,232	105,304	71,572	639,608
Additions	–	13,431	16,775	6,041	36,247
Disposals	–	(3,474)	(6,659)	(1,604)	(11,737)
Depreciation	(748)	(109,510)	(39,703)	(31,778)	(181,739)
Revaluation (note 34)	548	–	–	–	548
Net book value at 31 Dec 2003	18,300	344,679	75,717	44,231	482,927
At 31 Dec 2003					
At cost	–	1,345,403	347,385	231,519	1,924,307
At valuation	18,300	–	–	–	18,300
Accumulated depreciation	–	(1,000,724)	(271,668)	(187,288)	(1,459,680)
Net book value	18,300	344,679	75,717	44,231	482,927

7. Disclosure

Example 18

However, in SME FRS, the requirement is the same (except no comparative requirement), but it gives the following illustrative notes:

Property, plant and equipment

	Leasehold land and buildings	Furniture, fixtures and equipment	Total
Cost:	HK$	HK$	HK$
At 1 January 20X5	5,040,000	2,428,180	7,468,180
Additions	-	2,381,530	2,381,530
Disposals	-	(1,527,470)	(1,527,470)
At 31 December 20X5	5,040,000	3,282,240	8,322,240
Accumulated depreciation and impairment losses:			
At 1 January 20X5	2,160,000	1,204,170	3,364,170
Depreciation for the year	80,000	485,770	565,770
Written back on disposal	-	(878,000)	(878,000)
At 31 December 20x5	2,240,000	811,940	3,051,940
Net carrying amount:			
At 31 December 20X5	2,800,000	2,470,300	5,270,300
At 31 December 20x4	2,880,000	1,224,010	4,104,010

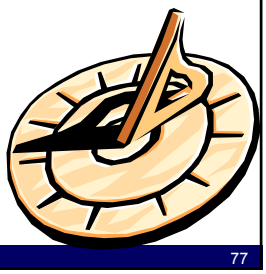
7. Disclosure

- The financial statements shall also disclose:
  a) the existence and amounts of restrictions on title, and PPE pledged as security for liabilities;
  b) the amount of expenditures recognised in the carrying amount of an item of PPE in the course of its construction;
  c) the amount of contractual commitments for the acquisition of PPE; and
  d) if it is not disclosed separately on the face of the income statement, the amount of compensation from third parties for items of PPE that were impaired, lost or given up that is included in profit or loss.
- Similar disclosures are required on the PPE measured by using Revaluation Model.

8. Transitional Provisions

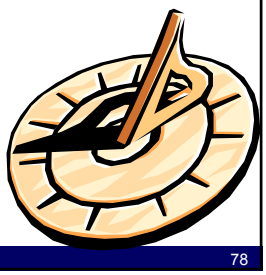
For exchange of assets

- The requirements regarding the initial measurement of an item of PPE acquired in an exchange of assets transaction
  - shall be applied prospectively to future transactions.



8. Transitional Provisions

- For those entities (charities and not-for-profit entities) that have previously taken advantage of the exemption under SSAP 17
  - They are permitted to deem the carrying amount of an item of PPE immediately before applying HKAS 16 on its effective date (or earlier) as the cost of that item.
  - Depreciation on the deemed cost of an item of property, plant and equipment commences from the time at which HKAS 17 is first applied.
  - In the case where a carrying amount is used as a deemed cost for subsequent accounting, this fact and the aggregate of the carrying amounts for each class of property, plant and equipment presented shall be disclosed.



8. Transitional Provisions

Example 19

What is the implication on the following cases when HKAS 16 is adopted?

- All the costs of PPE of an not-for-profit entity had been written off to income and expenditure statement before 2005.

  The entity is permitted
  - not to restate the costs of PPE
  - to carry zero beginning balance on PPE in 2005
  - to follow HKAS 16 from 2005

- All the costs of PPE of an not-for-profit entity had not been depreciated before 2005.

  The entity is permitted
  - to begin depreciation from 2005
  - to follow HKAS 16 from 2005

For both cases, the fact and the aggregate of the carrying amounts for each class of PPE presented shall be disclosed.

Implementation

A more clearer approach stated in HKAS 16 on **Component Accounting**

Summary of the changes relating to it

- Recognition: Subsequent cost — same recognition principles for all costs
- Measurement: Depreciation — each significant part depreciated separately
- Derecognition — to derecognise the replaced part (and recognise the new part)

Implementation

A more clearer approach stated in HKAS 16 on **Component Accounting**

In implementation

- Significant parts (components) of a PPE can be
  - recognised, depreciated and derecognised separately and individually
- The replacement of each such part shall be treated as
  - a disposal of the original part of the asset and
  - an acquisition of a new part
- The cost of servicing an asset, when that is a part of a major overhaul or inspection, shall be
  - treated as a component of the cost of an asset and
  - depreciated over the period until the next servicing
- Examples:
  - aircrafts, hotels, infrastructure ……

Implementation

Example 20

Same laser machine example as before

At 1 Jan. 2005, AX bought a laser printing machine of HK$50 million

- The machine will be used for 5 years (maximum useful life) and then dispose of at zero value
- The machine's laser head can operate 500 hours, after that replacement of a new laser head is needed
- The cost of a new laser head was HK$10 million at that time and its residual value is zero.

- At 31 Dec. 2006, replacement of the laser head is needed after 400 hours of operation
  - The carrying amount of the laser head alone would be HK$ 2 million at that date *[$10M – ($10M ÷ 500 x 400)]*
  - The cost of a new laser head is HK$ 8 million.

- If the laser head is replaced
  - Replaced laser head with HK$ 2 million shall be derecognised
  - New laser head of HK$ 8 million shall be recognised

Implementation

Case

四川成渝高速公路股份有限公司
SICHUAN EXPRESSWAY COMPANY LIMITED

Early adopted HKAS 16 only for 2004

Stated in 2004 Annual Report

- The adoption of HKAS 16 has resulted in
  - the Group's recognition of cost of replacing concrete road surface of an expressway and
  - the derecognition of the carrying amount of the replaced concrete road surface of the expressway

Implementation

Case

四川成渝高速公路股份有限公司
SICHUAN EXPRESSWAY COMPANY LIMITED

Accounting policy for expenditure incurred after fixed assets have been put into operation:

Expense
- **Ad hoc repairs and maintenance expenditures**
  - are charged to the profit and loss account in the period in which they are incurred

Capitalise
- **Cost of replacing concrete road surface of expressways**
  - is recognised in the carrying amount of expressways and
  - the carrying amount of replaced concrete road is derecognised

Capitalise
- **Expenditures for upgrading asphalt road surface of an expressways**
  - are capitalised as additional costs of the expressway

Capitalise
- **In other situations** where it can be clearly demonstrated that the expenditure has resulted in **an increase in the future economic benefits** expected to be obtained from the use of the fixed asset
  - the expenditure is capitalised as an additional cost of that asset.

Implementation

Example 21

- Company A's tangible non-current assets are split into
  - long leasehold properties (over 50 years) and
  - short leasehold properties which are all occupied by the company.
- The company's accounting policy as regards long leasehold properties is not to depreciate them on the grounds that their residual value is very high and the market value of the property is in excess of the carrying amount.
- Short leasehold properties are only depreciated over the final 10 years of the lease. The company renegotiates its short leaseholds immediately before the final 10 years of the lease and thus no depreciation is required up to this point.

ACCA 3.6 2002 Dec.

Implementation

Answers

- HKAS 16 states that the depreciable amount of an asset is depreciated over its useful life. Depreciable amount is the cost of an asset, or other amount substituted for cost, less its residual value.
- The residual value of an asset is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.
- It implies that the residual value can only be significant if the management clearly intends to dispose of the asset before the end of its physical usage life. Otherwise, in practice, the residual value of an asset is often insignificant and therefore immaterial in the calculation of the depreciable amount.
- HKAS 16 further requires that the residual value and the useful life of an asset shall be reviewed at least at each financial year-end. 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.
- Also if the long leasehold properties are held to the end of their lease term, then their residual value will be very low.

Implementation

Answers

- Hence it would seem that the company must intend selling the properties before this date in order for their residual values to be so high.
- If this is not the case, then the view of the company that the long leasehold properties have high residual values must be looked at with a degree of scepticism.
- Thus to avoid depreciating the long leasehold property, the asset must be revalued at each balance sheet date whereupon its value should not have fallen from the previous revalued amount.
- It has been argued that depreciation may be avoided because an enterprise will maintain the asset such that its fair value is maintained at a level similar to that at which it was purchased.
- The argument fails because the effect of maintaining an asset is to increase its economic life and at the end of its economic life the asset's residual value will be unaffected.
- The policy for short leasehold properties is not in line with HKAS 16, which states that the depreciation charge should be made throughout the asset's useful economic life and not just towards the end of its life.
- The current practice adopted by the company of non-depreciation and renegotiation appears to be a deliberate attempt to avoid depreciating the short leasehold properties.

Property, Plant and Equipment

(HKAS 16)

June 2006

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