

# property, plant and equipment, and tangible fixed assets

relevant to CAT Papers 3 and 6, and new  
ACCA Qualification Papers F3 and F7

# measurement and depreciation

■ This is the first of two articles which consider the main features of IAS 16, *Property, Plant and Equipment* (PPE). Both articles are relevant to students studying the International or UK stream. The series will primarily focus on the requirements of IAS 16, but will also compare IAS 16 with the equivalent UK standard, FRS 15, *Tangible Fixed Assets*. These standards deal with the four main aspects of financial reporting of PPE that are likely to be of major relevance in the exams, namely:

- initial measurement and depreciation – covered in this article
- revaluation and derecognition – covered in the second article.

Note: There are no significant differences between IAS 16 and FRS 15 as far as either initial measurement or depreciation of PPE are concerned.

IAS 16 defines PPE as tangible items that are:

- held for use in the production or supply of goods or services, for rental to others, or for administrative purposes and
- expected to be used during more than one accounting period.

## THE INITIAL MEASUREMENT OF PPE

IAS 16 requires that PPE should initially be measured at 'cost'. The cost of an item of PPE comprises:

- the cost of purchase, net of any trade discounts plus any import duties and non-refundable sales taxes
- 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.

These are costs that would have been avoided if the asset had not been purchased or constructed. General overhead costs cannot be allocated to the cost of PPE. Directly attributable costs include:

- employee benefits payable to staff installing, constructing, or initially testing the asset
- site preparation
- professional fees directly associated with the installation, construction, or initial testing of the asset
- any other overhead costs directly associated with the installation, construction, or initial testing of the asset.

Where these costs are incurred over a period of time (such as employee benefits), the period for which the costs can be included in the cost of PPE ends when the asset is *ready* for use, even if the asset is not brought into use until a later date. As soon as an asset is capable of operating it is ready for use. The fact that it may not operate at normal levels immediately,



because demand has not yet built up, does not justify further capitalisation of costs in this period. Any abnormal costs (for example, wasted material) cannot be included in the cost of PPE.

IAS 16 does not specifically address the issue of whether borrowing costs associated with the financing of a constructed asset can be regarded as a directly attributable cost of construction. This issue is addressed in IAS 23, *Borrowing Costs*. IAS 23 requires the inclusion of borrowing costs as part of the cost of constructing the asset. In order to be consistent with the treatment of 'other costs', only those finance costs that would have been avoided if the asset had not been constructed are eligible for inclusion. If the entity has borrowed funds specifically to finance the construction of an asset, then the amount to be capitalised is the actual finance costs incurred. Where the borrowings form part of the general borrowing of the entity, then a capitalisation rate that represents the weighted average borrowing rate of the entity should be used.

The cost of the asset will include the best available estimate of the costs of dismantling and removing the item and restoring the site on which it is located, where the entity has incurred an obligation to incur such costs by the date on which the cost is initially established. This is a component of cost to the extent that it is recognised as a provision under IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*. In accordance with the principles of IAS 37, the amount to be capitalised in such circumstances would be the amount of foreseeable expenditure appropriately discounted where the effect is material.

**EXAMPLE 1**

On 1 October 20X6, Omega began the construction of a new factory. Costs relating to the factory, incurred in the year ended 30 September 20X7, are as follows:

	<b>\$000</b>
Purchase of the land	10,000
Costs of dismantling existing structures on the site	500
Purchase of materials to construct the factory	6,000

Employment costs (Note 1)	1,800
Production overheads directly related to the construction (Note 2)	1,200
Allocated general administrative overheads	600
Architects' and consultants' fees directly related to the construction	400
Costs of relocating staff who are to work at the new factory	300
Costs relating to the formal opening of the factory	200
Interest on loan to partly finance the construction of the factory (Note 3)	1,200

**Note 1**

The factory was constructed in the eight months ended 31 May 20X7. It was brought into use on 30 June 20X7. The employment costs are for the nine months to 30 June 20X7.

**Note 2**

The production overheads were incurred in the eight months ended 31 May 20X7. They included an abnormal cost of \$200,000, caused by the need to rectify damage resulting from a gas leak.

**Note 3**

Omega received the loan of \$12m on 1 October 20X6. The loan carries a rate of interest of 10% per annum.

**Note 4**

The factory has an expected useful economic life of 20 years. At that time the factory will be demolished and the site returned to its original condition. This is a legal obligation that arose on signing the contract to purchase the land. The expected costs of fulfilling this obligation are \$2m. An appropriate annual discount rate is 8%.

**Requirement**

Compute the initial carrying value of the factory (see **Table 1** for solution).

**DEPRECIATION OF PPE**

IAS 16 defines depreciation as 'the systematic allocation of the depreciable amount of an asset over its useful life'. 'Depreciable amount' is the cost of an asset, cost less residual value,

or other amount (for more on the revaluation of the asset, see the second article in the August 2007 issue of *student accountant*). Depreciation is not providing for loss of value of an asset, but is an accrual technique that allocates the depreciable amount to the periods expected to benefit from the asset. Therefore assets that are increasing in value still need to be depreciated.

IAS 16 requires that depreciation should be recognised as an expense in the income statement, unless it is permitted to be included in the carrying amount of another asset. An example of this practice would be the possible inclusion of depreciation in the costs incurred on a construction contract that are carried forward and matched against future income from the contract, under the provisions of IAS 11.

A number of methods can be used to allocate depreciation to specific accounting periods. Two of the more common methods, specifically mentioned in IAS 16, are the straight line method, and the reducing (or diminishing) balance method.

The assessments of the useful life (UL) and residual value (RV) of an asset are extremely subjective. They will only be known for certain after the asset is sold or scrapped, and this is too late for the purpose of computing annual depreciation. Therefore, IAS 16 requires that the estimates should be reviewed at the end of each reporting period. If either changes significantly, then that change should be accounted for over the remaining estimated useful economic life.

#### EXAMPLE 2

An item of plant was acquired for \$220,000 on 1 January 20X6. The estimated UL of the plant was five years and the estimated RV was \$20,000. The asset is depreciated on a straight line basis. On 31 December 20X6 the future estimate of the UL of the plant was changed to three years, with an estimated RV of \$12,000.

At the date of purchase, the plant's depreciable amount would have been \$200,000 (\$220,000 - \$20,000). Therefore, depreciation of \$40,000 would have been charged in 20X6, and the carrying value would

have been \$180,000 at the end of 20X6. Given the reassessment of the UL and RV, the depreciable amount at the end of 20X6 is \$168,000 (\$180,000 - \$12,000) over three years. Therefore, the depreciation charges in 20X7, 20X8 and 20X9 will be \$56,000 (\$168,000/3) unless there are future changes in estimates. Where an asset comprises two or more major components with substantially different economic lives, each component should be accounted for separately for depreciation purposes, and each depreciated over its UL.

#### EXAMPLE 3

On 1 January 20X2, an entity purchased a furnace for \$200,000. The estimated UL of the furnace was 10 years, but its lining needed replacing after five years. On 1 January 20X2 the entity estimated that the cost of relining the furnace (at 1 January 20X2 prices) was \$50,000. The lining was replaced on 1 January 20X7 at a cost of \$70,000.

#### Requirement

Compute the annual depreciation charges on the furnace for each year of its life.

#### Solution

##### 20X2–20X6 inclusive

The asset has two depreciable components: the lining element (allocated cost \$50,000 – UL five years); and the balance of the cost (allocated cost \$150,000 – UL 10 years). Therefore, the annual depreciation is \$25,000 ( $\$50,000 \times 1/5 + \$150,000 \times 1/10$ ). At 31 December 20X6, the 'lining component' has a written down value of zero.

##### 20X7–20Y1 inclusive

The \$70,000 spent on the new lining is treated as the replacement of a separate component of an asset and added to PPE. The annual depreciation is now \$29,000 ( $\$70,000 \times 1/5 + \$150,000 \times 1/10$ ). ■

Paul Robins is a lecturer at FTC Kaplan

TABLE 1: SOLUTION TO EXAMPLE 1

Solution Component	Amount \$000	Reason
Purchase of the site	10,000	Cost includes cost of purchase
Dismantling costs	500	Site preparation costs represent a direct cost of getting the asset ready for use
Materials	6,000	All used in constructing the factory
Employment costs	1,600	Allowed to include employment costs in the construction period, so $8/9 \times 1,800$ included
Production overheads	1,000	Production overheads a direct cost of getting the asset ready for use but must exclude abnormal element
Administrative overheads	Nil	Only direct costs allowed to be capitalised
Architects' fees	400	Architects' fees a direct cost of getting the asset ready for use
Relocation costs	Nil	Specifically disallowed by IAS 16 – not part of getting the asset ready for use
Costs of opening the factory	Nil	Specifically disallowed by IAS 16 – not part of getting the asset ready for use
Capitalised interest	800	As per IAS 23, can capitalise interest for the period of construction (ie $12,000 \times 10\% \times 8/12$ )
Restoration costs	429	The present value of \$2m payable in 20 years at 8%
Total cost of factory	<u>20,729</u>	