

ACCOUNTING FOR PROPERTY, PLANT AND EQUIPMENT

RELEVANT TO ACCA QUALIFICATION PAPER F7

The accounting for IAS 16, *Property, Plant and Equipment* is a particularly important area of the Paper F7 syllabus. You can almost guarantee that in every exam you will be required to account for property, plant and equipment at least once.

This article is designed to outline the key areas of IAS 16, *Property, Plant and Equipment* that you may be required to attempt in the F7 exam.

IAS 16, PROPERTY, PLANT AND EQUIPMENT OVERVIEW

There are essentially four key areas when accounting for property, plant and equipment that you must ensure that you are familiar with:

- initial recognition
- depreciation
- revaluation
- derecognition (disposals).

INITIAL RECOGNITION

The basic principle of IAS 16 is that items of property, plant and equipment that qualify for recognition should initially be measured at cost.

One of the easiest ways to remember this is that you should capitalise all costs to bring an asset to its present location and condition for its intended use.

Commonly used examples of cost include:

- purchase price of an asset (less any trade discount)
- directly attributable costs such as:
 - cost of site preparation
 - initial delivery and handling costs
 - installation and testing costs
 - professional fees
- the initial estimate of dismantling and removing the asset and restoring the site on which it is located, to its original condition (ie to the extent that it is recognised as a provision per IAS 37, *Provisions, Contingent Assets and Liabilities*)
- borrowing costs in accordance with IAS 23, *Borrowing Costs*.

EXAMPLE 1

On 1 March 2008 Yucca acquired a machine from Plant under the following terms:

List price of machine	\$ 82,000
Import duty	1,500
Delivery fees	2,050
Electrical installation costs	9,500
Pre-production testing	4,900
Purchase of a five-year maintenance contract with Plant	7,000

In addition to the above information Yucca was granted a trade discount of 10% on the initial list price of the asset and a settlement discount of 5% if payment for the machine was received within one month of purchase. Yucca paid for the plant on 25 March 2008.

How should the above information be accounted for in the financial statements? (See [page 5](#) for the solution to **Example 1.**)

EXAMPLE 2

Construction of Deb and Ham's new store began on 1 April 2009. The following costs were incurred on the construction:

	\$000
Freehold land	4,500
Architect fees	620
Site preparation	1,650
Materials	7,800
Direct labour costs	11,200
Legal fees	2,400
General overheads	940

The store was completed on 1 January 2010 and brought into use following its grand opening on the 1 April 2010. Deb and Ham issued a \$25m unsecured loan on 1 April 2009 to aid construction of the new store (which meets the definition of a qualifying asset per IAS 23). The loan carried an interest rate of 8% per annum and is repayable on 1 April 2012.

Required

Calculate the amount to be included as property, plant and equipment in respect of the new store and state what impact the above information would have on the income statement (if any) for the year ended 31 March 2010.

(See [page 5](#) for the solution to **Example 2.**)

Subsequent costs

Once an item of PPE has been recognised and capitalised in the financial statements, a company may incur further costs on that asset in the future. IAS 16 requires that subsequent costs should be capitalised if:

- it is probable that future economic benefits associated with the extra costs will flow to the entity
- the cost of the item can be reliably measured.

All other subsequent costs should be recognised as an expense in the income statement in the period that they are incurred.

EXAMPLE 3

On 1 March 2010 Yucca purchased an upgrade package from Plant at a cost of \$18,000 for the machine it originally purchased in 2008 (**Example 1**). The upgrade took a total of two days where new components were added to the machine. Yucca agreed to purchase the package as the new components would lead to a reduction in production time per unit of 15%. This will enable Yucca to increase production without the need to purchase a new machine.

Should the additional expenditure be capitalised or expensed? (See [page 5](#) for the solution to **Example 3.**)

A GAIN ON REVALUATION IS ALWAYS RECOGNISED IN EQUITY, UNDER A REVALUATION RESERVE (UNLESS THE GAIN REVERSE'S REVALUATION LOSSES ON THE SAME ASSET THAT WERE PREVIOUSLY RECOGNISED IN THE INCOME STATEMENT – IN THIS INSTANCE THE GAIN IS TO BE SHOWN IN THE INCOME STATEMENT). THE REVALUATION GAIN IS KNOWN AS AN UNREALISED GAIN WHICH LATER BECOMES REALISED WHEN THE ASSET IS DISPOSED OF (DERECOGNISED).

Depreciation

Depreciation is defined in IAS 16 as being the systematic allocation of the depreciable amount of an asset over its useful economic life.

In other words, depreciation applies the accruals concept to the capitalised cost of a non-current asset and matches this cost to the period that it relates to.

Depreciation methods

There are many methods of depreciating a non-current asset with the most common being:

- Straight line
 - % on cost or
 - $\frac{\text{Cost} - \text{residual value}}{\text{Useful economic life}}$
- Reducing balance
 - % on carrying value

EXAMPLE 4

An item of plant was purchased on 1 April 2008 for \$200,000 and is being depreciated at 25% on a reducing balance basis.

Prepare the extracts of the financial statements for the year ended 31 March 2010. (See [page 5](#) for the solution to **Example 4**.)

Useful economic lives and residual values

IAS 16 requires that these estimates be reviewed at the end of each reporting period. If either changes significantly, the change should be accounted for over the useful economic life remaining.

EXAMPLE 5

A machine was purchased on 1 April 2007 for \$120,000. It was estimated that the asset had a residual value of \$20,000 and a useful economic life of 10 years at this date. On 1 April 2009 (two years later) the residual value was reassessed as being only \$15,000 and the useful economic life remaining was considered to be only five years.

How should the asset be accounted for in the years ending 31 March 2008/2009/2010? (See [page 5](#) for the solution to **Example 5**.)

Component depreciation

If an asset comprises two or more major components with different economic lives, then each component should be accounted for separately for depreciation purposes and depreciated over its own useful economic life.

EXAMPLE 6

A company purchased a property with an overall cost of \$100m on 1 April 2009. The property elements are made up as follows:

	\$000	Estimated life
Land and buildings (Land element \$20,000)	65,000	50 years
Fixtures and fittings	24,000	10 years
Lifts	11,000	20 years
	<u>100,000</u>	

Calculate the annual depreciation charge for the property for the year ended 31 March 2010. (See [page 6](#) for the solution to **Example 6**.)

REVALUATIONS

This is an important topic in the exam and features regularly in Question 2, so you should ensure that you are familiar with all aspects of revaluations.

IAS 16 rules

IAS 16 permits the choice of two possible treatments in respect of property, plant and equipment:

- The cost model (carry an asset at cost less accumulated depreciation/impairments).
- The revaluation model (carry an asset at its fair value at the revaluation date less subsequent accumulated depreciation impairment).

If the revaluation policy is adopted this should be applied to all assets in the entire category, ie if you revalue a building, you must revalue all land and buildings in that class of asset. Revaluations must also be carried out with sufficient regularity so that the carrying amount does not differ materially from that which would be determined using fair value at the reporting date.

ACCOUNTING FOR A REVALUATION

There are a series of accounting adjustments that must be undertaken when revaluing a non-current asset. These adjustments are indicated below.

The initial revaluation

You may find it useful in the exam to first determine if there is a gain or loss on the revaluation with a simple calculation to compare:

Carrying value of non-current asset at revaluation date	X
Valuation of non-current asset	X
Difference = gain or loss on revaluation	<u>X</u>

Revaluation gains

A gain on revaluation is always recognised in equity, under a revaluation reserve (unless the gain reverse's revaluation losses on the same asset that were previously recognised in the income statement – in this instance the gain is to be shown in the income statement).

The revaluation gain is known as an unrealised gain which later becomes realised when the asset is disposed of (derecognised).

Double entry:

Dr Non-current asset cost
(difference between valuation and original cost/valuation)
Dr Accumulated depreciation
(with any historical cost accumulated depreciation)
Cr Revaluation reserve
(gain on revaluation)

EXAMPLE 7

A company purchased a building on 1 April 2007 for \$100,000. The asset had a useful economic life at that date of 40 years. On 1 April 2009 the company revalued the building to its current fair value of \$120,000.

What is the double entry to record the revaluation? (See [page 6](#) for the solution to **Example 7**.)

Revaluation losses

A revaluation loss should be charged against any related revaluation surplus to the extent that the decrease does not exceed the amount held in the revaluation reserve in respect of the same asset. Any additional loss must be charged as an expense in the income statement.

Double entry:

Dr Revaluation reserve (to maximum of original gain)
Dr Income statement (any residual loss)
Cr Non-current asset (loss on revaluation)

EXAMPLE 8

The carrying value of Zen's property at the end of the year amounted to \$108,000. On this date the property was revalued and was deemed to have a fair value of \$95,000. The balance on the revaluation reserve relating to the original gain of the property was \$10,000.

What is the double entry to record the revaluation? (See [page 6](#) for the solution to **Example 8**.)

Depreciation

The asset must continue to be depreciated following the revaluation. However, now that the asset has been revalued the depreciable amount has changed. In simple terms the revalued amount should be depreciated over the assets remaining useful economic life.

Reserves transfer

The depreciation charge on the revalued asset will be different to the depreciation that would have been charged based on the historical cost of the asset. As a result of this, IAS 16 permits a transfer to be made of an amount equal to the excess depreciation from the revaluation reserve to retained earnings.

Double entry:

Dr Revaluation reserve
Cr Retained earnings

Be careful, in the exam a reserves transfer is only required if the examiner indicates that it is company policy to make a transfer to realised profits in respect of excess depreciation on revalued assets. If this is not the case then a reserves transfer is not necessary.

This movement in reserves should also be disclosed in the statement of changes in equity.

EXAMPLE 9

A company revalued its property on 1 April 2009 to \$20m (\$8m for the land). The property originally cost \$10m (\$2m for the land) 10 years ago. The original useful economic life of 40 years is unchanged. The company's policy is to make a transfer to realised profits in respect of excess depreciation.

How will the property be accounted for in the year ended 31 March 2010? (See [page 6](#) for the solution to **Example 9**.)

EXAM FOCUS

In the exam make sure you pay attention to the date that the revaluation takes place. If the revaluation takes place at the start of the year then the revaluation should be accounted for immediately and depreciation should be charged in accordance with the rule above.

If however the revaluation takes place at the year-end then the asset would be depreciated for a full 12 months first based on the original depreciation of that asset. This will enable the carrying amount of the asset to be known at the revaluation date, at which point the revaluation can be accounted for.

A further situation may arise if the examiner states that the revaluation takes place mid-way through the year. If this were to happen the carrying amount would need to be found at the date of revaluation, and therefore the asset would be depreciated based on the original depreciation for the period up until revaluation, then the revaluation will take place and be accounted for. Once the asset has been revalued you will need to consider the last period of depreciation. This will be found based upon the revaluation rules (depreciate the revalued amount over remaining useful economic life). This will be the most complicated situation and you must ensure that your working is clearly structured for this; ie depreciate for first period based on old depreciation, revalue, then depreciate last period based on new depreciation rule for revalued assets.

EXAMPLE 10

A company purchased a building on 1 April 2005 for \$100,000 at which point it was considered to have a useful economic life of 40 years. At the year end 31 March 2010 the company decided to revalue the building to its current value of \$98,000.

How will the building be accounted for in the year ended 31 March 2010? (See [page 7](#) for the solution to **Example 10**.)

EXAMPLE 11

At 1 April 2009 HD Ltd carried its office block in its financial statements at its original cost of \$2 million less depreciation of \$400,000 (based on its original life of 50 years). HD Ltd decided to revalue the office block on 1 October 2009 to its current value of \$2.2m. The useful economic life remaining was reassessed at the time of valuation and is considered to be 40 years at this date. It is the company's policy to charge depreciation proportionally.

How will the office block be accounted for in the year ended 31 March 2010? (See **page 7** for the solution to **Example 11.**)

Derecognition

Property, plant and equipment should be derecognised when it is no longer expected to generate future economic benefit or when it is disposed of.

When property, plant and equipment is to be derecognised, a gain or loss on disposal is to be calculated. This can be found by comparing the difference between:

Carrying value	X
Disposal proceeds	X
Profit or loss on disposal	<u>X</u>

Tip: When the disposal proceeds are greater than the carrying value there is a profit on disposal and when the disposal proceeds are less than the carrying value there is a loss on disposal.

EXAMPLE 12

An asset that originally cost \$16,000 and had accumulated depreciation on it of \$8,000 was disposed of during the year for \$5,000 cash.

How should the disposal be accounted for in the financial statements? (See **page 7** for the solution to **Example 12.**)

Disposal of previously revalued assets

When an asset is disposed of that has previously been revalued, a profit or loss on disposal is to be calculated (as above). Any remaining surplus on the revaluation reserve is now considered to be a 'realised' gain and therefore should be transferred to retained earnings as:

Dr Revaluation reserve
Cr Retained earnings

In summary, it can be seen that accounting for property, plant and equipment is an important topic that features regularly in the Paper F7 exam. With most of what is examinable feeding through from Paper F3 this should be a comfortable topic that you can tackle well in the exam.

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See pages 5, 6 and 7 for solutions to all the examples illustrated in this technical article.

BE CAREFUL, IN THE EXAM A RESERVES TRANSFER IS ONLY REQUIRED IF THE EXAMINER INDICATES THAT IT IS COMPANY POLICY TO MAKE A TRANSFER TO REALISED PROFITS IN RESPECT OF EXCESS DEPRECIATION ON REVALUED ASSETS. IF THIS IS NOT THE CASE THEN A RESERVES TRANSFER IS NOT NECESSARY. THIS MOVEMENT IN RESERVES SHOULD ALSO BE DISCLOSED IN THE STATEMENT OF CHANGES IN EQUITY.

IAS 16 SOLUTIONS

SOLUTION 1

In accordance with IAS 16, all costs required to bring an asset to its present location and condition for its intended use should be capitalised. Therefore, the initial purchase price of the asset should be:

	\$
List price	82,000
Less: trade discount (10%)	<u>(8,200)</u>
	73,800
Import duty	1,500
Delivery fees	2,050
Electrical installation costs	9,500
Pre-production testing	<u>4,900</u>
Total amount to be capitalised at 1 March	<u>91,750</u>

The maintenance contract of \$7,000 is an expense and therefore should be spread over a five-year period in accordance with the accruals concept and taken to the income statement. If the \$7,000 has been paid in full, then some of this cost will represent a prepayment.

In addition the settlement discount received of \$3,690 ($\$73,800 \times 5\%$) is to be shown as other income in the income statement.

SOLUTION 2

This is an example of a self-constructed asset. All costs to get the store to its present location and condition for its intended use should be capitalised. All of the expenditure listed in the question, with the exception of general overheads would qualify for capitalisation.

The interest on the loan should also be capitalised from 1 April 2009 as in accordance with IAS 23 it meets the definition of a qualifying asset. The recognition criteria for capitalisation appears to be met ie activities to prepare the asset for its intended use are in progress, expenditure for the asset is being incurred and borrowing costs are being incurred. Capitalisation of the interest on the loan must cease when the asset is ready for use, ie 1 January 2010. At this point any remaining interest for the period should be charged as a finance cost in the income statement.

Property, plant and equipment

Store:	\$000
Freehold land	4,500
Architect fees	620
Site preparation	1,650
Materials	7,800
Direct labour costs	11,200
Legal fees	2,400
Borrowing costs	
($25,000 \times 8\%$) $\times 9 / 12$	1,500
Total to be capitalised	29,670

Income statement impact

With regards to the income statement this should be charged with:

- General overheads of \$940,000
- Remaining interest for Jan–Mar which is now an expense \$500,000 ($25,000 \times 8\% \times 3/12$) and;

- Depreciation of the store. Even though the asset has not yet been brought into use, IAS 16 states depreciation of an asset begins when it is available for use, ie when it is in the location and condition necessary for it to be capable of operating in the manner intended by management.

Note: depreciation cannot be calculated in this question as information surrounding useful economic life has not been provided – this is for illustrative purposes only. Depreciation is covered later in this article.

SOLUTION 3

The \$18,000 should be capitalised as part of the cost of the asset as the revenue earning capacity of the machine has significantly increased, which could in turn lead to the inflow of additional economic benefit and the cost of the upgrade can be reliably measured.

SOLUTION 4

Income statement extract

Depreciation expense	\$37,500
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Statement of financial position extract

Plant	
(200,000 – 50,000 – 37,500)	\$112,500

Working for depreciation:

31/03/09	Cost	200,000
	Depreciation – 25%	<u>(50,000)</u>
	Carrying value	150,000
31/03/10	Carrying value	150,000
	Depreciation – 25%	<u>(37,500)</u>
	Carrying value	112,500

SOLUTION 5

31 March 2008

At the date of acquisition the cost of the asset of \$120,000 would be capitalised. The asset should then be depreciated for the years to 31 March 2008/2009 as:

$$\frac{\text{Cost} - \text{residual value}}{\text{Useful economic life}} = \frac{120,000 - 20,000}{10 \text{ years}} = \$10,000 \text{ per annum}$$

Income statement extract 2008

Depreciation	\$10,000
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Statement of financial position extract 2008

Machine	
(120,000 – 10,000)	\$110,000

31 March 2009

Income statement extract 2009

Depreciation	\$10,000
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Statement of financial position extract 2009

Machine	
(120,000 – 20,000)	\$100,000

31 March 2010

As the residual value and useful economic life estimates have changed during the year ended 2010, the depreciation charge will need to be recalculated. The carrying value will now be spread according to the revised estimates.

Depreciation charge:
 $\frac{100,000 - 15,000}{5 \text{ years}} = \$17,000$ per annum

<i>Income statement extract 2010</i>	
Depreciation	\$17,000
<i>Statement of financial position extract 2010</i>	
Machine	
(100,000 – 17,000)	\$83,000

SOLUTION 6

	\$000
Land and buildings (65,000 – 20,000)/50 years))	900
Fixtures and fittings (24,000/10 years)	2,400
Lifts (11,000/20 years)	<u>550</u>
Total property depreciation	<u>3,850</u>

SOLUTION 7

Gain on revaluation:	
Carrying value of non-current asset at revaluation date (100,000 – (100,000/40 years x 2 years))	95,000
Valuation	<u>120,000</u>
Gain on revaluation	<u>25,000</u>
Double entry:	
Dr Building cost (120,000 – 100,000)	20,000
Dr Accumulated depreciation (100,000/40 years x 2 years)	5,000
Cr Revaluation reserve	25,000

SOLUTION 8

Loss on revaluation:	
Carrying value of non-current asset at revaluation date	108,000
Valuation	<u>95,000</u>
Loss on revaluation	<u>13,000</u>
Double entry:	
Dr Revaluation reserve (to maximum of original gain)	10,000
Dr Income statement	3,000
Cr Non-current asset	13,000

The revaluation gain or loss must be disclosed in both the statement of changes in equity and in other comprehensive income.

SOLUTION 9**Statement of comprehensive income extract for the year ended 31 March 2010**

	\$000
Depreciation expense	400
Other comprehensive income:	
Revaluation gain	12,000

Statement of financial position extract as at 31 March 2010

	\$000
Non-current assets	
Property (20,000 – 400)	19,600
Equity	
Revaluation reserve (12,000 – 200)	11,800

Statement of changes in equity extracts

	Revaluation reserve	Retained earnings
	\$000	\$000
Revaluation gain	12,000	
Reserves transfer	(200)	200

Workings:

Gain on revaluation:	
Carrying value of non-current asset at revaluation date (10,000 – ((10,000 – 2,000)/40 years x 10 years))	8,000
Valuation	<u>20,000</u>
Gain on revaluation	<u>12,000</u>

Double entry:	
Dr Property (20,000 – 10,000)	10,000
Dr Accumulated depreciation ((10,000 – 2,000)/40 years x 10 years)	2,000
Cr Revaluation reserve	12,000

Depreciation charge for year to 31 March 2010:	
Dr depreciation expense ((20,000 – 8,000)/30 years)	400
Cr Accumulated depreciation	400
Reserves transfer:	
Historical cost depreciation charge ((10,000 – 2,000)/40 years)	200
Revaluation depreciation charge	400
Excess depreciation to be transferred	<u>200</u>

Dr Revaluation reserve	200
Cr Retained earnings	200

SOLUTION 10

Statement of comprehensive income extract 31 March 2010

Depreciation charge 2,500

Other comprehensive income:

Revaluation gain 10,500

Statement of financial position extract 31 March 2010

Building at valuation 98,000

Statement of changes in equity extract

Revaluation
reserve

Revaluation gain 10,500

Working paper:

Note: revaluation takes place at year end, therefore a full year of depreciation must first be charged.

(W1) Depreciation year ended 31 March 2010

$\frac{100,000}{40 \text{ years}} = \$2,500$

(W2) Revaluation

The carrying value of the asset at 31 March 2010 can now be found and revalued.

Carrying value of non-current asset at revaluation date (100,000 – (100,000/40 years x 5 years))	87,500
Valuation of non-current asset	<u>98,000</u>
Gain or loss on revaluation	<u>10,500</u>

Double entry:

Dr Accumulated depreciation	12,500
Cr NCA cost	2,500
Cr Revaluation reserve	10,500

SOLUTION 11

Statement of comprehensive income extract 31 March 2010

Depreciation charge
(20,000 (W1) + 27,500 (W2)) 47,500

Other comprehensive income:

Revaluation gain 620,000

Statement of financial position extract 31 March 2010

Office block (carrying value at 31 March):

Valuation	2,200,000
Depreciation	<u>(27,500)</u>
Carrying value	<u>2,172,500</u>

Statement of changes in equity extract

Revaluation
reserve

Revaluation gain 620,000

Working paper:

Note: Revaluation takes place part way through the year and therefore depreciation must first be charged for the period 1 April 09 – 30 September 09, then the revaluation can be recorded and then depreciation needs to be charged for the period 1 October 2009 – 31 March 2010.

(W1) Depreciation 1 April–30 September 2009

$\frac{2,000,000}{50 \text{ years}} \times 6/12 = \$20,000$

(W2) Revaluation

The carrying value of the asset at 1 October 2009 can now be found and revalued.

Carrying value of non-current asset at revaluation date (2,000,000 – (400,000 – 20,000))	1,580,000
Valuation of non-current asset	<u>2,200,000</u>
Gain on revaluation	<u>620,000</u>

Double entry:

Dr NCA cost (2,200,000 – 2,000,000)	200,000
Dr Accumulated depreciation	420,000
Cr Revaluation reserve	620,000

(W3) Depreciation 1 October – 31 March 2010

$\frac{2,200,000}{40 \text{ years}} \times 6/12 = \$27,500$

SOLUTION 12

The asset and its associated depreciation should be removed from the statement of financial position and a profit or loss on disposal should be recorded in the income statement.

The loss on disposal is:

Carrying value at disposal date (16,000 – 8,000)	8,000
Disposal proceeds	<u>5,000</u>
Loss on disposal	<u>3,000</u>