

# CENG 6108 Construction Economics

## **Real Estate/Property Valuation**

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# TO DO

- ① Introduction
- ② Methods of Measurement
- ③ Land Valuation
- ④ Real Estate/Property Valuation
- ⑤ Plant and Equipment Valuation
- ⑥ Valuation Reports



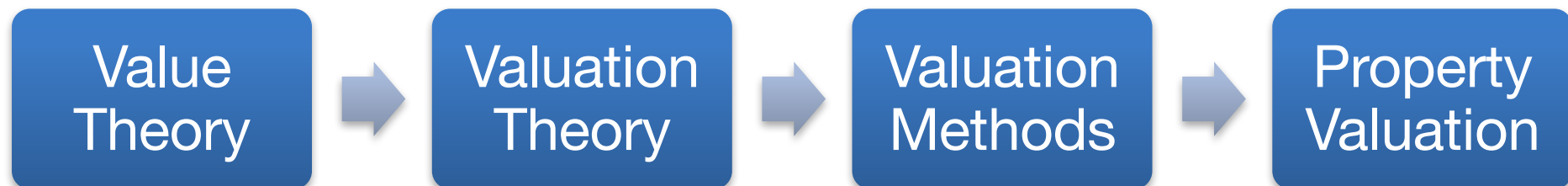
# Introduction

*Value  $\neq$  Price  $\neq$  Cost*

- **Value**
  - The monetary worth of a property, good or service to buyers and sellers at a given time.
  - The present worth of future benefits that accrue to real property ownership.
- **Price**
  - The amount a particular purchaser agrees to pay and a particular seller agrees to accept under the circumstances surrounding their transaction.
- **Cost**
  - The total dollar expenditure for an improvement (structure).

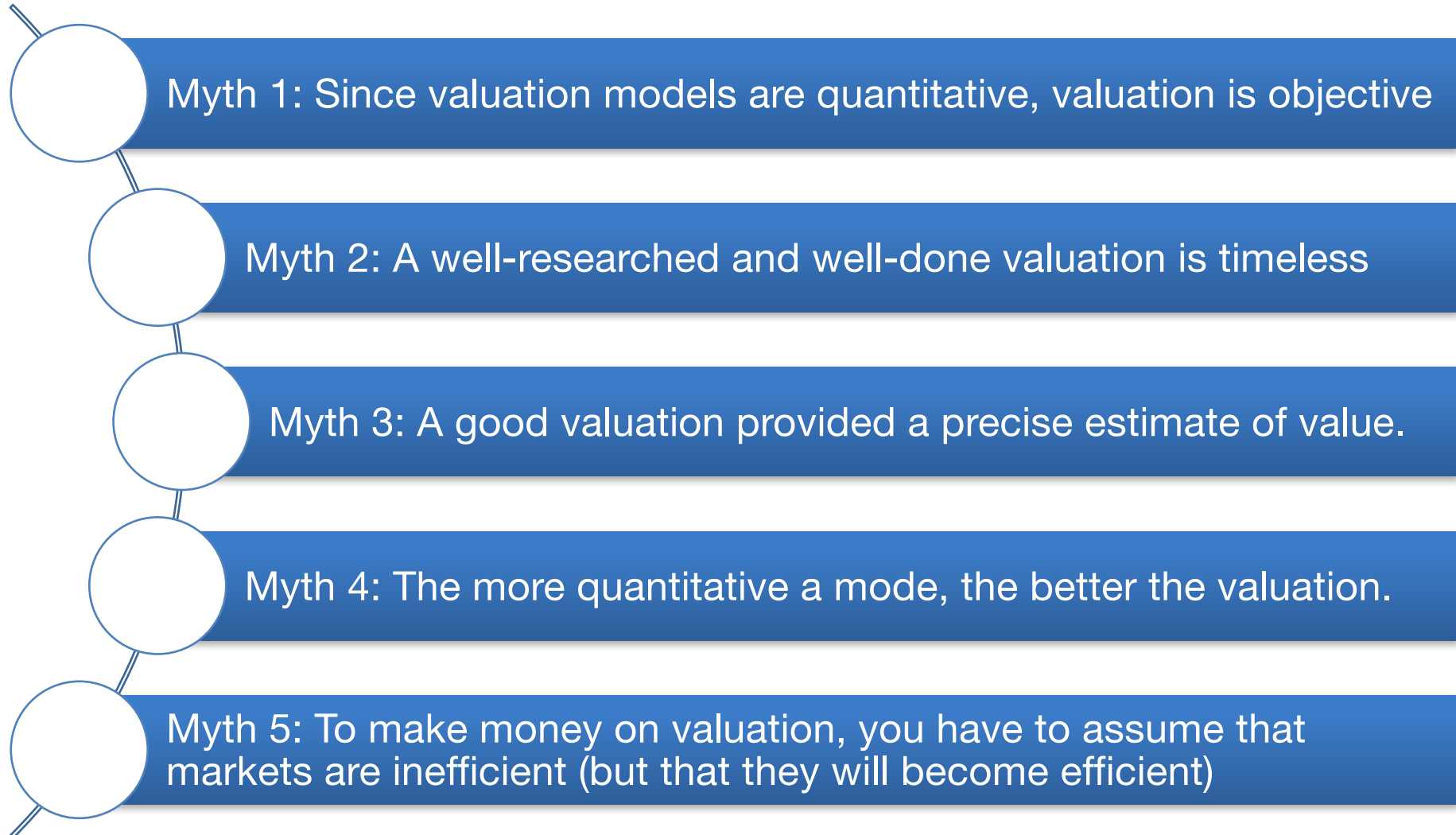
# Introduction

- Every asset, financial as well as real, has value.
- However, various information is needed, and details of valuations vary from case to case
  - Building, Construction/Consultancy Company, Bank share, etc.
- Philosophical Basis:
  - One who “knows the price of everything, but the value of nothing” (Oscar Wilde)
  - Bigger Fool Theory: the value of an asset is irrelevant as long as there is a “bigger fool” around willing to buy the asset from them.



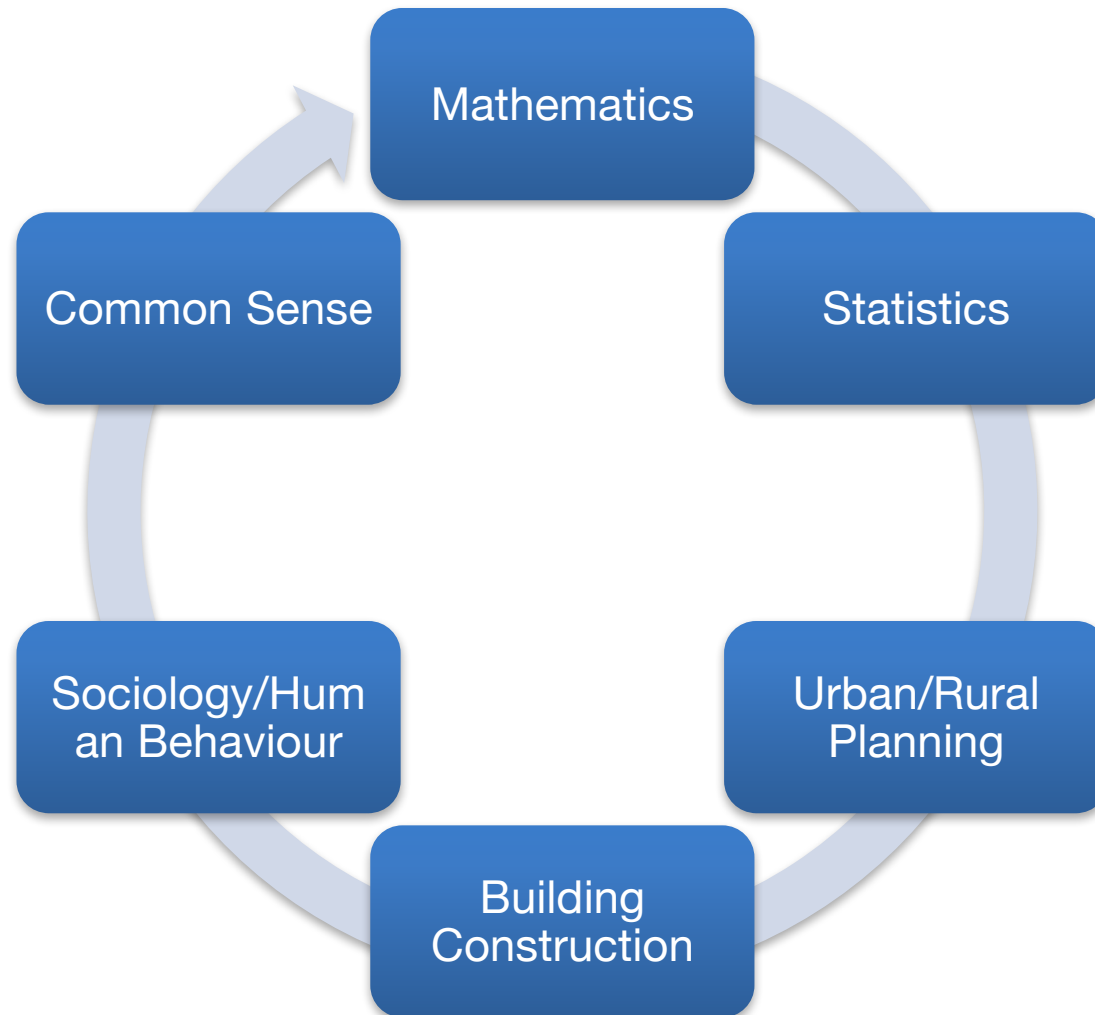
# Introduction

- Generalities about valuation: Valuation is both a Science and an Art!



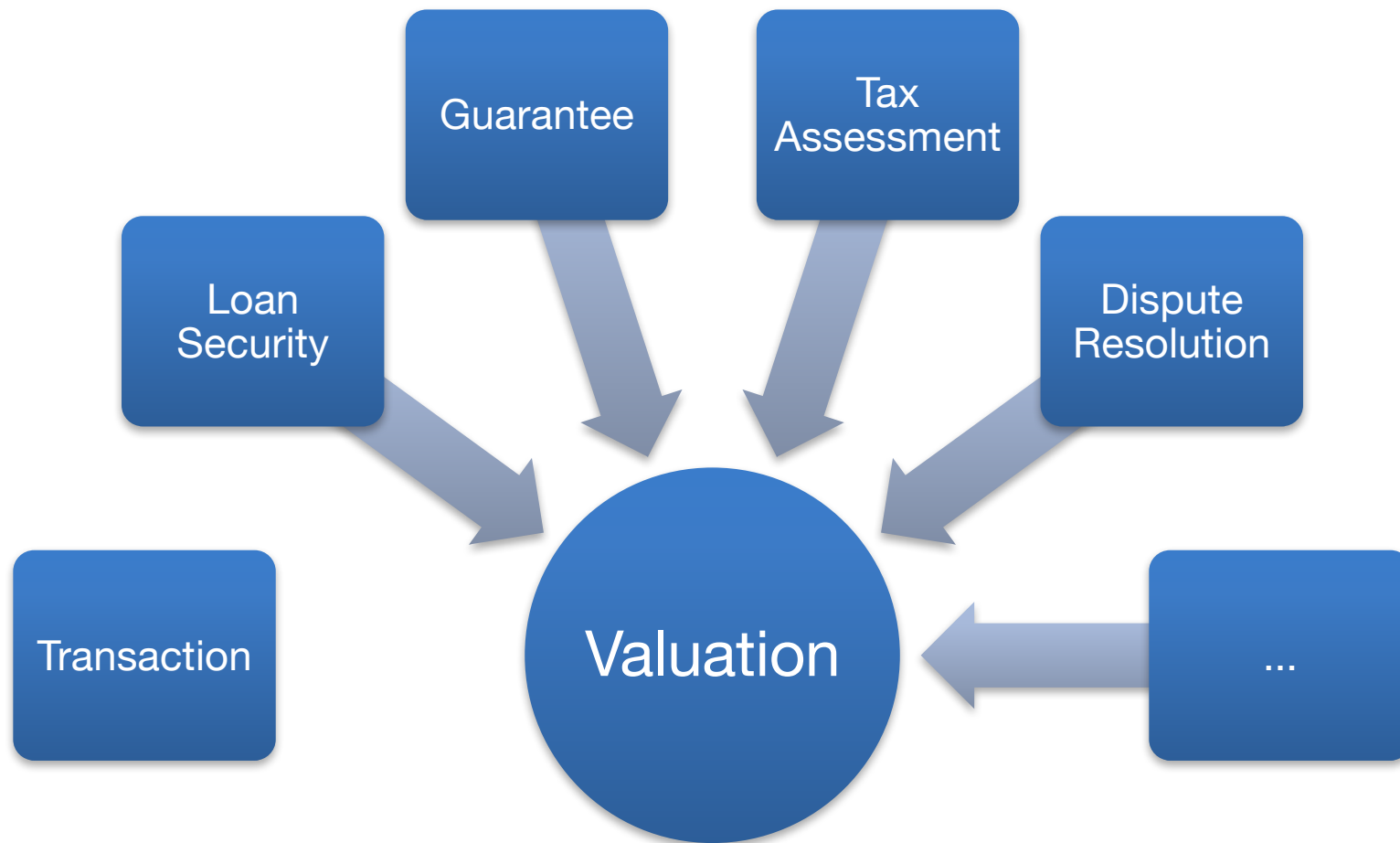
# Introduction

- Valuation includes components and knowledge of:



# Introduction

- Purpose of Valuation:
- *“Purpose for which the valuation assignment is being prepared shall be clearly stated” (RICS)*



# Methods of Measurement

- Code of Measuring Practice:
- The Royal Institution of Chartered Surveyors (RICS) has set a number of standards and guidelines on property valuation to ensure consistency and the application of 'best practice' within the profession:
  - The Red Book (RICS 2007d)
  - Code of Measuring Practice (RICS 2007b)
- The principal methods used in property valuation and management work are :
  - gross external floor area (GEA)
  - gross internal floor area (GIA)
  - net internal floor area (NIA)

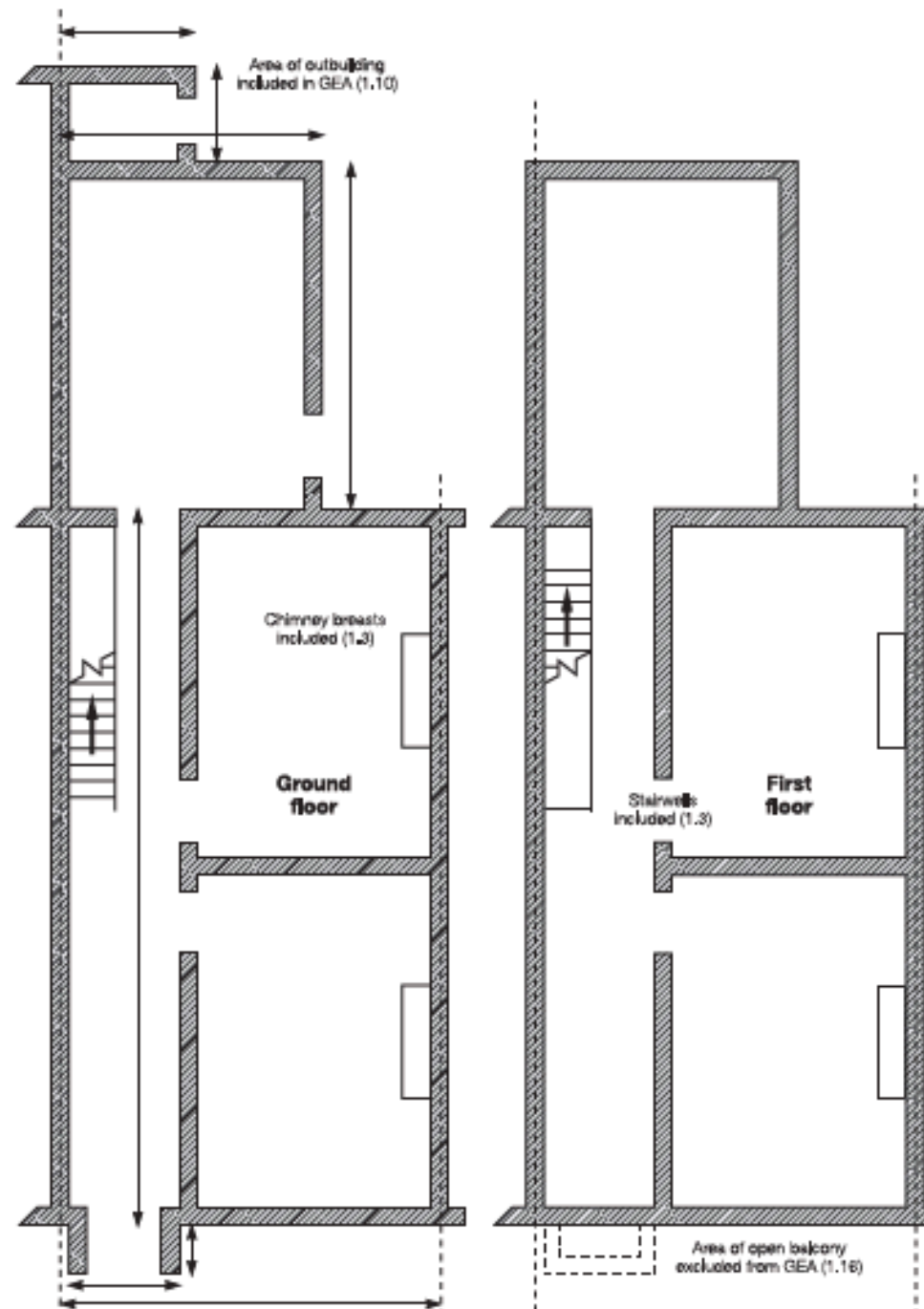
# Methods of Measurement: GEA

## 1.0 Gross External Area (GEA)

Gross External Area is the area of a building measured externally at each floor level.

Including		Excluding	
1.1	Perimeter wall thickness and external projections	1.16	External open-sided balconies, covered ways and fire escapes
1.2	Areas occupied by internal walls and partitions	1.17	Canopies
1.3	Columns, piers, chimney breasts, stairwells, lift-wells, and the like	1.18	Open vehicle parking areas, roof terraces, and the like
1.4	Atria and entrance halls, with clear height above, measured at base level only	1.19	Voids over or under structural, raked or stepped floors
1.5	Internal balconies	1.20	Greenhouses, garden stores, fuel stores, and the like in residential property
1.6	Structural, raked or stepped floors are to be treated as a level floor measured horizontally		
1.7	Horizontal floors, whether accessible or not, below structural, raked or stepped floors		
1.8	Mezzanine areas intended for use with permanent access		
1.9	Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above the main roof level		
1.10	Outbuildings which share at least one wall with the main building		
1.11	Loading bays		
1.12	Areas with a headroom of less than 1.5m		
1.13	Pavement vaults		
1.14	Garages		
1.15	Conservatories		

## GEA Example





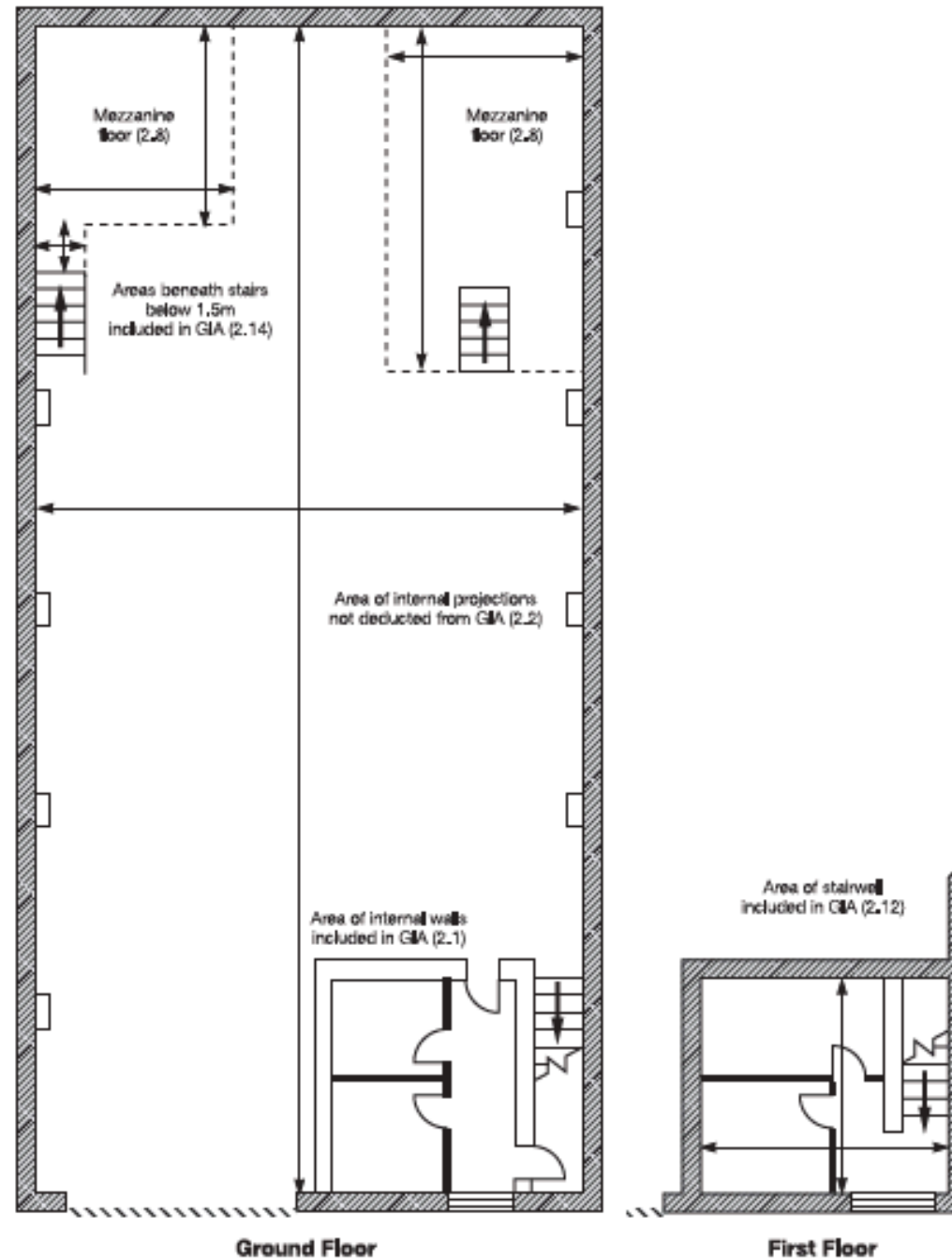
# Methods of Measurement: GIA

## 2.0 Gross Internal Area (GIA)

Gross Internal Area is the area of a building measured to the internal face of the perimeter walls at each floor level [see note GIA 4].

Including		Excluding	
2.1	Areas occupied by internal walls and partitions	2.18	Perimeter wall thicknesses and external projections
2.2	Columns, piers, chimney breasts, stairwells, lift-wells, other internal projections, vertical ducts, and the like	2.19	External open-sided balconies, covered ways and fire escapes
2.3	Atria and entrance halls, with clear height above, measured at base level only	2.20	Canopies
2.4	Internal open-sided balconies, walkways, and the like	2.21	Voids over or under structural, raked or stepped floors
2.5	Structural, raked or stepped floors are to be treated as a level floor measured horizontally	2.22	Greenhouses, garden stores, fuel stores, and the like in residential property
2.6	Horizontal floors, with permanent access, below structural, raked or stepped floors		
2.7	Corridors of a permanent essential nature [e.g. fire corridors, smoke lobbies]		
2.8	Mezzanine floor areas with permanent access		
2.9	Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above the main roof level		
2.10	Service accommodation such as toilets, toilet lobbies, bathrooms, showers, changing rooms, cleaners' rooms, and the like		
2.11	Projection rooms		
2.12	Voids over stairwells and lift shafts on upper floors		
2.13	Loading bays		
2.14	Areas with a headroom of less than 1.5m [see APP 6]		
2.15	Pavement vaults		
2.16	Garages		
2.17	Conservatories		

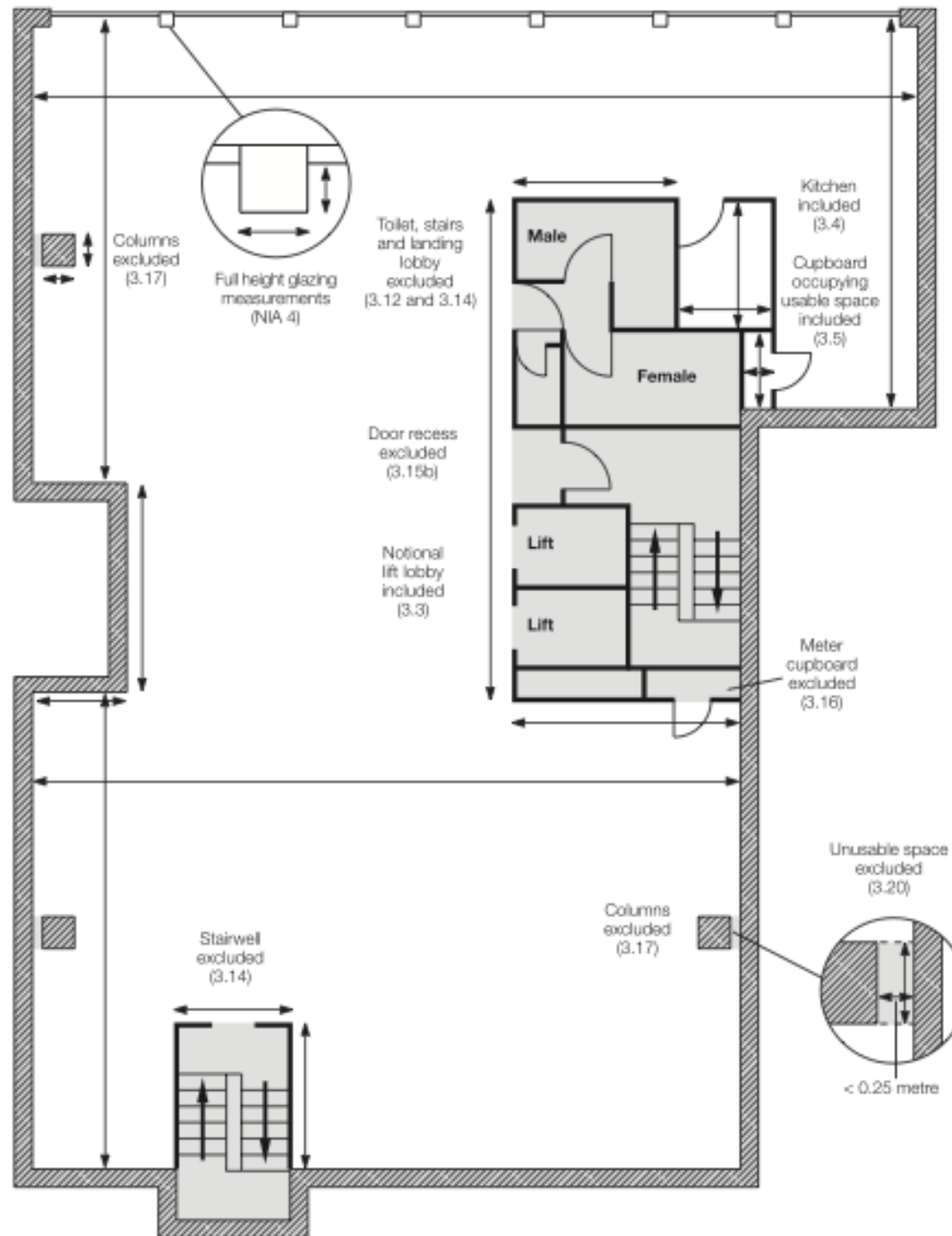
## GIA Example



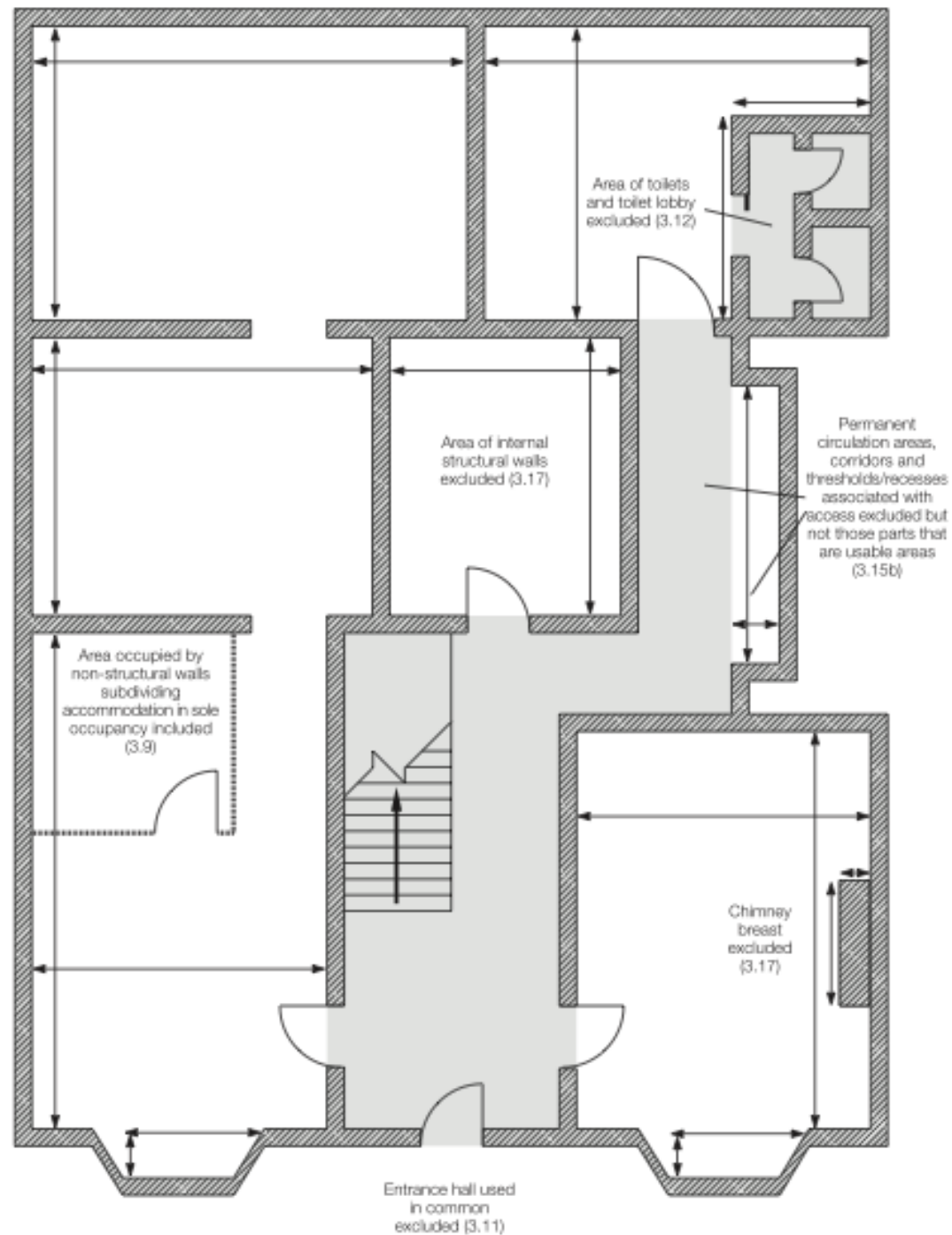
# Methods of Measurement: NIA

<b>3.0 Net Internal Area (NIA)</b>			
Net Internal Area is the usable area within a building measured to the internal face of the perimeter walls at each floor level. [See note NIA 3]			
<b>Including</b>		<b>Excluding</b>	
3.1	Atria with clear height above, measured at base level only (but see 3.11)	3.11	Those parts of entrance halls, atria, landings and balconies used in common (see 3.1 and 3.2)
3.2	Entrance halls (but see 3.11)	3.12	Toilets, toilet lobbies, bathrooms, cleaners' rooms, and the like
3.3	Notional lift lobbies and notional fire corridors	3.13	Lift rooms, plant rooms, tank rooms (other than those of a trade process nature), fuel stores, and the like
3.4	Kitchens	3.14	Stairwells, lift-wells and permanent lift lobbies
3.5	Built-in units, cupboards, and the like occupying usable areas	3.15(a)	Corridors and other circulation areas where used in common with other occupiers
3.6	Ramps, sloping areas and steps within usable areas	3.15(b)	Permanent circulation areas, corridors and thresholds/recesses associated with access, but not those parts that are usable areas
3.7	Areas occupied by ventilation/ heating grilles	3.16	Areas under the control of service or other external authorities including meter cupboards and statutory service supply points
3.8	Areas occupied by skirting and perimeter trunking	3.17	Internal structural walls, walls enclosing excluded areas, columns, piers, chimney breasts, other projections, vertical ducts, walls separating tenancies and the like
3.9	Areas occupied by non-structural walls subdividing accommodation in sole occupancy	3.18(a)	The space occupied by permanent and continuous air-conditioning, heating or cooling apparatus, and ducting in so far as the space it occupies is rendered substantially unusable
3.10	Pavement vaults	3.18(b)	The space occupied by permanent, intermittent air-conditioning, heating or cooling apparatus protruding 0.25m or more into the usable area
		3.19	Areas with a headroom of less than 1.5m
		3.20	Areas rendered substantially unusable by virtue of having a dimension between opposite faces of less than 0.25m. See diagram E
		3.21	Vehicle parking areas (the number and type of spaces noted)

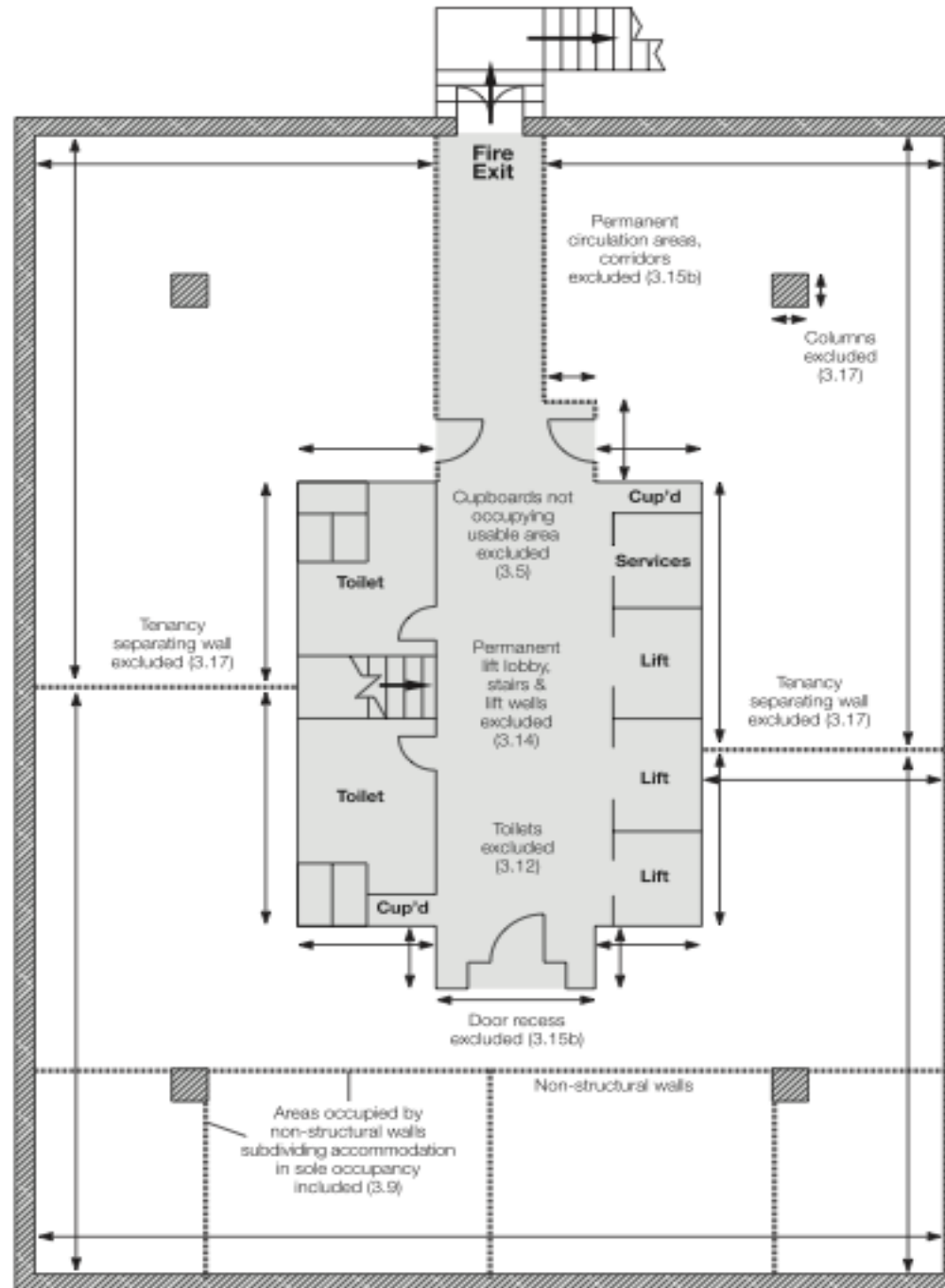
# NIA Example



## NIA Example



## NIA Example

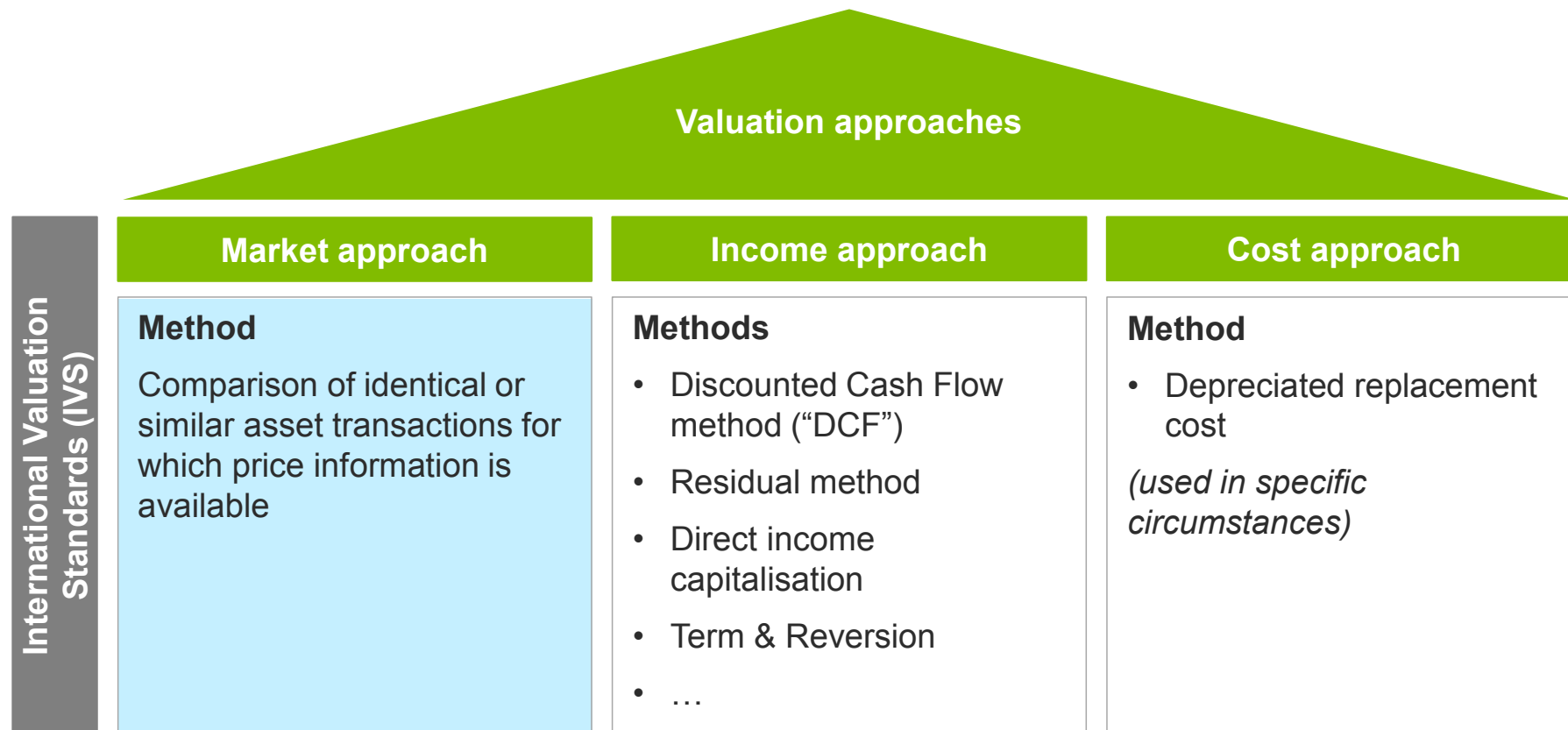


# Methods of Measurement

- Which definition is to be used for each specific purpose?
- Building cost estimation
  - non-residential all purpose: GIA
  - residential insurance: GEA
- Estate agency and valuation
  - department and variety stores: GIA
  - food superstores: GIA
  - industrial buildings: GIA or NIA
  - offices: NIA
  - retail warehouses: GIA
  - shops: NIA
  - valuation of new homes for development purposes: GIA
  - warehouses: GIA or NIA
- Town planning: GEA

# Introduction

- Methods of Valuation:



Source: Deloitte Tax and Consulting (2016)



# Introduction

- Methods of Valuation:
- *Market/Sales approach or Comparative Method*
  - The most probable price of a property on the open market
- *Income approach or Investment method*
  - The present value of future yearly net income
  - Used for investment decisions and market simulation
- *Cost approach or Contractor's method*
  - Replacement costs minus depreciation
  - Commonly used in Ethiopia

# Land Valuation

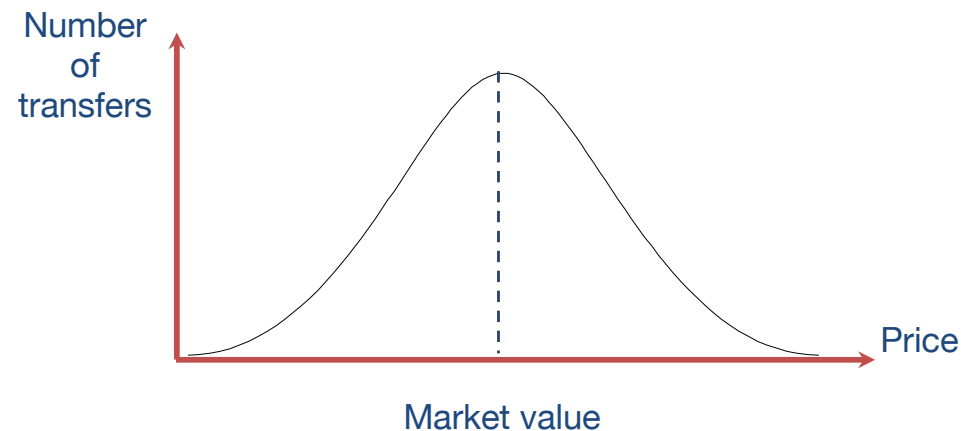
- Land Value Estimation:
  - Location and it's Composition
  - Area of land: generally speaking, the smaller the land the lower the efficiency ratio of the building on the land, i.e. the ratio of saleable floor area to the GFA of the building.
  - Site classification: Class A, Class B and Class C sites, and they all have different permitted site coverage and plot ratio.
  - Density zoning: Varying density zones, and permitted site coverage and plot ratio are different for each zone.
  - Lease restrictions: as the Government is the ultimate owner of all land, it is empowered to impose restrictions on the use of land. The restrictions in a government lease on permitted user, site coverage and plot ratio may vary from lease to lease.
  - Zoning and other restriction such as Maximum Plot Ratio.
  - Amalgamation of sites: if two adjoining sites can be amalgamated, the development

# Land Valuation

- Land Value Determination Methods:
  - Sales comparison
  - Allocation (ratio)
  - Extraction (less improvements)
  - Subdivision and development
  - Land residual technique: Cost determined after deducting cost of building, professional fees, etc. from the completed development cost.

# Market Value

- Definition of Market Value:



The most probable price of the property on the open market

- Market Value Key Points:

- “on date of valuation”
- “between a willing buyer” and “a willing seller”
- “after proper marketing”
- “wherein the parties had each acted knowledgeably”
- “and without compulsion”

# Market Approach

- Underlying economic theory is similar goods sell for similar prices.
- Applicable to all property types but works best for property types with frequent transactions.
  - Identification and selection of real properties purchased in a comparable market area
  - Objects are made comparable and adjusted according to purchase dates (price trends) or other differences
  - Mean price of the selected purchases = estimated market value
- Procedure:
  - Research market/gather data
  - Verify information
  - Select units of comparison (m<sup>2</sup>, Apartment unit cost, etc.)
  - Develop comparable analysis and make adjustments
  - Reconcile

# Market Approach

- Information Needed: For this method, no data means no estimations
- Information about the **purchase**:
  - Price
  - Date of sale
  - Seller
  - Buyer
- Information about **the real property**:
  - Land use
  - Land area
  - Building: size, age, standard, etc.
  - Other special conditions

### ILLUSTRATION 26.3: Valuing a Property Based on Comparables in 2000

Consider the property at 711 Third Avenue that was valued using discounted cash flow valuation. The appraisal also noted eight other properties in that part of Manhattan with roughly the same characteristics as the building being appraised that had sold recently. The following table summarizes the details of these properties and the prices that they were sold for:

Property	Size (Square Feet)	Occupancy Rate	Price for Sale	Price per Square Foot	Net Operating Income per Square Foot	Price/ NOI
900 Third Avenue	560,000	99%	\$182,000,000	\$325.00	26.98	12.05
767 Third Avenue	456,007	95%	\$ 95,000,000	\$208.33	NA	
350 Madison Avenue	310,000	97%	\$ 70,060,000	\$226.00	17.6	12.84
888 Seventh Avenue	838,680	96%	\$154,500,000	\$184.22	NA	
622 Third Avenue	874,434	97%	\$172,000,000	\$196.70	NA	
150 East 58th Street	507,178	95%	\$118,000,000	\$232.66	16.52	14.08
1065 Avenue of the Americas	580,000	95%	\$ 59,000,000	\$101.72	NA	
810 Seventh Avenue	646,000	95%	\$141,000,000	\$218.27	15.17	14.39
Average		96.13%		\$211.61		13.34

The property at 711 Third Avenue has 528,357 square feet of rental space, had an occupancy rate of 95%, and generated net operating income of \$6.107 million in the most recent year. Based on the average price per square foot, the value of the property is:

$$\begin{aligned}\text{Value of 711 Third Avenue} &= \text{Square footage} \times \text{Price per square foot} \\ &= 528,357 \text{ sq. ft.} \times \$211.61 \text{ per square foot} = \$111.807 \text{ million}\end{aligned}$$

If we adjust for the fact that the occupancy rate is slightly lower at 711 Third Avenue than the average we would estimate the following value:

$$\begin{aligned}\text{Value of 711 Third Avenue} &= \text{Square footage} \times (\text{Occupancy rate}_{711 \text{ Third}} / \text{Average occupancy rate}) \\ &\quad \times \text{Price per square foot} \\ &= 528,357 \text{ sq. ft.} \times (95\% / 96.13\%) \times \$211.61 \text{ per square foot} \\ &= \$110.498 \text{ million}\end{aligned}$$

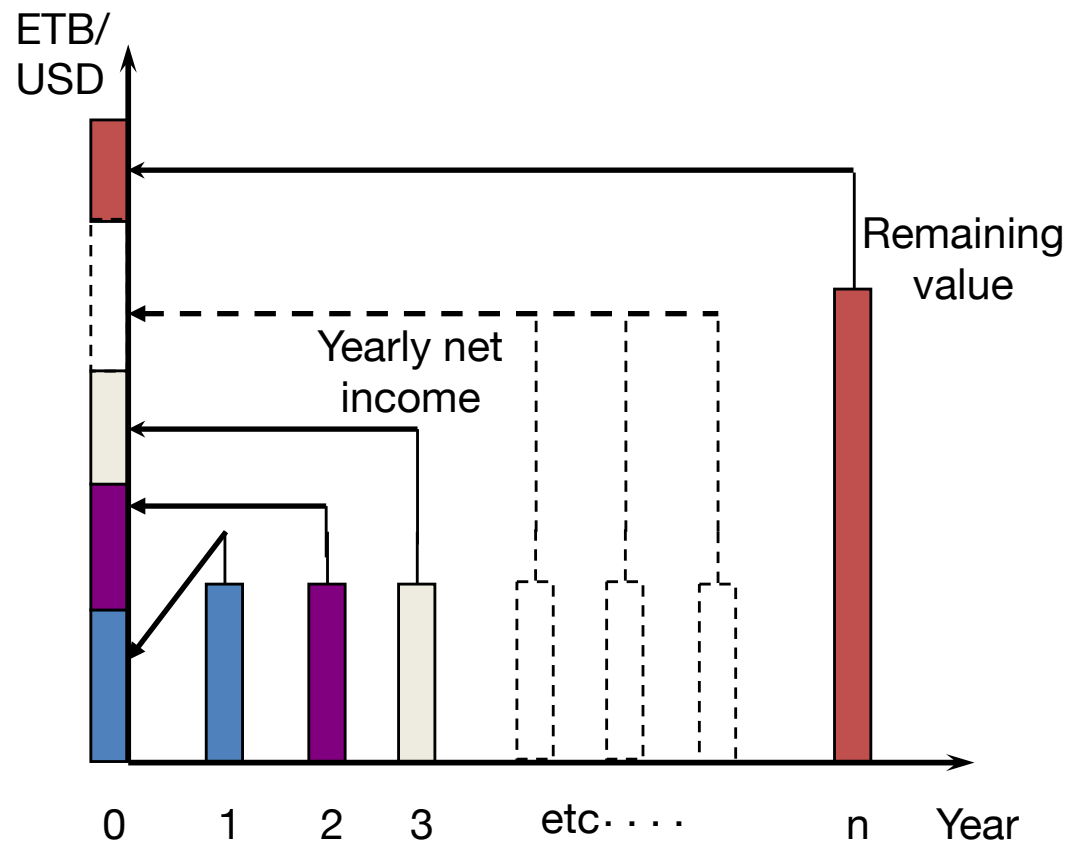
Finally, if we apply to this property the multiple of operating income based on the four properties for which it is available:

$$\begin{aligned}\text{Value of 711 Third Avenue} &= \text{Net operating income} \times \text{Average price/NOI} \\ &= 6.107 \times 13.34 = \$81.470 \text{ million}\end{aligned}$$

Which of these values gets used will depend on whether you view the lower operating income per square foot at 711 Third Avenue to be the consequence of poor management or the building's characteristics—location and condition. If it is the former, you might be willing to pay the higher values (\$111 million). If it is the latter, you would pay only \$81.4 million.

# Income Approach

- The current value of future yearly net income and remaining value at the end of the calculation period





# Income Approach

- Methods for income determination:
  - Sales price / square meter
  - Sales price coefficient
  - Gross capitalisation factor
  - Net capitalisation percent

# Income Approach

- Information Needed:
- Information about the real property:
  - Land use
  - Land area
  - Building: size, age, standard etc.
  - Yearly costs and incomes
  - Other special conditions

### ILLUSTRATION 26.1: Valuing an Office Building in 2000

In this illustration, we will be valuing an office building located at 711 Third Avenue in New York City. The operating details of the building are as follows:

- The building has a capacity of 528,357 square feet of rentable space. While 95% of this space is rented out for the next year, the occupancy rate is expected to climb 0.5% a year for the following four years to reach 97% of capacity in year 5. This is expected to be the occupancy rate in steady state.
- The average rent per square foot<sup>3</sup> was \$28.07 in the most recent year and is expected to grow 3% a year in perpetuity. Historically, there has been a credit loss, associated with tenants failing to make payments, of 2.5% of rental revenues.
- The building has a garage that generated \$800,000 in income for the most recent year. This income is also expected to grow 3% a year in perpetuity.
- Real estate taxes were \$5.24 a square foot in the most recent year, and are expected to grow 4% a year for the next five years and 3% a year thereafter.
- The land under the building is rented under a long-term lease, and the ground rent in the most recent year was \$1.5 million. This rent is expected to remain unchanged for the next five years and grow 3% a year thereafter.
- Other expenses, including insurance, maintenance, and utilities, amounted to \$6.50 a square foot in the most recent year and are expected to grow 3% a year in perpetuity. Approximately 10% of these expenses will be reimbursed by tenants each year (and thus will become a part of the revenues).
- The management fee for the most recent year was \$300,000 and is expected to grow 3% a year in perpetuity.
- The depreciation in the building is expected to be \$2 million a year for the next five years. The capital maintenance and upgrade expenditures (including leasehold improvements for new tenants) last year amounted to \$1.5 million, and are expected to grow 3% a year for the next five years. Beyond year 5, depreciation is expected to increase 3% a year in perpetuity, and capital maintenance expenditures will offset depreciation.

The potential buyer of the building is a corporation that faces a marginal tax rate of 38% and expects to finance the building with a mix of 60% debt and 40% equity. Then debt will take the form of a long-term balloon payment loan with an interest rate of 6.5%

#### STEP 1: ESTIMATING A COST OF CAPITAL

We begin by trying to estimate a cost of equity. While we had access to a survey that provided typical hurdle rates used by real estate investors for office buildings in New York, we chose to estimate the cost of equity from the capital asset pricing model because the potential buyer is a corporation (whose investors are diversified).<sup>4</sup> To make this estimate, we began with the unlevered beta of 0.62 of equity REITs with office properties. We estimated a levered beta using the debt-equity mix proposed for the building:

$$\begin{aligned}\text{Levered beta} &= \text{Unlevered beta}[1 + (1 - \text{Tax rate})(\text{Debt/Equity})] \\ &= 0.62[1 + (1 - .38)(.6/.4)] = 1.20\end{aligned}$$



To estimate the cost of equity, we used a risk-free rate of 5.4% and a risk premium of 4%:

$$\begin{aligned}\text{Cost of equity} &= \text{Risk-free rate} + \text{Beta} \times \text{Risk premium} \\ &= 5.4\% + 1.20(4\%) = 10.20\%\end{aligned}$$

Using the interest rate of 6.5% on the bank borrowing as the pretax cost of debt, we estimated a cost of capital:

$$\text{Cost of capital} = 10.20\%(.40) + 6.5\%(1 - .38)(.60) = 6.49\%$$

We assumed that this would be the cost of capital in perpetuity.<sup>5</sup>

## STEP 2: ESTIMATING CASH FLOWS ON THE BUILDING

We used the operating information specified earlier to estimate the cash flows prior to debt payments on the building for the next five years in the following table.

	Base Year/ Assumption	1	2	3	4	5	Terminal Year
Building space (square feet)		528,357	528,357	528,357	528,357	528,357	
Occupancy		95%	95.50%	96.00%	96.50%	97%	
Rent/square foot	\$28.07	\$28.91	\$29.78	\$30.67	\$31.59	\$32.54	
Rental income		\$14,512,115	\$15,026,149	\$15,557,965	\$16,108,166	\$16,677,377	\$17,177,698
Garage income	\$800,000	\$ 824,000	\$ 848,720	\$ 874,182	\$ 900,407	\$ 927,419	\$ 955,242
Reimbursement revenue	10.00%	\$ 353,735	\$ 364,347	\$ 375,277	\$ 386,536	\$ 398,132	\$ 410,076
Credit loss	2.50%	\$ 362,803	\$ 375,654	\$ 388,949	\$ 402,704	\$ 416,934	\$ 429,442
Total revenues		\$15,327,047	\$15,863,563	\$16,418,475	\$16,992,404	\$17,585,993	\$18,113,573
Expenses							
Real estate taxes	\$5.24	\$ 2,879,334	\$ 2,994,508	\$ 3,114,288	\$ 3,238,860	\$ 3,368,414	\$ 3,469,466
Ground rent	\$1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,545,000
Other expenses	\$6.50	\$ 3,537,350	\$ 3,643,471	\$ 3,752,775	\$ 3,865,358	\$ 3,981,319	\$ 4,100,758
Management fee	\$300,000	\$ 309,000	\$ 318,270	\$ 327,818	\$ 337,653	\$ 347,782	\$ 358,216
Total expenses		\$ 8,225,684	\$ 8,456,248	\$ 8,694,881	\$ 8,941,870	\$ 9,197,515	\$ 9,473,440
Operating income before depreciation		\$ 7,101,363	\$ 7,407,314	\$ 7,723,594	\$ 8,050,534	\$ 8,388,478	\$ 8,640,133
Depreciation	\$2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,060,000
Operating income Taxes		\$ 5,101,363	\$ 5,407,314	\$ 5,723,594	\$ 6,050,534	\$ 6,388,478	\$ 6,580,133
	38%	\$ 1,938,518	\$ 2,054,779	\$ 2,174,966	\$ 2,299,203	\$ 2,427,622	\$ 2,500,450
Operating income after taxes		\$ 3,162,845	\$ 3,352,535	\$ 3,548,628	\$ 3,751,331	\$ 3,960,857	\$ 4,079,682
+ Depreciation		\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,060,000
- Capital maintenance and leasehold improvement	\$1,500,000	\$ 1,545,000	\$ 1,591,350	\$ 1,639,091	\$ 1,688,263	\$ 1,738,911	\$ 2,060,000
Cash flow to firm		\$ 3,617,845	\$ 3,761,185	\$ 3,909,538	\$ 4,063,068	\$ 4,221,946	\$ 4,079,682



Since all of the items grow at 3% beyond year 5, we estimated a cash flow for year 6 as the terminal year. The terminal value of the building was calculated based on this cash flow, a perpetual growth rate of 3%, and a cost of capital of 6.49%:

$$\begin{aligned}\text{Terminal value} &= \text{FCFF}_6 / (\text{Cost of capital} - \text{Expected growth rate}) \\ &= \$4,079,682 / (.0649 - .03) = \$116,810,659\end{aligned}$$

The present value of the expected cash flows for the next five years and the terminal value, summarized in the following table, yields the value of the building:

	1	2	3	4	5
Cash flow to firm	\$3,617,845	\$3,761,185	\$3,909,538	\$4,063,068	\$ 4,221,946
Terminal value					\$116,810,659
Present value @ 6.49%	\$3,397,275	\$3,316,547	\$3,237,186	\$3,159,199	\$ 90,928,871

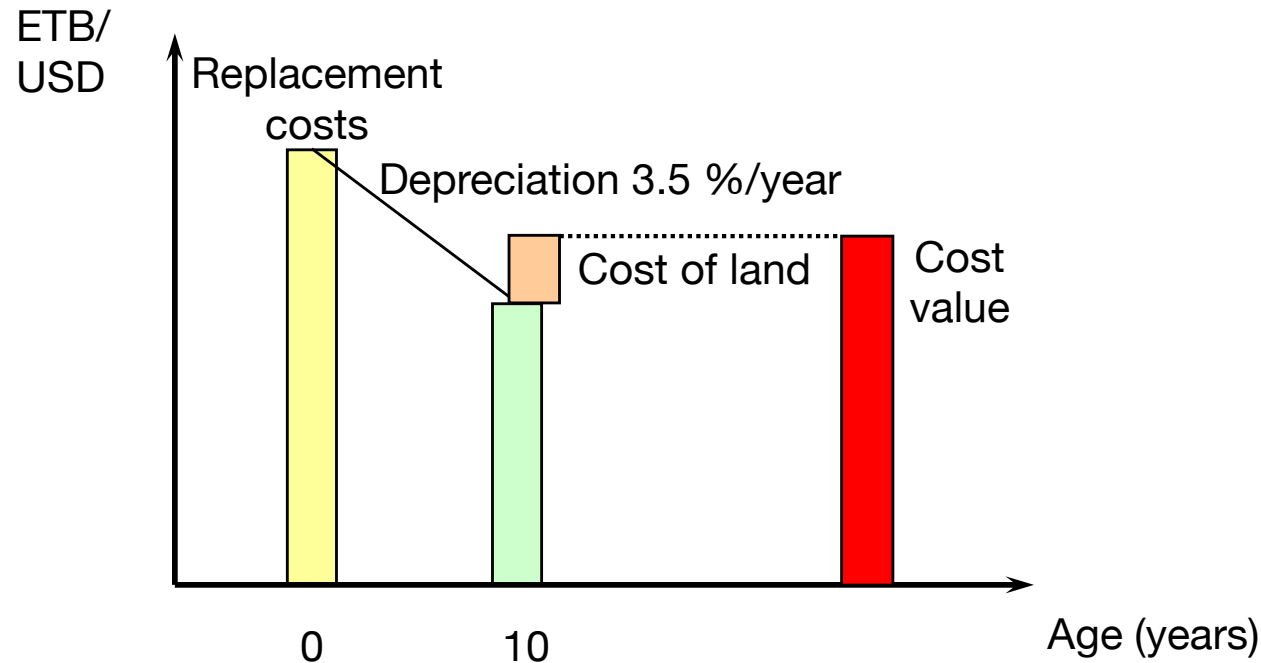
The sum of the present value of the cash flows is \$101.48 million. This is the estimated value of the building.

# Cost Approach

- Underlying economic theory is no prudent buyer would pay more than it would cost to purchase the land and develop.
- Applicable to all property types but does not have the ease of market/sales comparison.
- Reproduction vs. replacement cost
  - Reproduction is exact replica
  - Replacement is a “newer” building of equal utility (modern materials, designs, and layout)
- Procedure:
  - Estimate site value
  - Estimate hard and soft costs of improvements including reasonable profit
  - Estimate accrued depreciation in the structure
  - Add site value to improvement depreciated cost

# Cost Approach

- Determination of Cost Value:



Replacement costs	1 000
Depreciation 10 years 3,5 %	- 350
Cost of land	200
<b>Cost value</b>	<b>850</b>

# Cost Approach

- Cost Components:
- Direct (hard) costs
  - Building permits
  - Labor
  - Materials
  - Equipment
  - Security
  - Contractors profit
- Indirect (soft) costs:
  - Consulting
  - Engineering and architecture
  - Cost of carry (fees, points, interest, lease-up)
  - Selling expenses
  - Leasing commissions



# Cost Approach

- Unit in Place Method:
  - Each category (section) of the building's cost is estimated.
  - Foundation, sprinkler, roof, framing, etc. on m<sup>2</sup> basis
- Comparative Unit Method:
  - Determine estimate of cost per unit of area
  - Aggregate cost per unit
  - Use of benchmark building
    - Adjust for size, finish quality, time, etc.
- Quantity Survey Method:
  - Most complex and time consuming.
  - Number of labor hours, direct cost supplies are estimated and the cost of each is applied.
  - Rarely used in the developed world.

# Cost Approach

- **Depreciation:** Non-accounting sense
- Three major types:
  - Physical deterioration
  - Functional obsolescence
  - External obsolescence
- Economic life, effective age, remaining economic life
- Cost Value: In summary

$$V_o = V_{land} + Development\ Cost + Accured\ Depreciation$$

# Cost Approach

- Information Needed:
- General information
  - Average replacement costs
  - Depreciation - time and percent
  - Average value of land
- Information about the real property
  - Land use
  - Land area
  - Building: size, age, standard etc.
  - Other special conditions

# Plant and Equipment Valuation

- Plant and equipment assets have particular characteristics that distinguish them from most types of real property, and this fact influences the approach to, and reporting of, their value.
- Plant and equipment are typically capable of being moved or relocated and often will depreciate at a significantly faster rate than real property.
- Frequently, the value will differ notably depending on whether an item of plant or equipment is valued in combination with other assets within an operational unit, or as an individual item for exchange.
- In addition, whether plant or equipment may be considered as either in situ (in place) or for removal will also affect value.

# Plant and Equipment Valuation

- **Plant:** assets that are inextricably combined with others and that may include items that form part of the building, services installations, specialized buildings, machinery and equipment;
- **Machinery:** individual, or a collection of, machines that may have been installed wholly in connection with the occupiers' industrial or commercial processes (a machine is an apparatus used for a specific process in connection with the operation of the entity); or
- **Equipment:** other assets such as furniture and furnishings, tenants' fixtures and fittings, vehicles and loose tools that are used to assist the operation of the enterprise or entity.

# Plant and Equipment Valuation

- The general rule is that assets installed primarily to provide services to the buildings should be valued as part of the property interest if they would normally be included in the sale of the property.
- This will include:
  - items associated with the provision of services (gas, electricity, water, drainage, fire protection and security) to the property;
  - equipment for space heating, hot water and air conditioning not integral to any process; and
  - structures and fixtures that are not an integral part of process equipment, for instance, chimneys, plant housings and railway tracks.

# Plant and Equipment Valuation

- Equipment Value can be estimated using:
- $EV = RC * M_m * DR_n * EC$

where

$EV$  = *Estimated value of equipment*

$RC$  = *Replacmeent cost of equipment (MC + DC + UC)*

$MC$  = *Manufacturing cost*

$DC$  = *Dealer Cost = Cost of Insurance & Freight + Tax + Profit*

$UC$  – *User cost*

$M_m$  = *Maker or Model preference*

$DR_n$  = *Depreciation rate due to age*

$EC$  = *Depreciaition due to equipment condition*

# Valuation Reports

- The valuation report must clearly and accurately set out the conclusions of the valuation in a manner that is not ambiguous or misleading, and does not create a false impression.
- It must also deal with all the matters agreed between the client and the valuer in the terms of engagement and include the following minimum information, except where the report is to be provided on a form supplied by the client.
- The minimum content of the report shall be:
  - a) identification of the client and any other intended users;
  - b) the purpose of the valuation;
  - c) the subject of the valuation;



# Valuation Reports

- The minimum content of the report shall be:
  - d) the interest to be valued;
  - e) the type of asset or liability and how it is used, or classified, by the client;
  - f) the basis, or bases, of value;
  - g) the valuation date;
  - h) disclosure of any material involvement, or a statement that there has not been any previous material involvement;
  - i) the identity of the valuer responsible for the valuation and, if required, a statement of the status of the valuer;
  - j) where appropriate, the currency that has been adopted;
  - k) any assumptions, special assumptions, reservations, special instructions or departures;
  - l) the extent of the valuer's investigations;
  - m) the nature and source of information relied on by the valuer;

# Valuation Reports

- The minimum content of the report shall be:
  - n) any consent to, or restrictions on, publication;
  - o) any limits or exclusion of liability to parties other than the client;
  - p) confirmation that the valuation accords with these standards and that it also complies with the IVS (international Valuation Standards), where appropriate;
  - q) a statement of the valuation approach and reasoning;
  - r) a statement that the valuer has the knowledge, skills and understanding to undertake the valuation competently;
  - s) the opinions of value in figures and words;
  - t) signature and date of the report.

# References:

- Damodaran, Aswath (2012). Investment Valuation: Tools and techniques for determining the value of any asset. 3<sup>rd</sup> Edition, Wiley.
- RICS, (2011). Valuation Standards, 7<sup>th</sup> edition, RICS.
- Deloitte, (2016). Deloitte Valuation Conference: Real Estate Valuation.
- Blackledge, Michael (2009). Introducing Property Valuation, Taylor and Francis.