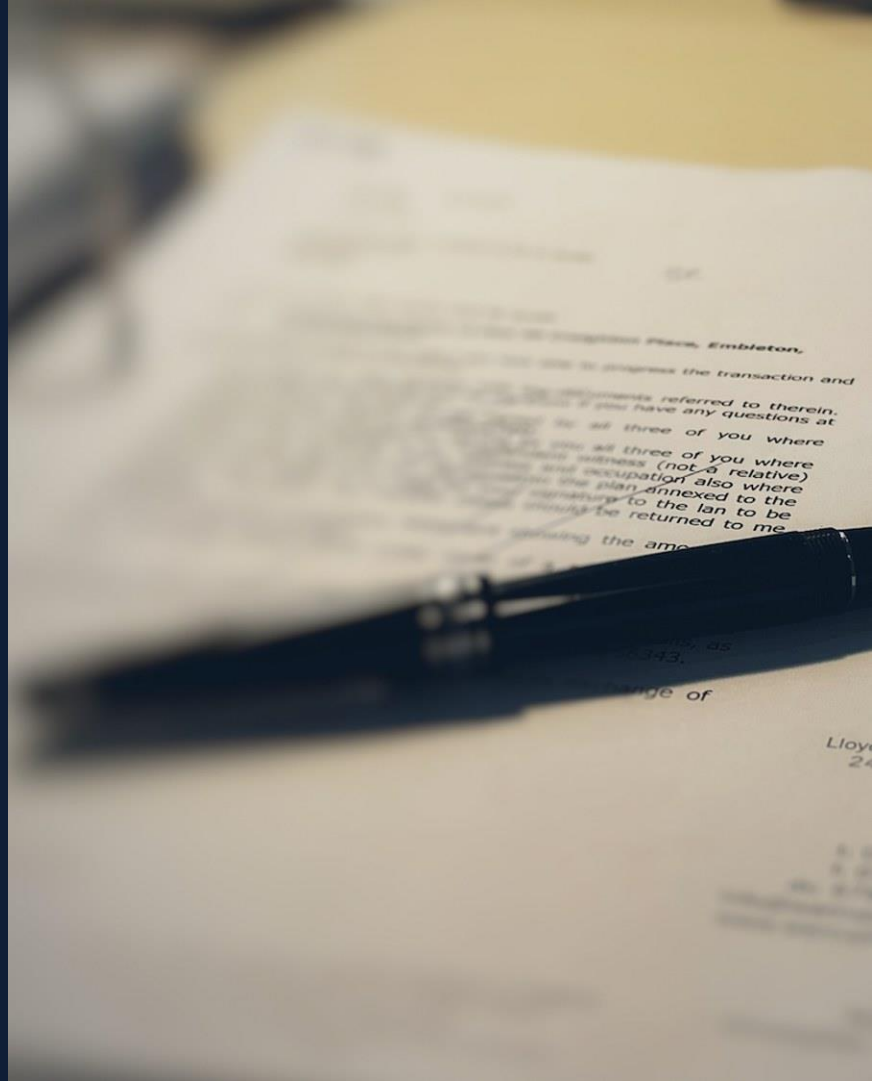
SCHOOL OF ENGINEERING

WEEK 7

Introduction to Engineering Contracts & Contract Law

Engineering Project Management



Roadmap: this week and next

THIS WEEK

1. **Engineering contracts**
   Why we contract, who the parties are, and how agreement is reached
2. **The law of contract**
   Origins, requirements, formats and key terms, and when a contract is formed
3. **Types of contract**
   Classifying by contractor selection, payment and responsibility

NEXT WEEK (WEEK 8)

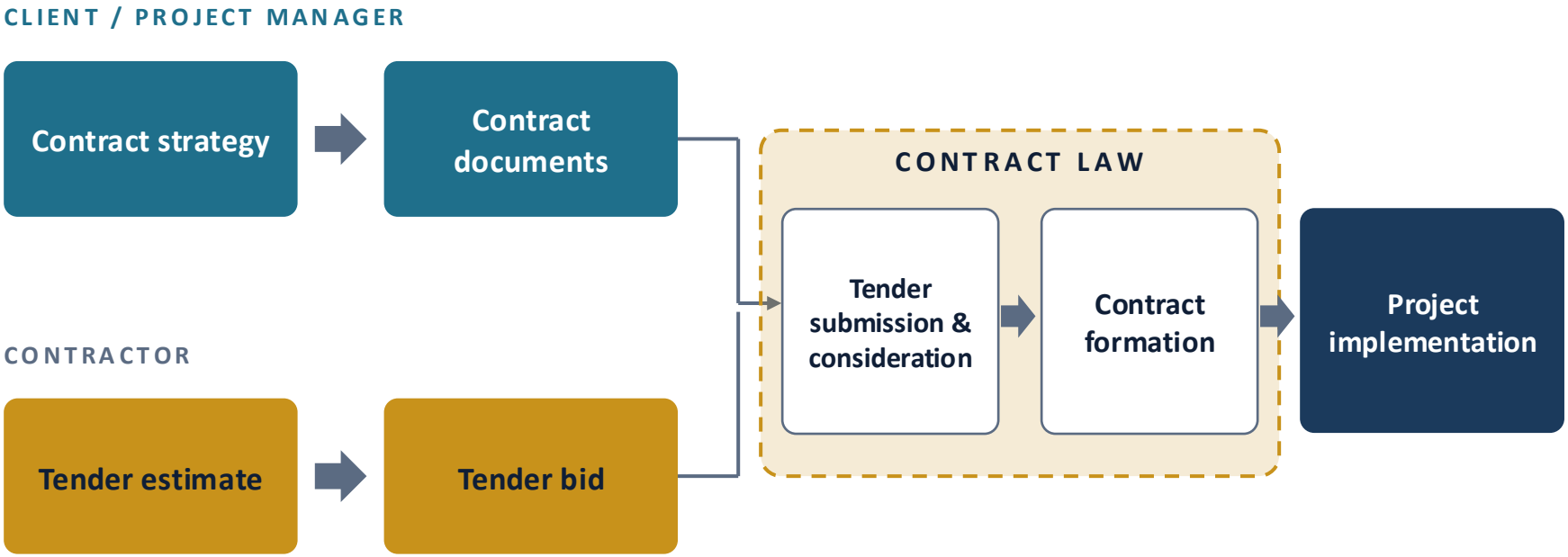
Contract planning and contractor selection
Stages in selection; the tender process

Contract award

Conditions of contract

Case studies and discussion

Where contracts fit in the process



1

Engineering contracts

Why we contract, who the parties are, and how an agreement is reached



Why do we need contracts?



The client can’t do it alone

A client is rarely in a position to carry out the engineering works a project requires.



An expert party steps in

An external party, experienced in this type of work, is brought in.



A contract binds them

Their relationship is a contract. The external party is the contractor, and the process is known as contracting.

Two parties, one agreement



The principal

The client of the project, once the contract is formed. Pays for the work.

Payment

Work



The contractor

Agrees to undertake the work required, in return for payment.

The particulars (requirements) of the contract are determined by negotiation:

Payment: what the principal will pay, and how and when

Work: what the contractor must do: scope and details

From invitation to agreement

PRINCIPAL

Invites tenders

An invitation to tender is proposed.

CONTRACTORS

Submit offers

Each tender is a formal offer, usually from several contractors.

PRINCIPAL

Evaluates

Accepts an offer, rejects it, or makes a counter offer.

BOTH PARTIES

Agree

Negotiations continue until the two parties reach agreement.

A counter offer goes back to the contractor, who either accepts or submits another offer.

To be enforceable in law, the agreement must be 'evidenced', usually in an Instrument of Agreement.

2

The law of contract



The legal aspects are extremely complicated, so we look at just the basics

Origins of contract law

Barter to market

1

A barter economy evolved into a market economy, which required legal enforcement of promises.

6th century

2

Roman law recognised the concept of contracts and agreements.

12th–13th centuries

3

Courts became necessary in Western Europe to enforce agreements between merchants.

Two traditions

4

Contract law developed within the established legal systems:

England: common law
Scotland: mixed

Continent: classical Roman law

What is a contract?

> *A contract is any promise or set of promises made by one party to another, the breach of which the law provides a remedy*
>
> Wikipedia (though the entry is now much expanded)

contract

noun | ˈkɒntrakt |

a written or spoken agreement, especially one concerning employment, sales, or tenancy, that is intended to be enforceable by law: *he has just signed a contract keeping him with the club* | *[mass noun] : much of the produce is grown* ***under contract***.

In everyday use, ‘the contract’ has come to mean the document in which the terms of the agreement are written down.

A contract implies that both parties accept certain responsibilities and receive benefits in return.

Requirements of a valid contract

Together these demonstrate an “intention to create legal relations”.



1

Intention of the parties



2

Genuine consent of the parties



3

A legal purpose



4

Both parties legally capable

Offer and acceptance

OFFER
One party makes an offer

ACCEPTANCE
The other accepts it, unconditionally

CONTRACT
A contract is formed

An offer and acceptance can be:



In writing



Oral



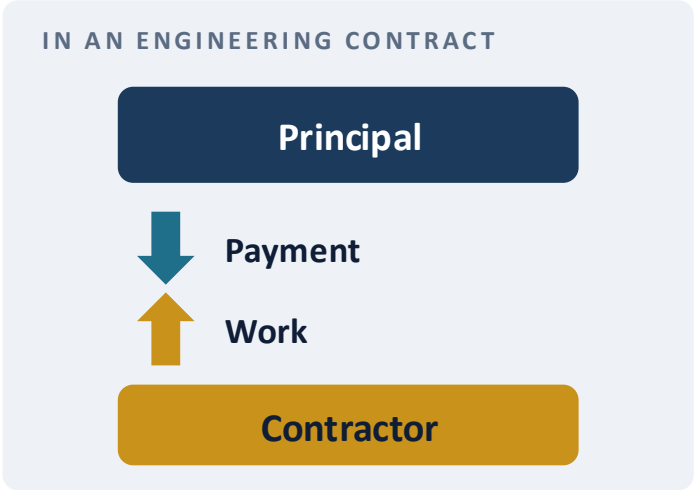
Implied by conduct

Consideration: the thing exchanged

An inducement to enter a legally enforceable agreement: the essential reason a party enters into a contract.

Either a detriment incurred by one party or a benefit received by the other: the thing exchanged, however small.

The party seeking to enforce must have paid or promised money, parted with goods, or forgone some benefit.



Courts check that consideration actually took place, not whether it was adequate. A nominal peppercorn has always satisfied the law.

Two formats: formal and simple

There are many types of engineering contract (covered later) but only two formats.

Formal contract
also termed ‘under seal’

FORM

A deed: signed, witnessed and passed to the other party

ESTOPPEL

Creates an estoppel

LIMITATION PERIOD

Longer

Simple contract
not in any particular form

FORM

No particular form, but it requires consideration

ESTOPPEL

None, or at least enforcement is difficult

LIMITATION PERIOD

Shorter

Two terms worth knowing



Estoppel

A rule of law that prevents a party from later claiming that a statement in the contract is incorrect, especially if others have been led to rely or act on it.

Simple contracts have no estoppel, or at least enforcement is difficult

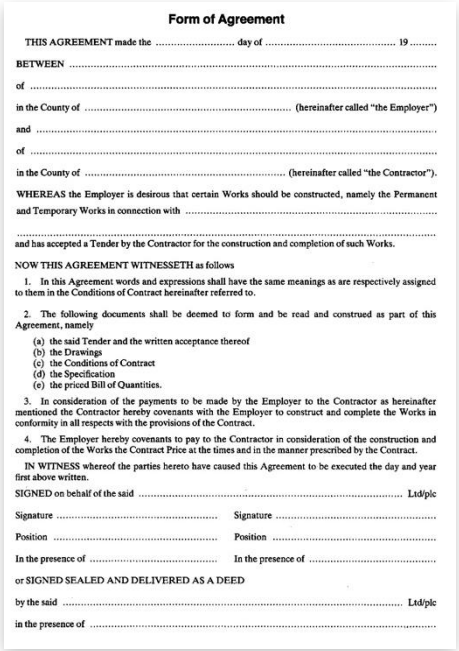


Limitation period

The time following a breach of contract in which the innocent party may take action against the other.

Longer for formal contracts

The Instrument of Agreement



Form of Agreement

THIS AGREEMENT made the ..... day of ..... 19 .....

BETWEEN .....

of .....

in the County of ..... (hereinafter called "the Employer")

and .....

of .....

in the County of ..... (hereinafter called "the Contractor").

WHEREAS the Employer is desirous that certain Works should be constructed, namely the Permanent and Temporary Works in connection with .....

.....

and has accepted a Tender by the Contractor for the construction and completion of such Works.

NOW THIS AGREEMENT WITNESSETH as follows

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, namely

(a) the said Tender and the written acceptance thereof
(b) the Drawings
(c) the Conditions of Contract
(d) the Specification
(e) the priced Bill of Quantities.

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned the Contractor hereby covenants with the Employer to construct and complete the Works in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay to the Contractor in consideration of the construction and completion of the Works the Contract Price at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed the day and year first above written.

SIGNED on behalf of the said ..... Ltd/plc

Signature ..... Signature .....

Position ..... Position .....

In the presence of ..... In the presence of .....

or SIGNED SEALED AND DELIVERED AS A DEED

by the said ..... Ltd/plc

in the presence of .....

Any contract may have an Instrument of Agreement (IofA). Its form shows whether the contract is simple or formal.

Signed by both parties, no witnesses → **Written evidence of a simple contract**

Signed, sealed and delivered as a deed, in front of witnesses → **The IofA becomes formal**

Merging: parties to a simple contract may merge it into a formal one by executing a formal IofA.

In practice: many engineering clients require a formal IofA, to ensure a formal contract exists.

Has a contract been formed?

One of the biggest legal challenges for contracts of any type is establishing whether a contract has been formed.

Where is the line between a conversation and a contract?



CASE STUDY 1

G Percy Trentham Ltd v Archital Luxfer Ltd

In your notes, and as a video recording on Learn.



THE CLASSIC EXAMPLE

Carlill v. Carbolic Smoke Ball Company

One of the earliest examples, and cited to all law students.

Carlill v Carbolic Smoke Ball Co



1

The advertisement

The company advertised a product said to cure influenza, promising £100 (in 1893) to anyone who became ill after using it.

2

The claim

Mrs Carlill used the product, became ill, and sued.

3

The ruling

The judges ruled that the advertisement was an offer, and that Mrs Carlill accepted it.

4

Consideration

Her actions in using the product demonstrated consideration.

Adverts as offers: recent examples



Hoover: two free flights to America when you spend £100 or more on Hoover products



Pepsi: a Harrier jet for 7,000,000 Pepsi Points



Later the subject of a Netflix documentary



Was each advert an offer that someone could accept?

Scots law: where it differs

Scots law is a ‘mixed’ system, with Roman roots and common-law influence. Several points above differ.

	English law (as taught so far)	Scots law
Consideration	Required for a simple contract	Not required: a contract or promise can bind without any exchange
Promises and adverts	An offer must be accepted, with consideration (Carlill)	A unilateral promise can bind without acceptance
Writing and formality	A formal contract is a deed: signed, witnessed and delivered	No ‘under seal’. Most contracts need no writing; some (e.g. land) must be signed. A witness makes a document self-proving
Estoppel	Estoppel; a formal contract creates one	Personal bar is the equivalent, arising from a party’s own words or conduct
Time limits	Limitation: 6 years (simple), 12 years (deed)	Prescription: generally 5 years for breach of contract, with no simple/formal split

Sources: Requirements of Writing (Scotland) Act 1995; Prescription and Limitation (Scotland) Act 1973; Limitation Act 1980.

3

Types of contract

Every contract is classified in three ways



Three ways to classify a contract

Each contract has one classification from each column.

By method of selecting the contractor		By method of payment for the work		By technical and administrative responsibility
Competitive tendering	+	**Price based**	+	Separate design and construction
or		*or*		Design and construct
Negotiated contract		**Cost based**		Construction supply / installation
				Management contract (and variations)
				Turnkey

Selecting the contractor

THE USUAL METHOD

Competitive tendering

- The principal formally invites a number of contractors to submit bids.
- Bids are estimated using common tender documents.
- The principal assesses the bids and either accepts one or negotiates further.

NO FORMAL TENDER

Negotiated contract

- The principal negotiates directly with one or more contractors.
- There is no formal tendering process.
- The contract is formed when mutual agreement is reached.

Negotiated contracts are common when the work is...

- **Of a highly specialised nature**
- **Few contractors are capable**
- **There is a good previous relationship**
- **Tendering and negotiation can be combined**

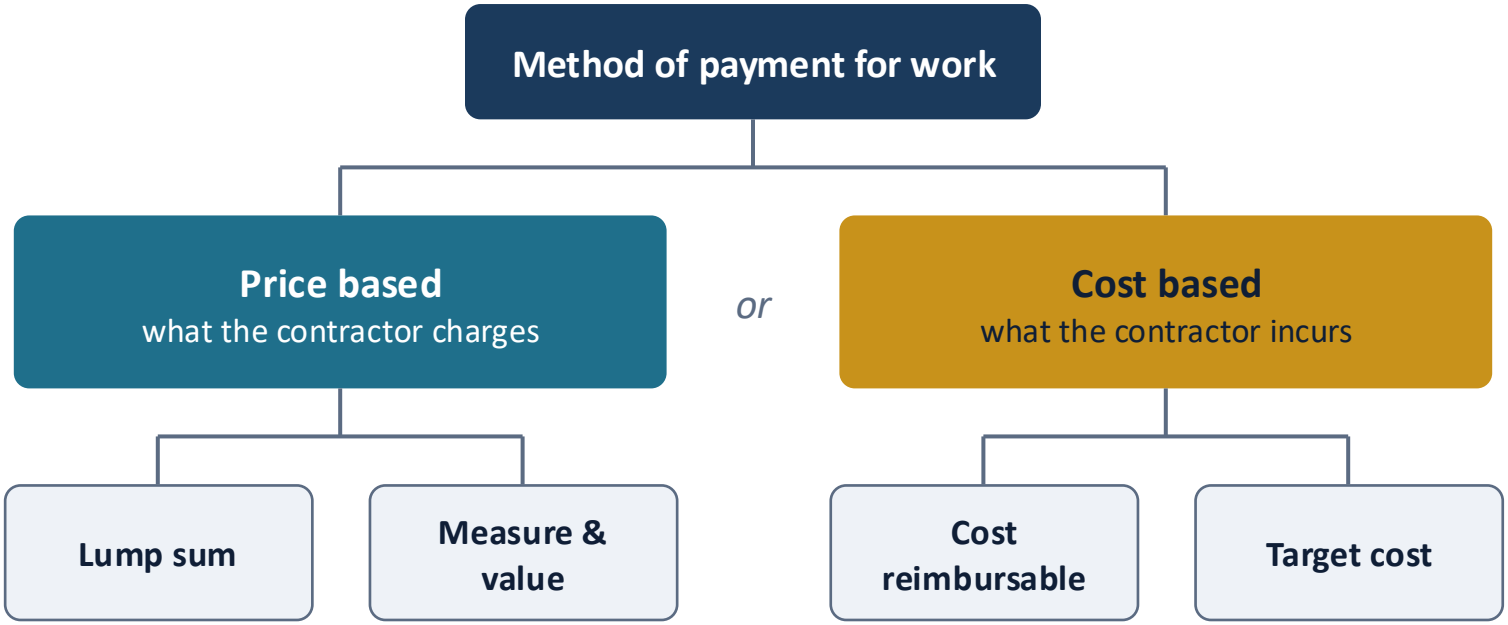


EXAMPLE

Negotiated contract: an example

Which of the three conditions might apply here?

Classifying by method of payment



The next four slides take each method in turn.

Lump sum

PRICE BASED

The contractor is paid the amount stated in the contract

A figure agreed during negotiation, usually paid in instalments at ‘milestones’.

Suitable when

The nature and extent of work can be precisely defined at tender stage

Unsuitable if

Change is expected during the contract

Variations

The amount may change if extra work is added or work deleted

Contingency

Contractor bids are likely to contain risk contingency sums

Measure and value

PRICE BASED

The contractor bids rates for items of work; payment depends on the quantity done

Also called admeasurement or remeasurement: work is remeasured after it is done. (See the estimating lecture.)



Bill of Quantities

Tender based on listed items of work with estimated quantities.

Provides a tender total



Schedule of Rates

Tender based on items of work with no quantities.

Nature of work can be defined; quantity cannot

Cost reimbursement

COST BASED

The contractor is paid actual costs plus a fee

Used when the nature of the work is not known at tender stage.

The fee may be:

- **A fixed sum**
- **A fixed sum with a bonus scheme**
- **A fixed fee with sliding-scale adjustments**
- **A percentage of the costs**

Lets construction proceed as the design develops

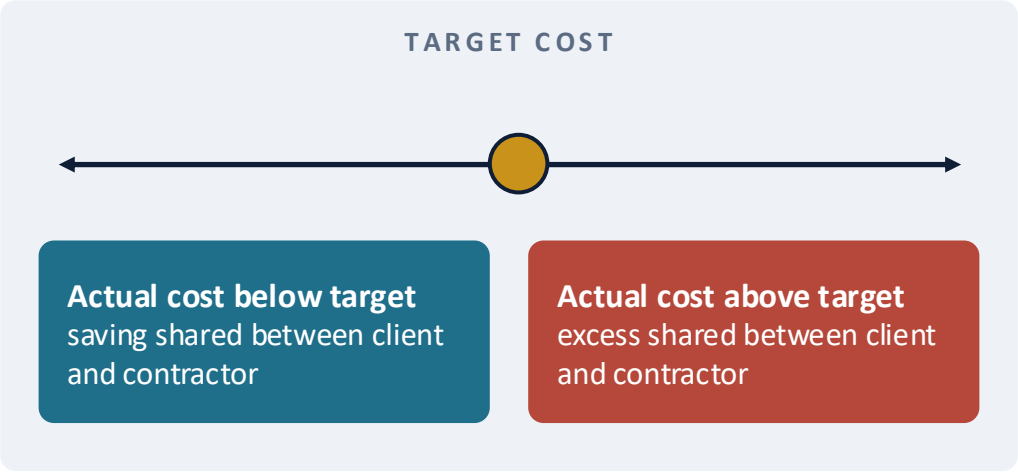
High risk to the principal, but allows contractor design input

Target cost

COST BASED

A probable cost for the whole project is agreed at contract negotiation

The contractor is paid costs as in cost reimbursement (usually with a fee).



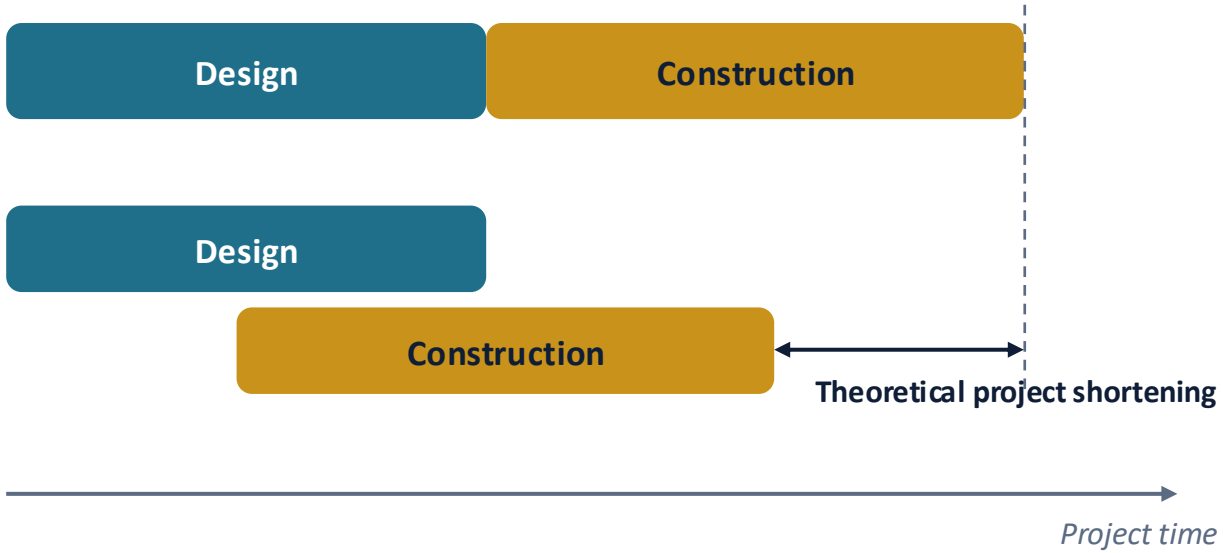
The split is normally loaded to the contractor, as an incentive. Savings and excesses usually have different ratios.

Why choose cost reimbursement?

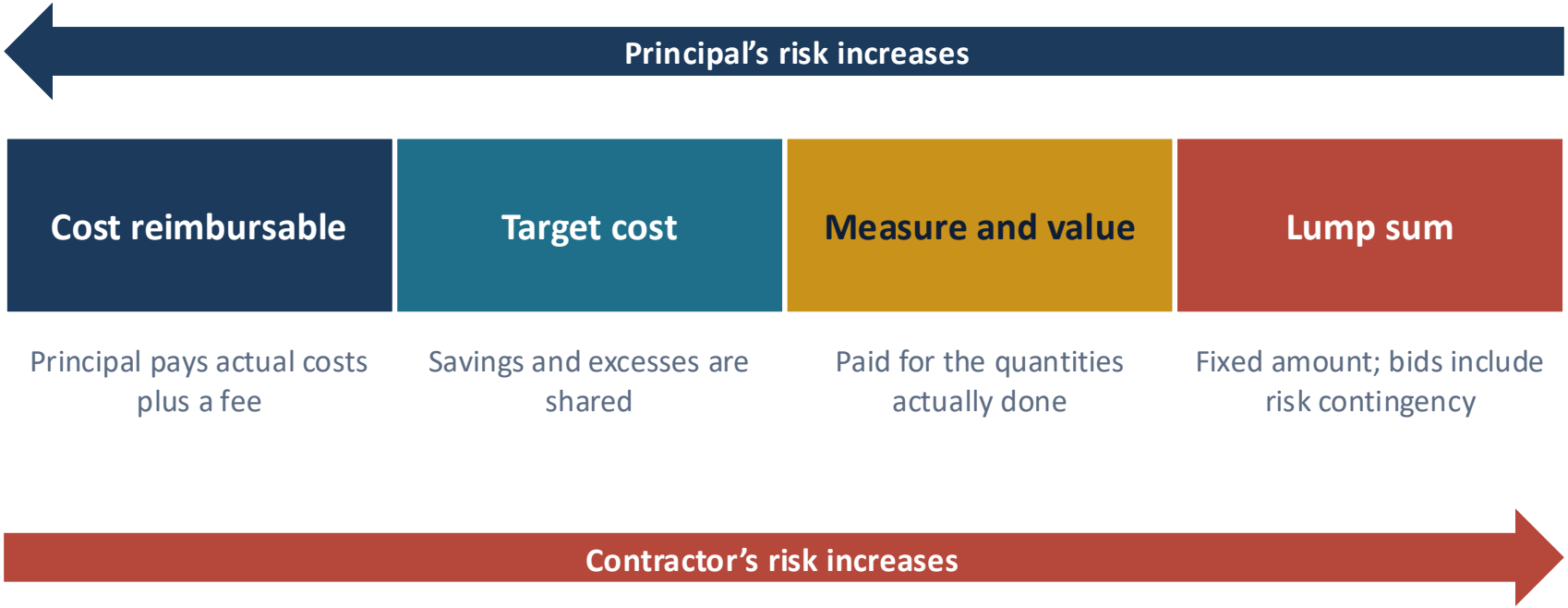
In price-based contracts the design must be well defined before tender and construction. If construction overlaps design, a different payment mechanism is needed.

Price based
design, then construction

Cost reimbursement
construction overlaps design



Who carries the risk?



Which payment method? Four factors

1

Price certainty

How certain a final contract price is needed at tender stage.

2

Flexibility

How much flexibility is needed to cope with likely design changes, and whether they can be evaluated systematically and equitably.

3

Incentives

The contractor's incentive for efficient performance, matched by the client's incentive to provide timely information and decisions.

4

Risk

The extent of risk likely to be encountered, and the most cost- and time-efficient way of allocating it.

Classifying by responsibility

Projects have widely differing technical, professional and administrative inputs. Contracts can be classified by how these bodies are organised.

Design and construction

- Separate design and construction
- Design and construct contract

Management

- Management contract
- Construction management contract
- Design and management contract

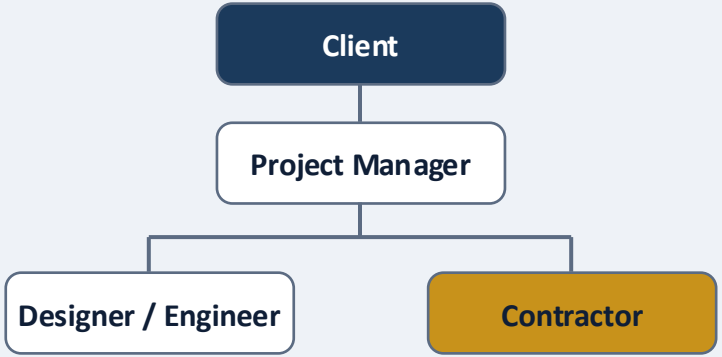
Supply and turnkey

- Construction supply / installation contract
- Turnkey contract

Separate vs design and construct

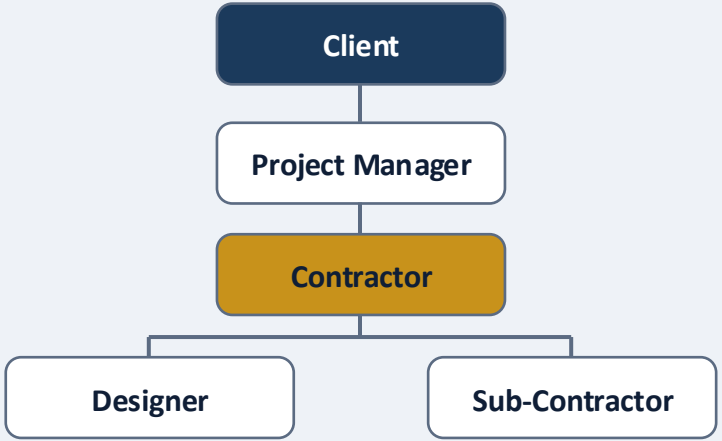
Separate design and construction

No direct link between designer and contractor.



Design and construct

The client wishes design to be tendered and managed by the contractor.



Management-based contracts

BASE FORM

Management contract

- Appointed by the client to manage all construction aspects, and sometimes design
- Does not carry out construction: enters into separate contracts with construction contractors
- Paid a fee

VARIATION

Construction management contract

- The Construction Manager is a contractor with very similar duties to the Management Contractor
- Main difference: contracts are placed with the client

VARIATION

Design and management contract

- Very similar to management contracting
- Design is the direct responsibility of the contractor
- Similar to design and construct, with emphasis on management of the project

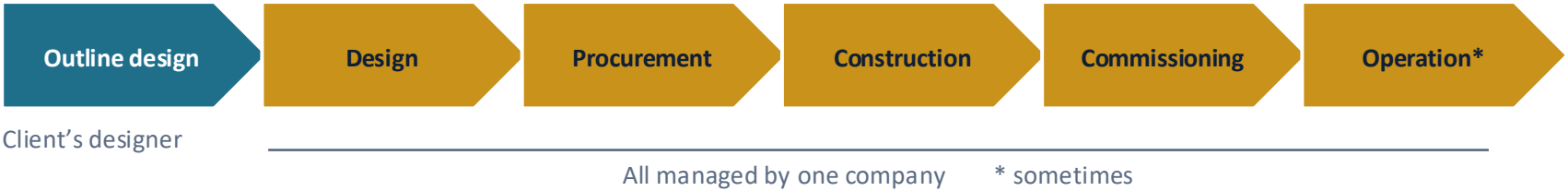
Supply / installation and turnkey

Construction supply / installation contract

Industrial projects, where installation and commissioning of plant are also required under the contract.

Turnkey contract

A scope or outline design is provided by the client's designer. After that, one company manages the rest.



Summary: key takeaways

1. A contract is a mutual agreement between a principal and a contractor, reached through offer, counter offer and acceptance.
2. A valid contract needs intention, genuine consent, a legal purpose and capable parties. A simple contract also needs consideration.
3. Contracts are formal (a deed) or simple. The Instrument of Agreement shows which, and many engineering clients require a formal one.
4. Every contract is classified three ways: how the contractor is selected, how the work is paid for, and who holds technical and administrative responsibility.
5. Payment methods trade price certainty against flexibility and risk: lump sum puts more risk on the contractor, cost reimbursement on the principal.

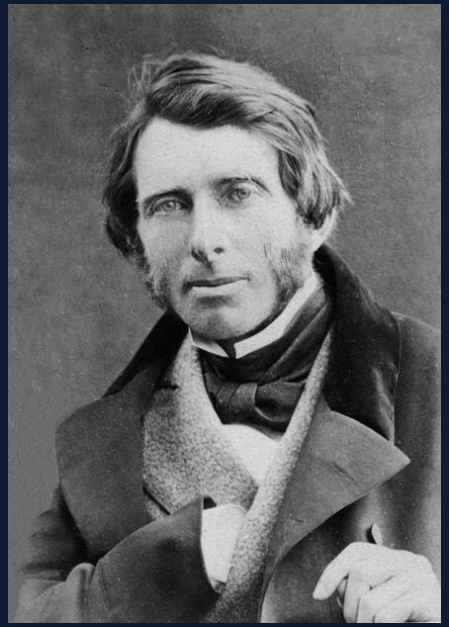
Next week: tender evaluation

There will be pressure to consider very low bids. These should be considered very carefully.

"It's unwise to pay too much, but it's worse to pay too little. When you pay too much, all you lose is a little money – that is all. When you pay too little, you sometimes lose everything because the thing you bought was incapable of doing the thing it was bought to do.

"… if you deal with the lowest bidder, it is well to add something for the risk you run, and if you do that, you will have enough to pay for something better."

John Ruskin, English writer, critic and artist (1819–1900), though there is dispute over whether, when and where he said this



Ruskin, by William Downey, 1863