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# Concepts of Proof in Large Construction Disputes

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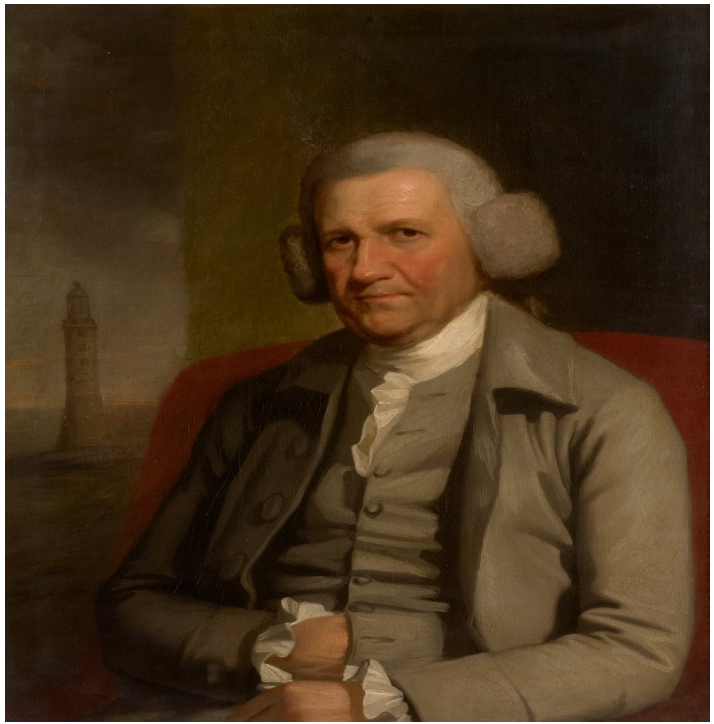
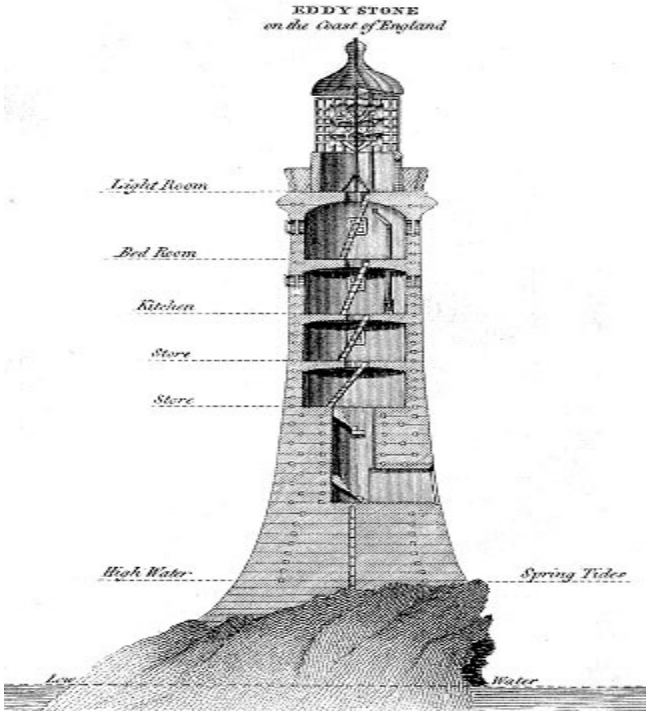
# Origins

- *Folkes v Chadd* (1783) 3 Doug KB 157 [99 ER 589]

# The “father of civil engineering”





# “Men of science”

“The cause of the decay of the harbour is also a matter of science…Of this, such men as Mr. Smeaton alone can judge. Therefore we are of opinion that his judgment, formed on facts, was very proper evidence…I cannot believe that where the question is, whether a defect arises from a natural or an artificial cause, the opinions of men of science are not to be received.” (per Lord Mansfield).

# “Twelve good men and true”

- *Folkes v Chadd* -> evidence of “men of science” may go before a jury.
- Jury then makes a decision (on the cause of the harbour decay) – a “scientific” decision?

# Concepts of proof

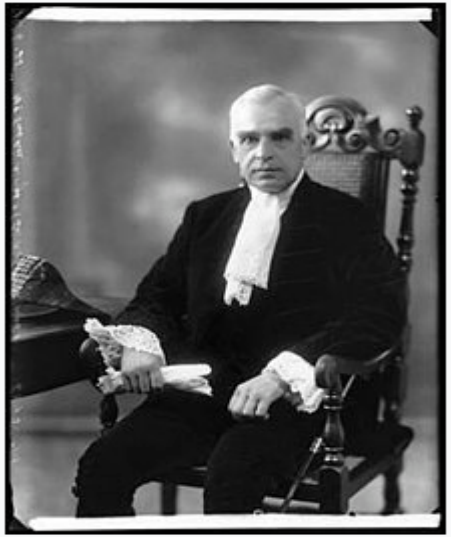
- English law standard in civil cases: the “balance of probabilities”.
- I.e. > 50% of key facts being true.
- E.g. if Mr Smeaton opined “there’s a 60% chance that Wells Harbour has silted up due to the local rivers” & jury accepted this -> basis for a verdict in favour of Folkes.

# Mathematical precision?

*Grant v Australian Knitting Mills* [1936] AC 85 at 96:


Mathematical, or strict logical, demonstration is generally impossible: juries are in practice told that they must act on such reasonable balance of probabilities as would suffice to determine a reasonable man to take a decision in the grave affairs of life. Pieces of evidence, each by itself insufficient, may together constitute a significant whole, and justify by their combined effect a conclusion.

The Right Honourable
**The Lord Wright**
GCMG PC FBA



# Large construction disputes

- Claims overload!
  - Thousands of variations.
  - Thousands of defects.
  - Thousands of drawing submittals.
  - Hundreds of EOT claims.
  - Hard copy information.
  - Vast electronic data.
  - Hundreds of millions (USD) or even billions at stake.

# How can courts / tribunals manage this?

Address every claim?

- Traditionally -> a requirement for any claimant / plaintiff, where a claim is contested.
- But what if there are hundreds or thousands of defects, perhaps with some being of small value?
- *HSH Hotels (Australia) Ltd v Multiplex Constructions Pty Ltd* [2004] NSWCA 302:
  - 16,000 minor defects in a hotel / apartment building in Kent Street, Sydney.
  - Defects expert for hotel = Richard Nixon -> gave evidence on all the defects
  - Defects expert for the contractor = Mr Johnson -> not cross-examined on all of Nixon's evidence regarding the 16,000 defects -> did this prevent the court from accepting accept Nixon's evidence?

# “Tediously impossible”

*HSH Hotels (Australia) Ltd v Multiplex Constructions Pty Ltd* [2004] NSWCA 302 at [103], per Tobias JA:

“Mr Johnson in his 13th statement of 8 November 2002, returned to a consideration of Mr Nixon's reports and expressed the view that the alleged defects described therein were minor and did not prevent the use of the building for its intended purpose. Although there was some cross-examination of Mr Johnson with respect to the alleged defective wardrobe doors, damaged aluminium door frames, sliding doors not closing properly, a missing balcony down-light in Unit 101 and stains and marks on the carpet at Levels 1 -8, it being put to Mr Johnson that those defects were major which he denied, none of Mr Johnson's cross-examination was referenced to any defect disclosed in any of Mr Nixon's reports notwithstanding that Mr Johnson's 8th, 13th and 21st statements responded in detail to them. Quite clearly, it would have been a tediously impossible task for the cross examiner to take Mr Johnson through each and every defect alleged by Mr Nixon. It is no criticism of senior counsel for HSH that he did not do so”.

# The Underlying Issues


1. Time.
2. Cost.
3. Proportionality (includes sums in dispute).

Arbitration statutes and rules mandate efficiency, e.g. Arbitration Act 1996 (UK):

**33 General duty of the tribunal.**

(1) The tribunal shall—

(a) act fairly and impartially as between the parties, giving each party a reasonable opportunity of putting his case and dealing with that of his opponent, and

(b) adopt procedures suitable to the circumstances of the particular case, avoiding unnecessary delay or expense, so as to provide a fair means for the resolution of the matters falling to be determined.

# Arbitration Rules

- HKIAC:

**Article 13 – General Provisions**

13.1 Subject to these Rules, the arbitral tribunal shall adopt suitable procedures for the conduct of the arbitration in order to avoid unnecessary delay or expense, having regard to the complexity of the issues, the amount in dispute and the effective use of technology, and provided that such procedures ensure equal treatment of the parties and afford the parties a reasonable opportunity to present their case.

13.5 The arbitral tribunal and the parties shall do everything necessary to ensure the fair and efficient conduct of the arbitration.

# Some techniques

1. All in: the claimant needs to prove all its claims. This is the general approach of the common law, but has its practical limitations -> can lead to disproportionate use of time / cost.
2. Broad brush: the court or tribunal (like a jury) takes a broad view of the evidence, and "does its best" on the available evidence, without necessarily taking into account all relevant facts -> a proportionate approach, but one which skates over many of the facts / details.
3. Sampling: potentially more precise than the "broad brush" approach, but much depends on how the sampling is undertaken -> recent case law considering the use of sampling, which we will consider…

# Sampling

How new is this idea?

*Hoskisson v Moody Homes Ltd* (1989) 46 BLR 81 at 89, per HHJ Newey QC:

“Nowadays official referees seldom work their way through Scott Schedules as orders for selection of representative items for trial are made on summonses for directions. (I may say that in eight years I have only once tried a Scott Schedule in detail and I hope not to repeat the experience.)”

# Sampling

More recently…

*Ramo Industries Pte Ltd v DLE Solutions Pte Ltd* [2020] SGHC 04 at [170], per Chan Seng Onn J:

"DLE took issue with the fact that Ramo did not provide photographs of every single fabrication defect. However, I note that it is not strictly necessary for Ramo to measure and provide photographs of every single defect. To require Ramo to do so would result in an unreasonably onerous burden of proof. In *Millenia Pte Ltd* [2019] 4 SLR 1075 at [298], the High Court accepted evidence of a witness' testimony on the number of oversized pin holes in the panels, who had measured pin holes on 81 out of 240 panels and extrapolated from the sample. Such a pragmatic approach will similarly be adopted in the present case".

# Sampling

*Building Design Partnership Ltd v Standard Life Assurance Ltd* [2021] EWCA Civ 1793 at [42]-[47], per Coulson LJ:

"It is not in issue that, in an appropriate case, sampling and extrapolation is an appropriate tool by which the parties and the court can organise the evidence and try the issues in a proportionate way. It is worth noting that, in this case, with in excess of 3,500 variations potentially in issue, the court would inevitably have dealt with the claims by way of sampling and extrapolation, however the claims had been pleaded. Indeed, the same is true even of the 122 variations which are the subject of the detailed claim in schedules 1-4. The need to keep costs to a proportionate level would have meant that only some of the 122 variations would themselves be fully explored in the evidence.

…as a matter of pleading, in an appropriate case, a claimant can plead an extrapolated claim [however]…such claims can be particularly difficult to establish."

- Why are they "particularly difficult to establish"?

# Potential difficulties with sampling

Example 1: the sample is not representative of the whole

- E.g. there are 2,000 variations instructed, all relating to various aspects of the works (foundations, structural steel, architectural finishes).
- A sample of 100 variations is taken -> most of them relate to foundations, not structural steel or architectural finishes.
- How can one extrapolate from the 100 sampled variations to address all 2,000 of them?
- Claimant needs to demonstrate that the sample is representative (e.g. because it was randomly selected), as opposed to being skewed.

# Potential difficulties with sampling


Example 2: lack of homogeneity within the sampled population

- Suppose that 2,000 variations are claimed to have been instructed by an employer, but there are disputes over (a) whether they are truly variations; and (b) if so, the adjustment to the contract price due to each variation.
- If each variation is essentially unique, and there are no common elements / fact patterns, what basis is there to extrapolate from a sample of those alleged variations (e.g. 100 of them)?
- Claimant needs to demonstrate a sufficient degree of homogeneity.

# Some conclusions & unresolved issues

- Sampling may be an acceptable method of pleading and proving a claim -> the law does not prohibit the use of sampling (just as it does not prohibit global claims for delay…).
- BUT:
  - When will sampling be permissible? What is the threshold for using sampling? (E.g. 100, 200, 500, 1,000, 2,000 claims?).
  - How is sampling undertaken / demonstrated as a matter of evidence? The emergence of a new type of expert in construction and engineering cases – the statistical expert, e.g. in *Amey LG Ltd v Cumbria County Council* [2016] EWHC 2856 (TCC) (ad hoc road repair works – 1,706 works orders, 116 orders were sampled -> insufficient). Paradoxically, will another type of expert add to cost / complexity in construction and engineering cases?

# Contractual solutions?

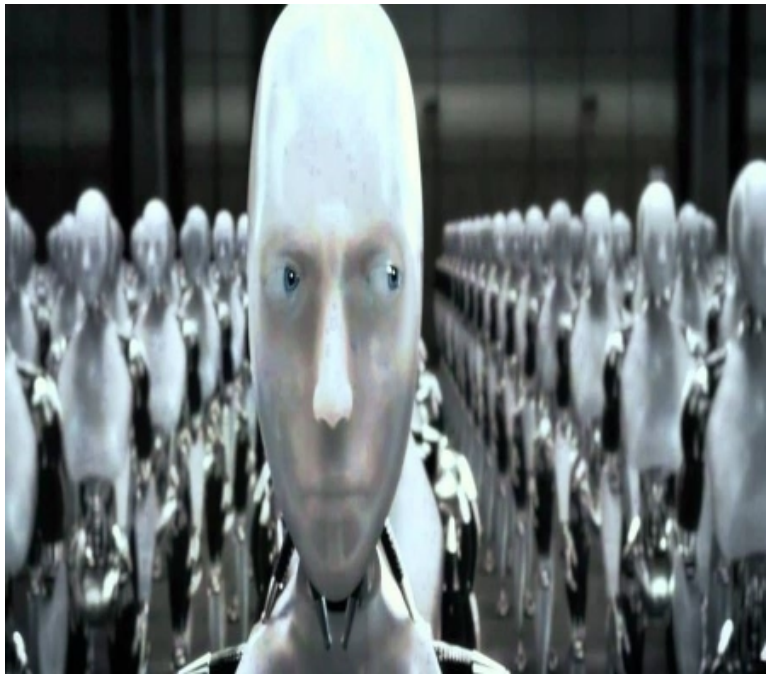
A “serial defects” clause, e.g:

- “A “Serial Defect” shall be deemed to exist if during the Warranty Period twenty percent (20%) or more of the same part or component in Supply Items…contain the same Defect (“Threshold Percentage”). If the incidence of a Defect equals or exceeds the Threshold Percentage, Buyer shall notify Supplier and Supplier shall perform a thorough investigation of all Supply Items as soon as possible after such Notice and shall repair or replace the defective part or item in all Turbines and other Supply Items supplied hereunder…”.

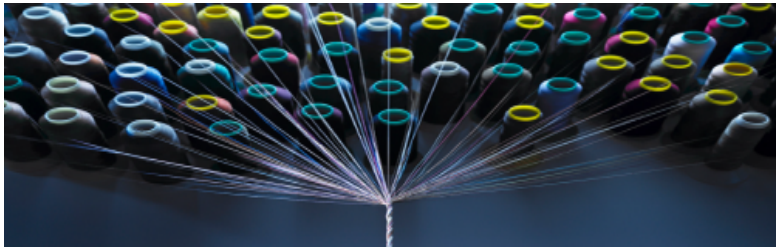
OR:

- “**Serial Defect**” means any same or similar Defect occurring on no less than five (5) occasions (and whether or not those occasions relate to the same or different components)”.

# Technological solutions?



# To sum up…



- For large projects / disputes -> solutions are needed to keep time and cost within proper bounds.
- The law / legal process is flexible -> we can use that flexibility to keep construction and engineering disputes proportionate in terms of time and cost.
- Sampling has emerged as an important tool in delivering proportionality for large construction and engineering cases, but it is relatively new, and its application in practice is still to be worked out…so stay tuned for more developments!

# Thank you for listening! 谢谢你的聆听

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