[2017] UKSC 59

On appeal from: [2015] EWCA Civ 407

JUDGMENT

MT Højgaard A/S (Respondent) v E.ON Climate & Renewables UK Robin Rigg East Limited and another (Appellants)

before

Lord Neuberger, President

Lord Mance

Lord Clarke

Lord Sumption

Lord Hodge

JUDGMENT GIVEN ON

3 August 2017

Heard on 20 June 2017

Appellants	Respondent
John Marrin QC	David Streatfeild-James QC
Paul Buckingham	Mark Chennells
(Instructed by Gowling WLG (UK) LLP)	(Instructed by Fenwick Elliott LLP)

LORD NEUBERGER: (with whom Lord Mance, Lord Clarke, Lord Sumption and Lord Hodge agree)

The background

1.
These proceedings arise from the fact that the foundation structures of two offshore wind farms at Robin Rigg in the Solway Firth, which were designed and installed by MT Højgaard A/S ("MTH"), failed shortly after completion of the project. The specific issue to be determined is whether MTH are liable for this failure.

2.
As Jackson LJ said in the Court of Appeal, the resolution of that issue turns on "how the court should construe the somewhat diffuse documents which constituted, or were incorporated into, the 'design

and build' contract in this case". Accordingly, I turn first to consider the relevant provisions of the contractual documentation.

The relevant provisions of the Technical Requirements and J101

3.
In May 2006, the appellants, two companies in the E.ON group ("E.ON"), sent tender documents to various parties including MTH, who in due course became the successful bidders. The tender documents included Employer's Requirements, Part I of which included the Technical Requirements ("the TR").

4.
Section 1 of the TR set out the "General Description of Works and Scope of Supply". Part 1.6 set out the so-called Key Functional Requirements, which included this:

"The Works, together with the interfaces detailed in Section 8, shall be designed to withstand the full range of operational and environmental conditions with minimal maintenance.

The Works elements shall be designed for a minimum site specific 'design life' of twenty (20) years without major retrofits or refurbishments; all elements shall be designed to operate safely and reliably in the environmental conditions that exist on the site for at least this lifetime."

5.
Section 3 of the TR was concerned with the "Design Basis (Wind Turbine Foundations)". Part 3.1 was entitled "Introduction", and it included the following (divided into sub-paragraphs for convenience):

"(i) It is stressed that the requirements contained in this section and the environmental conditions given are the MINIMUM requirements of [E.ON] to be taken into account in the design.

(ii) It shall be the responsibility of [MTH] to identify any areas where the works need to be designed to any additional or more rigorous requirements or parameters."

There were other references elsewhere to the stated requirement being a minimum. Para 3.1.2 of the TR required MTH to submit a detailed Foundation Design Basis document, which was required to contain, among other things, a statement as to "the Contractor's design choices, including, but not limited to, … departures from, or aspects not covered by, standards, if any".

6.
Part 3.2 of the TR was headed "Design Principles", and para 3.2.2 was concerned with "General Design Conditions", para 3.2.2.1 being directed to the "Tender Stage Design", and para 3.2.2.2 to the "Detailed Design Stage". Para 3.2.2.2 is of central importance for present purposes, and, for convenience, I shall treat it as divided into numbered sub-paragraphs. Para 3.2.2.2(i) required MTH to prepare the detailed design of the foundations in accordance with a document known as J101, using the "integrated analysis" method (which was one of the four methods addressed in J101). Para 3.2.2.2(ii) went on to state that:

"The design of the foundations shall ensure a lifetime of 20 years in every aspect without planned replacement. The choice of structure, materials, corrosion protection system operation and inspection programme shall be made accordingly."

7.

J101 was a reference to an international standard for the design of offshore wind turbines published by Det Norske Veritas ("DNV"), an independent classification and certification agency based in Norway. J101 included a statement that its "objectives" included the provision of "an internationally acceptable level of safety by defining minimum requirements for structures and structural components", as well as being "a contractual reference document", and a "guideline". Section 2 of J101 contained design principles which were, among other things, aimed at limiting the annual probability of failure to be in the range of one in 10,000 to one in 100,000 - para C201. Section 7 of J101 dealt with the design of steel structures, and para K104 provided:

"The design fatigue life for structural components should be based on the specified service life of the structure. If a service life is not specified, 20 years should be used."

Section 9 of J101 dealt with the design and construction of grouted connections. Part A included reference to shear keys, which, it was explained, "can reduce the fatigue strength of the tubular members and of the grout". Part B of section 9 set out a number of equations applicable to such a design, including one ("the Equation") which showed how the interface shear strength due to friction is to be calculated, namely:

$$\tau_{kf} = \frac{\mu \cdot \mathrm{E}}{\mathrm{K}} \cdot \left[\frac{\delta}{Rp} \right]$$

Precisely what the Equation actually means need not be spelled out. What is important for present purposes is that it was stated beneath the Equation that δ should "be taken as 0.00037 Rp for rolled steel surfaces" (Rp being the outer radius of the pile, and δ being the height of surface irregularities).

8.
Para 3.2.3.2 of the TR required MTH's design to accord with "international and national rules, circulars, EU directives executive orders and standards applying to the Site" and it went on to state that a defined "hierarchy of standards shall apply", as listed. Ignoring those standards which were irrelevant or not in force, the first in the list was J101. Para 3.2.5 required the contractor to design and construct grouted connections in accordance with J101. Para 3.2.6 stated that "[a]ll parts of the Works, except wear parts and consumables, shall be designed for a minimum service life 20 years" (sic).

9.
Section 3b of the TR was headed "Design Basis for Offshore Substations and Meteorological Mast". Para 3b.5.1 stated:

"The design of the structures addressed by this Design Basis shall ensure a lifetime of 20 years in every aspect without planned replacement. The choice of structure, materials, corrosion protection system operation and inspection programme shall be made accordingly."

Para 3b.5.6 provided that "[a]ll parts of the Works, except wear parts and consumables shall be designed for a minimum service life 20 years."

10.
Section 4 of the TR dealt with "Approvals and Certification". Para 4.4.3 provided that MTH should obtain a Foundation Design Evaluation Conformity Statement from the Certifying Authority within six months of the commencement date.

11.
Section 10 of the TR covered “Structural Design and Fabrication” (Wind Turbine Foundations), and para 10.1.1 required MTH to appoint “an accredited Certifying Authority … to independently evaluate the adequacy of his foundation design.” Para 10.5.1 was in these terms:

“The Contractor shall determine whether to employ shear keys within the grouted connection. If shear keys are used, the design and detailing shall take due account of their presence for both strength and fatigue design to the satisfaction of the Certifying Authority and the Engineer. If shear keys are to be omitted then the Contractor shall demonstrate with test data that the grouted connection is capable of transmitting axial loads at the grout/steel interface without dependence upon flexural (normal) contact pressures, which may not always be present, to the satisfaction of the Certifying Authority and the Engineer. Such demonstration shall also account for joint performance under different temperature conditions.”

12.
Para 10.24.9 of the TR stated that the “recorded potential difference exceedance” was not so great as to “cause accelerated anode depletion to such extent that the anode material provided is fully utilised before the end of the structure operational 20 year life”.

13.
Having been selected as the contractor for the works, MTH duly set about preparing its tender in accordance with Employer’s Requirements and J101. MTH’s design provided for (i) monopiles with a diameter of just over four metres, (ii) transition pieces about eight metres long, weighing approximately 120 tonnes, and (iii) grouted connections without shear keys. MTH explained at the time that no shear keys were specified because, taking δ as 0.00037 Rp, application of the Equation indicated that the grouted connections, as designed, had more than sufficient axial capacity to take the axial load.

14.
After E.ON had accepted MTH’s tender, MTH duly commenced design work, and in November 2006 it submitted a detailed Foundation Design Basis document, as required by para 3.1.2 of the TR.

The relevant provisions of the contract

15.
On 20 December 2006 E.ON and MTH entered into a written contract (“the Contract”) under which MTH agreed to design, fabricate and install the foundations for the proposed turbines. Part C of the Contract contained a List of Definitions. “Fit for Purpose” was defined as “fitness for purpose in accordance with, and as can properly be inferred from, the Employer’s Requirements”. “Employer’s Requirements” was stated to include the TR, which were themselves attached as Part I of the Contract. And “Good Industry Practice” meant “those standards, practices, methods and procedures conforming to all Legal Requirements to be performed with the exercise of skill, diligence, prudence and foresight that can ordinarily and reasonably be expected from a fully skilled contractor who is engaged in a similar type of undertaking or task in similar circumstances in a manner consistent with recognised international standards”.

16.
Clause 2.1 of Part D of the Contract provided that any failure by the Engineer or his Representative to spot defects or mistakes by the contractor would not exempt the contractor from liability. Clause 5.3

of Part D stated that in the event of inconsistencies, the order of precedence of the contractual documents should be as follows:

(a)
the form of agreement;

(b)
the conditions of contact and the List of Definitions;

(c)
the commercial schedules and the schedule of prices, payment profile and draft programme;

(d)
the Employer's Requirements;

(e)
the annexes to the Employer's Requirements;

(f)
volumes 2A, 2B and 3 of the contractor's tender return.

17.
Clause 8.1 of Part D required MTH "in accordance with this Agreement, [to] design, manufacture, test, deliver and install and complete the Works" in accordance with a number of requirements, including

"(iv) in a professional manner in accordance with modern commercial and engineering, design, project management and supervisory principles and practices and in accordance with internationally recognised standards and Good Industry Practice; …

(viii) so that the Works, when completed, comply with the requirements of this Agreement …;

(ix) so that [MTH] shall comply at all times with all Legal Requirements and the standards of Good Industry Practice;

(x) so that each item of Plant and the Works as a whole shall be free from defective workmanship and materials and fit for its purpose as determined in accordance with the Specification using Good Industry Practice; …

(xv) so that the design of the Works and the Works when Completed by [MTH] shall be wholly in accordance with this Agreement and shall satisfy any performance specifications or requirements of the Employer as set out in this Agreement. …"

18.
Clause 30 of Part D of the Contract was headed "Defects after taking over". Clause 30.2 provided that MTH "shall be responsible for making good any defect … or damage" arising from "defective materials, workmanship or design", "any breach by [MTH] of his obligations under this Agreement" or "Works not being Fit for Purpose", "which may appear or occur before or during the Defects Liability Period". That period was defined in clause 30.1 as being a period of 24 months from the date E.ON takes over the Works from MTH. Clause 30.3 required E.ON to give notice "forthwith" of any such defects to MTH. Clause 30.4 extended that Period in certain limited circumstances. Clause 30.10 required E.ON to produce a Defects Liability Certificate once the Defects Liability Period has expired and MTH has satisfied all its obligations under clause 30.

19.
Clause 33.9 of Part D of the Contract entitled MTH to apply, within 28 days of the issue of a Defects Liability Certificate, for a Final Certificate of Payment, and to accompany the application with a final account; clause 33.10 provided for the consequential issue of a Final Certificate of Payment; and clause 33.11 provided the Final Certificate of Payment is conclusive.

20.
Clause 42.3 of Part D of the Contract stated that:

"[E.ON] and [MTH] intend that their respective rights, obligations and liabilities as provided for in this Agreement shall alone govern their rights under this Agreement.

Accordingly, the remedies provided under this Agreement in respect of or in consequence of:

(a) any breach of contract; or

(b) any negligent act or omission; or

(c) death or personal injury; or

(d) loss or damage to any property,

are, save in the case of … Misconduct, to be to the exclusion of any other remedy that either may have against the other under the law governing this Agreement or otherwise."

Subsequent events

21.
MTH duly proceeded with the design and construction of the two wind farms ("the Works"), and, on its instructions, Rambøll Danmark A/S supplied in June 2007 a detailed design for the grouted connections, which did not include shear keys. Pursuant to para 10.1.1 of the TR, MTH appointed DNV as the Certifying Authority, and DNV evaluated and approved MTH's foundation designs. Pursuant to para 4.4.3 of the TR, DNV issued Foundation Design Evaluation Conformity Statements for the various phases of the works. MTH began the installation of foundations in the Solway Firth in December 2007, and completed the Works in February 2009.

22.
During 2009 a serious problem came to light at Egmond aan Zee wind farm, where the grouted connections did not have shear keys. Those connections started to fail, and the transition pieces started to slip down the monopiles. DNV carried out an internal review during late summer 2009, and discovered that there was an error in the value given for δ in the note to the Equation mentioned in para 7 above. It was wrong by a factor of about ten. This meant that the axial capacity of the grouted connections in wind farm foundations at various locations including Egmond aan Zee and Robin Rigg had been substantially over-estimated.

23.
On 28 September 2009, DNV sent a letter to MTH and others in the industry, alerting them to the situation (and DNV subsequently revised J101 to correct the error). In April 2010 the grouted connections at Robin Rigg started to fail, as they had done a year earlier at Egmond aan Zee, and the transition pieces began to slip down the monopiles. Very sensibly E.ON and MTH deferred any legal dispute and set about finding a practical solution to the problem. It was agreed between the parties

that E.ON would develop a scheme of remedial works. Those remedial works were commenced in 2014.

24.
In order to ascertain who should bear the cost of the remedial works, the parties embarked upon the present proceedings. In very summary terms, the parties' respective positions were as follows. MTH contended that it had exercised reasonable skill and care, and had complied with all its contractual obligations, and so should have no liability for the cost of the remedial works. By contrast E.ON contended that MTH had been negligent and also had been responsible for numerous breaches of contract, and they claimed declarations to the effect that MTH was liable for the defective grouted connections. The parties in due course agreed the cost of the remedial works in the sum of €26.25m, leaving the court to decide which of them should bear that cost.

25.
The case came before Edwards-Stuart J, and after an eight-day hearing in November 2013, he gave judgment in April 2014 - [2014] EWHC 1088 (TCC). He rejected the suggestion that MTH had been negligent, and he also rejected a number of allegations of breach of contract made by E.ON. However, he found for E.ON primarily on the ground that (i) clause 8.1(x) of the contract required the foundations to be fit for purpose, (ii) fitness for purpose was to be determined by reference to the TR, and (iii) para 3.2.2.2(ii) (and also para 3b.5.1) of the TR required the foundations to be designed so that they would have a lifetime of 20 years. He also held that this conclusion was also supported by clauses 8.1(viii) and (xv).

26.
MTH appealed to the Court of Appeal, and after a two-day hearing in February 2015, they handed down their decision two months later, allowing the appeal for reasons given by Jackson LJ, with whom Patten and Underhill LJJ agreed - [2015] EWCA Civ 407. Jackson LJ accepted that, if one was confined to the TR, para 3.2.2.2(ii) appeared to be "a warranty [on the part of MTH] that the foundations will function for 20 years". However, in the light of the provisions of the Contract, he said that there was "an inconsistency between [paras 3.2.2.2(ii) and 3b.5.1 of the TR] on the one hand and all the other contractual provisions on the other hand", and that the other contractual provisions should prevail. He went on to describe paras 3.2.2.2(ii) and 3b.5.1 of the TR as "too slender a thread upon which to hang a finding that MTH gave a warranty of 20 years life for the foundations".

The meaning of para 3.2.2.2(ii) of the TR

27.
The central question on this appeal is whether, in the light of para 3.2.2.2(ii) (and para 3b.5.1) of the TR, which refer to ensuring a life for the foundations (and the Works) of 20 years, MTH was in breach of contract, despite the fact that it used due care and professional skill, adhered to good industry practice, and complied with J101. Before turning to that issue, however, it is appropriate to deal with an argument raised by Mr Streatfeild-James QC in the course of his excellent submissions on behalf of MTH. He suggested that it was unlikely that the parties could have intended that there should be what Jackson LJ characterised as "a warranty that the foundations will function for 20 years", in the light of those parts of clauses 30, 33 and 42 of the Contract set out in paras 18 to 20 above. In summary, he argued that (i) the effect of clause 30 was that, subject to some relatively limited exceptions in clause 30.4, MTH was obliged to rectify any defect in the Works which occurred within 24 months of the Works being handed over, (ii) the effect of clause 42.3 was that any claim by E.ON in

respect of a defect appearing thereafter was barred, and (iii) the notion that there was no room for claims outside the 24-month period was reinforced by clauses 33.9 and 33.10.

28.
In my opinion, there is no answer to that analysis so far as it is directed to the effect of clauses 30, 33 and 42 of the Contract. Clause 42.3 makes it clear that the provisions of clause 30 (and any other contractual term which provides for remedies after the Works have been handed over to E.ON) are intended to operate as an exclusive regime. And that conclusion appears to me to be supported by the terms of clause 33.9 and 33.10, because they tie in very well with the notion that there should be no claims after the Final Certificate, which is to be issued very shortly after the 24-month period.

29.
Accordingly, if, as E.ON argue, para 3.2.2.2(ii) of the TR amounts to a warranty that the foundations will last for 20 years, there would be a tension between that provision and clauses 30, 33 and 42 of the Contract. However, I do not consider that the tension would be so problematic as to undermine the conclusion that para 3.2.2.2(ii) amounted to warranties as described by Jackson LJ. In the light of the normal give and take of negotiations, and the complex, diffuse and multi-authored nature of this contract, it is by no means improbable that MTH could have agreed to a 20-year warranty provided that it could have the benefit of a two-year limitation period, save where misconduct was involved. It would simply mean that the rights given to E.ON by paras 3.2.2.2(ii) were significantly less valuable than at first sight they may appear, because any claim based on an alleged failure in the foundations which only became apparent more than two years after the handover of the Works would normally be barred by clause 42.3. In this case, of course, there is no problem, because the foundations failed well within the 24-month period.

30.
However, in my view, although it would therefore be possible to give effect to para 3.2.2.2(ii) of the TR as a 20-year warranty as described by Jackson LJ, the points canvassed in paras 27 to 29 above justify reconsidering the effect of para 3.2.2.2(ii). It appears to me that there is a powerful case for saying that, rather than warranting that the foundations would have a lifetime of 20 years, para 3.2.2.2(ii) amounted to an agreement that the design of the foundations was such that they would have a lifetime of 20 years. In other words, read together with clauses 30 and 42.3 of the Contract, para 3.2.2.2(ii) did not guarantee that the foundations would last 20 years without replacement, but that they had been designed to last for 20 years without replacement. That interpretation explains the reference in para 3.2.2.2(ii) to design, and it obviates any tension between the terms of para 3.2.2.2(ii) and the terms of clauses 30 and 42.3. Rather than the 20-year warranty being cut off after 24 months, E.ON had 24 months to discover that the foundations were not, in fact, designed to last for 20 years. On the basis of that interpretation, E.ON’s ability to invoke its rights under para 3.2.2.2(ii) would not depend on E.ON appreciating that the foundations were failing (within 24 months of handover), but on E.ON appreciating (within 24 months of handover) that the design of the foundations was such that they will not last for 20 years.

31.
That, of course, raises the question as to what, on that reading, was precisely meant by “ensur[ing] a lifetime of 20 years”, given that the forces of nature, especially at sea, are such that a lifetime of 20 years, or any other period, could never in practice be guaranteed. The answer is to be found in J101. As explained in para 7 above, J101 requires the annual probability of failure to be in the range of one in 10,000 to one in 100,000, and specifically provides that, if a service life is not specified in a contract “20 years should be used”, which ties in with the proposition, agreed between the parties,

that an offshore wind farm is typically designed for a 20-year lifetime. This aspect could be expanded on substantially by reference to the detailed terms, requirements and recommendations of J101. In particular, one of the two so-called “Limit States” in terms of loadbearing requirements, FLS, is calculated by reference to the design life of the structure in question: hence para C201 of section 2 and para K104 of section 7 referred to in para 7 above. However, the simple point is that J101, while concerned with making recommendations and requirements linked to the intended life of a structure to which it applies, makes it clear that there is a risk, which it quantifies, of that life being shortened. That risk is, in my view, the risk which should be treated as incorporated in para 3.2.2.2(ii) - if it is indeed concerned with the designed life of the Works.

32.
It is unnecessary to decide whether para 3.2.2.2(ii) is a warranty that the foundations will have a lifetime of 20 years or a contractual term that the foundations will be designed to have such a lifetime. The former meaning has been taken as correct by the parties and by the courts below, but, for the reasons given in paras 28 to 31 above, I am currently inclined to favour the latter meaning. On the other hand, as the TR were produced and, to an extent, acted on before the Contract was agreed, it may be questionable whether it would be right to interpret the TR by reference to clauses of the Contract. However, it is clear that, if para 3.2.2.2(ii) is an effective term of the Contract, it was breached by MTH whichever meaning it has, and therefore the issue need not be resolved.

33.
I turn then to the central issue on this appeal.

The enforceability of para 3.2.2.2(ii) according to its terms: introductory

34.
E.ON’s case is that para 3.2.2.2(ii) of the TR is incorporated into the Contract, because (i) clause 8.1(x) of the Contract required the Works to be fit for purpose, (ii) Part C of the Contract equated fitness for purpose with compliance with the Employer’s Requirements, (iii) Part C also defined Employer’s Requirements as including the contents of the TR, and (iv) the TR included para 3.2.2.2(ii), which specifically refers to the foundations having a life of 20 years. On that basis, E.ON argues that para 3.2.2.2(ii) was clearly infringed, and, as it was a term of the Contract, it must follow that MTH is, as Edwards-Stuart J held, liable for breach of contract.

35.
By contrast, MTH supports the reasoning of Jackson LJ, and contends that it is clear that the Contract stipulated that the Works must be constructed in accordance with the requirements of J101 (and with appropriate care), and it is unconvincing to suggest that a provision such as para 3.2.2.2(ii) of the TR renders MTH liable for faulty construction, given that the Works were constructed fully in accordance with J101 (and with appropriate care). MTH contends that the references to a 20-year life in various provisions of the TR, including para 3.2.2.2(ii), ultimately do no more than reflect the fact that, as envisaged by J101, Part 1.6 of the TR specifies a “design life” for the Works. MTH also adopts Jackson LJ’s description of the contractual documentation as being “of multiple authorship [and] contain[ing] much loose wording”, and that it includes many “ambiguities, infelicities and inconsistencies” (quoting Lord Collins in In re Sigma Finance Corp (in administrative receivership) [2010] 1 All ER 571, para 35). More specifically, MTH makes the points that the TR are “in their nature technical rather than legal”, and that if the parties had intended MTH to warrant that the foundations would have a 20-year lifetime, or that they would be designed to have a 20-year life, a term to that effect

would have been included in plain terms, probably as a Key Functional Requirement in para 1.6 of the TR.

36.
As already explained, it appears to me that, if one considers the natural meaning of para 3.2.2.2(ii) of the TR, it involved MTH warranting either that the foundations would have a lifetime of 20 years (as Jackson LJ accepted) or agreeing that the design of the foundations would be such as to give them a lifetime of 20 years. As Mr Streatfeild-James realistically accepted, the combination of the terms of clause 8.1(x) of the Contract and the definitions of "Employer's Requirements" and "Fit for Purpose" result in the provisions of the TR being effectively incorporated into the Contract - unsurprisingly as they are included in the contractual documentation as Part I. In those circumstances, I consider that there are only two arguments open to MTH as to why the paragraph should not be given its natural effect (and while they are separate arguments, they can fairly be said to be mutually reinforcing). The first argument is that such an interpretation results in an obligation which is inconsistent with MTH's obligation to construct the Works in accordance with J101. The second argument is that para 3.2.2.2(ii) is simply too slender a thread on which to hang such an important and potentially onerous obligation.

The enforceability of para 3.2.2.2(ii) according to its terms: inconsistency with J101

37.
There have been a number of cases where courts have been called on to consider a contract which includes two terms, one requiring the contractor to provide an article which is produced in accordance with a specified design, the other requiring the article to satisfy specified performance criteria; and where those criteria cannot be achieved by complying with the design. The reconciliation of the terms, and the determination of their combined effect must, of course, be decided by reference to ordinary principles of contractual interpretation (as recently discussed in Wood v Capita Insurance Services Ltd [2017] 2 WLR 1095, paras 8 to 15 and the cases cited there), and therefore by reference to the provisions of the particular contract and its commercial context. However, it is worth considering some of the cases where such an issue has been discussed.

38.
Thorn v The Mayor and Commonalty of London (1876) 1 App Cas 120 has been treated as the first decision on this point (including in the judgments discussed in paras 39 to 43 below), although it seems to me to be only of indirect relevance. The contractor successfully tendered for work involving the replacement of the existing Blackfriars Bridge pursuant to an employer's invitation, which stated that the work was to be carried out pursuant to a specification. The specification included wrought iron caissons which were to form the foundations of the piers "as shewn on [certain] drawings" (p 121). It subsequently turned out that the caissons as designed "would not answer to their purpose, and the plan of the work was altered", causing consequential expense and delay to the contractor (p 122). The contractor's claim was based on the contention that the employer had impliedly warranted that the bridge could be built according to the specification. The unanimous rejection of the existence of such a warranty by the House of Lords does not directly relate to the issue in this case. However, it is worth noting that, as reconstruction of the bridge had been completed, the employer was not responsible for the contractor's losses and expenses flowing from the defective specification (at least on the basis of an implied warranty). Rather more to the point, the speeches of Lord Chelmsford (at pp 132 to 133) and Lord O'Hagan (at p 138) strongly indicate that a contractor who bids on the basis of a defective specification provided by the employer only has himself to blame if he does not check their practicality and they turn out to be defective.

39.
The Hydraulic Engineering Co Ltd v Spencer and Sons (1886) 2 TLR 554 appears to me to be more directly in point. In that case, the defendants contracted to make and deliver to the plaintiffs 15 cast iron cylinders. The contract provided that the cylinders would be cast according to specifications and plans provided by the plaintiffs, and also that the cylinders would be able to stand a pressure of 25 cwt per square inch. The Court of Appeal, upholding Coleridge CJ, rejected the defendants' contention that, because "the flaw was the inevitable result of the plan upon which the plaintiffs ordered them to do the work the defendants could not be held liable for a defect caused by that plan" (to quote from the report of counsel's argument). Lindley LJ said that "it was manifest that the defendants thought that they could cast the cylinders on [the] pattern [sent by the plaintiffs] without defects". Although he accepted that "the defect was unavoidable", he said that "[t]here was no doubt that it was a defect" and "the [defendants] were therefore liable". Lord Esher MR and Lopes LJ agreed.

40.
A similar view was taken in Scotland by the Inner House in A M Gillespie & Co v John Howden & Co (1885) 22 SLR 527, where a customer ordered a ship from shipbuilders pursuant to a contract which required the ship "to carry 1,800 tons deadweight", and which also required the ship to be built according to a model approved by the customer. The ship as built was unable to carry 1,800 tons deadweight, and the shipbuilders argued that they should not be liable for damages because it would have been impossible to construct a ship capable of carrying 1,800 tons according to the model approved by the customer. Upholding the Sheriff-Substitute, Lord Rutherfurd-Clark (with whom Lords Craighill and Young agreed) said at p 528 that "this [was] no defence", as "[t]he fact remains that the [shipbuilders] undertook a contract which they could not fulfil and they are consequently liable in damages for the breach".

41.
The issue has also come up in the courts of Canada. In The Steel Company of Canada Ltd v Willand Management Ltd [1966] SCR 746, the respondents were claiming for repair work to three defective roofs on buildings which they had constructed for the appellants. The respondents argued that the defects were not their fault, as they had constructed the buildings under a contract which required them to comply with the requirements of the appellants, and the defects resulted from defects in those requirements. Reversing the Ontario Court of Appeal, the Supreme Court of Canada rejected this argument on the ground that the contract also contained a term that the respondent guaranteed that all work would remain weather tight and that all material and workmanship would be first class and without defect. In the course of giving the judgment of the court, Ritchie J at p 751 rejected the respondents' contention, which was supported by a decision of the courts of New York, that they "guaranteed only that, as to the work done by it, the roof would be weather-tight in so far as the plans and specifications with which it had to comply would allow", and at pp 753 to 754 approved a statement in the then current (8th) edition of Hudson's Building and Engineering Contracts, p 147, to this effect:

"generally the express obligation to construct a work capable of carrying out the duty in question overrides the obligation to comply with the plans and specifications, and the contractor will be liable for the failure of the work notwithstanding that it is carried out in accordance with the plans and specification. Nor will he be entitled to extra payment for amending the work so that it will perform the stipulated duty."

42.

The reasoning of the Canadian Supreme Court was fairly recently applied by the Court of Appeal for British Columbia in Greater Vancouver Water District v North American Pipe & Steel Ltd 2012 BCCA 337, where a “clear and unambiguous” provision whereby a supplier “warrant[ed] and guarantee[d]” that the supplied goods were “free from all defects … arising from faulty design” was held to apply in full, notwithstanding the immediately preceding warranty by the supplier that the goods would “conform to all applicable specifications”, and that those specifications were unsatisfactory and led to the defect complained of.

43.
The law on the topic was well summarised by Lord Wright in Cammell Laird and Co Ltd v The Manganese Bronze and Brass Co Ltd [1934] AC 402, 425, where he said that “[i]t has been laid down that where a manufacturer or builder undertakes to produce a finished result according to a design or plan, he may be still bound by his bargain even though he can show an unanticipated difficulty or even impossibility in achieving the result desired with the plans or specification”. After referring to Thorn as being “[s]uch a case”, he mentioned Gillespie v Howden (1885) 12 R 800, where “the Court of Session held it was no defence to a shipbuilder who had contracted to build a ship of a certain design and of a certain carrying capacity, that it was impossible with the approved design to achieve the agreed capacity: the shipbuilder had to answer in damages”. Lord Wright then went on to explain that “[t]hough this is the general principle of law, its application in respect of any particular contract must vary with the terms and circumstances of that contract”.

44.
Where a contract contains terms which require an item (i) which is to be produced in accordance with a prescribed design, and (ii) which, when provided, will comply with prescribed criteria, and literal conformity with the prescribed design will inevitably result in the product falling short of one or more of the prescribed criteria, it by no means follows that the two terms are mutually inconsistent. That may be the right analysis in some cases (and it appears pretty clear that it was the view of the Inner House in relation to the contract in A M Gillespie). However, in many contracts, the proper analysis may well be that the contractor has to improve on any aspects of the prescribed design which would otherwise lead to the product falling short of the prescribed criteria, and in other contracts, the correct view could be that the requirements of the prescribed criteria only apply to aspects of the design which are not prescribed. While each case must turn on its own facts, the message from decisions and observations of judges in the United Kingdom and Canada is that the courts are generally inclined to give full effect to the requirement that the item as produced complies with the prescribed criteria, on the basis that, even if the customer or employer has specified or approved the design, it is the contractor who can be expected to take the risk if he agreed to work to a design which would render the item incapable of meeting the criteria to which he has agreed.

45.
Turning to the centrally relevant contractual provisions in the instant case, it seems to me that MTH’s case, namely that the obligation which appears to be imposed by para 3.2.2.2(ii) is inconsistent with the obligation imposed by para 3.2.2.2(i) to comply with J101, faces an insurmountable difficulty. The opening provision of Section 3, para 3.1, (i) “stresse[s]” that “the requirements contained in this section … are the MINIMUM requirements of [E.ON] to be taken into account in the design”, and (ii) goes on to provide that it is “the responsibility of [MTH] to identify any areas where the works need to be designed to any additional or more rigorous requirements or parameters”. In those circumstances, in my judgment, where two provisions of Section 3 impose different or inconsistent standards or requirements, rather than concluding that they are inconsistent, the correct analysis by virtue of para

3.1(i) is that the more rigorous or demanding of the two standards or requirements must prevail, as the less rigorous can properly be treated as a minimum requirement. Further, if there is an inconsistency between a design requirement and the required criteria, it appears to me that the effect of para 3.1(ii) would be to make it clear that, although it may have complied with the design requirement, MTH would be liable for the failure to comply with the required criteria, as it was MTH's duty to identify the need to improve on the design accordingly.

46.
As to the facts of the present case, para 3.2.2.2(i) could indeed be said to require that (as recorded in the note to the Equation in J101) δ should "be taken as 0.00037 Rp for rolled steel surfaces", and, as explained above, this was a mistake, in that it substantially over-estimated the connection strength. However, given the terms of para 3.1(i), this figure for δ was a "MINIMUM requirement", and, if para 3.2.2.2(ii) was to be complied with, the value of δ stipulated by J101 had to be decreased (as it happens by a factor of around ten). Furthermore, para 3.1(ii) makes it clear that MTH should have identified that there was a need for a "more rigorous" requirement than δ being "taken as 0.00037 Rp" to ensure that the design was satisfactory, or at least complied with para 3.2.2.2(ii).

47.
It is right to add that, even without para 3.1(i) and (ii), I would have reached the same conclusion. Even in the absence of those paragraphs, it cannot have been envisaged that MTH would be in breach of its obligations under para 3.2.2.2(i) if it designed the foundations on the basis of δ being less than 0.00037 Rp for rolled steel surfaces. Accordingly, at least in relation to the Equation, it represented a minimum standard even in the absence of paras 3.1(i) and (ii), and therefore there would have been no inconsistency between para 3.2.2.2(i) and 3.2.2.2(ii). I also draw assistance in reaching that conclusion from the cases discussed in paras 38 to 43 above. The notion that the Contractor might be expected to depart from the stipulations of J101, where appropriate, is also supported by para 3.1.2 of the TR, which specifically envisages that the Contractor's Foundation Design Basis document may include "departures from … standards", and J101 is expressly treated as a "standard" in para 3.2.3.2. In addition, given that satisfaction of the Equation is required to justify the absence of shear keys, E.ON's contention is assisted by the terms of para 10.5.1, which starts by stating that MTH "shall determine whether to employ shear keys within the grouted connection"; had shear keys been provided, the problems which arose would, it appears, have been averted.

The enforceability of para 3.2.2.2(ii) according to its terms: too slender a thread

48.
MTH relies on a number of factors to support the contention that para 3.2.2.2(ii) of the TR is too weak a basis on which to rest a contention that it had a liability to warrant that the foundations would survive for 20 years or would be designed so as to achieve 20 years of lifetime. First, it is said that the diffuse and unsatisfactorily drafted nature of the contractual arrangements, with their ambiguities and inconsistencies, should be "recognised and taken into account". The contractual arrangements are certainly long, diffuse and multi-authored with much in the way of detailed description in the TR, and "belt and braces" provisions both in the TR and the Contract. However, that does not alter the fact that the court has to do its best to interpret the contractual arrangements by reference to normal principles. As Lord Bridge of Harwich said, giving the judgment of the Privy Council in Mitsui Construction Co Ltd v Attorney General of Hong Kong (1986) 33 BLR 7, 14, "inelegant and clumsy" drafting of "a badly drafted contract" is not a "reason to depart from the fundamental rule of construction of contractual documents that the intention of the parties must be ascertained from the language that they have used interpreted in the light of the relevant factual situation in which the

contract was made", although he added that "the poorer the quality of the drafting, the less willing any court should be to be driven by semantic niceties to attribute to the parties an improbable and unbusinesslike intention". In this case, para 3.2.2.2(ii) is clear in its terms in that it appears to impose a duty on MTH which involves the foundations having a lifetime of 20 years (although, as discussed in paras 27 to 32, there is room for argument as to its precise effect). I do not see why that can be said to be an "improbable [or] unbusinesslike" interpretation, especially as it is the natural meaning of the words used and is unsurprising in the light of the references in the TR to the design life of the Works being 20 years, and the stipulation that the requirements of the TR are "minimum".

49.
Secondly, MTH argues that it is surprising that such an onerous obligation is found only in a part of a paragraph of the TR, essentially a technical document, rather than spelled out in the Contract. Given that it is clear from the terms of the Contract that the provisions of the TR are intended to be of contractual effect, I am not impressed with that point.

50.
Thirdly, MTH suggests that, given the other obligations with regard to design, manufacture, testing, delivery, installation and completion expressly included, or impliedly incorporated, in clause 8.1 of the Contract, it is unlikely that an additional further and onerous obligation was intended to have been included in the TR. The trouble with that argument is that it involves saying that para 3.2.2.2(ii) adds nothing to other provisions of the TR or the contract. I accept that redundancy is not normally a powerful reason for declining to give a contractual provision its natural meaning especially in a diffuse and multi-authored contract (see In re Lehman Bros International (Europe) (in administration) (No 4) [2017] 2 WLR 1497, para 67). However, it is very different, and much more difficult, to argue that a contractual provision should not be given its natural meaning, and should instead be given no meaning or a meaning which renders it redundant.

51.
Fourthly, MTH argues that, if the parties had intended a warranty or term such as is contended for by E.ON, it would not have been "tucked away" in para 3.2.2.2 of the TR, but would, for instance, have been a Key Functional Requirement in Section 1.6 of the TR. Section 1.6 is concerned with general provisions about the two proposed wind farms, and there is no reference in it to any specific component, in particular the foundations. In any event, as mentioned in para 4 above, the Key Functional Requirements include a requirement "for a minimum site specific 'design life' of twenty (20) years without major retrofits or refurbishments", and there is no definition of that expression. Jackson LJ said below, in para 91, "If a structure has a design life of 20 years, that does not mean that inevitably it will function for 20 years, although it probably will." Assuming (without deciding) that that is correct, it seems to me that there is a powerful case for saying that, given a Key Functional Requirement is that there is a minimum 20-year design life, it is scarcely surprising that a provision dealing with the "General Design Conditions" at the "Detailed Design Stage" includes a provision which has the effect for which E.ON contends in this case.

52.
Fifthly, MTH contends that the TR are concerned in a number of places (eg paras 1.6, 3.2.6 and 3b. 5.6) with emphasising that the "design life" of the Works or various components of the Works should be 20 years, which does not carry with it a warranty that the Works, or foundations, will last for 20 years or that they will be designed to last for 20 years, and so it is unlikely that para 3.2.2.2(ii) was concerned with imposing a greater obligation on MTH. The points I have already made at the end of para 49 and the end of para 50 above appear to me to answer this contention.

53.
Sixthly, MTH points out that para 3.2.2.2(ii) was concerned with planned maintenance and should not be given the sort of broad effect which E.ON’s case involves. It appears to me that the reference to planned maintenance at the end of the first sentence of para 3.2.2.2(ii) emphasises that the design of the foundations should not simply be such as to last for 20 years, but should be able to do so without the need for planned maintenance.

Conclusion

54.
In these circumstances, I would allow E.ON’s appeal and restore the order made at first instance by Edwards-Stuart J.