
Fit for Purpose or Due Skill and Care?

Dr Donald E Charrett*

This paper discusses the three judgments in the English case of MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd. The judgments contained detailed analyses of the conflicting requirements of preparing a design with due skill and care, and meeting a fitness for purpose obligation. The Supreme Court upheld the original judgment in the Technology and Construction Court that the contract required the wind turbine structures to have a service life of 20 years, notwithstanding that they were designed with due skill and care and in accordance with the relevant (but erroneous) international standard. The ultimate outcome depended on construction of the contractual terms in accordance with well-established principles; the fact that the judgment of the Court of Appeal differed from that of the Supreme Court emphasises the complexity of this task in the face of contractual documents of multiple authorship and loose wording.

INTRODUCTION

This paper reviews the outcome of a recent case in England which considered the contractual obligations of a design and construct contractor who was required not only to exercise due skill and care in performing the design, but also to warrant that the design would be fit for purpose.

The case is significant because the issues were addressed by learned judges in three courts: it was initially decided in the Technology and Construction Court, reversed in the Court of Appeal, and the first instance judge's decision was reinstated by the Supreme Court.

Ultimately, as is frequently the case, the outcome depended on construction of the documents comprising the contract. Not unusually for a construction contract, the contractual documents were of multiple authorship and contained much loose wording – an ideal environment for competing interpretations of the meaning of the contract.

What is of particular interest in this case is that the three learned judges of the Court of Appeal, construing the same documents, considering the same case law and applying the same tools of construction, came to the opposite conclusion to the five judges of the Supreme Court and the judge at first instance. This highlights the difficulties faced by parties considering entering into a construction contract comprising an intersecting web of legal and “technical” documents – even skilled and experienced practitioners may come to differing conclusions as to how the documents would be construed by the fictitious “reasonable” person in possession of the relevant background information.

TECHNOLOGY AND CONSTRUCTION COURT

The case¹ arose from the structural failure of wind turbine towers within two years after they were installed in Solway Firth in Scotland by MT Højgaard a/s (MT Højgaard or Contractor) for E.ON Climate and Renewables UK Robin Rigg East Ltd (E.ON or Employer).

The foundation for each wind turbine consisted of a single driven pile of slightly over 4 m in diameter. The tower supporting a wind turbine was connected to its foundation by means of an 8 m long sleeve over the pile, the gap between pile and sleeve being filled with a sand–cement mixture called grout. Such a grouted connection transfers loads between the tower and the pile by friction.

The Contractor's designer (Rambøll Danmark a/s) designed the grouted connection in accordance with the requirements of Det Norske Veritas (DNV) Standard DNV-OS-J101(J101). At the time the

* BE, LLB, MConstLaw, PhD, FIEAust, FCIArb; Barrister, Arbitrator and Mediator, Expert Determination Chambers.

¹ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2014] EWHC 1088 (TCC).

Robin Rigg wind farm was designed, this Standard represented the “state-of-the-art” for the design of grouted connections for offshore wind turbines.

The Employer’s Requirements formed part of the contract and contained the following Key Functional Requirement:

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.

The Technical Requirements (TR) for the Design Basis (Wind Turbine Foundations) in the Employer’s Requirements contained the following provision:

3.2.2.2 Detailed Design Stage

The detailed design of the foundation structures shall be according to the method of design by direct simulation of the combined load effect of simultaneous load processes (ref: DNV-OS-J101). Such a method is referred to throughout this document as an “integrated analysis”

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.

Clause 8.1 General Obligations of the Conditions of Contract contained the following provision:

The Contractor shall, in accordance with this Agreement, design, manufacture, test, deliver and install and complete the Works:

- (i) with due care and diligence expected of appropriately qualified and experienced designers, engineers and constructors (as the case may be).
...
- (iv) in a professional manner ... in accordance with ... Good Industry Practice
...
- (viii) so that the Works, when completed, comply with the requirements of the Agreement.
...
- (x) so that each item of Plant and the Works as a whole shall be fit for its purpose as determined in accordance with the Specification using Good Industry Practice.

The Conditions of Contract contained the following definitions:

“Fit for Purpose” means fitness for the purpose in accordance with, and as may properly be inferred from, the Employer’s Requirements.

“Good Industry Practice” means in relation to any particular undertaking or task ... those standards, practices, methods and procedures ... to be performed with the exercise of skill, diligence, prudence and foresight that can ordinarily be expected from a fully skilled contractor who is engaged in a similar type of undertaking or task in similar circumstances consistent with recognised international standards.

Thus, the contract contained the following explicit requirements in respect of the design of the grouted connections:

- (1) The design was to be prepared with due skill and care, in a professional manner and in accordance with good industry practice.
- (2) The design was to be prepared by the method of integrated analysis in accordance with J101.
- (3) The Works would be fit for purpose in accordance with the Employer’s Requirements.
- (4) A minimum site specific “design life” of 20 years.
- (5) A lifetime of 20 years without planned replacement.

In the event, the grouted connections failed within two years, and the towers started slipping down the piles. The remedial work cost €26.25 million, and the court case was brought to determine whether the Contractor or the Employer was liable for this cost.

In the Technology and Construction Court, Edwards-Stuart J determined that the designers had exercised due skill and care, and had prepared the design in accordance with the requirements of J101.

However, unknown to DNV and the designers at the time, there was an error in one of the parameters in a formula in J101 that meant the strength of the grouted connection was seriously overestimated. Notwithstanding that the designers had not been negligent, and that they had carried out the design of the grouted connections in accordance with the requirements of J101, the failure of these connections showed that they clearly did not have a service life of 20 years.

Edwards-Stuart J thus had to resolve which of the contractual requirements was determinative: design prepared with due skill and care in accordance with the requirements of J101, or a design that “ensured” a service life of 20 years.

His Honour referred to several cases in which a contractor was required to follow plans and specifications and provide a constructed facility that was fit for a specific purpose. In such cases, the obligation to provide a fit for purpose facility overrode the requirement to follow the plans and specifications:

If, for the purpose of this case, one treats J101 as “an owner’s specification”, then these decisions are authority for the proposition that the existence of an express warranty of fitness for purpose by the contractor can trump the obligation to comply with the specification even though that specification may contain an error.²

In determining that, in this case, the Contractor was liable for the remedial costs, his Honour applied well-established principles to construe the terms of the contract as a whole. He did not consider that, where the contractor has a design obligation, there was any incompatibility between a term that the completed work be fit for purpose and the “lesser obligation” that the design be prepared with due skill and diligence.³ Of particular importance in this case was the contractual provision that the structures were to have a “minimum” service life of 20 years. In his Honour’s judgment:

MTH warranted that the foundations would have a service life of 20 years and E.ON is entitled to rely on that warranty notwithstanding that MTH was required to design the grouted connections in accordance with J101. Since those connections failed within 2–3 years, MTH was in breach of that obligation.⁴

COURT OF APPEAL

MT Højgaard appealed Edwards-Stuart J’s decision on liability, and E.ON cross appealed Edwards-Stuart J’s finding that MT Højgaard had not breached two provisions of the contract. The judgment of the Court of Appeal was delivered by Jackson LJ, with whom Patten LJ agreed.⁵ Underhill LJ delivered a separate judgment in which he agreed with Jackson LJ’s judgment on liability, and provided separate reasons in respect of the finding on E.ON’s cross appeal.

Jackson LJ reviewed the case law referred to in the trial below and accepted that a construction contract may require the contractor to comply with particular specifications and standards and also to achieve a particular result. The issue in the appeal was whether the contract between E.ON and MT Højgaard was a contract of that character.⁶

In contrast to Edwards-Stuart J’s view that there was no inconsistency between the contractual requirements to exercise due skill and care and ensure a life of 20 years, Jackson LJ considered that the contractual provisions were inconsistent:

TR paragraphs 3.2.2.2 (2) and 3b.5.1 are inconsistent with the remainder of the TR and J101. They are too slender a thread upon which to hang a finding that MTH gave a warranty of 20 years life for the foundations. If TR paragraph 3.2.2.2 (2) and paragraph 3b.5.1 do not have that effect, then without

² *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2014] EWHC 1088 (TCC) [74].

³ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2014] EWHC 1088 (TCC) [77].

⁴ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2014] EWHC 1088 (TCC) [80].

⁵ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407.

⁶ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [79].

them clause 8.1 of the conditions cannot avail E.ON. Clause 8.1 does not contain any warranty that the foundations will have a 20 year life.⁷

His Lordship reached this conclusion after a detailed examination of “contractual documents of multiple authorship, which contain much loose wording”.⁸ He applied well-established principles of contractual interpretation, noting that in complex documents of the kind in issue, there are bound to be ambiguities, infelicities and inconsistencies. In this case he considered there was an inconsistency between provisions in the conditions of contract and those in the Technical Requirements, a document lower in the contractual hierarchy. This inconsistency was resolved as follows:

When there is tension between different provisions within contractual documents, the guidance given by Lord Mance in *Re Sigma Corp (in administrative receivership)* [2009] UKSC 2; [2010] 1 All ER 571 at [12] is of assistance. He said that the resolution of a construction issue is an iterative process. It involves checking each of the rival meanings against the other provisions of the document and investigating its commercial consequences.⁹

TR para 3.2.2.2 was critical to Edwards-Stuart J’s finding that MTH provided a 20-year service life warranty. However, Jackson LJ recognised a contractual difference between service life and design life in the following terms:

On the other hand, all of the other provisions in the TR are directed towards a design life. 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. As noted in Part 2 above, the TR contain many references to the requirement for the foundations to have a design life of 20 years. See, for example, TR paragraphs 1.6 and 3.2.6.¹⁰

Jackson LJ discussed the probabilistic nature of design, and the basis of J101 to create a sufficiently high probability of achieving a service life of 20 years, although “No-one suggests that that provision would achieve a structure with a guaranteed life of 20 years”.¹¹ J101 is intended to provide “an internationally acceptable level of safety” in which the annual probability of failure is to be in the range of 10^{-5} – 10^{-4} .¹²

His Lordship’s view was that a reasonable person in the position of E.ON and MTH would have known that the normal standard required in the construction of offshore wind farms was compliance with J101 and that such compliance was expected, but not absolutely guaranteed, to produce a life of 20 years. Importantly, he considered that it was not clear how a contractor, complying with J101 and the Technical Requirements, could in fact achieve a guaranteed operational life of 20 years. Such a warranty would involve additional cost that would need to be included in the tender, and the need for such allowance clearly flagged in the contract documents.¹³

Jackson LJ also upheld E.ON’s cross appeal and found that MT Højgaard breached the contract in that it did not carry out testing to justify the omission of shear keys, as was required by J101 and the contract. These provisions required that the contractor had to do something more than rely on calculations in accordance with J101; he had to demonstrate with “test data” that the grouted connection had sufficient axial capacity. Although the failure to provide such test data was a breach of contract, Jackson LJ accepted that, on the basis of the evidence and the balance of probabilities, such testing would not necessarily have detected the inadequate axial load capacity. Accordingly, he awarded only nominal damages in respect of these breaches.¹⁴

⁷ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [105].

⁸ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [71].

⁹ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [83].

¹⁰ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [91].

¹¹ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [93].

¹² For a discussion of modern design principles, see Dr Donald Charrett, “Design Life or Service Life – What Is the Difference?” (2017) 1 *International Construction Law Review* 16.

¹³ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [105].

¹⁴ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2015] EWCA Civ 407, [115]–[129].

SUPREME COURT

E.ON appealed the Court of Appeal's decision to the Supreme Court. Lord Neuberger delivered a judgment with which Lords Mance, Clarke, Sumption and Hodge agreed.¹⁵

No Inconsistency between a Lifetime of 20 Years and Complying with J101

The central issue in this appeal was the enforceability of para 3.2.2.2(ii) according to its terms. His Lordship found, using ordinary principles of construction, that the requirement to ensure a lifetime of 20 years in accordance with para 3.2.2.2(ii) was not inconsistent with the requirement that the structures be designed in accordance with J101.

In addition to the case law relied on in the courts below, Lord Neuberger referred to English case law going back over 100 years as support for the primacy of a contractual requirement to construct a work capable of carrying out a specified duty; such a duty may entail that more is required than compliance with the specification.¹⁶

Acknowledging that each case must turn on its own facts, his Lordship noted:

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.

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.¹⁷

This puts a heavy onus on a designer where a fitness for purpose obligation is imposed by a contract. In such a case, following international standards or the current state-of-the-art will not avail a designer where a standard or the current state-of-the-art is inadequate.¹⁸ The higher fitness for purpose standard will apply, notwithstanding that a designer may have no way of determining those inadequacies.

Design Life and Service Life

Lord Neuberger canvassed the previously accepted meaning of para 3.2.2.2(ii) of the TR that this was a 20-year warranty of service life. However, he went on as follows:

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 20 years without replacement.¹⁹

¹⁵ *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2017] UKSC 59.

¹⁶ *MT Højgaard a/s v E.ON Climate and Renewables Robin Rigg East Ltd* [2017] UKSC 59, [38]–[43].

¹⁷ *MT Højgaard a/s v E.ON Climate and Renewables Robin Rigg East Ltd* [2017] UKSC 59, [44]–[45].

¹⁸ For a case in which a designer was found liable for not following the provisions of an unpublished draft Standard, see Dr Donald Charrett and Dr Andrew Potts, "The Duty of Care in Design – Can Engineers Rely on Codes of Practice?" (2013) 152 *Australian Construction Law Newsletter* 6, 13–15.

¹⁹ *MT Højgaard a/s v E.ON Climate and Renewables Robin Rigg East Ltd* [2017] UKSC 59, [30].

Thus, as had been assumed in the Court of Appeal, Lord Neuberger suggested that para 3.2.2.2(ii) could be interpreted as specifying a design life of 20 years, rather than a service life of 20 years.

The relevant facts in this case were that the grouted connections failed within the 24-month Defects Liability Period. His Lordship found it unnecessary to decide whether para 3.2.2.2(ii) was a warranty that the foundations would have a lifetime of 20 years (ie a service life of 20 years), or a contractual term that the foundations were to be designed to have such a lifetime (ie a design life of 20 years), although he was inclined to favour the latter meaning.

His Lordship stated, without analysis:

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.²⁰

He acknowledged 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.²¹

This seems to be a recognition that although a structure might be designed to have a service life of 20 years, it might not in fact achieve that. As his Lordship found it unnecessary to decide whether the contractual provision in TR para 3.2.2.2 was a requirement for a design life of 20 years or a service life of 20 years, it appears that he considered that the failure demonstrated that the structures had neither a service life of 20 years, nor a design life of 20 years.

This raises the question as to what is meant by the term “design life”. In a previous paper, this was defined as follows: “design life can be defined as the expected service life that results from the design process.”²²

On this definition, by following the “state-of-the-art” design procedure in J101, the structures were designed for a life of 20 years according to then current practice. The designers expected a service life of 20 years because they followed the recognised international standard.

In this case, because of the error in J101, the structure did not function for 20 years, and clearly did not have a service life of 20 years, although it had a design life of 20 years according to the then prevailing standard. As noted above, Lord Neuberger apparently took the view that the structures did not have a design life of 20 years. While that is now known with the benefit of hindsight, it was not known at the time the design was carried out. The designer no doubt believed that by following J101, the structures had a design life of 20 years, as did DNV, which issued the Foundation Design Evaluation Conformity Statement.

Satisfying J101 Was a Minimum Requirement

Paragraph 3.1(ii) of the TR provided that:

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.

His Lordship stated:

Furthermore, para 3.1(ii) [of the TR] makes it clear that MTH should have identified that there was a need for a “more rigorous” requirement than d being “taken as 0.00037Rp” to ensure that the design was satisfactory, or at least complied with para 3.2.2.2(iii).

From a contractual perspective (which of course was the basis on which the case was decided), para 3.1(ii) of the TR undoubtedly put the onus on MTH to determine whether more rigorous requirements than J101 were required to ensure compliance with all the requirements of the contract. However, from a

²⁰ *MT Højgaard a/s v E.ON Climate and Renewables Robin Rigg East Ltd* [2017] UKSC 59, [32].

²¹ *MT Højgaard a/s v E.ON Climate and Renewables Robin Rigg East Ltd* [2017] UKSC 59, [31].

²² Charrett, n 12, 29.

practical perspective, how was MTH to determine what “more rigorous” requirements than J101 were necessary? J101 was the product of DNV, an internationally recognised standards organisation that was also the Certifying Authority for MTH’s design. DNV in fact provided the required Foundation Design Evaluation Conformity Statement that would normally provide comfort to a designer that it had complied with the necessary requirements. DNV was unaware at the time of the error in J101, as surely would have been the users of this Standard. As noted above, Jackson LJ squarely raised this issue in the Court of Appeal, in support of his view that the need for such additional work should have been clearly flagged so that appropriate allowance could be included in the tender price.

One of the notable issues in this judgment is its lack of commentary on the error in the DNV J101 Standard for the design of grouted pile connections. While Lord Neuberger stressed those aspects of the Technical Requirements that stated that compliance with the specified requirements (including the erroneous DNV Standard) were *minimum* requirements, there was no discussion as to what investigations may have been appropriate or necessary to determine whether or not additional measures over and above the Standard were required.

The writer’s view on the use of Standards by ordinarily competent designers has previously been published as follows:

Australian Standards are published documents that set out the aim of ensuring that products, services and systems are safe, reliable and consistently perform the way they were intended to. They establish a common language which defines quality and safety criteria acceptable to a broad range of interested parties.

...

In essence, by documenting norms in a common language, Standards enable the community and industry to seek and contract for goods and services on a level playing field. They specify minimum acceptable requirements pertaining to the majority of transactions that were anticipated in conceiving and scoping the particular Standard.

...

Professionals generally accept that appropriate procedures have been applied in the drafting, review and adoption of a Standard, so that it represents the “state-of-the-art”. On what informed or qualified basis would the regular practitioner be aware of the specific basis of each provision of the Standards, background research and deliberations of the Technical Committee and its individual members? In the authors’ view, it is commercially impractical and contrary to the professional objective of Standards for a user to review the project specific circumstances to assess the applicability and adequacy of each and every provision of a contractually specified Standard.²³

CONCLUSION

This case is an important reminder for contractors and designers entering into complex construction contracts for the need to understand and allow for the contractual obligations they are undertaking.

The principle of freedom of contract means that parties are free to agree to anything that is not against the law or public policy, irrespective of whether that is in accord with common norms or is objectively “reasonable”. The words of the contract, construed in accordance with well-known principles that require all the documents comprising the contract to be considered as a whole, and generally given their ordinary meaning, will usually determine the outcome of a dispute. Particularly in a case such as *MT Højgaard a/s v E.ON Climate and Renewables UK Robin Rigg East Ltd*, where the contract remedies were stated to be exclusive of any other remedy (save in the case of misconduct).

The obverse of freedom of contract is the principle of *pacta sunt servanda*: parties will be held to the bargain they have agreed to. In the event of a contractual dispute, the role of a court is essentially to determine what the parties have objectively agreed to, and to apply the appropriate remedies.

²³ Charrett and Potts, n 18, 8–9.

There is a particular caveat for designers highlighted by this case. Applying due skill and care and the state of the art as understood by the profession may not be sufficient to avoid liability where there is also a contractual obligation for the design to be fit for purpose. The obligation in each case will depend on the specific terms of the relevant contract, but it is clear from this case and others, that in a carefully worded contract, a fit for purpose obligation may trump the normal professional exercise of due skill and care. This is of particular concern to designers (and it is suggested, should also be of concern to employers) faced with a contractual liability which, in the absence of negligence, would not normally be covered by Professional Indemnity insurance.

The judgment of the Supreme Court does, however, highlight the fact that contractual terms can be a shield as well as a sword. In the contract between MT Højgaard and E.ON, the Contractor was obliged to rectify any defects that occurred within 24 months after the Works were handed over, and any claim after that time was barred. Lord Neuberger considered that, because the contractual remedies were intended to operate as an exclusive regime, E.ON only had two years to detect any defects, irrespective of whether the warranty was for a design life or a service life of 20 years. If the defect had been discovered more than two years after the Works were handed over, MT Højgaard would not have been liable for the rectification costs.

This case also highlights that, notwithstanding the well-established canons of contractual construction, this is not a trivial exercise for a complex and detailed construction contract, and skilled and experienced judges can have different views on the objective meaning of such a contract.