Neutral Citation Number: [2022] EWHC 1813 (TCC)

Case No: HT-2019-000452

IN THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
TECHNOLOGY AND CONSTRUCTION COURT (QB)

Rolls Building,
London, EC4A 1NL

Date: 14 July 2022

Before :

His Honour Judge Stephen Davies sitting as a High Court Judge

- -

Between :

MARTLET HOMES LIMITED	**Claimant**
- and -	
MULALLEY & CO. LIMITED	**Defendant**

- -
- -

Jonathan Selby QC & Tom Coulson (instructed by **Norton Rose**) for the **Claimant**
Simon Hughes QC & James Frampton (instructed by **Pinsent Mason**) for the **Defendant**

Hearing dates: 14-17 & 21-24 March & 13 April 2022.

- -

APPROVED JUDGMENT

This judgment was handed down remotely by circulation to the parties' representatives by email and by release to for publication on the National Archives caselaw website. The date and time for hand-down is deemed to be 10 am on 14 July 2022.
I direct that pursuant to CPR PD 39A paragraph 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

His Honour Judge Stephen Davies

His Honour Judge Stephen Davies:

[1] Where an abbreviation is introduced for the first time a superscript [1] is used to show that the full term is included in the Index.

Introduction and decision

1. By this claim the claimant Martlet Homes Ltd ("Martlet") as the owner of five tower blocks in Gosport ("the Gosport towers") seeks to recover approximately £8 million in damages from the defendant building contractor, Mulalley & Co Ltd ("Mulalley") for costs incurred from 2017 onwards in: (a) investigating and remedying, by removal and replacement, combustible external wall insulation ("EWI"[I]) rendered cladding, originally fitted by the defendant between 2005 and 2008 under a design and build contract made in 2005; and (b) providing a waking watch as a fire safety precaution until the EWI cladding had been removed.

2. The defendant admits that there were some defects in the installation of the EWI cladding but denies that they caused, or were such as to justify, the scheme for complete replacement works ("the replacement works scheme") in fact undertaken or the need for the waking watch. Its pleaded case and the case advanced at trial is that the real cause and justification for the replacement works and the waking watch was the claimant's realisation, triggered by the Grenfell Tower fire in June 2017, of the risk posed by the fact that the EWI cladding, being combustible, did not meet the heightened fire safety standards which had come into force after the works had been completed and which were further heightened as a result of the Grenfell fire.

3. It contends that only a scheme limited to limited repair works ("the repair works scheme") was reasonably required to remedy the installation breaches, costing far less than those actually carried out, and that this cost is irrecoverable given that the claimant chose to replace rather than to repair.

4. In response to that pleaded case the claimant, which had initially only pleaded installation breaches, sought permission to plead a fallback case. It obtained permission from Pepperall J at first instance, whose decision is to be found at [2021] EWHC 296 (TCC). Pepperall J's decision was upheld by the Court of Appeal, whose decision is to be found at [2022] EWCA Civ 32. The claimant's fallback case is that if the court was to agree with the defendant's case on causation in relation to the installation breaches, so that the replacement costs and the waking watch costs could not be claimed in respect of those breaches, nonetheless the EWI cladding as specified did not meet applicable fire safety standards as at the date of the contract (the "specification breach case"). The claimant contends that it is entitled to recover the replacement and waking watch costs as having been caused by the specification breach as an alternative to its primary installation breach case.

5. The claimant's further fallback case is that at the very least it is entitled to damages representing the reasonable cost of the repair works reasonably necessary to remedy the installation breaches. It contends that this cost is far greater than allowed by the defendant and, on its valuation, not less than the cost of the replacement works actually undertaken. On the same basis it also claims its waking watch costs for the period reasonably necessary to undertake those works.

6. In the event, therefore, the case as advanced and defended was primarily about: (a) the causation of loss in relation to the installation breach case; (b) the merits of the alternative specification breach case; and (c) the quantum of recoverable loss as regards the replacement scheme costs actually incurred, as regards the defendant's alternative repair scheme costs, and as regards the waking watch costs.

7. The specification breach case is of particular interest, since it raises for determination the question whether or not the specification of combustible EWI rendered cladding breached fire safety standards as they existed in the early to mid 2000's, well before the Grenfell Tower fire. However, like most other similar cases this case turns very much on the specific contractual provisions and the specific fire safety standards applicable to the particular product chosen as well as on the particular cases pleaded and argued and the evidence called.

8. I am extremely grateful to the legal teams for the preparation of user-friendly electronic bundles and for co-operating to engage Opus2 to provide an electronic trial document presentation facility as well as a live note transcript. This, coupled with the skill and hard work of counsel, enabled a mass of evidence to be heard in the seven days allowed for evidence. Detailed and impressive written opening and closing submissions were followed by oral closing submissions, after which I reserved judgment.

9. In summary, my decision is as follows: (1) had the claimant succeeded only on the installation breach case it could only have recovered the costs incurred referable to the repair scheme and not the costs of the replacement scheme; (2) however, since the claimant succeeds on the specification breach case, it can recover the costs incurred referable to the replacement scheme; (3) although the final costs of the replacement scheme and the repair scheme will require to be finalised once the quantity surveyors have translated my findings into figures, it appears likely that on my findings in relation to the repair scheme there will be little if any difference between the replacement scheme costs and the repair scheme costs in any event; (4) the claimant succeeds on the waking watch claim in relation to the specification breach case, subject to some relatively modest reduction; (5) the claimant would also have succeeded on the waking watch scheme had it only succeeded on the installation breach case, although the valuation of the waking watch on that hypothesis would have been assessed on the basis of a lesser time period.

10. My reasons appear below.

Summary of the facts and the parties' cases

The Gosport towers

11. Five concrete tower blocks were built in the early 1960's in Gosport, Hampshire to provide social housing. Of the five, two (Harbour Tower and Seaward Tower) are both 16 storeys and around 50 metres high. The remaining three (Blake Court, Hammond Court and Garland Court) are each 11 storeys and around 30 metres high. All five are thus significantly in excess of 18 metres in height, which is relevant because such buildings have been the subject of special attention in fire safety provisions over the years, reflecting the increased fire safety risk to those occupying them.

12. In the early 2000's a decision was made by their then owners, a social housing company known as Kelsey Housing Association Limited ("Kelsey"), to refurbish the five towers. The works included the application of EWI cladding to most elevations to improve their resistance to cold and damp penetration. The works were undertaken by the defendant under a design and build contract made under seal with Kelsey. The works to Garland Court were completed first, on 5 December 2006, followed by Hammond Court and Blake Court on 15 December 2007 and Harbour Tower and Seaward Tower on 7 April 2008.

13. No claim is made in relation to Garland Court only because the works were completed more than 12 years before this claim was issued. The claimant accepts that under the law as at the date of the trial any such claim was statue barred under the Limitation Act 1980.

The claimant

14. Martlet acquired the Gosport towers from Kelsey so that as at 2017 it was, and it remains, their freehold owner. It is also a wholly owned subsidiary of Hyde Housing Association Limited ("Hyde"). Hyde, together with its subsidiaries such as Martlet, owns a large number of properties in London and south-east England which provide residential social housing accommodation, including around 100 high-rise buildings. At all material times Hyde has effectively acted on behalf of Martlet in relation to the works to the Gosport towers and this claim. In this judgment I refer simply to "the claimant" without differentiating between the two companies, save where it is necessary to distinguish between them. It

is common ground that, by virtue of various transfers which I need not detail, Martlet is entitled to sue the defendant under the design and build contract as if it had been the original employer under the contract.

15. The decision-making structure within Hyde in 2017 was that its Group Board was, as would be expected, ultimately responsible for all of Hyde's activities. Sitting below the Group Board was an Executive Management Team ("EMT"[I]) which performed executive functions under the control of the Group Board and which held regular monthly meetings. Sitting below the EMT, and reporting to it, was what became known as the Fire Safety Team ("FST"[I]), formed as an urgent response to the Grenfell Tower fire in order to manage Hyde's response to the implications of that disaster for the safety of the occupants of its high rise buildings. Elaine Bailey was the Group chief executive at the time and she therefore sat on both the Group Board and the EMT. She was also the EMT "sponsor" for the FST. She thus had an important role in the events in question.

The defendant

16. The defendant is a well-known privately owned building contractor, based in Essex, which has a particular niche in the residential social housing sector.

The contract

17. By a contract under deed dated 20 January 2005 Kelsey contracted with the defendant for the refurbishment of the Gosport towers, including the application of the EWI cladding. The contract was based on the JCT 1998 Standard Form of Building Contract with Contractor's Design, incorporating Amendments 1 to 5 and some bespoke amendments. I shall refer to the relevant terms of the contract below.

The works

18. The EWI rendered cladding applied to the existing walls of the towers was a proprietary system known as the StoTherm Classic render system. Stotherm (usually abbreviated to "Sto") was a German owned business with a longstanding involvement in the EWI cladding market. In summary, the StoTherm Classic system consisted of an inner layer of expanded polystyrene ("EPS"[I]) insulation boards, fixed to the existing external wall with (in this case) adhesive with supplementary mechanical fixing dowels. Two acrylic organic[2] non-cementitious render coats were applied to the EPS insulation boards, a 3mm base coat known as a StoArmat Classic and a 1.5mm top coat known as a StoStolit, with a reinforcing glass fibre mesh layer between them.

19. The primary objectives of the StoTherm Classic system were to provide improved thermal protection, improved waterproofing and a more attractive decorative finish. However, EPS, unlike concrete, is a combustible substance, as is the organic acrylic render applied over it, so that its installation created a fire risk where none previously existed. The primary reason why EPS was used was its relative lightness, especially when compared with mineral wool insulation boards which were also offered as part of EWI cladding systems, both by Sto and other producers. In order to mitigate this known risk and to prevent the spread of fire the StoTherm Classic system incorporated horizontal mineral wool fire barriers at each floor level above the third storey.

---

[2] In cross-examination the defendant's fire safety expert Mr McCracken stated for the first time, based on recent online research he had done which had not been disclosed, that the Sto organic render might contain only 10% organic content, but there was no suggestion in his evidence or elsewhere that this detracted from the well-established point that the organic component nonetheless made the render combustible, albeit that its degree of combustibility might be affected by the proportion of organic material and by other factors.

20. No particular problem was experienced with the cladding system following practical completion. There is no evidence that anything untoward was revealed with the cladding system, either by any due diligence undertaken by the claimant when the Gosport towers were acquired by Martlet from Kelsey or by any fire risk assessments undertaken by the claimant following its acquisition. Although the defendant was somewhat critical of the fire risk assessments undertaken by the claimant post-acquisition, in my view nothing of importance turns on these criticisms. That is especially since there is no basis for the suggestion, floated in closing submissions, that it was the claimant's perception of its poor fire safety record pre-Grenfell which in some way influenced its decision to replace the cladding post Grenfell, so that it is unnecessary for me to make findings about these matters.

The Grenfell Tower fire, the post-Grenfell investigation and the remedial works

21. The disastrous fire at Grenfell Tower happened on 14 June 2017. As has been found in the Phase 1 report of the ongoing Grenfell Inquiry, Grenfell Tower had been refurbished between 2012 and 2016 so as to overclad the original concrete structure with a new insulation and rainwater cladding system. The rainscreen panels were made of aluminium composite material ("ACM[I]") which contained a highly combustible polyethylene core. Behind the rainscreen panels was a layer of insulation, fixed directly to the building, with a cavity between the inner face of the rainscreen panels and the outer face of the insulation layer. The insulation layer was also combustible. There were cavity barriers, but they were not continuous and, in many cases, poorly fitted. The fire, which began in a kitchen in one of the flats, was able to escape and enter the cladding through which it was able to envelop the entire building due to the presence of the combustible materials. Of course, the full details of this were not known immediately after the fire; however it was known within a relatively short time that the fire had been able to spread within the external cladding system due to the presence of combustible materials within that system.

22. Post Grenfell the claimant was immediately aware of the need to take appropriate measures for the safety of the residents of its own high-rise residential tower blocks. The FST was very quickly established to undertake that response.

23. The claimant's investigations into the Gosport towers, beginning on 23 June 2017, revealed very quickly that the cladding system included combustible EPS insulation boards. The claimant contends that its investigations also revealed within a short period the existence of serious installation defects, most significantly defects in the installation of the fire barriers which created a real risk that they would not operate as intended to prevent the spread of fire.

24. On the same day as the first inspection the claimant implemented a regular fire patrol system, known as a "waking watch", for the Gosport towers.

25. After further investigations the claimant decided to remove the entire EWI cladding system as installed by the defendant and replace it with a new, non-combustible, cladding system, using stone wool insulation panels rather than EPS insulation panels. The claimant says that it finally made this decision in November 2017. The defendant however contends that this was no more than a "paper" confirmation - with an eye to its position in any future litigation - of a decision which had in fact been made right from the outset.

26. The works were carried out by a building contractor on the claimant's panel known as Axis from 2018 to 2020. In summary, the timeline of the procurement and undertaking of the remedial works is that: (a) invitations to tender for the remedial works were sent on 21 December 2017; (b) on 6 March 2018 the claimant's agents, Pellings, produced a tender report which recommended that Axis be appointed to carry out the remedial works; (c) a building contract with Axis was concluded on 23 April 2018; (d) practical completion of the remedial works was achieved at Harbour Tower on 17 January 2020, at

Hammond Court on 29 May 2020, at Seaward Tower on 23 June 2020 and at Blake Court on 10 July 2020.

27. The waking watch was maintained for each tower until the removal of the insulation boards.

The claim

28. A potential claim was first notified to the defendant in August 2017. Initially there was no response, as it appears because the letter was somehow mislaid internally. The claim was re-notified in October 2017, producing a denial of liability in November 2017. One issue which arises is whether or not the claimant gave the defendant a reasonable opportunity to investigate the complaints made and to put forward a reasonable remedial works proposal which could have been undertaken instead of the full scale replacement.

29. In 2019 the claimant referred its claim to statutory adjudication. The appointed adjudicator, Her Honour Frances Kirkham OBE, found against the claimant. Her decision as an adjudicator is not of course binding on me in any way, notwithstanding her eminence and her expertise in this area. At the claimant's insistence I have not even seen or been referred to her decision, although I have been provided with and been referred to some of the evidence deployed in the adjudication. Dissatisfied with the decision, in December 2019 the claimant issued the current proceedings.

30. As I have already indicated the case as originally advanced was solely a defective installation case, the case being that the installation of the EWI cladding was defective because, in summary: (1) the horizontal fire barriers at each floor level were inadequately fixed; and (2) the EPS insulation boards were inadequately fixed to the wall behind.

31. As to this, the defendant admits that there are instances of the majority of the installation defects in its workmanship, but it does not admit the extent of those defects, specifically the extent of the gaps between the fire barriers or the inadequate dowels used in the fixing. The defendant also disputes the relevance of the alleged defect in respect of the adhesive for the EPS insulation, contending that it is irrelevant for fire safety purposes.

32. As I have said, the defendant contends that these breaches were not in any event factually or legally causative of the decision to replace the EWI cladding or to provide a waking watch. The defendant also contends that the installation defects would not, by themselves, have justified a wholesale replacement and that a less expensive repair solution would have sufficed. As I have also said the claimant disputes these contentions but obtained permission to plead the specification breach case as a fallback. This fallback case was also the subject of some more modest amendments on the first day of trial, which were not opposed, although I refused to allow a further amendment which sought to introduce a potentially significant new allegation.

The witnesses

33. The claimant called as witnesses of fact: (1) Elaine Bailey, referred to above, who retired from Hyde in September 2019; (2) John Carmichael, Hyde's risk and compliance director at the material time; (3) Jacob Le Page, a Hyde senior project manager who was a member of the FST and became the FST Lead, who left Hyde in August 2021; (4) Terry Hardy, a partner with the firm Pellings, which advised Hyde in relation to the defects and remedial works; (5) Paul Dew, who worked in the Hyde property services department and gave evidence about the waking watch costs.

34. Ms Bailey was in my view an honest, reliable and impressive witness. Whilst accepting some of the criticisms made by the defendant of the drafting of her witness statement and the fact that she was somewhat defensive when taken to contemporaneous documents which were at odds with what she had

said in her statement, nonetheless I accept the essential thrust of her evidence as to the reasons why the claimant decided to remove and replace the EWI cladding, on the basis that it was neither fundamentally inconsistent with the important contemporaneous documents nor a naked self-serving retrospective attempt to mould the evidence to suit the claimant's case. I do however also accept that Ms Bailey was more keen to ensure that the claimant proceeded "at pace" (to use the phrase in a contemporaneous document) to take all steps which she considered were reasonably required to protect the safety of the occupants of the Gosport towers than to engage in a lengthy internal debate as to whether it was the combustible nature of the EWI cladding or the installation defects or a combination of both which underlay the claimant's decision to replace the EWI cladding in its entirety.

35. The remaining witnesses called by the claimant were also honest and largely reliable. Mr Le Page had been placed in some difficulty in that he had written to the defendant, in response to its request for early disclosure of reports identifying the defects complained of, in a way which was undoubtedly misleading. However, it was clear to me that he had done so under instruction from others rather than by his own volition. In my view the fact that he had done so, albeit exacerbated with his attempt to defend the indefensible under cross-examination, was not conduct of so egregious a nature that it significantly affected my overall assessment of the reliability of his evidence. Mr Carmichael, Mr Hardy and Mr Dew added little of real weight to the contemporaneous documentary evidence so far as the remedial works and waking watch claims were concerned.

36. The claimant also relied upon a witness statement from Sarah Cullern, Hyde's head of financial control, who was not required for cross-examination.

37. There was some suggestion at trial that the claimant ought to have called Peter Denton, the group finance director, and Brent O'Halloran, the director of asset management, but it does not seem to me that either were witnesses who the claimant needed to call on the basis that only they could give evidence on key disputed issues, such that it would be proper to draw any adverse inferences against the claimant for its failure to do so without good reason. There was no reason in my view not to accept at face value their contemporaneous input into the documentary record.

38. The defendant called: (1) Eamon O'Malley, its managing director; (2) Paul Pinkney, its technical director; and (3) Stuart Watson, its commercial director. All three were honest and largely reliable, although in each case a little combative and partisan. In fairness, this was no more than to be expected, given the significance of this claim to the defendant, both as a freestanding claim in its own right and also in the context of its reputation in the housing association sector. I can say straight away that none of the findings made in this judgment are in any way critical of these witnesses or more generally of the defendant's general approach to fire safety or to building quality, especially since it appears that they largely sub-contracted the design, supply and installation of the works which are the subject of this claim.

39. The relevant experts as instructed and called by the parties in accordance with the permission granted at the first case management conference were as follows:

	Claimant	**Defendant**
Technical -Architectural	Roger Jowett	Euan Geddes
Technical - Fire Safety	James Lavender	Andrew McCracken
Quantity Surveyor	Ryan Greening	Mark Wheeler

40. The precise demarcation line between the evidence given by the architect experts and the fire safety experts was not always easy to identify. Mr Geddes helpfully explained the difference between the disciplines as being that "fire engineers will have understanding of the mechanics of fire and …

properties and materials in relation to fire [whereas] architects generally speaking don't possess that sort of knowledge. And to demonstrate compliance with the Building Regulations they need guidance to assist them to do so … A fire engineer very often adopts more of a risk−based analysis of the factors involved in fire safety".

41. The evidence of the architects was required primarily in relation to one element of the specification breach case since, by clause 2.5.1 of the conditions of contract, the defendant was to have the same liability in respect of design as would an architect or other appropriate professional designer. However, as was apparent from the issues they had addressed in their initial joint statement and in their subsequent separate reports, they had also considered disputed issues in relation to the statutory fire safety regime, the standard of the as-built EWI cladding works and the competing cases in relation to the remedial works as undertaken by the claimant and as proposed by the defendant. I have had regard to their evidence on all of these issues, whilst recognising the distinction between the disciplines and placing greater weight on the opinion of the fire safety experts on matters more properly within their particular area of expertise.

42. Both Mr Jowett and Mr Geddes were well qualified to give evidence as architects and both had a reasonable familiarity with fire safety issues. It seemed to me that it was a fair criticism of Mr Jowett's opinions on the key issues that they were very much based on his own views as to what the statutory fire safety regime required at the relevant times, whereas it was a fair criticism of Mr Geddes' evidence that at times he appeared almost to suggest that it was sufficient for an architect pre-Grenfell to do little more than accept a BBA certificate at face value without the need for much, if any, further investigation. In the end I have to make my own decision by reference to my overall assessment of the evidence on the disputed issues.

43. In a similar way it is not possible for me to say that either of the fire safety experts or either of the quantum experts were so obviously more impressive than the other that I could accept and prefer their evidence on every significant point where there was a difference. They all had their individual strengths and their weaknesses.

44. The defendant criticised the claimant's experts, Mr Lavender in particular, for not referring to or discussing material which had been provided to them by the claimant's solicitors in relation to BS 8414-1 tests of Sto systems by third parties. I am satisfied that Mr Lavender was reasonably justified in not doing so on the dual basis that he did not consider them to be material to the opinions he and Mr McCracken were asked to and did give and because the claimant's solicitors had provided them on the basis that they were legally privileged.

45. It might in another case be necessary to consider what an expert should do if the client's instructing solicitor provided him with material on the basis that it was privileged, the expert took the view that it was necessary for him to refer to it in order to comply with his duty to the court, whereupon the solicitor refused to permit him to do so on the basis that it was privileged. However, the point does not arise for consideration on the fact of this case, since I am satisfied that Mr Lavender reasonably considered that it was not necessary for him to refer to it, in circumstances where it had not been addressed by the experts as an issue and he had not been asked to express an opinion on it.

The relevant contract terms

46. There is little dispute as regards the relevant contract terms, so that I can refer to them in relatively short order.

47. Article 1 of the Articles of Agreement stated "upon and subject to the Conditions…, the Contractor will… both complete the design for the Works and carry out and complete the construction of the Works".

48. Clause 2.1 of the Conditions of Contract stated "the Contractor shall upon and subject to the Conditions carry out and complete the Works referred to in the Employer's Requirements, the Contractor's Proposals…, the Articles of Agreement, these Conditions and the Appendices in accordance with the aforementioned documents and for that purpose shall complete the design for the Works including the selection of any specifications for any kinds and standards of the materials and goods and workmanship to be used in the construction of the Works so far as not described or stated in the Employer's Requirements or Contractor's Proposals".

49. These clauses therefore made clear that the defendant was responsible for the design as well as the execution of the works, including the completion of the design and the selection of the specifications.

50. Clause 2.5.1 stated "insofar as the design of the Works is comprised in the Contractor's Proposals and in what the Contractor is to complete under clause 2 and in accordance with the Employer's Requirements and the Conditions (including any further design which the Contractor is to carry out as a result of a Change in the Employer's Requirements), the Contractor shall have in respect of any defect or insufficiency in such design the like liability to the Employer, whether under statute or otherwise, as would an architect or, as the case may be, other appropriate professional designer holding himself out as competent to take on work for such design who, acting independently under a separate contract with the Employer, had supplied such design for or in connection with works to be carried out and completed by a building contractor not being the supplier of the design".

51. Clause 2.5.1a stated "in addition to the foregoing, the Contractor hereby accepts responsibility for the design of the Works and every part thereof and for the selection and standards of all and any materials, goods and workmanship forming part thereof".

52. The defendant had pleaded that clause 2.5.1 had the effect that liability for any and all design obligations under the contract would only arise if the claimant could show that an architect or other professional designer would have been liable for such design and thus, in effect, introduced a requirement to establish professional negligence for breach of the design obligations. In closing submissions Mr Hughes confirmed that the defendant was no longer advancing this case. In my judgment that was a correct concession for two reasons in particular. First, as appears from the judgment of Lord Neuberger in MT *Hojgaard AS v E.ON Climate and Renewables UK Robin Rigg East Ltd* [2017] UKSC 59 to which my attention was drawn by Mr Selby, if there are two clauses imposing design obligations with different or inconsistent standards or requirements, treating the clause imposing the less demanding obligation as a minimum requirement makes more sense than treating it as qualifying the clause imposing a more demanding obligation, since to do so would give that clause a meaning which, in effect, renders it redundant (paragraphs 45 and 50). Second, in this case the opening words of clause 2.5.1a make it clear that the unqualified design and specification duty imposed by this clause is not qualified by the lesser duty imposed by clause 2.5.1.

53. Clause 2.5.4 made it clear that the defendant was liable for design which it had obtained from others. That is relevant in this case since it is clear that there were others who had input into the specification of the StoTherm Classic system. Realistically, given that clause, the defendant did not seek to contend that it was not equally liable for that input or that it could rely on the defence that it had reasonably relied upon the design of a competent consultant or subcontractor.

54. Clause 6.1.1.2 stated "the Contractor shall comply with… any Act of Parliament, any instrument, rule or order made under any Act of Parliament, or any regulation or byelaw of any local authority or of any statutory undertaker which has any jurisdiction with regard to the Works…"

55. It is common ground that these statutory requirements included the Building Regulations.

56. This obligation was fortified by paragraph GDI 001 of the Employer's Requirements, which stated "the Works are to be designed and constructed in accordance and compliance with all relevant and related Statutory Requirements, Codes of Practice, British Standards, Material Manufacturer's and Supplier's recommendations, Agrément Certificates, Professional or Trades or Suppliers Bodies recommendations, and the like".

57. The reference to Agrément Certificates is a reference to certificates issued by the British Board of Agrément ("BBA") which issued a certificate number 95/3132, to which reference is made below.

58. The obligation was also fortified by paragraph GDI 004, which stated that the contractor must "conform with the requirements, directions, recommendations and advice contained in the latest edition of the following publications, copies of which are required to be in the possession of the Contractor acting for the Association:- … f) Building Research Establishment's Reports, Papers, Defects Action Sheets and the like".

59. This is of particular relevance in this case, since - as will be discussed in much more detail below - the relevant Building Research Establishment ("BRE[I]") report - BRE 135 (1988) - had been replaced by BRE 135 (2003) by the time the contract was entered into and the claimant places particular reliance on the subsequent 2003 version.

60. The claimant also relies upon paragraph GDI 008, which stated "where a material, proprietary product or the like has more than one grade or type or more than one use or method of application or installation, ensure that the grade, type, use and method of application or installation selected is that most appropriate to the use to which the material, proprietary product or the like is being put" .

61. Clause 8.1 contained the usual requirements in relation to the standard of materials to be supplied and work to be done under the contract.

62. Turning to the Contractor's Proposals, section 2(d) of the Contractor's Proposals stated "external insulated render - our submission is based upon the use of a STO system, incorporating 110mm EPS insulation to main areas, 30mm thick to balcony returns. This is a very high quality system specially designed for high rise usage …". The defendant explained that this option had been selected for a number of reasons, including that it was not a cementitious system (and hence liable to shrinkage and brittleness) and that it was of a lightweight construction.

63. The claimant has pleaded that section 2(d) contained a clear contractual warranty that the STO system was specially designed and suitable for high rise usage.

64. Reference was also made in section 7 to technical and other information about the system. Section 7 was a brochure produced by Sto in relation to its StoTherm Classic product. Amongst the stated benefits of the system were that "class '0' fire rating and lightweight materials make this system suitable for tall constructions". The system description stated that: (a) the insulation boards were of EPS with a fire retardant additive; (b) the reinforcing render was a Sto-RFR cement free and fibre reinforced render with a max 3mm thickness; (c) the decorative finish render was either an acrylic or a silicone resin. It continued by stating that the StoTherm Classic was an "organic cement free system", conceived in the 1960's, which had become the market leader in externally insulated façade systems.

65. Under the section headed "system components" it was stated that the insulation boards were "of limited combustibility". This was the only express reference made to the fire performance of the system. This was also the subject of the late informal amendment application made by the claimant on the first day of trial which, as I noted above, I refused. One reason for refusing permission was that there was a real issue, which had not been addressed in the evidence, whether this brochure was referring to a UK or German standard in making this statement. The latter was not a fanciful suggestion, in circumstances

where Sto was, as I have said, a German company and where it is common ground that the Sto insulation boards were not (and had never otherwise been claimed to be) of limited combustibility in the context of the applicable UK standards.

66. In a section headed "Application", section 7 also explained that the insulation boards should be fitted to non-smooth substrates by applying adhesive to the boards "in a 'sausage' around the edge of the board and then apply 6 dabs to the surface of the board". The claimant contends that this was not done with, it contends, important consequences as regards fire safety, which I shall have to address in detail later.

67. In the same section it was further stated that dowels should be used to fix the EPS insulation boards. The associated diagram provided for 6 dowels per square metre. It also showed the dowels as fixed through the insulation panels and not through any part of the render applied to the insulation panels.

The claimant's pleaded case

68. Although I have already summarised the claimant's case, it is now necessary for me to refer to the pleaded case on breach in a little more detail, particularly in the light of the complaint persistently made by the defendant that the claimant's case was something of a moveable feast and the importance of ensuring that the case as advanced at trial does not stray outside the confines of the pleaded case.

69. The claimant pleaded the relevant terms of the contract as identified above and also pleaded regulations 4 and 7 of the Building Regulations and Requirement B4(1) of Schedule 1 to those Regulations which I refer to below. It also pleaded certain extracts from the technical specification of the BBA certificate issued in relation to the StoTherm Classic system.

70. The allegations of breach are pleaded in three separate sections: the first relating to fire barrier defects; the second relating to defects in relation to the EPS insulation panels; and the third being the alternative specification breach case.

71. As regards the fire barrier defects, they are pleaded as being: (a) a failure to fit the fire barriers using a continuous band of 50mm wide adhesive, leaving gaps between the fire barriers and the substrate of between 20mm and 40mm; (b) in some places, leaving vertical gaps of up to 15mm between adjacent fire barriers when there should have been no such gaps; (c) using dowels to fix the fire barriers which were too short and insufficient in number and which also had insufficient diameter heads and no washers. The effect is pleaded as being that as regards (a) and (b) the effectiveness of the fire barriers in the event of fire entering into the EWI system would be compromised, with fire and smoke able to bypass the fire barriers through any open gaps, and as regards (c) that the ability of the fire barriers to remain fixed to the substrate in the event of fire was undermined because the integrity of the existing paint coatings to the substrate could not be relied upon to support the weight of the fire barriers given that such paint coatings may degrade when exposed to fire.

72. As regards the insulation board defects, they are pleaded as being: (a) a failure to fit the insulation boards with a continuous "sausage" of adhesive around the edge of each; (b) using dowels of insufficient length. No separate specific consequence of this breach was pleaded.

73. As regards the alternative specification breach case, it is pleaded at paragraph 41 that:

"If as Mulalley contends … the losses claimed herein were caused by the fact that the insulation was EPS, Mulalley's selection and use of EPS as insulation … was in breach of [the contract terms pleaded above] and/or regulation 7 of the Building Regulations in that the EPS panels were flammable or combustible, which meant that:

(1) The external walls of those buildings did not adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of those buildings, contrary to Regulation 4 and Requirement B4(1) of the Building Regulations 2000.

(2) The building fabric, elements and/or components did not provide for a minimum useful life of 70 years.

(This case however is no longer pursued on the basis of the expert evidence.)

(3) The Sto system that was installed was not suitable for tall constructions.

(4) The Sto system that was installed would not achieve a class 0 fire rating in respect of those areas of the Towers above 18 metres.

(This case however is also no longer pursued on the basis of the expert evidence.)

(5) In addition, the defendant was in breach of paragraph GDI 004 of the Employer's Requirements (and thus clause 2.1 and 2.5.1 of the Conditions) in that the Sto system did not conform with the requirements, directions, recommendations and/or advice contained within BR 135 (2003) because it had not passed a BS 8414-1 test when tested against the BR 135 (2003) performance criteria.

(This case was added by the re-amendment made on day 1 of the trial.)

74. Further, at paragraph 41A it was pleaded "in support of its case that the EPS did not comply with the Building Regulations 2000" that, amongst other things:

"(a) Contrary to the defendant's case, there was no material change between the Building Regulations in force as at the date of the contract and the period after Grenfell.

(b) The Sto system did not comply with the guidance given in ADB 2000, in particular, the guidance in paragraph 13.7.

(c) The Sto system did not comply with the guidance given in BR 135 (1988) in that it used an organic based render and had not been the subject of a full scale test.

(d) The Sto system did not comply with the guidance given in BR 135 (2003) in that it had not passed a BS 8414-1 test when tested against the BR 135 (2003) performance criteria."

75. I should say that (b) to (d) above were included in the claimant's draft re-amended Particulars of Claim but, in the event, not expressly added to the pleaded case given the defendant's reasonable and realistic acceptance that it was not necessary for these matters to be expressly pleaded since they fell within the four corners of the existing pleaded case and had been addressed by the experts in their evidence.

The Building Regulations and associated materials

76. The position is relatively clear so far as the installation breach case is concerned but highly contentious and thoroughly unclear as regards the specification breach case. It was, unsurprisingly, the subject of close scrutiny at trial. I will attempt to summarise only the provisions most relevant to this case, including the relevant changes over the period from the time of entry into the contract to the time of the entry into the contract for remedial works. I will also resolve disputes between the parties about the true interpretation of the relevant provisions, whilst leaving my specific findings as to the installation and specification breaches to the relevant later section of this judgment. Since the interested reader can access the relevant materials elsewhere, I will not include lengthy recitations or extracts.

77. It is worth clarifying the role of the experts in the interpretation of the relevant provisions. In my view the proper interpretation of these provisions is to be found primarily from the words used. The

provisions are intended to be read and relied upon by a wide range of persons. Most may be expected to be involved in the construction sector in one way or another. But the extent of the knowledge and experience which a fire safety consultant will bring to bear upon these provisions will be vastly different to that which a small building company will have. Architects and other professional designers will likely fall somewhere in the middle in terms of knowledge and experience. Lawyers involved in contract negotiation or dispute resolution will likely have different knowledge and experience from those involved in the specifying and pricing of projects. There is no express warning or advice that the relevant material is not intended for use by private individuals with no particular knowledge of fire safety but having good reason to wish to understand the meaning of these provisions.

78. It follows in my view that it ought only to be necessary to have regard to the evidence of the experts in order: (a) to explain technical terms, which are not obvious or adequately explained in the material itself; or (b) to explain how the provisions were understood by those involved in the design and specification of external cladding systems when considering the "professional negligence" aspect of this case. Otherwise, I should not decide questions of interpretation by reference to the opinions of the experts, although the reasons they give as the basis for their opinions may of course assist me in making my own decision.

The Building Regulations 2000

79. The Building Regulations were made under powers contained in s.1 of the Building Act 1984. The Building Regulations current at the time of entry into the contract were the Building Regulations 2000.

80. Two regulations are relevant for present purposes.

(i) Reg. 4, which required building work to be carried out so that it, or any building materially altered thereby, complied with the applicable requirements in Schedule 1 (known as the "functional requirements").

(ii) Reg. 7, which required building work to be carried out (a) with adequate and proper materials which are: (i) appropriate for the circumstances in which they are used; (ii) … (iii) applied, used or fixed so as adequately to perform the functions for which they are designed; and (b) in a workmanlike manner.

The Schedule 1 functional requirements

81. Schedule 1 included the following functional requirements.

82. Requirement B3(4) stated "the building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited".

83. Requirement B(4) was headed "external fire spread". Sub-section B(4)(1) stated "the external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building".

84. It is clear in my view that the spread of fire over the walls covered by B(4)(1) was not limited to spread over the top of the walls and encompassed the spread of fire across the face of the walls in any direction.

85. It is also clear in my view that the use of the words "adequately" and "having regard to the height, use and position of the building" shows that it is a question of fact and degree in any particular situation what was required to achieve this objective. It is worth noting that Sir Martin Moore-Bick, the chairman of the Grenfell Inquiry considered this question in his Phase 1 report at chapter 26, saying (at 26.4) that "although in another context there might be room for argument about the precise scope of the word

"adequately", it inevitably contemplates that the exterior must resist the spread of fire to some significant degree appropriate to the height, use and position of the building".

The Approved Documents

86. Approved Documents were issued under the power conferred by s.6 Building Act 1984 to provide "practical guidance with respect to the requirements of any provision of building regulations". By s.7 of the Act: (a) a failure to comply with an Approved Document may be relied on as "tending to establish liability" for breach of the Building Regulations; whilst (b) proof of compliance with an Approved Document may be relied on as "tending to negative liability" for breach of the Building Regulations.

87. The role of the Approved Documents was thus both to provide practical guidance and to provide an indication of what would and would not be a breach of the Building Regulations. It was not to make prescriptive requirements.

88. There were 2 such Approved Documents in place at the time of entry into the contract.

89. As regards reg. 4 and the functional requirements, it was Approved Document B, Fire Safety, 2000 edition 2002 revision ("ADB 2002"[I]).

90. As regards reg. 7, it was the Approved Document to support regulation 7, 1999 edition, 2000 revisions ("AD7").

ADB 2002

91. The introduction to ADB 2002 confirmed that it was intended only as guidance and was not mandatory. Section B4 contained the guidance supporting Requirement B(4) above. Section 13 is relevant for present purposes, with section 13.2 stating that one purpose of the provisions restricting the combustibility of external walls of high buildings was to "reduce the danger from fire spread up the external face of the building".

92. It was explained in paragraphs 13.1 and 13.2 that the guidance related to: (a) the fire resistance required of external walls; and (b) the combustibility of such walls. The purpose of the latter guidance was to reduce the surface's susceptibility to ignition from an external source and to reduce the danger from fire spread up the external face of the building.

93. Paragraphs 13.5 and 13.6 sat under the sub-heading of "external surfaces", whereas paragraph 13.7 sat under the sub-heading of "external wall construction".

94. Paragraph 13.5 required the external surfaces of walls to "meet the provisions in Diagram 40".

95. Diagram 40 required elevations over 18m, where there was more than 1m between the building and the relevant boundary - as was the case in relation to each of the Gosport towers, to meet or exceed the external wall surface classification national class 0. This is a measure of the rate at which fire spreads over the surface of a material. It is important to note that this "surface spread of flame" requirement is not a measure of combustibility. It is common ground that the render finish on the Gosport towers met this Class 0 requirement. Thus, the requirements of ADB 2002 as regards surface spread of flame have no relevance to this case.

96. Paragraph 13.5 added that "one alternative to meeting the provisions in Diagram 40 could be BRE Fire Note 9 *Assessing the fire performance of external cladding systems: a test method* (BRE, 1999)".

97. It is common ground that (as explained, for example, in Annex A of BRE 135 (2003) referred to below), Fire Note 9 was a "full scale test and classification method to assess the fire performance of external systems". It was the forerunner of, and in substantially the same terms as, BS 8414-1:2002 Test method for non-loadbearing external cladding systems applied to the face of the building ("BS 8414"[I]). This was, therefore, an example of the Building Regulations guidance suggesting either compliance with specific provisions or undertaking - and passing - a full scale test.

98. Paragraph 13.6 explained that where the outer cladding was of a "rainscreen" construction with a drained and ventilated cavity (as was the case at Grenfell, but not at the Gosport towers) the internal face of the outer cladding should also comply with Diagram 40. This additional requirement for ventilated cavities reflected the understanding at the time that the presence of a ventilated cavity led to a risk of fire spread through that cavity, against which precautions needed to be taken.

99. In contrast, paragraph 13.7 was concerned with external wall construction. It has attracted a considerable amount of attention in this case. It contained 3 separate un-numbered sub-paragraphs (which I have numbered for ease of reference) which, as relevant state as follows:

13.7(1) "The external envelope of a building should not provide a medium for fire spread if it is likely to be a risk to health or safety. The use of combustible materials for cladding framework, or of combustible thermal insulation as an overcladding or in ventilated cavities, may present such a risk in tall buildings, even though the provisions for external surfaces in Diagram 40 may have been satisfied."

13.7(2) "In a building with a storey 18m or more above ground level, insulation material used in ventilated cavities in the external wall construction should be of limited combustibility."

13.7(3) "Advice on the use of thermal insulation material is given in the BRE Report Fire performance of external thermal insulation for walls of multi-storey buildings (BR 135, 1988)."

100. Paragraph 13.7(1) thus begins with what is, effectively, a restatement of functional requirement B(4)(1) and its importance in terms of fire safety. It makes clear that in relation to 18m plus tall buildings there was a fire safety risk in using combustible EPS insulation boards, even where the external finish met the class 0 standard.

101. There was a specific prohibition in relation to using anything less than limited combustibility insulation in ventilated cavities. Definitions of materials which are combustible, of limited combustibility and non-combustible appear in the Appendix to ADB 2002. That requirement did not apply as regards the design of the Gosport towers since they were not designed to have ventilated cavities. Thus, it did not expressly prohibit the use of the EPS insulation panels affixed to the Gosport towers, even though they were neither non-combustible nor of limited combustibility.

102. It follows that, whilst sub-paragraph (2) gave specific advice in relation to insulation material used in ventilated cavities, there was no equivalent specific advice given in relation to insulation panels as an over-cladding. It follows, in my judgment, that there was no express requirement in ADB 2002 to the effect that they had to be either non-combustible or of limited combustibility. However, it also follows in my judgment, reading paragraph 13.7 as a whole, that it could not be assumed that there was no restriction at all as regards their use. Instead, it would be necessary to refer to the advice given in BRE 135 (1988). I note the acceptance by Mr Geddes in cross-examination that a reasonably competent architect would have referred to BRE 135 (1988) in such circumstances.

103. An issue which arises is whether the reference to BRE 135 (1988) was superseded for the purposes of ADB 2002 once it was replaced by BRE 135 (2003).

104. ADB 2002 stated at p.5 "when an Approved Document makes reference to a named standard, the relevant version of the standard is the one listed at the end of the publication. However, if this version of the standard has been revised or updated by the issuing standards body, the new version may be used as a source of guidance provided it continues to address the relevant requirements of the Regulations". This is a reference to "Appendix G: Standards referred to", which contains a list of the relevant British Standards ("BS"[I]). In the following "Appendix H; other publications referred to", in the printed edition reference is made to BRE 135 (1988). In the online edition available after 2003 this was added to by the words "(replaced by the 2nd edition 2003)".

105. It follows, in my view, that there is no question of BRE 135 (1988) having been entirely superseded by BRE 135 (2003) so far as ADB 2002 was concerned. The architect experts agreed in their joint statement that, by virtue of clause GDI 004 of the Employer's Requirements, they would have expected the 2003 version to have been the version followed at the time of this project. This would clearly make sense in the real world, in the context of decisions being taken by responsible and substantial employers and design and build contractors with access to professional advice, such as was the case on this project. It can scarcely be supposed that such persons should be required to ignore the new BRE report in favour of the old BRE report just because the Approved Document had not been updated following the change. Whilst a strict approach would normally be taken to statutes and statutory instruments, there is no reason to adopt the same approach to what is, after all, no more than statutory guidance. It follows that whilst, strictly speaking, the defendant ought to continue to have regard to BRE 135 (1988), because that was still the version referred to in ADB 2002 as at the time of the contract, it would be unrealistic to criticise it for following the updated requirements, directions, recommendations and advice contained in BRE 135 (2003) insofar as they had overtaken what was in BRE 135 (1988). It follows that I must consider each in turn but, in my view, place more weight on the most recent version insofar as there is any important difference, especially when that is what the contract itself required the defendant to do.

BRE 135 (1988)

106. The summary page of BRE 135 (1988) explained the purpose of the report as follows:
"The application of external thermal insulation is a technique relatively new to the UK. The use of appropriately designed systems particularly on walls of high rise buildings provides an attractive method of energy conservation. To identify the design principles affecting the safety of occupants and the probable extent of fire spread, BRE has conducted large-scale tests in a four-storey experimental building … A series of fundamental design recommendations has consequently been drawn up to minimize the hazard to life and to restrict the extent of necessary reinstatement following a serious fire."

107. This makes clear that the fundamental design recommendations referred to were the product of large scale tests.

108. The introduction section helpfully summarised the range of systems designed for external application to solid masonry walls, explaining that combustible plastics-based insulants had been used on high rise buildings as well as non-combustible inorganic insulants such as rock or glass fibre. This section ended by saying "possible advantages in terms of economy and ease of installation might favour increased use of polymeric insulants were there not fears about the effects of these on fire spread and doubts as to their acceptability under the provisions of the Building Regulations".

109. The section headed regulatory aspects stated why the current regulatory system was considered insufficient:
"Control over the external surface of walls of buildings, particularly those of multi-storey flats, to avoid ignition and flame spread which might endanger the lives of residents above by breaking down effective 'compartmentation', is currently controlled by reference to tests specified in BS 476: Parts 6 and 7. However, these tests only provide information on surface fire behaviour. The overall fire performance

of a ventilated cladding system or insulated assembly, incorporating independently-supported weathering finishes and complicated reveal details, can only be investigated under actual fire conditions on a full-scale building façade. To identify the design principles on which constructional recommendations might confidently be based demanded research. This would be to determine both the risk of flame spread over the surface of the building and the risk of progressive spread via a cavity within the cladding system or through a layer of combustible insulant to other areas remote from the original fire."

110. The section headed "investigation of the problem" explained that "current concern has involved the likely performance in fire of large areas of external wall insulated in these ways when a flame plume emitted from a window on one storey impinges on the facade above".

111. The section headed "test programme" explained the tests undertaken, using a specially designed test rig, with experimental fires being undertaken on three experimental assemblies as well as on a selection of cladding systems already in use. It then stated "the salient features of the systems investigated, their fire performance and recommendations based on the latter are given in Tables 1 and 2" and that "analysis of these results indicates (the last column of each table) the performance required to ensure that no significant additional hazard to life or excessive damage to the system is likely to result from a fire in the building damaging the external insulation".

112. Table 1 was entitled "design recommendations based on fire behaviour of non-sheeted external insulation systems". It is common ground that the Sto Therm Classic system fell into this category. The first and second rows both involved EPS insulated material. The first had a "glass fabric reinforced polymeric render". The second having a "glass fabric reinforced polymer modified cementitious render" and a "mineral wool barrier at each storey". Thus, the second had two additional protective categories, first, a cementitious component to the render and, second, mineral wool fire barriers at each storey. The first had neither of these. In the test the first showed "render detached [and] extensive degradation", whereas the second only "limited extent of degradation of insulation or finish". The last column of the table, headed "recommendations and comments", stated "fire barrier and inorganic based surface render necessary with thermoplastic insulants", adding that "above recommendations restricted surface failure and barrier design prevented extensive damage of the insulant".

113. The concluding section was headed "RECOMMENDATIONS" and, as relevant, read as follows:
"To reduce the risk of vertical fire spread in existing and proposed external insulation systems the following recommendations based on this test programme are proposed by the Department of the Environment.

1. Mineral insulants may be safely used … protected by … cementitious renders"

2. Combustible insulants may be used without a specifically designed system of surface protection only if shown by a full-scale fire test to be satisfactory (eg expanded polystyrene aggregate in cementitious matrix)".
…

5. Combustible insulants incorporated in non-sheeted systems are likely to suffer only limited fire spread if the following recommendations are applied:

(a) Cementitious rendered metal lathing over thermoplastic insulants should be provided with sufficient metal pins (about one every square metre) to secure the reinforcement to the masonry in order to stabilise the cladding and fire barriers should be installed every two storeys from the second floor upwards. With satisfactory full-scale test evidence barriers may be omitted up to the 15 m level.

(b) Cementitious rendered metal lathing over thermosetting insulants should be provided with sufficient metal pins (about one per square metre) to stabilise the cladding.

(c) Thin renders with glass fabric reinforcement over thermoplastic insulants should be fitted with fire barriers (which also support the protective finish) at every storey from the second floor upwards. With satisfactory full-scale test evidence barriers may be omitted up to the 15 m level.

6. Surface protection applied directly to all combustible insulants must be carefully designed and installed, round windows and other openings."

114. It is common ground that EPS is a thermoplastic and that the StoTherm Classic falls within the category of thin renders with glass fabric reinforcement over thermoplastic insulants, so that paragraph 5(c) above is directly applicable here and only requires a fire barrier from second storey upwards and, even then, not if there is full-scale test evidence to justify its omission up to 15m.

115. There is a substantial disagreement between the parties about the true meaning of the recommendations contained in BR 135 (1988). The claimant's case is set out at pars. 249 - 250 of its closing submissions and the defendant's case is set out at pars. 159-168 and 261-266.

116. It is fair to say that the wording of BRE 135 (1988) is not a masterpiece of clarity. Indeed, I am at a loss to understand how the clear dual recommendation found in table 1 could have been diluted, apparently by the DoE as the responsible government department, into a single recommendation in the concluding section without even an acknowledgement that there is a difference, let alone an explanation.

117. That said, I agree with the defendant that one would naturally expect to see all relevant recommendations contained in the concluding section, prominently headed as it is "**RECOMMENDATIONS**" (bold type and capitals in original), rather than having to refer as well back to the "recommendations and comments" in the final column of two detailed tables running over two pages of text above.

118. It is possible to read recommendation 5(c) as being a watered down version of the recommendation in Table 1 on the assumption that the DoE's view was that so long as the fire barrier was carried through the render finish that removed any need for a modified cementitious render. I accept that this would be a reasonable reading of the report. I acknowledge the force of the view expressed by Mr Geddes that a professional designer would be reasonably entitled to expect that the recommendations section would set out what was required in clear and comprehensive terms and would not expect to have to interrogate the whole report to see whether anything more was recommended in each case.

119. I am also unable to accept the claimant's case that BRE 135 (1988) required the defendant to undertake a full-scale fire test before specifying the StoTherm Classic system. The requirement for a full-scale fire test was only applicable in the limited cases specified. The statement that "the overall fire performance of a ventilated cladding system or insulated assembly, incorporating independently-supported weathering finishes and complicated reveal details, can only be investigated under actual fire conditions on a full-scale building façade" cannot be said to import any such overriding requirement. In the case of the StoTherm Classic system the render weathering finish is not independently supported and the reveal details are not complicated.

120. In short, I do not consider that the claimant can place reliance on BRE 135 (1988) in this case. I do however accept that the reference in Table 1 to an inorganic based surface render being necessary as well as a fire barrier in the case of thermoplastic insulants cannot simply be disregarded, since it was plainly considered necessary by the BRE as the fire safety experts, even if that was not followed by the DoE as the representative of government.

BRE 135 (2003)

121. This edition of BRE 135 (2003) was written by Sarah Colwell and Brian Martin, who were also later responsible for ADB 2006. In the introduction section it said that: (a) the new edition had been commissioned as a result of a recommendation made in a parliamentary enquiry following a fire in a multi -storey residential housing block in Scotland in summer 1999; (b) its purpose was to "update and build upon the previous advice by providing a method of assessing the fire performance of such cladding systems from full-scale fire test data and offering design principles that reflect changes in the type of products and systems now in use".

122. This statement is important in my view. The report had two express stated purposes. The first was to provide a fire performance assessment method from full scale fire test data. The second was to offer design principles reflecting current products and systems.

123. Under the heading "Legislation" it said "this guide provides a basis upon which the external fire performance of external cladding systems can be assessed. It does not specify where this performance standard should be adopted; this is a matter for regulators and specifiers. However, the performance standard set out could be adopted where the implications of rapid fire spread by way of the external cladding system are considered to be unacceptable, such as tall buildings (above 18m) that may be out of the reach of conventional firefighting techniques, and areas where people sleep, when external fire spread may present an unacceptable risk to the occupants".

124. This is also important in my view. BRE 135 (2003) did not identify the particular circumstances where compliance with the performance standard it introduced was mandatory. That was said to be a matter for regulators and for specifiers. The clear implication is that, unless and until the regulators acted, it would be a decision for individual specifiers on individual projects whether or not to adopt the performance standard. It did, however, identify two particular cases where the performance standard "could be adopted", being high-rise buildings and sleeping areas. It did so in the context of a clear statement that in such cases "the implications of rapid fire spread by way of the external cladding system are considered to be unacceptable". High-rise residential tower blocks such as the Gosport towers of course combine both tall buildings and residential accommodation. I accept that the words "could be adopted" are words which suggest rather than mandate. In my view, when read in the context of the paragraph in question and the wider circumstances they are clearly words of strong exhortation. I shall consider how this strong exhortation ties in with the contract requirement in GDI 0004 in the section of this judgment dealing with the specification breach case.

125. Under the section "mechanisms of fire spread" there is a helpful explanation of the key stages of external fire spread. It shows how rapid fire spread occurs when the cladding system contributes to flame spread resulting in a risk of multiple simultaneous secondary fires. Restricted fire spread limits this risk. The pictorial description at fig. 2 shows how, in a rapid fire spread case, a fire in one level can rapidly result in the fire entering the next level and then successive levels, whereas in a restricted fire spread case the fire is contained in the next level without rapidly spreading up successive levels. In short, restricting the fire spread allows time for the initial fire and any secondary fire to be brought under control before the fire can rapidly spread up the building.

126. There is a section headed "generic cladding systems", which identifies the commonly found materials and systems. The next section is headed "fire performance design principles for external cladding systems". It states that its purpose is to provide non-exhaustive "generic fire performance design principles for information …based on recent full-scale research programmes" rather than giving "prescriptive solutions". This is explained by the fact that rapid changes in the market and applications for external cladding systems "do not lend themselves" to a prescriptive design solution. It continued, in terms which have been the subject of some dispute, "innovative designs and variations in material

selection and design can only be fully assessed by full-scale testing". The footnote to the words "full-scale testing" referred to BS 8414-1.

127. It then stated "the following general points should be considered when designing and specifying external cladding systems", namely: (1) robust installation and fixing methods; (2) "the external finish should not unduly support fire propagation"; and (3) systems should not "prematurely delaminate or spall allowing fire entry to unprotected cavities or combustible material within the system".

128. In a section headed "system-specific details: rendered systems" it explained the risk of fire attacking the insulation layer if the external render finish was to delaminate under heat from a fire source, especially if the external finish and supporting mesh were not adequately restrained. Under the heading "fixing details" it suggested that an adhesive-based fixing method should be supplemented with mechanical fixings. It stated that as well as retaining the insulation to the substrate it was also necessary to consider the stability of the finish coats in order to avoid excessive system delamination and, for this purpose, to consider using mechanical fixings to attach the base coats to the substrate or using through-fixing details at fire barriers.

129. This section also emphasised the need for adequate fire barriers in order to avoid the potential for fire propagating through the system in the event of fire entering a void in the system, whether a void as part of the design or one created by the fire. It explained why this was particularly necessary where EPS insulating material was used. Under the sub-heading "design principles for fire barriers" it set out three "key design elements for fire barriers", namely that: (a) the fire barrier should form a continuous band of non-combustible insulation material, with no cavity existing for fire to track or pass through; (b) the non-combustible material should be bonded and tied back to the wall and external render finish to ensure that no fire path could be created between the fire barrier and the wall or external render finish; (c) consideration should be given to through fixing of the render base coat to the primary substrate to prevent movement of the external render away from the fire barrier. It ended by stating, in a passage relied upon by the claimant "the potential effectiveness of a fire barrier design can only be fully assessed as part of a system test at large scale".

130. Thus, the focus of the report in relation to setting design principles for rendered systems was on the need for robust fixing details and adequate fire barriers. The rationale was that the adoption of such design principles ought to prevent the rapid spread of fire through external cladding systems with EPS insulating material.

131. However, it is important not to confuse these general and specific design principles with performance standards. The latter were contained in Annex A, headed "the performance criteria and classification method of BS 8414-1:2002".

132. It is important to note that Annex A was not merely a summary of BS 8414-1. Instead, having explained that BS 8414-1 set out a method for testing and determining the external fire performance of external cladding systems and given a reasonably detailed explanation of the testing system, it then stated, under the heading: 'Performance criteria and classification method':

"The performance criteria and classification method set out here are based upon the BS 8414—1:2002 test method. The primary concern when setting the performance criteria for these systems is that of fire spread away from the initial fire source and the rate of fire spread. If fire spread away from the initial fire source occurs, the rate of progress of fire spread or tendency for collapse should not unduly hinder intervention by the emergency services.
The performance of the system under investigation is evaluated against three criteria:
External fire spread
Internal fire spread
Mechanical performance."

133. Annex A thus both explained the purpose of setting the performance criteria and identified the three performance criteria. Specific failure criteria were set for external fire spread and for internal fire spread, when the temperature rose above and remained at a specified level within a specified time of the specified start time. In relation to mechanical performance no similarly precise failure criteria were specified, the note stating instead "details of any system collapse, spalling, delamination or flaming debris should be included in the test report. The nature of the mechanical failure should be considered as part of the overall risk assessment when specifying the system".

134. If Annex A is compared with BS 8414-1, the crucial difference is that BS 8414-1 did not itself set out the performance criteria which are found in Annex A. Instead, it gave full details of the methodology to be adopted to measure the results of the test against the performance criteria which was found in Annex A. Section 5 of BS 8414-1 did however make it clear that the test was intended to replicate the real life performance of a particular manufacturer's system: in section 5, headed "test specimen", it explained "the external cladding system shall include all relevant components assembled and installed in accordance with the manufacturer's instructions".

135. It follows, that BRE 135 (2003) and Annex A created a performance standard which was to be found in Annex A and which was to be assessed through the tests to be undertaken in accordance with BS 8414-1. I will address the relevance of this point to the claimant's case on specification breach in the section addressing that topic.

136. It is perhaps worth noting that in my view at least BRE 135 (2003) could have been clearer. The report needs to be read carefully to identify the design principles and to identify the performance standard. The way in which the report strongly encourages the adoption of the performance standard for high rise residential buildings without mandating that it do so may well be a function of its status, sitting within the non-mandatory guidance of the Approved Documents. However, it is also unhelpful, especially when a specifier needs to know whether it would be a breach of the Building Regulations to specify a system which did not meet the Annex A performance standard in the case of a high-rise residential building.

ADB 2006

137. ADB 2006 came into effect in April 2007. It divided the guidance into Volume 1 (dwellinghouses) and Volume 2 (other buildings). Volume 2 is nonetheless relevant to this case because it is where the guidance applicable to requirement B4 - External fire spread is to be found as applicable to very large dwellinghouses, which are defined, consistently with ADB 2002, as those over 18m in height.

138. The relevant material is found in section 12: construction of external walls. The first sub-paragraph of paragraph 12.5 is in substantially the same terms as the first sub-paragraph 13.7 of ADB 2002 referred to above. However, the second sub-paragraph is materially new and provides "external walls should either meet the guidance given in paragraphs 12.6 to 12.9 or meet the performance criteria given in the BRE Report fire performance of external thermal insulation for walls of multi storey buildings (BR 135) for cladding systems using full scale test data from BS 8414-1:2002 or BS 8414-2:2005".

139. Paragraph 12.6 refers to diagram 40 and thus refers to surface fire spread as did its equivalent in ADB 2002 and, again, is not of any direct relevance to this case.

140. Paragraph 12.7 however is entirely new and states "in a building with a storey 18m or more above ground level any insulation product … used in the external wall construction should be of limited combustibility (see Appendix A) …".

141. This is a clear and mandatory, design and specification requirement which had no equivalent in ADB 2002. Since the EPS insulation panels forming part of the StoTherm Classic system were not of limited combustibility as specified by Appendix A it was no longer possible to install that system on tall buildings such as the Gosport towers. In short, under ADB 2006 it was no longer possible to use combustible insulation panels unless the EWI system of which they formed part had passed a BS 8414-1 full-scale fire test.

142. The claimant seeks to minimise this change as doing no more than clearly spelling out a prescriptive "linear" route to compliance whilst retaining the alternative of using a system that met the performance criteria in BRE 135 (2003). I am unable to accept this submission. In this respect, at least, there was a fundamental change from the previous regime as provided for by ADB 2002 and BRE 135 (2003). Whilst I accept their alternative submission that the scheme provided for by ADB 2002 and BRE 135 (2003) cannot be construed as meaning that whatever is not expressly prohibited is permitted, I am unable to accept that the introduction of an express prohibition, where none previously existed, is anything other than a significant change.

143. It should be noted that the claimant does not plead or argue a case that ADB 2006 has any application to this case. That is understandable, since ADB 2006 came into force in April 2007, in circumstances where the contract was concluded in January 2005, the finalisation of the detailed specification for the StoTherm Classic system took place later in 2005 and the initial Building Regulations notice was submitted in February 2007, which the experts agree is the relevant date for ascertaining which are the applicable Building Regulations and Approved Documents. On that basis it is irrelevant that the works for the four Gosport towers were practically completed later on in 2007 at a time when ADB 2006 was in force.

144. It is, however, an irony that, if the date of submission had been only three months later, the defendant would not realistically have been able to propose the use of the StoTherm Classic system for the Gosport towers without departing from the guidance in ADB 2006. However, in the absence of any express contractual provision the claimant is unable to advance any case to the effect that the defendant was under any duty under the contract to revisit the specification for the towers after April 2007 or to comply with the Approved Documents in force at the time of practical completion, even if different from those in force at the time of the contract or the time the works commenced.

BBA Certificates

145. The defendant places reliance on the BBA Certificates issued in respect of the StoTherm Classic system. The British Board of Agrément was a body established by the UK Government in 1966 and is accredited by the United Kingdom Accreditation Service ("UKAS") to provide product conformity certification.

146. The introductory wording to AD7 in respect of Regulation 7 in the Building Regulations 2000 made clear that a certificate of compliance issued by an accredited authorisation scheme such as the BBA might be used as an aid to establish the suitability of a material for use for a specific purpose, alongside such other aids as British Standards, other national and international technical specifications, technical approvals, CE marking, tests or calculations performed by accredited testing laboratories, past experience and sampling.

147. The BBA Certificates cannot be said to amount to a form of "guarantee" or "passport" to compliance with the Building Regulations. Indeed, as the claimant observes in its closing submissions, it is a curious feature of the BBA Certificates issued in this case that they purport to evidence that a system, comprising of a number of separate materials, meets a functional requirement applicable in relation to regulation 7 of the Building Regulations, whereas AD7, issued in respect of regulation 7, says no more than that a certificate of compliance issued by an accredited authorisation scheme may be used as an

aid to establish the suitability of a material for use for a specific purpose. Since this point was only raised in the claimant's closing submissions and thus not able to be fully argued it would not be right for me to express any concluded opinion on the point. However, there is clearly force in the point made, which does tend to support the claimant's argument that it would be wrong to afford a weight to the BBA Certificates above and beyond that which appears from the Building Regulations and approved documents themselves.

148. The claimant also submitted that the defendant did not follow the 1995 BBA Certificate in relation to Gosport towers in any event, since the StoArmat Classic base coat which was applied was not covered by that certificate. However, as the defendant submitted, there is no indication that this base coat differed in any material way from the base coat included in the 2005 BBA Certificate. I do not therefore regard this point as having any real significance in terms of the substantive issues.

149. It is not disputed that the BBA certificate scheme is an independent certification scheme for the purposes of paragraph 1.2(e) of ADB7, or that it follows that a BBA certificate is one of the aids which may be used to establish the suitability of use of a material for a specific purpose. The defendant referred me to the observation by HHJ Richard Seymour QC sitting as a High Court Judge in *Skinner v Crest Nicholson Residential (South) Limited* [2003] EWHC 2984 (TCC), at [71] that "a certificate of the Board is generally considered evidence that a product used in accordance with the methodology set out in the certificate is a suitable one to use for the application the subject of the certificate".

150. However, it also follows that the BBA Certificate is simply one of a number of such specified aids. It has no more intrinsic weight than any other of the aids mentioned. This is notwithstanding that the BBA, in its Supplement to the Approved Documents supporting the Building Regulations published in March 2001, stated "the Secretary of State has agreed with the British Board of Agrément the aspects of performance which they need to assess in preparing their Certificates in order that the Board may demonstrate the compliance of a product or system, which has an Agrément Certificate, with the requirements of the Regulations. An Agrément Certificate issued by the Board under these arrangements will give assurance that a product or system to which the Certificate relates, if properly used in accordance with the terms of the Certificate, will meet the relevant requirements".

151. Certificate 95/3132 issued in 1995 ("the 1995 BBA Certificate") covered the StoTherm Classic System as well as two other Sto systems. An updated version was issued in February 2007 ("the 2007 BBA Certificate"), after the contract had been entered into although before practical completion of the works to the four towers and at a time when the Building Regulations 2000, ADB 2002 and BRE 135 (2003) were all applicable.

152. As regards the 1995 BBA Certificate, the claimant submits that this certificate is only evidence that, as it stated on its face: (a) since the Sto systems were classified Class 0 they met the requirement B4(1); and (b) the systems are acceptable in terms of materials and workmanship.

153. The defendant submits that this ignores the further statements in relation to the StoTherm Classic system under the heading "properties in relation to fire" that:

"4.1 The system would not be classified non-combustible when tested in accordance with BS 476: Part 4 : 1970(1984). However, in the opinion of the BBA, the use of the system will not introduce an additional hazard in respect of behaviour in fire when compared with a system using traditional sand/cement render finishes.

4.2 The system is classified Class 0 as defined in paragraph A12 of Approved Document B to the Building Regulations 1991 (as amended 1994) (England and Wales).

4.3 The behaviour in fire of external wall insulation systems is the subject of recommendations by the Building Research Establishment which, for the system, makes no restriction on the height of the building to be treated provided fire barriers are included at every floor level above the third storey."

154. I agree with the defendant that this section makes it clear that the system met the requirements of B4(1) as a whole and not solely in relation to Class 0. Nonetheless, it seems to me that on a fair reading it did no more than adopt the recommendations in the concluding section of BRE 135 (1988) on the basis of the narrow reading that all was required in such a case was the inclusion of fire barriers. There is no basis for considering that any further tests were undertaken, as is apparent from the summary of technical investigations referred to at p.7 of the certificate. I agree with the claimant, and the defendant did not seriously submit to the contrary, that the 1995 BBA Certificate cannot be read as if it was a guarantee that the StoTherm Classic system complied with requirement B4(1).

155. I am prepared to accept the evidence of the defendant's experts that in the real world professional designers would place great weight on the existence of such a certificate and that this is undoubtedly relevant when considering the case for breach of the "professional negligence" obligation in clause 2.5.1 of the contract. However, I do not regard this evidence as of any significant weight as regards the strict design and materials obligations in the contract.

156. The other two Sto systems also covered by the 1995 BBA Certificate were the Stotherm Mineral EWI system and the Stotherm Lamella EWI system. The former, as its name suggests, employed mineral fibre insulation slabs which, given their qualities, were classified non-combustible and, hence, did not need fire barriers. The same was true of the Lamella system. Thus, as the claimant observes, only the StoTherm Classic system contained combustible EPS insulation boards and, thus, required fire barriers to mitigate the fire safety risk created thereby. However, the StoTherm Classic system had other advantages, particularly its lightness and lesser susceptibility to cracking, which explains why it remained widely used notwithstanding its combustibility. As the defendant submits, it would be wrong to focus entirely on relative fire risk and to conclude that there was no comparative benefit in specifying and installing that system when considering whether or not it was a breach of contract to do so.

157. The 2007 BBA Certificate was in broadly similar terms. Section 2.2 updated section 4.3 in the previous version by referring to the requirement in BRE 135 (2003) that fire barriers should be installed at each level starting with the second storey.

158. For completeness, a further certificate was issued in May 2012. This included an updated section of behaviour in relation to fire, under which the system was restricted for use in buildings less than 18m in height unless designed in accordance with BRE 135 (2003). In July 2017 this was further revised to include a requirement for fire barriers even in lower buildings, as advised in what was by then then the applicable BRE 135 edition, the third (2013) edition.

The Building Regulations 2010

159. The 2010 Regulations came into force with effect from 1 October 2010 and, thus, were in force after the defendant's works the subject of this claim had been undertaken but before the replacement works also the subject of this claim were undertaken.

160. The 2010 Building Regulations did not alter in any material way the requirements in the Building Regulations 2000 as summarised above.

161. It is also pertinent to note that, as with their predecessor regulations, they applied to the material alteration of a building which applied where the work undertaken would result in a previously compliant building no longer complying or a previously non-compliant building being more unsatisfactory. The

definition is relevant because it cannot be said that the alternative proposed remedial works to the Gosport towers would have fallen into either such category.

Post-Grenfell guidance

162. The immediate focus post Grenfell was, understandably, in relation to the risks posed by the use of ACM cladding systems. However, it was not long before consideration was given to the wider risks from EWI systems more generally. Advice Note 14, issued by the DCLG on 11 December 2017 in consultation with its independent expert advisory panel, related to residential buildings above 18m. It said that the panel believed that the "clearest ways of ensuring an external wall system adequately resists external fire spread are to use materials either of limited combustibility, or an external wall system which can be shown to have passed a large scale test conducted to the BS 8414 standard".

163. Although the defendant sought to place significant emphasis on Advice Note 14, in reality in my judgment it said very little if anything beyond what was already to be found in ADB 2006. It advised building owners to carry out checks to see if the external wall system did either use materials of limited combustibility or materials which had passed a BS 8414-1 test. It did not, however, direct or even advise or recommend that, if not, the existing external wall system should be removed and replaced with one that did. That is not to say that a responsible body in the claimant's position should not have done so, but in my view it cannot be said that its decision would have been made because it believed or perceived that it was obliged to do so because of Advice Note 14.

164. The more significant change occurred when, with effect from 21 December 2018, the Building (Amendment) Regulations 2018 amended regulation 7 of the Building Regulations 2010 to prohibit the use of combustible materials in external walls of high rise buildings above 18m.

Breaches

165. I will deal first with the installation breaches and second with the specification breaches.

The installation breaches

166. In their joint statement the architectural experts agreed that: (a) the defendant fixed the fire barriers to the substrate using a 'dot and dab' method of adhesion, which left a continuous void between the barrier and the wall, negating the effectiveness of the fire barrier; (b) there were vertical gaps between sections of fire barrier; (c) the stainless steel fixings (or dowels) were too short to provide adequate restraint; (d) the defects in the installation of the fire barriers meant that, as built, the works did not comply with: (i) the Building Regulations; (ii) the guidance in ADB 2002; (iii) the guidance in BRE 135 (2003); or (iv) the 1995 BBA Certificate. In their joint statement the fire engineering experts reached essentially the same agreement.

167. These agreements are entirely in accordance with the results of the initial inspections undertaken by Sto on 4, 13 and 14 July 2017, following which it produced its report dated 24 July 2017 identifying defects in the external walls of each tower. I should not read this report entirely uncritically, since Sto undoubtedly had an interest in minimising any criticism of its system. Nonetheless, it is a detailed and careful report, produced by Mr Trew, Sto's technical services manager, with the assistance of a technical adviser, and gives every impression of reliability. It contains clear evidence of a lack of adhesion in two of the fire break cores and clear evidence of vertical gaps between fire break boards in two cases, with evidence of attempts to remedy this by filling with expanding filler foam. It also contains clear evidence that the former was because of a failure to comply with the requirement to use a continuous band of non-combustible adhesive and that the dowels used to provide additional restraint to prevent the fire barrier becoming detached from the wall behind were not fitted with washers as required.

168. The Sto report also contained clear evidence of a significant shortfall in the number of dowels delivered to site and, it was concluded, probably installed. The updated report dated 4 September 2017, produced after further investigations which involved further cutting out and, according to Mr Trew, consistent observations throughout: (a) confirmed the failure to apply adhesive in accordance with Sto's recommendations and the evidence of vertical gaps; (b) stated that the dowels used to secure the fire break boards were too short with the result that - in one observed case - it could be removed without the aid of tools.

169. The further investigations undertaken by Mr Mills and Mr Ingham of Capita, commissioned specifically for the purpose of contemplated litigation against the defendant and recorded in their updated advice note dated 6 October 2017, confirmed the failure to apply adhesive properly to the fire barriers with consequential gaps behind the barriers, the insufficient length and number of dowels installed in the fire barriers and the lack of washers fitted with the dowels.

170. In such circumstances I am satisfied that the claimant has fully made out its case as regards the installation breaches in relation to the fire barriers. Although the claimant was put to proof as to number and extent of the number of dowels in my judgment the evidence is sufficient for me to conclude that this was a significant and serious problem. I am also satisfied that the defects in relation to the dowels did have an effect on their ability to withstand force, as evidenced by the observation in the Sto report. Moreover, although the defendant rightly observed that there were only two photographs in the second Sto report showing such gaps, that ignores the comments in the updated report of 4 September 2017. Given the damning evidence as to the overall quality of the installation of the fire breaks and the absence of any evidence to the contrary from the defendant, it is reasonable to conclude, and I do, that this was not an isolated but rather a widespread breach.

171. As regards the EPS insulation boards, the defendant has admitted in its defence that they were not fixed by a continuous band of adhesive around the perimeter and that the dowels used as supplementary mechanical fixings were too short. The architectural experts have agreed that: (a) the EPS insulation boards were fixed by dot and dab adhesive without a perimeter band (or sausage) of adhesive, which was not in accordance with the Sto installation requirements and created a continuous void between the insulation and the wall; (b) the mechanical fixings were not adequately embedded in the backing wall; and (c) as a result of the defective fixing of the EPS insulation, the claimant's works as built did not comply with (i) the Building Regulations or (ii) the 1995 BBA Certificate.

172. In such circumstances I am also satisfied that the claimant has fully made out its case as regards the installation breaches in relation to the EPS insulation boards.

173. An issue also arose as to the significance of the fact that the fire barrier boards and EPS insulation boards did not have a continuous band of adhesive around their perimeter.

174. There is no disagreement so far as the fire barrier boards are concerned. The architectural experts and the fire experts both agreed in their respective joint statements that "the adhesive dabs are shown in photographs to have left a continuous void between the barrier and the wall, negating the effectiveness of the barrier" (emphasis added). This was clearly a very serious breach, in that the fire safety strategy in relation to tower blocks such as the Gosport towers was based on the assumption that the fire barriers would prevent or at least materially restrict the rapid spread of fire across the external walls of the block even though, as in this case, the insulation panels were made of combustible EPS and the render finish was organic. If a continuous void is left behind the fire barriers then a fire can bypass the fire barriers and thus create an obvious and serious risk of rapid fire spread.

The need for additional cavity barriers

175. There is however an issue in relation to the EPS insulation boards. The fire experts had agreed that "a perimeter 'sausage' of adhesive does not prevent a fire path within the EWI system as the EPS softens and melts in the early stages of fire. This allows a fire path through the EPS insulation, irrespective of a 'sausage' of adhesive or dot and dab as installed".

176. Mr Geddes explained that in the event of a fire the adhesive would melt in the same way as the EPS, so that a void would be created at an early stage of a fire in any event. In short, on this analysis the breach had no causative impact, assuming that the voids behind the fire breaks were remedied as part of the remedial works scheme.

177. Mr Geddes said that one reason why it was irrelevant that there was no continuous adhesive sausage behind the insulation boards was because it was permissible to have a void in such a location anyway, as was the case in the mechanically fixed version of the Sto system. However, he accepted in cross-examination that the alternative mechanical fix system was designed to permit a cavity behind the EPS insulation on the assumption that there would be no equivalent cavity behind the fire barriers, so that there would be no continuous void in such a case. Nonetheless, his point is a good one so long as it can be said that all that would be needed would be for the void behind the fire breaks to be dealt with as part of the remedial works scheme.

178. In the joint statement and in his report Mr Jowett expressed his concern that the presence of this unintended void could not be ignored and required the provision of cavity barriers to address it. His analysis was that where there is a concealed cavity in an external wall, ADB - both in its 2002 and 2006 iterations - requires a cavity barrier to be provided and that this requirement applies as much to an unintended cavity, such as the present, as to an intended cavity, such as a mechanical fix system. This evidence is of particular relevance to the alternative remedial scheme, because the claimant contends that it would add a significant cost to such a scheme

179. The defendant objects that there is no pleaded allegation to the effect that cavity barriers are necessary to remedy this breach. However, I do not regard that as a fatal objection, since its relevance only arises in relation to the hypothetical cost of the defendant's remedial works scheme. As the claimant observes, since the detail of that scheme was not specifically pleaded out by the defendant, there can be no basis for criticising the claimant for not pleading this particular point in response or for criticising the claimant for the fact that it only emerged as an issue at the expert evidence stage.

180. In its closing submissions the claimant clarified that it was not suggesting that vertical fire barriers were required in addition to horizontal fire barriers and cavity barriers. Thus, it argues that it is irrelevant that in 2017 the claimant's adviser considered whether vertical fire barriers were needed and concluded that they were not needed.

181. In cross-examination Mr Geddes accepted that the guidance in ADB 2002 included a requirement for cavity barriers but also made the point that this was not a mandatory requirement in the Building Regulations themselves so that, for example, there was no such requirement in relation to mechanically fixed systems.

182. In my judgment, the essential question is whether there is a good fire safety reason for cavity barriers to be provided in such circumstances. The specific point which I need to consider is whether the presence of this unintended concealed void creates a fire safety risk which needs to be addressed by the provision of cavity barriers even though: (a) there would be no void behind the fire barriers; and (b) a void would be formed in any event through melting of the adhesive and EPS insulation panels in the event of exposure to a fire.

183. As I have said, if there was no void behind the fire barriers that would prevent the spread of fire behind the fire barriers within the inadvertent cavity behind the EPS insulation panels. However, is

that enough? In my view the defendant's further argument that a void would be created anyway in the event of a fire already melting the EPS insulation boards should not detract from the importance of there being no void before such a fire could become established. It is well-established that the presence of pre-existing voids, especially in concealed areas, allows small, localised fires to spread rapidly and dangerously, especially through cavities through service penetrations and around windows into such voids. ADB 2002 explains the greater risk of danger in case of concealed fire spread. It specifically requires cavity barriers at the edges of cavities, including around openings in all cases of dwelling houses, flats and other residential buildings. Mr Geddes accepted that cavity barriers would have been required around service penetrations.

184. It therefore appears to me that the claimant has established on the balance of probabilities that cavity barriers would indeed be reasonably required around windows and service penetrations and at compartment walls for good fire safety related reasons. The defendant, having admitted a breach and having admitted that the consequence is the creation of unintended concealed voids in the external wall, has failed to satisfy me that it is not reasonably necessary to take steps to address this obvious fire safety risk.

185. Mr Geddes suggested in cross-examination that if cavity barriers were otherwise needed around window openings the existing detail might provide a sufficient cavity barrier in any event. He accepted however that this would have needed to be investigated further if the defendant's remedial scheme was to have been adopted. In closing submissions, the defendant referred to the presence of some evidence to support what Mr Geddes said about this in his evidence. However, in my judgment this was little more than speculation from Mr Geddes, unsupported by reliable contemporaneous evidence. It was not put to Mr Jowett in cross-examination. The defendant was offered inspection facilities in 2017-2018 before the remedial works began and it can scarcely complain if it declined to take up that offer, especially at a time when it was not even proposing this remedial scheme or offering to undertake it at its own expense.

186. A further and separate issue arose as to whether the dowels were installed directly into the EPS insulation boards and not through the reinforcing mesh or the render applied to the insulation boards as well. This is not a pleaded complaint so far as the installation breaches are concerned, but it is of relevance to the specification breach case, where I shall address it as relevant.

The specification breaches

187. It is important to be clear that this case must be considered on an alternative and a hypothetical or "counter-factual" basis, namely that the StoTherm Classic system was installed as it was in fact installed but with none of the installation breaches complained of. That is because although there are disputes as to whether the system as initially specified was in accordance with relevant contractual and statutory requirements, it is also common ground that the revised specified and installed system was different to the system as initially specified. It follows that any non-compliant details as regards the initially specified system which were not carried through to the revised specified and installed system are causally irrelevant to the case. Further, it is only the alleged breaches as regards the revised specified and installed system but without the installation breaches which are relevant to this alternative case as to whether or not they would have justified replacement in any event and regardless of the absence of the installation breaches.

188. It is useful to illustrate this rather theoretical point by a salient example. The system as specified in the 1995 BBA Certificate and as designed and specified by Sto for Gosport towers was fundamentally deficient because it incorporated a 20mm EPS insulation board to be applied to the face of the fire barrier, which would have allowed any fire to bypass the fire barrier in direct contradiction of the design philosophy behind the specification of fire barriers. Happily, at some point before the works were undertaken a change was made, so that this layer of EPS insulation board was not used and the fire

barrier extended the full width of the EPS insulation boards. It would be wrong to consider the specification breach case on the basis that this change had not been made, because the initial breach in wrongly specifying that design had no causative effect when it came to the decision whether to repair or replace.

189. The starting point for the analysis is whether or not the StoTherm Classic system complied with functional requirement B4(1) of Schedule 1 to the Building Regulations which, it will be recalled, required the external walls of a building "to adequately resist the spread of fire over the walls … having regard to the height, use and position of the building".

190. Sir Martin Moore-Bick, the chairman of the Grenfell Inquiry was persuaded to and did determine this issue in relation to the cladding system as installed at Grenfell Tower in his Phase 1 report at chapter 26, deciding in trenchant terms at 26.4 that to hold that it was met would be "an affront to common sense". This was on the simple basis that "in this case, whether one considers the rainscreen panels alone or the cladding system as a whole, or even the complete external envelope, including the original concrete structure, it is clear that the walls did not resist the spread of fire. On the contrary, they promoted it".

191. Of course, this does not directly assist me in deciding this case, given the significant differences between the external cladding system installed at Grenfell Tower and that installed on the Gosport towers. Moreover, as explained above, the question which Sir Martin was considering in Grenfell was the adequacy of the system as installed, including the installation deficiencies in the cavity barriers, rather than - as I am considering here - the adequacy of the revised specified and installed system without installation deficiencies.

192. If the question here was whether the system as designed and installed complied with functional requirement B4(1) then I would have no difficulty in answering that it did not. Since, however, the question I have to answer is whether the revised specified and installed system without installation defects complied with functional requirement B4(1) I do not consider that this can be answered in the simple and straightforward way which Sir Martin was able to adopt in Grenfell. Instead, I must do so with reference to the relevant approved documents and thus, as necessary, to the guidance referred to in such documents.

193. For shorthand, whilst I refer to the "specified system" and the "specification breaches" in the rest of this section and judgment I am referring to the revised specified and installed system without installation deficiencies and the alleged breaches relating to that system.

194. In closing submissions the claimant contended that all that I need to do is to accept the opinion of Mr Lavender in his report that the external walls of the towers did not adequately resist the spread of fire. He noted various influencing factors. In particular he noted that the towers were high-rise towers in residential use, both of which factors increase the risk from spread of fire. He also noted that the EPS was a combustible thermoplastic and that the render was not inorganic which both thermally degrade when exposed to fire, neither of which is controversial. He added "once the render has degraded and/or become detached from the EPS, any fire can work its way around the face of a fire barrier". It is not entirely clear whether this is a reference to the system as initially specified, rather than the system as finally specified which did not, as I have said, include an EPS insulation board over the face of the fire barrier. He was not specifically cross-examined about what he was referring to in this respect.

195. However, in my judgment the fundamental weakness with this opinion is that if it is intended to be a reference to the system as finally specified it fails to give any express consideration to the fact that the StoTherm Classic system incorporated these fire barriers which were, as I understand it, greater in height than the recommended height. It does not explain how, in that context, the fire barriers as installed without defects could so easily be bypassed in the event of the render being degraded by fire.

I do not, with respect to Mr Lavender, see how he could reach his opinion that the StoTherm Classic system as finally specified did not satisfy functional requirement B4(1) without at least explaining in some detail how the fire barriers did not adequately resist the spread of fire.

196. It follows in my judgment that it is not as simple as the claimant submitted, which is that the absence of cross-examination of Mr Lavender on this specific point or on his conclusion means that I should accept his unchallenged evidence and conclude that functional requirement B4(1) was breached.

197. In closing submissions the claimant submitted that it was logically contradictory for the defendant positively to contend that the StoTherm Classic did not comply with the 2010 Building Regulations and at the same time to deny that they did not comply with the 2000 Building Regulations in circumstances where there was no material change in the wording of the relevant Regulations. The claimants note the observation of Coulson LJ on the amendment appeal in this case at [99] where he said that:

"We were shown the relevant provisions of the Building Regulations 2000 (which applied when the design and construction took place) and the Building Regulations 2010 (which applied at the time of the Grenfell fire and today). Those provisions were materially identical. That might suggest that the EPS insulation complied with both sets of Regulations or with neither; certainly if that was not so, one would expect to find a straightforward explanation as to when and how this potentially important change had come about. After all, these are meant to be practical Regulations which are easy to understand and implement in drawing offices and on building sites."

198. The short answer, the defendant submits, to that rhetorical question - which does not appear to have been explained to Coulson LJ in the context of the interlocutory appeal there under consideration - is that, whilst there was admittedly no material difference between the 2000 and the 2010 Building Regulations, there was a very material difference between ADB 2002 and ADB 2006 and, thus, to the position which applied when the design and construction took place and when the decision was taken to remove and replace the StoTherm Classic system was taken. Under the latter, but not the former, the use of combustible insulation panels in buildings over 18m was expressly prohibited unless the EWI system of which they formed part had passed a BS 8414-1 full-scale fire test.

199. The claimant seeks to meet this submission by arguing that the intent and recommendations remained the same and all that really changed was that the prescriptive "linear" route to compliance as an alternative to passing a BS 8414-1 test was clearly spelt out in ADB 2006 whereas previously it had not. However, this argument depends upon my finding that the same prescriptive linear route to compliance - no combustible insulated panels for buildings over 18m without a successful BS 8414-1 test - can be spelled out from ADB 2002 when read with BRE 135 (1988) or with BRE 135 (2003). As concluded above, whatever else these BRE reports may have advised on a proper reading, neither of them said in mandatory terms that combustible insulated panels should not be used for buildings over 18m high with fire barriers unless the system had passed a BS 8414-1 test.

200. The claimant however submits that the defendant cannot credibly contend that it positively followed the guidance in ADB 2002 when there was no prescriptive guidance given in ADB 2002 to follow. I agree with this submission, since it is clear that as regards external wall construction: (a) the only prescriptive guidance given was not to use combustible insulation material in ventilated cavities; and (b) the only specific advice given was: (i) that the use of such material for cladding framework may present a risk as a medium for fire spread in tall buildings; and (ii) to refer to the guidance given in BRE 135 (1988). Whilst I will deal briefly with BRE 135 (1988) first, I am satisfied that the real question in this case is whether the defendant followed the guidance in BRE 135 (2003) as its replacement, especially since that is what it was contractually required to do.

Compliance with BRE 135 (1988)

201. As regards BRE 135 (1988), the claimant contends that the defendant did not follow what it submits was the prescriptive guidance not to use a system which had been the subject of a large-scale test and to use a cementitious render. However, for the reasons I have already given I am satisfied that on a true reading of BRE 135 (1988) no such requirement applied in the case of a system such as the StoTherm Classic system.

202. That conclusion is fortified post the coming into force of BRE 135 (2003). Since BRE 135 (2003) contained its own separate testing regime, based on the newly introduced BS 8414-1, it would be wholly unrealistic to argue that the oblique references to full scale tests in BRE 135 (1988) could continue to have any relevance. Moreover, since the introduction to the second edition stated that it offered design principles which reflected "changes in the type of products and systems now in use", then given the complete absence of any reference to polymeric modified cementitious render it is not reasonably possible in my judgment to argue that the recommendation for polymeric modified cementitious render in BRE 135 (1988) survived the introduction of this second edition.

Compliance with BRE 135 (2003)

203. I turn then to BRE 135 (2003). As well as being something to be taken into account in relation to functional requirement B4(1) via ADB 2002, I must also separately consider the strict contractual requirement under paragraph GDI 004 of the Employer's Requirements for the defendant to "conform with the requirements, directions, recommendations and advice contained in" BRE 135 (2003) as the latest edition of a relevant BRE report. Thus, in relation to GDI 004 I must ask myself whether and if so to what extent BRE 135 (2003) contained relevant: (a) requirements; (b) directions; (c) recommendations; and/or (d) advice. If and to the extent that it did, I must also consider whether or not the defendant complied with any such relevant requirements, directions, recommendations or advice.

204. The claimant's case in closing, in summary, was that: (a) BRE 135 (2003) created a performance standard for the fire performance of external insulation systems; and (b) in order to conform with the requirements of BRE 135 (2003) an external insulation system needed to be shown to meet that performance standard.

205. The defendant's case in closing, in summary, was that had that been the intention then one would have expected that BRE 135 (2003) would have made it very clear to the construction sector that, notwithstanding the fact that the Building Regulations and Approved Documents at the time did not suggest that this was a mandatory requirement, this updated guidance did. Its case is that it did not make it clear that this was the intention behind BRE 135 (2003).

206. As I have already said above, BRE 135 (2003) did indeed clearly introduce a performance standard in Annex A when read with BS 8414-1. I agree with the defendant that it could have done so more clearly. However, in my view any careful reading of the document, especially by any construction professional with fire safety related knowledge, would have shown that it did. That was clearly understood as being what it did in various subsequent documentary references. All of the experts agreed that it created a performance standard.

207. However, I am unable to accept the claimant's confident assertion that on a true reading BRE 135 (2003) also required every external insulation system to meet that performance standard. Instead, as I have said, in the section titled legislation it said in terms that where this performance standard should be adopted was a matter for regulators and specifiers.

208. It is impossible in my view to read the suggestion that it "could be adopted" in high-rise residential buildings as a mandatory "requirement" or "direction" that the performance standard must be adopted in all such cases.

209. I have already said that in my view this suggestion, read in context, amounts to a strong exhortation. I am satisfied that it amounts to a clear "recommendation" and clear "advice" to that effect. I appreciate it can be said that the actual words scrupulously avoid saying that this is a recommendation or advice. It is true that it ultimately leaves the decision to those involved in the specification for a particular development. However, by stating that the risk from rapid fire spread was considered to be unacceptable in the case of high-rise buildings and sleeping areas it is plain in my view that the suggestion that the performance standard "could be adopted" in such cases passes beyond mere suggestion into positive recommendation and advice.

210. If I am right on that, then the defendant was plainly in breach of contract in failing to follow such recommendation or advice and that is the end of the matter.

211. Even, however, adopting a reading more favourable to the defendant, in my view there is clearly at the very least a more nuanced recommendation or advice to the effect that a specifier considering specifying combustible cladding for a high-rise residential building should not specify a system which did not meet the Annex A performance standard unless they could be satisfied from other sources that it would adequately resist the spread of fire over the walls. In addition to the words used in the section just discussed, further support for this as a minimum obligation is to be found in the other references to the effect that: (a) "innovative designs and variations in material selection and design can only be fully assessed by full-scale testing"; and (b) "the potential effectiveness of a fire barrier design can only be fully assessed as part of a system test at large scale".

212. I accept that, read in isolation, these references would not be sufficient to impose a requirement of compliance with the Annex A performance standard whenever EPS cladding was to be installed to a high-rise residential building. However, it is worth remembering that what had been tested for the purposes of BRE 135 (2003) were two versions of a generic EPS system, one with fire barriers and one without fire barriers. Section 13.2 of ADB 2002 stated in terms that one purpose of the provisions restricting the combustibility of external walls of high buildings was to reduce the danger from fire spread up the external face of the building. Section 13.7 stated that the use of combustible thermal insulation as an over-cladding may present a risk to health and safety as a medium for fire spread in tall buildings. The general and specific design principles in BRE 135 (2003) focussed on the need for, and gave detailed guidance in respect of, robust fixing details and adequate fire barriers. This made it clear that it was necessary to focus on the specific details of the particular system, the effectiveness of which could only be fully assessed by full-scale testing. The additional fire safety risk from using a combustible organic acrylic render, as opposed to a cementitious render, was well-known and had been identified in the previous version of BRE 135.

213. In my judgment the combined effect of all of this was that BRE 135 (2003) did contain a recommendation and/or advice that the default position for a system such as the StoTherm Classic system, comprising a combination of combustible thermoplastic EPS insulants and an organic surface render, which thus created an obvious fire risk and a heightened fire risk for high-rise residential tower blocks, was that it should not be specified for use in such buildings unless it had been shown to meet the Annex A performance standard in accordance with the test method set by BS 8414-1.

214. I am prepared to accept, given that the overall approach of the Building Regulations, Approved Documents and BRE reports was to avoid a prescriptive regime, that on this analysis it might in an individual case be sufficient for the specifier, having given the question proper consideration, to have been able to conclude that compliance with the Annex A performance standard was not required in the particular circumstances of the case. It might, for example, have been sufficient for the specifier to

have been able to satisfy themself that the StoTherm Classic system so obviously complied with the totality of the general and system-specific fire performance design principles for rendered systems that it would be unnecessary to insist on showing that it met the Annex A performance standard as well. However, that would have had to have been done by reference to the current BBA Certificate and product literature in terms of the make-up of the system and the fixing details in question.

215. Here, there is no evidence that this was done or that a specifier could, conscientiously, have said that they had satisfied themself that the StoTherm Classic system did comply with these fire performance design principles without the need to show that it met the Annex A performance standard. I have already noted that the relevant BBA certificate at the time of the contract dated from 1995 and, as I have stated, said little more than that all that was required to comply with BRE 135 (1988) was the inclusion of fire barriers. I have already also noted that the details showed that a layer of combustible insulation was to be applied over the top of the fire barriers, which was plainly wholly at odds with the fire performance design principles. Moreover, as I have also already said, the fixing details did not show the mechanical fixings as extending through the mesh or top render coat, plainly contrary in my view to the system-specific fire performance design principles for rendered systems in terms of fixing details. Mr McCracken made a rather unconvincing attempt to argue, without any real basis in my view, that it was possible that the dowels had been installed through the reinforcing mesh which had lifted off the insulation board as the render was removed without leaving any signs of adhesion to the dowel head. The complete absence of any evidence of residual mesh around the dowel heads was clearly inconsistent with that suggestion. There is no other evidence that the specification in this respect was revised before installation so as to address this obvious deficiency.

216. It follows in my judgment that it would simply not have been possible, once BRE 135 (2003) had been published, for the conscientious specifier to have satisfied himself that the StoTherm Classic system could properly have been specified in this case for these five high-rise residential tower blocks without having met the Annex A performance standard.

217. I accept that an EWI cladding system based on EPS insulating panels and organic render with fire breaks was not unique at the relevant time and nor did it exhibit dramatic variations in material selection or design from others available on the market. However, and nonetheless, in my judgment the specification of a system such as the StoTherm Classic system, with its own unique combination of specific materials and its own specific design, did involve a sufficient variation in material selection and design that it was necessary to demonstrate compliance with the Annex A performance standard via a BS 8414-1 test if intended for use in high-rise residential tower blocks. In my view this obligation could only have been avoided had the StoTherm Classic simply been a revision of an existing system which had already been shown to meet the Annex A performance standard and BS 8414-1 and where it could be clearly seen that the revision did not introduce any additional fire risk.

218. In closing submissions the defendant engaged in a detailed critique of the evidence given by the experts with a view to demonstrating that on a proper reading of BRE 135 (2003) there was no express requirement for compliance with the Annex A performance standard in this case. I accept that the evidence of the claimant's experts as to why they believed that there was such a requirement was not particularly compelling in itself. However, for the reasons I have already given, I do not think that this point turns on what the various experts say that they now think that BRE 135 (2003) says, as opposed to an informed analysis of what it actually does say.

219. The facts of this case do however illustrate why, in my view, it is not an answer for the defendant simply to say that at the time no-one involved in the design or specification of high-rise residential buildings appears to have believed that StoTherm Classic system could not have been specified for such buildings because it had not been shown to pass a BS 8414-1 test. This is aside from the simple point that it is not a defence to the strict contractual obligations in play in this case - even if it was a defence to the reasonable skill and care obligation - to say that the industry as a whole appears to have failed to

heed the content of BRE 135 (2003) and to re-assess such systems in the light of that content. Mr McCracken gave evidence in his report at [5.2.3.11] that Sto manufactured other very similar EPS systems which had been tested against BS 8414-1 and which did meet the defined criteria. The example he gave, the StoTherm Vario system, had a mineral based reinforced render rather than an organic render. He confirmed in cross-examination that the Vario system was being offered by Sto as early as 1995. He accepted that it had a mineral-based render with a higher fire resistance than an organic acrylic-based render.

220. In cross-examination he sought to qualify this statement in his report by saying that he did not know whether this was also the case in 1995 or indeed at the time of the contract. However, since he had not investigated the point when preparing his report and appeared to raise the question for the first time in cross-examination, I see no reason not to assume that it did. If the StoTherm Classic system had been the same in all material fire-safety related respects as the Vario system, and if the Vario system had already been successfully tested to the Annex A performance standard at the time the Classic system was specified for the Gosport towers, then I can see that the claimant would have had no grounds for complaint. But this was plainly not the case here.

221. Indeed, in this case the original refurbishment strategy prepared by Curtins consulting engineers for the employer, Kelsey, stated that the recommended option was a "thin coat polymer render system on top of an inert mineral wool insulation". It appears to have been the defendant or its subcontractors who proposed the use of the StoTherm Classic system with EPS insulation instead.

222. I do not accept that it was sufficient for the defendant - or to whomever it delegated this responsibility - simply to rely on the fact that the StoTherm Classic system had a BBA certificate. As I have already said, it is apparent from a reasonably careful reading of the BBA certificate that it based its certification on little or nothing more than the fact that the specification included fire barriers. That was not enough to give comfort that there was no need to show that it satisfied the Annex A performance standard. That was particularly so given that the BBA certificate dated from 1995 and, as at the date of the contract, had not been updated post the introduction of BRE 135 (2003).

223. Since it was not in force at the time, a specifier could not reasonably have relied as at the date of the contract on the 2007 BBA Certificate even if it had said anything fundamentally different to the 1995 BBA certificate. Although it referred in section 2.2 to BRE 135 (2003), all that it said was to record the guidance that fire barriers should be installed at each level above first floor level. Section 5, summarising the technical investigations carried out on the system, did not suggest that any testing in relation to its fire performance had been undertaken, either by reference to a BS 8414-1 test or equivalent or by reference to its compliance with the design principles stated in BRE 135 (2003). That change did not come in until the 2012 BBA certificate.

224. Thus, I am satisfied that even on this more favourable reading of this part of BRE 135 (2003) the defendant was in breach of contract in failing to conform with the recommendation and/or advice contained in BRE 135 (2003) by demonstrating that the StoTherm Classic system met the Annex A performance standard or that it was not necessary to do so by reference to the particular features of that system which showed that it did not create an unacceptable risk of rapid external fire spread.

225. I appreciate that I have reached this fallback conclusion by a rather more roundabout route than the more direct route urged on me by the claimant. But it is nonetheless a conclusion which accords with the essential case as pleaded by the claimant and as advanced in its evidence.

226. Thus, Mr Jowett in his report at [6.1.3] said, in a section headed "selection and use of the Sto system", that "for use on buildings such as these, therefore, a reasonably competent architect at that time would require evidence of satisfactory performance in a full-scale test in order to be satisfied that the functional requirements of the Building Regulations to adequately resist the spread of fire over the walls, had been

met. It would not in my view have been sufficient to rely solely on a manufacturer's reputation or on publications which were by then several years old". In paragraph 6.2.10 he added that in his view the only other way of demonstrating compliance would have been a "holistic fire engineering study - which would necessarily require test data to support it".

227. Mr Lavender's evidence was to similar effect; see his report at [6.1.6] to [6.1.13] and again at [6.4] in a lengthy and detailed exposition. He accepted in cross-examination that he understood that the fire barrier included within the StoTherm Classic system accorded with the system-specific fire performance design principles of BRE 135 (2003) but he was not asked about whether the StoTherm Classic system complied with all of the general system-specific fire performance design principles of BRE 135 (2003) and it is inconceivable that he would have accepted that it did, for the reasons I have already explained.

228. The defendant placed significant reliance on the opinions expressed by Mr Stow as fire safety expert for the claimant in the adjudication. However, not only did he not give evidence before me, but in my view his report does not go so far as to say that there was a proper basis on which a specifier could have satisfied themself that the StoTherm Classic system complied with BRE 135 (2003) in form and in substance. For example, at paragraph 1.35 of his report he stated that "although the Stotherm Classic K system has not achieved BRE 135 classification via a BS 8414 test, the design of the system ought to have been based on principles developed from full scale testing used to show adequate external fire spread performance, as was the requirement of the guidance at that time" (emphasis added). However, that was essentially speculation on his part and he certainly did not say that he was satisfied that the system was indeed consistent with such principles.

229. The view of Mr McCracken and Mr Geddes appeared to be that BRE 135 (2003) did not require a BS 8414-1 test so long as the system, if it was a rendered insulation system containing EPS, had a fire barrier which followed the design principles in BRE 135 (2003). In my view, that is wrong as being far too simplistic an analysis of what BRE 135 (2003) actually said and required, as well as failing to engage with what BRE 135 (2003) also said and required in relation to fixing details.

Would the StoTherm Classic system as specified and installed without installation defects have passed a BS 8414-1 test?

230. Before referring to the evidence on this issue it is necessary to consider and understand its relevance as an issue.

231. If, as I have found, the defendant had a contractual obligation in this case to follow the recommendation and advice in BRE 135 (2003) only to install an EWI cladding system which passed the Annex A performance criteria, then it is plain from the evidence that at no time during the performance of the contract from the initial specification stage through to practical completion of the Gosport towers did the defendant or anyone else on its behalf seek or obtain any evidence which demonstrated that the StoTherm Classic system passed the Annex A performance criteria.

232. Before making its decision whether or not to replace the claimant asked Sto for advice. Sto never suggested that the StoTherm Classic system had ever undertaken or passed a BS 8414-1 test. From its earliest involvement on this project in 2017 Sto was clear that the StoTherm Classic system would not have passed the Annex A performance criteria. In its first report dated 24 July 2017 it said in terms "installations using insulation that is not classed as non-combustible or is of limited combustibility are currently permissible providing that it can be demonstrated that the system has been assessed by way of full scale fire testing in accordance with BS 8414 parts 1 and 2 to meet the performance requirements of the BRE report BR135 'Fire performance of external thermal insulation for walls of multistorey buildings'. The StoTherm Classic K system would not meet the performance criteria given in the current (3rd) edition of BRE 135 and so would not be permissible under current legislation".

233. Although the defendant noted that the third edition of BRE 135 had not been referred to and was not in the trial bundle, neither the defendant nor anyone else has suggested that there was any difference between the performance criteria in Annex A of the 2nd edition BRE 135 (2003) and in Annex A of the 3rd edition.

234. This report was circulated at the time by Mr O'Halloran to the EMT, so that it cannot be argued that the decision makers within the claimant were not fully aware that the StoTherm Classic system was not compliant with the BRE 135 performance criteria from July 2017 onwards.

235. It follows in my judgment that from July 2017 onwards the claimant was entitled to and did, when making its decision as to whether to replace or to repair, proceed on the basis that the StoTherm Classic system as installed by the defendant was not only defectively installed but also contained combustible EPS insulation and render in circumstances where its suppliers accepted that it would not meet the performance criteria in BRE 135 if subjected to a fire-test in accordance with BS 8414-1. Its decision as to whether to repair or to replace is to be considered by reference to this known state of affairs.

236. Furthermore, at the point in time when the claimant was deciding whether to repair or to replace the EWI cladding system it would have been open to the defendant to provide evidence that, notwithstanding what it refers to as a "process" breach, in fact the system as specified and installed without the installation defects had been or could be demonstrated to meet the Annex A performance criteria, either by producing a BS 8414-1 test undertaken previously or, if one was not available, by taking steps to procure such a test and asking the claimant to defer its decision whilst it did so. Had the defendant been able to produce such evidence the claimant would have had to have regard to that evidence in making its decision and, if it had elected to replace regardless, it would have taken the risk that its claim should be assessed on the basis that the defendant was able to show that this breach had no causative relevance.

237. However, the defendant did none of those things at the time. Later, it did ask Sto for assistance. On 30 January 2018, in a letter sent in response to a request by the defendant, Mr Trew replied "we don't have any BS 8414-1 test reports or classification reports for StoTherm Classic systems as these systems would not meet the performance criteria given in BRE 135. Consequently, under current building regulations, StoTherm Classic systems are therefore limited to use on buildings not exceeding 18 metres in height".

238. Nonetheless, the defendant now seeks to argue that this finding of a "process" breach is insufficient and that the claimant also has to go on and positively prove that the StoTherm Classic system would have failed to pass the Annex A performance criteria had it been tested as specified and installed without installation defects.

239. In my judgment this argument seeks to reverse the burden of proof on this issue. The claimant has proved that the defendant was in breach of contract in specifying and installing the StoTherm Classic system at a time when it had not obtained proof that the system passed the Annex A performance criteria when tested in accordance with BS 8414-1 and, thus, with the test specimen assembled and installed in accordance with the manufacturer's instructions. If the defendant now seeks to show that this breach is causatively irrelevant because the system would have passed had it been tested at the time on that basis, then it is for the defendant to adduce that evidence.

240. The defendant has, however, never attempted to demonstrate that it would have passed by conducting its own BS 8414-1 test. This is notwithstanding that the case was vigorously put to the claimant and to its experts in cross-examination that it would have been an extremely straightforward and inexpensive thing for the claimant to do (on the assumption that the claimant was obliged to do so). That is not surprising, since there is no evidence that anyone on the defendant's side, whether the

defendant itself with its own access to in-house technical advice, or its independent experts who it consulted at any time from 2017 onwards, or Sto, ever positively believed that it would have passed.

241. The impetus for the defendant to run this point appears to have been the recent disclosure via release of documents from the Grenfell Inquiry of a confidential BRE document from 2002 headed "Generic data supporting the revision of BR 135". It explains that 5 render systems and 5 ventilated cavity systems (which are not identified) were tested using the draft BS 8414-1 to assist in the revision of BRE 135. The defendant places reliance on the fact that number 5 – described as being a thin render over EPS insulation with mineral wool fire barriers – was identified as passing a BS 8414 test.

242. Mr McCracken suggested in cross-examination that, although this was a blind test, since the StoTherm Classic system was a market leading render system in use at the time there was a reasonable possibility that the product tested was the StoTherm Classic system. However, he also accepted that there was insufficient detail for him to form a firm conclusion on the point.

243. As Mr Lavender said in cross-examination, one would need to know much more about the composition of the system before being able to offer an opinion as to whether or not the StoTherm Classic system as specified to be installed on the Gosport towers would also have passed an equivalent test. This is an important point. It would not be sufficient to point to tests on the system as apparently specified at the time of the 1995 BBA certificate or on the specification made available in 2005, given the evidence that this was not the system or the specification which was actually installed, leaving aside any question of installation defects.

244. In similar vein was a further document, also dating from 2002, being an "analysis of ISO 9705, European and British Standard fire test data for BR 135 project" along similar lines to that already discussed. In that document system number 4, which is probably the same system as system number 5 in the previous document, was described as an "expanded polystyrene core with acrylic render coat. 100mm lamella fire barriers at each floor", which was said to have passed a test under Fire Note 9 (the genesis of BS 8414-1). The defendant places particular reliance on this because the combination of an EPS core with an organic acrylic render coat and mineral fire barriers is, clearly, very similar in its basic composition to the StoTherm Classic system.

245. The final document in this trilogy was an untitled and undated single page document which again records the result of fire tests to a variety of systems. The fifth render system, which passed, was described as a thin scrim with EPS insulation and rockwool fire breaks.

246. Mr McCracken's evidence was that this combination of material gives a good indication that the incorporation of fire barriers to rendered EPS insulation cladding was sufficient to enable such systems to pass BS 8414-1. However, as he accepted, the documents did not provide much in the way of detail. As the claimant submits, it is not even possible to be sure whether or not there may have been a cementitious addition to the render.

247. In cross-examination of Mr Lavender the defendant sought to suggest that there was further evidence which supported its case that the StoTherm Classic system would have passed a BS 8414-1 test. This was in the form of a reference, in the context of a report produced in April 2012 by a fire safety consultancy known as IFC, to a test undertaken in December 2006 by a testing organisation based in Leipzig, Germany on what was described as a StoTherm Classic system. This evidence only emerged shortly before trial, in circumstances where it was disclosed by the claimant under a waiver of privilege in relation to various communications.

248. However, as Mr Lavender explained, the system tested was materially different to that applied to the Gosport towers, because it incorporated an intermediate mineral (i.e. non-organic) coat which was not present on the StoTherm Classic system as installed on Gosport towers. Mr McCracken agreed that

the intermediate coat comprised a polymer cement as opposed to an organic render. He also agreed that the report recommended that the organic render forming part of the StoTherm Classic system should only be used with mineral or lamella insulation and, thus, not with EPS insulation boards.

249. It follows in my judgment that the IFC report in fact provides little if any additional support for the defendant's case.

250. The exchanges between Mr Stow of Arup and Mr Trew of Sto dating from 2019, which also only emerged shortly before trial and which refer to the Leipzig test, make clear that when Sto undertook in-house tests on the StoTherm Classic system it failed, because the acrylic render burned through and allowed fire to spread to the EPS, bypassing the fire barriers. In cross-examination Mr McCracken cast doubt on the reliability of these tests on the basis that they did not use the test rigs mandated by BS 8414-1 or otherwise comply with the very detailed criteria specified in that BS. I accept that this is a fair criticism. Nonetheless, the fact that they failed in these in-house tests and that the manufacturer Sto did not think it worthwhile putting the system through formal BS 8414-1 tests is a clear indicator that it did not consider that it could pass such tests.

251. The defendant also seeks to rely upon recent email exchanges in March 2022 between Mr Kevin Davies as the Head of Technical at Sto and a representative of Warringtonfire on behalf of Mr McCracken. They suggest that these discussions, referring to the Leipzig test, provide evidence that the StoTherm Classic system might well have passed if it had been put through a formal BS 8414-1 test. I am prepared to accept that it is possible. However, I am unconvinced that this evidence comes anywhere near demonstrating that it is probable. Indeed, as I have said, IFC as the consultancy which reported on this and other test results positively advised against the use of the organic render used with the EPS insulation boards in the StoTherm Classic system.

252. These exchanges showed that the StoTherm Classic system such as was installed in this case has never been subjected to a BS 8414-1 test by Sto, or by anyone else so far as it was aware, because having conducted tests on a system without a fire break which failed, they decided to test the Vario K system instead, on the basis that it had a non-organic render. Once the Vario K system had passed the BS 8414-1 test Sto decided not to bother spending any more time or money on testing the StoTherm Classic K system.

253. It does not seem to me that much weight can be placed on the experts' opinions on this particular point. The point emerged relatively late and the experts had not had much chance to consider the point or to investigate it. Furthermore, the key point which came through is that in the absence of knowing the detail of the particular system being tested it is difficult for anyone, expert or otherwise, to know how much weight can safely be placed on that evidence. That is not surprising. The reason why each system requires its own BS 8414-1 test is because the detail of the system matters. In the absence of evidence of an actual test of the StoTherm Classic system as specified to be installed at Gosport towers it is not possible to do more than speculate. That is well illustrated by the acceptance by Mr McCracken that the StoTherm Classic system as shown on the Sto detail, with the render coat as not tied back to the substrate, was further down the scale in terms of likelihood of failing a BS 8414-1 test than was one where the render was tied back to the substrate. Thus, this failure to comply with the BRE 135 (2003) design principles was not just a technical breach but a substantive breach.

254. It follows that I am not satisfied on the balance of probabilities that the StoTherm Classic as specified to be installed at Gosport towers would have passed the Annex A performance criteria had it been tested in accordance with BS 8414-1.

255. I should also, however, record my view that I am also unable to accept the claimant's positive case that I can be satisfied on the balance of probabilities that the StoTherm Classic as specified to be

installed at Gosport towers would not have passed the Annex A performance criteria had it been tested in accordance with BS 8414-1.

256. It is unusual, I acknowledge, for a court to fall back on the burden of proof on an issue after a trial, especially a trial of this length with such a detailed examination of the evidence, including expert evidence. However, in this case this is a consequence of the fact that neither party sought to plead this issue in terms or to investigate this issue until very shortly before trial, so that neither party's experts addressed it at all or in any detail in their reports or in the joint statements. In reality, both parties were seeking to make bricks with a few strands of straw, in circumstances where the experts all conceded, and I am satisfied as is well demonstrated by the evidence, that in a case such as this the only way of clearly demonstrating compliance or non-compliance with the performance standard is to carry out a BS 8414-1 test.

257. In my judgment it would be positively unfair in such circumstances to make a positive finding one way or another on such a potentially important matter. This is not a case where the judge simply has to do his or her best on the imperfect available information.

Compliance with the Building Regulations - conclusion

258. Having found that the defendant was in breach of the contractual requirement in GDI 004 because it failed to follow the recommendation and advice in BRE 135 (2003), I must now return to the question as to whether or not the defendant also failed to comply with functional requirement B4(1) of Schedule 1 on the basis that the specified StoTherm Classic system failed to adequately resist the spread of fire over the walls, having regard to the height, use and position of the building.

259. In my judgment, given that as at the time the defendant supplied and installed the StoTherm Classic system: (i) there was no evidence that it had satisfied the Annex A performance criteria through a BS 8414-1 test; and/or (ii) there was no evidence that it satisfied all of the general and system specific design principles found in BRE 135 (2003); and (iii) the BBA Certificate then in force for the system did not in fact demonstrate or seek to demonstrate compliance with these requirements, the system failed to satisfy functional requirement B4(1).

Breach of the warranty that the system would be suitable for tall constructions

260. I am not satisfied that the claimant has made out its case for breach of this warranty, on the simple basis that the statements in the Contractors Proposals relied upon are in the nature of general statements which make no express or implicit reference to fire safety, save for the reference to the system achieving a Class '0' fire rating which, it is accepted, was true. In the circumstances, I am not satisfied that these general statements can properly be understood as amounting to a specific warranty that the system was suitable for high-rise residential buildings in terms of fire safety.

261. In any event, since the only basis for finding a breach of such a warranty would be by reference to functional requirement B4(1) and BRE 135 (2003) I do not think that this adds anything to the case which I have already accepted.

Breach of clause 2.5.1 - the reasonable skill and care design obligation

262. It would be possible to devote a great deal of time to this issue but, given the findings I have already made, it is unnecessary to do so.

263. The defendant's position, founded on Mr Geddes' evidence, supported by Mr McCracken, is that it was reasonable at the time for a professional designer to specify the StoTherm Classic system, given that it was a well-known and widely used system from a well-regarded manufacturer, given that it held

a current and unqualified BBA Certificate, and given that there was nothing in the Building Regulations and associated approved documents and guidance which advised against its use on buildings such as Gosport towers.

264. In my judgment this argument, whilst ostensibly impressive, founders on the analysis I have conducted of the 1995 BBA Certificate and BRE 135 (2003).

265. Mr Geddes stated in his report at [10.1.1.1] that "in my opinion, a reasonably competent designer had to ensure that any cladding system which it specified satisfied the requirements of the Building Regulations 2000 and any relevant guidance". Whilst strictly speaking I think that he over-stated the position by failing to qualify this by reference to the standard of reasonable skill and care, he was clearly right to say that a designer was under an obligation to take reasonable skill and care to ensure that this was the case.

266. In this case I am satisfied that as at the date of the design and specification of the StoTherm Classic system for this project any reasonably competent designer and specifier could not simply have relied blindly upon the 1995 BBA Certificate, since they must have known that matters had moved on since then in terms of the introduction of ADB 2002 and BRE 135 (2003) of which they ought to have been well aware.

267. For the reasons already given, I am satisfied that any reasonably competent designer specifier could not have failed to be aware at the time that BRE 135 (2003) - as the most up to date and authoritative report on the topic - contained a clear recommendation and advice to avoid specifying a product such as the StoTherm Classic system with a combination of combustible EPS insulation and combustible organic acrylic render for a high-rise residential building unless there was evidence that it met the Annex A performance criteria via a BS 8414-1 test. At the very least in my judgment they would have needed to ask the question of the supplier and, if the answer came that it had not passed a test to BS 8414-1, to have sought and obtained satisfactory confirmation that it otherwise met the requirements of functional requirement B4(1). Here, for the reasons I have given, they could not have been satisfied that the StoTherm Classic system conformed with all of the general and system specific design principles contained within BRE 135 (2003).

268. Thus, the question for the reasonably competent designer specifier in those circumstances would be whether it was sufficient that the StoTherm Classic system (in the hypothetical revised specified and installed iteration) incorporated fire barriers which appeared to comply with the design principles contained within BRE 135 (2003), even though it had not been demonstrated that this met the Annex A performance criteria.

269. In my judgment, for a high-rise residential building that would not have been enough, given that there were alternatives available in the market at the time which would not have contained the same combination of combustible insulation and combustible render and thus, either had passed or would pass a BS 8414-1 test, including the alternative Sto Vario system. It is of particular note that in this case the employer's consulting engineer (Curtins) had recommended using a mineral wool (i.e. a non-combustible material) rendered system, and the only documentary evidence to explain or justify the defendant's choice of StoTherm Classic from a fire safety perspective was on the basis that it included fire barriers. In this respect I also consider that clause GDI 008 of the contract is relevant since, as I have said, it required the type of material or proprietary product most appropriate to the use to which it was being put to be selected. Since Sto Vario was plainly more appropriate from a fire safety perspective to this particular use on a high-rise residential building, and since no-one from the defendant's side has been able to identify particular features of the StoTherm Classic system which made it more appropriate for use for other, non-fire safety related, reasons which outweighed the fire safety perspective, then the use of the StoTherm Classic system contravened this contractual obligation.

270. In those circumstances I am satisfied that the defendant was in breach of this duty as well. I am conscious that in making this finding I am applying a more nuanced approach than that contained in the claimant's own expert evidence, which was very much based on the argument, which I have not accepted, that the combination of ADB 2002 and the BRE report in its first and second versions prohibited the use of a system such as the StoTherm Classic system unless it had passed a full scale fire test.

271. I am also conscious that it is contrary to the evidence of the defendant's experts that at the time the typical designer specifier would regularly specify the StoTherm Classic system even for high-rise residential buildings on the simple basis of its being a well-known system which had a valid BBA Certificate whose use was not expressly prohibited at the time on such buildings. However, I accept the claimant's argument in closing submissions that the argument that "everyone else was doing it" does not, on a proper application of the "*Bolam*" principle, operate as a get out of jail free card. Following the analysis of Edwards-Stuart J in *199 Knightsbridge Development Ltd v WSP UK Ltd* [2014] EWHC 43 (TCC), at paragraphs 101 to 120, for the *Bolam* principle to operate to exonerate a defendant, there must be "evidence of a responsible body of opinion that has identified and considered the relevant risks or events and which can demonstrate a logical and rational basis for the course of conduct or advice that is under scrutiny" (paragraph 120). "A defendant is not exonerated simply by proving that others … [were] … just as negligent" (paragraph 106). Both of these observations would apply in this case.

Causation - overview

272. To a large extent, the most vigorously contested questions of causation have been overtaken by my findings in relation to the specification breaches. However, in case the matter goes further and my decision in relation to the specification breach is overturned, it is necessary for me to address the arguments raised. Despite, or possibly because of, the complexity of the arguments raised, it is necessary to identify the starting point and the basis for the arguments before becoming immersed in the detail.

273. The factual starting point is of course the fact that the claimant has replaced, rather than repaired, the cladding system.

274. The defendant accepts, and positively alleges, that this was a reasonable decision to take in 2017 because at that time the use of combustible cladding was no longer acceptable on high-rise residential tower blocks, both due to the change from ADB 2002 to ADB 2006 and the changed landscape post Grenfell. Because the defendant denies that it was in breach of contract in fixing combustible cladding in 2005-08 it denies that it can be responsible for the cost of the replacement.

275. I have found that the defendant was in breach of contract in fixing combustible cladding in 2005-08. Since the defendant has not asserted a separate positive case on causation on this factual basis that finding disposes of the causation issue.

276. If I had not found that the defendant was in breach of contract in fixing combustible cladding in 2005-08 then I would have needed to determine whether the claimant was nonetheless entitled to recover the replacement costs as damages for the installation breaches. I would also need to consider the recoverability of the waking watch costs on this hypothesis.

277. As to the replacement costs, there are three possibilities. The first is that the claimant is entitled to recover nothing at all, because there is no causal connection between the installation breaches and the replacement works. This is the defendant's primary case. The second is that the claimant is entitled to recover the replacement costs in full, because there is a sufficient causal connection between the installation breaches and the replacement works. This is the claimant's primary case. The third is that

the claimant is only entitled to recover the reasonable remedial costs to remedy the installation defects, even though it never carried out such works, because that operates as a causative cap on its recoverable damages.

278. In the remainder of this section I shall begin by discussing the relevant legal principles. I shall then go on to address the facts and make my decisions in relation to the works costs and the waking watch costs separately.

Causation - the relevant legal principles and their application

279. I have been referred to a number of authorities and textbooks. One of the difficulties with causation is disentangling the different legal principles which may apply in what, especially in TCC litigation, can be factually complex cases. It is important for me to seek to be clear as to which principles are relevant to which questions.

280. *Beattie Passive Norse Ltd v Canham Consulting Ltd* [2021] EWHC 1116 (TCC) is a useful recent starting point, because in his decision in that case Fraser J began in his consideration of the legal principles by referring to the decision of the Court of Appeal in *County Ltd v Girozentrale Securities* [1996] 3 All ER 834 to the effect that causation is a highly fact sensitive arena (paragraph 106) and a matter of fact and common sense (paragraph 108). "Causation involves taking account of recognised legal principle but, that having been done, it is a question of fact in each case". This does not, of course, enable the court to make a decision in a legal vacuum, but it is an important reminder of the danger of seeking to import decisions in different cases involving different facts to the present case.

But for test versus the effective cause test

281. In this case, as in many others where there is a vigorous dispute about causation, the dispute arises because there is a contest as which of two or more competing causes is the legally relevant cause of the loss. There is a controversy in this case as to whether the appropriate test to apply is the "but for" or the "effective cause" test.

282. I should say that the effective cause test does not require that the cause is the "dominant" cause; there can be more than one effective cause of an event: see the judgment of Beldam LJ in *County v Girozentrale* at p846f-h and p848h-j, with whose reasoning Hobhouse LJ agreed, see also p857g. See also the judgments of Lord Sumption and Lord Clarke, with whom Lords Walker and Philips agreed, preferring their analysis to that of Lord Mance, in *Petroleo Brasileiro S.A. v E.N.E. Kos 1 Limited* [2012] 2 AC 164.

283. The defendant submits that it is a pre-condition to any finding that the installation breaches caused the decision to replace that the "but for" test is satisfied, i.e. that it can be said that "but for" the installation breaches the cladding would not have been replaced. It argues that the test cannot be satisfied here, because the cladding would have been replaced anyway due to the changed fire-safety landscape.

284. This point was discussed recently by the Supreme Court in *Financial Conduct Authority v Arch Insurance UK Ltd & others* [2021] UKSC 1 (the Covid claims insurance litigation). Although that case turned on principles of causation applicable to insurance policy claims, the joint speech of Lords Hamblen and Leggatt JJSC at [181] onwards addressed the issue in the wider context as well. At [181] they observed that in most cases the but for test is a "minimum threshold test of causation". At [182] they said that "it has, however, long been recognised that in law as indeed in other areas of life the but for test is inadequate, not only because it is over-inclusive, but also because it excludes some cases where one event could or would be regarded as a cause of another event".

285. They gave a number of examples, the first being that "given by Hart and Honore in their seminal treatise on Causation in the Law, 2nd ed (1985), p 206 of a case of two fires, started independently of each other, which combine to burn down a property". They observe that this is a class of case where "each putative cause, although not necessary, was on the assumed facts sufficient to bring about the relevant harm". They distinguish this from the "further class of cases in which a series of events combine to produce a particular result but where none of the individual events was either necessary or sufficient to bring about the result by itself, giving as their last example where multiple polluters discharge hazardous waste into a river where the waste discharged by each would not be necessary or sufficient to cause the harm by itself.

286. Coulson J addressed the same subject in his judgment in *Greenwich Millennium Village Ltd v Essex Services Group plc* [2013] EWHC 3059 (TCC) at [171] and following. He said that the court should not depart from the "but for" test without clear and proper reasoning. He gave the same two examples. He said that the authorities showed that in cases where there were two, concurrent, independent causes of the loss, fairness and reasonableness might dictate that the but for test should not be required to be a necessary condition. He referred to other cases where two causes give rise to the loss but where each, on its own, would not have done so where, by reference to authority, that was sufficient to establish liability. The case he cited, the decision of Devlin J in Heskell v Continental Express [1950] 1 All ER 1033, was also cited in the FCA case at [172] for the proposition that "if a breach of contract is one of two causes, both co-operating and both of equal efficacy, it is sufficient to carry judgment for damages".

287. In cases where it is not appropriate to apply the but for test, it is sufficient for the claimant to succeed so long as event X is an effective cause of event Y. This was the question which Fraser J posed himself in the *Beattie v Canham* case, with which I began this discussion.

288. The answer to the question which test to apply may be influenced - and I consider is influenced in this case - by the question as to what is the loss which is the subject of the enquiry. The defendant suggests that the loss is the cost of the replacement of the cladding which the claimant is seeking to recover. However, in my judgment, that is looking at the case from the wrong starting point. As the claimant submitted, the proper measure of damages is diminution in value, even if measured by the reasonable cost of repairs: see *Coles v Hetherton* [2013] EWCA Civ 1704 per Aikens LJ giving the judgment of the court at paragraphs 27 - 28. In a typical construction case such as the present that will be the cost of the works necessary to reinstate or repair the defective work.

289. This is borne out by the comprehensive analysis undertaken by HHJ Peter Coulson QC, sitting as a High Court Judge, in *McGlinn v Waltham Contractors Ltd & others* [2007] EWHC 149 (TCC). The facts of the case are irrelevant for present purposes, save to note that it had the same essential similarity as the present case that the claimant was claiming the cost of entire removal and replacement (in that case, of a very substantial house), whereas the defendants were contending that he should be limited to the costs of rectification. At [787] the judge noted that whilst, traditionally, the measure of damages is diminution in value, in construction cases more usually the appropriate measure is the cost of reinstatement or repair as the foreseeable consequence of the defective work. At [802] he agreed with the claimant's submission that there was no difference in principle between the claimant's primary claim for the cost of demolition and rebuilding and the secondary alternative claim for the costs of repair. At [803] he concluded that it followed that the claimant was entitled to recover the cost of repair, if that was all the court found he was entitled to, notwithstanding that in fact repair was no longer practicable because the property had already been demolished.

290. The decision of the Court of Appeal in *County Ltd v Girozentrale Securities* is also relevant in this case when one considers the two causes which, on the hypothesis with which I am now concerned, are in play. The cause asserted by the claimant is the presence of the installation breaches for which the defendant is legally responsible. The cause alleged by the defendant is the claimant's decision to replace as a result of the change in the fire-safety regime coming into force after it had completed the

design and construction of the works. In his judgment at p858a-c Hobhouse LJ distinguished the causative impact of conduct which does, and does not, contain an element of fault, saying this:

"In nature there are certain conditions which must exist for an event to occur. The presence of oxygen is a necessary condition of a fire but no one, save when it was necessary to do so in a scientific context, would describe it as a cause. Similarly, if responsibility for an event is to be attributed to a human agency, then the character of the contribution made by that human agency has to be evaluated. The state of mind of the human agent is in most cases an important consideration, as are the standards of conduct which we expect of such a person. Conduct which contains no element of fault will not without more be treated as a cause in law. Such conduct, to be treated as a cause, must be of such a character as to negative the responsibility of some earlier actor for the consequences of his fault, typically on the basis that the later causative conduct was outside the contemplation of the previous party. In the legal analysis, the concepts of contemplation and foreseeability interact with concepts of standard of conduct."

291. In this case, if one adopts a definition of loss that focusses on the existence of a real loss in legal terms, rather than on specific expenditure for a specific purpose, it is plain that the claimant suffered a loss as a result of the defective installation. That is because those defects significantly increased the fire risk at the Gosport towers and it was undoubtedly necessary for remedial action to be taken to address those defects. However, by the time the claimant became aware of the defective installation and its consequences, the claimant had also become aware that it was also necessary for remedial action to be taken to address the additional problem caused by the fact that combustible cladding was no longer acceptable on high-rise residential tower blocks. Thus, although the remedial action necessary to remedy the defective installation in isolation was different from the remedial action necessary to address the presence of combustible cladding, nonetheless the claimant's decision to replace the cladding was the only sensible way to address both of the problems it faced at that time.

292. This is, therefore, in my judgment a very good case for an application of the effective cause test for causation in place of the but for test for causation. Otherwise, the claimant would have been forced to make a choice between two equally unpalatable solutions when it was faced with the one problem - the need to take remedial action - caused separately by two unrelated causes. On the defendant's analysis the claimant either had to repair the defective cladding and still be left as owner of four high rise residential buildings which presented a known and - by current standards - unacceptable safety risk to their occupants due to the presence of combustible cladding, or to replace the defective cladding but then have no right of recourse against the defendant, as the company legally responsible for the defective installation, for any part of the cost incurred, even though that work and that cost had the effect of resolving the problem for which the defendant was legally responsible.

293. It follows, in my judgment, that there can be no question of the defendant succeeding in its primary case on causation, which is that because the decision to replace the cladding does not satisfy the but-for test for causation the claimant can recover nothing. As I find below, the installation breaches were an effective cause of the loss suffered which led to the decision to replace the cladding and, hence, the defendant is liable for such loss. That is particularly so when on this hypothesis the other effective causes, namely the change in the fire safety regulatory regime and the impact of Grenfell, is not conduct amounting to fault by some third party or conduct which should negative the defendant's responsibility for the consequences of its earlier fault. After all, changes in the fire safety regulatory regime as a result of a greater appreciation of a fire risk due to a fire in a high-rise residential building can scarcely be said to be outside the defendant's contemplation as a well-established construction company, given the genesis of BRE 135 (2003) as explained in the introduction to that report (see above).

294. The defendant argues that the above analysis fails to take into account that the installation breach was not concurrent with the other cause relied upon. It referred in its closing submissions at one point to the other cause being the design of the system. However, that is the specification breach case, which

is not an issue in this hypothesis. The other cause as alleged by the defendant is the subsequent fire safety regulatory regime change occurring both before and after Grenfell. The analysis also fails to take into account the unusual circumstances occurring in this case, wherein: (a) the installation breaches occurred first in time, but were not known about until after Grenfell; (b) no-one is suggesting that the first regulatory change, ADB 2006, which prohibited the use of combustible cladding on high-rise buildings unless they had passed a BS 8414-1 test, had retrospective effect so that the claimant was obliged, or was aware that it was obliged, from that time onwards to replace the existing cladding; (c) it was only post Grenfell that the claimant became aware at around the same time of the installation breaches and of the need from a fire safety perspective to remove the combustible cladding.

295. This is not, therefore, a case like that of *Performance Cars Ltd v Abraham* [1962] 1 QB 33 referred to by both parties, where the claimant could not recover from a defendant, who caused damage to his Rolls Royce car, for the cost of a re-spray because the car already needed a re-spray as a result of an earlier accident that had led to judgment against a third party for the cost of the re-spray. Indeed, as the claimant submitted, if it was appropriate to take a strict chronological approach the relevant loss would have been suffered in 2007-08 when the works to each tower were handed over as practically complete with the installation breaches present and unremedied, so that any loss due to the subsequent changes to the fire safety regulatory regime would be causally irrelevant. There would have been no break in the chain of causation due to the subsequent change in the fire safety regulatory regime: see the detailed analysis of Gross LJ in *Borealis v Georgas Trading* [2010] EWHC 2789 (Comm) at [42] - [47].

Limitation on recovery to the reasonable cost of remedying the installation breaches

296. The further question is whether nonetheless there is some applicable principle of law under which the claimant should be limited in its recovery against the defendant to the reasonable cost which would have been incurred in remedying the installation breaches. In my judgment there are three principles which have this effect, namely the overall requirement of reasonableness when addressing causation and assessment of damages, the principle of mitigation and the principle of betterment.

297. The first principle is that damages will be assessed on the basis that a claimant who reinstates or repairs his property has a duty to act reasonably as an incident of the primary assessment of damages: see the discussion by HHJ Coulson QC in *McGlinn v Waltham Contractors*, at [790] - [794], citing in particular Clarke LJ in *The MV Maersk Colombo* [2001] EWCA Civ 717 where he said "as I read the authorities, where reinstatement is the appropriate basis for the assessment of damages, it must be both reasonable to reinstate and the amount awarded must be objectively fair as between the claimants and the defendants".

298. There is also a separate freestanding duty upon a claimant to act reasonably to mitigate its loss. As to this, the defendant referred me to the subsequent analysis by Legatt J of the principle of mitigation in *Hirtenstein v Hill Dickinson LLP* [2014] EWHC 2711 (Comm), where he observed at paragraph 127 that "the true principle is that where there is more than one option reasonably available to the claimant in responding to the consequences of the defendant's breach of duty, the claimant can only recover as damages the cost of the less (or least) expensive option", on the basis that "the additional cost is regarded as a consequence of the claimant's choice and not of the defendant's wrong".

299. This may be contrasted with other authorities to which I was referred by the claimant, which show that the onus is on the defendant to establish that the claimant's conduct was unreasonable and that the court should not be too ready to accept criticism after the event with the benefit of hindsight.

300. I was referred to the well-known statement of Lord Macmillan in *Banco de Portugal v Waterlow & Sons Ltd* [1932] AC 452, at 506 where he said this:

"Where the sufferer from a breach of contract finds himself in consequence of that breach placed in a position of embarrassment the measures which he may be driven to adopt to extricate himself ought not to be weighed in nice scales at the insistence of the party whose breach of contract has occasioned the difficulty. It is often easy after an emergency has passed to criticise the steps which have been taken to meet it, but such criticism does not come well from those who have themselves created the emergency. The law is satisfied if the party placed in a difficult situation by reason of the breach of a duty owed to him has acted reasonably in the adoption of remedial measures, and he will not be held disentitled to recover the cost of such measures merely because the party in breach can suggest that other measures less burdensome to him might have been taken."

301. I was also referred to the further statement of Sedley LJ in *Wilding v British Telecommunications plc* [2002] ICR 1079, at paragraph 55 where he said this:

".. it is not enough for the wrongdoer to show that it would have been reasonable to take the steps he has proposed: he must show that it was unreasonable of the innocent party not to take them. This is a real distinction. It reflects the fact that if there is more than one reasonable response open to the wronged party, the wrongdoer has no right to determine his choice. It is where, and only where, the wrongdoer can show affirmatively that the other party has acted unreasonably in relation to his duty to mitigate that the defence will succeed."

302. It seems to me that the difference in the language used is simply a reflection in all cases of the principle that the touchstone is what is reasonable. In *Hirtenstein* the claimant was fully aware at the time that there were two available options, both of which could be viewed from his own personal perspective as reasonable responses to the consequences of the defendant's breach. He decided to choose the more expensive option, knowing that it was more expensive, on the basis that it was his personal preferred option. In other cases, the claimant may not even have known at the time that there was more than one option reasonably available to him or that - as it would subsequently transpire with the benefit of hindsight - one of them would prove better than the other. In the latter cases, if a claimant has to make a choice as a matter of urgency or on incomplete information then it is not surprising that the court will not be too critical of a decision to choose option A which, with hindsight, turns out to be more expensive that option B. In contrast, if the claimant chooses, for his own personal interests, option A rather than option B, knowing that option B was a reasonable alternative, then it is not surprising that the court will only allow him to recover the cost of option B.

303. Betterment is also pleaded by the defendant in its defence on the basis that the remedial works have conferred benefits which would not have been conferred consequent upon full and complete performance of the obligations in the contract (paragraph 10.5).

304. The claimant referred me to the recent discussion by Leggatt LJ in *Sartex Quilts & Textiles Ltd v Endurance Corporate Capital Ltd* [2020] EWCA Civ 308 as to the principles relating to betterment in the context of an insurance claim, although there is nothing in this part of the judgment which turns on any difference between the general law and insurance law. In paragraph 90 he said that if a party, when reinstating property after destruction or damage, chooses to make improvements to the property at an additional cost, that is not part of the cost of reinstatement at all and is therefore not recoverable. He contrasted this in following paragraphs to the case of betterment where a party derives a benefit as an incidental consequence of adopting a reasonable reinstatement scheme. He held that in such a case any money benefit should be deducted from the award.

305. It may be that in the former case, where the claimant has a choice, that is on proper analysis an example of the two principles already discussed, i.e. the overriding requirement of reasonableness and mitigation. It may be that betterment properly so called is limited to the second category of case identified by Leggatt LJ in *Sartex*. Nothing turns on that distinction in this case. The question as to whether or not the claimant had a choice or was compelled to replace the entire cladding system was

not debated before me on the basis that it was unnecessary to do so, in circumstances where it was common ground that it was, at the very least, a reasonable thing to do. It follows that it would be wrong for me to express any concluded view as to whether or not the claimant was legally obliged to do so as an incident of its obligations under the Regulatory Reform (Fire Safety) Order 2005 and/or Advice Note 14 issued by the Department of Communities and Local Government in December 2017. The relevance of *Sartex* is that it confirms that even if the claimant had no choice, if it derived a benefit in such a case which can be valued in money terms it should give credit for that benefit.

306. Here, it follows that insofar as the claimant derived a benefit then it should give credit for that benefit.

Reasonable reliance on expert advice

307. In TCC cases in particular an issue which also often arises is the relevance of the fact that a claimant has taken professional advice and carried out a remedial scheme on the basis of such advice. This was also addressed by HHJ Coulson QC in *McGlinn v Waltham Contractors* from [795] onwards, where he considered in some detail the decision of HHJ Newey QC in the *Great Ormond Street* case (19 Con LR 25) and the subsequent decision of the Court of Appeal in *Skandia Property UK Ltd v Thames Water Utilities Ltd* [1999] BLR 338.

308. He concluded at [827] that on a proper analysis the case was only authority for the narrow principle that: (1) if two remedial schemes are proposed to rectify a defect which is the result of a defendant's default, and one scheme is put in hand on expert advice, the defendant is liable for the costs of that built scheme, unless it could be said that the expert advice was negligent; subject to the proviso that (2) although reliance on an expert will always be a highly significant factor in any assessment of loss and damage, it will not on its own be enough, in every case, to prove that the claimant has acted reasonably and it is not necessary for the defendant to prove conduct by the expert amounting to professional negligence or similar.

309. He also concluded that there were important differences on the facts between the *Great Ormond Street* case and the case before him. One particular factor which he considered relevant to his decision, which may also have some relevance in this case, was that the decision to rebuild was for reasons unconnected with the defects which were the consequence of the defendant's breaches.

The reasonableness of the claimant's expenditure on remedial works, including settlements with remedial contractors

310. In *McGlinn v Waltham Contractors* at [790] HHJ Coulson QC identified the general principle that a claimant who carries out either the repair or reinstatement of his property must act reasonably. He also, relevantly, noted the judgment of HHJ Newey QC in *Great Ormond Street* for the qualification that "reasonable costs do not, however, mean the minimum amount which, with hindsight, it could be held would have sufficed. When the nature of the repairs is such that the plaintiff can only make them with the assistance of expert advice the defendant should have foreseen that he would take such advice and be influenced by it". He also referred to that judgment at [796] for HHJ Newey's comment that: "in my view where works have been carried out, it is not for the court to consider de novo what should have been done and what costs should have been incurred either as a check upon the reasonableness of the plaintiff's actions or otherwise".

311. Whilst these observations were also subject to the qualification put on them by the *Skandia* case discussed above, they remain of relevance and illustrate the reluctance of TCC judges, consistent with the general principle of mitigation, to be too willing to second-guess decisions made at the time by claimants made with the benefit of reputable competent expert advice.

312. This was addressed by Akenhead J in *Axa Insurance UK plc v Cunningham Lindsey* [2007] EWHC 3023 (TCC) at (271)-(273). He referred to the well-known case of *Biggin and Co Ltd v Permanite Ltd* [1951] 2 KB 314 as establishing the proposition that it is "necessary for the claimant always to establish a causative link between the breaches of contract and either the settlement reached or the sum payable pursuant to the settlement". He then referred to the judgment of HHJ Coulson QC in *John F Hunt Demolition Ltd v ASME Engineering Ltd* [2007] EWHC 1507 (TCC) which, in his opinion, correctly stated the law, and concluded with four propositions at (273) as follows:

"(a) if there is no effective causal link between the breaches of duty of the defendant and the need for the claimant to enter into the settlement with a third party or the payment of the sums pursuant to the settlement agreement, there will be no liability to pay the settlement sums irrespective of whether the settlement was reasonable.

(b) The onus of proof in establishing the reasonableness of the settlement is upon the claimant. Thus, there must be some reliable evidence for the court to conclude that it was a reasonable settlement.

(c) The mere fact that the claimant is not liable to the third party either at all or for all the sums payable pursuant to the settlement is not necessarily a bar to recovery or to the establishment of the reasonableness of the settlement. However, the fact that the claimant was not liable to the third party either at all or for anything approaching the sums payable may be a factor in determining that the settlement was unreasonable.

(d) Where a settlement is not established as reasonable, it is still open to the claimant to recover from the culpable defendant elements of the sums paid pursuant to the settlement to the third party to the extent that it can be proved that there is an effective causal link between the payment of those sums and the established breaches of duty. In those circumstances, it is legitimate for the court to consider and establish what was likely to have been payable as a matter of fact and law to the third party as the foreseeable result of the defendant's breaches."

Remoteness of loss

313. This issue arises in relation to the recoverability of the waking watch costs.

314. The principle was stated by Baron Alderson in the seminal decision in *Hadley v Baxendale* (1854) 156 E.R. 145 as being as follows:

"Where two parties have made a contract which one of them has broken the damages which the other party ought to receive in respect of such breach of contract should be such as may fairly and reasonably be considered as either arising naturally, i.e. according to the usual course of things, from the breach of contract itself, or such as may reasonably be supposed to have been in the contemplation of both parties at the time they made the contract as the probable result of the breach of it."

315. The defendant referred me to the summary in *Chitty on Contracts* (34th edition, 2021) at 29-128 as follows:

"A type or kind of loss is not too remote a consequence of a breach of contract if, at the time of contracting (and on the assumption that the parties actually foresaw the breach in question), it was within their reasonable contemplation as a not unlikely result of that breach."

316. As to this, it is helpful to refer to the recent discussion by Morris J in *Orchard Plaza v Balfour Beatty* [2022] EWHC 1490 (TCC) where, having referred to the principal authorities and the passage from *Chitty* referred to above, he said this:

"43. An issue which arises from the decided cases is whether the appropriate test as to degree of probability of the loss is "a not unlikely result", or "a serious possibility". The Privy Council recently considered the leading authorities in Attorney General of the Virgin Islands v Global Water Associates Ltd [2020] UKPC 18, and in particular this issue. After discussing at §§27 to 29 varying language used in The Heron II and The Achilleas and the view of Lord Burrows in his Restatement of the English Law of Contract, Lord Hodge summarised the position as follows:

"31. First, in principle the purpose of damages for breach of contract is to put the party whose rights have been breached in the same position, so far as money can do so, as if his or her rights had been observed.

32. But secondly, the party in a breach of contract is entitled to recover only such part of the loss actually resulting as was, at the time the contract was made, reasonably contemplated as liable to result from the breach. To be recoverable, the type of loss must have been reasonably contemplated as a serious possibility, in the sense discussed in paragraphs 27 and 28 above.

33. Thirdly, what was reasonably contemplated depends upon the knowledge which the parties possessed at that time or, in any event, which the party, who later commits the breach, then possessed.

34. Fourthly, the test to be applied is an objective one. One asks what the defendant must be taken to have had in his or her contemplation rather than only what he or she actually contemplated. In other words, one assumes that the defendant at the time the contract was made had thought about the consequences of its breach.

35. Fifthly, the criterion for deciding what the defendant must be taken to have had in his or her contemplation as the result of a breach of their contract is a factual one." (emphasis added)

In summary, it is clear that "loss" means "type or kind of loss". Further, the better view is that what must be reasonably contemplated is whether the type of loss is "a serious possibility" (rather than "not unlikely to occur")."

317. The claimant referred me to the well-known decision of the Court of Appeal in *Parsons Ltd v Uttley Ingham & Co* [1978] 1 QB 791 for the proposition that the particular circumstances or precise extent of the loss that occurs need not be foreseeable or reasonably contemplated. Rather, what is necessary is that the loss or damage was of a type or kind which the parties could reasonably be supposed to have contemplated at the point at which they entered their contract. In that case the defendant, who supplied a food storage hopper to the claimant pig farm, had breached the parties' contract by leaving a ventilator in the top of the hopper improperly sealed. The lack of ventilation lead to the pignuts that were stored in the hopper going mouldy which, in turn, lead to the pigs contracting E coli and dying. The Court of Appeal held that the very substantial losses resulting from the death of hundreds of pigs and the loss of the profits that would have been earned on them were not too remote. It was a foreseeable consequence of the breach that the pignuts might become mouldy and that the pigs might become ill as a result. That was all that was required. It did not matter that it was only a slight possibility, or that the particular illness which resulted (E coli) and its seriousness was not reasonably foreseeable as even a slight possibility.

318. The claimant referred me to the judgment of Asquith LJ at 540 in *Victoria Laundry (Windsor) Ltd v Newman Industries Ltd* [1949] 2 KB 528 for the principle that, when considering foreseeability, the question is not whether the contract-breaker in fact foresaw the type of loss or considered the risk. The question is whether if he had considered the question he would, as a reasonable person, have concluded that the loss was liable to result. It follows that retrospective evidence from a representative of the defendant as to what he personally knew or did not know about the use of a waking watch at the time

of the contract in 2005 is irrelevant, save insofar as it sheds any light as to what a reasonable person in his position would have concluded had he given thought to the question.

319. The claimant referred me to the judgment of Lord Walker at (78) in *The Achilleas* [2009] 1 AC 61 for the proposition that remoteness is not all about probability:

"…it is not simply a question of probability. It is also a question of what the contracting parties must be taken to have had in mind, having regard to the nature and object of their business transaction. If a manufacturer of lightning conductors sells a defective conductor and the customer's house burns down as a result, the manufacturer will not escape liability by proving that only one in a hundred of his customers' buildings had actually been struck by lightning."

320. The defendant also referred me to *The Achilleas* and its subsequent consideration by the Court of Appeal in *Wellesley Partners LLP v Withers LLP* [2015] EWCA Civ 1146, [2016] CH 529 which, they contend, make clear that the reasonable contemplation test is not sufficient in all cases to meet the rule of remoteness, which is intended to control recoverable damages. They refer me to the observation of Floyd LJ in *Wellesley* at [69] where he said that:

"The [*Hadley v Baxendale*] principle is founded on the notion that the parties, in the absence of special provision in the contract, would normally expect a contract-breaker to be assuming responsibility for damage which would reasonably be contemplated to result from a breach. *The Achilleas* shows that there may be cases where, based on the individual circumstances surrounding the making of the contract, this assumed expectation is not well-founded. Thus, in that case, charterers of a ship were not liable for all the consequences of a late redelivery of the vessel, which had forced the owners to renegotiate a more favourable rate for a follow-on charter. The commercial pressure to renegotiate had arisen because of unusually and highly volatile market rates. According to Lord Hoffmann (see para 23), with whom Lord Hope of Craighead agreed, departure from the ordinary test was justified because the loss claimed would have been completely unquantifiable at the date of the contract and because the general understanding of the market was that the claimed loss was not recoverable. The charterer could not reasonably be taken to have assumed responsibility for the particular loss claimed. Lord Hoffmann recognised that the mere fact that losses were unforeseeably large did not exclude recovery if loss of that type would fall within one or other of the rules in *Hadley v Baxendale* 9 Exch 341: see [2009] AC 61, para 21. Nevertheless there was also what he called an "exclusive principle" which meant that there could be some foreseeable losses for which the contract-breaker would not be liable because they were not the kind or type of loss for which he can be treated as having assumed responsibility (ibid). Whether a type of loss was different is determined by asking whether it reflects what would reasonably have been regarded as significant for the purpose of the risk being undertaken: para 22. Lord Hoffmann did, however, point out at para 11: "cases of departure from the ordinary foreseeability rule based on individual circumstances will be unusual, but limitations on the extent of liability in particular types of contract arising out of general expectations in certain markets, such as banking and shipping, are likely to be more common."

321. Floyd LJ went on to observe at [70] that in *The Achilleas* "Lord Rodger of Earlsferry, with whom Baroness Hale of Richmond agreed, felt able to bring the case within the traditional remoteness rule, holding that the loss in question stemmed from an unusual occurrence of which the charterers were unaware and could not have been foreseen as being likely to arise out of the delay in question [and] … felt it unnecessary to deal with questions of assumption of responsibility in those circumstances".

322. At [71] he observed that the speech of Lord Walker might be read as approving both the "assumption of responsibility" approach of Lord Hoffmann and the more traditional approach of Lord Rodger, but concluded that he had not "found it necessary to delve further into the question of whether this means that the true ratio of the decision is that given by Lord Hoffmann or Lord Rodger, or whether there are two inconsistent ratios".

323. Likewise, it is not necessary for me in this case to investigate or attempt to decide that question. It is sufficient to say that what is plain is that a loss will not be foreseeable if in the particular individual circumstances of the contract the loss was an unusual occurrence outside the contemplation of the parties (Lord Rodger at par. 60) or a different type of loss of which the defendant had insufficient knowledge to make it reasonable to attribute to him acceptance of liability for such losses (Lord Hoffmann at par. 22).

Causation - were the installation breaches an effective cause of the replacement works?

324. In the summary above I have referred to events post Grenfell and noted that as early as 23 June 2017 the claimant had begun the process of undertaking what was described as a "review of Gosport cladding system to determine building regulation compliance at time of installation, fire performance and requirements for fire engineered solutions to mitigate any risks identified".

325. The initial findings, which were available by 26 June 2017, identified concerns as to the combustibility of the EPS insulation boards and the render and also identified concerns as to installation defects, specifically, the voids behind the EPS insulation boards. Later that day Ms Bailey emailed the Hyde non-executive directors. She referred to the investigations having identified what was "strongly believed to be flammable cladding". She explained the steps that had already been taken and that further investigations would be undertaken using expert consultants. She also said "we are working on the basis that the cladding will have to be removed". This is consistent with her having spoken to Mr Martin, by then at the Department of Housing, Communities and Local Government ("DCLG"), and recorded in an email that he "sounded impressed / surprised that we'd already decided to remove the insulation".

326. These contemporaneous communications are consistent with other evidence that from a very early stage the majority of those involved, and Ms Bailey in particular, clearly believed that the existing EPS insulation would, being combustible, need to be removed and replaced with non-combustible insulation in order to ensure the safety of the residents of the Gosport towers. Thus, the minutes of the EMT meeting held on 11 July 2017 recorded that Hyde was gathering enough information to make a recommendation, but that it was likely that the EMT would receive a recommendation from the project team to remove the cladding.

327. However, I accept the claimant's essential submission that there is a fundamental difference between: (a) those tasked with undertaking investigations and making decisions having a belief that the whole cladding would need to be replaced, or even making a decision in principle to that effect; and (b) the claimant as a company, acting in accordance with its decision making structure, making a firm and irrevocable decision, having completed its investigations, to remove and replace the existing cladding in its entirety. Furthermore, I think that some of the correspondence shows Ms Bailey, having herself decided that the combustible cladding ought to be removed, seeking to ensure that the claimant as a business should make that decision and implement it without delay.

328. What is clear is that both Ms Bailey in particular and the claimant in general knew that it would have to seek and obtain specialist advice before making any final decision. As early as 26 June 2017, the claimant contacted Sto (whom it had identified as the manufacturer of the external wall system) to seek its advice and input on the system and, by early July 2017, the claimant had begun the search for a fire engineer to provide specialist advice. That cannot be categorised as a cynical exercise in back-covering in anticipation of future litigation; I entirely acquit those involved with the decision in general and Ms Bailey in particular of such conduct, for which there is no real support in the evidence.

329. On 13 July 2017 tests revealed the defects in the fixing of the fire barriers. An internal email sent to Mr Le Page by Mr Marr, an in-house surveyor, summarised the defects which had been found and

identified the two options as removing and repairing the fire barriers only, or removing and replacing the whole external wall system, identifying various advantages and disadvantages in relation to both, including the issue of a warranty in relation to the repair option.

330. I have already referred above to the Sto report of 24 July 2017, confirming the installation defects in relation to the fire breaks and recommending that more investigations be carried out "at the very least". This was discussed by email by the members of the EMT on 26 July 2017, in the course of which Mr O'Halloran, the director of asset management, made it quite clear that his recommendation to decide in principle to remove the cladding on safety grounds and to consider replacement options was based very substantially on the conclusions of the Sto report.

331. Mr Denton, the group finance director, supported by Mr Gannicott, the group business director, made clear his view that it was important to obtain sufficient evidence to justify the decision as well as a costed options paper before any "final sign off" occurred. Ms Bailey's email in reply does not disagree. She stressed the need to avoid delay whilst also suggesting that obtaining information and detailed costings could be "played out in tandem" with removal and replacement. This is important, because it shows that - as might be expected - different people within the EMT had different perspectives as to what were the key driving factors. It is not surprising that some, such as Ms Bailey, would see the key driving factor as the need to ensure resident safety at all costs, whereas those with more of a commercial or financial responsibility such as Mr Denton and Mr Gannicott, would see the commercial and financial impact of such a decision as needing to be borne in mind.

332. The claimant's case is that on 26 July 2017 the EMT decided to remove the cladding in principle and to consider replacement options, but that the decision to remove and to replace was only made on a final and definite basis in November 2017, once it had undertaken detailed investigations and obtained reports from two separate consultants and given the defendant the opportunity to make proposals. It contends that what is plain is that the final decision was taken on the basis of the installation breaches, albeit also taking into account wider considerations including the combustible nature of the cladding.

333. The defendant's case is that the cause of the decision to replace the cladding was the presence of combustible insulation in the cladding and had nothing to do with the installation defects.

334. A large amount of time and effort was directed to this heavily contested issue, both in cross-examination and by reference to the contemporaneous documents. There is no need to prolong this section of the judgment by recording every exchange. I completely reject any suggestion by the defendant that the claimant was not actually placing reliance upon what it was being advised by its expert advisers. It follows in my view that some of the most important contemporaneous documents are those in which that advice is recorded.

335. By 9 October 2017, in addition to the reports provided by Sto and Capita the claimant also had the benefit of a condition survey, feasibility estimate and an options appraisal, all produced by Pellings. Apart from the Pellings feasibility estimate, which provided a high-level costing for replacement of the EWI cladding, all these reports confirmed the presence of the installation breaches and that remedial works were required by reference to these installation breaches as well as to the combustible nature of the EWI cladding.

336. The defendant suggests that the first Pellings condition survey, produced on 1 August 2017, proceeded on the basis that the brief was already only to consider replacement. That is not, however, what appears from the executive summary where at [1.14] further opening up works were recommended to ascertain the full extent of remedial works required, with "serious consideration" being given to complete replacement [1.16]. The same is true of the revised version produced on 18 August 2017, as appears from [1.17] and [1.19.2] in particular. It is clear from the summary of the report prepared for the EMT meeting of 25 August 2017 and the final versions produced subsequently that whilst the

replacement option was the "recommended option", the repair option was nonetheless described as "unlikely but still a consideration until further testing is carried out". Again, there is no basis in my judgment for rejecting this as a device; it is plain that a final decision had still not been taken.

337. Although the defendant also suggests that the Capita advice note can be disregarded on the basis that it was prepared for the purpose of the potential claim against the defendant, there is no basis from its content for considering that its purpose is simply to support a pre-determined conclusion. It is also clear from the contemporaneous documents that it was something which was taken into account by the claimant in making its decision and no claim for privilege has been maintained in relation to its content even though, not unusually, privilege has been maintained as regards the instructions to Capita which are summarised anyway in the report.

338. I have also already referred above to the further Sto report of 4 September 2017. This also stated that, in addition to remedial works to the fire barriers, "as the current integrity of the system cannot be assured, we would strongly recommend supplementing the existing system by installing new mechanical fixings throughout [the existing insulation boards]" which would, in turn, necessitate removing and then replacing the new render coatings, including new overlapping reinforcing mesh. The claimant argues that since, on this basis, it would have been necessary to undertake extensive remedial works in relation to all of the EPS cladding over the whole of the four towers as well as to the fire barriers it could not have been unreasonable to decide to replace the existing EPS cladding at the same time instead.

339. The updated Capita advice note dated 6 October 2017 recorded a discussion with Mr Trew of Sto who reported that whilst there was a precedent for removing the fire barrier without also removing the EPS insulation panels: (i) it was "unusual"; (ii) it would require a complete rendering of the entire insulation in any event; (iii) it would be necessary to remove the redundant adhesive first to ensure that the new fire barrier boards were effectively secured to the substrate without leaving gaps behind. The conclusions at [90] and [91] of the Capita note are worth setting out in full:

"90. I therefore recommend that the external wall insulation system is removed and replaced. In my view the opportunity might be taken to supplement fire safety at the buildings by installing vertical fire barriers at compartment wall lines and to select an insulant that is less readily combustible than the expanded polystyrene that is currently in place for use throughout the system.

91. However, if the prospect of material 'betterment' needed to be avoided, I confirm that I would regard a conforming Sto EWI system using EPS insulant with adequately and properly installed 'Lamella' horizontal firebreaks to provide a significant improvement in fire safety conditions at the Gosport Towers."

340. In those circumstances, the claimant was plainly aware that it would have to make a choice between the replacement and the repair options and that a decision to replace might bring in the question of whether the full cost could be repaired or whether some of it would be regarded as betterment.

341. The options appraisal report produced by Pellings dated 9 October 2017 identified the three potential options as being repair, removal with no replacement and removal with replacement upgraded to meet current standards. The removal with no replacement option was swiftly discounted and there has never been any criticism of this decision. Thus, the two options available to the claimant were repair or removal and replacement. Pellings recommended removal and replacement with a modern alternative EWI rendered system. This was instead of rainscreen panels, which in their view would be more costly and the design more complex, given the existing render construction, and again there is no criticism of that advice. Their key reasons were that:

"11.1 Repairing the fire breaks will only ensure that the system performance meets with the manufacturers requirements at time of the original installation. In addition to the repairs and reinstatement works required to the fire breaks supplemental mechanical fixings would also need to be installed throughout the blocks to ensure the structural integrity of the system as a whole. On completion of such significant remedial work the external wall insulation system would still not be compliant with current Building Regulations albeit that you are not currently required to upgrade the complete system.

11.2 The cost of repair is significant and will be in the region of 50% to 60% of the cost to replace it with a system that would be fully compliant with current Building Regulations …"

11.5 In light of the potential risks to residents with regard to the fire breaks, coupled with the cost of repairs versus replacement, urgency of the work required and the element of uncertainty that would remain in relation to the integrity of the system as a whole we would recommend replacement of the EWI in its entirety. Only with complete replacement will Hyde be in a position to ensure that the EWI will meet with the requirements of the current Building Regulations and provide the building with a system that would be guaranteed by the chosen manufacturer for a further 20 years."

342. As regards the comparative costs of repair, in its condition survey dated 22 September 2017 Pellings had already estimated at [8.2] that the remedial costs would be significant, especially given the amount of working access provision required. In the budget estimates attached to its options appraisal report it assessed the cost for the 4 towers as being £2,100,000, net of various exclusions including professional fees and VAT. It assessed the cost of removal and replacement with an EWI rendered system for the four towers as being £3,380,000 on the same basis. Thus, in broad terms the claimant was aware that it would cost approximately another 60% to remove and replace compared with to repair.

343. The claimant does not argue that it could not have replaced the fire barriers without also replacing the EPS cladding so as to comply with the requirements of the Building Regulations current at the time. No doubt this is because, leaving aside the fact that on a proper reading of the 2010 Building Regulations then in force that would not have been the case, the Pellings condition survey dated 22 September 2017 noted at [1.24] that the local Building Control had advised informally that "any remedial work to the fire breaks is likely to be considered in isolation of the complete installation with regard to Building Regulation Approval".

344. On 2 November 2017 Mr Le Page produced the final iteration of his "repair / replace options appraisal" to be put before the EMT for approval, explaining that it was based on the Pellings' condition survey and options appraisal and that it also took into account the Capita report. Having analysed the options considered by Pellings, it adopted Pellings' recommendation to replace the existing system with a non-combustible EWI system. The major disadvantages of the repair option were identified as being that: (a) retaining the existing EPS insulation would mean that the external cladding system would not be current Building Regulations compliant and remain a fire safety risk; (b) there was a risk of other unidentified defects, such as voids behind the existing insulation, remaining; and (c) the costs of work access, site preliminaries and management costs would be the same as the repair option. It identified the estimated cost as being £4.0 to £4.5 million, excluding fees, VAT and contingency (this being for all five towers). It said that a further report would be provided, with a detailed specification and an outline programme, before procurement would be progressed.

345. The paper also stated that should the defendant agree to rectify the defects in the towers to an agreed standard within a set deadline "this paper will become void". There is no reason in my view to regard this statement as manufactured. In my view it reflects the reality, which is that had the defendant made a sensible proposal to undertake works at its own expense and with expedition along the lines of the repair option proposed by Sto and Capita and as it now asserts in this litigation it would have been

taken very seriously by the claimant, who would not simply have ignored it and proceeded with the replacement option regardless. However, that is not what happened.

346. It is common ground that, because it "slipped through the cracks", the defendant failed to respond to the claimant's initial letter before claim dated 11 August 2017. The claimant's follow-up letter dated 18 October 2017 stated that the claimant had concluded that the external cladding system at the Gosport towers had been defectively installed and had to be removed and replaced urgently and offered the defendant inspection facilities before it did so. In an accompanying letter the claimant said that it would be willing to allow the defendant to undertake the works itself and to confirm its interest to the claimant if it was interested in so doing.

347. There was then a dispute about access which I do not need to investigate. I have already noted that Mr Le Page did write misleadingly in one respect, but do not accept that this is evidence of a deliberate strategy of seeking to mislead either the defendant or the court as to its genuine willingness to consider alternatives to full replacement. The defendant was offered inspection facilities in any event in Mr Le Page's subsequent email, which it chose not to take up, as well as being provided with photographs. Further, in its formal response dated 9 November 2017 the defendant denied liability on the basis that, regardless of the alleged installation defects, the EWI was "a fire hazard and should be removed". The defendant did, I accept, make clear that this was on the basis that the EWI was now, but was not at the time of installation, recognised to be unsuitability due to the fire safety risk it created.

348. The defendant did suggest as a possible solution to the problem with the fire breaks a proposal to inject a fireproof solution into the cavities using an abseiling method. That, however, was never in my view a realistic solution, as the experts agreed. The defendant was not at that point suggesting that the claimant could and should remove and replace the fire breaks in isolation as opposed to complete replacement; the defendant's essential argument was that the need to replace was not the result of any installation defects.

349. The EMT meeting was scheduled to take place on 6 November 2017. It appears from Ms Bailey's email of 9 November 2017 that she had intended to raise this under any other business at the meeting but forgot to do so. Instead, she emailed Mr Le Page's paper to the EMT members, asking for their approval and saying that they could discuss if they wished. She added "note that approval will enable the team to start the procurement exercise and that, in parallel, we are pursuing the legal action route". Her recommendation was unanimously approved by her fellow EMT members by exchange of emails and without the need for further discussion at a meeting.

350. Ms Bailey was cross-examined on the basis that the rather casual way in which this ostensibly important matter was to be inserted without warning into any other business and then forgotten about and dealt with by exchange of emails showed that this was really a mere formality, because the actual decision to replace as opposed to repair had been taken many months previously. It was suggested to her and to Mr Le Page that much of what was produced on paper from August 2017 onwards was little more than a paper trail, orchestrated by the claimant's solicitors who had been engaged at that time, to seek to demonstrate that the decision which had already been made without proper consideration or formality had been taken at a later stage with full consideration of the alternatives and with proper formality.

351. I can understand why this argument was advanced. As I have said, there is evidence that from a very early stage the claimant, and Ms Bailey in particular, believed that the existing EPS insulation would need to be removed and replaced with non-combustible insulation in order to ensure the safety of the residents of the Gosport towers. I can understand the basis for the defendant's suspicion that, with the benefit of advice from in-house and external legal advice, the claimant has been assiduous to give the impression that the decision whether or not to replace was entirely separate from advice given in relation to its prospective claim against the defendant. I also agree that the approach to the formal

decision made in November 2017 was surprisingly casual, although Ms Bailey also explained that this was intended to be an informal catchup meeting rather than a formal meeting anyway. However the apparent force of these points is negated in my view by reference to the following points.

352. First, it is misleading to view the events of 2017 through the prism of litigation-driven hindsight. That is especially so in the context of this case where, as it has proceeded, the defendant has sought to make a binary division between the installation breaches and the specification breach in terms of liability and causation. However, in my view that is not how the claimant saw it at the time. Instead, it is clear that most of the claimant's representatives in general, and Ms Bailey in particular, simply wanted to do what they regarded as the right thing as regards resident safety and that it was obvious from an early stage that the safest thing would be to remove the defective fire barriers and to remove the combustible EPS insulation from the Gosport towers, regardless of whether the need for these works might be characterised as an installation breach, a specification breach, a post contract fire safety regulatory regime change, a heightened appreciation of fire risk from combustible external cladding post Grenfell, or more than one of the above.

353. Second, it is difficult to disentangle the two causes in fact. As the claimant pointed out in closing submissions, it was the combination of the combustible cladding and the defects in the fire barriers which created such a serious problem; one without the other would have been far less of a problem.

354. Third, it is wrong to treat the decision as being a once and for all decision, made for all purposes and for all time in June or July 2017. It seems reasonably clear that whilst most of the claimant's representatives in general, and Ms Bailey in particular, had proceeded from a very early stage on the basis that the claimant would undertake a complete replacement, there is no basis for a suggestion that the claimant was unwilling to review that decision in the light of further developments. It is worth noting that the decision to undertake further investigations and the decision made on 26 July 2017 were both made before the claimant instructed external solicitors in August 2017. It cannot, therefore, be contended that these decisions were carefully choreographed with their involvement, contrary to the suggestion in the defendant's closing submissions. If it is alleged, I do not accept that the claimant was instructing Pellings or Capita to provide reports to assist it in making its decisions on the basis that the claimant was committed to replacing regardless of what the reports might say.

355. In my judgment the claimant has demonstrated on the evidence that the final decision to replace was only made in November 2017 with the benefit of full investigations and detailed advice from external consultants and at a time when the installation defects were plainly an effective cause of the decision. The email from Mr Le Page to Mr Hardy dated 13 November 2017, saying "yes we now have the green light to proceed with procurement", shows that he clearly believed at the time that it was only then that the decision was made.

356. Even if, contrary to my actual findings, the true position was that the claimant had already made that decision for all practical purposes in June or July 2017 on the sole basis of the presence of the combustible EPS cladding, nonetheless it would be sufficient in my judgment as a matter of principle for the claimant to be able to show that by the time it became committed to that decision the installation defects had also become an effective cause of the decision. The claimant was not committed to the decision any earlier than the date of entry into the replacement works contract with Axis and by that date the installation defects had, on any reasonable view, also become an effective cause of the decision.

357. Insofar as it is relevant to have regard to the defendant's contemporaneous position, on 9 February 2018 the defendant made a financial proposal to the claimant on the basis of the remedial solution involving the injection of adhesive into the firebreak cavities and making good. As I have said, this is not a remedial solution which is supported by the defendant's experts. Mr McCracken's opinion in section 4.2 of his report, based on his witnessing of a test conducted by the defendant, was that "it was possible for me to opine that the fire safety system defects could potentially be rectified by

this method" and that "with further development and verification the 'injection method' could have achieved the objectives". In fact, the defendant itself chose not to take this forward at the time so as to seek to demonstrate to the claimant that this really was a viable solution.

358. Instead, it is clear to me that it was put forward on the basis of the defendant seeking to justify the least costly financial proposal which the defendant thought it could get away with at the time. It is telling in my judgment that notwithstanding what is said by Mr Pinkney in his witness statement the defendant was not, at the time, willing to actually undertake these remedial works at its own expense and with the benefit of any commitment that it would test them to prove that they had resolved all of the problems with the fire breaks, let alone all of the installation defects which existed at that time. It was not said, and there is no evidence, that as at February 2018 it was endorsed by Sto or by any other consultants as being a tried, tested and technically appropriate solution. In the circumstances, the claimant cannot be blamed for rejecting this offer on the stated basis that it "benefited from little thought, is minimalistic and does not address the required scope".

359. The defendant did not put forward the repair option which it now contends for until it served its response in the adjudication, well after the claimant had already completed the replacement works.

360. For all of those reasons I am satisfied that the claimant has shown that the installation defects were an effective cause of the claimant's loss.

Causation - would the claimant have been entitled to recover the cost of the replacement works even without the specification breaches?

361. Whilst this issue does not arise, given my findings on the specification breach case, I should nonetheless deal with it. In summary, the defendant contends that, since its proposed repair scheme would have been both appropriate from a technical perspective to remedy the installation defects and far cheaper than the full replacement option, there would have been no proper basis for awarding the claimant the replacement costs if the only breaches for which it is responsible are the installation breaches. The claimant accepts that at the time it appeared that the remedial scheme would be cheaper but alleges that at the time it took the reasonable decision to replace, based on expert advice, and denies that the remedial scheme is satisfactory from a technical perspective. For those principal reasons it asserts that it would have been entitled to recover the actual replacement costs even on this hypothesis.

362. In summary, the defendant's proposed remedial scheme involves the removal and replacement of the fire barriers and the provision of additional mechanical fixings to the EPS panels. It is described in the architects' joint statement as comprising: "(a) cutting in fire barriers bedded in a 100mm adhesive band; (b) installing supplementary stainless-steel fixings at 300mm centres to the fire barriers; (c) provision of supplementary fixings to the EPS insulation at a rate of 8 per m^2 and stainless-steel fixings at a rate of 1 per m2; (d) install new reinforcing mesh 650mm high over the fire barriers; (e) complete levelling compound and over-render".

363. I shall consider the objections to the repair scheme on the grounds of technical feasibility in the order addressed by the claimant in its closing submissions.

364. First, the claimant submits that the remedial scheme was unacceptable as unsupported by any test evidence to demonstrate that the StoTherm Classic system would, once remedied, perform adequately in fire engineering terms.

365. I do not regard this as a strong point. On the hypothesis that I am only dealing with installation defects in a system which is otherwise compliant and does not require BS-8414-1 test evidence, remedying the installation defects would in itself provide the necessary comfort in circumstances where

the claimant's experts have not been able to demonstrate any specific cause for concern save for the presence of the remaining combustible insulation panels.

366. Second, the claimant submits that the remedial scheme would have left unremedied the installation of the EPS panels using a 'dot and dab' method without a perimeter band (or 'sausage') of adhesive around the edge of the board, which had created continuous voids between the insulation and the substrate. I have already addressed this point above under the installation breaches. However, it is not directly relevant to the claimant's technical objections to the repair scheme because Mr Jowett accepted that it would be possible to overcome this problem by providing a suitable system of cavity barriers.

367. The claimant also submits that the problem with a lack of adhesive might lead to a problem with wind loading which the scheme design had not addressed. Given, however, the proposal in the remedial works scheme for additional mechanical fixings, which would go through the base coat and reinforcement layer, I regard this as an essentially theoretical objection. I reach the same conclusion as regards the complaint that the defendant's failure to show how the remedial scheme would meet the thermal requirements of the Building Regulations.

368. The claimant also referred to an issue about remaining substrate defects but, since that allegation was withdrawn as a positive case and not in my judgment made good by appropriate investigation or expert evidence, I do not accept it.

369. I also accept the defendant's submission that the claimant has failed to provide evidence to demonstrate that the remedial works would not meet the thermal performance requirements of the Building Regulations.

370. In relation to all of these points, it is a fair comment that none of them seemed serious obstacles to the claimant's advisers, Pellings or Capita, when they were considering a remedial scheme of this nature in 2018.

371. The claimant contends that it is a major flaw with the defendant's remedial scheme that it would not - unlike the replacement system provided - have had the benefit of a guarantee, warranty or bond from the designer, the contractor, the system manufacturer or a warranty provider. I accept that in principle this could be a material consideration. However, in the context of this case, where the StoTherm Classic system had been in place, with whatever warranties were originally provided, for some 12 to 13 years by the time it was replaced and where - on the hypothesis under consideration - the only relevant flaw with the system for which the defendant is responsible is the presence of the specified installation defects, it is apparent that the only warranty which the claimant could realistically have expected would have been the usual contractual warranties from the parties involved in the remedial work scheme in respect of their remedial work. There is no evidence or basis for suggesting that the claimant could not have assembled a team to design and undertake the works which would not have been prepared to give conventional warranties in relation to their works, albeit that they would not - understandably - have been prepared to warrant the entire system. In my judgment the claimant cannot credibly argue that the absence of a new warranty for a wholly new system would have been a good reason for rejecting a remedial scheme to this 12 to 13 year old system at the defendant's expense.

372. The claimant makes the associated point that there is no evidence that such a scheme is "tried and tested". Capita's advice note of 6 October 2017 records that the author had discussed with Mr Trew of Sto whether there was a "precedent for a practical and cost-effective remediation to defective fire-break installations, without the need for the general insulant to be removed from the building's elevation" and had been informed that "a precedent does exist but that it is unusual". No more than this is known. It is perhaps not surprising that this would be an unusual thing to do because, for all the reasons which weighed with the claimant in this case, any building owner who decided, post Grenfell, to undertake works to remedy a known fire safety risk in a building such as this would almost certainly - all other

things being equal and there being no financial or litigation recovery related issues - choose complete replacement over limited repair. However, in a case such as this, where there has been exhaustive expert scrutiny of the options, both at the time and during this litigation, the court is entitled and indeed in my view required to assess the merits of the solution on the basis of that evidence rather than the absence of evidence of it being a tried and tested option.

373. Finally, the claimant contends that the means by which access is proposed to be provided in the defendant's alternative remedial scheme is inappropriate, since the proposal for mobile "mast climber" platforms would not provide the same level of temporary weather or dust protection as would using scaffolding - as did the claimant's remedial contractor. I shall address this point under the section on quantum since, if and to the extent that it is a good point, it cannot be said that it could not have been overcome by providing scaffolding for the remedial works instead of mast climbers.

374. For all of these reasons, I reject the claimant's argument that the repair option would not have been a technically appropriate option to remedy the installation breaches.

375. It is necessary, therefore, to consider the wider factors in play when deciding whether or not the claimant would have been entitled to recover the replacement costs as damages for the installation breaches alone. I accept that the claimant's expressed concerns about the technical feasibility of the remedial scheme are, whilst not decisive for the reasons stated above, of some relevance to the overall assessment insofar as – as I have accepted - they are not wholly spurious.

Reliance on expert evidence

376. The claimant, understandably, makes much of the fact that its decision was backed by expert evidence which was neither unreasonable nor negligent. I accept that on the authorities this is a relevant factor. However, in my judgment its relevance in this case is limited for the following reasons.

377. First, this is not a straightforward issue where the only question for the experts to consider and for the court to decide is whether or not the remedial scheme adopted was a reasonable solution to remedy the defects in the building for which the defendant was responsible. As I have made clear, this issue would only arise in the hypothetical circumstances where I found the defendant liable for the installation breaches but not the specification breaches. In 2017 the experts were simply being asked to advise the claimant on the best solution to the problem it then faced, in the context of what was a new and very challenging post Grenfell world, regardless of who was responsible for which aspects of that problem. Thus, Capita's advice note of 6 October 2017 did not come down unambiguously on the side of replacement for purely technical reasons, acknowledging that there would be benefits to adopting a replacement scheme which might, however, also be viewed as amounting to betterment. Sto had not advised against the remedial scheme on technical grounds and their description of it as "unusual" does not imply clear advice to that effect. The view expressed by Pellings also took into account factors above and beyond the narrow issue of how best to resolve the installation breaches most effectively and efficiently.

378. Moreover, this is not a case where, having decided - reasonably - that remedial action had to be taken, the claimant had no option but to replace the whole system in order to comply with current Building Regulations. That was plainly desirable for the safety of the occupants and, no doubt, for the claimant's reputation as a reasonable housing association, but it was not something which the claimant was obliged to do. The claimant had reached the conclusion, albeit provisional and subject to expert advice, from a very early stage that it was likely that the entire cladding system would require replacement in the post Grenfell world for a combination of reasons going beyond the installation breaches.

379. I acknowledge that the defendant did not put the remedial works option forward at the time. In other circumstances that might be a point against it. However, since in this case the claimant was well aware of this alternative remedial option from the outset the point has little or no relevance. It does, however, as I find later have relevance in relation to the quantification of the remedial costs had I assessed damages on this basis, since there would have been no proper basis for assessing the costs on the basis that the defendant could and should have been allowed to undertake the remedial works itself in circumstances where it had declined to do so at the time.

Cost of the remedial scheme compared with the replacement scheme

380. As I have already observed, the claimant was aware at the time that there was a significant cost difference between the replacement scheme and the remedial scheme, with Pellings saying in the budget estimates attached to its options appraisal report that it would cost about 60% more to replace than to repair, £2,100,000 compared with £3,380,000 (both net of professional fees and VAT).

381. There was nothing in the Pellings options appraisal report which suggested that the risk of increase from the estimated to an actual out-turn cost was greater in relation to the repair scheme than the replacement scheme. It follows that, at the time, the claimant did not make its decision, and nor could it reasonably have made its decision, on the basis that there was such a modest difference between replacement and repair that it was reasonable, not only for its own purpose but also in the context of any prospective claim against the defendant, to proceed with the replacement scheme.

382. It might be possible to compare the contract sum agreed with Axis for the replacement works the subject of this claim with the equivalent estimated cost of the remedial scheme based on my findings in this judgment so as to produce a like-for-like comparison. However, the estimated cost of the remedial scheme cannot be definitively ascertained until the quantity surveyors have produced a final figure based on my determinations in relation to the items in dispute and until any dispute in relation to the potentially different VAT rate applicable to the replacement and the remedial works is resolved.

383. It is, therefore, not possible for me at this point to undertake a like-for-like comparison as to whether or not at the point of contracting the estimated cost of the replacement scheme was higher than the estimated cost of the remedial scheme as it now appears.

384. Nonetheless, it is reasonably clear that if there needs to be added to the remedial scheme the significant costs of the provision of cavity barriers and the significant add-on costs of procuring the remedial works through a main contractor and specialist subcontractors then the difference between the two will be significantly less than was assumed by Pellings in 2017.

385. The claimant has not raised, as a separate ground for justifying recovery of its actual replacement costs, any argument to the effect that the reasonableness of its decision to choose the replacement option is to be addressed by reference to such a comparison and, hence, I have not heard argument on the point. Accordingly, it would be wrong for me to reach any conclusion on such a basis, even if I had the figures available to me to do so, which I do not.

386. However, any potential prejudice which might otherwise have been suffered by the claimant had I found against it on the specification breach case is very likely to be substantially diminished, if not entirely removed, by the fact that the cap on its recoverable damages in such a case would be measured by reference to the estimated cost of the remedial scheme as calculated in accordance with my determinations on the points in dispute.

Conclusion

387. In all the circumstances I am satisfied that in such circumstances it would have been unreasonable to allow the claimant to recover the replacement costs actually incurred as damages for the installation breaches alone.

388. I have considered whether the claimant might have been entitled to recover the replacement costs actually incurred less a discount for the additional cost of replacing the existing EPS insulation boards with mineral insulation boards and any other items of "betterment". However, it seems to me that since the real purpose behind replacement as opposed to repair was precisely to achieve the objective of replacing the existing EPS insulation boards as well as the fire barriers and, but for this objective there would have been no compelling case for replacement as opposed to repair, that would have been wrong in principle.

Causation and remoteness - the waking watch

389. The waking watch involved the assignment of a number of trained operatives, either fire wardens or security officers, to the Gosport towers. Their purpose, as stated in the email from Mr Le Page on 23 June 2017 to the first company contracted to provide the service, Churchill Security, was to: (i) provide a "visible presence for residents to feel that their safety is important"; (ii) patrol the towers periodically, checking for fires or matters which might increase the risk or seriousness of fires and reporting any relevant defects, (iii) in the event of a fire emergency call the fire rescue service, alert persons within the immediate vicinity of the fire and assist the fire rescue service as requested.

390. The first decision to implement a waking watch was made at a meeting of the EMT on 23 June 2017. As Mr Carmichael said in his witness statement the decision to implement a waking watch was a measure taken to mitigate the consequences of the fire-safety risks identified post Grenfell until the permanent safety measures which might turn out to be required could be identified and implemented. As he also said it was a measure taken to mitigate the more dramatic consequences, both to the residents and to the claimant's finances, had it proved necessary to evacuate the residents of the Gosport towers and find alternative accommodation over that period.

391. On 22 June 2017, the DCLG had written to all local authorities and housing associations giving advice in relation to safety checks following the Grenfell fire, although limited to buildings where ACM cladding had been used. It advised that where buildings were not protected by a sprinkler system or similar, owners needed to consider taking "interim measures" to mitigate the risks, including the "provision of a fire watch by appropriately trained patrolling security officers/wardens" and that "in the case of the most serious risk, consideration must be given to moving all residents out of the block until satisfactory remedial work has been done".

392. In his witness statement Mr Carmichael said that the claimant "applied the same logic to the situation at Gosport", adding that in his view there was a concern that it would have been negligent of the claimant not to do so.

393. The minutes of the FST's meeting held on 26 June 2017 show that the initial advice received from the claimant's fire safety expert was that there was no need for evacuation as long as there were "effective controls [and a] fire warden on site". This was confirmed by the Hampshire Fire and Rescue Service ("HFRS"[I]) two days later, who stated that what was needed was a 24 hour waking watch within each block in the form of a minimum of 2 wardens per block.

394. The evidence shows in my view that by the time of the decision to implement a waking watch the claimant's initial inspections had already revealed that the Gosport towers were clad with combustible EPS insulation cladding and that in Garland Court voids had been found behind the EPS panels due to the dot and dab adhesive application. The existence of voids behind the EPS panels in the other towers had not been positively established at this point. The existence of defects with the fire barriers had not

been identified at this point in time, although a minute of the FST meeting held on 26 June 2017 shows that there was already a suspicion that there was no effective fire barrier.

395. On 11 July 2017 the claimant's consultants, Charlton Ross, undertook invasive fire safety inspections which revealed the existence of serious internal fire compartmentation issues at Garland Court. Two days later, on 13 July 2017, the existence of the fire barrier defects was discovered. On 26 July 2017 the claimant informed HFRS of the confirmation on 13 July 2017 that the fire breaks had been defectively installed and stated that it would continue with the mitigation measures already in place (including the waking watch).

396. The defendant accepts that if the claimant succeeds on the substantive specification breach case, as it has, then it does not advance a case on causation in relation to the waking watch claim, although it does advance a case on remoteness which I address below. If the claimant had only succeeded on the installation breach case then the defendant would have disputed causation on a similar basis to the arguments advanced in relation to the replacement works, adding what it argues is the fundamental further point that as at 23 June 2017, when the decision to implement the waking watch was made, the claimant had no knowledge of the installation defects.

397. In my judgment this further point fails on the basis that by the time of the initial decision on 23 June 2017: (a) the claimant was already aware of the presence of at least one of the installation defects; (b) the claimant was already aware that it raised a serious fire safety related issue, due to the consequence of concealed voids behind the combustible EPS panels; (c) the claimant was entitled to be and was, by 26 June 2017, reasonably concerned that if there were defects in the installation of the EPS panels there might well also be defects in the installation of the fire barriers which, within three weeks, was indeed shown to be the case.

398. I accept the evidence of Mr Carmichael and Mr Le Page, consistent as it is with the documentary evidence, that as at 23 June 2017 preliminary investigations had already been undertaken by GHT Property Services and Frankham Risk Management Services - the latter in the presence of Mr Le Page, which had revealed voids behind EPS insulation panels in Garland Court due to the dot and dab adhesive. I also accept as intrinsically plausible the evidence of Mr Carmichael in particular - as an attendee at the meeting - that the initial results, even though preliminary and not yet committed to paper, were being fed in to the EMT by the time the decision was made. I accept that the minutes of the meeting only refer expressly to the fact that the cladding was reported to be of EPS. However, they also stated that "the facts are still being established and further advice is given before firm decisions can be made". I am satisfied on the balance of probabilities that by the time it was agreed that Mr Carmichael should arrange immediate 24 hour security patrols at Gosport towers it had been reported to the EMT that initial investigations had revealed that there were apparent voids behind what appeared to be combustible insulation panels in Garland Tower and that this was a very serious cause for concern as regards the overall fire safety of the external cladding system at the Gosport towers. Whilst I accept that the contemporaneous documents from that time do not provide express support for this finding and that neither Mr Le Page nor Mr Carmichael had a clear recollection of this information being passed on by the former to the latter and again by the latter to the EMT at or by the time of the meeting, nonetheless in my judgment it is inherently probable that it was. The defendant's forensic reliance upon the absence of contemporaneous documentary evidence and clear recollection now founders again in my judgment on the artificial distinction which this litigation has emphasised between the importance of the impact of the installation and the specification defects, which was not a major concern at the time.

399. It follows, applying the same principles as applied in relation to the causation of the replacement works, that from 23 June 2017 the installation defects were at least an effective cause of the decision to implement (and to continue with) the waking watch, alongside the presence of the combustible EPS insulation cladding and the presence of internal fire compartmentation defects.

400. The defendant submits that it is necessary for the claimant to prove that it knew about the installation defects and took them into account as a dominant cause of its decision to implement the waking watch at its meeting on 23 June 2017. I do not accept this submission. It is enough, as I have said, that it was an effective cause, which I am satisfied it plainly was. In my judgment the defendant is seeking to elevate what needs to have been known into concrete proof and knowledge of the existence of all of the installation breaches and of all their consequences. Whilst that may be appropriate in a once and for all irrevocable decision where there is no particular urgency to make a final decision, I do not accept that the same holds good in a case such as this, where a decision as to whether or not to implement a waking watch had to be made at speed on the basis of imperfect knowledge, in circumstances where getting it wrong could have the most serious of consequences both for human life and also for the claimant's reputation and financial position, but was not a once and for all decision.

401. Given that decision was not a once and for all decision but a continuing decision which was capable of being reviewed as matters developed, there is no basis in principle for asking the question only as at the date of first implementation. For the reasons I have given, even if it was not an effective cause as at 23 June 2017 it plainly was an effective cause of the decision to continue with the waking watch as from 14 July 2017 or 26 July 2017.

402. In the case of the waking watch claim there is no basis for distinguishing between the fact that without the specification breach there would - as I have found – have been no justification for undertaking the replacement option as opposed to the repair option. I address and reject the defendant's general complaint as to the overall duration of the waking watch under the quantification section below. I also address the overall duration of the waking watch on the assumption that the claimant only succeeded on the installation breach case below in that section.

Remoteness

403. The fundamental issue between the parties is whether the loss which has to be contemplated is, as the claimant contends, no more specific than the cost of taking temporary measures to mitigate the fire safety risk until a permanent solution can be identified and implemented or, as the defendant contends, the specific cost of a waking watch.

404. Neither party suggests that there is anything in the contract itself or in the pre-contract exchanges which is of particular relevance in terms of answering this question.

405. Nonetheless, in my judgment there are factors to do with the contract and the subject-matter of the contract which are of relevance. The first is that the defendant undoubtedly knew that the works included the provision of EWI cladding to a high-rise residential building. The second is that the Employer's Requirements stated that the EWI cladding to be used was a Sto system, incorporating 110mm EPS insulation, thus containing combustible insulation, albeit described as a "very high quality system specially designed for high rise usage". The third is that the defendant was undertaking a design as well as a construction responsibility, with specific obligations to comply with the Building Regulations and with BRE advice. The defendant, as an experienced contractor with access to designer advice must, therefore, have been taken to know of the importance of fire safety in relation to the selection and installation of external cladding and the potentially serious, not to say tragic, consequences of fires in high rise residential buildings due to fire spread in external cladding, as previously explained in ADB 2002 and BRE 135 (2003).

406. The defendant, quite rightly, does not suggest that the cost of undertaking remedial works in the event of specification or installation breaches is too remote. Nor does the defendant suggest that the cost of providing temporary fire safety measures in the event of specification breaches is too remote. Why then does the defendant suggest that the same cost is too remote in the event of installation breaches?

407. The defendant contends that the waking watch was caused by the unusual facts and fallout of the Grenfell Tower fire. The defendant relies on the evidence of Mr O'Malley to the effect that he was not familiar with the use of a waking watch before Grenfell, even after fires occurring in high rise buildings. Mr O'Malley said that he had discussed this in relation to this case with chief executives of other companies, all of whom said the same thing. The defendant also seeks to rely on the evidence of Mr McCracken to the effect that he would not have expected many reasonably competent design and build contractors to have been aware in 2005 of a waking watch being used as a possible measure to mitigate against a failure to install fire safety breaks. His reasoning seems to have been that, based on his experience, at the time the importance of passive fire safety provision (such as fire breaks) was just not appreciated by many contractors.

408. On that basis, it is scarcely surprising, but irrelevant, that they would not have considered there to be any need for any remedial measures. Mr McCracken accepted that in 2005 a waking watch was a possible, and one of many available, potential responses to an increased fire risk.

409. Mr Carmichael gave evidence that the claimant had used waking watches in 2011 and again in 2014 where there had been temporary failures with fire alarm or exit systems in student accommodation and in sheltered housing. I have no doubt that this would not have been uncommon as at the date of the contract and, indeed, Mr O'Malley effectively accepted in cross-examination that this could not be described as unusual. Mr Lavender gave similar evidence. The defendant criticised this evidence as limited to special circumstances, observing that Mr Lavender's example related to the use of fire wardens and marshals during the Blitz in WWII. However, in closing submissions the claimant also noted that in his report as served in the adjudication Mr Stow had said that he was aware of a 24/7 waking watch in the Houses of Parliament since 2005 because of its poor fire safety systems.

410. In its opening and closing submissions the defendant submitted that the waking watch as a concept only arose because of a change in the overall fire strategy for tower blocks from a "stay put" strategy to a full evacuation strategy. It was said that in 2005 a reasonable contractor would not have foreseen any such change to the overall fire strategy for the Gosport towers and that, even if it had, the typical additional fire safety measure for a simultaneous evacuation policy at that time was a fire alarm system. The defendant sought to rely upon the Local Government Association's guide entitled "fire safety in purpose-built block of flats" dated May 2012 as evidence of the contemporaneous view that moving from a stay put approach to a simultaneous evacuation approach (where retro-fitting with a fire alarm system was all that was proposed) was considered "unduly pessimistic" and "not justified by experience or statistical evidence". The defendant also sought to rely upon guidance issued by the National Fire Chiefs Council issued post-Grenfell on 2 October 2017 as comprising the first formal national guidance on a waking watch as part of a temporary simultaneous evacuation strategy in a purpose-built block of flats.

411. The claimant contends that these guidance documents are irrelevant, in the sense that there is no necessary connection between the use of a waking watch and any alleged change of strategy post Grenfell - which they dispute occurred in any event - from a stay-put approach to a full evacuation approach. I agree with the claimant on this issue. The National Fire Chiefs Council guidance is to do with the implementation of a temporary simultaneous evacuation strategy, and the references to the waking watch are primarily included for that purpose. Even then, however, the purpose of the waking watch was stated as wider than merely assisting with a simultaneous evacuation, including for example such tasks as detecting a fire in the building, detecting external fire spread if combustible cladding insulation materials had been identified as part of the external wall system, summonsing the relevant Fire and Rescue Service ("FRS"[I]) and meeting its representatives on arrival (which, it may be observed, are all matters included within the instructions in this case) as well as ensuring all residents were alerted to begin simultaneous evacuation.

412. It seems to me that what all of this evidence shows is that prior to Grenfell the use of a waking watch was by no means unknown but, I would agree, tended in practice to be used to address either relatively short term acute fire safety issues or buildings with a very high fire safety risk. I am prepared to accept that prior to Grenfell there was no widespread knowledge or understanding within the construction sector that the risk to fire safety, where combustible external cladding was found on a high-rise residential tower block, was so great that a waking watch would be required until it was removed. However, this seems to me to reflect more what was clearly a culture of endemic complacency within the construction sector about the true nature and extent of the fire safety risk associated with the use of combustible external cladding on high-rise residential tower blocks than any reasoned assessment that the risk could never be sufficiently high to justify the provision of temporary additional fire-safety precautions if serious fire safety related defects were discovered in such a building.

413. In my judgment a sensible company in the position of the defendant, had it applied its mind in 2005 to the probable consequences of there being a serious fire safety risk in the Gosport towers as a result of the use, in breach of the Building Regulations and the contract, of combustible EPS insulation in the EWI cladding and/or widespread and serious installation defects, would have appreciated that it was a serious possibility that until permanent remedial works were undertaken there would be a need for temporary measures to be taken to ensure that there was no fire-safety related risk to the residents of these high-rise buildings in the meantime. I appreciate that the degree of probability or possibility would depend in large part on the seriousness of the fire safety risk from the use of the combustible cladding and/or the installation breaches. I also accept that such a contractor would probably have thought that any requirement for evacuation or the provision of a 24/7 waking watch would be necessary only in the most serious of cases, where required or endorsed by the local fire rescue service or a suitably qualified fire safety consultant.

414. Here, in my judgment, the combination of the use of combustible EPS insulation in the EWI cladding and the serious installation defects, in particular in relation to the fire safety barriers which were serious in that they effectively negated to a very considerable degree the benefit to be gained from the use of fire barriers, did make it a very serious case. Moreover, the implementation of a waking watch was indeed required or endorsed by the local fire rescue service and the fire safety consultants. It may be that before Grenfell many contractors might not have appreciated that these failings were as serious as they undoubtedly were, but I am satisfied that any reasonably prudent contractor would have been very concerned about the risk from the fire barriers being rendered ineffective even before Grenfell. Moreover, it may very well also be the case that before Grenfell many fire rescue services and fire safety consultants would have been less ready to require and endorse a waking watch than after Grenfell, but again I am satisfied that in this case the risk from the fire barriers being rendered ineffective would have made them very concerned even before Grenfell.

415. I also agree with the claimant's argument that, applying the approach in *Parsons v Uttley Ingham* and more recently in *AG of the Virgin Islands v Global Water Associates*, it is sufficient that it is the type or kind of loss which has to be reasonably contemplated as arising naturally from the breach or as its probable result. In the *Parsons* case it was illness to pigs and in this case it is the need for temporary safety measures to mitigate a serious fire-safety risk. On that basis it seems to me to be clear that such a type of consequence was within the *Hadley v Baxendale* principle. Whether the breach is the installation breach or the specification breach or - as I have found - both, it is plain that the need for temporary fire-safety measures to be taken pending a permanent solution is a natural or a reasonably contemplated consequence of such breach.

416. The defendant argued as a fall-back that even if the provision of a waking watch was reasonably foreseeable, what it categorises as an "on-site firefighting service carried out by the local fire and rescue service" was not. It contends that the provision of such a service was not in accordance with any guidance issued since the Grenfell Tower fire, noting that Mr Greening agreed in cross-examination

that even since the Grenfell Tower fire he had not come across any other project where the waking watch was provided by former firemen.

417. However, in my judgment this argument depends upon the defendant persuading me that the type or kind of loss which must be reasonably foreseeable is even more specific than its primary case about the need for specific foreseeability of the use of a waking watch, which I have already rejected. Further, as will be seen when I come to consider the detail in the quantification section below, what actually happened was that due to concerns about the quality of the service provided by Churchill Security, using security staff with no fire safety related training, the claimant decided to bring in supervision provided by a local company known as Wessex Fire and Rescue Services (UK) Ltd ("WFRS[I]") who provided former fire fighters for that service. WFRS was then used at various further times for various particular purposes. WFRS was not being used to provide some sort of private contracted on-site firefighting service to replace or supplement the fire service, so that no question of remoteness arises, although questions of mitigation and reasonableness may arise, which I address in the section on quantification.

418. I thus reject the defendant's case on remoteness on this ground as well.

419. Finally, even if I had accepted the defendant' case on reasonable foreseeability on the above basis, I would nonetheless have accepted the claimant's fallback case, which is that the cost of a waking watch was a reasonable step to be taken in mitigation of the far greater loss which would have flowed from a full scale evacuation of the Gosport towers. It is clear from the contemporaneous documentary evidence and the witness evidence of Mr Le Page in particular that the claimant was well aware at the time that it was far preferable, both to its residents and to itself, both organisationally and financially, if the waking watch option could be used instead of a full decant. It cannot seriously be argued by the defendant that the risk of the claimant having to physically decant the residents of the Gosport towers in the event of the discovery of serious defects creating a serious fire-safety risk, until the danger had been removed, was not within the reasonable contemplation of the parties to the contract. It was clearly something which was actively considered at the time by the HFRS and the claimant's fire safety consultants.

Quantification

420. I shall deal separately with the separate costs of the remedial works as undertaken, the remedial works as contended for by the defendant and the costs of the waking watch.

Quantification - the remedial works undertaken

421. The claimant claims a total of £4,893,852.24 in relation to the cost of carrying out the replacement scheme, by reference to the sums which it paid under the final account as agreed with Axis, together with certain professional fees.

422. In the causation section I have already noted that the courts are generally reluctant to criticise, with the benefit of hindsight, the reasonableness of the claimant's expenditure on remedial works, including settlements with remedial contractors, especially when the remedial works are designed and supervised, and the remedial contract administration is undertaken, by professional consultants. One of the issues which arise here is the extent to which the claimant's decisions in relation to the contract with Axis were in fact taken with the benefit of professional advice from its consultants and, in particular, Pellings as the employer's agent under the replacement works contract.

423. A useful starting point when considering the reasonableness of this claim is the budget estimate provided by Pellings in its report dated 22 September 2017 at [7.1] in the sum of £5,920,000, exclusive of VAT and professional fees. This however included a cost for a sprinkler system of £250,000 which

could never have been claimed against the defendant and also included for all five Gosport towers. Deducting the £250,000 and reducing by 20% produces a comparator of £4,536,000 net of VAT and fees. On the basis of that starting point it is clear that in broad terms the costs incurred were not significantly different from those estimated at the outset.

424. A further useful comparator is the contract price as agreed with Axis of £5,017,245.42 which, deducting the £715,889.27 for Garland Court, equates to a net comparator of £4.3M net of VAT and fees. This is also broadly comparable with Pellings' budget estimate. There can be no criticism of the claimant for entering into a contract on this basis, even though it might have been able to enter into a contract with an alternative contractor for a lesser contract price.

425. It also follows, in my view, that the criticisms made by the defendant should be judged against the overall point that there is no evidence of the actual costs being significantly higher than the estimated costs put forward by the claimant's professional adviser or the contract price as entered into.

426. The parties have with the assistance of the quantum experts been able to narrow the areas of disagreement, for which I am grateful. The remaining areas of disagreement comprise: (a) additional costs during the tender process; (b) some remaining disputed variations; (c) other costs of providing the remedial works; (d) abatement for areas of retained render; and (e) liquidated damages.

Additional cost during the tender process

427. The defendant contends that even though Axis' tender was some £400,000 more than a lower tender the claimant also agreed during the tender process to include an additional sum of £257,929.85 in additional preliminaries allowed for an increase in the duration of the contract because of a later start date, and an additional sum of £354,856.74 allowed for providing a system with a BS 8414-1 test which, the defendant contends, was already a requirement of the tender document.

428. The claimant objected that it was not open to the defendant to run the point about the additional £354,856.74 because it had confirmed on day seven of the trial that the only point it was running as regards the tender process was the point about the additional £257,929.85. That appears to be a good objection since on that basis there was no reason to, and the claimant did not, cross-examine Mr Wheeler on the issue. However, in any event I am also able to decide the question on the basis that it seems to me to be a bad point anyway. Mr Hardy made clear in his witness statement that none of the tenders were compliant, because none of the replacement EWI systems put forward by the tenderers had been certified as tested to BS 8414-1. Axis responded to Pellings' notification to this effect by putting forward a proposal to use a compliant system for which they required an additional cost to cover the cost of obtaining a BS 8414-1 test.

429. Whatever the tender documents may have said since the claimant, for entirely understandable reasons, wanted to ensure that the replacement EWI system was certified as tested to BS 8414-1, there can be no basis for contending that the claimant acted unreasonably, with input from Pellings, in agreeing to pay for this cost. It is not said that Axis was contractually committed to its tender and there is no reason to believe that any of the other tenderers could or would have been willing to absorb this extra cost or that it would necessarily have been prudent to accept a tender from someone who was willing to do so.

430. So far as the additional £257,929.85 is concerned, this is explained by the fact that Axis had to change its replacement EWI system as tendered from a Structherm system to a Wetherby system.

431. The documentary evidence, confirmed by Mr Hardy's evidence, shows that the reason for the change was that in March 2018 it was discovered that certain proprietary fixings which had been used in the construction of the Structherm EWI system - which had been the subject of a full-scale test in

accordance with BS 8414-1 and was the system which Axis was intending to use - were no longer supplied by the manufacturer. The consequence was that the Structherm system proposed to be installed could not be said to have passed a BS 8414-1 test. Accordingly, a decision was taken to procure a replacement system. In his witness statement Mr Hardy explained that this took a considerable time, on the basis that it was necessary to identify an alternative system, ensure that a SWIGA (Solid Wall Insulation Guarantee Agency) guarantee could be procured for this system, engage with its system supply chain to ensure the suppliers were accredited where necessary and organise Wetherby-approved installers to install the system.

432. The consequence of these delays was that the originally envisaged start on site date was delayed by some three months. Axis contended that one consequence of that delay was that the overall duration of the works would exceed the three months due to the knock-on effect of increased winter working with inevitable consequences in terms of time lost to inclement weather. The end result was that the claimant agreed an additional £257,929.85 in additional preliminaries in respect of the increase from a 42-week to a 50-week contract programme.

433. In my judgment there can be no possible basis for criticising the claimant for entering into this agreement. It was clear that the Structherm system could not be used for reasons outside of the reasonable control of Axis and that it was necessary to secure an alternative compliant system. A consequence of that was a delay for which Axis was not responsible and, hence, an increase in the likely contract duration. As the claimant submits, in the circumstances it was entirely reasonable to agree these additional preliminaries, on the basis that Axis was reasonably entitled to them, or at the very least on the basis that it was a reasonable commercial decision, taken with input from Pellings, to agree to these additional preliminaries. It is obvious that to begin a contract by seeking to force a contractor to swallow additional costs for which he is not in any real sense culpable, even if according to the strict letter of the draft contract it might be argued that he bears the risk, is not a sensible way to start what is intended to be a collaborative process.

Disputed variations

434. The quantum experts and the parties have been able to agree all variations save for five.

435. The claimant's primary position is that there is no need for the court to engage in a retrospective assessment of each of the five variations which remain in dispute. They have been paid by the claimant as part of its settlement of Axis' final account, on the basis of professional advice from Pellings as the Employer's Agent. In the absence of any suggestion or evidence of anything untoward or lacking or unreasonable in the management of Axis' contract or the negotiation and agreement of the final account there is no basis for interfering.

436. I do not agree that the claimant can succeed solely on this basis. In my view the court needs to understand the basis for the variations to be satisfied that the assessments made are reasonable, although the court need not go through each variation with a fine toothcomb.

437. All sums below are net of 5% VAT, which should be added to the total.

Additional site setup costs

438. EAI 1.1 concerns additional site set up costs incurred as a result of a change to the location of Axis' site compound, where Mr Greening's assessment is £72,420.42 on the basis that this was the additional amount agreed and paid, whereas Mr Wheeler's assessment is nil.

439. The claimant's case is that Axis' tender expressly stated that it would use the car parks at each of the Towers for its site set-up. However, subsequently it was unable to do so because it realised that the car

parks had to be kept available for resident car parking. Instead, the claimant was only able to provide an alternative, less convenient, location. This was confirmed by Mr Hardy in his witness statement for the adjudication, made in September 2019, which he confirmed in his witness statement for this trial albeit, as the defendant says, his recollection now of the detail of events is, not surprisingly, rather poor. Nonetheless his evidence is also supported by the Axis tender submission showing what was proposed in relation to site establishment location and there is no positive evidence to counter what the claimant says and the documents show.

440. On the basis that I accept this factual case the change was plainly a variation which entitled Axis to recover its extra costs. It does not seem to me that the general clauses in the Employer's Requirements to which the defendant refers alter the fact that if a contractor tenders on the basis that it will be able to use specified facilities and if the employer then requires it to use other less convenient facilities instead then that is a variation. It is apparent that Mr Hardy of Pellings as the Employer's Agent had knowledge of all this at the time and accepted it as a variation and there is no basis in my view for considering that his approach was unreasonable.

441. The defendant is also critical as to the amount of the variation. However, whilst it is true that Mr Greening was unable to explain on what basis the amount claimed had been reduced from £143,000 down to £84,324.15 and then down again to £72,420.42, and whilst there is some suggestion that a relevant document referred to by Mr Greening may not have been disclosed, neither fact is sufficient in my view to justify rejecting this lesser figure as being a reasonable one in all the circumstances. All the indications are that it was a reasonable compromise in relation to what would otherwise have been a complex and time-consuming task to investigate and determine.

442. Hence, I allow the amount claimed in full.

Omit BREEAM

443. Within the final account Axis gave a credit of £3,200 for the cost saved in not providing a BREEAM (Building Research Establishment's Environmental Assessment Method) "excellent" sustainability rating certificate. Mr Wheeler considers that this was a variation and that the omission which was agreed with Axis "seems very low…to cover all of the activities needed to secure a BREEAM excellent certificate". He put forward his own figure for credit of £34,348 based on a quotation which the defendant had obtained.

444. There are two principal issues which arise in relation to the reasonableness of this credit. The first is whether Axis was under any contractual obligation to provide a BREEAM certificate and the second is whether the quotation obtained by Mr Wheeler was too high because it included non-mandatory cost elements.

445. As to the first issue, it became clear at trial that the contract only required Axis to provide a BREEAM certificate "where applicable". In the absence of any other specific contractual obligation which required such a certificate to be provided (which neither Mr Wheeler nor the defendant could identify) that would only be the case where there was some statutory requirement to that effect. In disputing that there was such a requirement, Mr Greening relied in his report on an email from a qualified third party BREEAM assessor, a Ms Alison Ewins at Build Energy, who explained that such a certificate was not required because the works did not constitute a change of use or conversion under part L1b of the Building Regulations.

446. It is right to record that this was not the explanation put forward by Mr Hardy who, in his adjudication witness statement, had said that it was originally a contractual requirement but the local Authority ultimately did not require one so that it was omitted. It is likely, however, in my view that the reason the local authority did not require it was because it was not required. Otherwise, it is difficult to see on

what basis the local authority would have been prepared to agree to waive something if it was indeed required under the relevant statutory framework.

447. On that basis, I am satisfied that the omission was reasonable, since on a proper analysis Axis was not required to give any credit.

448. As to the second issue, if I need to decide it, there is a debate as to whether or not the quotation obtained by the defendant and relied upon by Mr Wheeler included items above and beyond those strictly required, with Mr Greening's opinion being that they did and, if stripped out, the quotation would reduce down to £13,274.

449. In my judgment the case adduced by both parties seemed to me to be seeking to open up what had previously been agreed as a modest reduction and re-arguing the case on liability and quantum on little hard information.

450. In the circumstances I am satisfied that the most reliable evidence is what was agreed at the time, and I therefore allow £3,200. This seems to me to reflect a contemporaneous pragmatic assessment that there might be room for doubt as to what, if anything, Axis had actually priced for this item and a decision to agree a modest reduction rather than engage in a detailed analysis and dispute.

Fire breaks behind areas of façade covered in Bauclad panels

451. I agree with the defendant's argument that if the claimant seeks to argue that the defendant is liable for the cost incurred as a variation under the Axis contract of providing fire cavity barriers behind rainscreen panels, on the basis that they ought to have been provided under the original contract, then this is a separate allegation of breach of that contract which would have had to be separately pleaded as a defect in the initial works to be recoverable. It is not enough to say, as the claimant does in closing submissions, that Mr Pinkney accepted in cross-examination that he believed that the defendant had installed these panels or that the case was referred to in the evidence in the adjudication. I thus allow nil for this variation.

Gas remedial works

452. This concerns the additional works associated with and resulting from the need for Axis and its subcontractors to comply with Hyde's policies in relation to scaffolding and gas safety. The sum actually included in Axis' final account and paid by the claimant was £443,371.75. Mr Greening's assessment is in the lesser sum of £342,306.87 on the basis of his excluding costs associated with maintenance items to individual flats which in his opinion were not caused by the defects.

453. This is another case where the picture is confused. Mr Hardy's evidence in the adjudication was that the claimant's policies were not provided in the tender documents but, once provided, Axis incurred various costs to comply which it claimed as variations. Mr Hardy accepted that some of these works were unconnected with the replacement works, which is why they have been excluded by Mr Greening.

454. Mr Wheeler objects to this variation because he considers that the claimant could and should have included these policies in the tender and contract documents from the outset and, by failing to do so, it "missed an opportunity to mitigate these costs as part of a competitive tender process".

455. However, I agree with the claimant's submission that if the policies had been included in the tender and contract documents from the start, then although Axis would presumably have included for complying with the policies it would also have returned a higher tender as a result to cover the cost of complying. In short, as the claimant submits, it could never have obtained compliance with these

documents for free and there is no evidential basis for a generalised suggestion that a cost lesser than that claimed and allowed could have been secured.

456. I also accept the claimant's further point that even though there was an allowance in the original tender for tenant liaison that would not have covered additional liaison required as part of this further obligation.

457. A further question, canvassed in cross-examination of Mr Greening, was whether the vast majority of the claim is a dayworks claim by the subcontractor in question, Lawtech, in respect of a provisional sum for external gas risers. Mr Greening was cross-examined on the basis that this was a different claim from a typical variations claim. He acknowledged this but also said, rightly in my opinion, that the effect of omitting the provisional sum and claiming the actual cost on a dayworks basis is not fundamentally different from a typical variation in the context of a final account claim such as this. He was also cross-examined on the basis that charging on a dayworks basis was extremely expensive. His response was that it would all depend on the particular circumstances. I agree. There can be no hard and fast rule to this effect. He was also cross-examined on the basis that the claimant's factual explanation did not appear to have been explained by Mr Hardy and the evidence in support was scant. In his witness statement for the adjudication Mr Hardy had described this as a "relatively recent claim", which explains the absence of contemporaneous evidence at that point, although there is still no evidence that any dayworks sheets were produced by Lawtech.

458. The defendant's final point was that the amount allowed by Mr Greening now was greater than that included in his report in the adjudication. Again, that is true, but is explained by the fact that at that stage he explained that his assessment was based on what was "presently substantiated".

459. In the circumstances, I am satisfied that whilst the evidence adduced is thin, it is sufficient to establish the variations claim. The fact that the majority of the claim relates to dayworks explains why this claim is such a substantial claim, and although I accept that the evidence in support of the amount is thin there is no reason to think that it was not a genuine and justified claim. I thus accept this as a final account claim which was reasonably accepted and which has been reasonably valued both at the time and by Mr Greening.

Covid costs

460. It appears that Axis originally claimed £131,434.88 in respect of Covid related costs, but that an agreement was struck in the sum of £41,620.50.

461. Again, the defendant's primary contention is that there is a lack of evidence to substantiate this claim and that all that has been provided is a two page spreadsheet.

462. This is true. However, the spreadsheet does explain that the delay effects are assessed by reference to the impact on the programme submitted in February 2020 and identifies the programmed and actual individual completion dates, splitting the delay equally between the parties and providing details of the build up and the basis for the allowance.

463. Under normal circumstances I would have been inclined to accept that a settlement of this kind was reasonable on the basis that there appears to be no cogent basis for disputing that Axis was entitled to some additional costs as a result of some delays incurred because of the Covid-19 pandemic or for contending that the amount agreed was unreasonable.

464. However, for reasons explained below in relation to the issue as to liquidated damages I am satisfied that it is unreasonable for the claimant to be entitled to add this claim to its claim against the defendant

as well as not having to account for the liquidated damages not levied as a part of the agreement struck with Axis in relation to delay, extensions of time, liquidated damages and loss and expense.

465. Thus, I allow nothing for this item.

Other costs of providing the remedial works

466. These relate to Pellings' fees. There is agreement in relation to: (a) the feasibility report; (b) the exclusion of the sprinkler report; and (c) the recoverable cost of the Employer's Agent's fee, which will be 2.58% of the amount I allow the claimant to recover in relation to the Axis costs.

467. As to the number of small points still in issue, my decision is as follows: (a) there should be a reduction of 20% for the disbursements and clerk of works fee to reflect an allowance for Garland Court; (b) if the claimant has in fact been charged VAT at 20% on these fees, which should be a matter of record, then VAT at that amount should be added.

Abatement or deduction for retained areas of render

468. It is common ground that before the defendant carried out its works under the contract some sections of the external walls areas had already had an insulated render system. It is also common ground that these areas were included within the Axis contract. The defendant contends that there is no reason why it should be liable for those costs on the basis that there is no technical reason why the existing system had to be replaced which is related to the defendant's installation or specification breaches.

469. The areas have been agreed between the experts as comprising 4.81% of Harbour and Seaward Towers and 6.48% of Blake and Hammond Court.

470. The claimant contends that it reasonably relied on Pellings' advice in its condition survey to the effect that "if it is decided to replace the EWI consideration should be given [to] their replacement to ensure a uniform life cycle for the materials and to obtain an insurance backed guarantee from manufacturer for the entire system".

471. In my judgment the claimant must give credit for the cost associated with this work on the basis that it is betterment. It may have been perfectly sensible for Pellings to recommend and the claimant to agree to replace these areas as well, for the reasons given, but Pellings was not saying that there was a need for replacing these areas which was connected with the replacement works resulting from the defendant's installation and/or specification breaches. As is apparent, the claimant's predecessor in title had obviously been happy to retain these areas when it contracted with the defendant to provide the EWI cladding to the remainder of the Towers.

472. As to the amount of the credit which the claimant must give, there is a dispute between the quantity surveyors which can be summarised as follows. First, the amount of the deduction has initially been calculated by each surveyor by taking the total of the Axis final account including variations and applying the percentages based on the agreed areas as set out above. Because Mr Greening's valuation of the Axis final account is greater than Mr Wheeler's his valuation of the credit is higher than that of Mr Wheeler's, £284,735.67 compared with £218,376.43.

473. As the claimant observes in its closing submissions, if I considered it necessary to arrive at a precise figure the experts would have to undertake the exercise based on my findings as to the variations. Second and more fundamentally, however, as trailed in the joint statement in his report Mr Greening had revisited the whole question of areas and, through an analysis of the planning permission drawings prepared for the defendant's contract works, concluded that the agreed areas were wrong and that the defendant ought to have applied new EWI cladding to a greater area than it contends it did. This results

in Mr Greening's valuation reducing, in more conventional style, to a lesser amount than his opposite expert, namely £159,165.82.

474. The defendant objects to this retrospective exercise. The claimant contends that it was trailed in the joint statement and explained in Mr Greening's report and it is the defendant's fault if it chose not to cross-examine on the point. Whatever the force of that point may be in another case, it has no application in this case because in my view it was already too late for Mr Greening to raise this in his report for the first time, given that it had not - for obvious reasons - been canvassed by the witnesses or by the experts in the joint statement. In such circumstances, and since the defendant was deprived of the opportunity to adduce evidence on the point, it would indeed in my judgment be unfair to allow the claimant to take the point.

475. I also do not accept the claimant's submission that even if it has to give credit for the EWI cladding it should not have to give credit for the over-rendering, since that would have been required anyway for aesthetic reasons. The reason why I do not accept this is because I accept, for the same reason as stated above, that since the claimant's predecessor in title was content to have separate areas of render and/or mosaic, the claimant cannot now say that it is entitled to make the defendant pay for consistency now.

476. It follows that the quantity surveyors will have to calculate the credit on the basis of the agreed areas and the total Axis final account as I have determined it to be.

Liquidated damages

477. An issue arises in relation to what the defendant contends was the claimant's failure to deduct, as it was entitled to do under the contract, liquidated damages from Axis' entitlement under the final account.

478. This is a substantial issue in money terms because, based on the contract sectional completion dates and the actual sectional completion dates and the contract rates of liquidated damages, the claimant would have been entitled to deduct £559,542.12 in relation to the four towers, assuming no extension of time was granted to Axis. Since no extension of time was granted, and since Pellings issued certificates of non-completion, the claimant was undoubtedly contractually entitled to deduct liquidated damages in this amount.

479. The defendant's case is that the claimant has failed to establish any adequate explanation for this failure to exercise a clear contractual right and that either the full amount or at least a substantial proportion of the total amount should be deducted from the amount it is liable on my findings to pay the claimant.

480. The claimant's responds by raising the following arguments: (a) first, that levying liquidated damages against Axis would not in fact or in law reduce its loss suffered as a result of the defendant's breaches; (b) second, that any liquidated damages levied would have constituted a collateral benefit for which the claimant is not required in law to give credit; (c) third, that it was not unreasonable for the claimant not to levy liquidated damages against Axis, since it represented a reasonable compromise of its claim for liquidated damages and Axis' cross-claim for loss and expense.

481. The first and second arguments are closely connected and, in my judgment, fail for essentially the same reasons, which are as follows. The claimant has succeeded in persuading the court that it is entitled to be compensated for the defendant's specification breach by recovering damages assessed by reference to the cost of the replacement works and the cost of the waking watch until the EPS cladding was removed as part of those works. A major component of its damages is represented by the amount paid to Axis under the replacement works contract. That included various rights enjoyed by one party

against the other and various obligations undertaken by each party to the other, typical of a standard construction contract. As relevant here, in addition to the claimant's obligation to pay for the works Axis was obliged to complete the works within the specified sectional dates, failing which the claimant was entitled to deduct or recover liquidated damages. Axis was well aware that the claimant was incurring the costs of a waking watch pending the removal of the EPS cladding.

482. It follows that the claimant's overall loss has two components, first the cost of the works and second the cost of temporary safety measures until the stripping out element of those works is completed. The contract with Axis included provisions relevant to both components, which were inter-connected. It follows in my judgment that by exercising its right to deduct liquidated damages the claimant would indeed be reducing the overall loss suffered as a result of the defendant's breaches. It also follows in my judgment that an unreasonable failure by the claimant to exercise that right should not be visited on the defendant. By the same process of reasoning, it is plain that exercising the right to deduct liquidated damages would not have constituted a collateral benefit.

483. In my judgment the same consequences would have followed even if the claimant had not also been pursuing a claim for the cost of temporary safety measures, because the position would still have been that the claimant was advancing a claim based on the amount it had to pay Axis under the replacement works contract and that it is not open to the claimant to hold the defendant liable for amounts paid without giving credit for deductions which it could and should - if the defendant's case is made out on the facts - have been entitled to make under the same provisions of the very same contract.

484. I am prepared to accept that there may, in other cases with other facts, be contracts with provisions which entitle the claimant to receive benefits which have no sufficient connection with the loss suffered by reason of the defendant's breach to require credit to be given. But that is not this case.

485. I turn therefore to the facts.

486. On 17 May 2019 and on 25 June 2019 Pellings issued certificates of non-completion in relation to Phase 1 (Harbour Tower, Seaward Tower and Garland Court) and Phase 2 (Hammond Court and Blake Court).

487. On 2 August 2019 Axis submitted requests for extensions of time of 24 weeks and 20 weeks respectively. The requests relied on a disparate number of specified events.

488. On 12 September 2019 Mr Hardy of Pellings emailed the claimant about these requests, saying that he "understood" that the claimant would seek to deal with Axis as one of its framework contractors by reaching an agreement on the basis that the claimant would not apply liquidated damages on the basis that it would grant Axis an extension of time but Axis would not claim loss and expense - in short what is often referred to as a walk-away settlement. He ended by asking whether he had interpreted the claimant's thoughts correctly.

489. Although the claimant has not disclosed any reply to this email it is apparent that Mr Hardy had indeed interpreted the claimant's thoughts correctly because on 29 November 2019 there was an exchange of emails between Mr Hardy and Mr Bater of Axis, referring to a conversation the previous week, in which it was agreed that the claimant would not apply liquidated damages for the duration of delay to the project and in return Axis would not seek to recover any loss and expense associated with its requests for extensions of time. Although there was also a reference to the claimant granting Axis a full extension of time on that basis, there is no evidence that any formal extension certificate was issued.

490. In his witness statement Mr Hardy said that Pellings did not carry out a detailed delay analysis but that both Pellings and the claimant "felt that Axis was likely to have some entitlement to an EOT".

Since the claimant was "more concerned that they [Axis] completed the project with a quality installation rather than finishing on time", and in order to avoid going down the "contractual" route, the claimant and Axis sat around a table and worked out a suitable compromise, which is that recorded in the November emails. In his witness statement Mr Le Page said that the claimant decided not to levy liquidated damages because they did not want to fall out with Axis and took a decision to take a collaborative approach rather than to get involved in claims and counterclaims.

491. The defendant submits, and I agree, that it is clear from Mr Hardy's evidence that: (a) Pellings was not involved in this decision other than to have general discussions with the claimant and with Axis and to act as a conduit between the two; (b) no attempt was made to obtain further information or back up details from Axis either as to the basis for any extension of time or as to what, if any, loss and expense it might be entitled; (c) Pellings was not asked to provide any detailed or other analysis of delay, save insofar as delay was discussed at the regular monthly progress meetings; (d) Pellings did not even provide the claimant with an informal assessment of the likely respective entitlements of the parties in relation to delay, extensions of time, liquidated damages or loss and expense.

492. In his report Mr Greening was able to say very little other than that in his experience it was not unusual for a settlement of this sort to be agreed. He did however also comment on the costs submitted by Axis in relation to the claim for the impact of Covid delays (see above). He expressed the opinion that, due to the difference between the costs claimed and the claimant's entitlement to liquidated damages, if Axis could justify an entitlement to an extension of time of approximately one third of the total period of delay that would result in a position where no money would change hands.

493. This is, as the claimant submits, a relevant point because it shows how it would not have been difficult for Axis to put forward a claim for extension of time and loss and expense which would have enabled it to demonstrate - at least - an entitlement to extinguish any liquidated damages which the claimant might otherwise have been able to assert.

494. In its closing submissions the defendant suggested that even if one aggregated the claims made in the August 2019 letters with the Covid related claims and allowed them in full the total claim would have been 31 weeks compared to 56 weeks (13 months) for Phase 1 and 31 weeks compared to 45 weeks (12,5 months) for Phase 2.

495. All of this in my view demonstrates that the claimant would indeed have been justified in concluding, with the benefit of general support from Pellings, that it was reasonable to adopt a walk-away settlement with Axis, both as at November 2019 and as at final account stage. However, this analysis only holds good if one includes the Covid delays. There is absolutely no adequate or acceptable explanation or basis in my view for saying that, having reached this agreement in November 2019, the claimant was also justified in "rolling over" and agreed to pay Axis a further £40,000 at final account stage for Covid related delays. By this stage the works had been completed, so that there was little or no commercial rationale for doing a separate deal for these delays when that went clearly against what had already been agreed.

496. For these reasons I am satisfied that, whilst it would not be right to reduce the claimant's claim against the defendant by reference to the liquidated damages which it might otherwise have levied against Axis, it would not be reasonable to hold them liable for the additional payments made by the claimant to Axis in relation to Covid related delay costs.

Waking watch cost paid to Axis

497. Although the defendant addressed this element of the waking watch claim in its closing submissions under this section at par. 405ff, since (apart from a separate issue about whether it was properly claimed

and paid as a variation) it raises similar issues to those raised in relation to the waking watch claim as a whole I follow the claimant's approach and address it there as well.

VAT

498. The defendant accepts the claimant's evidence that VAT at 5% was added to the Axis fees and could not be reclaimed, so that it should be added to the sums which I have determined net of VAT. I have already said that the VAT position in relation to Pellings' fees should be checked and the appropriate rate added.

Quantification - the alternative remedial scheme

499. There are a number of significant differences between the parties on this issue. Even though it is strictly unnecessary for me to do so I will decide on the differences between the parties, since they were fully argued. Indeed, the outcome is relevant for any cost benefit analysis of any appeal. Because the total cost depends on a series of calculations which need to be undertaken in accordance with my findings, I am not in a position to produce a final figure. However, as with the quantification of the costs of the replacement scheme the quantity surveyor experts should be able to undertake the task without difficulty once they have my findings. Although it is not strictly necessary to have a final figure for the purposes of making an order following this judgment, I anticipate that the parties may consider it sensible to complete this process whilst all minds are fresh and for the figure to be included as a recital to the order.

500. In summary, in his principal report Mr Wheeler's assessment was that the alternative remedial scheme would have cost a total of only £1,324,091.36 to carry out, broken down as to: (a) fire barrier replacement £569,999.98; (b) mechanical fixings to EPS panels £213,139.46; (c) mast climber and scaffolding £329,400; (d) site preparation £7,830; and (e) preliminaries £203,721.92.

501. In contrast, in his principal report Mr Greening's assessment was £2,708,877.72, broken down as to (a) fire barrier replacement £1,187,404.06; (b) mechanical fixings to EPS panels £254,045.59; (c) mast climber and scaffolding £508,508.82; and (d) preliminaries £758,919.24.

502. The most substantial area of disagreement concerned the allowance in the fire barrier replacement costs for labour costs. There was a substantial disagreement as to the actual time it would take the operatives to undertake the remedial works as well as further disagreement in relation to non-productive time for adverse weather conditions. These feed through into the total time taken and, hence, the quantification of the access costs and preliminaries.

503. Mr Greening had also made allowances totalling £570,000 for costs not included by Mr Wheeler, such as fire breaks to the vertical Bauclad rainscreen cladding, a new levelling coat, a top coat render to retained render elevations, professional fees, test rig and testing costs, producing a revised total cost of £3,278,877.72.

504. Both Mr Wheeler and Mr Greening had valued the cost of the remedial works on the basis of the works being undertaken by the defendant's direct labour force with direct material purchasing. Assuming that the works were undertaken by a third party main contractor and a specialist subcontractor Mr Greening's total cost estimate increased to £4,094,382.78.

505. This total figure is not very different to the full replacement costs claimed by the claimant (£4,893,852.24).

506. Finally, after adding in his costing for further works to provide cavity barriers which Mr Jowett stated were required his total cost estimate increased to £6,975,593.96.

507. This is substantially in excess of the feasibility estimate for the fire break replacement works provided by Pellings in its report of 9 October 2017, which came to £2,100,000 net of VAT and professional fees and after netting off the cost of Garland Court. It is to be noted that in his report Mr Greening suggested that this estimate represented a reasonable pre-estimate of the likely costs subject however to the additional costings identified by him in his report.

508. In the run-up to the trial the defendant conducted a "demonstration" of its alternative remedial scheme and served a second witness statement from Mr Watson, together with accompanying documents and videos, providing an explanation as to how, on the defendant's case, the remedial works could be done in a time and cost efficient manner. This was the subject of supplemental reports from the experts as well as cross-examination and submission at trial. Mr Wheeler's view remained unchanged, whereas Mr Greening's valuations reduced somewhat - although not significantly.

509. As the claimant says, there are four principal issues to be considered, namely:
(a) The estimated time and cost of carrying out the works.
(b) The additional costs not considered by the defendant.
(c) The cost of the works if procured on the market rather than carried out by the defendant.
(d) The scope of remedial works and in particular the need for cavity barriers.

The estimated time and cost of carrying out the works

510. The current position is that Mr Greening's figure is £2,472,154.66, assuming two mast climbers, whereas Mr Wheeler's figure is £1,324,091.36. I am satisfied that it would be both reasonable and practicable for the remedial works to be undertaken using mast climbers; I do not consider either that it would be reasonably necessary to use scaffolding for the remedial works or that the use of mast climbers has such serious adverse consequences on the efficient and timely undertaking of the remedial works as Mr Greening suggested. The main difference between the two valuations on this basis is explained by the time allowed by Mr Greening for some activities (in particular, for the careful removal of the existing render either side of the firebreak), the time allowed for non-productive time due to adverse weather and the programme duration and its impact on preliminaries and access costs.

511. In its written closing the claimant made detailed submissions as to why the demonstration was unreliable and why Mr Greening's revised assessment was to be preferred. The claimant noted that Mr Wheeler had declined to increase his assessment post demonstration, even though he admitted that there was one major error in his timing (activity 13). His explanation was that this error balanced out against time savings achieved on other activities. Whilst this was a reasonable explanation, the claimant was also able to identify no fewer than 17 separate important differences between the test circumstances in which the demonstration was undertaken and the real life case. Finally, although this was not Mr Wheeler's fault, the demonstration had been undertaken late in the day to a design produced by Mr Pinkney with no prior input even from the defendant's experts let alone from the claimant's experts. In the circumstances, even though I accept that Mr Watson was a reliable witness and that there is no basis for considering that this was a significantly flawed or skewed exercise, I must nonetheless approach it with some caution.

512. It would be wrong to pretend that I could arrive at a precise rather than an estimated time for carrying out the works. The difficulty which both quantity surveyors face is that this is a very unusual bespoke repair method for which no standard rates can be obtained from builders pricing books such as Spons. I am satisfied that neither expert's duration for a 12m length – neither Mr Greening's revised duration of 707 minutes nor Mr Wheeler's assessment of 394 minutes - is likely to be accurate and that the answer, as so often in these cases, is somewhere between the two. I am satisfied on balance that the true position is rather closer to Mr Wheeler's assessment than Mr Greening's over-cautious assessment and that 480 minutes (8 hours) is a reasonable allowance.

513. The claimant invited me to prefer Mr Greening's allowance of approximately 30% for weather-related downtime over Mr Wheeler's assessment of between 5 and 10%. As Mr Greening says, this is an exposed site where the work would be relatively susceptible to interruption from adverse weather, although the extent would no doubt depend on the time of year in which the work is undertaken. In my view Mr Greening had again taken too cautious an approach, for example not taking into account that nowadays contractors are able to obtain reasonably reliable information about expected weather conditions, at least for the next few days, so as to be able to schedule their work accordingly. That said, Mr Wheeler had not included any separate allowance on the basis - which I do not accept - that a contractor would include it in its overall allowance. I am satisfied on balance that a fair allowance is 10% as an addition to the 8 hours I have allowed.

514. As regards programme, on a similar basis I am satisfied that the most realistic estimate is 32 weeks, compared with Mr Greening's assessment of the programme of 74 weeks and Mr Wheeler's assessment of 14.4 weeks.

515. So far as I am aware everything else, including fixed preliminaries, are agreed as between the experts and parties.

The additional costs not considered by the defendant

516. In closing submissions the claimant identified why each of the 10 additional items considered by Mr Greening should be included. I deal with each briefly in turn.

517. Bauclad cladding. I repeat what I said above in relation to the replacement works and thus allow nil.

518. Additional Sto levelling. Although the defendant argues that this was always included in its method statement, based on Mr Geddes' opinion, it is clear from Mr Wheeler's supplemental report that initially he had valued it only for the area of repair whereas he now understands that it is required throughout. Thus, it is an additional cost. The only valuation issue is the allowance for adverse weather, which can now be assessed by reference to my finding above.

519. New top coat. I accept the claimant's case that it would be reasonable to add a new top coat to the retained render elevation for aesthetic reasons, given that but for the need for these hypothetical remedial works the work would not have been undertaken and there would have been no discrepancy between the new and the existing coats. The valuation experts contend for £78,565.84 and £56,842.20. My assessment is £65,000.

520. Third party tests (three items). I do not accept the claimant's case that in this hypothetical scenario it would have been necessary to undertake a full-scale fire test. I am satisfied that £10,000 is allowable as a reasonable fee for a fire engineer to review the remedial works proposals and allow this amount.

521. Liaison with gas undertaker to deal with gas risers. The need for this is not satisfactorily explained and I allow nothing.

522. Professional fees. I agree with the claimant that in this hypothetical scenario it would have been necessary to involve an architect to specify the works as well as a fire engineer to review the works. Although the defendant produced the specification for this litigation that is irrelevant for the purposes of this assessment. I allow £20,000.

523. Building control fees. Since Pellings confirmed at the time that Building Regulations approval was not required for the remedial works I allow nothing for this item.

524. Environmental consultant. I accept this is reasonably required and allow £5,000.

525. The total allowance can be arrived at once the additional levelling layer is valued.

The cost of the works if procured on the market rather than carried out by the defendant

526. The claimant contends that there are two separate reasons why the costs should be assessed on the market rate basis as opposed to the basis of the cost if carried out by the defendant at its own cost.

527. The first is that despite being invited to do so at no time prior to the execution of the replacement works did the defendant ever put forward this repair option, let alone offer to undertake it at its own expense. I agree that it follows that in this hypothetical scenario the cost which would have been incurred by the claimant, had it gone down this route, would have been the cost of it arranging to undertake the works at its own expense using third party contractors. There is no basis for contending that in this hypothetical scenario the claimant ought to be limited to recovering the cost which the defendant would have incurred. That could only have been appropriate had it volunteered to do so but such offer had been unreasonably refused by the claimant.

528. The second is that the claimant says it would not have been unreasonable for the claimant to have decided that it wanted the works to be carried out by an alternative contractor, given the nature and extent of the defects in the original works for which the defendant was responsible. However, as I have noted that was not the claimant's position at the time, since it expressed itself willing to consider a proposal by the defendant to undertake remedial works. Further, and since the supply and installation of the EWI cladding was not, as I understand it, actually something for which the defendant was directly responsible, since the system was specified and sourced and installed by its consultants and suppliers and installation subcontractors, there is no rational basis for such an objection.

529. Nonetheless, given that I agree with the claimant on the first reason, I also agree that the additional costs identified by Mr Greening on the basis that the works would be procured by a main contractor and undertaken by specialist subcontractors should be added to the cost. Mr Greening has explained in his report why he considers that this procurement method is justified and why he has arrived at the rates he has taken. His analysis and his figures have not been the subject of express challenge and they appear reasonable. It follows that the allowances for subcontractor and main contractor costs identified in his report should be calculated and added to the cost to be allowed.

The additional cost of cavity barriers.

530. I have already concluded under the section dealing with installation defects that cavity barriers at compartment walls, around windows and around service penetrations would reasonably be required as part of the remedial scheme.

531. So far as the cost is concerned, there is a substantial difference between Mr Greening's valuation (net of subcontractor and main contractor uplifts) of £2,273,590.54 and Mr Wheeler's valuation on the same basis of £793,025.00.

532. It appears that Mr Greening's valuation includes a very substantial allowance for preliminaries, including his 30% weather uplift, totalling approx. £1.69 million, whereas Mr Wheeler has simply allowed an additional 50% in round terms for preliminaries in addition to his allowance for the works themselves.

533. My assessment, which is admittedly fairly rough and ready but nonetheless informed by the conclusions I have already reached about the approach of the respective experts in relation to similar

matters, is that £1.25 million for the total cost of the additional cavity barriers is a fair allowance. Contrary to the claimant's submissions in closing I was favourably impressed by the answers given by Mr Wheeler in cross-examination as to why economies of scale could be obtained where, for example, cavity barriers were required between two windows set not too far apart. He also made what seemed to me to be a fair point, which is that Mr Greening's total was remarkably high for what was effectively a take-off from a small part of Mr Jowett's report and a one page diagram identifying the areas of remedial works. Whilst I have agreed that the work is needed, given the lack of detailed investigation and any detailed work specification I should be cautious and give the defendant the benefit of any reasonable doubt.

534. However, I note that on top of this cost figure will also need to be added the subcontractor and main contractor allowances identified by Mr Greening to obtain the final figure.

VAT

535. A final issue raised by the claimant relates to VAT on the remedial works. In short, the position is that because of the nature of its business and the VAT treatment of its supplies the claimant cannot reclaim any VAT paid on its costs. Thus, it had to absorb the 5% paid as VAT to Axis for the remedial works. However, that 5% was a reduced rate because the supply was categorised as the installation of energy-efficient materials. In its closing submissions the claimant suggested that there was every possibility that the rate of VAT applicable to the remedial works would be the standard 20%, since they would not fall within the same supply category. That does seem likely to be correct, although it is not possible without consideration by the experts for me to say so definitively. Fortunately, so far as I can see there is no need for this point to be determined in this judgment, save to record in the recital to my order that the cost of the remedial scheme would have been £X plus VAT at the appropriate rate.

Quantification - the waking watch

536. The claimant claims a total of £2,987,205.93 (inclusive of VAT) in respect of the cost of providing the 24-hour 'waking watch' which it employed at the Gosport towers following the discovery of the defects in order to mitigate the fire-safety risk to residents. A waking watch was implemented at all of the Gosport towers on 23 June 2017. It was removed at Blake Court, Harbour Tower and Seaward Tower by 1 March 2019 and on Hammond Court by 30 April 2019. Of the total sum paid £2,097,049.92 was paid up to 30 September 2018 to various external providers as well as to the claimant's in-house force and the balance of £890,156.01 was paid thereafter to Axis under the replacement works contract.

537. The defendant raises a number of challenges to the reasonableness of the claim which I will consider in turn.

Overall duration excessive

538. The defendant contends that the total duration of the waking watch was excessive and that the claimant failed to mitigate its loss by removing the EPS cladding as a matter of urgency. The defendant's primary contention, advanced through its expert Mr Wheeler adopting a programme produced by the defendant itself, is that the EPS cladding could and should have been removed within 17 weeks from 23 June 2017.

539. This is a wholly unrealistic argument. As I have already recorded, the claimant's initial approach from June 2017 onwards was to investigate, with the benefit of professional advice, whether the appropriate course was removal, replacement or repair, regardless of whether any, and if so what, cost was ultimately reclaimable from the defendant. Having done so, the claimant took the decision to proceed with the replacement scheme in November 2017. It then had to implement that decision, which it did by sending out invitations to tender in December 2017 and entering into a building contract with

Axis in April 2018. The works were practically completed in sections, with the waking watch being removed from each block once the combustible EPS cladding was itself removed from that block. Whilst the end result is that the waking watch was maintained for a total period of 1 year 9 months, it is not enough in my judgment for the defendant simply to complain in general terms that this was a very long time which has resulted in a very large bill. The defendant has to establish that the claimant unreasonably failed to mitigate its loss by showing that it could and should have acted differently in specified respects and that, had it done so, the overall duration would have been significantly reduced.

540. However, it is plain in my view that by acting in the way described the claimant acted prudently but did not allow matters to stagnate. It is clear from the history of events that the claimant wanted to proceed "at pace" but was conscious of the need to undertake a proper investigation before making and implementing a decision, including allowing the defendant the opportunity to participate in that process. The period from June 2017 was, it must be remembered, a time of great difficulty and uncertainty for owners of high-rise residential buildings such as the claimant where the overriding priority was, rightly, the safety of residents and the need to make the right decisions going forwards.

541. In such circumstances, the very suggestion that the claimant could and should, acting reasonably, have decided from the very outset to remove the EPS cladding so that it could all have been removed within 17 weeks is hopeless. How, one might ask rhetorically, could the claimant reasonably have decided to move straight from the discovery of the presence of the combustible cladding and the installation defects to a decision to replace without any time at all for investigation and consideration? The defendant's argument appears to be founded on no more than an argument that, since the claimant did ultimately remove the cladding, it could and should have done so straightaway. The irony of that submission of course is that it has been the defendant's case throughout that it could not have been held liable for the costs of such a decision in any event. The claimant was plainly acting reasonably in deferring any decision until it had obtained professional advice and had sufficient time to consider that advice and make a decision. Once that decision had been made the claimant had to proceed to implement it which, equally plainly, necessarily involved a procurement process before the replacement works could begin. It must be remembered that this process was begun and continued at a time of great demand for contractors ready, willing and able to undertake work of this kind post Grenfell, so that the claimant could not simply dictate the timetable it wanted.

542. The defendant's suggestion that the EPS cladding could and should have been removed straight away, deferring the decision as to the particular replacement or remedial works to a later date, founders against the points that to do so: (a) would have removed any possibility of selecting a less expensive remedial scheme which retained the EPS cladding which, of course, is precisely what the defendant has argued the claimant ought to have done in terms of any recovery as against it; (b) would have removed the protection against rain and cold provided by the EWI cladding for what may have been an extended period, which had its own disadvantages; (c) may have necessitated two separate contracts, with a consequential dual mobilisation and demobilisation process cost or, alternatively, a liability for extended preliminaries, such as scaffold hire etc, whilst the decision-making and procurement process was undertaken.

543. The defendant has referred to the fact that in January 2018 the claimant produced and proceeded to implement a proposal to remove the cladding on Garland Court as a standalone project on the basis that to do so would take some 3 months from the decision to proceed and, the cost of the works being neutral, would save almost £1 million (allowing for an alarm cost which would not have been required in relation to the other towers) in waking watch costs when compared with the cladding being removed in 10 months as currently envisaged if all the works were done as one project. The estimated monthly cost for the waking watch for Garland Court alone was said to be £144,000.

544. Mr Le Page dealt with this in his witness statement. He said that the decision made in relation to Garland Court was made in part due to its higher risk profile. (This is consistent with the reference in

the proposal to there being a need for an evacuation strategy in relation to Garland Court, which is not identified in relation to the other towers at this stage). He suggests, albeit only from memory, that the reasons for not doing the same for the other towers was because: (a) the other towers were not as well insulated, so that there would be more of an impact on the residents' occupation of the flats; (b) of the additional costs associated with the work being undertaken in two phases. He said that at the time the claimant was hoping that the contract works would start earlier than they in fact did and did not foresee how long the works would actually take.

545. It should be said that there is no indication that any of this was the subject of a separate contemporaneous written proposal similar to that produced for Garland Court. Mr Le Page was not, however, specifically asked about this and it was not put to him or to other witnesses that the decision was unreasonable.

546. In my judgment the defendant has failed to establish that this decision was unreasonable so as to justify reducing the overall period of time over which the waking watch should be allowed. The defendant has adopted what in my view is a fundamentally flawed strategy of advancing a wholly unrealistic case. If it had really wanted to advance this as a realistic case it would have needed to instruct Mr Wheeler to produce a costed analysis based on a proper analysis of the time and cost of undertaking the removal of the cladding first to demonstrate the financial savings which could reasonably have been made had the claimant made the same decision in 2018 in relation to all four towers as it made in relation to Garland Court. It would then have been able to investigate this case at trial on a proper evidential basis, instead of sending Mr Wheeler into evidence to seek to defend a wholly unrealistic case for which he was not really responsible.

547. It also appears obvious that by reference to the chronology for Garland Court Mr Wheeler's analysis of 17 weeks for the removal of cladding on all five towers is unrealistic. The removal work for just a half of the external surface of Garland Court appears to have been estimated to take a month in itself, even after allowing three months from the time of instruction to the time work started. Mr Greening's alternative analysis of 39 weeks for the work may be somewhat on the high side but, overall, it seems rather more realistic to me.

548. The same is true of Mr Greening's analysis to the effect that the additional costs of procuring the work in the phases suggested by the defendant would be in the region of £1.5 million including VAT. Again, I have little doubt that this is on the high side. However, at least he had undertaken the analysis from the outset, using contemporaneous documents actually provided by a contractor for Garland Court at the time, whereas Mr Wheeler had - wrongly - suggested that these contemporaneous documents were somehow unreliable. Instead, he had only produced his rival assessment of £675,000 odd only in his supplemental report and, even then, only in reliance on a quotation provided by the defendant itself for a completely separate project. The amount is also unrealistically low when compared with the cost of £300,000 for the removal of cladding on just a half of Garland Court as estimated by the claimant at the time, albeit that the quotation from Hamilton was a little less, around £250,000 inclusive of provisional sums.

549. In the circumstances and on the evidence before me I reject the challenge to the overall duration of the waking watch. I can see that with the benefit of hindsight it can be demonstrated that there would have been a net saving to the claimant in doing what the defendant now suggests it should have done. But that is very different from saying that, on the basis of the information available at the time, and having regard to all of the costs which could then reasonably have been estimated, as well as other less tangible matters such as resident dissatisfaction, it should have been obvious to the claimant at the time, had it conducted a proper investigation of the options, that the only reasonable decision was to remove the cladding across all five towers at the outset so as to achieve a significant overall saving on the total costs. Indeed, on the basis of the evidence before me I do not have sufficient evidence to assess what the saving would have been so as to discount the claim for waking watch accordingly.

550. Finally, the defendant suggests that it ought not to have to bear the cost of the waking watch associated with periods of delay to the replacement works contract for which either the claimant itself or Axis was responsible. However, this complaint also fails in my view on the basis that the defendant has failed to identify specific reasons for specific periods of delay so as to show that the delays were clearly caused by conduct, whether on the part of the claimant or Axis, which broke the chain of causation, amounted to a failure to mitigate on the claimant's part, or would not have been reasonably foreseeable to a reasonable contractor in the defendant's position at the time of contracting. It is a statement of the obvious that delays to a construction contract are not unknown and can occur without either the employer or the contractor being seriously at fault, so that just complaining in a general sense that the defendant should not have to pay for delays which were not of its making gets the defendant nowhere.

Failure to take reasonable steps to reduce the costs incurred on the waking watch

551. This complaint involves an analysis of the various decisions made by the claimant as regards the procurement of the waking watch service over the relevant period and a consideration as to whether or not the claimant failed to act reasonably so as to keep the cost to a reasonable level.

552. In summary, the complaints relate to: (a) the claimant's decision to use external providers and an in-house provider over some of the periods in question, at rates higher than the reasonable range agreed between the experts, namely £9.75/hour to £14.36/hour plus VAT; (b) the claimant's decision to use a supervisor as well as two operatives per tower; (c) the claimant's decision to use qualified and experienced firefighters provided by WFRS as fire marshals to replace the supervisors.

553. In his report Mr Greening summarises the rates paid to the various external providers used as follows: (a) Churchill Security (£12.50/hour + VAT); (b) Leisure Sec (£11.25/hour + VAT); (c) Reed Recruitment (£23.69/hour + VAT); (d) WFRS (Operatives) (£11.25/hour + VAT; (e) WFRS (Fire Marshalls) (£950/24hour + VAT - equating to £39.58/hour + VAT).

554. As can be seen, the rates paid to Churchill, Leisure Sec and the WRFS operatives all fell within the range of reasonable rates, so that there is no basis for challenging the rates agreed and paid to those providers. Insofar as Mr Wheeler in his assessments reduced the rates in relation to Reed and WFRS for fire marshals to the mid-point of £12.06/hour, that was plainly wrong, since on the basis of the agreement of the range of reasonable rates it would have been reasonable to agree up to £14.36/hour.

555. Addressing the defendant's criticisms is complicated by the fact that the waking watch provision changed from time to time, especially in the initial period, not just as to who was providing it but also as to whether there were supervisors as well as operatives and how many operatives were provided. In my view what has to be considered at any particular time is what the claimant expected to be the total overall cost of providing the waking watch at each stage and why the total overall cost changed from stage to stage. Thus, for example, if the number of operatives was reduced from eight (two per tower) to four (one per tower) on the basis that, in addition to the four operatives, there would also be a supervisor, then the total number of operatives reduces from eight to five and the total cost may also reduce. In such circumstances, it would be wrong in my view to deduct the cost of the supervisor without some very good reason, for example that there was simply no need for a supervisor. If, however, the number of operatives was increased again from four to eight, the decision to retain the supervisor would have to be scrutinised with more care. A further point to bear in mind is that there might be some more justification for bringing in a supervisor, both on safety and cost grounds, if the operatives are third party untrained security staff, and less justification for doing so if they are in-house or trained staff. Finally, it would be wrong to scrutinise the decisions made by the claimant without considering to what extent they were based on advice received, in particular from HRFS, since it is

difficult to conceive of a finding that the claimant acted unreasonably by following advice from the local FRS, unless that advice was obviously wrong or open to serious doubt.

556. The first decision to use a fire marshal was made in early July 2017, when the claimant asked WFRS to provide a former firefighter as a fire marshal on a 24/7 basis from 14 July 2017 to supervise the Churchill staff. Churchill had initially been requested to provide one operative per tower but this had later been increased to two per tower in accordance with advice from HFRS. At this time the claimant was also considering whether to replace the Churchill operatives, who were security staff with no particular training or experience in fire safety matters, with operatives more qualified in relation to fire safety.

557. As John Carmichael said in his witness statement, WFRS was able to provide operatives who were ex-fire service personnel with expertise and experience in fire safety and firefighting. There is no basis in my judgment for criticism of this decision. Using security staff was a sensible initial decision but, as and when it became apparent that there were concerns about their performance, it was clearly reasonable to bring in a trained person as a supervisor, even if that was at a significantly higher rate than the rate being paid to Churchill for untrained security staff, because the overall cost was still reasonable. In any event it is not entirely clear to me whether the supervisor may at this stage have been brought in solely for use at Garland Court, as Mr Dew appears to suggest in his evidence and which is consistent with it being perceived as a greater fire risk, in which case it has had no impact on the defendant anyway.

558. Although the defendant seeks to place reliance on an internal email dated 1 August 2017 from the claimant's head of procurement to argue that the intention was to provide an "on-site fire-fighting service" that was not in my view the rationale for or basis of the decision. There is no evidence of any intention that the fire marshal would act as a firefighter as such. The intention was to use that person, as a trained and experienced ex-firefighter, to use his expertise to assist the Churchill operatives in performing their intended role more effectively. Whilst it may be that he would also be able to take initial steps if he came across a fire whilst waiting for the fire service to arrive which the security staff could not, it would be a nonsense to envisage that one supervisor operating across 4 tower blocks was added for the primary reason to act as a firefighter.

559. The second criticism concerns the decision to replace Churchill with Hyde Property Services ("HPS"[I]), the department within Hyde which delivered building repair and maintenance works. Churchill were providing two operatives per tower. It is clear from correspondence at the end of July 2017 that there was a concern about the quality of the performance by Churchill but also a concern about the cost of the service if provided by HPS and/or WFRS. The decision was made to use HPS in house, and Churchill's contract in relation to the four towers was ended with effect from 11 August 2017, having already been ended in relation to Garland Court.

560. It was decided that it was possible in such circumstances to reduce the number of operatives to one per block with one more senior person employed as a supervisor whose role, described by Mr Dew, was to make sure that everybody turned up and was doing their job and also to act as a relief for breaks and also to deal with any points of escalation. Although the defendant contends that this shows that this was really a very limited back-up role, and did not need anyone with contract manager level experience or firefighting experience, in my judgment it is plain that one, and preferably both, such attributes, were reasonably considered necessary, to ensure that what needed to be done was done and that any issues or concerns were dealt with efficiently.

561. Although the defendant argues that the decision to reduce the operatives from two to one operative per tower was to do with having reduced the fire compartmentation risk rather than a belief that more Churchill operatives were needed than FRS operatives, I am satisfied that the two events ran in tandem with each other and that one justification for replacing Churchill with FRS was that the claimant's own

in-house staff were seen as being far more reliable and useful than Churchill. I note that Mr Greening considered whether there was any obvious correlation between the two and concluded that there was not.

562. The cost of using HPS staff for such a role represented the existing cost of employing such staff. Mr Dew explains that in order to incentivise the HPS staff to volunteer for this role they had to agree to pay the standard rate plus overtime for working out of hours. Mr Greening assesses the actual hourly cost paid and claimed by the claimant, on which no VAT is payable, as being £42.86 (excluding Garland). This is significantly in excess of the Churchill and WFRS rates. He assesses that on the same basis the rate paid to the supervisors was £46.93/hour.

563. The essential point at issue is whether the decision to use HPS so as to provide in-house staff who were part of the claimant's team, used to dealing with residents, was unreasonable, in circumstances where although their overall cost per operative to the claimant was significantly greater than the cost of a Churchill operative, there was far less of an overall significant difference because only five as opposed to nine personnel were being used.

564. On the basis of the comparative hourly rates charged by Churchill and paid by the claimant for HPS, the comparison in weekly cost is as between **£20,160** for Churchill (eight staff at 12.50/hour x 24 hours x 7 = £16,800 plus VAT) and **£28,801.92** for HPS (four staff at £42.86/hour x 24 hours x 7). The additional cost of a supervisor / fire marshal should be the same in either case. Whilst this is a broadbrush comparison, it is consistent with the comparative costings reported by Mr Dew in his 27 September 2017 proposal, discussed below, where the total weekly cost for using HPS and one supervisor was around £58,000 whereas the total weekly cost for using Churchill, allowing for double the number of operatives and one supervisor was around £46,000 plus VAT.

565. In my judgment it is not unreasonable for the defendant to have to pay for this change. It is clear that this option was under consideration from mid July 2017 on the basis of legitimate concerns about Churchill's poor performance as well as their operatives' lack of expertise. In his internal email dated 1 August 2017 the claimant's head of procurement also explained that "having the fire fighters there gives us an higher service level not only in terms of the equipment they use, but also the expertise, whereby they will actively fight any fires as opposed to just alerting the emergency services".

566. Whilst I have already noted that active firefighting can't only have been one component of their additional expertise, this does show that there clearly were good reasons from a fire safety point of view in making this change. The overall cost difference, given the reduced numbers of HPS staff, was not in my view disproportionate to the benefit to be achieved. It must be remembered that, as I said in the section of my judgment dealing with the question of remoteness in relation to this claim, in the circumstances prevailing at the time the claimant had a legitimate concern that the Gosport towers represented a serious fire risk and the difference between using Churchill and using HPS potentially made the difference between a fire with horrific consequences and avoiding such an occurrence.

567. Mr Dew was cross-examined to good effect on the fact that he at least was perfectly willing to contemplate re-hiring Churchill so long as they were properly supervised by HPS (or WFRS). It appears reasonably clear from the evidence that there was a divergence in opinion, so that some within the claimant (notably Mr Dew and Mr O'Halloran) were more willing to contemplate re-hiring Churchill on that basis whereas others (notably Ms Bailey) were very resistant to the idea. The differing views are well encapsulated in the exchange of emails between Mr O'Halloran and Ms Bailey on 1 August 2017. I do not consider that the view expressed by Ms Bailey can be dismissed as unreasonable.

568. The third criticism concerns the delay in replacing HPS with a cheaper alternative.

569. It is clear from the contemporaneous internal claimant emails that they were aware from the outset that using HPS staff was expensive. In his witness statement Mr Dew explained that by September 2017 it was appreciated that as well as being very expensive it was also putting a strain on HPS' ability effectively to deliver its core repair and maintenance services, so that he was asked to investigate other alternatives.

570. His first proposal was dated 6 September 2017. In it he proposed re-engaging Churchill with six operatives and four supervisors which he suggested would produce a saving of £51,784 a week.

571. The defendant complains that this appears to have been summarily rejected by Ms Bailey later that day. Ms Bailey said, and I accept, that this was not a decision which she had imposed and instead had been reached on the basis of a consensus. The email dated 8 September 2017 from Mr Shaw, the director of property services and the chair of the FST, shows that there had been a discussion about this involving Ms Bailey, himself and the deputy head of customer services and, although it also stated that Ms Bailey had "firmly stated" her view, this does not in my view indicate that Ms Bailey was simply making the decision herself without discussion or consensus.

572. More importantly perhaps, for the reasons already stated I am satisfied that it was not unreasonable in the circumstances for the claimant to make a decision not to revert to Churchill or some other security company provider to provide unqualified and untrained security staff to perform this important role. Ms Bailey was, in the circumstances, entitled to say that Mr Dew would need to go back to the drawing board and produce a revised proposal which included reliable costings for using trained ex-firefighters supplied by a company such as WFRS.

573. His final revised proposal was produced on 27 September 2017 and considered five options, of which the most expensive (£58,000/week) was retaining the existing arrangement (six HPS staff plus one supervisor) and the least expensive was reverting to using six security staff from Churchill or an equivalent provider with one direct labour supervisor (£33,700/week).

574. Option 2A, which was recommended, was to use the services of an employment agency, Reed, who had set up a team of ex police and fire officers, to provide six staff on a temporary basis to replace the HPS operatives, with two FRS staff to supervise. This would reduce the weekly cost by £23,000 per week to £35,500 per week. At £23.70/hour, the temporary rate was more expensive than option 2B, which was employing them through Reed on a full time basis at £19/hour, however that would save a one off finders fee of £37,800 and would avoid the indirect costs of managing full time staff. Over a relatively short period it would not make very much difference but the longer it continued the more expensive, relatively, it would become. In the end, therefore, the decision was made to proceed with Option 2B which, as it transpired, was clearly the right decision.

575. It is also to be noted that using the trained Reed staff was very little more expensive than reverting to using untrained Churchill staff.

576. The very next day Ms Bailey emailed to say that she was happy to proceed with the recommended option.

577. Mr Dew explains that the transition began in October 2017 and was completed by mid-November 2017. He explained that the transition did take some time because the claimant had to mobilise a new team from scratch, to recruit and then take on 20 to 25 ex-servicemen, and go through a period of "on-boarding" (training and induction). Mr Greening confirms in his report that the bulk of the HPS provision stopped on 31 October 2017.

578. In all the circumstances I reject the complaint that the claimant was guilty of unreasonable delay in moving from HPS to another less expensive provider from early September 2017 onwards.

579. I also reject any complaint that it was inappropriate to contract with Reed as opposed to Churchill or some other security staff provider. It was reasonable to bring in trained ex-firefighters and it was reasonable to secure their services on a full time contract basis at the agreed rate.

580. At around the same time as the transition to WFRS the claimant obtained further specialist advice from fire engineers, a firm known as BB7, to provide advice on fire safety measures. These reports said that the existing waking watch system, with a brief only to phone the fire service in the event of a fire, would not assist in the event of a fast-moving fire spreading across the external walls and recommended what was effectively an extension of the waking watch to assist with a more pro-active phased evacuation strategy. Mr Carmichael explained in his witness statement that the claimant, not surprisingly, considered that it had no real option but to follow this advice. He explains that the claimant therefore took the decision in November 2017 to replace the untrained supervisors provided through HPS with fire marshals, being trained ex-firefighters supplied through WFRS.

581. That represented a significant cost increase, to £39.58/hour but, again, it is not possible in my view to say that this was an unreasonable decision, either in itself or in terms of visiting the consequences upon the defendant. The claimant followed expert advice in making the decision to increase the scope of the waking watch role and, in those circumstances, to procure marshals who could perform that role in a way which would make a difference in the event of a fast-spreading fire across the external walls.

582. In late 2017 HFRS visited the Gosport towers. Mr Carmichael explains that after the visit HFRS, supported by BB7, advised the claimant to increase the number of waking watch operatives from one to two per block in accordance with what he says was current guidance. He explains that he saw this as more of a directive than a request, given that the alternative was that HFRS might serve a prohibition notice which might force the claimant to decant the residents, so that the claimant took the decision to comply.

583. However, the one point which appears to me at least to be unexplained is why as from 13 November 2017 right up until the removal of the waking watch (i.e. including throughout the Axis contract period) the claimant appears (see Appendix 5 to Mr Greening's report and his helpful chart) to have employed, paid for and claimed as against the defendant for the services of two fire marshals. I can understand that it was both reasonable and necessary to have one fire marshal. But there is no evidence or reasoned basis why it was necessary to have two fire marshals for the four blocks, i.e. excluding Garland. In his witness statement Mr Dew specifically justifies the need for one supervisor to cover all five towers (pars. 4.12 and 4.13). There is nothing in his witness statement which justifies two per tower after WFRS took over (he says nothing about this in his par. 6.3 where he refers to this) and Mr Carmichael does not suggest that the claimant was advised by BB7 or HFRS to increase the number of supervisors from one to two or that such advice would still have been made if Garland was not included (noting that Garland was physically distant from the other four towers).

584. It follows that if and insofar as the claimant has claimed for two fire marshals over that period the claim should be reduced so to claim only one such marshal.

The provision of the waking watch by Axis

585. On around 30 September 2018, Axis commenced the provision of the waking watch using WFRS operatives. From then on, Martlet paid for the provision of the waking watch under the Axis replacement works contract. This was included by way of a variation to the Axis contract in the sum of £743,793.23 which the claimant accepted and paid.

586. The defendant contends that: (a) on a proper analysis there was no basis for agreeing to a variation, because the waking watch was covered by the Axis contract in any event; (b) no documents have been

disclosed by the claimant to show or to evidence the build-up of the claim; (c) the number of operatives is excessive; (d) the claim period extends after the cladding was removed.

Was the provision of the waking watch covered by the existing contract with Axis?

587. The defendant seeks to contend that on a proper analysis of the contract terms the provision of the waking watch was included in the existing contract with Axis so that, since the claimant was not contractually liable to pay Axis anything extra for that provision, the claimant cannot recover it as against the defendant.

588. The claimant addressed this argument in some detail in its closing submissions. It made the point that there was nothing in the build-up of the contract sum of £5,071,245.42 and nothing in the Employer's Requirements (including section 7, which contained the completed contract sum analysis, and section 9, which contained the main summary of the Axis tender) which included any financial allowance for the provision of a waking watch. The main summary total amounts to £4,336,708.20 and the difference between that and the contract sum is explained by the schedule of adjustments to the contract sum analysis, including various additions and omissions, but saying nothing about a waking watch.

589. Moreover, there is no suggestion that there was any specific requirement for a waking watch contained in the Employer's Requirements.

590. However, the defendant relies upon two tender addendum documents, dated 3 and 22 January 2018 respectively, which are included as contract documents in accordance with the contract documents schedule.

591. The first asked Axis to include for various items, item 1.2 of which said "contractor to take on full responsibility for the provision of waking watch in all five blocks for full duration of the project up until issue of practical completion. Full specifications / details for existing waking watch to be provided under separate cover".

592. Against this entry it is written "incl" (i.e. inclusive). The defendant contends that this means that Axis was agreeing to provide the waking watch as included within the contract sum. I can see the apparent force of the point. However, in the absence of any evidence that any details of the waking watch had been provided there would be uncertainty about what Axis was offering to provide as part of the unadjusted contract price. Insofar as this document can be given any meaning in itself it might equally be that Axis was agreeing in principle to provide the waking watch but that any such agreement was subject to sight of what was required and subject to financial adjustment as necessary.

593. The second contained a revised item 1.2, which said "the contractor is to provide and manage Waking Watch (WW) service for the full duration of the contract and should provide their monthly cost here per block. (Contractors should note that Hyde require flexibility of service and therefore may omit WW from all blocks once the existing EWI has been removed subject to risk assessment at the time. Garland Court WW may be omitted in the 1st or 2nd month of the contract. Wessex Fire are to be retained to manage the WW (which is currently 2 no officers at £950 each). All WW officers provided should be suitably qualified and security cleared. A minimum of 2 no officers shall be provided per block on a 24 hour basis with 2 no Wessex officers overseeing at all times on an 24 hour basis".

594. Against this, Axis provided a price per tower per month. This does indeed make reasonably clear that, once the details had been provided, the claimant expected Axis to provide, and Axis did provide, a monthly figure for the provision of the waking watch. On any sensible view this second addendum clearly superseded the first tender addendum.

595. The defendant suggests, without any evidential basis, that these prices were listed to enable the claimant to omit the waking watch in due course. That seems to me to be pure surmise and is not what the addendum says as being the only purpose.

596. More fundamentally the defendant, noting that this price was not included in the itemised contract sum, argues that if the costs were meant to be additional but Axis forgot to carry them into the contract sum through inadvertence then that would be its failure and would not entitle it to a variation to add them in after the contract was entered into.

597. Plainly, these monthly sums for the individual towers could not simply have been included within the itemised contract sum, unless they were either multiplied by the estimated contract duration or separately specified as monthly sums. Nonetheless, it is the case that the figures stated in the tender addendum were not carried forward into the schedule of adjustments. However, as the claimant says, the explanation is provided by the email from Axis dated 17 April 2018, forming part of the tender submission, which states "please find herewith the correctly completed summary pages for Garland and Harbour and revised summary sheet excluding the waking watch total. We have signed this and dated it as of the original submission date".

598. It follows, as the claimant submits, that a decision was clearly made after the tender addendum documents to exclude the waking watch but that, nonetheless, this had not been followed through by those responsible for putting together the contract documentation pack so as to exclude the reference to the waking watch in the tender addendum documents before including them as contract documents.

599. The claimant submits that the conflict is resolved by the order of precedence provision in paragraph 6.2 of the contract documents schedule, which provides that both the schedule of adjustments to the contract sum analysis and Axis' tender submission with completed contract sum analysis (as items 3 and 4 of the documents schedule) take precedence over the tender addendum documents (item 5 of the documents schedule).

600. In my judgment this submission is plainly right. The email, forming part of the tender submission, clearly explains that the waking watch is excluded. Even if it did not, the schedule of adjustments would show that it was not included.

601. The claimant also contends as a fall-back that even if there was any merit in this point, it cannot be said that it acted unreasonably in instructing Axis to provide the waking watch as an extra, in circumstances where there is no evidence to suggest that either the claimant or Pellings as the Employer's Agent ever believed that it was already included in the Axis contract. The minutes of progress meeting number 7 held 30 August 2018 show that it was instructed as a variation without any suggestion that it was or even might be already included. It is clear that both the claimant and Pellings were reasonably entitled to believe that it was an extra. Insofar as relevant Mr Wheeler accepted this in cross-examination in relation to the position of Pellings as a contract administrator.

602. In my judgment the reality is that if as at September 2018 the claimant had sought to compel Axis to provide the waking watch on the basis that the price was already included Axis would doubtless have refused to do so. In such circumstances the claimant would almost certainly have had to obtain the service elsewhere. If it had sought to withhold or to recover the cost from Axis the latter would doubtless have vigorously defended its position, either on the basis as above that the contract did not, on its true construction, include for the waking watch or, if it did, that was a mutual mistake which could and should be rectified. It is difficult to see what defence the claimant would have had to such an argument. In the circumstances, the claimant cannot in my judgment be criticised for not going down that route.

No evidence of build-up?

603. The defendant complains that there is no evidence to substantiate the build-up of the Axis claim for the waking watch costs as a variation. However, Mr Greening refers in his report to the breakdown provided in the Axis payment application and, in my view, there is no basis for this complaint. He confirms that Axis effectively took over the existing arrangement with WFRS and that, having seen the invoices submitted by WFRS to Axis, is satisfied that the claim as made is consistent with this arrangement (apart from a small reconciliation error in the defendant's favour).

604. Mr Greening also explains and justifies the add-on main contractor discount claim made by Axis as well as its claim for overhead and profit ("OHP"). In circumstances where the claimant was engaging Axis to undertake the replacement works it was reasonable to engage them to provide the waking watch as well, to ensure proper co-ordination, so that in my view these costs are reasonably recoverable by the claimant from the defendant.

Excessive number of operatives provided

605. The defendant complains that there is no justification for the provision of two fire marshals as well as two operatives per tower. As recorded above, I agree and insofar as included one should be omitted.

Claim for period after cladding removal?

606. The defendant also complains that the claim made by Axis extends to 8 April 2019, whereas the claimant's pleaded position is that "the original EWI systems were all stripped from the Towers by March 2019, whereupon the waking watch patrol ceased".

607. Mr Greening refers in his report to the periods of provision of the waking watch and confirms that the claim in relation to Hammond extends to April 2019, whereas the claim for the others extends only to the end of February 2019, consistent in each case with when the cladding was removed. He confirms that he has seen correspondence from Frankhams as the fire safety consultants which approves the removal of the waking watch on this basis.

608. It follows that there is no merit in this point.

Conclusion

609. For the reasons given, the claim for the waking watch succeeds in full in the amounts agreed between the experts, save for a reduction down to one fire marshal rather than the two as apparently provided by WFRS from November 2017 onwards.

Waking watch under the remedial works contract

610. I need to deal with this in case it is later found that the claimant is only entitled to damages on the basis of the remedial works scheme. I found that 32 weeks would have been a reasonable period for that scheme. To that must be added a period from discovery of the problem on 23 June 2017 to the date when the remedial works could have been started, having been investigated, designed and procured. That would have been less than the period which it took in relation to the replacement works, since there would have been no need to consider alternatives. On what is inevitably a broad brush basis I would have allowed a further 20 weeks, thus allowing the first 52 weeks of the claim on that basis.

Interest

611. It is common ground that the claimant is entitled to interest on the damages it recovers and that: (a) the appropriate rate is 3% pa; and (b) the appropriate period is from the midpoint of the date when its losses were incurred, which will be different for the remedial works and for the waking watch.

612. Mr Greening has ascertained the midpoint for the remedial works costs as 30 June 2019 and the midpoint for the waking watch costs as 26 April 2018. Assuming there is no disagreement as to these dates interest can be calculated down to the date of the judgment.

Index of commonly used abbreviations

ACM	Aluminium composite material
ADB 2000	Approved Document B, Fire Safety, 2000 edition
BBA	British Board of Agrement.
BRE	Building Research Establishment
BS	British Standards
BS 8414	BS 8414-1:2002 - Test method for non-loadbearing external cladding systems applied to the face of the building. (Note BS 8414-2:2005 is the equivalent which applies to such systems where fixed to and supported by a structural steel frame.)
EMT	Hyde's Executive Management Team
EPS	Expanded polystyrene
EWI	External wall insulation
FRS	Fire and Rescue Service
FSRP	Hyde's Fire Safety Review Programme, formed by Hyde in response to the Grenfell Tower fire
FST	Hyde's Fire Safety Team,
HFRS	Hampshire Fire and Rescue Service, the fire and rescue services for Gosport towers
HPS	Hyde Property Services, the department within Hyde which delivered building repair and maintenance works
WFRS	Wessex Fire and Rescue Services (UK) Ltd, the company which provided ex firefighters to undertake a waking watch