Web Blue CoS
OUTER HOUSE, COURT OF SESSION

[2017] CSOH 57

CA141/13

OPINION OF LORD DOHERTY

In the cause

HUNTAVEN PROPERTIES LIMITED

Pursuer

against

(FIRST) HUNTER CONSTRUCTION (ABERDEEN) LIMITED

(SECOND) AIRSIDE INSTALLATIONS LIMITED

(THIRD) GSLP9999 LIMITED

(FOURTH) GEORGE HUTCHISON ASSOCIATES LIMITED

Defenders

Pursuer: Bowie QC, Richardson; CMS Cameron McKenna LLP
First Defender: MacColl; Brodies LLP
Third Defender: S Smith QC, Mackenzie; BTO
Fourth Defender: Ferguson QC, MacPherson (Solicitor Advocate); Clyde & Co

30 March 2017

Introduction

[1] The pursuer is the proprietor of a pipe storage yard facility at Fordoun, Aberdeenshire. In 2008 - 2009 a large concrete hard standing ("the slab") was constructed at the yard. Following its completion, defects in the slab became apparent. In this action the pursuer avers that each of the defenders is responsible for the defects. It seeks damages of £3.6 million from them jointly and severally for breach of contract, and in the cases of the first and third defenders it contends that there is also concurrent liability in delict. The second defender is insolvent. It did not enter appearance and decree in absence was pronounced against it on 16 December 2014. Each of the other defenders denies liability. Each also maintains that any obligation to make reparation to the pursuer has prescribed. The matter came before me on the commercial roll for a preliminary proof before answer on prescription.

[2] I heard evidence over the course of five days. The pursuer led evidence from Kenneth Macpherson, a chartered surveyor and a partner of Ryden; Nigel Gunner, a chartered civil engineer; Bruce Ferguson, a director of Hunting Energy Services (UK) Limited, a sister company

of the pursuer; and George Scott, a retired solicitor in England and Wales who worked on a consultancy basis with the pursuer and other companies in the same group. The first defender led evidence from Mark Oakley, the first defender's current Contracts Director; Alistair Porter, the first defender's Surveying Director; Alexander Ogilvie, a former Contracts Director with the first defender; Kevin Oliphant, a civil engineer and former principal of the second defender; and Professor John Knapton, an independent expert engineering witness. The third defender led evidence from William Slater, a structural engineer and a director of the third defender; and Jack Bull, an independent expert engineering witness. The fourth defender led evidence from Nathan Woods, a civil engineer with the fourth defender. Signed witness statements or affidavits or (in the cases of Professor Knapton and Mr Bull) expert reports had been lodged in advance of the proof, and these were taken to stand in place of conventional examination-in-chief. In some cases, with the court's leave, that evidence-in-chief was supplemented by further oral evidence-in-chief. On the sixth day parties prepared written closing submissions, and I then heard oral submissions on the seventh and eighth day of the diet. I am grateful to counsel for the considerable assistance which their submissions provided.

Credibility and reliability

[3] Each of the witnesses who gave evidence appeared to me to be doing his best to assist the court. I had no concerns as to the credibility of any of the witnesses. For the most part I found the evidence of the witnesses to fact to be reliable - though it will be apparent from the findings which follow that I have not accepted the entirety of each witness's evidence. I have accepted some, but not all, of the evidence of the independent skilled witnesses (Professor Knapton and Mr Bull).

Objections

[4] During the course of the proof a number of objections were taken to the admissibility of evidence or to the line of evidence, and I admitted the evidence under reservation of competency and relevancy. Since none of the objections were insisted upon during closing submissions it is unnecessary to say more about them.

The period up to February 2010

[5] The first defender is a building contractor. The second defender was a concrete works subcontractor. The third defender is a firm of consulting engineers. It was formerly incorporated as Robertson Slater Partnership Limited. The fourth defender carries on business as specialist consulting engineers with expertise in the design of concrete slabs.

[6] The pursuer appointed Ryden LLP ("Ryden") as contract administrator/project manager and Murray Montgomery Partnership ("MMP") as quantity surveyors for the project. In January 2007 the pursuer appointed the third defender as consulting engineer for the project.

[7] In 2008 the construction work was put out to tender. The tender Bill of Quantities specified that the concrete in the slab was to be reinforced using steel Dramix fibres and was to have 4% air entrainment. However, alternative tenders were permissible.

[8] An air entrainment agent is an additive for concrete which allows small air bubbles to be captured within the concrete. The bubbles serve to reduce and absorb stresses arising from the freeze-thaw process of water within the concrete, increasing the durability of concrete in climates

subject to freeze-thaw. Where an air entrainment agent is present it may be a discrete constituent which is added when the concrete is mixed, or it may have been included within a water reducing admixture ("WRA") which is used as a constituent of the concrete.

[9] The first defender tendered for the construction work. As well as a tender which conformed with the Bills of Quantities it submitted alternative tenders. Alternative Tender Number 2 was for a 225mm polypropylene fibre reinforced concrete slab. The manufacturer of the polypropylene fibres was to be Grace Construction Products Limited ("Grace"). Following further discussions between the first defender, the third defender and Grace, the pursuer was advised by the third defender that polypropylene fibres were a viable alternative to steel reinforcement. The pursuer decided to proceed with the proposal to use Grace fibres.

[10] Initially the intention had been that the first defender would design the slab. Subsequently, in about April 2008, the pursuer and the third defender agreed that the third defender would carry out that task. However, ultimately the fourth defender was instructed by Grace to design the slab.

[11] On 17 July 2008 the fourth defender issued drawing QC7481/01 Revision A to Ryden and the third defender. The following day the fourth defender issued a further Revision B of the drawing to the same recipients. The drawings did not specify that there should be air entrainment in the concrete used to form the slab.

[12] On 23 July 2008 a meeting was held in the first defender's portacabin office at Fordoun. One of the purposes of the meeting was to enable the fourth defender's construction drawings to be finalised. The meeting was attended by Mr Oakley, Mr Oliphant, Mr Slater, Mr Woods, and by two representatives of Grace (Mr Attree and Mr Head).

[13] Mr Oliphant's evidence was that during the meeting he queried with Mr Head why air entrainment was not included in the slab, and that Mr Head had responded that it was unnecessary. Mr Oakley provided some indirect support for Mr Oliphant's account - he recalled that Mr Oliphant told him soon after the meeting that a Grace representative had said that air entrainment was not required with Grace fibres. Neither Mr Oakley nor any of the other witnesses who spoke to what happened at the meeting (Mr Slater and Mr Woods) recalled overhearing the exchange between Mr Oliphant and Mr Head, but the evidence was that in Mr Macpherson's absence the meeting had not been well chaired or well structured. On occasions more than one conversation was ongoing at the same time. I accept that there was some discussion about air entrainment with Mr Head on 23 July 2008 but I have reservations as to whether Mr Oliphant's recollection of the exchange is wholly accurate. It seems inherently unlikely that Mr Head would have made an absolute or unqualified statement. Mr Head was not called as a witness, so I do not have the benefit of his recollection of events. However, for present purposes the important point is that the pursuer was not privy to the exchange between Mr Oliphant and Mr Head or to the exchange between Mr Oliphant and Mr Oakley. Neither were Mr Slater or Mr Woods.

[14] Following the meeting on 23 July 2008 the third defender instructed the first defender to proceed on the basis of the construction drawings, which were reissued to incorporate minor alterations which had been discussed at the meeting. The first and second defenders commenced the work on site in 2008, before the formal conclusion of contracts. In fact, the contract between the pursuer and the first defender was not formally concluded until 27 and 28 July 2009. The first and second defenders concluded a subcontract on 27 July 2009 for the construction of the slab by the second defender.

[15] The slab construction was carried out in two phases. Phase 1 comprised the area between gridlines 1 and 15. It was constructed during August and September 2008. Section 1 of Phase 1 achieved practical completion on 29 September 2008. Section 2 achieved practical completion on 29 October 2008. Phase 2 commenced in about November 2008 and was completed on 11 March 2009. It comprised the area between gridlines 15 to 26. The Phase 2 concreting works were in November and December 2008 and in January 2009. The defects liability period for Phase 1 ended on 28 September 2009. The defects liability period for Phase 2 ended on 10 March 2010.

[16] By about the time of practical completion of Phase 2 the pursuer had lost confidence in the third defender. As a result, the third defender had little or no actual involvement with the project works after that date. The pursuer instructed Mr Gunner to advise it as and when it considered it required engineering advice.

[17] The slab did not contain air entrainment. The concrete did not include an air entrainment agent additive; nor was air entrainment included as a constituent of the WRA which was used.

[18] Mr Macpherson did not request the third defender to inspect Phase 1 of the slab around the end of the Phase 1 defects liability period. Mr Gunner was instructed to perform that task. On 21 September 2009 Mr Gunner inspected Phase 1. He was accompanied by Mr Macpherson, Mr Oakley and Mr Oliphant. Mr Gunner noted that there were a number of areas where the surface of the slab had deteriorated. He wrote to Mr Macpherson on 6 October 2009 with his observations (Joint Bundle ("JB") 218). In particular he noted:

> "Polishing of surface and slight surface spalling occurs in numerous places, noted particularly along the main track of Gridline 14 to 15, and significant polishing in front of Bay H3. Similar polishing is occurring on the main track between Gridlines H and J.
>
> The polishing and cement removal is occurring in varying degrees and notably some slab pitting or stone loss is occurring in the most tracked areas.
>
> There is poor surface finish to the third panel along Gridline 15 in front of Bay D3.
>
> …
>
> The scope of defects appear relatively minimal, the majority confined to the main access or heavily tracked areas.
>
> …
>
> Of note in the defects are the surface irregularities, where under heavily trafficked sections the surface laitance and finish have been removed, polishing the aggregate, and in some cases causing the aggregate to de-bond and remove. This surface, we recommend, should be monitored for further deterioration over the oncoming winter, since the effects of freeze-thaw over another season may accelerate surface deterioration.
>
> …

We do not, at this time, consider these defects to be significant enough to warrant prevention of use of the slabs, though we do recommend that the areas of concern be monitored for further deterioration.

We note that a Stage 2 inspection is due in Spring 2010, and we suggest that any suggested repairs be delayed until the full extent of the defects is known.

You may, however, wish to copy this letter to Hunter Construction, both for confirmation of the existence of the defects and to seek what remedial actions they would propose, should you consider it necessary to remedy the defects.

This matter can be discussed over the ensuing 6 months, ready for any repairs to be undertaken in Spring 2010…"

There was no mention in the letter of clumping and balling of fibres, and at the proof Mr Gunner could not recollect whether there had been clumping and balling at that time. However, in cross-examination by the first defender Mr Macpherson confirmed that at that time there was localised balling of fibres; and Mr Oakley's evidence was that clumping and balling of fibres was present.

[19] Mr Macpherson did not request the third defender to inspect Phase 2 of the slab around the end of the Phase 2 defects liability period. Mr Gunner was instructed to perform that task, which he did on 22 and 23 February 2010. On 22 February he was accompanied by Mr Macpherson and by Mr Hankins, a chartered surveyor advising the pursuer (and who provided Mr Gunner with his instructions). The following day's inspection was attended by those three persons and by Mr Oakley and Mr Ogilvie. By this time significant and material defects were apparent in the slab. Many parts of it were affected by surface delamination and fibre balling. After the inspection Mr Gunner prepared a schedule of defects and a report for the pursuer. The schedule and the report contained 16 photographs of problems with the slab. The report contained the following observations:

"<u>General Comments</u>

From the observations and photographs above, the majority relate to surface de-lamination with surface latents (*sic*) loss and fine aggregate removal, in some cases, larger aggregate removal revealing potholes and significant fibre balls.

…

<u>De-lamination</u>

De-laminations are areas of surface mortar which result from bleed water or bleed air being trapped below the prematurely closed mortar surface. The primary cause is finishing the surface before bleeding has occurred and is more likely to occur when factors that extend

the bleeding time of the fresh concrete, for example a cold substrate, are combined with factors that accelerate the surface setting, for example curing compounds.

De-laminated areas that are separated from the underlying concrete leave a hole in the surface which resembles spalling.

Other factors that can account for surface blisters or de-lamination are an excess amount of entrapped air within the concrete, insufficient vibration during compaction and finishing the surface too soon, preventing bleed water and air. Such measures can be avoided during construction."

[20] The pursuer did not instruct Mr Gunner to ascertain the cause or causes of the defects he observed during the inspections on September 2009 and February 2010. Mr Gunner's instructions were simply to record defects. In fact in his report following the February 2010 inspection Mr Gunner mentioned some possible causes of the sort of defects which he saw, but he did not offer any view as to the actual causes.

The contract between the pursuer and the first defender

[21] In terms of clause 1 of the agreement between the pursuer and the first defender the first defender undertook to carry out and complete the Contract Works in accordance with the Contract Documents. The contract was regulated by the Conditions of the JCT Scottish Building Contract Sectional Completion Edition With Quantities (May 1999 Edition) (January 2004 Revision). Clauses 1.5, 2.1 and 17 of the applicable Conditions provided:

"1 Interpretation, definitions etc.

…

1.5 Notwithstanding any obligation of the Contract Administrator to the Employer and whether or not the Employer appoints a clerk of works, the Contractor shall remain wholly responsible for carrying out and completing the Works in all respects in accordance with the Conditions, whether or not the Contract Administrator or the clerk of works, if appointed, at any time goes on to the Works or to any workshop or other place where work is being prepared to inspect the same or otherwise, or the Contract Administrator includes the value of any work, materials or goods in a certificate for payment or issues the certificate of Practical Completion or the Certificate of Completion of Making Good Defects.

…

2 Contractor's obligations

2.1 The Contractor shall upon and subject to the Conditions carry out and complete the Works by Sections in compliance with the Contract Documents, using materials and workmanship of the quality and standards therein specified…

…

17 Practical Completion and defects liability

17.1 When in the opinion of the Contract Administrator Practical Completion of any Section is achieved… he shall forthwith issue a certificate to that effect and Practical Completion of that Section shall be deemed for all the purposes of this Contract to have taken place on the day named in such certificate.

17.2 Any defects, shrinkages or other faults which shall appear in any Section within the Defects Liability Period in relation thereto and which are due to materials or workmanship not in accordance with this Contract or to frost occurring before practical completion of that Section of the Works, shall be specified by the Contract Administrator in a Schedule of Defects for that Section which he shall deliver to the Contractor as an instruction of the Contract administrator not later than 14 days after the expiration of the said Defects Liability Period, and within a reasonable time after receipt of such schedule the defects, shrinkages and other faults therein specified shall be made good by the Contractor at no cost to the Employer unless the Contract Administrator with the consent of the Employer shall otherwise instruct; and if the Contract Administrator does so otherwise instruct then an appropriate deduction in respect of any such defects, shrinkages or other faults not made good shall be made from the Contract Sum.

17.3 Notwithstanding clause 17.2 the Contract Administrator may whenever he considers it necessary so to do issue instructions requiring any defect, shrinkage or other fault which shall appear in any Section within the Defects Liability Period and which is due to materials or workmanship not in accordance with this Contract or to frost occurring before practical completion of that Section, to be made good, and the Contractor shall within a reasonable time after receipt of such instructions comply with the same at no cost to the Employer unless the Contract Administrator with the consent of the Employer shall otherwise instruct; and if the Contract Administrator does so otherwise instruct then an appropriate deduction in respect of any such defects, shrinkages or other faults not made good shall be made from the Contract Sum. Provided that no such instructions shall be issued after delivery of a schedule of defects or after 14 days from the expiration of the Defects Liability Period for the relevant Section.

17.4 When in the opinion of the Contract Administrator any defects, shrinkages or other faults which he may have required to be made good under clauses 17.2 and 17.3 shall have been made good he shall issue a certificate to that effect, and completion of making good defects in the relevant Section shall be deemed for all the purposes of this Contract to have taken place on the day named in such certificate (the 'Certificate of Completion of Making Good Defects').

…"

[22] Supplementary Condition A33 provided:
"A33 - EMLOYERS REQUIREMENTS:

QUALITY STANDARDS/CONTROL

STANDARDS OF MATERIALS AND WORK

Good Practice

Where and to the extent that materials, products and workmanship are not fully detailed or specified they are to be :

Of a standard appropriate to the Works and suitable for the purposes stated in or reasonably to be inferred from the project documents, and;

In accordance with good building practice.

…."

The contract between the pursuer and the third defender

[23] The third defender's appointment was governed by the ACE Conditions of Engagement 2002 Agreement B(1) for Non Lead Consultants (JB 9). Clause B2.3 of those conditions provided:

"Skill and Care

2.3 The Consultant shall exercise reasonable skill, care and diligence in the performance of the Services."

Condition B1 defined the Services as the totality of Normal Services and Additional Services. In clause A19 of the contract Memorandum Normal Services were specified as the services set out in clauses C1 to C9 of the Schedule of Services comprising Part C of the conditions, and Additional Services were specified as all Additional Services set out in clause C10 (save for those, if any, listed in C1 to C9 as Normal Services) together with any further Services requested by the Client and consented to by the Consultant. Clauses C1 to C9 set out Services at the Appraisal Stage (C1), the Strategic Briefing Stage (C2), the Outline Proposals Stage (C3), the Detailed Proposals Stage (C4), the Final Proposals Stage (C5), the Production Information Stage (C6), the Tender Documentation and Tender Action Stage (C7), the Mobilisation, Construction and Completion Stage (C8). Clause C9 provided that the Consultant shall from time to time as may in his opinion be necessary, advise the Client as to the need for the Client to be provided with Additional Services in accordance with

C10 or C11. Clause C10 listed certain Additional Services, none of which is relevant to the present dispute. The Services at the Mobilisation, Construction and Completion Stage included:

> "C8.7 Advise the Lead Consultant on certificates for payment to Contractors in respect of the Works.
>
> …
>
> C8.9 Inspect the Works on completion and, in conjunction with any Site Staff, record any defects."

The contract between the pursuer and the fourth defender

[24] The pursuer and the fourth defender contracted in terms of a design agreement (dated 17 February 2010 and executed on 2 March 2010). The agreement retrospectively confirmed the appointment of the fourth defender as a consultant for the project with effect from 23 July 2008. It narrated that the fourth defender's original instructions came through Grace; and that payment for the services provided by it was made in full by Grace in August 2009 on certification of completion of the fourth defender's work. The agreement included a warranty by the fourth defender:

> "that in carrying out the Services, you have exercised the reasonable skill, care and diligence to be expected of a professional consultant holding himself out as having the competence, experience and resources necessary for the proper performance of the services in connection with a project of a size, scope and complexity similar to that of the Project."

The Services were defined in the First Schedule of the agreement as:

- "

  The design of an external concrete hardstanding, reinforced using polypropylene STRUX 90/40 fibres, forming part of "the Project".

- Provision of a general arrangement and detail drawings, in respect of a concrete hardstanding forming part of "the Project".
- Attendance at 2 meetings held on site."

Events after February 2010

[25] Following the inspection in February 2010 the pursuer and its advisers discussed the schedule of defects with the first defender. On 16 March 2010 Mr Macpherson gave the first defender a notice (contract instruction no. 012) in terms of Clause 17.2 of the contract conditions. The notice stated that areas of the slab were not in accordance with the contract and that they required to be made good. The defects relevant for present purposes were "Delamination and

spalling of the surface of the concrete roadways, potholes and fibre balling." The locations of the defects were highlighted on a drawing attached to the notice. The instruction also stated:

> "Please report on the anticipated cause of the defects/faults to the concrete surfaces, the proposed remedial works and the timescale for completion of these."

[26] On 26 March 2010 Mr Macpherson wrote to the fourth defender. The letter enclosed a copy of contract instruction no. 012 and it stated:

> "The Instruction is being copied to you for your information only, I do not expect you to take any action regarding this but should you have any thoughts on the issues I would be interested to hear your views."

[27] On 29 March 2010 Mr Macpherson wrote to the third defender advising of the inspection which had recently taken place, and enclosing a copy of contract instruction no. 012. The letter concluded:

> "Your appointment as Project Engineer, for which you advise me you have been fully paid, included the final site inspection. As you were not in attendance you may wish to visit the site and inspect the affected areas. This can be organised by prior arrangement with myself."

Mr Slater replied by email of 30 March 2010 indicating that the third defender would attend the site as requested, but that he thought it was very important that someone from the fourth defender was also there. He indicated that he would contact the fourth defender and get back to Mr Macpherson. He contacted Mr Woods the same day to enquire as to his availability. On 31 March 2010 Mr Macpherson replied to Mr Slater as follows:

> "… May I make it clear that Ryden have not requested you to either attend the site or carry out a final inspection of the yard slab. As you were informed in my letter, the final inspection has already taken place.
>
> My letter …. was only intended to provide you with a copy of the Schedule and to give you the opportunity to visit the site should you wish to do so before appropriate remedial work is undertaken.
>
> May I make it clear that it is not my intention to issue you with any further instruction which could lead to Robertson Slater Partnership raising additional fees in connection with this Project.
>
> I do not consider that there is any need for GHA Livigunn to visit the site and request you immediately advise Nathan Woods you were in error in saying to him in your email that 'Ryden has instructed you to carry out a final inspection of the yard slab'…"

On the same day Mr Macpherson emailed Mr Woods asking him not to act on Mr Slater's instruction to inspect the site, and repeating that he did not expect Mr Woods to take any action but should he have any views on the defects he would be interested to hear them.

[28] On 6 April 2010 Mr Woods emailed Mr Macpherson with his comments (JB 243) on the schedule of defects. He advised that several of the defects appeared to be on heavily trafficked routes and that the degree of wear was of the order expected in such areas. As regards fibre balling, he indicated that it was normal to locally core around the area and fill the core with a suitable cementitious or similar repair compound. Mr Macpherson asked Mr Gunner for his comments on Mr Wood's email. Mr Gunner disagreed with the suggestion that the degree of wear was of the order to be expected. Mr Macpherson shared Mr Gunner's view on that matter.
[29] Following receipt of the instruction of 16 March 2010 the first defender liaised with the second defender with a view to the preparation of a response. On 29 April 2010 Mr Oakley discussed the defects with Mr Macpherson and the former indicated that the first defender was prepared to accept responsibility for remedial work. On 10 May 2010 Mr Macpherson emailed Mr Oakley asking for a report on the cause of the defects. Mr Oakley replied the same day indicating that he had asked the second defender to submit a concise report. The second defender prepared the report (JB 251) which commented on the defects and proposed a remedial solution. Mr Oakley provided the report to Mr Macpherson on 17 May 2010. Thereafter Mr Gunner expressed a desire for clarification that the structure of a 50mm fibre reinforced topping (proposed as part of the remedial work) would perform as an integral part of the original slab. On 30 June 2010 he wrote to Mr Attree and Mr Woods asking for confirmation of a number of technical matters, including that the 50mm thickness proposed was a sufficient depth for reconstruction. He indicated that the pursuer would be grateful for an indication of the recommended workability, fibre dosage and admixtures that would be appropriate for the proposed repair. On 6 July 2010 Mr Woods replied to Mr Gunner indicating that he had responded with his comments directly to Grace. There were subsequent discussions between representatives of the pursuer (including Mr Gunner) and the first defender before the final extent and locations of the remedial work to be carried out were agreed.
[30] The pursuer instructed the fourth defender to attend the site on 5 August 2010 to discuss and appraise the remedial work proposed by the first defender. Following the site visit the fourth defender wrote to the pursuer on 6 August 2010 (JB 293). The letter advised that the proposed method of work was in accordance with two specified British Standards and that it followed industry best practice for reinstatement works. The clear context in which the letter was written was that the fourth defender had been asked to comment on the first defender's proposed method of working. It had not been asked to determine the cause of the defects.
[31] The first defender saw to it that the proposed remedial work was carried out. The work commenced on site in about late August 2010 and was completed in November 2010. Essentially the same concrete mix as had been used previously was used for the remedial work. It did not contain air entrainment. On 16 November 2010 the slab was inspected on behalf of the pursuer and a certificate of making good defects was issued in terms of Clause 17. On 11 February 2011 Mr Macpherson issued the final payment certificate for the contract works. Between 16 November 2010 and early May 2011 it appeared that the remedial work had been effective. However in about the beginning of May 2011 defects again become apparent. Thereafter the slab continued to deteriorate further.

The pleadings

[32] Since this is a preliminary proof before answer on prescription it is unnecessary to summarise the defenders' other defences on the merits. Nor is it the time to debate the relevancy of the averments of breach of contract or concurrent fault which the pursuer directs against the defenders. For present purposes those averments fall to be taken *pro veritate*.

[33] The pursuer maintains that the defects and the slab's subsequent further deterioration and degradation are attributable to the fact that the concrete used for the slab did not contain an air entrainment agent; and to the existence of an overabundance of Grace Strux 90/40 reinforcement fibres in the surface of the concrete and localised pockets or clusters of fibres within the concrete. It avers that the deterioration and degradation of the slab arise from the breach of contract of each of the defenders *et separatim* from the fault and negligence of the first and third defenders.

[34] The pursuer avers (cond. XVI) that the first defender undertook to carry out and complete the Project in accordance with the Contract Documents, using materials and workmanship of the quality and standards therein specified; and to carry out its works in accordance with good building practice. The first part of that averment is clearly a reference to the general obligation contained in Clause 2.1 of the contract conditions, and the second part is a reference to the general obligation in Supplementary Clause A33. However, the specific respects in which it is said that the first defender was in breach of its contractual and delictual obligations to the pursuer (hereinafter referred to as failures (i), (ii) and (iii)) were (i) by failing to take adequate steps to mix the fibres into the concrete and ensure that they were evenly and properly spread throughout the slab; (ii) by failing to warn the pursuer of the absence of air entrainment within the slab and that such absence would make the failure of the slab inevitable; and (iii) because in so far as the design failed to specify air entrainment the concrete was not fully detailed or specified (and in those circumstances the first defender was in breach in using concrete not in accordance with good building practice). The pursuer further avers that when defects became apparent the first and second defenders carried out remedial work, and that that work was carried out pursuant to the defects liability provisions in Clause 17.2. While at the time it was carried out the remedial work appeared to have been successful (and on 16 November 2010 a certificate of making good defects had been issued to the first defender by the contract administrator), in fact the first defender had not made good the defects. As a result of that failure the first defender is said to have been in breach of its obligation under Clause 17.2 to make good the defects which had been specified by the pursuer in the Clause 17.2 notice.

[35] The pursuer avers that the deterioration and degradation of the slab was materially contributed to through the third defender's breach of contract *et separatim* fault and negligence. It avers that the third defender was in breach of contractual and concurrent delictual obligations to the pursuer to exercise reasonable care, skill and diligence in carrying out its services as structural engineer for the project; and that in particular it was in breach in failing to identify that the fourth defender's design for the slab did not specify that air entrainment be used.

[36] The pursuer avers that the deterioration and degradation of the slab was materially contributed to through the fourth defender's breach of contract. It avers the fourth defender was in breach of its contractual warranty to the pursuer that in carrying out the Services it had exercised the reasonable, skill, care and diligence to be expected of a professional consultant holding itself out as having the competence, experience and resources necessary for the proper performance of

the Services in connection with a project of the size, scope and complexity similar to that of the project; and that in particular it was in breach of contract in failing to specify that air entrainment be used.

The evidence of Professor Knapton and Mr Bull

[37] Professor Knapton and Mr Bull are both civil engineers with expertise in external pavement design. Professor Knapton was instructed by the first defender and Mr Bull by the third defender.

[38] Professor Knapton prepared a Supplementary Report dated 29 September 2016 (JB 347) which he adopted as his evidence. In his opinion the pursuer ought to have become aware of the absence of air entrainment in the slab design in May 2009, failing which, on 6 October 2009 when Mr Gunner reported in writing following the inspection of 21 September 2009. In May 2009 there had been a change in the proposed thickness of the slab and Mr Macpherson had been exercised to discover whether the quantities of raw materials could be accommodated within a cubic metre of concrete. Mr Macpherson had been advised by the contractor of quantities of cement, sand, aggregate, WRA, water and Grace fibres per cubic metre for the original specification and the revised specification. He had not been advised of any quantity for an air entrainment agent. He had provided this information to Mr Gunner by email on 6 May 2009 and asked him whether the quantities in each specification could be incorporated in a cubic metre of concrete. By email of 20 May 2009 Mr Gunner responded. He advised Mr Macpherson that the constituents of the original specification appeared to be under-calculated but that the constituents of the revised specification appeared to conform to a normal design mix. At that stage Professor Knapton would have expected Mr Gunner to question the apparent absence of air entrainment from the list of constituents. In any case, by the time he reported to the pursuer on 6 October 2009 the surface deterioration had been linked by Mr Gunner to freeze-thaw damage and ought to have raised in Mr Gunner's mind the issue as to whether the slab contained air entrainment. In Professor Knapton's opinion, at that stage an ordinarily competent engineer with experience in the design and inspection of external concrete pavements would have queried the position in respect of air entrainment. Such an engineer would also have queried the position in respect of air entrainment following the inspection in February 2010.

[39] Mr Bull adopted his report dated September 2016 (JB 350), but his oral evidence differed from that report in significant respects. In the report he had indicated that by May 2009 Mr Gunner had had "all the available concrete mix information". He had continued:

> "This information indicated that air entrainment was not specified and not provided. I consider it a small task to review this information and raise the question of how freeze-thaw protection had been provided."

However in oral evidence Mr Bull stated that although he thought some competent pavement engineers would have raised the question of air entrainment in May 2009, he did not think that all would have done so, bearing in mind the focus of the enquiry made to Mr Gunner at that time. While in paragraph 3.5.1 of his report Mr Bull had opined that by the time of the inspection in September 2009 an ordinarily competent pavement engineer ought to have raised the issue of air entrainment, in oral evidence he was more nuanced. He opined that many competent pavement engineers would have queried the issue of air entrainment at that stage, but he stopped short of

opining that no such engineer would have failed to do so. He was referred by counsel for the fourth defender to paragraph 4.2 of a report (JB 352) prepared by an engineer instructed by the fourth defender, Mr Ridge (who did not give evidence), where Mr Ridge had stated that it would have been "appropriate" for Mr Gunner to advise the pursuer in September/October 2009 that the absence of air entrainment may have been one of the reasons why freeze-thaw damage had occurred. With some hesitation he agreed "on balance" with that statement. He later qualified that by indicating that it depended on how extensive the damage had been in September 2009. However he was clear that in his opinion any such engineer would have raised the issue of air entrainment following the inspection in February 2010.

[40] Standing the terms of Mr Bull's evidence, I do not accept that no competent pavement engineer exercising ordinary care would have failed to raise the issue of air entrainment in May 2009 or in September/October 2009. However, I accept the evidence of Professor Knapton and Mr Bull that any such pavement engineer who was instructed to consider the cause of the defects evident on inspection in February 2010 would have raised the question of air entrainment. That is consistent with Mr Gunner's evidence as to what he would have done in February 2010 had he been instructed to advise as to the cause of the defects.

Knowledge of the absence of air entrainment

[41] The first and second defenders were aware throughout the project that the slab did not contain air entrainment. Mr Macpherson was unaware of the lack of air entrainment or, indeed, of the significance of air entrainment, until long after the deterioration of the slab in May 2011. Mr Gunner was also unaware of its absence until long after that date. From the outset Mr Gunner had assumed that the slab would contain air entrainment. That was because in his view air entrainment was standard for external slabs of the type constructed at Fordoun; and because air entrainment had been included in the original Bill of Quantities and there was no reason to think that the change from Dramix fibres to Grace fibres would have altered that.

Relevant statutory provisions

[42] Sections 6, 10, and 11 of the Prescription (Scotland) Act 1973 (as amended)("the 1973 Act") provide:

> "6. — Extinction of obligations by prescriptive periods of five years.
>
> (1) If, after the appropriate date, an obligation to which this section applies has subsisted for a continuous period of five years—
>
> (a) without any relevant claim having been made in relation to the obligation, and
>
> (b) without the subsistence of the obligation having been relevantly acknowledged,
>
> then as from the expiration of that period the obligation shall be extinguished:
>
> …

(2) Schedule 1 to this Act shall have effect for defining the obligations to which this section applies.

…

(4) In the computation of a prescriptive period in relation to any obligation for the purposes of this section—

(a) any period during which by reason of—

(i) fraud on the part of the debtor or any person acting on his behalf, or

(ii) error induced by words or conduct of the debtor or any person acting on his behalf, the creditor was induced to refrain from making a relevant claim in relation to the obligation, …
…

shall not be reckoned as, or as part of, the prescriptive period:

Provided that any period such as is mentioned in paragraph (a) of this subsection shall not include any time occurring after the creditor could with reasonable diligence have discovered the fraud or error, as the case may be, referred to in that paragraph.

(5) Any period such as is mentioned in paragraph (a) or (b) of subsection (4) of this section shall not be regard
ed as separating the time immediately before it from the time immediately after it.
…

10. — Relevant acknowledgment for purposes of sections 6 and 7.

(1) The subsistence of an obligation shall be regarded for the purposes of sections 6, 7 and 8A of this Act as having been relevantly acknowledged if, and only if, either of the following conditions is satisfied, namely—

(a) that there has been such performance by or on behalf of the debtor towards implement of the obligation as clearly indicates that the obligation still subsists;

…
(4) In this section references to performance in relation to an obligation include, where the nature of the obligation so requires, references to refraining from doing something and to permitting or suffering something to be done or maintained.
…

11.— Obligations to make reparation.

(1) Subject to subsections (2) and (3) below; any obligation (whether arising from any enactment, or from any rule of law or from, or by reason of any breach of, a contract or promise) to make reparation for loss, injury or damage caused by an act, neglect or default shall be regarded for the purposes of section 6 of this Act as having become enforceable on the date when the loss, injury or damage occurred.

(2) Where as a result of a continuing act, neglect or default loss, injury or damage has occurred before the cessation of the act, neglect or default the loss, injury or damage shall be deemed for the purposes of subsection (1) above to have occurred on the date when the act, neglect or default ceased.

(3) In relation to a case where on the date referred to in subsection (1) above (or, as the case may be, that subsection as modified by subsection (2) above) the creditor was not aware, and could not with reasonable diligence have been aware, that loss, injury or damage caused as aforesaid had occurred, the said subsection (1) shall have effect as if for the reference therein to that date there were substituted a reference to the date when the creditor first became, or could with reasonable diligence have become, so aware.

…"

In terms of paragraph 1(d) of Schedule 1, section 6 applies to any obligation arising from liability (whether arising from any enactment or from any rule of law) to make reparation.

The issues relating to prescription

[43] Each of the first, third and fourth defenders maintains that any obligation to make reparation to the pursuer has prescribed. They say that the breaches giving rise to each of the obligations to make reparation (other than the breach of Clause 17.2) occurred and were completed before the date of practical completion. They contend that the pursuer was aware or could with reasonable diligence have been aware of relevant material loss, injury or damage more than five years before a claim in relation to each of the obligations was made. Each of the obligations the pursuer sought to enforce had subsisted for more than five years before a relevant claim to enforce it was made.

[44] Counsel for the pursuer's response was formulated in the following six submissions, which he described as being alternative submissions. First, none of the obligations founded upon became enforceable before 16 November 2010 because before that date the pursuer suffered no loss. Second, each of the defenders' acts, neglects or defaults had been a continuing act, neglect or default which had not ceased until at least the certificate of making good defects on 10 November 2010, and possibly until the final payment certificate on 10 February 2011. Accordingly loss, injury or damage is deemed to have occurred on the date of cessation of the act, neglect or default (1973 Act, s. 11(2)). Third, the pursuer was not aware, and could not with reasonable diligence have become aware, that it had suffered loss until May 2011. Prior to that date, although it had become aware of defects in the slab it had not suffered a loss because the first defenders had been obliged

to remedy those defects and had appeared to do so. Fourth, during a period beginning soon after the inspection of February 2010 and continuing until the end of May 2011 the pursuer was induced to refrain from making a claim against each of the first, third and fourth defenders because of error induced by each of them. Fifth, throughout the period April to November 2010 the first defender relevantly acknowledged the subsistence of its obligations to make reparation to the pursuer. Sixth, counsel for the pursuer advanced an alternative hypothesis that *damnum* occurred when the slab was constructed because at that point it lacked air entrainment and suffered from an over-abundance of fibres near its surface. On that basis the pursuer had not been aware of *damnum* until it had discovered the lack of air entrainment and the over-abundance of fibres respectively. There had been no such actual awareness until less than five years before the claims were made against each of the defenders. Nor with reasonable diligence could the pursuer have become aware of either of those aspects of the *damnum* more than five years before its claims were made against the defenders.

Was there loss, injury or damage sufficient to give rise to *damnum* in September 2009?

[45] In my opinion the issue is whether the defects apparent in September 2009 represented material, as opposed to negligible or insignificant or trivial, damage (see e g *Strathclyde Regional Council* v *W A Fairhurst & Partners* 1997 SLT 658, per Lord Abernethy at p 662B; *Pelagic Freezing (Scotland) Limited* v *Lovie Construction Limited* [2010] CSOH 145, per Lord Menzies at paragraphs 102, 105, and 110; *Stewart Milne Westhill Limited* v *Halliday Fraser Munro* [2016] CSOH 76, per Lord Doherty at paragraph 67; *Johnston,* Prescription and Limitation (2nd ed), paragraphs 4.23 to 4.26; *Scottish Law Commission,* Discussion Paper on Prescription (D. P. no 140), paragraph 5.8); *cf Homberg Houtimport BV* v *Agrosin Private Ltd* [2004] 1 AC 715, per Lord Bingham at paragraphs 39-40, Lord Steyn at paragraph 64, Lord Hoffman at paragraph 90, Lord Hobhouse at paragraph 139).

[46] I recognise that in the present case this issue involves questions of fact and degree which are not free from difficulty. Mr Gunner characterised the scaling of the surface in September 2009 as "indicative rather than severe". The defects were not "significant *enough* to warrant prevention of use of the slabs" at that time (emphasis added), and the extent of the damage probably did not warrant immediate repairs. It was envisaged that if repairs were thought to be necessary they could be dealt with at the same time as repairs for defects identified during the Phase 2 defects liability period. Mr Gunner described the scope of the defects as being "*relatively* minimal" and "*fairly* minimal" (the emphasis is mine). That provides a pointer towards his view of the relative gravity of the defects: but in so opining he was not directing his mind to the criteria which the court requires to apply. Even if he had been, ultimately the question remains one for the court to determine on all the evidence. Mr Gunner accepted that the slab had the appearance of "a problem", and that it was a slab "with issues". The defects were of sufficient concern to require monitoring to see if the slab deteriorated further over the winter. I do not overlook the fact that they involved only fairly small portions of what was a very large slab (Phase 1 extended to about 7 or 8 acres, and the entire slab to about 15 acres). However, in my opinion, adopting an objective approach, I do not think that the defects can be characterised as being insignificant, or negligible, or trivial. There was polishing of the surface and slight surface spalling in numerous places. There

was cement removal in varying degrees with some slab pitting and stone loss, de-bonding and removal of aggregate. In my view material loss, injury or damage was evident.
[47] On the evidence fibre balling was present on 21 September 2009. How extensive it was at that time is less clear. If Mr Gunner had observed significant fibre balling at that time (at the proof he could not recollect if he had observed any fibre balling then) I think it very unlikely that he would have omitted to mention it in his report of 6 October 2009. It seems clear from his fairly detailed description of the other defects, and from his evidence, that the list of defects was compiled with care. In the whole circumstances I am not satisfied that on 21 September 2009 the fibre balling constituted material loss, injury or damage.

The position in January and February 2010
[48] It is plain from Mr Macpherson's evidence that by about 1 January 2010 the delamination and spalling defects in the slab were serious and widespread, and that the position then with regard to them was similar to that recorded at the inspections in February 2010. If, contrary to my view, the defects in September 2009 were not material damage, there is no doubt that by 1 January 2010 the delamination and spalling defects comprised material loss, injury or damage.
[49] Mr Macpherson did not indicate what the position was in relation to fibre balling in January 2010. However, I am clear that by the time of the inspections in February 2010 the fibre balling was material loss, injury or damage.

Causation
[50] The polishing, spalling and cement removal evident in September 2009 and the delamination apparent in January 2010 are damage which the pursuer now attributes to lack of air entrainment in the slab; and the fibre balling and clumping evident in February 2010 is damage which the pursuer now attributes to the alleged inadequate mixing of the concrete.

The date the obligations which the pursuer seeks to enforce first became enforceable
[51] The pursuer seeks to enforce several separate obligations to make reparation because of breaches of contract and (in the case of the first and third defenders) concurrent delicts.
[52] I put to one side for the moment the possibility of the date of enforceability being postponed by virtue of s 11(2) or s 11(3). In relation to the first defender's obligation to make reparation for failure (i), *prima facie* there was the concurrence of *injuria* and *damnum* by 22 February 2010. In respect of the first defender's obligations to make reparation for failures (ii) and (iii), and in respect of the third and fourth defenders obligations to make reparation, *prima facie* there was concurrence of *injuria* and *damnum* by 21 September 2009. By those dates, *prima facie* each of those obligations had become enforceable (1973 Act, sections 6 and 11(1)).
[53] In reaching those conclusions I reject counsel for the pursuer's submission that there was no *damnum* in respect of any of those obligations before 16 November 2010, and that none of them had become enforceable before that date. The submission was that the defects which became apparent prior to that date should be treated as being of the nature of temporary disconformities which the first defender had been contractually obliged to make good by 16 November 2010. Reliance was placed on *ANM Group Limited* v *Gilcomston North Limited* 2008 SLT 835, per Lord Emslie at para 35; *P & M Kaye Ltd* v *Hosier & Dickinson* [1972] 1 WLR 146, per Lord Diplock at pages 165-6, 170;

Strathclyde Regional Council v *Borders Engineering Contractors Limited* 1998 SLT 175, per Lady Cosgrove at page 177J-K. Counsel recognised that a similar argument had been rejected by Lord Menzies in *Pelagic Freezing (Scotland) Ltd* v *Lovie Construction Ltd & Anor,* at paragraph 106; but he maintained that that case was distinguishable on its facts. The only claim here was for the cost of remedial works. There was no claim for consequential loss. He submitted that the short, but crucial, point was that before 16 November 2010 the pursuer had suffered no loss, injury or damage. He suggested that had the pursuer raised an action for reparation against any of the defenders prior to that date the action would have been premature.

[54] In my opinion counsel for the pursuer's submission is not well founded. *Ex hypothesi* the pursuer's averments, the slab contained latent defects from the outset because of the absence of air entrainment and because the fibres had been poorly mixed. Neither those defects, nor the manifestation of physical damage when it occurred, were transitory. They were not of a kind which would exist only temporarily as work was being progressed towards practical completion.

[55] By practical completion of Phase 2 the first defender was in breach of the obligations upon which the pursuer now founds (other than the obligation to make reparation in respect of the alleged breach of Clause 17.2). In my opinion, on a proper construction of the contract between the pursuer and the first defender, practical completion of a Phase means the completion of all the construction work that has to be done for that Phase (*Keating on Construction Contracts* (10th ed), paragraph 20-169; *Westminster Corporation* v J *Jarvis & Sons Ltd* [1970] 1 WLR 637 at 646-7; *cf Musselburgh & Fisherrow Co-operative Society Ltd* v *Mowlem Scotland Ltd* 2004 SCLR 412, per Lord Eassie at paragraph 26). The defects liability period is provided in order to enable defects not apparent at the date of practical completion to be remedied (*Keating, supra,* para 20-169; v *Westminster Corporation* v J *Jarvis & Sons Ltd, supra,* at 646). At practical completion the first defender was obliged to hand over to the pursuer the relevant Phase of the slab, which Phase was to be in conformity with the contract requirements. If it was not, the first defender would be in breach of contract at that time. Clause 17.2 provided the pursuer with a simple mechanism for dealing with breaches of contract falling within the scope of the clause. In terms of Clause 17.3 the contract administrator could have required defects which became apparent during the defects liability period (and for which the first defender was responsible) to be made good immediately. The first defender would not have been entitled to refuse to make good such defects until the expiry of the defects liability period (*Keating, supra,* para 20-201). The simple point is that the existence of such contractual remedies did not postpone the occurrence of *injuria* or *damnum* until the end of the defects liability period (*Pelagic Freezing (Scotland) Ltd* v *Lovie Construction Ltd & Anor, supra,* per Lord Menzies at paragraph 106; *cf Jackson* v *Clydesdale Bank plc* 2003 SLT 273, per Lord Eassie at paragraph 28). Those remedies did not exclude the pursuer's common law rights to damages in respect of the first defender's breaches (see eg *Pearce & High Ltd* v *Baxter* (1999) BLR 101; *Keating, supra,* para 20-205; *Hudson's Building and Engineering Contracts* (13th ed), paragraphs 4-094 and 4-095).

[56] The scenario which Lord Emslie posited at paragraph 35 of *ANM Group Limited* v *Gilcomston North Limited* was an obligation on a contractor to complete stipulated works within the contract period. That was the context in which he opined that it would be unrealistic and unfair to treat every disconformity, however short lived, as a breach of contract potentially sounding in damages. The question he was discussing was when *injuria* emerged in respect of such an

obligation. In my opinion *ANM Group Limited* is not authority for the proposition that the existence of a contractual remedy capable of being exercised during a defects liability period means that *damnum* is not suffered until the expiry of that period. If, contrary to my reading of his Opinion, his lordship was advancing that proposition I would respectfully disagree with it.

[57] In *Strathclyde Regional Council* v *Borders Engineering Contractors Limited* Lady Cosgrove held that *injuria* occurred at the date of practical completion by the defenders of the construction of a pipeline and not (as the defenders maintained) at the earlier date when a length of pipe which had been disconform to contract was laid in the ground (p 178H-I, read in context with the submissions recorded at pp 177E-178G). She held that *damnum* occurred at an even later date when the length of pipe cracked (p 179K). At first blush the observations at p 178A-B and H-I might be thought to suggest that her ladyship considered that the availability of a remedial provision under the contract postponed the occurrence of *injuria* and the emergence of an enforceable right to damages for breach of contract. However, when those observations are properly read in context I think it is clear that Lady Cosgrove was addressing the period before practical completion. The case is not authority for the proposition that a provision such as Clause 17.2 postpones the concurrence of *injuria* and *damnum* until the expiry of the defects liability period.

[58] Even if, contrary to my view, the pursuer's ability to utilise Clause 17.2 had the result that there was no concurrence of *injuria* and *damnum* in respect of to the first defender's obligations to make reparation until the expiry of the defects liability period, I am not persuaded that the availability to the pursuer of that contractual remedy against the first defender would postpone the occurrence of *injuria* or *damnum* in relation to the third and fourth defenders' obligations to make reparation. I respectfully agree with Lord Menzies' observations on that point in *Pelagic Freezing (Scotland) Ltd* v *Lovie Construction Ltd & Anor, supra,* at paragraph 106.

[59] In relation to the alleged breach of Clause 17.2, for present purposes it is sufficient to say that there could be no concurrence of *injuria* and *damnum* until there had been defective performance of the obligation to make good the defects. The remedial work began in about late August 2010 and was completed in November 2010, with the certificate of making good defects being issued on 16 November 2010. A continuous period of five years from that date had not elapsed when on 2 September 2015 the pursuer adjusted its pleadings to insert the case of breach of Clause 17.2. It follows that the obligation to make reparation in respect of that breach has not been extinguished.

Section 11(2)

[60] Counsel for the pursuer submitted that with each of the obligations to make reparation there had been a continuing act, neglect or default by the relevant defender. He maintained that each act, neglect or default had continued after the date when relevant *damnum* occurred until at least 10 November 2010 (the date of the certificate of making good defects), or possibly even until 10 February 2011 (the date of the final payment certificate). Thus in the case of each obligation loss, injury and damage was deemed for the purposes of s. 11(1) to have occurred at the date of cessation of the act, neglect or default (s. 11(2)). It followed that none of the obligations to make reparation had become enforceable more than five years before a relevant claim had been made in relation to it. None had been extinguished.

[61] I am not persuaded that counsel for the pursuer's analysis is correct. I shall examine in turn each of the obligations to make reparation upon which the pursuer founds.

The obligations of the first defender to make reparation

[62] Counsel for the pursuer submitted that the general obligation in Clause 2.1 was an obligation which continued until at least the certificate of making good defects, and probably until the issue of a final certificate. Clause 1.5 was consistent with that. It was also plain that the first defender's obligations under Clause 17 must continue until at least the date of the certificate of making good defects. It followed that the acts, neglects or defaults of the first defender upon which the pursuer founded had continued until at least 10 November 2010.

[63] I do not accept that that is correct.

[64] It is important to keep in view that on a proper construction of the contract the first defender's primary obligation in terms of Clause 2.1 was to carry out and complete the works in accordance with the contract by the date of practical completion.

[65] Furthermore, it is essential for present purposes to focus on the particular obligations to make reparation which the pursuer seeks to enforce (see *Cole* v *Lorie* 2001 SC 610 at para 16; *Musselburgh & Fisherrow Co-operative Society Ltd* v *Mowlem Scotland Ltd, supra,* at para 50; *Johnston, supra*, para 2.23). That requires identification of the specific respects in which the general obligations are said to have been breached. As Lord Eassie observed in *Musselburgh & Fisherrow Co-operative Society Ltd* v *Mowlem Scotland Ltd* at paragraph 50:

> "…although a contractual relationship will often contain general provisions such as a general duty of care or a general duty to construct in a workmanlike manner, for the purposes of the running of the five-year prescription it is necessary to identify the particular respect in which the general duty is breached and which leads to the causing of the particular defect in question."

As already discussed, the specific respects in which it is said that the first defender was in breach of the general obligation in Clause 2.1 were failures (i) and (ii). The particular respect in which the first defender was in breach of the general obligation in Supplementary Clause A33 was failure (iii). The particular obligations to make reparation which the pursuer seeks to enforce against the first defender are in respect of those specific breaches (and the corresponding concurrent delictual breaches). Those specific breaches occurred, at the latest, by the time of practical completion of Phase 2. The first defender required to have constructed and handed the slab over to the pursuer by that date. Once the slab had been constructed and handed over each of those acts, neglects or defaults had been completed (see eg *Johnston* v *Scottish Ministers* [2005] CSOH 68, per Lady Dorrian at paragraph 17; *Warren James (Jewellers) Ltd* v *Overgate GP Ltd* [2010] CSOH 57, per Lord Glennie at paragraphs 506; *John G Sibbald & Son* v *Douglas Johnston* [2014] CSOH 94, per Lord Tyre at paragraph 8; *Johnston, supra*, paragraphs 4.64 - 4.68). It would be highly artificial to treat any of them as having continued after practical completion.

[66] In my opinion that conclusion is not undermined by the fact that some of the first defender's obligations under the contract fell to be performed after practical completion. An example is Clause 17. It provides simple mechanisms for instructing the contractor to remedy relevant defects which become apparent during the course of the defects liability period. If

appropriate resort was had to Clause 17, and the required notice was given, the first defender will have been obliged in terms of Clause 17 to make good the relevant defects. However, obligations which may arise in terms of, or because of breach of, Clause 17 are distinct and different obligations from the obligations to make reparation already described; and an act, neglect or default in respect of a clause 17 obligation would be a different act, neglect or default from the acts, neglects or defaults which constituted failures (i), (ii) or (iii).

The obligation of the third defender to make reparation

[67] The pursuer does not aver that the third defender had an obligation to review the fourth defender's design after the slab had been constructed and to warn the pursuer at that stage of the absence of air entrainment, and that the loss claimed arose from breach of such an obligation. Had it done so, the existence of a duty to review in the circumstances is likely to have been contentious (see eg *New Islington & Hackney Housing Association Ltd* v *Pollard Thomas & Edwards* [2001] PNLR 515, per Dyson J at p. 522; *Hudson, supra,* paragraphs 2-040 to 2-04; *Keating, supra,* paragraph 14-070). More significantly for present purposes, breach of a duty to review and warn after practical completion would have been a different act, neglect and default from the initial failure at the design stage (see eg *Oxford Architects Partnership* v *Cheltenham Ladies College* [2007] BLR 293; *Keating, supra,* paragraph 14-070).

[68] As already discussed, in Cond. XVIII the pursuer avers that the deterioration and degradation of the slab was materially contributed to through the third defender's breach of contract *et separatim* fault and negligence. It avers that the third defender was in breach of its contractual (and concurrent delictual) obligations to the pursuer to exercise reasonable care, skill and diligence in carrying out its services as structural engineer for the project. However the only specific respect in which that general obligation is said to have been breached is that the third defender failed to identify that the fourth defender's design for the slab did not specify that air entrainment be used. For much the same reasons as apply in the case of the first defender, in my opinion if there was such a failure it occurred, at latest, by the time of practical completion of Phase 2. By that date the slab had been constructed in accordance with the fourth defender's design. The design had been given effect to with the result that the slab without air entrainment had been completed. The third defender's failure to warn was a completed act, neglect or default.

[69] In my opinion it is nothing to the point that some of the Services which the third defender was obliged to provide in terms of its conditions of engagement would continue to be rendered after practical completion (the pursuer relied on clauses C8.7 and C8.9 in this regard). I reserve my opinion as to whether the inspection referred to in C8.9 is an inspection at practical completion - I think it arguable that it is. In any case, in my view the obligations to perform with skill and care the services referred to in clauses C8.7 and C8.9 appear to me to be distinct from the obligation to warn that the design did not incorporate air entrainment. It simply does not follow from the existence of obligations relating to those other Services that there was a continuing obligation to warn after practical completion, or that the failure to warn which resulted in the defective slab was an ongoing act, neglect or default which continued after practical completion.

[70] For completeness I record that the third defenders actual involvement in the project had ceased by about the date of practical completion. In March 2010 Ryden sent the third defender a copy of the schedule of defects prepared following the February 2010 inspection and informed it

that the inspection had taken place. It is clear that the third defender was not instructed at that stage to review the fourth defender's design, or to provide any additional advice (apart from what appears to have been a separate instruction in the summer of 2009 to provide discrete advice in relation to concrete cube test results).

The obligation of the fourth defender to make reparation

[71] The pursuer avers that the deterioration and degradation of the slab was materially contributed to through the fourth defender's breach of contract. It avers that the fourth defender was in breach of its contractual warranty to the pursuer that in carrying out the Services it had exercised the reasonable, skill, care and diligence to be expected of a professional consultant holding himself out as having the competence, experience and resources necessary for the proper performance of the Services in connection with a project of the size, scope and complexity similar to that of the project. The particular respect in which the pursuer avers that that general obligation was breached is said to be that the fourth defender's design for the slab failed to specify that air entrainment be used.

[72] In my opinion the scope of the warranty is clear. It related to Services which been provided in 2008 and 2009, namely the design of the slab, provision of general arrangement and detail drawings, and attendance at two meetings on site. The Services did not include review of the design after the slab was constructed. The fourth defender warranted that the Services had been carried out with reasonable care, skill and diligence.

[73] The particular act, neglect or default which the pursuer founded upon when it brought its claim against the fourth defender was the fourth defender's failure to include air entrainment in its design for the slab. In my opinion that failure occurred at the design stage, before the slab was constructed. The act, neglect or default was complete, at the latest, by the time of practical completion. It was not an act, neglect or default which continued thereafter.

[74] Counsel for the pursuer sought to place some reliance upon the fact that the pursuer instructed the fourth defender to attend the site on 5 August 2010 to discuss and appraise the remedial work proposed by the first defender, and upon the terms of the letter of 6 August 2010 (JB 293) which the fourth defender wrote to the pursuer following that meeting. However, in my view that reliance was misplaced. It is clear that what was said by Mr Woods at the meeting on 5 August 2010 and in his letter the following day did not form part of the Services which the fourth defender warranted. If any obligation had been assumed by the fourth defender in relation to the remedial work - and I stress that the pursuer does not plead that any such obligation was assumed - it would have been a different obligation from the obligation to specify air entrainment when the slab was designed; and breach of that separate obligation would have been a different act, neglect or default from the act, neglect or default upon which the pursuer founded in the claim which it made against the fourth defender on 20 April 2015.

Section 11(3)

[75] It is now clear that in order for prescription to begin to run for the purposes of s 11(3) the creditor need only be actually or constructively aware of the occurrence of loss. Lack of awareness that the loss was caused by an actionable act, neglect or default does not postpone the running of the prescriptive period (*David T Morrison & Co Ltd (t/a Gael Home Interiors)* v *ICL Plastics Ltd* 2014

SC (UKSC) 222, per the decision of the majority; *Gordon* v *Campbell Riddell Breeze Paterson LLP* 2016 SC 548).

[76] In my opinion by 6 October 2009 at the latest, when Mr Macpherson received Mr Gunner's report of the inspection of 21 September 2009, the pursuer was actually aware of the occurrence of loss arising from polishing, spalling and cement removal. The pursuer attributes that damage to the absence of air entrainment. It was *damnum* said to have arisen from the defenders' respective failures concerning the absence of air entrainment.

[77] Similarly, by 22 February 2010 the pursuer was actually aware of fibre balling amounting to material damage. That fibre balling was *damnum* said to have arisen from the first defender's failure to take adequate steps to mix the fibres into the concrete and ensure that they were evenly and properly spread throughout the slab.

[78] I am satisfied that the pursuer did not have earlier actual awareness of having suffered material damage.

[79] I am also satisfied that the pursuer could not with reasonable diligence have discovered either aspect of the *damnum* earlier than it in fact did. Reasonable diligence means the taking of those steps that a person of ordinary prudence would have taken if placed in the circumstances in which the pursuer found itself (*Glasper* v *Rodger* 1996 SLT 44, per Lord President Hope at page 48 applying a dictum of Webster J in *Peco Arts Inc* v *Hazlitt* [1983] 1 WLR 1315 at p 1323; *Adams* v *Thorntons* 2005 1 SC 30, per Lord Penrose at paragraphs 23-24; *Heather Capital Limited (In Liquidation) and Duffy* v *Levy & McRae; Heather Capital Limited (In Liquidation) and Duffy* v *Burness Paull LLP,* per Lady Paton at paragraph 72; *Johnston,* paragraphs 6.100 - 6.103). Prior to the inspection on 21 September 2009 there was no cause for the pursuer to have any concern that it may have suffered a loss.

[80] If, contrary to my opinion, the polishing, spalling and cement removal reported by Mr Gunner on 6 October 2009 was not material damage, the pursuer would not have been actually aware of suffering material damage because of delamination until 1 January 2010.

[81] In my opinion, whether or not the polishing, spalling and cement removal in September 2009 were material damage, an ordinarily prudent person in the position of the pursuer would not have considered it necessary in the circumstances to instruct Mr Gunner to advise as to the cause of the defects then apparent. At that stage the defects were relatively minor (though, in my opinion, material), and matters were to be monitored. I am content that ordinary prudence did not require that more be done in October 2009 or at any point thereafter until further damage became apparent in January 2010 and February 2010.

Section 6(4)

The first defender

[82] Prior to 29 April 2010 there were no words or conduct of anyone acting on behalf of the first defender which induced error on the part of the pursuer inducing it to refrain from making a claim in respect of any of the obligations which it now seeks to enforce against the first defender. Before that date it seems to me that a variety of possible causes for the defects were mooted: I am not persuaded that the first defender communicated, expressly or by clear implication, that the defects were matters for which it accepted responsibility.

[83] However, I accept that during a telephone discussion between Mr Oakley and Mr Macpherson on 29 April 2010 Mr Oakley accepted, expressly or by clear implication, that remedial work was required and that the need for it arose as a result of matters for which the first defender was responsible.

[84] On 17 May 2010 the first defender forwarded the report dealing with the causes of the defects and the suggested remedial solutions. The report was prepared by the second defender, the first defender's subcontractor, but it was provided by the first defender to the pursuer in response to the pursuer's requests to the first defender (in contract instruction no. 012 and also in Mr Macpherson's email of 10 May 2010) for a report identifying the causes of the defects and proposed remedial solutions. Thereafter the first defender and the pursuer fine-tuned the remedial work which should be carried out.

[85] I accept that from 29 April 2010 the pursuer laboured under the erroneous belief that the delamination damage was attributable to workmanship issues when the concrete was laid for which the first defender was responsible. I also accept that from 17 May 2010 the pursuer held the erroneous belief that the remedial work proposed by the first defender would address the causes of both the delamination and the fibre balling. I am satisfied that, viewed objectively, the words and conduct of the first defender and those acting on its behalf between 29 April 2010 and the completion of the proposed remedial work materially contributed to those erroneous beliefs, with the result that the pursuer refrained for a period from 29 April 2010 from making a claim against the first defender (see *Heather Capital Limited (In Liquidation) and Duffy* v *Levy & McRae; Heather Capital Limited (In Liquidation) and Duffy* v *Burness Paull LLP, supra,* per Lady Paton at paragraphs 63-64 and the authorities there discussed). I consider it significant that the context in which the first defender acted was that it had been asked by the pursuer to identify the cause or causes of the defects which had become apparent, and that it purported to do so.

[86] Until when did the pursuer's error continue? The pursuer avers (Cond. XIII) that the error continued until at least July 2011 "when it became apparent that the Slab had suffered further deterioration". However, counsel for the pursuer accepted that the further deterioration was evident earlier than that. Mr Scott's recollection was that in "mid-2011" Mr Walker, the yard manager, had noted some breaking up of the surface of the slab. Mr Macpherson's evidence was that when he was at the site with Mr Walker "around or before May 2011" they had both noticed that the surface concrete was again showing signs of deterioration. As a result he arranged for a further inspection. A schedule of condition was prepared on 22 July 2011.

[87] I agree with counsel for the first defender that on that evidence I should take the discovery of the deterioration as being no later than 1 May 2011. Counsel for the pursuer did not suggest that the error induced by the first defender continued after the discovery of the deterioration.

[88] Could the pursuer with reasonable diligence have discovered the error earlier than 1 May 2011? The relevant circumstances here include the fact that the pursuer had not instructed Mr Gunner (or any other appropriately qualified pavement engineer) to advise as to the cause of the defects observed during the inspections in September 2009 and February 2010. I am content that was not a step which an ordinarily prudent person in the position of the pursuer need have taken in September 2009 given the relatively minor extent of the damage. However by the time of the inspection in February 2010 the damage was much more serious. An ordinarily prudent person in the position of the pursuer at that time would have sought appropriate advice as to the

cause of the defects. Without appropriate advice as to the cause of the defects it is difficult to understand (i) how the pursuer, or an ordinarily prudent person in its position, could properly assess whether the defects were caused by an act, neglect or default of one or more of the defenders; or (ii) how the pursuer or such a person could properly assess whether the proposed remedial work was likely to address the cause or causes of the defects. However, the fact is that at the time the error was induced that advice had not been sought. That being the state of affairs, I think that an ordinarily prudent person in the position of the pursuer would have sought the advice soon after the discussion with Mr Oakley on 29 April 2010, and would have wished to have it in order to assess whether the proposed remedial work would address the cause or causes of the defects. He would have sought appropriate advice as to the causes and whether the proposed work would address them. Mr Gunner's evidence was that, if he had been instructed to advise as to the actual cause or causes of the defects, one of the possible causes he would have to have considered was absence of air entrainment. He indicated that he would have asked for details of the concrete mix, including admixtures. If the issue of lack of air entrainment had been raised by him as a possible cause I believe that it is very likely indeed that inquiries would have been made (by Mr Macpherson or Mr Gunner) of the first or second defender, with the outcome that the absence of air entrainment would have become apparent. I think it likely that that information would have emerged relatively quickly, within not more than two months of the report of 17 May 2010.

[89] While the steps outlined above would not have revealed the over-abundance of fibres near the surface, they would have dispelled the error that the proposed remedial works would solve the slab's problems.

[90] It follows that, in computing the prescriptive period for the obligations which the pursuer seeks to enforce against the first defender, only the period between 29 April 2010 and 17 July 2010 ought not to be reckoned as part of the prescriptive period.

The third defender

[91] Counsel for the pursuer submitted that the third defender had by its conduct materially contributed to the error already described. That contribution had begun when it was written to on the 29 March 2010 and was made aware of the defects. The error had continued until the deterioration was discovered on 1 May 2011. The submission was that the conduct had been of the nature of an omission in circumstances where there had been a duty to act. The omission had been "an omission to engage at all in the remedial works process".

[92] I reject the submission. I am unconvinced that conduct by the third defender induced the error suggested. The third defender was not asked to carry out the defects liability inspection. It was not asked to carry out a further inspection (although it was prepared to do that if so instructed). It was not asked for its view as to the cause or causes of the defects; indeed it was not even asked to comment on the defects. It was not informed of the remedial work which was proposed, let alone asked to comment on it. The circumstances appear to me to be very far removed from a case of silence where there was a duty to speak up, and where the silence induced error. Nor do I consider there is any other relevant basis for concluding that the third defender's words or conduct induced the suggested error.

[93] If, contrary to my opinion, the third defender did induce the suggested error, for the reasons already outlined the pursuer could with reasonable diligence have discovered the error by 17 July 2010.

The fourth defender

[94] Counsel for the pursuer submitted that the fourth defender had by its words or conduct materially contributed to the same error. The first matter which had contributed to the error had been Mr Woods' email to Mr Macpherson of 6 April 2010. The email had not raised the possibility that any of the defects might be attributable to design issues or to the concrete mix. Mr Woods' statements at the meeting of 5 August 2010 and in his email and letter of the following day had also induced the error. Those statements ought reasonably to be understood as having indicated that the remedial work would resolve the problems which had arisen. At this stage too there had been an omission to raise the possibility that the defects might be attributable to design issues or to the concrete mix. The error had continued until the deterioration was discovered.

[95] I am not persuaded that the fourth defender materially contributed to the pursuer's error by its words or conduct.

[96] The email of 6 April 2010 set out some of Mr Woods' thoughts after reading the schedule. In my opinion nothing which he said in that email induced the error upon which the pursuer founds. Mr Woods had not been asked or instructed to advise as to the causes of the defects. He was not under a duty to so advise. The fact he did not raise the possibility that defects might be attributable to design issues or to the concrete mix was not an omission in breach of any duty which he owed to the pursuer. Nor do I consider there is any other relevant basis for concluding that the fourth defender's words or conduct at that time induced or materially contributed to the suggested error.

[97] In my view counsel for the pursuer sought to take more from what was said by Mr Woods at the meeting of 5 August, and from the letter of 6 August 2010, than was justified having regard to the statements made and their context. The fourth defender had not been asked to assess the defects, advise as to their cause, and advise if the proposed remedial work would address that cause. The scope of the advice sought from and given by Mr Woods was much narrower than that. Advice was sought on the method of work which was proposed. That was the setting against which Mr Woods advised that the proposed method of work was in accordance with two British Standards dealing with particular issues and that it followed industry best practice for reinstatement works. What was said by Mr Woods on 5 and 6 August did not indicate (and could not reasonably be understood to indicate) either that the cause of the defects was the slab having been laid in inappropriate weather conditions or that the remedial work would address the cause of the defects. Further, once the scope of the task which Mr Woods had undertaken at that time is properly identified, the fact that he did not raise the possibility that defects might be attributable to design issues or to the concrete mix was not an omission in breach of any duty which he owed to the pursuer. Nor do I consider there is any other relevant basis for concluding that the fourth defender's words or conduct at that time induced or materially contributed to the suggested error.

[98] If, contrary to my opinion, the fourth defender did induce the suggested error, and it was induced on 6 April 2010, in my view for the reasons already outlined the pursuer could with reasonable diligence have discovered the error by 17 July 2010. If, on the other hand, the error was

induced by Mr Woods but not until 5 and 6 August 2010, I consider that the pursuer could with reasonable diligence have discovered the error before the remedial work was completed. On that hypothesis an ordinarily prudent person in the position of the pursuer who had not previously done so would have sought appropriate advice (as to the cause of the defects and whether the proposed work would address them) soon after 6 August 2010. On being advised that lack of air entrainment was a possible cause it is likely that inquiries would have been made of the first or second defender, with the result that the absence of air entrainment would have been confirmed.

Relevant acknowledgement

[99] Counsel for the pursuer submitted that the subsistence of each of the obligations which the pursuer sought to enforce against the first defender had been relevantly acknowledged within the period of five years before a relevant claim in respect of the obligation had been made. In relation to each obligation there had been such performance by or on behalf of the first defender as clearly indicated that the obligation still subsisted (1973 Act, s. 10(1)(a)). The pursuer avers (Cond XIII) that the first defender's "involvement … in the process of carrying out the purported remedial works in 2010 which culminated in the issue of the Certificate of Making Good Defects" constituted such performance.

[100] As has been observed (*Johnston, supra*, paragraph 5.67), the test for performance must be a fairly high one since the performance has to clearly indicate that the obligation still subsists. Performance towards implement must be clearly referable to the particular obligation the subsistence of which is said to be clearly indicated (*Richardson* v *Quercus Ltd* 1999 SC 278; *Gibson* v *Carson* 1980 SC 356).

[101] For the purposes of the present discussion the obligation to make reparation for breach of Clause 17.2 can be put to one side. I did not understand the pursuer to maintain that that obligation had been relevantly acknowledged. In any case it is plain that the carrying out of the remedial work was not performance towards implement of the obligation to make reparation for breach of Clause 17.2.

[102] The other obligations which the pursuer seeks to enforce against the first defender are obligations to make reparation for failures (i), (ii) and (iii). The issue is whether in doing what it did with regard to the remedial work there was such performance by the first defender towards implement of any of those obligations as clearly indicated that the obligation still subsisted. I shall examine each of the obligations in turn.

[103] In my opinion, carrying out the remedial work was such performance by the first defender towards implement of the obligation to make reparation for failure (i) as clearly indicated that the obligation still subsisted. Fibre balls are attributed by the pursuer to breach of the obligation to mix and spread the fibres evenly and properly. The remedial work included removing fibre balls. In so far as it did so it was performance towards implement of the obligation to make reparation for failure (i). It was intended to redress damage caused by that failure. It indicated to the pursuer (and, judged objectively, would have indicated to a person in the pursuer's position) that the first defender was clearly indicating that the obligation (to make reparation for failing to mix and spread the fibres evenly and properly) subsisted.

[104] On the other hand, I do not think that the first defender's involvement in the process of carrying out the remedial work was performance towards implement of either the obligation to

make reparation for failure (ii) or the obligation to make reparation for failure (iii). The first defender's conduct did not clearly indicate to the pursuer (and judged objectively would not have clearly indicated to a person in the pursuer's position) that the first defender acknowledged the subsistence of an obligation to make reparation for failure to warn the pursuer of the absence of air entrainment in the slab. Nor, in my opinion, did the first defender's conduct clearly indicate to the pursuer (or, judged objectively, to a person in the pursuer's position) that the first defender acknowledged the subsistence of an obligation to make reparation for failure to use air entrained concrete in the construction of the slab. Rather, the pursuer's understanding was that the delamination defects were attributable to the first defender having laid the slab when weather conditions were unsuitable. At that time the pursuer understood (and a person in the pursuer's position in the circumstances would have understood) that the first defender's conduct in respect of the remedial work clearly indicated that the first defender accepted responsibility for remedying defects resulting from that poor workmanship. That appears to me to be as much as may reasonably be taken from the first defender's conduct.

[105] It follows that the first defender's obligation to make reparation for failure to take adequate steps to mix the fibres into the concrete and ensure that they were evenly and properly spread was relevantly acknowledged within five years of the obligation becoming enforceable (and less than five years before a claim was first advanced in respect of it on 2 September 2015). However, in my opinion there was no relevant acknowledgement by the first defender of the other obligations which the pursuer seeks to enforce.

The pursuer's alternative characterisation of *damnum*

[106] In the pursuer's written submissions the final alternative submission was that *damnum* occurred when the slab was constructed, because at that point it lacked air entrainment and suffered from an over-abundance of fibres near its surface. On that basis the pursuer had not been aware of *damnum* until it discovered the lack of air entrainment and the over-abundance of fibres. There had been no such actual awareness until less than five years before the claims were made against each of the defenders. Nor with reasonable diligence could the pursuer have become aware of either aspect of the *damnum* more than five years before the claims were made. When it came to oral submissions counsel for the pursuer simply adopted this submission without seeking to develop it.

[107] In my opinion the submission is plainly wrong.

[108] The better view is that when the slab was constructed it contained latent defects, but that no *damnum* occurred until the physical manifestation of material damage in September 2009 and February 2010 (see eg *Musselburgh & Fisherrow Co-operative Society Ltd* v *Mowlem Scotland Ltd*, per Lord Eassie at paragraphs 27-28).

[109] In any case, even if there was *damnum* at the time of the slab's construction, the pursuer became aware of the occurrence of material damage long before it discovered that the slab lacked air entrainment and that it had an over-abundance of fibres near the surface. The defects reported by Mr Gunner on 6 October 2009 were material damage which the pursuer now attributes to lack of air entrainment in the slab; and by 22 February 2010 the fibre balling and clumping were material damage which the pursuer now attributes to the alleged inadequate mixing of the

concrete. It was enough that the pursuer knew of that damage, even though it may have been ignorant of the true cause or causes of the damage.

[110] Lest anything should turn upon it, I am satisfied that the pursuer was not actually aware of the absence of air entrainment in the slab until a time within five years of each of the relevant claims being made. I am not persuaded that actual knowledge of lack of air entrainment in the slab should be attributed to the pursuer at any earlier date. I do not accept that any individual employee or agent of the pursuer possessed that knowledge at an earlier date; or that such knowledge should be attributed to the pursuer at an earlier date on the basis of the cumulative knowledge of its employees or agents. At all material times Mr Macpherson was unaware of the absence of (or the significance of) air entrainment. Mr Gunner assumed that the slab contained air entrainment. I accept that the information in the fourth defender's construction drawings, in the applications for payment by the first defender to the quantity surveyors acting on the pursuer's behalf, and in the May 2009 correspondence already discussed, was available to agents acting on the pursuer's behalf more than five years before each of the relevant claims were made. However, I doubt whether in the whole circumstances it is appropriate to attribute knowledge of all of that information to the pursuer for the purpose of the present claims (and in particular for the purposes of s. 11(3)) (see *Meridian Global Funds Management Asia Limited* v *Securities Commission* [1995] 2 AC 500; *Bilta (UK) Limited (in liquidation) & Ors* v *Nazir & Ors (No. 2)* [2016] AC 1; *Howmet Limited* v *Economy Devices Limited & Ors* [2016] EWCA Civ 847). The collation of these disparate sources of information was not something which was actually undertaken by anyone at the material time: and the context and focus of each of the documents at that time may be contrasted with the particular significance which the defenders now seek to attach to them. In any case I am not satisfied that the fourth defender's drawings, or the correspondence relied upon, were intended or understood to set out an exhaustive list of the constituents of the slab (and in particular of the concrete mix). It was plain from Mr Gunner's evidence that the information given to him in May 2009 was not a complete specification of the concrete. He had had to make a number of assumptions in order to carry out his calculations. In relation to the original specification he had assumed that the aggregate was uncrushed, that it had a relative density of 2.6, and that the concrete density was 2420 kg/m^2; in relation to the revised specification he had assumed that the aggregate had a relative density of 2.7, and that the concrete density was 2480 kg/m^2 . In each case he had calculated his figures on the basis that there was air entrainment in the mix because that was what he had understood the position to be. That had involved making a small adjustment to each calculation: in the case of the original specification the concrete density had been adjusted from 2450 kg/m^2 to 2420 kg/m^2. I am also unconvinced that the payment applications to MMS are as telling as the defenders suggest. They indicated to MMS that no payment for an air entrainment agent was claimed. That did not necessarily mean that no air entrainment had been used. An air entrainment agent could have been used but not claimed for (the evidence was that the cost was relatively small); or air entrainment could have been a constituent of the WRA (which was used, and the cost of which was claimed).

[111] However, as already discussed in relation to s 6(4), and for the same reasons, in my opinion the pursuer could with reasonable diligence have discovered the absence of air entrainment in the slab by 17 July 2010.

Authorities

[112] The following additional authorities were referred to in written or oral submissions: *Royal Bank of Scotland plc* v *Halcrow Waterman Limited* [2013] CSOH 173; *BP Exploration Operating Co Limited* v *Chevron Shipping Company* 2002 SC (HL) 19; *Heather Capital Limited (in liquidation)* v *Levy & McRae* [2016] CSOH 107; *Heather Capital Limited (in liquidation)* v *Burness Paull* [2015] CSOH 150; *Ghani* v *Peter T McCann* 2002 SLT (Sh Ct) 135; *London Borough of Bromley* v *Rush & Tomkins Ltd* (1985) 35 BLR 94; *Dunlop* v *McGowans* 1980 sC 9HL) 73; *Jackson & Powell: Professional Liability* (7th ed), paragraph 5-033; *Morrison's Associated Companies* v *James Rome* 1964 SC 160; *Pirelli General Cable Works Ltd* v *Oscar Faber & Partners* [1983] 2 AC 1; and *Ketterman* v *Hansel Properties Ltd* [1987] AC 189.

Conclusions

[113] The first defender's obligation to make reparation in respect of failure (i) became enforceable on 22 February 2010. The pursuer's case in respect of that failure was inserted by adjustment of 2 September 2015. By that date, even though the period of error between 29 April 2010 and 17 July 2010 is not reckoned as part of the prescriptive period, the obligation had subsisted for a continuous period of more than five years. However, the obligation has not been extinguished by the short negative prescription because the subsistence of the obligation was relevantly acknowledged by the first defender throughout the period between late August 2010 and 16 November 2010.

[114] Counsel for the first defender suggested that even if this obligation to make reparation had not been extinguished any breach by the first defender had not caused the loss which the pursuer claimed, because, he submitted, the effective cause of the need to replace the slab was the lack of air entrainment. In my opinion whether that is so or not is an argument for another day. The pursuer avers that the breach to which obligation (i) relates materially contributed to the deterioration of the slab. For present purposes I require to take that averment *pro veritate*.

[115] The first defender's obligations to make reparation in respect of failures (ii) and (iii) became enforceable on 6 October 2009. The pursuer's cases in respect of obligations (ii) and (iii) were inserted by adjustment of 14 October 2015. Although the period of error between 29 April 2010 and 17 July 2010 is not reckoned as part of the prescriptive period, the obligations subsisted for a continuous period of five years from 6 October 2009 without any relevant acknowledgement of their subsistence having been made. Accordingly, those obligations have been extinguished by the short negative prescription. The outcome would have been the same even if the obligations had not become enforceable until 1 January 2010 or 22 February 2010.

[116] The pursuer's case in respect of the obligation of the first defender to make reparation for breach of Clause 17.2 has not prescribed. It was inserted by adjustment on 2 September 2015. That obligation to make reparation became enforceable less than five years before 2 September 2015.

[117] The third and fourth defenders' obligations to make reparation became enforceable on 6 October 2009. Service by the pursuer on each of these defenders was effected on 20 April 2015. By that date each of the obligations had subsisted for a continuous period of more than five years without any relevant acknowledgement of its subsistence having been made. The obligations were extinguished by the short negative prescription before 20 April 2015. The outcome would have

been the same even if the obligations had not become enforceable until 1 January 2010 or 22 February 2010.

Disposal

[118] I shall put the case out by order to discuss (i) an appropriate interlocutor to give effect to my decision; (ii) further procedure.