



OUTER HOUSE, COURT OF SESSION

[2021] CSOH 77

CA122/19

OPINION OF LADY WOLFFE

In the cause

APCOA PARKING (UK) LIMITED

Pursuer

against

CROSSLANDS PROPERTIES LIMITED

Defender

Pursuer: Howie QC; Brodies LLP

Defender: Borland QC et Manson; Pinsent Mason LLP

30 July 2021

Background

The car park

[1] This is a further litigation between the parties arising out of the state of a three-level multi-storey car park (“the car park”) at the Kingsgate Shopping Centre (“the Centre”) in Dunfermline. The Centre was built in 1985 and renovated in 2002. In around 2008 the Centre was extended to the east to provide new retail units and the car park above those units.

[2] Since its completion in 2008 the car park, owned by the defender and operated by the pursuer under a licence, has been beset with problems. These have included ponding of

water at level 3, spalling (or the break-up) of the concrete surface over areas of level 3, the failure of a waterproof membrane over part of level 3 (resulting in leaks into the retail unit below), wide-spread cracking of the surfaces of levels 1 and 2, and corrosion to some of the steel stanchions which support the undersides of levels 2 and 3. These problems have spawned prior litigations, an extensive programme of remedial works to all levels (although only those for level 3 were undertaken) and a prolonged dispute between the parties. Since the remedial works, the defender has issued two repair notices to the pursuer, seeking to hold the pursuer liable in terms of its repairing obligations to undertake the works they specified. The pursuer maintains it is not liable for what it contends are defects of design or workmanship in the original construction and now seeks to be relieved of any future obligations in respect of the car park.

The central issue in this case

[3] The order the pursuer seeks in this action is relatively unusual. The pursuer does not seek damages or to enforce any term of the Agreement by specific implement. The pursuer maintains that the defects it alleges are such that, collectively or individually, the defender is in material breach of its contractual obligations (noted in the next paragraph), with the result that the pursuer is now entitled to rescind the contract. It has raised the present proceedings and seeks declarator to that effect. The pursuer alleges seven separate defects of design or workmanship, noted below (at para [41]).

The pursuer's assertion of the defender's breaches of their contract

[4] The pursuer asserts breaches of clauses 2.4 and 3.1 of the parties' agreement (as after-noted, in paras [5] ff). Read short, these clauses obliged the defender

- 1) to use all reasonable endeavours to procure that the building contractor performs its obligations under the building contract (clause 2.4), and
- 2) to procure *inter alia* the completion of the car park “in a good and workmanlike manner using all due diligence, and using the material specified in the Agreed Plans and Specification failing which with good quality materials” and also to comply with the requisite consents, codes, British Standards and certain construction regulations (clause 3.1).

The Agreement

The construction of the car park and the terms of the lease

[5] In advance of the construction of the car park, the parties entered into an “Agreement for a Lease” (referred to in much of the documentation as “the AfL” (but which is referred to in this opinion simply as “the Agreement”)), by missives dated 11 October and 5 November 2007. In terms of the Agreement, the defender would procure the construction of the car park (which it did in 2008), and which the pursuer, who are well-known operators of car parks, would occupy and operate under a 25-year lease (in the form of the draft lease appended as annex 6 to the Agreement).

The tenant’s input at the stage of construction

[6] The tenant’s obligations are set out in Part V of the Schedule to the draft lease appended to the Agreement (respectively, “Part V” and “the lease”). In terms of paragraph 3 of Part V, the pursuer as tenant would, other than for insured risks, assume onerous obligations to repair, reinstate and renew the car park for the duration of the 25-year period envisaged in the lease “irrespective of the cause of damage”. (The terms of

the tenant's repairing obligations are set out in para [10], below.) Those prospective obligations provided the pursuer with an acute commercial interest to ensure that the car park was built to the requisite standard. Putting it another way, the risk inherent in an onerous repairing obligation of 25 years for a newly constructed car park with a design life of 50 years is likely to be materially lower than a like obligation assumed for a 20-year old car park. The pursuer's ability to mitigate that risk was reflected in the structure of the Agreement. It contained detailed provisions, including those stipulating the design for the car park in the form of a "Shell & Core Specification Car parking Levels" contained in annexation 1 to the Agreement ("the Specification"), and requiring compliance with certain standards and guidance applicable to car park construction (*per* paragraph 2.2 of the Specification). (Annexation 9 appeared to contain a duplicate of the Specification but at the proof reference was made only to the version in annexation 1.) In addition to imposing "construction obligations" on the defender (*per* heading to clause 3, albeit the scope of those obligations is disputed), the Agreement conferred certain rights on the tenant to monitor the construction works (under clause 4). Clause 5 also entitled the tenant to access and inspect the works at key points, including prior to the issue of certificates for practical completion and for the making good of defects (see clauses 5.1 and 5.2).

The effect of practical completion

[7] There was additional provision for a dispute resolution mechanism in respect of such matters (in clause 5.3). These were important rights because, once "properly issued", the certificate of practical completion was (subject to the dispute mechanism in clause 5.3) "final and binding" on the parties (*per* clause 5.6). The practical effect of that provision was to activate the tenant's risk under the repairing obligation.

The collateral warranties in favour of the tenant

[8] Another feature of the Agreement affecting the allocation of risk was the tenant's entitlement to collateral warranties (under clause 9) from the design team and building contractors (the latter, Mivan Limited ("Mivan"), are now insolvent), and the obligation on the defender to "use all reasonable endeavours to procure that the Building Contractor makes good all defects" brought to its notice during the defects liability period (under clause 9.2). The defender was relieved of any obligation to compensate the pursuer for any disruption or lost profits arising from the contractor making good any defects.

The obligations incumbent upon the pursuer as occupier

[9] No lease has been entered into pursuant to the Agreement. The pursuer occupies the car park under a licence, which, by virtue of a deeming provision in clause 12.1 of the Agreement, imposes like obligations *inter alia* for repair and maintenance as would be imposed in terms of the lease. (For ease of reference, I will refer to the provisions of the lease directly, without also noting the deeming provision.) The defender relies on clause 2 of the lease, to the effect that the pursuer as tenant has accepted:

"...the Premises...and which Premises and the Common Parts the Tenant accepts in good and substantial repair and condition and suitable and fit for their purposes in all respects..."

The definition of the term "Premises" (in Schedule Part I of the lease) effectively comprised the car park, including

"the floor of each level of the said car park extending from the underside of any membrane or surface treatments on the floor of each level of the said car park to the upper side of the tarmac on the said floors...waterproofing and other applied membranes..."

The defender contends that the pursuer, as tenant, accepted that the “Premises” were in good and substantial repair and condition, and suitable and fit for purpose in all respects, and is thereby barred from raising in these proceedings any disconformity with the specification or design guidance relating to the car park.

The pursuer’s repairing obligations under the lease

[10] By virtue of clause 3.1 of the lease, the pursuer, was as the tenant, obliged to “implement, perform and fulfil the obligations and undertakings set out in Schedule Part V”. Schedule Part V of the lease set out the tenant’s obligations, including paragraph 3, in the following terms:

“At the Tenant’s expense well and substantially to **repair**, maintain, decorate, cleanse, glaze (and where necessary) **rebuild, reinstate and renew** and generally in all respects **keep in good and substantial repair and condition the Premises** and every part thereof **irrespective of the cause of the damage causing such repair, maintenance, renewal or others**, BUT excepting always from the foregoing responsibility damage to any item caused by the occurrence of one of the Insured Risks (save where and only to the extent that the insurance monies are rendered irrecoverable in consequence of any act, neglect or default of the Tenant or anyone for whom the Tenant is legally responsible and the Tenant has not made good the same)”. (Emphasis added.)

I shall refer to these obligations as “the tenant’s repairing obligations”. The defender relies on the wording emphasised above and submits that in terms of clause 2 of the lease, the pursuer accepted “the Premises” (which included the floors, waterproofing and membranes at each level of the car park) as being in good and substantial repair and conditions. The defender notes that the tenant’s repairing obligations incumbent upon the pursuer applies “irrespective of the cause of the damage causing such repair, maintenance, renewal or others”. It maintains that the work necessary to comply with this obligation (as detailed in

the repair notices, after-mentioned in paras [14] and [15]) must be carried out at the pursuer's expense.

The Specification

[11] As one of the issues is as to the extent of waterproofing required, it is convenient to set out the applicable term, being paragraph 3.9 of the Specification, which provided:

“Waterproofing is provided at the following levels with the use of a proprietary liquid applied membrane, Procor 3, forming part of the composite concrete floor slab:
‘Car park level 1 - membrane applied throughout entire area.
‘Car park level 2 - no membrane.
‘Car park level 3 - membrane applied as part of composite floor over the area of the anchor store back of house areas. A surface applied proprietary waterproofing finish is applied over the balance of area at this level”.

The “anchor store back of house area”, situated on level 2, was variously referred to in the evidence as “the retail area” or “the insulated area” (I shall adopt the later term) and which was occupied by Debenhams.

The earlier litigations

[12] In an earlier action, raised in February 2014, the owner of the car park (the defender in the present action), sought to hold its tenant or licensee (the pursuer in the present action) liable for certain repairs to level 3 of the car park on the basis of repairing obligations said to be incumbent upon it (“the Crosslands Action”). This followed a notice of repair setting out the matters the defender identified as in need of remediation. This prompted the pursuer to raise a counterclaim in February 2015, contending that the repairs were only necessary because of Crosslands’ failure to procure a car park constructed in accordance with the requirements of the Agreement (“the APCOA Action”). By the time of the debate the car park was in a state of disrepair. The waterproof coating on the top deck (also referred to as

“level 3” or “the roof”), which is exposed to the elements, had failed. The concrete, or the waterproof membrane that was integral to a section of it, had broken down at several locations. That in turn has led to water penetrating down through the insulated area into the retail unit below.

[13] In those proceedings Crosslands maintained that the extent of its obligation had been to procure a competent design team but that otherwise it bore no liability for the state of the car park. After debate in those actions (reported at [2016] CSOH 63), Lord Woolman rejected Crosslands’ contention. Thereafter, Crosslands accepted it was responsible for certain repairs to the car park and it abandoned the Crosslands Action. The APCOA Action did not proceed further. (As noted below, the pursuer submits that one of the defender’s arguments is simply a reformulation of the one rejected by Lord Woolman, and which should similarly be rejected.)

The 2018 and 2020 Repair Notices

The 2018 Repair Notice

[14] Some months after the remedial works to level 3 were said to have been completed, the defender served a repair notice on the pursuer detailing works required to levels 1 and 2 and the ramps of the car park (“the 2018 Repair Notice”). The required works included:

- (1) investigation and installation of durable water seals to all movement joints;
- (2) repairing all cracks wider than 1mm with an epoxy resin;
- (3) installation of a high performance elastomeric waterproof coating to the tops of levels 1 and 2 (and sealing any cracks less than 1mm, if the manufacturer of the waterproofing product recommended this); and
- (4) installation of an impressed cathodic protection system.

While items (1) to (3) are self-explanatory, item (4) is designed to address the risk of corrosion to any reinforcing steel (embedded into concrete) that might be caused or exacerbated by water (and corrosive water-soluble substances) penetrating the concrete via the cracks. There was minimal evidence about the costs of undertaking these works, though in evidence the figure of more than £200,000 as elicited as the cost of installing a cathodic protection system at each of levels 2 and 3 (item (4), and which is intended to address the corrosion risk arising from alleged defect 5 (defined in para [41], below). The pursuer does not accept it is liable for those repairs. It also contends that the remedial works undertaken to level 3 were deficient or did not conform to the Specification.

The 2020 Repair Notice

[15] The defender served a further repair notice in 2020 (“the 2020 Repair Notice”) during the currency of this action, essentially repeating item (2) from the 2018 Repair Notice, but now requiring that all shrinkage cracks with widths between 0.3mm and up to 9mm be filled with an epoxy resin treatment.

[16] It was clear from the evidence of the pursuer’s Graham Tidball that, given the issues with the car park and notwithstanding the resultant remedial works, the service of the Repair Notices led the pursuer to conclude that “enough was enough”. It raised the present proceedings whose primary purpose is to relieve the pursuer from its future obligations under the lease.

The defender’s concession relative to the 2018 and 2020 Repair Notices

[17] As noted below, the defender’s two experts, Mr Davis and Prof Robery, spoke to the good condition of the car park. This was particularly so of Prof Robery, who described

being “impressed” by the condition of the car park (which he inspected in April 2021) and of it being in very good condition. He rejected the suggestions in respect of levels 1 and 2, that the cracking was out of the ordinary or posed any enhanced risk to the integrity of the car park, or that a cathodic protection was required to be installed. (Mr Davis shared the view that a cathodic protection system was unnecessary: Davis 3 at paragraph 5.12.) This evidence was wholly inconsistent with the Repair Notices. This did raise a certain tension for the defender: to the extent that it asserted in the Repair Notices that the car park was deficient (and not attributable to any failure in a maintenance obligation owed by the pursuer), this could be seen as assisting the *pursuer’s* position on the merits of its case that the car park was beset with material defects for which it was not responsible. In the course of the defender’s submissions, I raised this inconsistency with the defender’s Senior Counsel, Mr Borland QC, who, after taking instructions, advised that the defender withdrew both the 2018 and the 2020 Repair Notices in their entirety and accepted that the works therein specified would not be required of the pursuer (“the defender’s concession”).

Concrete as a material

[18] In order to understand the alleged defects (set out at para [41]) and the evidence of the parties’ experts, it is necessary to understand the different layers that comprise the deck of each level of the car park, as each has a different method of construction. Before doing so, it is also helpful to have an understanding of the properties of concrete, as this is the principal material (in various forms) used in the construction of the decks of the car park.

Cast concrete

[19] In construction works, concrete that is pre-formed (ie pre-cast) in rectangular slabs may be used. In its wet form, concrete may also be poured *in situ* or “cast”. If cast, the formation of concrete is a wet process. Cast concrete acquires strength and rigidity as it dries or “cures”. Curing is a process of evaporation which must be controlled to minimise the formation of cracks (all concrete cracks to a certain extent as it cures) and to maximise the strength of the cured concrete.

The use of a reinforcing steel mesh in cast concrete

[20] As noted below, concrete was used for two distinct layers in each deck. In each deck’s uppermost layer (which was variously described as “the wearing course” or “waring screed”, or “floating screed” or “the topping”, and which I shall refer to as “the wearing screed”), a reinforcing steel fabric or mesh (comprised of rectilinear pieces of steel) (“the reinforcing steel mesh”) was embedded in the concrete. The principal purpose of the reinforcing steel mesh was to control or minimise the amount and depth of early - age or shrinkage cracking, which is the kind of cracking that occurs in the first 2 years of the life of the concrete, as the concrete cures. To be effective for that purpose, the reinforcing steel mesh should not be buried under too thick a layer of concrete (as that would defeat the point of controlling cracks at the surface of the concrete) or too shallow a layer (as that might expose the mesh to corrosion from water ingress or water-soluble substances such as chloride (a common component of de-icing treatments)). Hence the specification of the permitted thickness of the concrete slab above the reinforcing steel mesh.

The occurrence of cracks in concrete

[21] So far as possible, the formation of cracks in concrete is to be minimised. Cracking cannot be wholly avoided. In relation to the design of concrete car parks, there is guidance in the form of a British Standard (“BS”) as to the different widths of cracks which may be tolerated, and the desiderated treatment of these. In terms of the BS applicable at the time of the construction of the car park, BS8110-1:1997 (“Structural use of concrete –Part 1: Code of Practice for design and construction” (withdrawn in 2010)), the permitted width for structural cracks under full load was 0.3mm. In relation to non-structural cracking, such as plastic shrinkage cracking, thermal cracking or long-term drying shrinkage cracking, which can occur due to non-structural effects (that is, not caused by weight bearing or pressure), cracks wider than 0.3mm are acceptable. Unless cracks wider than 0.3mm lead directly to any metal structural reinforcement (such as a reinforcing steel mesh), they are not treated until the widths are greater than 0.5 to 1.0mm wide. Accordingly, while there were disputes about the number and sizes of the cracks identified in a survey by Darley of the cracks (or indeed about the reliability of that survey), in the course of the proof it became common ground (i) that cracks of 1.0mm or more required to be repaired (by infilling with suitable material), but (ii) that cracks of a lesser width might be left untreated or, if they were to be covered by a surface waterproof treatment, a manufacturer might specify the width of cracks (under 1.0mm) which should be filled prior to such an application.

Cracks as a potential source of risk

[22] As is clear from the preceding paragraph, not all cracks are indicative of a problem with the structural integrity or workmanship of a built concrete form. However, much of the evidence elicited at the proof proceeded on the footing that the existence of cracking can

pose a risk to the integrity of the concrete itself (and, ultimately to the structure if this affected structural concrete). The principal perceived risk was of corrosion of any embedded reinforcing steel mesh, if it becomes exposed to water. Rust staining on the surface of concrete can be a sign of corrosion of any reinforcing steel elements.

The potential effect of exposure to water and chloride on steel-reinforced concrete

[23] Concrete is not impermeable to water. Exposure of concrete to water may have deleterious effects. The Institution of Structural Engineers (“ISE”) “Design Recommendations for multi-storey and underground car parks” (4th ed, 2011) (“the ISE 2011 Recommendations”) states that:

“A frequent factor in premature deterioration is retention of water, either on rough, textured surfaces or in areas of ponding. Unless there is an effective waterproofing membrane on the concrete surface (see Section 8.6), ponding water will slowly penetrate into the concrete surface. As well as increasing the risk of damage due to freeze-thaw action, the surface water is likely to contain chloride salts from sea spray or from de-icing salts.”

(The passage in the 3rd ed., in 2002, is differently worded but to similar effect.) Accordingly, the design of concrete structures which will be exposed to the elements over their design life (such as exposed decks of unroofed or open-sided car parks) must address these effects.

[24] In respect of the car park, this was sought to be done by two design elements. The first was the use of a reinforcing steel mesh to try to control the extent, width and depth of any surface cracking and thereby minimise any water penetration via cracks. The second was to provide for waterproofing, eg by the provision of a waterproof membrane (in this case, the Procor 3 membrane), either on the surface of the wearing screed (eg at level 3 as part of the remedial works), enabling water to flow into channel drains, or as an embedded layer (eg at level 1), enabling any water that does penetrate into the concrete subsurface to

be caught and channelled into sub-surface drains. Where these features are effective, water does not penetrate through the concrete so as to leak into any area beneath the concrete structure (as has happened from the insulated area on level 3 into the Debenhams unit or from level 1 into the DW Sports retail unit) and it does not come into contact with, or compromise or corrode any reinforcing steel elements.

The different forms of construction of the three levels of the car park

[25] The car park provide 690 parking spaces and 30 accessible spaces over three levels. The uppermost level of the car park, level 3, is exposed to the elements. The structure of the car park is a steel frame, open to the elements at its sides. A different form of deck construction was specified for each of the three levels. (I shall use the term “deck” to encompass all of the elements of the level referred to.) It is necessary to understand the different layers that comprised the deck of each level of the car park.

The level 1 deck

[26] The lowest *stratum* of the level 1 deck is a 150mm thick *in situ* reinforced concrete slab, specified as Grade RC 35, which is laid over a steel deck flooring (“the level one slab”). (The term “RC 35” is a specification for a particular concrete mix and reflects its characteristic cube compressive strength.) The next layer is a proprietary waterproofing membrane, known as “Procor 3”, which is affixed to the underside of a 2mm protection board (“the protection board”). An insulation layer with a depth of 120mm was placed over the Procor 3 and protection board. The final or top layer was the wearing screed, which was specified to be 75mm thick and formed of Grade 30 RC concrete reinforced with a steel mesh. None of these concrete layers was structural.

The level 2 deck

[27] The bottommost layer was comprised of pre-cast pre-stressed 150mm Hollowcore concrete planks (“the level two slab”). In contrast to the level one slab, this slab was structural. Again, and in contrast to levels 1 and 3, there was no intermediate Procor 3 waterproofing membrane specified for the level 2 deck. (The absence of a membrane at this level is not the subject of dispute.) Immediately above the level 2 slab was a 75mm thick RC 50 concrete topping (ie the wearing screed). This wearing screed was also reinforced with a steel mesh.

The level 3 deck

[28] The construction of the level 3 deck differs from that of the decks of either of levels 1 and 2. There were also two different specifications for the level three deck: there was a higher specification for the area comprising the south east portion of level 3 (this is the insulated area, defined above at para [11]), as it is immediately above the Debenhams’ retail area. Otherwise, the majority of the level 3 deck had a more basic specification, as it was simply above level 2 car parking spaces. I describe this larger area first.

The Level 3 deck over the majority of level 3

[29] The larger part of the level 3 deck was comprised of 150mm precast pre-stressed Hollowcore concrete planks (“the level 3 slab”). A 75mm RC 30 concrete wearing screed, also with a form of reinforcing steel mesh, was laid over the level 3 slab. The level 3 deck was finished with waterproof finish known as Decseal Interdeck. (While the final specification had been for a product known as Larcote, this change is of no moment.)

The level 3 deck over the insulated area of level 3

[30] The bottom-most layer of the level three deck over the insulated area was comprised of 75mm solid precast pre-stressed concrete planks. The next layer was 100mm of structural insulation. Over this was a layer comprised of a Procor 3 waterproof membrane with board protection. The final, top-most, layer was a 75mm RC 30 concrete wearing screed with the same reinforcing mesh as specified for the rest of the wearing screed on level 3.

Level 3 falls and drainage

[31] As there is an issue about ponding (defect 1), it is necessary to note the drainage arrangements for level 3. For water to flow and drain adequately across a broad expanse, the falls cannot be too shallow.

[32] The drainage for level 3 of the car park, which is longer on its east-to-west orientation than it is north-to-south, is via a series of two ridges, each on an east-west axis which divide level 3 into thirds. Each ridge sheds water down into two “valleys”, one to the north and one to the south of the ridge. In the middle valley (ie between the two ridges) there was provision for a sub-surface covered channel running along its length, which bisected the level 3 deck along an east-west orientation. Surface water reaching the channel drain was carried down through the structure via rain downpipes. As part of the remedial works, the channel drain on level 3 was changed to an exposed valley gulley (“the valley gulley”).

Interaction with vertical drains

[33] As noted above, a Procor 3 waterproofing membrane was sandwiched between the slabs and wearing screeds on level 1 and on the insulated area of level 3. This was intended to catch any water that penetrated the surface of the wearing screed and to direct it to vertical drains and connected rain downpipes. The vertical drains had openings, like a form of simple lattice work, to enable the water to drain. In order to ensure a complete waterproof seal, any waterproof membrane should be lapped up (*per* Mr Clarkson) or sealed with a ring around the vertical drain (*per* Prof Robery). Ancillary issues in relation to the drains is whether this detailing was done adequately and whether the drains inspected in April 2021 were blocked by some broken concrete (*per* Mr Clarkson) or blocked by accumulated debris (*per* Prof Robery).

*Other features of the car park**Failure to remove the embedded Procor 3 membrane as part of the remedial works*

[34] As will be seen, one of Mr Clarkson's criticisms was the failure as part of the remedial works to excavate, remove and replace the buried Procor 3 membrane, which he asserts is faulty. Rather, the solution adopted at level 3 was to use a different surface-level proprietary waterproofing system known as "Decseal". On the balance of the evidence, this has provided a functionally adequate level of waterproofing, as there has been no recurrence of the substantial water ingress from level 3 into the Debenhams retail unit below.

However, this does not conform to the original Specification.

The ramp leading from level 2 to level 3 and its head

[35] One of the alleged defects is the absence of waterproofing embedded in, or sprayed onto the surface of, the concrete layer comprising the level ramp leading from level 2 to level 3 (“the level 3 ramp”). The allegation extends to the area at the top of the ramp (its “head” or turning circle), which is also said to be lacking waterproofing. In submissions, Mr Howie QC, who appeared on behalf of the pursuer, abandoned defect 3, at least insofar as it related to the level 3 ramp.

The structural or expansion joints

[36] Alleged defect 7 and part of defect 1 concern expansion or structural joints (also referred to as “movement” joints). Part of the allegation in defect 1 appeared to relate to a movement joint (also referred to as a “SABA” joint) adjacent to the insulated area on level 3. Defect 7 concerned the expansion joint, running on a north-south axis, which bisects the car park. In particular, it is alleged that a section of this was worn.

The remedial works

[37] After the abandonment of the Crosslands Action, the defender commissioned engineers (W J Marshall (“WJM”)) to investigate the nature and extent of any remedial works required to the car park. The defender commissioned another firm (“Condell”) to produce a specification for remedial works in the light of those investigations. Another firm (Volkerlaser) executed those works under the supervision of Condell. The remedial works undertaken in respect of level 3 were carried out over two phases (the first in 2017; and the second in 2018). The Volkerlaser works secured the removal and replacement of all

sub-standard concrete on level 3. The other remedial works undertaken at level 3 included the following:

- 1) Removal and replacement of the concrete over the insulated area;
- 2) Removal of the channel drainage and replacing it with concrete graded to the valley gulley; and
- 3) Application of a fully reinforced Decseal waterproofing system over the whole of level 3.

Inherent in defect 1 is the proposition (advanced principally by Mr Clarkson) that as built, or as remediated, level 3 of the car park failed to conform with the Specification, either because two levels of waterproofing were required over the whole of level 3, or because the Decseal product was not originally specified or equivalent to the Procor 3 membrane. It is therefore necessary to describe the Decseal product.

Decseal

[38] In terms of the Decseal product literature, this is a proprietary product intended to be installed as a “system” with different components, and for which the surface-level application is simply a finish. The surface-level Decseal is not itself intended by the manufacturer to be a stand-alone waterproofing treatment. The defender’s position, supported by their experts, is that nonetheless this is sufficiently effective and supersedes the Procor 3 membrane (which has been left *in situ*) where applied at level 3. The pursuer’s position is that the Procor 3 membrane is necessarily defective (because a well-performing system would not have permitted leaks) and should have been replaced.

The parties' positions in outline in respect of the alleged defects*The pursuer's case in outline*

[39] The pursuer's essential position is that it expected to occupy and operate a new car park built to an agreed specification, and which it would reasonably expect to be free of defects. This was material, given the onerous repairing obligations assumed by the tenant under the lease. It avers that, as a consequence of the defect it alleges, the car park is "radically defective" (see Article 5 of Condescence). The pursuer contends that the basis of the Agreement has been radically altered and the prejudice to the pursuer is such that it is justified in rescinding the Agreement. The pursuer argues that in this case damages would be wholly inadequate. The defender is in insolvent liquidation, and any decree the pursuer may establish against it for breach of the Agreement is unlikely to be satisfied. Further, if the pursuer is not relieved of the tenant's repairing obligations, it could be compelled to put right the defects in the car park, notwithstanding that (on its case) these defects arose from the defender's breach. Nor does the pursuer have recourse against the contractor undertaking the remedial works, as, in contrast to the pursuer's entitlement to collateral warranties for the original construction, no collateral warranties were provided to the pursuer by the contactors involved in the remedial works.

[40] For these reasons the pursuer seeks to rescind the Agreement and be relieved of any future obligations under the lease by reason of the defender's alleged breaches of clauses 2.4 and 3.1 (summarised at para [4], above). The defects in the car park it alleges are noted in the next paragraph.

The alleged defects

[41] The summons details the variety of ways in which it is said the car park is defective, either as constructed or as a consequence of the remedial works themselves being inadequate or incomplete. Parties agreed that the defects the pursuer alleges may be summarised as follows:

- 1) The pursuer alleges that the defective buried Procor 3 membrane at level 3 of the car park was not repaired. The replacement Decseal waterproofing and expansion joint (also referred to as “the SABA” joint) to be installed by the defender to address the defects present in level 3 do not meet the requirement of the Agreement (“defect 1”);
- 2) The pursuer contends that there is ponding on level 3 of the car park, and that this is being caused by a failure to provide the necessary falls or gradients to allow the water to reach the drainage gullies (“defect 2”);
- 3) The pursuer argues that there is no functional waterproof membrane layer over the level 3 ramp or third level area at the top of the ramp (“defect 3”);
- 4) The pursuer contends that there is corrosion to steelwork on the underside of levels 2 and 3 of the car park (“defect 4”);
- 5) The pursuer alleges that there is cracking in the concrete ‘topping’ at levels 1 and 2 of the car park (“defect 5”);
- 6) The pursuer argues that the substrate Procor 3 waterproofing membrane installed as part of the construction at level 1, and the sub-slab drainage at level 1, are defective (“defect 6”); and

- 7) The pursuer contends that the defender has failed to complete the structural or movement joint (also referred to as “the Radflex joint”) adjacent to the car park office (“defect 7”).

[42] Furthermore, the pursuer contends that the defender

- 1) refuses to carry out such work as is required to put level 3 into the state which it ought to have been in consistent with the terms of the Agreement;
- 2) refuses to carry out any of the works to the other areas of the car park as are required to put them in the state which they ought to have been in consistent with the terms of the Agreement; and
- 3) maintains that the defender is liable to carry out and pay for all further works necessary to put and keep the car park into good and substantial repair.

As a consequence of the foregoing, the pursuer contends that the defender has provided a radically defective car park which is likely to require substantial and ongoing repair works at the expense of the pursuer, during the execution of which the car park may not effectively be used as such in whole or in part. This, in short, was not the performance expected or required of the pursuer in terms of the Agreement. This goes to the root of the Agreement, entitling the pursuer to rescind.

The defender's position in outline

[43] The defender admits that at the stage of initial construction a waterproof membrane had not been installed over all areas of the top (or level 3) of the car park, nor on the ramp leading to level 3 or the head of the ramp. The defender notes that it has expended considerable resources in attending to level 3 since the time of the pursuer's occupation and it relies on the remedial works undertaken. It contends that, as a consequence of the

remedial works, a waterproof membrane is now in place at level 3, where required, and which is covered by a 10 year guarantee. It maintains that the car park is functional. It is capable of being occupied and operated by the pursuer.

Outline of defender's reply to the pursuer's seven specific defects

[44] In light of the foregoing, the defender's reply to the pursuer's individual criticisms (noted at para [41], above), are:

- 1) That whatever the state of the proprietary "Procor 3" waterproofing membrane at level 3 of the car park as initially constructed, any defect was resolved by the application of Decseal waterproofing overlaid on top of the concrete wearing screed as part of the remedial works. The Decseal waterproofing functions well and renders the Procor 3 membrane otiose in all material respects. It was not necessary to remove or repair the Procor Membrane 3 itself. There have been no reported leaks since the installation of the Decseal membrane. It has also installed the requisite expansion joint.
- 2) There is no serious ponding at level 3, or any substantial part of it, such as to render the car park unusable or to pose any health and safety risk to pedestrians or cars. Any ponding of the type condended upon by the pursuer is a function of inadequate maintenance on the part of the pursuer. The pursuer had confirmed that it would attend to the maintenance necessary to avoid ponding. The relevant areas are served by a new drainage system installed during the Volkerlaser works which the defender put in place and paid for. Any inadequate falls or gradient (ie to enable water to drain), or any resultant ponding as a consequence of inadequate falls, is *de minimis*.

- 3) Properly construed, there is no contractual requirement for a functional waterproof membrane layer over the Level 3 ramp or third level area at the top of the ramp.
- 4) The remedial works have resolved any issue involving corrosion to the steelwork on the underside of levels 2 and 3 of the car park.
- 5) Any cracking in the concrete wearing screed at levels 1 and 2 of the car park is not structural but is hairline cracking calling only for patch repairs. It is not an extensive problem (if it is a problem at all). The relevant category of repair falls within the scope of the pursuer's obligations and responsibilities under the Agreement.
- 6) There is no current evidence that the Procor 3 membrane at level 1 is leaking or defective, or that the sub-surface drainage isn't operating as it should.
- 7) This is a modest repair, at best. While there is a temporary fitting, the defender's intention is for this to be replaced by a permanent expansion joint.

The defender's allegations of the pursuer's failures

[45] The defender also alleges that some of the problems have arisen by reason of the pursuer's failures, eg to maintain and clean the gullies and drainage systems at level 3, or its inappropriate use of salt as a de-icing agent in the winter.

The defender's case of personal bar

[46] The defender also contends that the pursuer is precluded from asserting material breach. Its averments are as follows:

“The pursuer has occupied and operated the car park since 2008. It was aware of the items complained about in connection with the third floor since that time. It has complained about the first and second floors since 2016. The parties have been engaged in various litigations concerned with the pursuer’s position in connection with the condition of the car park. The pursuer has never before asserted that it considers the defender to be in material breach. The pursuer has not withheld performance of its own material obligations under the Agreement i.e. operation of the car park and payment of rent. The defender has therefore proceeded on the basis that it is not being held in material breach of contract. It has expended considerable resources both in terms of time and money in engaging with the pursuer over its complaints and effecting certain works at the car park. It has done so on the footing that it was not being held in material breach. The pursuer has represented to the defender by its conduct that material breach is not alleged. The defender has relied and acted upon the same. Its actings were caused by the pursuer’s conduct and the defender would not have so acted absent that conduct. The defender has been prejudiced by the conduct of the pursuer and the defender’s reliance upon the same. The pursuer is personally barred from now asserting that the defender is in material breach.

Any right to rescind which the pursuer seeks to establish has been lost by the effluxion of time. The pursuer did not seek to exercise the purported right within a reasonable period of time. This is despite the background of complaint in connection with the car park running back to 2008, some eleven twelve years ago.”

The pursuer’s response to the defender’s plea of personal bar or the timing of its case

[47] The pursuer rejects the defenders’ pleas that by reason of personal bar or the passage of time that it is precluded from advancing its case. Until the receipt of the 2018 Repair Notice, in late 2018, it had not been aware of the defender’s position that there were such defects or of its intention to hold the pursuer responsible for their remediation. This action was raised in August 2019 and first called in Court on 10 September 2019.

Ancillary issues relative to the alleged defects

[48] Two ancillary issues emerged in the evidence. It is convenient to note them, although I consider the implication of these more fully when I address the defects to which they relate.

Maintenance issues said to affect drainage

[49] The first was the question of maintenance. Parties linked this to the issue of ponding (defect 2). The defender produced photographs, principally of level 3, showing vegetation growing in the cracks at the edges of the level 3 deck, accumulated debris in some of the corners (including the remains of a seagull) and some silting of surface drainage. As one of the higher elevated areas in Dunfermline, level 3 of the car park attracts seagulls during the nesting season. They are protected during that season, and may not be removed or disturbed.

Inappropriate use of de-icing salt

[50] The second ancillary issue arises from the high level of chloride noted in WJM's letter of advice, dated 3 November 2016 ("the 2016 WJM Letter"). The defender's position is that the chloride is due to the pursuer's staff using de-icing salts. Guidance for car parks recommends against the use of de-icing agents with a significant chloride content in concrete structures, such as car parks. The reason is because the chloride element within such materials can be deleterious to concrete, especially if it penetrates and reaches any reinforcing steel structure which may corrode and diminish the integrity of the concrete itself.

[51] This was touched on lightly in the evidence. The defender produced statements from two former employees of the pursuer, who had both been employed as car park managers. They were not cross-examined and their evidence was comprised of their unchallenged statements. In those, they both speak to using salt regularly at all levels for a number of years. The pursuer did not lead any witness who had experience of the operation

of the car park, or the practice of salting at that time. Gary Anderson, one of the pursuer's witnesses to fact, joined the pursuer only in 2016 and he could not speak to the pursuer's practice prior to that time. He acknowledged that there were purchase orders for salt. This issue is relevant to defect 5 (the cracking in the wearing screed at levels 1 and 2).

Documentation produced for the proof

[52] The documentation produced for the proof was extensive. The core bundle, comprising the pleadings, key productions and 19 witness statements (omitting the statements from the three witnesses not led at proof) and 11 expert reports and supplementary reports, extends to over 1,800 pages. The joint bundle contains more than 3,000 additional pages. I have considered these materials, to the extent they were referred to by the parties' witnesses or in the many expert reports or in evidence at the proof. I was referred to additional materials, namely Neil Clarkson's first report and several master plans, which were omitted from the core and joint bundles. The parties' experts' evidence comprised the major part of the parole evidence elicited at proof. It will assist if I note first the technical or other materials referred to by one or more of the parties' experts in their evidence, and then identify the reports produced by each party (see paras [64] and [65]).

Key investigations and reports

Technical reports

[53] From about 2010 until the conclusion of the remedial works in 2018, numerous tests and investigations relative to the car park have been commissioned from a variety of entities. These included taking core samples to check the depth of the various *strata* of

which the different levels of the car park were composed and the compressive strength of the concrete; testing for the presence of chlorides (the presence of high concentrations of which may lead to carbonation or corrosion of embedded reinforcing steel), analysing water bonding and ratios, and surveying of surface-level cracking. Many of these reports are referenced in, or appended to, one or more of the experts' reports. Parties' positions have also evolved, as new issues emerged and existing ones were developed or abandoned, and this is also reflected in the multiple expert reports produced. (Later reports respond to reports by the other party's experts. Final, consolidated reports were not produced.) Extensive reference was made to these earlier technical investigations in the expert reports. However, the vast majority of these technical reports are either irrelevant to the issues in this case (as focused in the seven defects (see para [41]), or otherwise have been superseded by the remedial works. I do not propose to record these. Parties declined the invitation of the Court to try to agree the few which appeared relevant. Accordingly, I summarise in the next paragraph the key matters for which the technical reports were cited.

Key matters for which technical reports cited

[54] The technical reports which were cited for the more limited purposes of asserting, in respect of the uppermost concrete layer (or wearing screed):

- 1) that the chloride levels were high;
- 2) that carbonation was present or potentially active; and
- 3) that there was excessive cracking in the surfaces of levels 1 and 2.

[55] In support of those propositions, the following reports were referred to:

- 1) Charles Darley Associates Ltd ("Darley"): Darley are a specialist investigations and materials testing consultancy. They were commissioned to undertake testing

in respect of a variety of issues in December 2014, September 2016, January and April 2017 (eg on compressive strength, carbonation etc). The only document of theirs relevant to the issues in this case is their survey mapping the extent of cracking on levels 1 and 2 of the car park (referred to by some of the witnesses as “the crack maps”). I shall describe these further below, and the comments made by other witnesses.

- 2) Henderson Thomas Associates (“HTA”) produced a report in 2019 recording the chloride ion content of the concrete at Levels 1, 2 and 3;
- 3) William J Marshall & Partners (“WJM”) and Kishan de Silva: Mr Kishan de Silva was the principal author of the 2016 WJM Letter, produced following a visual examination and a review of the test data obtained by others. WJM were instructed to express their views of the car park and on the appropriate remedial works, which they did, albeit in tentative terms as they had not seen all of the documentation they would have expected. In brief, they concluded:
 - i) that the condition of the wearing screed of levels 1 and 2 showed no evidence of spalling, that cracks were widespread and their width ranged between 5mm and 3.5mm; and that rust staining was found at only one location;
 - ii) that, while there was carbonation (a process by which acidic gases, such as atmospheric carbon dioxide, progressively reduce the alkalinity of the concrete from surface level down towards the reinforcement), this had not reached a stage which enhanced the risk of corrosion to the steel reinforcement; and

iii) in respect of the presence of chlorides (which can support corrosion of the steel reinforcement, once the chloride level at the reinforcement exceeds a threshold level), in light of the chloride levels in the concrete wearing slab (as disclosed in one of the Darley tests in 2014), WJM concluded that the risk of corrosion initialisation was high or extremely high in the wearing screed at levels 1 and 2, but negligible or low at level 3; and that in origin the chloride was likely to have been from ingress (rather than created at the time the concrete was cast). WJM noted that the diminution in the chloride levels as one ascended through the car park could be explained by vehicles shedding highway de-icing salts at lower levels of the car park and by the closure from time to time of level 3.

The pursuer's concession

[56] While the pursuer's case in respect of defect 3 had been predicated on showing there being a disconformity of the car park as built, when compared to the Specification or final design at the point of construction (and for which purpose, a number of plans and other documentation were examined to ascertain the final iteration of the design at the point of construction), at the stage of submissions the defender's senior counsel abandoned most of its case on defect 3. I therefore do not set out this evidence.

Comment on the Darley crack maps

[57] As noted above (at para [55(1)]), Darley undertook a survey of the cracking on levels 1 and 2 which it depicted its findings using thick lines in yellow and red on two plans ("the Darley crack maps"), produced as part of its report from 2016. The cracks shown on

the Darley crack map of level 2 were broadly on a horizontal, or east-west axis and predominantly coloured yellow. There were more cracks depicted on the level 1 crack map and the pattern of cracking was much more irregular. Again, these were predominantly coloured yellow. For his part, Prof Roberts relied on the Darley crack maps, as at the time of his site visit these levels of the car park were relatively full.

[58] Mr Clarkson relied on the Darley crack maps and reproduced them as his appendix 5 to his second report. (No other part of that Darley report was produced and no key was provided in Mr Clarkson's report or discernible on the Darley crack maps themselves.) Mr Clarkson states (in his second report, at paragraph 9.1.1) that he undertook a visual survey which concurred with the Darley crack maps.

[59] One of the pursuer's witnesses, Mr de Silva, who held professional qualifications but not led as an expert, commented that the Darley crack maps could be misleading, if glanced at quickly and without reference to any key, as the lines were crudely drawn and depicted with too thick a crayon or marker. In particular, none of the cracks at levels 1 or 2 would correspond to the width of the red or yellow lines as depicted on the crack, if taken at scale.

[60] Prof Robery undertook his own survey of each level of the car park and of the ramps, which he records in his second report. From that survey he concluded that the Darley crack maps were unreliable. By contrast, Prof Roberts had not checked the accuracy of the Darley crack maps and he could not gainsay Prof Robery's evidence that there were only two cracks with a width of greater than 1mm. From his own examination, Mr Davis also formed the view that the Darley crack maps exaggerated the number and width of the cracks, and were unreliable. Darley's widths were "overstated" because they measured the width at the surface, but that was affected by fretting (ie breakdown at the edges at surface level due to pressure) (Davis 4 at paragraph 3.18). Mr Davis measured the depths of some of the cracks

with a crack microscope and found that they were narrower at depth (Davis 2 at paragraph 3.8(d)). Prof Robery made comments to the same effect, that measurement of the surface width of the cracks, as Darley had done, was “deceptive”. He had found that most of the cracks he inspected were less than 0.5mm at the time of his first inspection (Robery 1, Table at 5.2, row 4).

[61] He noted, too, that Darley had recorded construction joints as cracks (see Davis 2 at paragraph 3.8(c)), but these were more properly understood as physical discontinuities deliberately introduced as part of the construction process (*ibid*, at paragraph 4.12). Further, the construction joints recorded by Darley as cracks did not appear to be as wide as recorded by Darley (*ibid* at paragraph 3.8(c)).

[62] Mr Davis also noted that, while Darley had commonly recorded these as more than 1.0 mm wide, he had been unable to confirm this. Those joints were visible but had not opened up unduly. Many of the cracks were in parking bays; were less than 0.5mm, and were difficult to see. Cracks of this size were within the normal range expected in reinforced concrete structures.

The parties' experts' reports

The pursuer's experts' reports

[63] As noted above, each party led two experts who, collectively, produced 11 reports.

[64] The pursuer's experts reports were as follows:

- 1) Report of Neil Clarkson, dated 11 February 2020 (“Clarkson 1”);
- 2) Supplementary Report of Neil Clarkson, dated 28 April 2020 (“Clarkson 2”);
- 3) Second Supplementary Report of Neil Clarkson, dated 14 April 2021 (“Clarkson 3”) (allowed late, but under deletion of Part V);

- 4) Report of Prof John Roberts, dated 9 June 2020 (“Roberts 1”); and
- 5) Supplementary Report of Prof John Roberts, dated 12 April 2021 (“Roberts 2”).

Shortly before the diet of proof set down in June 2020, the defender lodged two notes of objections. (That proof was discharged *inter alia* for receipt of a report for a then newly-instructed expert for the pursuer, Prof Roberts, and for receipt of a report from the defender’s second expert, Prof Robery.)

The defender’s experts’ reports

[65] The defender’s experts and their reports are as follows:

- 1) Expert Report of Matthew Davis, dated 27 February 2020 (“Davis 1”);
- 2) Supplementary Report of Matthew Davis, dated 28 April 2020 (“Davis 2”);
- 3) Third Report of Matthew Davis, dated 9 June 2020 (“Davis 3”);
- 4) Fourth Report of Matthew Davis, dated May 2021 (“Davis 4”);
- 5) Expert Report of Prof Peter Robery, dated 28 August 2020 (“Robery 1”); and
- 6) Supplementary Expert Report of Prof Peter Robery, dated 17 May 2021 (“Robery 2”).

Other technical standards or guidance

[66] Parties’ experts and the other professionals involved also referred to published guidance concerning the construction and maintenance of multi-storey car parks which are open to the elements. It suffices to note the following:

- 1) The Institution of Structural Engineers (“ISE”), Design recommendations for multi-storey and underground car parks (Fourth edition) March 2011

("the 2011 ISE Design Recommendations"). The third edition was in 2002

("the 2002 ISE Design Recommendations"); and

- 2) Institution of Civil Engineers ("ICE"), Recommendations for the inspection, maintenance and management of car park structures, 1st ed 2002 ("2002 ICE Recommendations").

Item (1) was referred to for passages about design as it affects cracking and crack width on concrete and the effect on concrete of exposure to chlorides. The 2002 ISE Design Recommendations, being the version in force at the time of the construction of the car park, was replaced by an edition in 2010. Reference was made to both, but, while the wording of the passages differed as between the 2002 and 2010 editions, the import was essentially the same. Item (2) was referred to by Prof Robery in support of the proposition that it was good practice for operators of car parks to prepare a "Life Care Plan" detailing the health, safety and maintenance requirements for a car park and containing a schedule for routine maintenance for the duration of its occupation. He saw no evidence that the pursuer had prepared such a plan for the car park. (See Robery 1 at paragraph 6.2.2 and Robery 2 at paragraph 5.2.3.)

The April 2021 Investigation at level 1

[67] At a relatively late stage in the litigation a site investigation was arranged at level 1 involving the pursuer's experts, Mr Clarkson and Prof Roberts, and one of the defender's experts, Prof Robery ("the April 2021 Investigation"). Mr Allan was also in attendance.

[68] The intrusive investigation on level 1 involved drilling down to remove cores at three locations (described as "L4", "L5" and "L6"). The principal purpose was to establish the integrity of the wearing screed and to access the Procor 3 membrane sandwiched

between that wearing course and the level 1 slab. It will be recalled that at this level, the Procor 3 membrane was fixed to the underside of a protective board. The upper surface of the board was black; the Procor 3 membrane is beige in colour. (The fact that HTA had identified the membrane as red in one of their earlier reports casts doubt on the findings in that report.) The Procor 3 membrane was exposed at only one of the locations, namely L4. This was only possible because the core found a joint in the protection board, which enabled this to be lifted in order to expose the Procor 3 membrane affixed to its underside.

[69] The summary comments of those in attendance and the photographs taken were produced as joint bundle no 193 (“the Note of the April 2021 Investigation”). The Note of the April 2021 Investigation was prepared in the form of a table, with each of those in attendance (Mr Clarkson, Prof Roberts, Prof Robery and Mr Allan) providing comments of what they each saw and concluded. Prof Robery made more extensive comments in Robery 2 of what he had found at that investigation and his own more comprehensive site visit undertaken the same day.

L4

[70] This was the one location where the Procor 3 membrane was exposed. There were no adverse comments about the thickness of the wearing slab or insulation layer.

Prof Robery noted that the reinforcing steel was deep within the core and showed no signs of corrosion. He also noted that the foam insulation was in “perfect” condition. All present noted that the hole created by removal of the core filled slowly with water over the course of an hour.

The condition of the protection board

[71] The parties differed as to their description of the protection board. The pursuer's experts, Mr Clarkson and Prof Roberts, both considered that the protection board was wet, distressed and friable. In Prof Robert's view, the board was no longer protecting the membrane. Mr Allan thought that the protection aboard appeared to be in good condition; was firm and stable, and broke apart only in the process of its removal. Prof Robery agreed that the protection board was wet and swollen. He did not find this surprising given the presence of water at the location and that the board was a fibre-based board impregnated with bitumen. In his view, however, the protection board only fell apart when pulled up by Mr Clarkson. He rejected Mr Clarkson's characterisation that it was "clearly distressed".

The condition of the Procor 3 membrane

[72] Mr Clarkson and Prof Roberts characterised the membrane as soft and pliable in places. Prof Roberts also identified a small 10mm² square hole in the membrane. Prof Robery surmised that, as the membrane adhered to the board, damage to the membrane may have occurred when Mr Clarkson pulled off the protection board. While he noted that a small area of the membrane on the north side of L4 was more pliable and a small piece of it had detached, in his view, this was caused by Mr Clarkson's tugging at the board in order to remove it and which caused the membrane to overstretch. In any event, in Prof Robery's view, the sole purpose of the board was to provide temporary protection to the Procor 3 membrane while the insulation layer was fitted on top of it and the wearing screed cast. In his view, once the insulation was in place, the protection board was redundant. (There was no challenge to this at the proof.)

The condition of the nearby drain

[73] Water was noted in the hole at L4. It was also noted that the adjacent drain was full of water on arrival but that a blockage in the lower part of the drain was easily cleared. (Prof Robery described Mr Clarkson removing the top grillage and flushing the drain with a hosepipe.) Once this was cleared the water in the hole drained. Mr Allan described the adjacent drainage as being “completely choked with debris and full of water”, but this cleared after Mr Clarkson’s intervention. Prof Robery thought it was an exaggeration to say that the vertical channels of the drain were “blocked” by concrete; at most these were partially blocked. In his view, any blockage could readily be remedied.

[74] Mr Clarkson noted that over the course of an hour the hole at L4 filled to a depth of 55mm but that there was no sign of it draining to the adjacent gully. From this he concluded that the sub-surface drainage was not functioning.

[75] Mr Clarkson stated that there was no evidence of the membrane lapping into the drain. Prof Robery was of the view that the correct way to detail this would be a compression ring running around the drain not lapping. It would not be possible to identify any discontinuity in the membrane without dismantling the drain itself, which was not attempted. There was no evidence of discontinuity, for the simple reason that the membrane was not visible at the drain during the investigation. Dirt and debris inside the drain prevented a more detailed examination.

L5 and L6

[76] The samples and findings at L5 and L6 were relatively uncontroversial. At L5 there was no criticism of the measured thickness of the wearing course of level 1 slab. The hole was dry and the cored samples were well compacted. The protection board was intact and

described as firm and stable. One of the cores had split, and Prof Robery added the observation that there was no evidence of corrosion to the reinforcing steel mesh. He and Mr Clarkson also noted an extra layer of polythene.

[77] At L6, there were no adverse comments about the thickness of the different layers; there was well compacted concrete in the cores, and no evidence of corrosion. However, there was evidence of long-standing water when the hole was opened up. Three layers of blue polythene were noted above the protection board. When cut though, it was clear that water had been trapped for a long time between the layers of polythene, as it was stagnant and smelly. Comments about the protection board were made, which were similar to those made in respect of L4.

The evidence at proof

[78] I have already noted the documentation produced for the proof. The parties produced witness statements for their witnesses to fact (although one of the pursuer's experts, Mr Clarkson, also produced three witness statements). These were adopted as their evidence in chief, followed by cross-examination. The experts spoke to their reports (which are noted above, at paras [64] and [65]).

[79] I record the evidence of the parties' respective witnesses to fact in the next sections. In relation to the evidence from the parties' experts, which comprised the majority of the evidence, it is not necessary to record the totality of this evidence, or their reports. Some of these were produced a considerable time ago, or were preliminary reports before the expert had an opportunity to examine the car park; and often these early reports were produced before the issues or parties' positions in these proceedings were crystallised. Furthermore, the scope of the dispute become more focused, and narrowed to some extent, as the

evidence emerged. Accordingly, when I come to consider parties' experts' evidence, I propose to consider this using the seven alleged defects (set out at para [41]) as the framework, and noting each expert's position on those specific matters.

The pursuer's witnesses to fact

[80] The pursuer led four witnesses to fact (including Mr Clarkson, for parts of his evidence) and who, collectively, produced ten witness statements. Mr de Silva spoke to the 2016 WJM Letter.

Graham Tidball

[81] At the outset of his evidence, Mr Tidball adopted his three witness statements. He joined the pursuer in 2007, and held several management roles culminating in his current position as director of commercial parking services from 2015. He spoke briefly to the remedial works, for which he had oversight on behalf of the pursuer. It was in that context that the pursuer instructed Neil Clarkson to monitor the remedial works. Mr Clarkson had been the pursuer's expert instructed for the earlier litigations. He stated that after he joined the pursuer there were issues with water ingress at levels 1 and 2. In his view, the problems at level 1 and 2 are due to poor workmanship, and are an extension of the issues at level 3. The sorts of defects affecting the car park were not ones he had experienced in any other newly-constructed off-street car park he has managed.

[82] In response to witness statements from the defender, in particular that from John Heller (to the effect that so far as he was aware the pursuer had never asserted a material breach), Mr Tidball denied that the pursuer had never made known their discontent with the state of the car park. The pursuer had made clear on numerous

occasions that the car park the defender had provided was not what the pursuer had expected or agreed. The pursuer had not sought to terminate the lease before now, as it thought the defender would remedy everything and the pursuer could then move forward without a more onerous repairing and maintenance obligation under the lease than had been agreed to. He described being “shocked” on receipt of the 2018 Repair Notice, which prompted the pursuer to seek advice as to its options. Having been through two lengthy and expensive court actions and given the huge amount of management time these consumed, for the pursuer “enough was enough”. He reiterated his position that he had never seen a car park with these issues; the defects were substantial, expensive and disruptive. The pursuer would never have taken on the car park with these defects or assumed the attendant repairing obligations under the lease. In relation to the pursuer’s desire to terminate the lease, the pursuer had always reserved its position in any question with the defender. He noted the receipt of the 2020 Repair Notice. In his view, the pursuer never got the car park it bargained for and it now finds itself constantly facing demands from the defender, as landlord, to carry out significant and expensive repairs. He accepted that, notwithstanding the Repair Notices, the pursuer had not incurred any costs as it did not believe it was liable.

Gary Anderson

[83] At the outset of his evidence, Mr Anderson also adopted his three witness statements. Mr Anderson, who has worked for the pursuer since May 2016, is its senior area manager for Scotland. In that capacity he oversees the day-to-day operations of a number of car parks situated in central Scotland, including the one at the Centre. He was aware of the remedial works undertaken at level 3, but stated that at no point during any meetings he attended did

anyone from the pursuer sign off on completion of the remedial works. Notwithstanding the remedial works, in his view issues still existed on level 3 in the form of poor drainage, “large pools of water across level 3” and the pursuer was “still seeing leaks that go through level 3 into the lower levels of the car park”.

[84] In relation to water ingress at lower levels, most of his evidence concerned the car park prior to the remedial works. (For example, he stated that “flooding” on level 3 was causing “substantial” problems with water ingress “pouring down through the lower levels of the car park” (paragraph 10 of his first witness statement.)) To the extent he spoke to any post-remedial water ingress, it appeared to concern water ingress into the pursuer’s car park office via an incomplete joint, and which resulted in wet floors.

[85] In relation to maintenance, he asserted that none of the existing problems was as a consequence of any want of maintenance by the pursuer. He, or another employee, carried out site inspections of the pursuer’s car parks on a fortnightly basis and, further, on-site staff had a weekly cleaning system to sweep out the drains. At least, this was the position since the completion of the remedial works. Prior to that, cleaning had been as and when required, although he conceded in cross that he had no direct knowledge of those matters. He also explained that the pursuer had a monthly cleaning contract with a third party, ABM. Mr Anderson maintained that the pursuer had expended a significant amount of money in upkeep for the car park, mostly on level 3. Mr Anderson did acknowledge that there was a big problem with seagulls nesting on level 3 and that throughout the nesting season (described as between April/May to August/September), it was “near impossible to keep level 3 ...completely clear”. He spoke to having instructed ABM to do a deep clean with a jet wash of level 3 in October 2019 at a cost of c £5,800. In cross, he accepted that he had no knowledge of the cleaning regime in the period from 2008 to 2016. He also accepted that

when he had started with the pursuer, it had kept three staff on site at the car park but that had now reduced to one person. Under reference to certain photographs showing significant seagull detritus on level 3, a blocked drain or accumulated vegetation, he accepted that what they showed was not an acceptable level of cleanliness but he explained that that was why, latterly, the pursuer had brought in ABM.

[86] In respect of ponding, as illustrated in the photo below, he accepted that the standing water in no way affected the operation of the car park.



He was shown another photo, taken during a rainy day, in which level 3 was wet. He agreed that what it depicted was no different from the top level of any other car park after a rain shower.

[87] He was unaware of ever being advised that increased maintenance would be required to level 3 as a consequence of the change from channel drainage to the valley gully. The ponding issue he had described in his first statement was “in various places all over level 3” and not just beside the drains or gully. He did not consider the ponding to be

as a result of blocked drains and he described ponding remaining, even if there had not been rain for days.

[88] In relation to de-icing, he stated that no de-icing was carried out at levels 1 and 2, as these were covered, nor on the ramps as any water would flow down. Grit was used on level 3, as that was exposed to the elements. After receipt of witness statements from two former employees of the pursuer, Anthony Fitzwater and Noel McDougall, who stated that they regularly used salt at the entrance to the car park and on the ramps between each level and on levels 1 and 2, Mr Anderson returned to the issue of de-icing materials in his third statement. He was not aware of the practice these witnesses spoke to and had never instructed it since his time with the pursuer. If salt had been spread during his tenure, this must have been from leftover salt. The last delivery of salt to the car park he noted from the pursuer's records was in September 2013, which was delivered to a different car park, and uplifted by a staff member in November 2016 for use at the car park. The amount of salt spread on level 3 was "minimal". In cross-examination he was pressed that regular salting as described by the two former employees was standard procedure. Mr Anderson was unable to gainsay their evidence. He accepted that salting continued on level 3 up until December 2020, but maintained it was not in the quantity they spoke to.

Kishan de Silva

[89] Mr de Silva, a partner with WJM, is a consulting engineer with 30 years' experience. He had been instructed as an expert in relation to the prior litigations. He was not instructed in that capacity in the present litigation. He was led for the limited purpose of speaking to the 2016 WJM Letter, in which WJM had provided a provisional view on the state of concrete slabs (ie the wearing screed) and on the then-proposed remedial works.

From its terms it is clear that it was a summary report expressing preliminary views on the basis of limited design documentation. Mr de Silva had not visited the car park since 2015 and could not comment on its condition after that time.

[90] The following passages of the 2016 WJM Letter were put to him:

- 1) In relation to the slab (or wearing screed) condition at levels 1 and 2, the report noted the following (at paragraph 3.3):

“[...]

(b) Cracks in the Concrete Topping were widespread, typically in a rectilinear pattern, with widths at the surface reported in the range of 0.25mm to 3.5mm. The arrises (edges) of the cracks were fretted from the wheels of vehicles in many locations and we suspect that the cracks at depth in the slabs may be narrower.

(c) There was no evidence of spalling of the surface of the Concrete Topping although there were some limited, localised, areas of delamination.

(d) Rust staining at the surface was reported at 1No location, and in addition reinforcement was visible at the surface of the concrete on 1No ramp.

(e) There were some limited areas of water ponding on the surface of the slabs at a number of locations. At Level 2 the water appeared to arise from leaks through the movement joints and from the suspended drainage system serving the Level 3 slab above. At Level 1 the water also appeared to arise from leaks at the movement joints and from the suspended drainage system, but also from a car washing operation at that level. During periods of rainfall we would also expect vehicle to transfer water onto the slabs whilst there may be windblown rainwater entering from the open sides of the Car Park.”

- 2) As regards the compressive strength (noted at paragraph 3.12),

“3.12 The compressive strength of the concrete is slightly lower than specified but we would not expect this alone to significantly affect the long-term performance of the Car Park. The analysis of the concrete did not identify any deleterious process that would affect the performance of the concrete, but it did identify that the concrete had a relatively high water/binder ratio which may have led to undue drying shrinkage and the cracking that has been identified in the Concrete Topping [ie the waring screed]”.

- 3) In respect of the steelwork it was noted (at paragraph 3.43):

“Steelwork

3.43 Our instructions are to summarise the results of the recent investigations of the concrete slabs of the Car Park and to prepare outline remedial works proposals for the slabs (see the second paragraph on Page 1 above). However, during our site visits we viewed the steelwork at Levels 1 and 2 of the Car Park and for completeness summarise our key findings as follows:-

- (a) We saw no evidence of significant impact damage,
- (b) We saw no widespread and serious corrosion of the steelwork. In particular we saw no prising of connections due to corrosion of the steelwork.
- (c) There was water staining of the steelwork in a significant number of areas due to water penetration primarily from movement joints, drainage gullies, linear drains and suspended drainage.
- (d) The steelwork along the perimeter of the Car Park was also water stained, probably due to wind-blown rain through the semi-open elevations of the Car Park (see Plate 5 in Annexe 12).
- (e) Where the steelwork was water stained the coatings were peeling away in places (see Plate 8 in Annexe 12).
- (f) Some areas of the steelwork was affected by corrosion albeit we judge that this was superficial at this stage.
- (g) In areas the intumescent coating is damaged due to water leakage and hence the fire resistance of the steelwork will have probably been reduced in significant albeit relatively local areas.”

- 4) The report summarised its findings as follows (in paragraphs 4.3 and 4.4),

“Remedial works

4.3 We summarise the key problems identified by the investigations that affect the slabs and the other elements of superstructure of the Car Park as follows

- (a) Modest corrosion of the reinforcement to the Concrete Topping at Levels 1, 2 and 3 has been initiated at certain locations.
- (b) Water and chlorides are present at the level of the reinforcement. At Levels 1 and 2 and the ramps the chloride contents are classified as having a high or extremely high risk of initiating corrosion and at Level 3 the chloride contents are classified as having negligible or low risk of initiating corrosion, all on the basis of guidance given in BRE 444-2.
- (c) The Concrete Topping at Levels 1, 2 and 3 contain widespread cracks that could allow water and further chlorides to penetrate down to the reinforcement. The surface coating at Level 3 is missing over large areas.
- (d) The outer concrete to the planks have higher chloride contents than we would have expected, although this is based on only 4No measurements.
- (e) The coatings for corrosion and fire protection have peeled from the steelwork in places, and some areas of the steelwork have been affected by limited corrosion, due to water ingress on to the steelwork: the fire resistance of the steelwork has also been compromised in areas.

4.4 The Car Park is some nine years old, and if no appropriate remedial works are implemented there is a significant risk of reinforcement corrosion and damage to the Car Park structure in the foreseeable future. The objective of the current remedial proposals is to extend the service life of the Car Park and to provide a method to monitor the performance of the Concrete Topping to give advance warning so that additional measures can be taken in the future if significant corrosion initiation is identified.”

[91] In relation to cracking (referred to at paragraph 3.3(b)), the comments in the 2016 WJM Letter on the pattern of cracks were based on the Darley Report (of which the crack maps formed part). In respect of the Darley crack maps, while Mr de Silva had no reason to believe Darley were anything but reliable, he regarded the markings on the Darley crack maps to be crude and apt to mislead, in the absence of the key specifying the crack width the different colours were meant to depict. Mr de Silva confirmed that rectilinear cracking above pre-cast planks was not surprising or a cause of concern. He confirmed the recommendation to repair cracks of 1mm or more, and that additional work such as bridging would be required for cracks over movement joints.

[92] He was asked to relate two photographs (at plates 7 and 8) appended to the 2016 WJM Letter to the movement joint referred to in sub-paragraph (e), but he was unable to recall their location. This is not surprising, given the passage of more than 6 years since his single site visit. Plate 8 showed the flaking paint to the steelwork caused by water leaking through an expansion joint. The flaking appeared to be superficial.

[93] As regards the peeling paint work on the steelwork underpinning the levels, in his view the cause for this was water leakage from above. The paint was intumescent paint, which provides a degree of fire resistance to the steelwork. He estimated the total area affected to be about 5% of the steelwork. This water damage was localised, not widespread. Where it had occurred, it was significant because of the loss of the fire-retardant effect of the intumescent paint.

[94] In cross-examination Mr de Silva confirmed that he was not an expert instructed in this case; that the 2016 WJM Letter was expressing only a preliminary view; that he had not returned to the car park since March 2015; that he had assumed a design-life of 50 years for the car park when making his various assessments; and that the Darley crack maps could give the wrong impression as to the width of the cracks unless read together with its key. He was unable to comment on the current state of the car park or on any remedial works.

[95] He explained that “spalling” was the disruption to the concrete wearing screed if a reinforcing element (such as the mesh), expanded as a consequence of corrosion.

[96] He explained that Darley had exposed the mesh in several areas but found no severe cracking and no serious ongoing reinforcement corrosion. In short, there was no widespread serious corrosion of the reinforcing steel mesh at either level 1 or 2. The absence of spalling was consistent with this. However, he did note that the chloride levels at the depth of the reinforcing mesh were high, and which carried a risk of corrosion in the future.

[97] He also confirmed that the slightly lower compressive strength of the concrete (which was not structural) would not itself significantly affect the long-term performance of the car park. Furthermore, there was no need to replace the steelwork underpinning levels 2 and 3 of the car park. The flaking paint on the steelwork was superficial and if this were cleaned up and repaired, the steelwork would serve its intended purpose.

Mr Clarkson

[98] While Mr Clarkson was led as an expert to speak to his three reports, he also produced three witness statements. These detail his involvement in monitoring the remedial works on behalf of the pursuer, how those progressed and his role in the technical discussion (including the adoption of gulley drainage at level 3). Little, if any, of this is

relevant to the defects alleged. To the extent that he expresses a view on other matters, this is better dealt with as part of his opinion evidence, which I address below.

The defender's witnesses to fact

John Heller

[99] John Heller is the Chief Executive Officer of London Associated Properties (“LAP”), a property investment company and an investor in *inter alia* the Centre. Among a portfolio of loans LAP acquired in 2013 was that concerning the Centre. LAP were shareholders of the defenders for the period 2013 to 2019. Mr Heller had no direct knowledge of the matters relevant to the defects. To the extent that the defender undertook the remedial works, at a cost of £1,262, 025 (the figure is from his second witness statement; the lower figure in his first witness statement was the contract costs), this was indicative of its intention to insist on the terms of the lease. If the pursuer had indicated that it wanted to terminate the lease, this sum would not have been spent. On this point, he was pressed in cross-examination that the defects identified repairs would have been required, regardless of whether the pursuer terminated the lease. Mr Heller resisted answering the question directly, stating that the defender may or may not have sought another remedy, but that this was not considered as it was believed that the pursuer was liable. He ultimately accepted that the remedial works to level 3 would in any event have been required in order to secure a new tenant to replace the pursuer.

[100] He also explained that the defender paid compensation to the pursuer for the loss of the use of car parking spaces during the remedial works, in accordance with the formula in the lease. He spoke in general terms to the decline in visitor numbers to shopping centres and consequent decline in revenue for associated car parks. In order to counter an

impression given by one of Mr Tidball's statements, Mr Heller confirmed that he was not aware of the pursuer carrying out any material repairs to the car park since 2008.

[101] On the question of the cathodic protection required in the 2018 Repair Notice, put to him in cross, he relied on the experts to identify what was required. He accepted the proposition that there was going to be "a big bill" sooner or later because of the present situation and that he did not want the defender to be left to pay for it.

Stephen Allan

[102] Stephen Allan, a chartered surveyor, is a senior director with CBRE Limited. His role includes project management. Much of his witness statements dealt with CBRE's role in the remedial works and responded to Mr Clarkson's first statement on those matters. So far as relevant to the issues in this case, Mr Allan rejected Mr Clarkson's criticism of the defender for not removing the Procor 3 membrane from the insulated area of level 3. If the defender had stripped out the precast concrete and Procor 3 membrane above the insulated area, as Mr Clarkson suggested, Debenhams would have had to close for 3 months. In his view, that was undesirable, given its impact on Debenhams, nor was this necessary. The water found in this level was pumped out, the Procor 3 membrane was repaired and then the Decseal product applied to the surface of the wearing screed. This superseded the need to remove the underlying Procor 3 membrane.

[103] He explained the decision to replace the channel drain on level 3 with the valley gully, as suggested by Mr Clarkson. He confirmed the terms of the minutes that Mr Clarkson was advised of the enhanced level of maintenance for such a system (a matter Mr Clarkson said in his evidence he could not recall), and also that there may be increased

ponding because of the reduced capacity of the gulley system to hold rainwater. (This was not challenged in cross.)

[104] In relation to the SABA joint (part of alleged defect 1), Mr Allan confirmed that while the SABA joint had not been part of the remedial works, this was programmed to be done, but its installation was delayed by bad weather (on the several planned points of installation), and by the sale of the defender (in 2019). It had been planned for spring 2020.

[105] In relation to the report of a water leak into the pursuer's office on level 1 in October 2019 via the expansion joint, he had inspected the levels above and ascertained that a plant room on level 3 (which was above the pursuer's office) had flooded as a result of a nearby drain being blocked by seagull waste. After this drain was cleared, the water was pumped from the roof. Following the unblocking of the drain, which he regarded as a maintenance issue for the pursuer, there were no further leaks reported into the pursuer's office.

[106] In relation to the leaks from level 1 into a retail unit, he was not aware of any repairs undertaken by the pursuer. He rejected Mr Clarkson's contention that this was caused by water coming from level 3. This was because the leaks from the insulated area of level 3 above Debenhams (which is the opposite corner from the DW Sports unit) had ceased after the remedial works were completed. He also explained that Mr Clarkson attended the practical completion meeting for the remedial works in October 2018.

[107] He responded to some of the pursuer's alleged defects, as follows:

- 1) defect 1: He did not accept Mr Clarkson's assertion that a waterproof membrane had not been provided over the whole of level 3. Following the remedial works Decseal had been applied to all areas of level 3. Nor did he accept Mr Clarkson's interpretation of the Specification, that two levels of waterproofing were required

for the insulated area. In any event, following the remedial works there were two layers: the repaired Procor 3 and the new Decseal surface application. As for the structural joint, this work had been instructed.

- 2) defect 2: Mr Allan was surprised that Mr Clarkson criticised the falls or ponding on level 3. A new and superior drainage system, as suggested by Mr Clarkson, had been installed as part of the remedial works. Mr Clarkson had been made aware that this might result in some ponding. The design for the new drainage system included improvement to the falls where this was possible. Any residual ponding was not significant and did not affect the operation or maintenance of level 3.
- 3) defect 3: He also rejected Mr Clarkson's reading of the Specification as requiring a waterproof coating on the level 3 ramp.
- 4) defect 6: While he understood from the Centre manager, Mr Neil Mackie, that there had been some leaks from level 1 into one retail unit, he understood that these were minor and that the pursuer had never been asked to fix this. He rejected Mr Clarkson's view that the source of this water was from level 3. In his view, water reached level 1 either from cars coming off the streets in wet conditions or from the car wash operated in that part of level 1 (and which had ceased operations in 2019).
- 5) defect 7: In his view, this was an isolated event resulting from a blocked drain that had been cleared, and this had not recurred.

Neil Mackie

[108] Neil Mackie is the manager of the Centre, a position he had held for 21 years. His evidence, which was not subject to cross-examination, may be summarised as follows:

- 1) Leaks into Debenhams: Leaks into Debenhams had occurred from the beginning, when the car park was opened in August 2008. The pursuer was never asked to undertake or pay for the associated remedial works at level 3. He observed that, while Neil Clarkson had recommended removal of the entire slab construction above Debenhams, Mr Mackie described this as “100% impractical”, not least because of the impact on the Centre’s anchor tenant (Debenhams) who was known to be in financial difficulty. Volkerlaser undertook more limited work of patch repairing the Procor 3 membrane over the insulated area, replacement of the insulation layer, resurfacing the concrete above that and the application of a new surface waterproof membrane. Since those works were done, there have been no further leaks.
- 2) Ponding on level 3: Mr Mackie spoke to some continuing ponding on level 3, even after the remedial works, and silt accumulating in some areas. In the main, he attributed this to poor maintenance by the pursuer and he explained that he had had to instruct the Centre’s own maintenance team from time to time.
- 3) Leaks below level 1: In his view, the extent of leaks below level 1 were minimal and confined to the DW Sports unit. This was not a torrential leak, but periodic drip leaks. This was below the area where a car wash had been permitted to operate on level 1 for around 10 years. This brought an increased level of water into level 1 along with additional salt and organic matter washed from cars. The leaks ceased when the car wash ceased operations.

Noel McDougall and Anthony Fitzwater

[109] The statements of these two individuals were agreed as their evidence in chief. They were not called and therefore not cross-examined. Their evidence is relevant to the second ancillary issue (see paras [49] and [50], above), and which I summarised in those paragraphs.

[110] Mr McDougall was car park supervisor from 2008 to late 2017. He confirmed that salt was used to de-ice the car park in the winter. This was applied to the top, bottom and length of the ramps. The salt came on pallets containing 50 bags of 25kg each. They put salt bags at the tops and bottoms of each ramp, to make it easier to spread when required. After an ice-spreading machine broke, this was done manually with shovels. If more salt was needed, he would contact Gary Allan who would arrange for the delivery of one or two pallets (ie between 50 and 100 bags). They could get through between one and two pallets of salt over a winter. He confirmed that the kind of salt was the same as that depicted in one of the photographs appended to Davis 2.

[111] In relation to the cleaning regime, he explained that after the cleaning machine broke down (in about 2010), all cleaning had to be done by hand. This consisted of Mr McDougall and the attendant on shift going around at night picking up litter using a hand picker. It was not possible to wash down the surfaces of the level 1 and 2 decks, as this was too big a job to do manually. He did not regard it as within his responsibilities to clean up the seagull guano on level 3 due to the health and safety risk. He described Gary Anderson as being reluctant to spend money toward the upkeep of the car park.

[112] Mr Fitzwater worked as a car park attendant from 2015 to 2018, immediately after Mr McDougall's departure. He corroborated the essentials of Mr McDougall's evidence. The cleaning regime was undertaken manually; level 3 was closed during the breeding

season and its surface was only power-washed once in 2017. Salting was standard procedure and when he began work there was a pallet of bags of salt (which he estimated as being 30 to 40 bags of 20kg each). In his view, it was undoubtedly the case that Gary Anderson was aware of the regular use of salt, not least because he instructed Mr Fitzwater to collect more from the pursuer's car park in Livingston when they ran out at the car park.

The opinion evidence

Preliminary comments

[113] As noted above, the parties' four experts produced multiple reports over an extended time-frame. In the case of some of the four experts, their first reports were simply desk-top studies before they had visited the site. For that reason and because parties' positions have evolved over the time, I do not propose to rehearse these. I propose to record each expert's qualifications, the circumstances leading to their instructions (where relevant), and then, as I address each of the seven alleged defects in turn, to set out their final or settled opinions on each of those defects.

Mr Clarkson

Qualifications

[114] Mr Clarkson, a director of NRS consult ltd, is a chartered engineer, a fellow of the Institute of Civil Engineers and he holds a BSc (hons) and MSc. His *curriculum vitae* (appended to Clarkson 1) records that he has worked on many major developments in Scotland and throughout the UK, Hong Kong and Australia; that he has a wide range of experience within the industry including the design of large retail, commercial, industrial,

conference, education and infrastructure developments; and that he has experience of many types of contract procurement and construction methods. Mr Clarkson has also lectured in structural design to final year students at Edinburgh University where he was made an Honorary Fellow in 2001.

Mr Clarkson's prior involvement

[115] Mr Clarkson has been involved in the parties' dispute about the car park since 2016. Initially he was instructed by the pursuer as an adviser on the problems affecting the car park and as its expert for the earlier litigations. After those settled, he was retained to protect its interests in respect of the proposed remedial works. He produced a total of four reports. (His first report was omitted from the joint and core bundles.) Much of what is covered in his earlier reports concerns defects that have now been repaired, or which are outwith the issues in this case.

Objection to Mr Clarkson

[116] Shortly before the earlier diet of proof set down for June 2020, the defender lodged a note of objections, dated 9 June 2020 ("the Clarkson Objection") challenging the admissibility of the evidence of the pursuer's expert witness, Mr Clarkson, on the grounds of a want of impartiality and independence. This led the pursuer to seek to instruct a second expert, Prof Roberts. While receipt of his report was opposed (because it imperilled the then-imminent proof diet), that opposition was dropped on the basis that the parties agreed that the defender would be permitted to instruct a further expert and the proof discharged. It was also the view of the defender's Senior Counsel, Mr Sandison QC (as he then was), that a proof of this complexity could not be conducted remotely. (The defender's second note of

objections, of May 2021, was superseded by court orders.) The defender maintained its objection to Mr Clarkson in submissions. I set this out below (at para [222]).

Prof Roberts

[117] Prof Roberts, BSc (Eng), PhD, CEng, FStructE, FICE, FIMS, FCMI, MICT, Emeritus Professor of Civil Engineering at Kingston University, has specialised in concrete and masonry design and construction throughout his career. Of most relevance to the issues in this case are his memberships, as a fellow of the Institution of Structural Engineers, of the Institution of Civil Engineers, of the Institute of Concrete Technology, and of the International Masonry Society. He is presented as an expert in the specification, design and construction of concrete and masonry. In his parole evidence he confirmed that his principal area of expertise was masonry.

[118] Given the circumstances of his first instructions, noted above, he was only able to provide a desk-top study just over two weeks after he was instructed on the basis of the documentation then available. From its terms, it is clear that he was heavily reliant on the reports and views of Mr Clarkson. Indeed, prior to his own investigations (recorded in Roberts 2), Prof Roberts could do no more (in Roberts 1) than record Mr Clarkson's findings, as he was in no position separately to check or interrogate them. He produced Roberts 2 after his site visit in December 2020, and in which he also responded to Davis 2 and Robery 1. In both of his reports, Prof Roberts relies substantially on Mr Clarkson's reports. Even in Roberts 2, he defers to Mr Clarkson's close involvement (eg at paragraph 5.1).

Mr Davis

[119] Mr Davis has been a partner in WJM since 1989. He has a BSc (Hons) in Civil Engineering from Manchester University and an MSc in Construction Law and Arbitration from King's College London. He is a Fellow of the Institution of Civil Engineers and a Member of the Institution of Structural Engineers. In evidence, he explained that he has been investigating the deterioration of concrete structures since 1985, including car parks in particular since 1993. His first report (Davis 1) was a desk-top study instructed to respond to Clarkson 1. In Davis 2 he reports on his findings, following his site visit and meeting with Mr Clarkson in March 2020. Reference was made at the proof to some of the 88 photographs appended to Davis 2. Davis 3 responded to Clarkson 2. Davis 4 replied to Clarkson 3 and Roberts 2.

Prof Robery

[120] Prof Robery is the Royal Academy of Engineering visiting professor in Forensic Engineering at the School of Engineering in Birmingham. He is also a Chartered Civil Engineer, and a Fellow of the Royal Academy of Engineering, of the Institution of Civil Engineers, of the Concrete Society and of the Institute of Concrete Technology. He was appointed President of The Concrete Society for two 1-year terms (2006/7 and 2007/8) and served on its Technical Executive Committee that is responsible for the technical standards and consistency of the Society's Technical Reports and other publications.

[121] He has specialised in the field of concrete construction and materials technology for over 40 years, with particular expertise in the deterioration of structures including car parks, bridges and maritime structures. He has a particular specialisation in concrete car parks and the assessment of their condition and residual life, and he is very familiar with the normal

methods of specification, testing and interpretation of concrete test results. He also specialises in the performance testing of concrete repair systems, including membrane and coatings. In relation to specialist bodies concerned with the standards for the concrete industry, he sits on the European Committee for Standardisation (“CEN”) responsible for developing BS EN 15042. The professional association which is particularly relevant to the issues in this case are his successive appointments by the ISE to serve on its Task Group responsible for the 2002 and 2011 ICE Design Recommendations, as well as his appointment by the Institution of Civil Engineers (“ICE”) to serve on its steering committee for the Report “Recommendations for the inspection, maintenance and management of car park structures” 1st edition (2002) and 2nd edition (2018).

[122] After his site visit when attending the April 2021 Investigation, he produced Robery 2. Prof Robery is the only expert who recorded in detail his thorough technical examination of the car park, and who provided the most comprehensive photographic record (comprising more than 120 photographs with explanatory narrative as one of the appendices to Robery 2), to evidence what he observed. Prof Robery is also the only expert who measured the cracking at the different levels and provided the measurements and locations of those cracks. (The others relied on the Darley crack maps, with some modest cross-checking.)

The seven defects alleged by the pursuer

Consensus which emerged among the experts at proof

[123] The seven alleged defects (noted at para [41], above) were agreed by the parties at the outset of the proof. As noted above, there has been a very large volume of documentation produced, much of it now historic, and a considerable number of technical

and expert reports. (Indeed no more than two or three documents in the Joint Bundle were referred to in the parole evidence elicited at proof.) However, as the evidence emerged at proof, the dispute between the parties narrowed further.

[124] As I note more fully below, the pursuer's principal expert, Mr Clarkson, ultimately accepted that the effect of certain remedial works either resolved the particular problem they sought to address, or they enabled reasonable use of the car park, even if the car park as remediated did not precisely conform to the original specification (or Mr Clarkson's reading of it (defect 1)). As will also be seen, the pursuer's senior counsel abandoned its case in respect of most of defect 3. In respect of other defects, such as ponding on level 3 or corrosion to stations under levels 1 and 2, (being defects 2 and 4 respectively), or the completion of structural or expansion joints (defect 7 and part of defect 1), the pursuer's experts ultimately accepted that these were all minor matters, or involved relatively modest further remediation. By the conclusion of their evidence, the views of the experts coalesced, at least to the extent that they each accepted that none of the defects alleged precluded the reasonable use of the car park. As the evidence developed, alleged defects 5 and 6 emerged as being potentially more serious (if established) and potentially involving considerable expenditure. Further, in the course of parties' submissions, it became clear that the pursuer regarded Mr Clarkson as its principal expert on whom it placed most reliance, and the defender placed most reliance on Prof Robery. For these reasons, I propose to record only the experts' respective final positions. Further, where Prof Roberts' views were the same as Mr Clarkson's, and where Mr Davis' views were the same as Prof Robery's, there would be little utility in also recording their views.

Defect 1(a): the level 3 waterproof membrane issue

Consensus that the Decseal system applied has resolved the leaks from level 3

[125] There are several strands to this allegation: that the Specification required two levels of waterproofing across level 3; that the Procor 3 membrane sandwiched between the level 3 slab and the concrete wearing screed of the insulated area had not been removed as part of the remedial works; and it remained defective. For the first strand, the disconformity with the Specification, the pursuer relies on Mr Clarkson's reading of the Specification.

[126] However, notwithstanding opinions expressed to the contrary in their reports, Mr Clarkson and Prof Roberts both accepted in their parole evidence that the Decseal system, applied as part of the remedial works to the whole surface of level 3, appeared to be performing adequately and that no leaks had been reported since those remedial works were completed.

Mr Clarkson's and Prof Roberts' evidence

[127] Perhaps reflecting his involvement in the earlier litigations, in which he was an adviser for the pursuer, Mr Clarkson dwelt in his reports on the historic issues of the deficiencies in the Procor 3 membrane at level 3, and the resultant water leaks from level 3 into the Debenhams' unit. Mr Clarkson's position is that the Procor 3 membrane on level 3 over the insulated area is defective. He infers that it must necessarily be so, because it had permitted water ingress into the Debenhams' unit immediately below level 3, notwithstanding that it is a water-impermeable material designed to prevent water ingress. However, that part of paragraph 3.9 of the Specification relevant to level 3 provided:

"Car park level 3 - membrane applied as part of composite floor over the area of the anchor store back of house areas [ie Debenhams]. A surface applied proprietary

waterproofing finish is applied **over the balance of the area at this level.**"
(Emphasis added.)

This was put to Mr Clarkson, who ultimately accepted that the requirement for two forms of waterproofing applied only to the insulated area. Mr Clarkson nonetheless remained critical of the original architects (Keppie) for not specifying a second layer of water proofing, and he believed that Keppie did not understand the engineering requirements. However, this criticism is not advanced by the pursuer in this case.

[128] Mr Clarkson was also critical because Decseal was not the proprietary product noted in the Specification; only part of the Decseal "system" had been applied and he doubted its long-term efficacy. The technical sheets for Decseal were put to him. This was a non-slip epoxy resin. In his view, the application of a top layer of Decseal onto the wearing screed of the ramp area was insufficient. That was only a waterproofing finish. There was no mention in that data sheet of having any waterproofing capacity. It was part of, but did not comprise the totality of, the whole Decseal waterproofing system. The whole Decseal system had not been installed as part of the remedial works.

[129] No other expert supported Mr Clarkson's contention that the Procor 3 membrane over the insulated area required to be dug up and replaced. In cross-examination, Mr Clarkson could not gainsay that there had been no report of any leaks after the installation of the Decseal system at level 3. Mr Clarkson still maintained that the Procor 3 membrane is defective (and was not lapped at the drains) but he ultimately, if reluctantly, accepted that the alternative method of waterproofing in the form of Decseal system was adequate. In his view, it was not wholly equivalent because it had a shorter warranty period, though the respective warranty periods were not specified. (This is of no moment as the pursuer did not seek to make a case that the defender was obliged to supply or transfer

any warranty in respect of these works.) Mr Clarkson's ultimate position was that the Decseal system applied to the top surface of the deck at level 3 provided an equivalent level of waterproofing as the original Procor 3 membrane and that it was adequate at present.

[130] Prof Roberts shared Mr Clarkson's view that the Procor 3 membrane had been incorrectly installed at the construction stage and that, for so long as it remained *in situ*, this was a defect or non-conformity with the Specification. However, Prof Roberts also accepted that the replacement Decseal system was functioning adequately and that there were no reported leaks from level 3.

The defender's evidence: Mr Davis and Prof Robery

[131] Prof Robery noted that the Centre manager, Mr Mackie reported that there are no issues of leakage reported by Debenhams (the occupier of the retail unit below the insulated area). In his view, given the combination of a fully-reinforced Decseal waterproofing material applied over the entire area of the level 3 deck, the new movement joint system, and the new SABA joint at the boundary with this area (which is the subject of defect 7), he did not expect there to be any leakage issues. In Mr Davis' view, waterproofing materials may not be strictly in accordance with the Specification (Davis 2 at paragraph 10.15). He also acknowledged that the Procor 3 membrane over the insulated area may contain some minor defects (*ibid* at paragraph 10.11 (a)). However, the new Decseal system was fully functioning. It provided an equivalent level of waterproofing to the original Procor 3, a proposition Mr Clarkson ultimately accepted. Both Mr Davis and Prof Robery explained that, while Decseal was not marketed as a waterproofing material, it had the same chemical composition as other waterproofing materials. In Prof Robery's view, the Decseal component applied to the surface of the level 3 deck effectively superseded the embedded

Procor 3 membrane. In relation to Mr Clarkson's initial position about the requirement for two waterproof membranes, Mr Davis' position was that "there is nothing that I can see in the AofL that called for two functioning membranes to be provided over any part of Level 3".

Conclusion on defect 1(a)

[132] I accept the defender's submission that there was no requirement in the Specification for two membranes to be installed over the whole area of level 3 of the car park. In my view, properly construed, paragraph 3.9 of the Specification (quoted at para [11], above) only required that a membrane was to be applied as part of the flooring over the "anchor store back of house areas" - the area corresponding with the insulated area. Mr Clarkson's assertion that there was such a requirement is based on a misreading of clause 3.9, a position Mr Clarkson accepted in his parole evidence. In respect of the "balance" of the area of level 3, a surface-applied waterproofing finish was all that required to be installed. This has now been achieved. It may be that the Decseal product was not as specified in the Specification, but there was no evidence to indicate that it would result in any lesser protection or performance.

[133] Part of the pursuer's case is that the Procor 3 membrane over the insulated area is defective (essentially, because of the leaks in the past) and requires to be removed.

However, this fails to take into account the remedial works, which included repair of parts of the Procor 3 membrane over the insulated area as well as the Decseal application. No leaks have been reported since then. To the extent any minor defect remained, it was not causative of any issue in terms of maintenance or use of the car park.

[134] Nor do I accept that there is any requirement that the Procor 3 membrane be removed from the insulated area or that the failure to do so is a relevant breach of the Agreement. Four factors inform this view. First, all of the experts ultimately accepted that the Procor 3 membrane originally installed was now redundant by reason of the remedial works. Secondly, all of the experts accepted that there had been no leaks reported after those works were completed. Thirdly, there was no evidence that leaving the Procor 3 membrane *in situ* in the insulated area produced a materially less functional car park, or one that is likely to require significant repairs or maintenance for the duration of the pursuer's occupation. Fourthly, Mr Mackie's evidence was that it would be "100% impractical" to remove the embedded Procor 3 membrane from the insulated area. This would be disproportionate from the tenant's perspective, as it would have meant a 3 month closure of the Debenhams' unit below. Given that the Decseal system applied appears to be effective, the defender's refusal to remove the embedded and now redundant Procor 3 membrane is reasonable and has no adverse impact on the quality or use of the car park.

[135] For these reasons the pursuer has failed to establish defect 1(a).

Defect 1(b): the level 3 expansion joint

[136] Such limited evidence as there was relative to the expansion joints was not always easy to relate to the structural joint around the insulated area (defect 1(b)) or to the expansion joint installed on a north-south axis (defect 7). On the evidence, a short length of the joint was identified as faulty or no longer having the requisite waterproof seal at this point: see Robery 1 at paragraph 4.2.5 (and associated photograph no 30 in appendix 3). No witness questioned on this issue suggested that its repair was anything other than a modest

exercise. In Prof Robery's view, this should be dealt with as a question of maintenance. He had also inspected the area beneath this in April 2021 but found no evidence of leaks from it.

[137] To the extent that there was any difference amongst the experts, I prefer Mr Robery's evidence as to its features and as being subject to the tenants maintenance obligations. The pursuer has failed to establish defect 1(b).

Defect 2: the level 3 ponding issue

The pursuer's experts

[138] The second alleged defect concerned ponding on level 3, which was said to manifest itself in the form of several areas of water that did not drain away via the valley gully formed as part of the remedial works. Mr Clarkson's view was that while the majority of the falls on level 3 were adequate, there was ponding along a length of the central valley line, and up to a metre's width on either side.

[139] Mr Clarkson maintained for a considerable part of his evidence that these areas of ponding constituted a health and safety risk for cars and pedestrians, at least in the winter, if these areas of ponding froze; and that this "unreasonably limits the operation of several areas" of the car park (Clarkson 2, paragraph 8.3.2). At one point, he went so far as to suggest freezing at the head of the ramp on level 3 might require that level of the car park to close. He accepted that he had never warned the pursuer of a risk in these terms. Subject to his comment about the health and safety risk, he ultimately accepted that these areas did not unreasonably restrict the use of the car park. In relation to photographs taken on a wet day, showing water over the surface of the car park, he could not contradict Gary Anderson's acceptance that, as depicted, this was no different from any other car park in Britain exposed to the rain, and that this would not preclude the use of the car park in such a condition.

[140] Mr Clarkson relied on a levels survey he undertook in January 2021 (produced as appendix 4 to Clarkson 3) and three photographs he had taken of level 3 on a dry day. The latter showed small areas of damp (which had not yet evaporated) at points where the surface level of the deck was below that of the nearest drain. Below is the photo he reproduced with the levels survey:



[141] As depicted in the photographs, the largest of the ponds was estimated to be no more than about 1.5 by 0.700 metres. Their locations corresponded broadly with the line of the valley gully running on an east-west axis. Another area of ponding was adjacent to the

edge of a built-structure (see para [86], above). In terms of the photographic evidence, the total area of ponding or damp patches was individually of very modest proportions, was very shallow and the overall area affected constituted only a very small proportion of level 3, a characterisation which Mr Clarkson accepted. He also accepted that, as depicted in the few photographs he had taken, all parking bays were usable and nothing would affect the reasonable operation of the car park.

[142] In relation to the level survey, plotted from individual measurements of the surface, the areas marked blue on the level survey appeared as larger areas than the ponding shown in related photographs. However, Mr Clarkson accepted that its purpose was to identify those points where the levels were lower than (and could not therefore drain to) an adjacent drain. The level survey did not depict (and was not intended to depict) actual areas of standing water. He also accepted that the level survey had been of only about 40% of the surface of level 3.

Prof Roberts

[143] Prof Roberts' evidence on this issue was in short compass. In his opinion, as a consequence of initial failure at construction, there was inadequate deck and drainage gradient at level 3 which needed to be addressed. He did not indicate in what way this should be achieved.

The defender's experts

[144] Prof Robery noted that level 3 showed isolated instances of ponding over the new Decseal membrane surface close to the valley gully, but his "overall impression was of a deck that has good gradient falls from high points to valleys that would encourage rapid

shedding of rainwater and followed good practice” (Robery 1 at paragraph 4.2.4). Mr Davis noted that while the car park was generally laid to a minimum fall (of 1 in 60), there were instances where the fall is less than as recommended. In each of his four reports he had also noted some ponding, but this was not uncommon in car parks and the ponding was not significant. The photographs Prof Robery took after his visits to the car park were appended to his reports. He noted that he found that the surface of level 3 was generally dry, notwithstanding that he visited the day after “torrential” rains. The following photo (plate 30 of Robery 1) is representative of the largest individual areas of ponding on level 3:



[145] Under reference to 112 photographs in Appendix A3.2 to Robery 1, he concluded: “The Decseal surface was generally dry despite the previous day’s torrential rain”. In Prof Robery’s opinion, it was simply not feasible to achieve perfect falls over large areas such as on the decks of multi-storey car parks. He was not challenged on this evidence.

[146] Prof Robery’s overall conclusion from his visual inspection was as follows:

- “4.5.1 In my opinion, I found little evidence on which to criticise legitimately the newly waterproofed Car Park.
- 4.5.2 I have inspected many car park structures over my career, many with negative falls leading water away from drains, and resulting in large areas of standing water. I had expected to see this type of defect at the Car Park, based on my reading of the reports submitted by APCOA’s experts.

4.5.3 The evidence I found was completely to the contrary, as I saw decks with good falls from ridges into valleys at all Levels, and no significant areas of ponding. Where rainwater ponding was occurring, in the small areas that I saw on Level 3, this was commonly caused by blocked drain grillages, due to a lack of maintenance by the operator APCOA.” (Robery 2)

[147] Mr Davis was also of the view that any ponding found on level 3 was no worse than commonly found on roof-top car parks (Davis 2 at paragraph 5.3 (b)), and there was no evidence of extensive ponding (*ibid* at paragraph 4.6). His visit was two days after the last rainfall. The ponding he noted was not extensive, apart from an area in the north-east where a leaking tap was preventing the area from drying out. He looked for silt deposits and tide marks, which can indicate regularly occurring puddles, but he did not find much evidence of this. He did find some silting in the channels between the gullies, which indicated that these were holding water (*ibid* at paragraph 4.6).

Maintenance issues said to affect ponding and drainage

[148] The first of the ancillary issues I identified above (at para [49]), whether or to what extent any inadequacies in the pursuer’s tenant’s cleaning contributed to ponding, is relevant to this issue. No witness demurred from the proposition that regular cleaning would aid drainage and was part of the appropriate regime for maintaining a car park. I have already noted the evidence of the witnesses to fact touching on this. As noted above, seagulls nest on level 3 and may not be disturbed during the breeding season. This poses challenges to the maintenance of the car park at those times. While there was some evidence that debris impeded the free-flow of a few drains (as depicted in some photographs), the detritus shown on other photographs appeared along the perimeter, as occurs when wind-blown debris meets a barrier (see, eg the photograph at para [83] or at paragraph 3.8 of

Davis 4). However, in other photographs, the level 3 deck looked clear, clean and well-maintained.

[149] On the evidence I have heard and upon an examination of all of the photographs produced, I find that there is no single cause for the limited amount of ponding which persists on level 3. Some ponding occurs in those areas where the surface of level 3 is below the level of the gullies or nearest drains. Water cannot flow upwards. Water trapped in these low lying areas can only disappear by evaporation. In dry weather, the ponding is minimal; in wetter seasons, it remains for longer. To the extent that there was persistent ponding recurring in the same location, this was in or near the valley gully. On balance, a lack of maintenance is likely to be a contributing factor in that location. This is because none of the pursuer's witnesses who gave evidence, including Mr Clarkson, appeared to have appreciated that this style of gully may require greater maintenance at times of heavy rain. Some of the photographs of this location show some build-up of silt and some of which partly-obscured a nearby drain. Finally, the areas of ponding on level 3 were not related in any obvious way to the other ponding in the area of the disabled parking bays at level 1 (that is, two levels below). While Mr Anderson asserted that water poured down between the levels, this is an extravagant exaggeration. There is simply no evidence to support any pathway for the water on level 3 to reach level 1.

Comment on Mr Clarkson's and Prof Robery's assessments of the same area of ponding

[150] I did not have the benefit of a site visit. On the issue of ponding, the real dispute between the experts did not really involve the application of their expertise (eg as to its cause), as much as a qualitative judgement about the degree of ponding. I have included above (at paras [140] and [144]) examples of the photographs relied on by Mr Clarkson and

Prof Robery, respectively. They were taken on different days but show broadly the same location on level 3. They also show a similar level of ponding. The two photographs provide a useful comparator of their different qualitative assessments. I accept Prof Robery's assessment as more balanced and realistic as to what is portrayed. On this issue, Mr Clarkson's assessment tended to be overstated, and not supported by other evidence. On this, as on other issues, when faced with other evidence, Mr Clarkson was compelled to moderate his criticisms. There is some force, therefore, in the comment of other witnesses that some of Mr Clarkson's conclusions were over-stated.

Conclusion on defect 2

[151] Mr Clarkson was challenged on the basis that the few photographs he had produced did not demonstrate any material ponding issues. For the reasons just stated, there is force in this challenge. I have reviewed the photographs provided by or spoken to by the experts. Even from the photograph Mr Clarkson associated with his levels survey, the ponding depicted was very modest. No more than a few parking bays were affected, and these were only minimally so. I accept the evidence that such ponding as there was did not restrict the reasonable use of the car park. In any event, this affected level 3 which, on other evidence was the least used (because furthest from the Centre and inhospitable in bad weather).

[152] I have also considered the levels survey. While as a matter of basic physics it is correct that water cannot flow upwards, the amount of water left lying in those areas below the level of the nearest drain - or the total area affected - was minimal. I accept Prof Robery's assessment as more measured and reflective of the photographic and other evidence. I also accept his evidence that it is difficult to get perfect falls across such an expanse in this kind of structure. Accordingly, I do not find that the modest amount of

ponding supports the pursuer's case that the falls on level 3 are deficient or demonstrative of poor workmanship, or are inadequate in any material sense.

[153] In light of my findings that the extent of ponding was modest and did not restrict the reasonable use of the car park, I conclude that the pursuer has not proved that the car park was defective or failed to conform to any specified standard by reason of the amount of ponding following wet weather.

Defect 3: the level 3 ramp damp-proofing issue

The pursuer's concession

[154] As I understand Mr Clarkson's position, in his view damp-proofing on the level 3 ramp was required (i) by the ISE recommendations for exposed levels of multi-storey car parks, and (ii) on his reading of the Specification and plans. He was critical of the decision in 2008 of Keppie, the architects instructed on behalf of the defenders, to remove provision for this during the design phase as part of a "value engineering" exercise. In his view, Keppie failed to co-ordinate the design requirements of the other professionals, including the engineers.

[155] In submissions, Mr Howie abandoned this allegation insofar as it related to the surface of the level 3 ramp. Mr Howie's concession was well made: after the relative plan by Keppie was put to Mr Clarkson, namely "L (11)004 'Level 3 waterproofing'" (which was contained with appendix 9 to Clarkson 2), Mr Clarkson ultimately accepted that Keppie had not specified damp-proofing on the level 3 ramp. Furthermore, the Woolgar Hunter methodology recorded (at paragraph 4.5.7) that the final specification of waterproofing was to be "confirmed by architect", that is, by Keppie. As Prof Roberts relied on Mr Clarkson's interpretation of the contract Specification and plans, his evidence also falls away.

Accordingly, defect 3 was insisted on to the very limited extent of the surface area at the head of the level 3 ramp, an area of a few m² (Prof Roberts estimated about 2m²).

Prof Robery's evidence

[156] On his site inspection, Prof Robery detected that there was, in fact, a Decseal interdeck waterproof finish on the level 3 ramp. Under reference to five photographs, he noted that the coating on or near the head of the ramp was beginning to deteriorate, with approximately 10-15% loss of waterproofing on the surface in this location. However, he regarded this as "needing only minor work to repair or replace" the 12-year old coating on the ramp.

Conclusion on defect 3

[157] To the extent that the pursuer maintained its case on this defect, it was solely in relation to the head of the level 3 ramp. The evidence on this was scant. Mr Clarkson asserted that there was no waterproof membrane at the head of the ramp. However, Prof Robery observed that there was a waterproof coating, but that it appeared to be suffering from wear. Regardless of whether waterproofing was required at the head of the level 3 ramp, this was not causative of any loss to the pursuer (assuming there had been a breach). This is because, on Prof Robery's evidence, such a surface would wear out after about a decade or so. The pursuer has occupied the car park for 13 years. In those circumstances, any repair or renewal would be covered by the tenant's repairing obligations. I do not find that any relevant defect has been established on this matter.

Defect 4: the corrosion to the steel work at the underside of levels 1 and 2

[158] The level 2 and 3 decks of the car park are supported by horizontal steel beams in a grid pattern resting on vertical steel stanchions. It is clear from some of the photographs of the undersides of these levels that there has been water penetration for a period of some years prior to the remedial works. Some of these steel structures show signs of water damage at their upper edges, consistent with the areas of historic water ingress from level 3. Every expert accepted that historic water ingress had caused some of the paintwork at the top of the stanchions to bubble or peel away and that some of the steelwork was showing evidence of corrosion. In addition to the paint protecting the steel work against corrosion, it was intumescent paint, which provides a degree of protection to the structure in the event of fire.

[159] The principal differences amongst the experts were as follows:

- 1) how serious was the present state of corrosion,
- 2) how extensive it was throughout the car park,
- 3) whether remediation involved removal of the loose paint and repainting, or a more intrusive removal process involving industrial blast-cleaning before any repainting, and
- 4) the risk and timescale of any future deterioration.

The pursuer's evidence

[160] Prof Robert's evidence was in short compass: it was important that the damaged paintwork to the steel was repainted, but he agreed that "it was not a major concern in the sense of it being at this stage of any structural significance". In Mr Clarkson's view, there was "significant corrosion" to the steelwork to the underside of levels 2 and 3 of the car park

which required repair. He attributed this to failed waterproofing of the upper surfaces.

Mr Clarkson produced two plans marked with the areas of corrosion (see Clarkson 3) and three photographs of the underside of level 3 in support of his conclusion that these showed rust and corrosion damage. The plan for level 3 had solid lines on a grid pattern, apparently replicating the majority of the steel work. The plan for the steelwork underpinning level 2 was marked with solid lines along the two valley gullies. He estimated that this kind of damage affected 10 to 20% of the steelwork. He was challenged on the ground that he had not produced more photographs. His position was that what was depicted in the photographs was typical of the area beneath the channel drain that had been replaced at level 3, and extended along the continuation of this beam line. In his view, there was some similar damage to the steelwork at the underside of level 2, along the same axis as the beams in the underside of level 3, but there was less corrosion at the underside of level 2. No photographs were produced of the corrosion he found at the underside of level 2.

[161] In cross, he accepted that he had produced no tests to evidence that corrosion was continuing to take place or, if so, at what rate. He also accepted that these areas could be repaired at modest cost. He noted that this had initially been included in the Volkerlaser repair specification, but was subsequently removed. He did not accept that simple painting would suffice - the loose paint had to be blast-cleaned first. He ultimately accepted that such a process would only disrupt a few parking bays at a time, that the repairs required to address the issue of corrosion was a minor matter, and that they could be repaired at modest cost.

Comment on the extent of corrosion depicted in Mr Clarkson's 3 photographs

[162] Mr Clarkson produced only three photographs to support his position on corrosion (one of the photographs in the body of Clarkson 2 was duplicated in the appendix). These depict very modest areas of water staining or bubbling paint (consistent with corrosion), and generally only at the uppermost part of the stanchion at its edge. There was no sign of corrosion to the primary steel which was the principal underpinning support to the level above. Further, these photographs show only intermittent, not wide-spread or continuous runs of, corrosion. This is inconsistent with the marked areas of Mr Clarkson's plans, which would suggest continuous runs along the valley gullies marked as well as extensive areas of damage.

The defender's evidence

[163] By contrast, Prof Robery described what he observed as slight surface rusting that simply required maintenance painting. Quite properly, Prof Robery also recorded matters that might be adverse to the position of his instructing client. So, for example, he noted (at paragraph 4.3.10 of Robery 1) in relation to corrosion of the steelwork, that the

“condition of the paint system to the steelwork below the main movement joint was noticeably worse than in other areas, which I attribute to the historic leakage issues at the movement joint in the Level 3 deck.”

He also noted (at paragraph 4.3.12, *ibid*) that “[i]n the central area of the deck, I observed more areas of paint peeling from the steelwork either side of the main movement joint, and some break-through Corrosion”. He documented both of these findings with photographs. His comment on what was depicted in Mr Clarkson's photographs was that they depicted “slight surface rusting”. Prof Robery estimated that the total steel work affected comprised just 1% of the total steelwork and could be resolved by maintenance painting.

[164] The evidence of others who examined the car park was inconsistent with Mr Clarkson's initial evidence as to its extent. Prof Roberts' brief observation (in Roberts 2, at paragraph 3.14) was that there was corrosion damage to a steel beam at level 2 caused by water ingress. He offered no view on the extent of the steelwork affected. Mr Davis described the damage as "quite slight" (at Davis 3, paragraph 5.9; see also Davis 4 at paragraph 3.23) which, in his parole evidence he estimated as amounting to no more than a few percent of the total area. Mr de Silva's diffident suggestion of the total area affected, having not visited the site since 2016, was around 5%. In terms of the percentage of the steel affected, Mr Clarkson's figure is unsupported by the evidence. Of the other figures mentioned, I am inclined to disregard Mr de Silva's, simply on the basis that it was based on a recollection of a visit 5 years earlier. I prefer the evidence of the defender's experts, both of whom had visited within the 6 or 7 month period prior to the proof, as more accurate and measured. Ultimately, Mr Clarkson accepted that the areas of corrosion were "minor matters" which could be easily repaired at modest cost. All of the other witnesses, Prof Roberts as well as Prof Robery and Mr Davis, also agreed with this characterisation.

Conclusion on defect 4

[165] The weight of the evidence does not support the pursuer's case that there was extensive corrosion to the steelwork underpinning levels 2 and 3. Such intermittent corrosion as is shown is not uniform, nor widespread. This was an assessment that even Mr Clarkson and Prof Roberts accepted. The corrosion depicted in the photographs appears to be superficial and only to affect the top flanges of the stanchions, at their edges. No witness suggested that the present level of corrosion posed any risk to the integrity of the steel work as a supporting structure. Furthermore, Mr Clarkson, Mr Davis and Prof Robery

all agreed that this could be simply repaired at modest cost. In light of the foregoing, I find that the pursuer has not established defect 4. The pursuer has not established that the present state of the steel underpinning levels 2 and 3 was as a result of any breach by the defender. Given the age of the car park and the relatively modest extent of the corrosion, this more properly falls within the tenant's repairing obligations.

Defect 5: the level 1 and 2 cracking issue

[166] I have already described the properties of concrete as a material (above, from paras [18] to [21]), including its tendency to crack as it cures. By its nature, alleged defect 5 raised potentially much more serious concerns, if the presence of wide-spread cracking indicated or facilitated any compromise to the integrity of the level 1 and 2 decks, or if the presence of the cracks entailed very substantial remediation costs. There were several discrete, but interlinked, factors which may be discerned from the evidence.

- 1) Remediation costs: The first, and simplest, factor was whether cracking itself was indicative of poor workmanship. Related to this was the issue of what width of crack necessitated remediation (by infilling) and what width of cracking was acceptable and could be left untreated.
- 2) Water ingress and corrosion to the reinforcing steel mesh: The second factor was whether the cracks permitted water ingress to the lower layers of the deck and, in particular, to the reinforcing steel mesh embedded in the wearing screed, and which would result in its corrosion. (The proposed cathodic protection system, as required by the 2018 Repair Notice, was intended to ameliorate that risk.) It was disputed whether any corrosion, or wide-spread corrosion, had been initiated. A discrete matter that emerged in the evidence, and which may be

related to the issue of water penetration via cracks at level 1, was whether, in addition to any risk of corrosion to the reinforcing steel mesh embedded in the wearing screed, excessive amounts of water had penetrated through the wearing screed and accumulated on the underlying Procor 3 membrane.

- 3) High levels of chloride present in the wearing screed: The third factor, the presence of high chloride levels, was directly relevant to the second factor, as chloride was a water-soluble substance which could exacerbate corrosion. It is in this context that the second of the ancillary issues I identified above, namely the factual dispute about the pursuer's staff's use of de-icing salts, is relevant.

Before addressing the competing evidence of the parties, it is helpful to note points of consensus that emerged among the witnesses.

Consensus that cracking was non-structural

[167] There was a significant amount of evidence relating to this issue. I have already described the Darley crack maps (see paras [57] to [62], above) relied on by Mr Clarkson and Prof Roberts, and commented upon by Mr de Silva and Prof Robery. It was ultimately accepted that the cracking observed was not structural. The cracking at issue affected only non-structural concrete elements, namely, the wearing screed comprising the upper most layer of each deck of level 1 and 2.

Consensus that the reinforced steel mesh was redundant

[168] It will be recalled that a reinforcing steel mesh was embedded within the wearing screed and, as noted above (at para [20]), the purpose of this was to control shrinkage cracking of the concrete as it cured. In Prof Robery's view, stated expressly in his report,

the mesh became redundant after this initial curing process was finished. The possibility of redundancy was not addressed in either Mr Clarkson's or Prof Roberts' several reports, but this was accepted in their parole evidence. This affects the other factors relevant to alleged defect 5. This clearly has implications for the second and third factors, recorded two paragraphs above. If the steel reinforcing mesh was redundant, subsequent corrosion damage was unlikely to produce any real adverse consequence for the car park. Further, if that were correct, the possible effect of chloride as an agent of corrosion also ceases to be relevant.

Mr Clarkson

[169] On this issue, Mr Clarkson was the pursuer's principal witness. In his view, the amount of cracking generally was more than one would expect in a wearing screed 13 years after its construction and the majority of the cracks were greater than design recommendations. More specifically, in relation to level 1, Mr Clarkson suggested that the wearing screed "has extensive cracking over the whole area": Clarkson 2, paragraph 9.2.1. In relation to level 2, Mr Clarkson observed that the "concrete topping [ie the wearing screed] to the pre-cast units has cracking over a significant area": Clarkson 2, paragraph 9.1.1. His position was that there was a pattern of cracking which was excessive, and which was "not what would be expected from properly placed concrete": *ibid*. He also noted the extent of cracking to the wearing screed in Clarkson 3 (the table at p 14 (item "Slab cracking", at level 2), and on p 16 (item "Concrete wearing slab", at level 1). He rejected the proposition, put to him under reference to paragraph 4.5.7 of Woolgar Hunter's methodology (in the Joint Bundle), that cracks of up to 0.3mm wide were permissible. In his view, this was taken out of context and related to the requirements of a waterproofing system.

[170] In his parole evidence, Mr Clarkson modified the position stated in his reports. In relation to level 1, Mr Clarkson accepted that the wearing screed was not structural; that, whatever the nature of the cracking, it was non-structural cracking and, as such, posed no threat to the structural integrity of the car park. In relation to level 2, Mr Clarkson maintained that these cracks corresponded with the pre-cast concrete slabs and from this he inferred that the cracks extended to the depth of these slabs. He accepted he had not measured these, nor had he undertaken any moisture analysis of any water ingress into the cracks. He also accepted that any spalling (as had been found on level 3) was historic only, and that there was no evidence now of spalling at levels 1 or 2. Mr Clarkson was challenged for not having undertaken his own survey of the cracking or measurements of the width or depth of cracks. He maintained his reliance on the Darley crack maps. While he did not accept that there was no need to repair cracks of 1mm or less, he accepted that in respect of wider cracks, this was a minor repair which simply involved sealing.

Prof Roberts

[171] Prof Roberts also relied on the Darley crack maps, which he regarded as thorough. The presence of cars at the time of his site visit precluded his doing anything other than some localised checking. He shared Mr Clarkson's view that the cracking at levels 1 and 2 were as a consequence of poor workmanship at the time of construction. He accepted that cracking was expected, but that the widths of the cracks were greater than expected. He did not accept that cracks of width under 0.5mm could be left untreated. The cracks were a concern because they provided access to the reinforcing steel mesh.

The defender's expert witnesses

[172] Mr Davis noted widespread cracking on levels 1 and 2, which he attributed to a high water-to-cement ratio. Mr Davis noted that the design crack width was 0.3 mm, although the permitted deviation was as much as $\pm 50\%$. From his examination of levels 1 and 2, some cracks were wider than he would have expected in properly designed and constructed reinforced concrete (Davis 2, paragraph 4.14). The wider cracks would benefit from sealing. His overall view was that both levels appeared in good condition and that no signs of damage to the concrete could be seen (*ibid* at paragraphs 3.8(a) and 3.9(a)).

[173] In terms of the width of cracks tolerated in the wearing screed of a multi-storey car park, the fullest evidence on this matter was that of Prof Robery. This was in the context of the nature of concrete as a substance that always cracks and, indeed, is intended to crack by design. I first record his evidence about how, generally, cracks in concrete can occur and the width of cracks which are tolerated. As he explained (in Robery 2):

“3.2.17.1 Concrete is brittle, whereas steel reinforcement is ductile. By way of example, when a beam flexes, the steel stretches and the concrete cracks. It is commonplace to limit structural cracking to 0.3mm, principally for aesthetic reasons, by using sufficient reinforcing steel to control cracks. Reinforced concrete design to BS 8110, as used for the car park design, has traditionally limited structural cracks to 0.3mm when under full load.

3.2.17.2 Second, wider cracks often occur in concrete due to ‘non-structural’ effects, included in which are plastic shrinkage cracking, thermal cracking and long-term drying shrinkage cracking. Such cracks are commonly much wider than 0.3mm and **unless these cracks lead directly to structural reinforcement, commonly they are not treated till the widths are greater than 0.5-1.0mm wide.**” (Emphasis added.)

While those observations relate to structural concrete, the permitted width of non-structural concrete, like the wearing screeds of levels 1 and 2, is likely to be at the upper end of that

range. Prof Robery adopted the figure of 1.0, and, on his evidence, cracks of that width or wider should be repaired.

[174] In terms of the number and size of cracks in the wearing screed, Prof Robery was the only expert who took his own measurements of cracks throughout the three levels of the car park as well as on the ramps. He may have had the good fortune that both levels 2 and 3 were largely empty of cars at the time of his visit. (Prof Roberts commented that at the time of his inspection the lower levels of the car park were packed with cars.) Prof Robery's findings in relation to level 2 were as follows:

“4.3.5 There were areas of general cracking of the concrete wearing screed in places, which exhibited as a pattern of cracking that was not consistent with any structural movement of the deck. I say this because in my opinion and experience the pattern of the shrinkage cracking was random in appearance and did not follow any structural features, such as transverse joints between the precast pre-stressed planks.

4.3.6 The crack width was characteristic of normal shrinkage cracking, or restrained shrinkage, which would have developed in the 12-year old concrete wearing screed (Kingsgate 97, 99, 120). The cracks were typically 0.3mm to 0.5mm wide in the surface, with normal abrasion and wear causing the top surface to open out, which gives the appearance that the crack is wider than it really is.

4.3.7 I saw other, finer cracks, but these were less than 0.3mm width and so by any reasonable assessment these would normally be considered of no consequence. I say this because 0.3mm is the normal crack width to which concrete structures have been designed over the preceding 25 years to the construction of the Car Park [the foot note reference here was to BS 8110]. Concrete structures are expected to crack to this width without any detriment to their performance.

4.3.8 The only wider crack that I noted in the concrete wearing screed was at the 'dog-leg' in the construction, with a single crack radiating from the 90-degree re-entrant corner, but which quickly closed and disappeared (Kingsgate 122 - 123). The crack would benefit from sealing with a flexible material and, in my experience, this is only a minor repair.”

And in respect of level 1, his findings were similar:

“4.4.1 The Level 1 concrete wearing screed, used over the insulation and the concealed Procor 3 waterproof membrane, was of similar appearance to Level 2, finished to a good standard and to the same falls.

4.4.2 The wearing screed had areas of cracking in places, and, as with Level 2, the pattern of the cracking suggested these were drying shrinkage cracks, widely spaced and not orientated to the structural form, and by their narrow width are difficult to photograph (Kingsgate 177-183). The deck was free from typical structural cracking.”

After noting the different modes of construction for the level 2 and 1 decks, he continued:

“4.4.4 In my experience, the unbonded screed on Level 1 will be more prone to shrinkage cracking than the bonded screed on Level 2, and so I would expect to see wider and more frequent cracking, and this appeared to be the case. As the concrete wearing screed is unbonded, and there is Procor 3 waterproof membrane beneath the insulation, any rainwater that does penetrate down the wider cracks would not be able to reach the structural concrete floor, comprising reinforced concrete on metal decking, that lies below it. The collection of water on the Procor 3 membrane would therefore be of no consequence to the structural behaviour.”

[175] Prof Robery also took care to identify larger cracks, being those wider than 1mm, and he recommended they be sealed as part of normal maintenance. The appearance of these few larger cracks was in his view explicable, as they often radiated from a sharp corner (eg the column of a stanchion) and which served as a stress concentration point. There was no challenge to the veracity of any of Prof Robert’s recorded observations about the condition of the wearing screed of levels 1 and 2 or to his more specific findings about the nature or number of cracks.

[176] In relation to the cost to repair the few larger cracks, Prof Robery’s opinion was that this was a straightforward and modest repair. He estimated a cost of c £250 per linear metre, which meant a total cost of around £2,000 to address the two cracks exceeding 1mm. There was no challenge to this evidence. Nor could there properly be any challenge, as Mr Clarkson accepted that, if only cracks wider than 1mm were repaired, the repair costs would be modest. Prof Roberts accepted these cracks could simply be sealed.

[177] Turning to the issue of corrosion risk, while Mr Clarkson and Prof Roberts both assumed that cracks in concrete posed a corrosion risk, Prof Robery was the only expert who critically examined this proposition. The relevant passage (from Robery 1) is as follows:

“4.6.15 Cracks visible in a concrete surface, such as a car park deck, usually taper and so are narrower at the depth of the reinforcing bar. Only significant cracks, greater than 0.5mm at the bar depth, are considered to offer any increased risk of corrosion (e.g. Allen, Broomfield (ibid)). Even then, the **rate of ingress of chloride ions and moisture is limited**, as they are offset by the local alkalinity of the concrete and the ability of the cracks to self-repair, a process known as autogenous healing.

4.6.16 For these reasons, **high rates of corrosion do not occur at cracks**, because effective corrosion cells cannot form:

4.6.16.1 Firstly, reinforced concrete will always crack, in response to normal structural loading, with steel reinforcing bar used to control cracks, normally to 0.3mm or less, with no consequence for concrete durability (e.g. as design to BS 8110 shows (ibid)).

4.6.16.2 Secondly, concrete shrinkage often causes ‘*non-structural*’ cracks, which are fully explained in standard publications 35. Once non-structural have formed, usually over the first two years from construction, they should be sealed to prevent penetration of water and chloride salts and to some extent will self-repair in any case.

4.6.17 Therefore, in my opinion shrinkage cracking of the type seen at the Car Park at Level 2 is a common phenomenon with a bonded concrete wearing screed, and this will be of higher risk in unbonded construction, as used on Level 1. Significant cracks can be simply and cheaply sealed at the surface and **so will not present any significantly increased risk of reinforcement corrosion.**” (The defender relies on the passages highlighted.)

[178] Those comments were in Robery 1, produced before Prof Robery had had the benefit of meeting the pursuer’s principal expert, Mr Clarkson, which he did at the April 2021 Investigation. Having done so, he noted that all of the experts were agreed that the cracking on levels 1 and 2 was caused by the expected shrinkage as the concrete cured. He described his findings in Robery 2 in respect of the wearing screeds at level 1 (at paragraph 4.3.11) and in respect of level 2 (at paragraph 4.3.7) as follows:

“Level 1

4.3.11 ... this refers to the 75mm thick floating screed laid onto insulation, detailed in the April Inspection notes. **The experts accept these cracks are due to plastic shrinkage cracking. Shrinkage cracks in a non-structural floating screed are of no consequence, as there is provision for any water penetrating through cracks to be trapped on the Procor 3 below and be conveyed to drains.** Cracking of 0.3mm width is not relevant to the durability of the Level 1 floating screed or the structure below. **I am not aware of any cracks at Level 1 that are wider than 1mm, except at the dog-leg movement joint, and this cracking should be sealed; I estimate this may be 5m of crack that requires resin sealing and so is not a major maintenance item.** I accept the surface appearance would be improved by applying an intermediate deck coating to seal the cracks, but I do not consider it to be essential work.”
(Emphasis added.)

And

“Level 2

4.3.7 ...: There are cracks in the bonded wearing screed applied to the precast prestressed hollowcore planks (the ‘Planks’), and **all the experts in this dispute accept these are due to plastic shrinkage.** Shrinkage cracks in a non-structural screed will taper and not prove a path for water to reach the Planks below. Therefore, cracking of 0.3mm is not relevant to the durability of the Level 2 slab and in my opinion, only cracks of 1mm or above need to be addressed. **I am not aware of any cracks at Level 2 that are wider than 1mm, except the dog - leg movement joint, and this cracking should be sealed. I estimate this may be 3m of crack that requires resin sealing and so this is not a major maintenance item.** I accept the surface appearance would be improved by applying an intermediate deck coating to seal the cracks, but I do not consider it to be essential work”.

[179] Prof Robery approached this issue in a more nuanced way. In short, his view was that cracking itself - or at least of the kind found on levels 1 and 2- was unlikely to be the means by which corrosion would occur. He explained how corrosion can arise, as follows:

“4.5.4 I have also seen many car parks that have been affected by reinforcement corrosion, due to chloride salt penetration from cars or de-icing salts used on the deck. The salts will result in characteristic brown staining of the concrete, as corrosion products leach through the surface, and the expansion pressures caused by steel corrosion causes spalling that will require patch repairs. I saw no evidence of any such damage or any patch repairs to the deck surfaces that would be necessitated by problems of ongoing reinforcement corrosion at the Car Park. Brown corrosion product can also leach between and through the precast prestressed hollowcore planks when viewed from below, but again I saw no evidence of any brown staining, just white calcite stains.

4.5.5 As I have noted earlier in my report, the testing evidence suggests some of the reinforcement in the concrete wearing screed at Levels 1 and 2 may now be at a higher risk of corrosion, because the chloride ion content at the depth of the reinforcement exceeds 0.4% bwc. **However, for a significant rate of corrosion to develop, the concrete must be regularly wetted with chloride-containing water, such as an external bridge parapet would be.**

4.5.6 In the Car park, the Level 1 & 2 decks are well drained and generally dry. Consequently, any reinforcement that is of higher risk of corrosion, due to elevated chloride ion content in the concrete, will only corrode at a slow rate. Furthermore, as the corrosion risk exists in the concrete wearing screed and not in the precast prestressed planks, then such corrosion (if it were to occur) would not be of any structural consequence.

4.5.7 My recommendation is that the corrosion risk should be monitored over the remaining life of the Car Park, and inspection and testing should be a standard maintenance item in the Life Care Plan at intervals that I suggest should be every 5 years." (Emphasis added.)

In his parole evidence, he confirmed that, even if water penetrated to the reinforcing steel mesh and caused corrosion, given the depth of the reinforcement and the "very, very small" amount of likely expansion, any corrosion which might take place in the future was not likely ever to have any deleterious effect on the concrete screeds at levels 1 and 2 in the next 12 years.

[180] In relation to the presence of corrosion, in Prof Robery's opinion,

"there is currently no evidence of any deterioration of the wearing screed due to reinforcement corrosion, or any significant penetration of chloride through the concrete wearing screed and such as to cause any risk of corrosion in the precast prestressed planks that provide the main structural load capacity of the decks" (Robery 1 paragraph 4.6.6).

In assessing the risk of corrosion arising from cracks, he noted that

"4.6.7 It has been known and established over many decades that corrosion risk in reinforced concrete is affected **by overall penetration of chloride ions into the concrete by a process of absorption and diffusion**, rather than penetration at cracks in the concrete. [Citations omitted] This can lead to corrosion cells being established, and loss of section of the reinforcement can occur at the anodes of the corrosion cells.

4.6.8 The testing by Darley, using the half-cell potential method, is a common technique that is used to find areas of a concrete structure that are more anodic than others, and the data shows higher negative potential results in some areas.

4.6.9 In my opinion, having anodic sites on the reinforcement, as indicated by the half-cell potential test, is not any indication that active corrosion is occurring. High negative potentials only indicate a probability that corrosion may be occurring, provided other conditions are satisfied.

4.6.10 For corrosion to occur, the anode and cathode sites need regular quantities of both moisture and oxygen. The test reports that I have reviewed, which comment on the condition of the reinforcing bar in the concrete wearing screed after it has been broken out and inspected, do not show any significant loss of steel section due to corrosion.

4.6.11 Therefore, in my opinion, at this time the combination of the use of the Decseal Interdeck waterproofing finish on Level 3 and the good falls and drainage provided generally to the deck surfaces at all three levels, has worked collectively to keep the concrete generally dry **and minimise the risk of actual corrosion occurring.**" (Emphasis added.)

Discussion of alleged defect 5

[181] I first consider the issue of corrosion to the reinforced steel mesh (factor 2 at para [166(2)]). On this matter the pursuer is concerned that the high level of chlorides found in the wearing screed, coupled with what it regards as excessive cracking, pose a risk of corrosion of the reinforcing steel mesh. (This is separate from the issue of corrosion to the steelwork underpinning the level 1 and 2 decks.) This risk is perceived to be elevated by reason of the presence of high levels of chloride. (The source of the chloride is the second ancillary factual dispute between the parties.)

[182] I start by observing that the pursuer led no evidence at proof to establish that corrosion to the reinforcing steel mesh *had* occurred or even that the process of corrosion had been initiated. An indicator of such corrosion would be rust-staining bleeding through the wearing screed but neither of the pursuer's experts identified any location where this was occurring. Turning to the question of whether there was a risk of corrosion that may

manifest itself during the remaining 12 years of the lease, I prefer the evidence of Prof Robery to that of the pursuers' experts. Of all of the experts, he has the greatest level of professional expertise in the properties and performance of concrete, as is evidenced by his involvement *inter alia* in the production of the technical guidance in the form of the 2011 ISE Design Recommendations, and his membership on specialist technical committees of the ISE and ICE concerned with car parks. More importantly, his views were cogently reasoned, supported by reference to the relevant technical guidance or papers, and expressed with care and precision. His qualitative assessments, tested against the other objective evidence (eg photographs or measurements) were verifiably moderate and reasonable. Consistent with the qualities of independence and impartiality, he recorded findings even if they might be adverse to the defender's position. Two examples suffice: he measured and recorded in full the largest cracks he found; he also produced many photographs evidencing the good and clean condition of level 3 of the car park.

[183] In light of Prof Robery's evidence, there is no substantial risk of corrosion likely to materialise during the currency of the lease. I accept as correct his explanation that the mere presence of cracks is not a significant risk factor; it is the wide-spread wetting with chloride-impregnated water. However, the level 1 and 2 decks are generally dry. Even then, on his (unchallenged) evidence, the rate of corrosion is very slow. I return to the consensus that emerged about the redundancy of the reinforcing steel mesh. It was this element within the wearing screed which gave rise to the corrosion risk.

[184] As noted above, a consensus emerged among the experts that cracking was to be expected. This should not have been contentious, as I note that it is stated in the 2002 ISE (at entry 1 to table 8.1 at p 68) that in concrete "cracking can be controlled, but not completely eliminated". Prof Robery was also the expert who exhibited the greatest insight

into the use of reinforcing steel mesh as a means of controlling what he described as early-age cracking, and for that reason, could explain his position that such a mesh was thereafter redundant after that early-age cracking had ceased. Again, this was a matter that was ultimately accepted by the pursuer's experts, when the proposition was put to them.

[185] However, the implication of this redundancy was not fully worked out in the evidence of the witnesses. If the reinforcing steel mesh is now redundant, whether or not there is corrosion or there is a risk of it occurring, ceases to be of any material consequence. Putting this another way, even if the risk of corrosion were to materialise, or to proceed at a faster rate than Prof Robery projects, given the redundancy of the reinforcing steel mesh - the very element at risk of corrosion - the likely impact in terms of the wearing screed or the need to repair is negligible. There would be no utility in repairing an element which no longer served any active purpose. This is at least implicit in the defender's concession withdrawing the 2018 Repair Notice (which is the one requiring a cathodic protective system).

[186] In light of these conclusions, the ancillary issue as to the source of the chloride is effectively superseded. For completeness, I should record that on the conflict in the evidence between the defenders' evidence (particularly Mr McDougall and Mr Fitzwater) and that of Mr Anderson as to the pursuer's use of de-icing agents, I would have no hesitation in preferring the former. On this chapter of his evidence, Mr Anderson appeared to be less than candid and unwilling to assist the court. When the evidence of Mr McDougall and Mr Fitzwater was put to him, his response was, in effect, to shrug this off with the comment that "that's what they say". His other answers were guarded, eg of speaking of only finding certain purchase orders for salt while not engaging with the question of what he himself knew. Moreover, his evidence had the further limitation of not covering anything like as

extensive a period as that of these two witnesses, who, collectively, covered the period from 2010 to 2019. On their unchallenged evidence, very significant volumes of de-icing salts were used without restraint through winter months for all of those years. Accordingly, I find that the activities of the pursuer's employees materially contributed to the high chloride readings found in the decks of the car park.

[187] The remaining factor is that of the cracks and the cost of remediation. As noted above, Mr Clarkson and Prof Roberts were critically dependant on the Darley crack maps. So, for example, in cross Mr Clarkson asserted that there were a significant number of cracks greater than 0.3mm. However, in that same passage of evidence, he accepted that he had not counted the number of cracks in excess of 0.3mm; he could not say how many cracks were greater than 1.0mm, and that he had no reason to doubt Prof Robery's own measurements. He referred to having "validated" the Darley crack maps but he accepted that he had relied on these. In my view, their reliance is undermined by the evidence from Prof Robery and Mr Davis that, from their own measurements, the Darley crack maps exaggerated the width of the cracks. Given their observations, and their further evidence that the cracks were narrower at depth, I prefer their evidence to that relied on by the pursuer's experts.

[188] In terms of the competing qualitative assessments of the cracking in the level 1 and 2 wearing screeds, on this matter I also prefer the evidence of the defenders, and especially that of Prof Robery. He described the decks at levels 1 and 2 as finished to a good standard or in good condition. Both decks were free of any structural cracking. Such cracking as there was at level 1 was a result of drying shrinkage cracks; and at level 2, was not consistent with any structural movement of the deck. Furthermore, in his view the cracking was not indicative of poor workmanship, a view that Mr Davis also shared.

[189] While the cracking was extensive, this was not itself a risk factor. I also prefer the defender's experts' evidence as to the width of cracks that may be left untreated and those which require to be repaired. This was well-vouched by the technical guidance. There were relatively few cracks in the category requiring repair. Following his survey, Prof Robery identified only two cracks of 1mm or more, one each at level 1 (of approximately 5 metres in length) and level 2 (of approximately 3 metres in length) and both situated near a particular stress point (which he described as the "dog leg"). In relation to the cost to repair the few larger cracks, Prof Robery's opinion was that this was a straightforward and modest repair, likely to cost around £2,000. There was no challenge to this evidence. Nor could there properly be, as Mr Clarkson and Prof Roberts accepted that, if only cracks wider than 1mm were repaired, the repair costs would be modest. Prof Roberts accepted these cracks could simply be sealed.

[190] For these reasons, the pursuer has failed to establish alleged defect 5.

Defect 6: the Procor 3 membrane and subsurface drainage at level 1

[191] There are two distinct strands to this alleged defect: (a) whether the Procor 3 membrane is defective and (b) whether the sub-surface drainage system is faulty. (The latter is described at para [33], above.)

[192] The pursuer's case on defect 6(a), in respect of the Procor 3 membrane, appeared to be predicated on two adminicles of evidence:

- 1) that there had been leaks into the back of the DW Sports retail unit (situated along the north edge of the car park), from which it was inferred that the Procor 3 membrane was faulty; and

- 2) Mr Clarkson's and Prof Robert's assessment at the April 2021 Investigation that at the single location where the Procor 3 membrane was exposed (L4), it was pliable - an assessment which was not shared by the others who were in attendance (Mr Allan or Prof Robery) - and that a small hole had been found at the same location.

[193] Its case on defect 6(b), the sub-surface drainage system, is predicated principally on the findings (or the interpretations of what those in attendance on behalf of the pursuer saw) for L4 and L6 at the April 2021 Investigation and recorded above (from paras [70] to [77]), and, perhaps to a lesser extent, on the historic leaks.

The pursuer's experts

[194] In Clarkson 2, Mr Clarkson referred to the fact of leaks in the past into the DW Sports unit (at paragraph 9.2.2). From this, he suggested that it "may be" that there are defects at level 1 similar to those found in the Procor 3 membrane on level 3 (*ibid*). Mr Clarkson did not contend that the whole of the Procor 3 membrane at level 1 had failed; his position was that, as there had been leaks into a retail unit immediately below level 1, there must logically be some defects in the Procor 3 membrane to have permitted this. Following the discovery at the April 2021 Investigation of water above the Procor 3 membrane at L4 and L6, Mr Clarkson surmised that this resulted in the Procor 3 membrane being softer than it should be. He could not think of any other reasonable cause. He accepted in cross-examination that there was no widespread failure of the Procor 3 membrane at this level; that he could not say where this membrane was faulty; and that there had only been one location where the Procor 3 membrane had been exposed (being L4). He nonetheless maintained his position that something about the membrane was not correct, if it had

permitted leaks in the past and therefore it must be defective. He accepted that, at most, there might be localised defects.

[195] In relation to the allegation that the subsurface drainage at level 1 was defective, Mr Clarkson had identified several areas at level 1 where the sub-slab drainage was not functioning as it should and that water was being retained within the system that should not be there. He attributed the cause to blocked drains. In his view the cause of the blockage, at least for the drain examined at the April 2021 Investigation, was rubble from the time of the construction of the car park. In relation to the source of the water, in his view this came from level 3, the implication being that it also had to pass through the deck of level 2 in order to find its way to the subsurface of the level 1 deck. He accepted in cross-examination that he had not considered or excluded other sources of water, such as pipes. He also accepted that in a photograph contained in Clarkson 1 he had misidentified this as showing part of that membrane.

[196] Prof Roberts' comments echo the pursuer's premise: that a product such as the Procor 3 waterproof membrane "should not allow water to pass through it if it is correctly installed" (Roberts 2 at paragraph 4.6). From this he concluded that the water ingress into the DW Sports unit was most likely a failure in execution of the Procor 3 membrane and requires further investigation.

The defender's experts

[197] Prof Robery was one of those who attended at the April 2021 Investigation, although he appears to be the only witness who also took the opportunity to inspect other areas of the car park and Centre, including the DW Sports unit and to produce photographs of what he observed on that occasion (together with verbal descriptions, annexed to Robery 2). From

his investigation (recorded in Robery 2) he found that there was no evidence of any active leakage in the shop itself, the back office, the storage areas or the service corridor behind the shop (see paragraphs 2.3.4 and 2.3.7). This was against a background where there were no reports of active leaks into any of the retail units below level 1. From this he concluded:

“The evidence I have seen is that there is no leakage into the shop units at all and therefore the Procor 3 is sound and watertight, and so does not need to be replaced at all.” (See paragraphs 3.2.25.2 and 5.2.5 of Robery 2.) In respect of the pursuer’s experts, he stated:

“3.2.25.1 Neither Professor Roberts nor Mr Clarkson has any evidence showing the Procor 3 is defective and is prone to leakage based on the inspections of 30 April 2021.

[...]

3.2.26 I also disagree with Professor Roberts that there is any evidence on which to conclude, as he does, that leakage into shop units is ‘*most likely a failure in execution [of the Procor 3] and requires further investigation*’. As I have stated above, there is no evidence of any leakage into shops currently, or any evidence of defects in the Procor 3. Therefore, in my opinion any extensive intrusive investigation or replacement of the Procor 3 membrane would be completely unnecessary and disproportionate.” (*Ibid*)

From the foregoing, Prof Robery concluded that there was no evidence that the Procor 3 membrane was defective. Nor, in his view, was any evidence presented to establish “that the Procor 3 membrane has failed or decomposed or is allowing standing water to penetrate into the retail units below the level 1 car park” (Robery 2, paragraph 3.2.22).

[198] In the absence of an ongoing or widespread leak from level 1, in Prof Robery’s view there was no justification for an intrusive investigation of the kind contemplated by the pursuer’s experts. The defender’s other expert, Mr Davis, also supported that view, and he recommended a good cleaning out of the drainage system (Davis 4, paragraph 3.29(h)).

[199] As for the source of the water for the now-historic leaks which had occurred in the DW Sports unit, in Prof Robery's view this could have come from blocked drains, rather than any defect in the Procor 3 membrane (Robery 2, paragraph 4.2.17). He noted that while there had been an active leak, there could have been testing carried out to determine its source (eg by the use of what he described as "fugitive dye" (see Robery 2 at paragraph 3.2.25.2)), but this had not been done by Mr Clarkson or any other person on behalf of the pursuer (Robery 2, paragraph 4.2.17). In the absence of such investigations, which could confirm or exclude various causes, Prof Robery characterized as "speculation" Mr Clarkson's attribution of the historic leak into the DW Sports unit to an unspecified defect in the Procor 3 membrane (Robery 2, paragraph 4.2.20). Prof Robery noted that there had been a car wash which had operated on level 1 in the area above the DW Sports unit. It may have been that the volume of water from that activity was such as to overtop the drainage gullies at the perimeter of the level 1 deck.

[200] In relation to Mr Clarkson's reliance on what he noted at L4 in the April 2021 Investigation, Prof Robery did not agree with Mr Clarkson's assessment. In his view, the protection board was not disintegrating. He noted that Mr Clarkson took several attempts to remove the board and expose the membrane. In his view, it was this activity in removing the board that led to a small piece of membrane to be pulled away from the structural concrete beneath (Robery 2, paragraph 2.2.7 to 2.2.8). In any event, the protection board was there to protect the Procor 3 membrane during the installation of the insulation layer above it.

Discussion of alleged defect 6

The evidence of occurrence and location of leaks

[201] As noted above, the pursuer's case on defect 6(a) is largely premised on what is now accepted to be an historic leak into one retail unit. Against that is the evidence that, while in the past there had been regular water ingress into the DW Sports shop immediately below, no further leaks had been reported since the remedial works were completed.

[202] There was surprisingly little evidence of the precise location of the leak. As noted above, only Prof Robery inspected the DW Sports unit in 2021. He described evidence of historic water staining toward the rear of the unit, or its back storage area, which was at the north-most edge of the unit. This would be adjacent to and below the perimeter drainage on level 1 of the car park (eg as shown on figure 2.3 of Robery 1). Having done so, he found no evidence of any active leaks into any area of the shop. In the course of the proof, it became clear that the water ingress into the DW Sports unit had ceased by about the time of completion of the remedial works. The pursuer's experts, Mr Clarkson and Prof Roberts both accepted this. No witness suggested that there were any ongoing leaks from level 1.

[203] The difficulty for the pursuer is what may reasonably be inferred about the state of the Procor 3 membrane from the evidence. Mr Clarkson acknowledged that he was in no position to say that any defect in the Procor 3 membrane at level 1 was wide-spread. At its highest, Prof Robert's evidence was simply that the historic leaks merited investigation. The problem for this part of the pursuer's case is that the absence of leaks for a period of 2 years displaces its primary premise. Neither of the pursuer's experts addressed that fundamental difficulty for the pursuer's case.

[204] I next turn to the evidence of L4, which is the second adminicle underpinning the pursuer's case in respect of defect 6(a), and on which Mr Clarkson placed considerable

reliance. As it appears in the plan to the experts' collated findings following the April 2021 Investigation (lodged as Joint Bundle no 193), the location of L4 is near the northernmost perimeter of the car park and broadly above the back area of the DW Sports unit. I have already noted above (at paras [70] ff) the differing views of those in attendance of what was revealed at L4.

[205] On the contested matter of the assessment of the state of the Procor 3 membrane as found at L4 at the April 2021 Investigation, I prefer the evidence of Mr Allan and Prof Robery. Prof Robery, in particular, was clearly the most knowledgeable about the function of the various elements comprising the level 1 deck. So, for example, he explained the make-up of the protection board; that it served a limited purpose for a very short period of time and that its purpose was thereafter superseded; and he explained that the Procor 3 membrane was affixed to its underside. By contrast, Prof Roberts assumed it was meant to serve an on-going function, hence his concern about its friable state (see para [71], above). I also accept Prof Robery's description of the effort required to remove the protection board in order to expose the Procor 3 membrane and that those actions may have damaged, or changed the elasticity or feel of, the membrane - an explanation that was not challenged in evidence. It is telling that the pursuer's experts did not seem to contemplate, or they appeared willing immediately to exclude as a possible cause, the necessarily intrusive investigation they were undertaking as having had any effect on the membrane found. The final position of the pursuers' experts was that something was not right about the Procor 3 membrane (Mr Clarkson) or that the past leaks merited investigation (Prof Roberts).

[206] There was very limited evidence in relation to the small hole detected at the same location, which did not form a major plank of the pursuer's case on defect 6(a). From certain questions posed in cross-examination, it appeared at least implicit in the pursuer's case that

the hole was not created by the intrusive investigations at L4, but that it had existed prior to the April 2021 Investigation and had been “found” by that exercise. Had the hole Mr Clarkson identified in L4 existed prior to the April 2021 Investigation, or affected the performance of the Procor 3 membrane, one would have expected the leak into the DW Sport unit to have manifested itself even after completion of the remedial works. It has not. In any event, regardless of whether the hole existed prior to, or was caused by, the April 2021 Investigation, the existence of a small hole in a waterproof membrane does not support an inference that the membrane itself was substantially defective in a sense relevant to the remedy the pursuer seeks.

[207] In my view, neither Prof Roberts nor Mr Clarkson has demonstrated that the Procor 3 is defective and prone to leakage based on the April 2021 Inspections. The absence of water ingress into the DW Sports unit, whose location broadly corresponds with L4, provides a strong contra-indicator to the pursuer’s premise that, in fact, the membrane is operating as it should at level 1. The pursuer has not established the nature of any alleged defect, its location or extent. Mr Clarkson accepted this in cross-examination.

[208] One of the disputed matters relative to defect 6(b) is the source of the water which was found trapped in layers of polythene above the Procor 3 membrane during the April 2021 Investigation at location L6 or which flowed back into the core hole at L4. The parties had competing theories as to the source of the water, but there was no evidence to establish this with any certainty. The pursuer’s position appeared to be that the water had come from leaks in upper levels of the car park. Prof Roberts appears to have assumed this, too, when he noted the ponding in some of the disabled bays at level 1, although he could not state with any confidence what the likely source of that water was. The defender’s position is that this water was most likely produced by a car wash which operated for some

years in the northwest corner of level 1, immediately above the area where the leaks occurred in the retail unit. (From this Prof Robery had surmised that the water ingress into the retail unit may have resulted from run off from the car wash overtopping the membrane ie at its outer edges or where it lapped up against an intrusion (such as a stanchion.))

Mr Clarkson did not appear to contemplate the car wash as the source of the leak or of the water found trapped above the membrane at level 1. This is a striking omission, given that the operation of the car wash at level 1 was noted in the 2016 WJM Letter (see para [90(1)], above), and included as appendix 11 to Clarkson 2, and was referred to by Mr Mackie (see para [108(3)], above). Of the possible sources of that water, I am not persuaded that the source of this is from level 3. This would necessarily mean the water had to have passed through level 2. While Mr Anderson referred to water pouring down through the deck levels, this was not supported by any independent evidence and was, like other features of his evidence, exaggerated.

[209] It is in this context that the question of cleaning and maintenance of the drains arises. Again, I prefer Prof Robery's observations to those of Mr Clarkson in respect of the condition of the drains examined at the April 2021 Investigation. The pertinent fact is that, once the drain was cleared of its obstruction, the accumulated water drained away. I also agree with the defenders' experts that keeping drains clear is a matter of maintenance. I am not persuaded that there is any defect in the drains, by reason of the construction or workmanship, as alleged in defect 6(b).

[210] Furthermore, whatever the source of the water found trapped above the Procor 3 membrane at the level 1 deck, it has not been established that the presence of water at sub-surface level, found at L4 and L6, itself posed an ongoing risk to the viability of the membrane. Indeed, the very fact that some standing water was trapped between several

layers of polyurethane at L4, but none of which had seeped below, is a strong indicator that the membrane was in fact performing adequately. Other than Mr Clarkson's observation that the membrane was pliable, there was no evidence that the membrane was being used or relied on for a purpose outwith its design capacity. There was no challenge to Prof Robery's description that the Procor 3 membrane was designed to bear a great volume and weight of water and was waterproof, even if it was not specifically marketed as a waterproofing product or treatment. There was no evidence to support a conclusion that the Procor 3 membrane at level 1 was defective. On this matter, Prof Robery concluded in Robery 2, that "there is no evidence presented that the Procor 3 membrane has failed or decomposed or is allowing standing water to penetrate into the retail units below the Level 1 car park" (at paragraph 3.2.22). In light of that evidence, any asserted failure of the sub-surface drainage at level 1 ceases to have any adverse effect on, or risk to, the car park

Defect 7: The failure to complete a structural movement joint

[211] The final defect advanced was an alleged failure to complete a structural movement joint on level 3, on which the evidence was minimal. No witness suggested that the movement joint should not have been installed. Mr Davis was not challenged on his evidence that its absence affected the pursuer's use of its offices. A blockwork wall was constructed over the incomplete joint. This would require first to be taken down in order for the joint to be completed. The common view (including Mr Clarkson) was that this was a relatively minor matter.

Discussion of defect 7

[212] The movement joint was not completed. Accordingly, there was a technical non-compliance with the Specification or a failure of workmanship. The pursuer has proved this defect. However, in the context of the construction of a car park, such an omission - especially 13 years after its construction - may be characterised as *de minimis*. I accept the defender's submission that alleged defect 7 is plainly a matter which could be fixed very quickly and cheaply and does not afford a basis to find that the defender is in material breach of the Agreement.

[213] I turn to consider the implications of my findings in respect of the remedy the pursuer seeks. Before doing so, I should briefly address parties' legal submissions. I should record that I have also had regard to, but need not record, the parties' full and careful submissions lodged at the end of the proof.

Discussion of the legal issues and their application to the findings in respect of the alleged defects

The construction of clauses 2.4 and 3.1

[214] Parties disputed the proper construction of clause 3.1. The defender submits that the clause 3.1 obligation to "procure" required no more of the defender than to appoint a competent team of professionals and building contractor to construct a sound car park, and to secure collateral warranties in favour of the pursuer. I accept the pursuer's submission that this repeats the argument the defender advanced without success at the debate before Lord Woolman. His decision is not *res judicata*, and the issue is at large for me. In my view, the pursuer's submission that the defender's reading is fundamentally inconsistent with clauses 5 and 9.2 of the Agreement (summarised at paras [6] to [8], above) is well-founded.

If the defender's reading were correct, it would deprive the tenant's rights to inspection and the whole dispute mechanism in clause 5 of any utility. Nor can the defender's reading be reconciled with its liability (under clause 9.2) to procure that all defects are made good during the defects liability period. It would have no liability arising under clause 9.2, if its duties were exhausted upon "procuring" a professional team to construct the car park. I also accept the pursuer's submission that "procure" should be given a straightforward meaning, namely "to cause the desired result to be brought about" (eg of good workmanship or the use of specified materials). In relation to clause 2.4, there was no dispute as to its construction and, as Mr Howie acknowledged, this clause had little role to play given the pursuer's concession. It was now relied on only in respect of what remained of alleged defect 3, the waterproofing to the head of the level 3 ramp.

Personal bar

[215] The defender's plea of personal bar appeared to be based on the limited evidence of Mr Heller (see para [99], above). At best, he was equivocal about whether the defender would have proceeded with the remedial works if the pursuer had indicated its intention to rescind the Agreement. Otherwise, on the evidence there is no unqualified representation by the pursuer that it would not treat any breach by the defender as non-material. There is no adequate foundation in the evidence to meet the requirements for personal bar, as set out in the classic formulation in *Gatty v Maclaine of Lochbuie* 1921 SC(HL) 1.

The lateness of the pursuer's claim

[216] The defender's other legal argument was that the pursuer's claim comes too late, coming as it does more than a decade after the construction of the car park and the pursuer's

occupation throughout that time. The pursuer's reply is that a decision to rescind a contract has to be made in the full knowledge of the matters which would entitle it to rescind. The pursuer submits that in this case, until receipt of the Repair Notices, the pursuer did not know (or could not be deemed to have known) of defects affecting levels 1 and 2. This was spoken to by Mr Tidball, who described his "shock" upon receiving the 2018 Repair Notice shortly after completion of the remedial works which followed the pursuer's success in the prior litigations (see para [82], above). This action was duly raised in 2019. I accept as well-founded the pursuer's submissions on this issue.

Consideration of whether the pursuer has established material breach or breaches going to the root of the parties' Agreement

What must be established in order to be entitled to rescind a contract?

[217] It is common ground that not every breach of contract will justify rescission, but that a party seeking to rescind a contract must demonstrate a breach of a term going "to the root" of the parties' contract (the *dictum* is that of Lord President Dunedin, in *Wade v Waldon* 1909 SC 571 at 576). Whether a particular term goes "to the root" of the contract is a question of construction: *Gloag on Contract* (2nd ed) at p 63, cited with approval by Lord Jauncey in *NV Devos Gebroeder v Sunderland Sportswear Ltd* 1987 SLT 337 at 337F-G (whose remarks were undisturbed by the Inner House, reported at 1990 SC 291). A term may be agreed by the parties to be material (eg a provision that "time is of the essence"). By its nature as a metaphor, the phrase "going to the root of the contract" is an open-textured and flexible test to be applied having regard to all of the circumstance. Therefore, it may also be important to consider the term concerned and its inter-relationship to other terms in the overall context of the parties' agreement. In this case, for example, the effect of the onerous repairing

obligations assumed by the pursuer is to transfer the consequences of any breach by the defender to the pursuer. The effect of that term and an evinced intention on the part of the defender to hold the pursuer liable under such a clause for some defect in the condition of the car park (at least if the defect is established to have been attributable to a prior breach of the defender), is likely to be relevant to and inform the assessment of the materiality of any breach on the part of the defender.

[218] Once a term has been construed (or stipulated) as going to the “root of the contract”, then the question of whether its breach is material is treated as a question of fact (see, eg, the discussion in McBryde, *The Law of Contract in Scotland* (3rd ed) at paragraph 20-96). That form of enquiry is likely to involve consideration of matters extraneous to the contract term said to have been breached. While one of the points that Mr Borland made on behalf of the defender in submissions was that the pursuer had not proved it had sustained any loss or that it had even incurred any expense by reason of any breach on the part of the defender, it will be recalled that the materiality of a breach is not measured solely by the pecuniary consequences of the breach for the innocent party (*per* Lord Jauncey in *NV Devos Gebroeder*, *cit supra*).

[219] Mr Howie suggested that the breach must be so material, in the nature of the term breached or in its adverse effect on the innocent party, as to render the contract other than what the parties contemplated, and thus to make it unfair to continue to hold the innocent party to it. That submission must be understood in its context, namely, that in assuming an onerous repairing obligation in the lease, the pursuer assumed the risk of having to undertake substantial works or repairs, which were not foreseeable at the time of the Agreement, even if the need for those repairs flowed from the defender’s breach. What is clear is that breach of a term going to the root of the contract is not a low threshold.

Mr Howie accepted that in order for the pursuer to obtain the declarator it seeks, it must establish that the breaches of clauses 2.4 and 3.1 of the Agreement, either singly or in combination, pass that threshold.

Application of the legal test to the findings in fact

[220] I have summarised the pursuer's position above (at paras [39] to [42]). As I have recorded in my consideration of each defect, the pursuer has failed to prove all but two of the defects it alleges. The breach constituting defect 7 may properly be described as *de minimis*. The only defect predicated on clause 2.4 was defect 3, which was maintained only in an attenuated form. In relation to clause 3.1, at most, the pursuer has established an immaterial breach which has had no appreciable impact on the operation of the car park and remediation of which would involve a very modest figure. In those circumstances, there is no prospect of the pursuer establishing a breach of the requisite quality to obtain the remedy it seeks. That conclusion is enough to dispose of the action. However, as I have had some regard to Mr Clarkson's evidence, it is appropriate that I determine the defender's objection to Mr Clarkson. (No other objections made in the course of the proof were maintained in submissions. In any event, having regard to the nature of the evidence heard under reservation of these objections, none of them was well-founded.)

The Clarkson Objection

[221] In brief, the principal grounds of the Clarkson Objection were:

- 1) that by reason of his role as an adviser to or agent of the pursuer in relation to the remedial works to level 3, or of having an input into the design process (because

of his suggestion to replace the channel drains with open gullies), his independence was compromised;

- 2) that he purported to express a view on some of the obligations in the Agreement;
- 3) that some of the language used in his witness statements (quoted in paragraph 5 of the Clarkson Objection) reflected that shift in perspective, as did Mr Clarkson's comments on and challenges to the evidence of the defender's own witnesses in his witness statements; and
- 4) that Mr Clarkson's role as the pursuer's representative or adviser in relation to the remedial works was also spoken to by some of the defender's own witnesses.

For these reasons, the defender's submission was that Mr Clarkson should not be regarded as an expert or skilled witness and his evidence was inadmissible (treating those qualities as a threshold to admissibility: *Kennedy v Cordia (Services) LLP*, 2016 SC 59 (UKSC) ("*Kennedy*"), *per* Lords Reed and Hodge at paragraph 51.

[222] The pursuer responded to the Clarkson Objection. It explained that Mr Clarkson's involvement in the remedial works was necessitated by the defender's failure to operate clause 5 of the Agreement (which provided a mechanism for the pursuer to inspect and comment on construction works to the car park before certificates, such as for practical completion or making good defects, could be issued). Mr Clarkson's role was to monitor the remedial works, as he had the requisite expertise and also in-depth knowledge gained from his role as an expert in the prior litigation, in order to ensure that those works complied with the Agreement and Specification. In respect of the some of the language used by Mr Clarkson, some of this was taken out of context. Otherwise, his use of the word "advising" had to be understood as reflecting his role in monitoring the remedial works. He had stated the scope of his instructions, which were those engaging him as an expert. He

was an engineer with over 39 years' experience, and was an experienced expert witness. In relation to Mr Clarkson's witness statements (as opposed to his report), it was only fair that he be entitled to respond to the criticisms levied against him by the defender's witnesses to fact (as opposed to their experts), and which he did in his own witness statements. These did not form part of his expert reports. Finally, in his references to the terms of the Agreement he was providing the framework for his comments.

Discussion of the Clarkson Objection

[223] The defender's challenge was made under reference to the Supreme Court's decision in *Kennedy*. If a challenge to an expert's independence is upheld, the effect is to render his or her opinion evidence inadmissible. Given that the practice in the Commercial Court is to hear evidence under reservation and deal with the merits of any objection at the stage of submissions (the practice is noted in *Scots Road Partnership Limited v The Scottish Ministers* [2019] CSOH 113 at paragraph 32), that would mean such a finding is given effect after the evidence has been led and considered. For my own part, absent a very clear case that an expert has ceased to be impartial and independent, it is unlikely that a court could make such a finding *ab ante* and without the benefit of hearing and considering the evidence of the expert, including it being tested by cross-examination.

[224] While Mr Borland was critical of Mr Clarkson for making extensive reference to the terms of the Agreement, so too did Prof Robery. In each case, it is explicable that the expert concerned would wish to relate his comments to the contractual framework (as understood by or explained to the expert).

[225] Having heard and considered the whole evidence, including Mr Clarkson's evidence over the course of two days (the majority of which was cross-examination) I find that the

defender's challenge is not well-founded. First, Mr Clarkson's initial involvement was his instruction as an expert for the pursuer in the prior litigations, and the subsequent remedial works, which related to level 3. In this litigation, only one of the defects alleged related to level 3 in any significant way (defect 1, the issue of ponding). Nor do I find that Mr Clarkson's role in respect of the remedial works compromised his standing as an expert. It was not an adversarial role; in some instances his suggestions (eg the use of a valley gully) were followed by the defenders; his purpose, in common with others, was to achieve the best car park in the circumstances. While I have preferred the evidence of other witnesses on certain matters of fact (eg about the state of the Procor 3 membrane at L4), these are on grounds that do not arise from the witness' expertise or opinion evidence, but upon an assessment against other factual evidence I have accepted. Accordingly, while some of the language used in Mr Clarkson's witness statement, while unfortunate (as Mr Howie accepted), this is of no moment. To the extent that, on occasion, Mr Clarkson expressed strong views on certain issues, or on matters outwith his direct expertise or experience, these matters go to weight, not admissibility. Notwithstanding the defender's forcefully advanced objection, I am not persuaded that it is well-founded or justifies the exclusion of Mr Clarkson's evidence. On matters of opinion, I have preferred the evidence of others to that of Mr Clarkson. This was because I found the expert whose evidence I preferred (principally, Prof Robery) to have a deeper knowledge of the subject-matter under consideration, to have undertaken more thorough investigations, to have expressed himself with more care and precision and I have found that his opinion was better supported by the other evidence. I do not need to address this as a matter of weight. It is in the nature of adversarial litigation, where contested matters may turn on opinion evidence, that the

evidence of one expert is preferred to another. Such a finding does not infer that any of the criticisms advanced by the defender in the Clarkson Objection was well-founded.

Decision

[226] For these reasons, the pursuer has failed to establish its entitlement to rescind the Agreement. I shall issue an interlocutor to that effect, but will reserve the question of expenses meantime.