Patents Act 1977 **Opinion Number** **12/17**

OPINION UNDER SECTION 74A

Patent	EP1522638 B1
Proprietor(s)	Carlow Precast Concrete Engineering
Exclusive Licensee	
Requester	Burren Precast Concrete Ltd
Observer(s)	Carlow Precast Concrete Engineering
Date Opinion issued	13 October 2017

The request

1. The comptroller has been requested by PurdyLucey Intellectual Property Ltd on behalf of Burren Precast Concrete Ltd ("the Requester") to issue an opinion as to whether claims 1-15 of EP1522638 B1 ("the Patent") are valid. In particular the Requester asserts that the claims of the Patent lack novelty and/or an inventive step in light of (i) a prior use, (ii) a publically-available leaflet and (iii) two patent documents.

2. The request was received on 19 July 2017. It was accompanied by a statement supporting the request as well as 10 documents, D1-D10 including four signed Declarations.

Observations & Observations in reply

3. Observations were received on 18 August 2017 from Fieldfisher acting on behalf of the proprietor of the Patent, Carlow Precast Concrete Engineering ("the Observer"). The Observer notes that their observations can only be partial as they did not have a full copy of the submissions and state that they reserve the right to advance further submissions should the validity of the Patent be the subject of proceedings. They also question the suitability of this matter for the Opinions Service. On this latter point, firstly they submit that the content of the Declarations filed in support of the Request can only properly be resolved by cross-examination of the Declarants under oath. Secondly they assert that it is the Requester's position that s.70 proceedings (Remedy for groundless threats of infringement proceedings) will be issued in which the validity of the Patent will be a core issue.

4. Observations in Reply were received from the Requester on 1 September 2017 along with three further documents D11, D12 and D13. Here, the Requester urges

the Office to refuse the Observer's request to file further Observations. The Requester also disagrees that the matter is not suitable for the Opinions Service. Regarding the first argument put forward by the Observer, the Requester submits that the Declarations filed are statements of fact and that the Observer has had ample time to provide evidence in order to attempt to refute the contents of the Declarations. They also note that D2 for example was provided as a corroborative document. Regarding the second argument they confirm that there are no IP proceedings underway.

5. The Observer filed further correspondence on 11 September 2017 to state that the Observations in Reply and the three attachments are not in their view confined strictly to matters in reply as required by Rule 96 of the Patent Rules and that therefore these submissions should not form part of my deliberations. They also cast doubt on the authenticity of document D11.

6. In response to the arguments raised during the Observations and Observations in Reply, I first note that apart from the subsequent correspondence no further submissions have been filed by the Observer as part of this Opinions process and therefore this point is moot. There are no IP proceedings underway and therefore again there is nothing more I need to consider in this regard. Regarding the suitability of the evidence, there is no restriction on the form of evidence that can be filed as part of the Opinions procedure. A witness statement or other evidence may be filed in relation to prior use. I must, however, weigh up the evidence of prior use including the alleged 'publication date' on the balance of probabilities. I will comment on this point further below.

7. Regarding the subsequent correspondence from the Observer and whether the further submissions in the Observations in Reply should be allowed, I would note that the opinion process only provides for three rounds of submissions and that submissions made outside of those three rounds will generally not be considered. I would however note that given that there are only three rounds, any observations made in reply must be just that and any observations that are not strictly in reply will not be considered. I discuss the observations in reply in more detail later on.

The Patent

8. The Patent entitled "A stormwater attenuation tank and a method of manufacturing same" is an EP(UK) patent filed on 6 October 2004 with an earliest claimed priority date of 6 October 2003. The Patent was filed in the name of Carlow Precast Tanks Ltd with the rights transferred to Carlow Precast Concrete Engineering on 27 February 2015. The patent was granted on 3 May 2017 and is still in force in the UK.

9. The Patent relates to a tank which is designed for use as a buffering device to collect excess stormwater for slow release to a municipal sewer or the like; the loading on the sewer is controlled reducing the possibility of flooding. The tank 10 (see Figure 1 of the Patent reproduced below) comprises a modular perimeter wall 14 consisting of a plurality of precast wall units 16 secured in a reinforced concrete floor 18. In addition the tank 10 comprises a roof 20 consisting of an array of pre-cast roof units 22. A line of precast internal walls 24 is provided in order to support the roof units 22. Importantly, the internal walls are seated directly on the concrete floor without fixing

or sealing reducing the time to manufacture the tank and providing structural continuity to the floor underneath. The Patent explains further that conventional stormwater tanks when manufactured from concrete would often be cast as a monolithic structure on site. In the invention of the Patent, the wall units 16, roof units 22, and internal walls 24 are all precast offsite reducing the time taken to manufacture the tank 10.

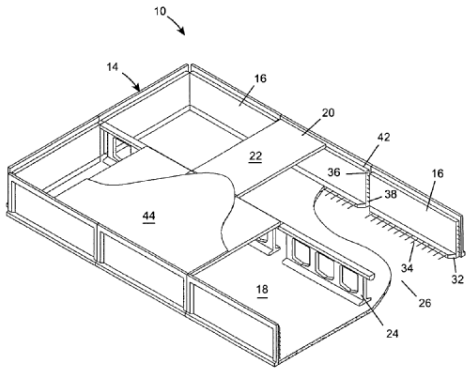


Fig. 1

10. The Patent has 15 claims including independent claim 1 directed to a stormwater attenuation tank. Claim 11 defines a method of manufacturing an attenuation tank according to any of the previous apparatus claims. Claim 1 reads as follows with the features for convenience separated out in a similar manner to that adopted by the Requester:

> ***1*** *(i) A stormwater attenuation tank (10)*
> *(ii) comprising an inlet through which to channel stormwater;*
> *(iii) an outlet adapted for fluid communication with a sewerage system;*
> *(iv) a floor (18);*
> *(v) a modular perimeter wall (14) comprising precast wall units (16);*
> *(vi) at least one precast internal wall;*
> *(vii) and a roof (20) comprising precast units (22) supported on the at least one internal wall (24),*
> *(viii) characterised in that the floor (18) of the tank (10) comprises a steel fibre reinforcement incorporating steel reinforcing elements;*
> *(ix) and the at least one precast internal wall has an enlarged foot which stands directly on the floor (18) without requiring fixing in order to maintain structural continuity to the floor (18) beneath the at least one internal wall, and without a seal being formed between the floor (18) and the at least one internal wall.*

11. The Requester submits the following:

    a. Claim 1 of the Patent lacks novelty over a prior use. In particular the Requester alleges that a stormwater attenuation tank meeting claim 1 was sold to SM Morris Limited/Castlethorn Developments and subsequently installed at Hanstead Way, Adamston, Lucan, Co. Dublin in both cases before the priority date of the Patent.

    b. Claim 1 of the Patent lacks novelty over document D2, a leaflet entitled

"Carlow Precast Tanks Ltd", which they allege was made available to the public in September 2003.

c. Claim 1 lacks an inventive step over patent document D5 (JPH09151493) and common general knowledge.

d. Claim 1 lacks an inventive step over patent document D6 (JP06299591) in combination with document D4, a manual entitled "Recommended Practice for Precast Prestressed Concrete Circular Storage Tanks".

12. Similar arguments have been made regarding method claim 11 and the remaining dependent claims.

Novelty and Inventive step – the law

13. Section 1(1)(a) and (b) of the Patents Act (henceforth 'the Act') reads:

> *1(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –*
> *(a) the invention is new;*
> *(b) it involves an inventive step;*

14. The relevant provisions in relation to novelty are found in section 2(1) and section 2(2) which read:

> *2(1) An invention shall be taken to be new if it does not form part of the state of the art.*
>
> *2(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.*

15. The provisions in relation to inventive step are found in section 3 which states:

> *3. An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).*

16. The Court of Appeal in *Windsurfing*[1] formulated a four-step approach for assessing whether an invention is obvious to a person skilled in the art. This approach was restated and elaborated upon by the Court of Appeal in *Pozzoli*.[2] Here, Jacob LJ reformulated the *Windsurfing* approach as follows:

> *(1)(a) Identify the notional "person skilled in the art"*
> *(1)(b) Identify the common general knowledge of that person;*

[1] Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd, [1985] RPC 59
[2] Pozzoli SPA v BDMO SA [2007] EWCA Civ 588

(2) *Identify the inventive concept of the claim in question or if that cannot be readily done, construe it;*

(3) *Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed.*

(4) *Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?*

17. I will begin by considering the validity of the invention as defined by claim 1. Only if I find it to be invalid will I consider claim 11 and the remaining dependent claims.

Construction of claim 1

18. Before considering the documents put forward in the request I need to construe claim 1 of the Patent, that is to say I must interpret it in the light of the description and drawings as instructed by Section 125(1) and take account of the Protocol to Article 69 of the EPC. In so doing, I am following the recent authority on claim construction in Eli Lilly v Actavis [2017] UKSC 48, which reminds me that I must construe the claims normally by giving effect to how the claims would have been understood by the notional addressee i.e. the skilled reader.

19. The Requester considers the relevant skilled person to be "one familiar with precast concrete structures, such as precast concrete tanks". I think that is a reasonable assessment and I adopt this definition here.

20. Claim 1 is generally straightforward to construe. There are a couple of terms, however, that are worthy of consideration.

21. The first of these is 'precast' which appears in features (v), (vi), (vii) and (ix) to describe the wall units, internal wall and roof units. According to the Patent in paragraph [0028]: 'The wall units 16, roof units 22, and internal walls 24 are all precast offsite, to exact tolerances, thereby dramatically reducing the length of time taken to manufacture the tank 10 on site'. The skilled person would therefore consider 'precast' to have its normal meaning of cast into form before being put into position. This could occur either onsite or, more typically as the Patent suggests, offsite.

22. The second term to consider is the 'enlarged foot' of the internal wall in feature (ix). According to paragraph [0038] of the Patent: 'The enlarged base or foot of each internal wall 24 reduces the effective span of the floor 18'. This can be seen in Figures 1 and 2 where the base of the internal wall has an increased width compared with the body of the internal wall. The skilled person would realise that the foot is part of the structure of the internal wall; the foot could have any width as long as it is wider than the stem of the internal wall.

Whether claim 1 lacks novelty over a prior use

23. The Requester alleges that a stormwater attenuation tank meeting claim 1 was firstly sold to SM Morris Limited/Castlethorn Developments and subsequently installed at

Hanstead Way, Adamston, Lucan, Co. Dublin in both cases before the priority date of the Patent, 6 October 2003. The Requester alleges that the site installation commenced on 21 July 2003 and was completed by 1 August 2003. They allege that the installation was freely available to persons not bound by secrecy. The Requester concludes that both the sale and the disclosure by way of the subsequent installation constitute novelty-destroying prior uses.

24. To support their allegations, the Requester provides signed Declarations from four people, summarized as follows:

    a. D1: Mr Michael Joseph Lomax states he was General Manager/ Managing Director of Carlow Precast Concrete Engineering/Carlow Precast Tanks Ltd from March 2001 to November 2014. He states further that a stormwater attenuation tank meeting claim 1 of the Patent was sold and subsequently installed at Hanstead Way on the dates given above.

    b. D7: Mr Sam Deacon states that his company supplied the precast concrete roof slabs and that these slabs were delivered to the Hanstead Way site on 30 July 2003.

    c. D8: Mr Gerard Rooney states he was a site installation operative on the Hanstead Way site between 21 July 2003 and 1 August 2003.

    d. D9: Mr David Deacon states he supplied the crane machinery for the installation at Hanstead Way and was on site on 23rd 28th 29th and 30th July 2003 to crane lift the precast concrete components of the tank.

25. The Requester also provides a leaflet D2 which they assert shows photographs of the stormwater tank being installed at the Hanstead Way site. This is confirmed by all four Declarants. The Requester has annotated the leaflet in D3 to indicate the particular features of claim 1 of the Patent.

26. The Observer (also the Patentee) accepts that a stormwater attenuation tank was installed at this address. However, they do not confirm that the stormwater tank has all the features of claim 1. Further, they do not accept that the installation took place on the dates asserted (although they do not provide alternative dates) nor that the installation was a public disclosure.

27. In summary, therefore, both Requester and Observer agree that a stormwater attenuation tank supplied by the Patentee was installed at the Hanstead Way site. They do not agree on the dates of the installation, whether the installation was a public disclosure or whether the stormwater tank has all the features of claim 1 of the Patent. I will deal with these three issues in turn in light of the submissions and evidence from both Requester and Observer. There are many arguments presented by both parties. I have carefully considered everything filed but I have only discussed the most relevant points in this Opinion. I note in cases of alleged prior use that the required standard of proof is proof on the balance of probabilities. Further, proof “up to the hilt” is not always required; however mere assertion is insufficient: place, time and detail are essential. (See for example Colley’s application [1999] RPC 97.)

28. I will consider first the date of installation and crucially whether it occurred before the earliest filing date of the Patent, 6 October 2003. All four Declarants state that work was carried out on the tank during July/August 2003. The Observer asserts, however, that none of the Declarants could be described as independent and may be parties to non-IP related proceedings with the Patentee. The Requester admits in their Observations in Reply that the Declarants have a working relationship between themselves and with the Patentee but stresses that the relationship has not unfairly influenced the content of the signed Declarations. They admit further that Mr Lomax is involved in a dispute with the Patentee regarding a non-IP matter. The Requester emphasizes, however, that Mr Gerard Rooney, Mr Sam Deacon and Mr David Deacon are neither employees of the Patentee nor of the Requester and are not party to the dispute. Although further investigation may indicate otherwise, as far as this Opinion is concerned, I will assume that the Declarants are sufficiently independent for their Declarations to be separately accountable and will assume that only Mr Lomax of these four Declarants was an employee of the Patentee during the alleged time of installation.

29. The Observer calls into question the precision with which the Declarants can recall specific dates, particularly without reference to contemporaneous documents. In order to further confirm these dates the Requester as part of their Observations in Reply filed further documents D11-D13 as follows:

    a. D11 is a "Method Statement and Safety Plan" allegedly supplied to the contactors installing the tank. This plan, apparently only in draft form, specifies dates between 18th July 2003 and 31st July 2003 when the particular steps are proposed to take place.

    b. D12 is a copy of Job Time Sheets of Mr David Deacon (Declarant of D9) for work carried out between 23rd July and 30th July 2003 and allegedly signed by Mr William Rooney, who is a named inventor on the Patent.

    c. D13 is a letter signed by Mr William Rooney who confirms he signed the Job sheets of D12. He also confirms he was on the Hanstead Way site in July 2003 when a tank was being constructed.

30. I need first to consider whether these documents are strictly observations in reply as required by Rule 96 of the Patent Rules. Whilst these documents were submitted in response to the Observer challenging the evidence initially provided by the Requester regarding the date that the stormwater tank was installed, that is not in itself sufficient for them to be treated as evidence in reply. Indeed having considered the matter carefully, I have concluded that they are not strictly evidence in reply. They are not directed to any evidence provided by the Observer but rather are intended to strengthen the case initially advanced by the Requester. As is clear from the initial request, it was clear that the Requester understood the importance of showing that the prior use predated the Patent. The Requester could have provided this additional evidence in their request but did not do so. If they had then the Observer would have had an opportunity to make observations on it. The Observer would not have that opportunity if I allowed the documents to be introduced during the observations in reply stage. That would be unfair to the patentee and hence I will not consider them for the purposes of this opinion.

31. Reviewing the evidence, all four Declarants in Declarations D1, D7, D8 and D9 state that work was carried out on the attenuation tank during July/August 2003. Mr Lomax (D1) and Mr Gerard Rooney (D8) specifically state the tank was completed by 1 August 2003. Mr Sam Deacon (D7) states the precast roof slabs were delivered to the site on 30th July 2003 and Mr David Deacon (D9) states he was on the site on a number of dates to crane lift the precast concrete components including on 30th July. Whilst the patentee accepts that a stormwater tank was installed at this address they seek to challenge the dates this occurred although I note that they do not provide any alternative dates. I consider on the balance of probabilities and in light of all the evidence and arguments provided that a stormwater tank was installed at the Hanstead Way site in July/August 2003 before the priority date of the invention.

32. The Requester also alleges that the tank was sold before being installed at Hanstead Way. The Requester alleges that the sale itself constitutes a novelty-destroying prior use. The sale and subsequent installation is confirmed by Declarant Mr Lomax in D1. The Observer asserts that there is no evidence that the sale took place ***before*** installation of the tank. However, I agree with the Requester that as well as the declaration in D1, it is common business practice with such an expensive item, for a sale to take place prior to installation. Therefore on the balance of probabilities I consider the sale of the tank to have also taken place before the priority date of the Patent.

33. I will now move on to whether the disclosure at Hanstead Way was in fact a ***public*** disclosure, necessary to satisfy section 2(2) of the Act. According to the evidence provided, the only named people who were not employees of the Patentee and were also allegedly on site during installation are Mr Gerard Rooney (a site operative) and Mr David Deacon (supplier of crane machinery). The Observer does not provide any evidence that in particular Mr David Deacon was under any confidentiality arrangement. As noted by the Requester, it was stated in *Lux Traffic Controls Ltd v Pike Signals Ltd and Faronwise Ltd ([1993] RPC 107)* that contractors had been free in law and equity to examine the object in question and further that if a skilled man had taken the time to test the object the examination would be sufficient to disclose the invention. In this case it appears that at least one contractor was free to examine the tank; Mr David Deacon in his Declaration D9 states he was on site to crane lift the pre-cast concrete components of the tank. These would presumably include the roof components installed towards the end of the installation process. The presence of at least one contractor on site not bounded by secrecy is sufficient in my opinion to render the disclosure public.

34. I will now consider whether the stormwater attenuation tank installed at Hanstead Way meets the terms of claim 1 of the Patent. Of all the Declarants, only Mr Lomax in his Declaration D1 refers to the features of the tank with respect to the claims of the Patent. In particular Mr Lomax states: “The stormwater attenuation tank that was installed at Hanstead Way …and that is illustrated in the leaflet … has all the features of Claim 1 of European Patent No. 1522638, including a floor comprising a steel fibre reinforcement incorporating steel reinforcing elements.” What Mr Lomax does not do in his declaration is to go through each of the features of the stormwater tank of claim 1 and explain how he is aware that they were present in the tank installed at Hanstead Way. In formal litigation proceedings that is something that would be explored in cross examination but that is not part of the opinion process.

What was really needed here was much more detail in the declaration rather than just the broad statement provided. It is also common ground that Mr Lomax had a relationship and is currently involved in an unrelated dispute with the patentee; I believe that I must look for further support for Mr Lomax's position in the other evidence provided.

35. The Requester provides D2 as a corroborative document. D2 contains a series of eight photographs of a stormwater tank allegedly being installed at Hanstead Way. Unfortunately the photographs in D2 are not very clear. The Requester has annotated D2 in D3 to highlight the key features and labelled the photographs as Figures 1A-1H. There is some dispute between the Requester and Observer as to how the leaflet was created. However, both seem to agree that the photographs are indeed of the tank being installed at Hanstead Way. All four Declarants in their statements in D1, D7, D8 and D9 confirm that this is the case.

36. Although not apparent in the photographs, such a tank must have an inlet and outlet to channel stormwater and be suitable for communication with a sewerage system respectively. Therefore I am satisfied that the tank meets the terms of features (i)-(iii) of claim 1. The tank has a floor, visible in say Figure 1B and indicated with numeral 1 by the Requester and therefore feature (iv) is also disclosed.

37. Feature (v) requires the tank to have a perimeter wall comprising precast wall units. The tank in say Figure 1B clearly has a perimeter wall. Mr David Deacon in D9 states he was on site to 'crane lift the precast concrete attenuation components of this tank'. However, he does not specify which components were lifted, in particular whether they were *wall* units. None of the other Declarants refer specifically to wall units. However, as the Requester points, out Figure 1A shows wall units being placed to form the perimeter wall indicating they are precast. I consider there to be sufficient disclosure to anticipate feature (v).

38. The tank from the photographs has at least one internal wall (see reference numeral 3 in Figures 1E and 1G). None of the Declarants refers specifically to the internal wall. Figure 1D, however, illustrates the internal wall being put in position indicating again that it is precast. I consider there is sufficient disclosure to anticipate feature (vi).

39. Regarding the roof, Mr Sam Deacon in his Declaration states: "The precast roof slabs were collected … from our yard and delivered to site …". The roof units can be seen in Figure 1F and given reference numeral 4. The roof slabs are seen in this Figure to be supported by the internal wall. I think there is sufficient evidence to disclose feature (vii).

40. Feature (viii) requires the floor to comprise steel fibre reinforcement incorporating steel reinforcing elements. As accepted by the Requester, this cannot be seen in D2/D3. Mr Lomax in his Declaration D1 specifically states this feature is present. Mr Gerard Rooney in his Declaration D8 states he was 'involved in adding steel fibre reinforcement to the readymix concrete trucks on site before the concrete was poured to form the floor of the precast attenuation tank'. I consider this evidence sufficient to disclose this feature.

41. It can be seen from Figure 1F, reference numeral 5, that at least one internal wall

has an enlarged foot as required by feature (ix). However, it is not apparent from the Figures that the internal wall stands directly on the floor without requiring fixing and without a seal being formed between the floor and the at least one internal wall as required by claim 1. None of the Declarants mentions anything specifically about the internal wall. Presumably the internal wall at the installation site could have, for example, been sealed into place. This part of feature (ix) is not discussed by either Requester or Observer. I therefore consider that feature (ix) is not disclosed sufficiently.

42. In summary, the evidence I have been supplied with does not disclose feature (ix) of claim 1. I draw similar conclusions regarding the alleged sale of the tank. I have not been asked to consider inventive step in relation to prior use. Therefore on balance I consider claim 1 to be novel in light of the alleged prior use.

Whether claim 1 lacks novelty in light of document D2

43. As discussed above the Requester employs D2 as a corroborative document for the alleged prior use of the stormwater attenuation tank. They also assert that D2 may be used as a standalone prior art document to demonstrate that claim 1 of the Patent is not novel. As discussed above, however, the leaflet is not sufficient to disclose all of the features of claim 1. I have only been asked to consider inventive step in relation to the reinforced concrete floor, which would not help to resolve missing feature (ix).

44. For completeness I will also consider whether D2 was made available to the public before the priority date (6 October 2003) of the Patent. At the bottom of the leaflet is written “© September 2003”; the Requester relies on this to state that the leaflet was published i.e. made available to the public at that time.

45. The Observer points out that even if the leaflet was created in September 2003 as suggested by the date on the leaflet there is no evidence in any of the Declarations or elsewhere that the leaflet was made available to the public in September 2003 or at any time before the priority date of the Patent. Next to the date on the leaflet is the statement “Patents Applied For”. The Observer makes the point that either the copyright date or this statement is wrong as the priority date of the Patent is not until October 2003.

46. In response to these arguments, I agree with the Observer that while the declarations in D1, D7, D8 and D9 all state that the leaflet contains photographs of the stormwater tank being installed at Hanstead Way, none verifies the publication date of the leaflet. Although the date on the leaflet may correspond to the date when it was created, I can see no evidence for the leaflet being made available to the public at that time or before the priority date of the Patent.

47. Therefore I consider claim 1 of the Patent to be novel in light of D2.

Whether claim 1 lacks an inventive step over D5 and common general knowledge

48. The Requester provides D5 which is a Japanese-language patent document JPH09151493 A. The Requester also provides a machine-generated English translation of the description. I will use this translation (and the Figures) to understand the disclosure as far as possible but am minded of its limitations. The Requester submits that claim 1 lacks an inventive step over D5 in light of common general knowledge of the skilled person. I will employ the four-step Windsurfing/Pozzoli approach as detailed above.

Steps 1(a) and 1(b): Identify the notional "person skilled in the art" and the common general knowledge of that person

49. As stated above, the Requester considers the relevant skilled person to be "one familiar with precast concrete structures, such as precast concrete tanks". I think that is a reasonable assessment. The skilled person would be familiar with the standard processes involved when manufacturing such structures.

Step (2): Identify the inventive concept of the claim in question or, if that cannot be readily done, construe it.

50. As discussed above claim 1 is generally fairly straightforward to construe. The inventive concept is as set out in claim 1 as construed above.

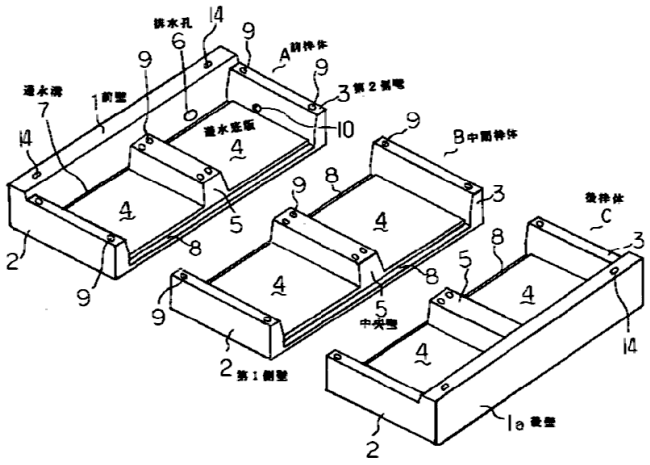
Step (3): Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or claim as construed.

51. I will now consider the disclosure in D5 and whether it exhibits features (i) - (ix) of claim 1 as set out previously. D5 relates to a storage tank 'for temporarily storing rainwater' (paragraph [0004]) and therefore discloses feature (i) of claim 1. D5 discloses both an inlet ('rainwater inflow holes', paragraph [0012]) and an outlet ('the drain hole 6 is connected to the sewer under the road', paragraph [0027]), meeting the terms of features (ii) and (iii). From Figure 3 (reproduced below) the tank clearly has a floor, feature (iv).

52. Regarding feature (v), D5 discloses that 'by constructing this facility at the factory etc …, it is to provide an inexpensive precast concrete in-house storage tank with uniform quality and standardized', paragraph [0004]. Therefore it seems that the separate parts are precast off-site. From for example Figure 3, the tank has a perimeter wall including front wall 1, rear wall 1a and side walls 2 and 3. The tank is formed in three 'frames' labelled A, B and C. From paragraph [0017], 'the front wall 1 is separated … and is formed as a separate body'. This can be seen from Figure 1 where it seems that that at least the front wall 1 and rear wall 1a can be detached. Therefore D5 discloses a modular perimeter wall including at least two precast wall units thus meeting feature (v).

53. From Figure 3 and paragraph [0019], the tank of D5 has a 'center wall 5' or internal wall 'disposed transversely in the front-rear direction', thus disclosing feature (vi).

【図３】



54. The tank has a roof D formed from two units 15 and 16 (Figures 4 and 7). From Figure 7 the roof portions are seen to be supported on the internal wall 5. This appears to be confirmed by paragraph [0019] which states: 'On the upper surfaces of the first side wall 2, the second side wall 3 and the center wall 5, mounting holes 9 … of the lid D are formed'. Therefore this seems sufficient to meet the terms of feature (vii).

55. The disclosure of D5 does not state whether the floor of the tank comprises steel fibre reinforcement. This is accepted by both the Requester and Observer. Therefore D5 does not disclose feature (viii).

56. From Figure 3 and paragraph [0019] the internal wall 5 in each frame A, B, C appears to be located on a 'base plate' 4. The Requester argues that the base plate 4 on either side of the internal wall creates an 'enlarged foot' for the internal wall 5 as required by feature (ix). They argue further that that the base plate is 'floating' i.e. is not fixed or sealed to the floor underneath thus satisfying the remaining part of this feature.

57. In response, I note that the base plate is described in the translation as a 'floating base bottom plate' paragraph [0014] and does indeed appear to float above the ground underneath without any seals or fixing requirements. However, although it is not easy to tell from the translation, it appears from paragraphs [0014] and [0032] that the internal wall 5 may be detachable from the base plate. For example paragraph [0014] states: 'the center wall is detachably formed with respect to the floating base bottom plate'; and paragraph [0032] states: 'if the centre wall 5 is detachably formed with respect to the floating water bottom plate, the central wall is detached as necessary to improve versatility of the storage tank'. It seems the tank can then be used as for example a pool (paragraph [0032]). It appears therefore that the internal wall 5 and base plate 4 may be separate entities. Moreover, the base plate appears to be permanently attached to the side walls 2, 3 in order to form the frames A, B, C. For example paragraph [0020] states: 'The intermediate frame B … is composed of a first side wall 2, a center wall 5, a second side wall 3, and a flood base plate 4'. The frame appears to be connected together using 'reinforcing bars 13' (see paragraph [0023] and Figure 9). Therefore the base plate and side walls

appear to form a fixed frame with an additional internal wall that may be detachable. In light of this, I do not consider the base plate to be the required enlarged foot for the internal wall. Regarding the remaining part of this feature, the internal wall 5 is (detachably) fixed to the base plate 4 and therefore it does not stand unfixed or unsealed to the floor. Thus D5 does not disclose feature (ix).

58. In summary, the difference between the disclosure in D5 and claim 1 is that D5 does not disclose features (viii) and (ix).

Step (4): Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention.

59. Regarding the first difference, feature (viii), which requires the floor of the tank to comprise steel fibre reinforcement, the Requester argues that employing steel reinforcement would be obvious to the skilled person. They provide documents D4 "Recommended Practice for Precast Prestressed Concrete Circular Storage Tanks" and D10 "Irish Agreement Board Building Product Certificate for precast septic tanks 1996" to illustrate that steel fibre reinforcement in such concrete structures would be part of the skilled person's common general knowledge. I am not convinced that these particular manuals in their entirety would necessarily form part of the skilled person's common general knowledge. However, I do agree that the skilled person would be aware of employing steel fibre reinforcement in concrete structures. As pointed out by the Requester, this assertion is supported by the Patent in paragraph [0036] which describes the reinforcement as 'conventional'. The skilled person would readily employ steel reinforcement in the structure of D5 to satisfy feature (viii). Therefore I consider this difference to be obvious.

60. Regarding the second difference, feature (ix), I agree with the Observer that the attenuation tank in D5 is very different to that of the Patent. In the Patent, a concrete floor is laid in situ and precast perimeter wall units are fixed to this. Internal walls with enlarged feet are placed directly on the concrete floor and then the roof units added on top. In D5 it seems that precast frames A, B and C (each including side walls and internal wall fixed to a base plate) are put in place alongside both front and rear precast walls. The roof units again are added on top. In particular in D5 the frames appear to be placed directly on soil rather than on a reinforced floor (see for example paragraph [0032]). It would therefore require a considerable change of design to provide the internal walls of D5 with enlarged feet and then place them unsealed and unfixed on the floor underneath. This could not be readily undertaken by the skilled person without some inventive ingenuity. Even if the base plate could be seen as the enlarged feet of the internal wall as suggested by the Requester, the design is then missing a reinforced floor underneath, which again to include would require a considerable change of approach. Therefore this difference in my view involves an inventive step.

61. In conclusion I consider the invention as defined in claim 1 to involve an inventive step in light of D5 and common general knowledge.

Whether claim 1 lacks an inventive step over D6 and D4

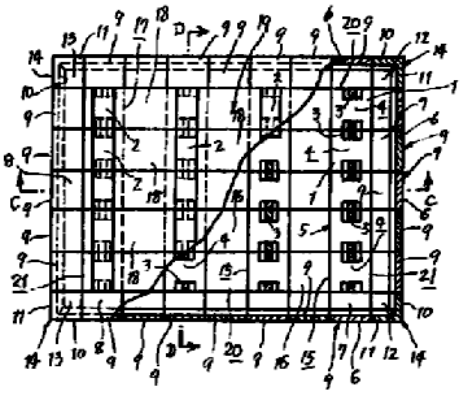
62. I will now apply the Windsurfing/Pozolli steps to establish whether claim 1 lacks an inventive step over D6 and D4 as asserted by the Requester. D6 is a Japanese-language patent document, JP06299591 A; again, the Requester provides a machine-generated English translation of the description. D4 is the manual "Recommended Practice for Precast Prestressed Concrete Circular Storage Tanks" mentioned above. Steps (1) and (2) are the same as discussed above for D5.

Step (3): Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or claim as construed.

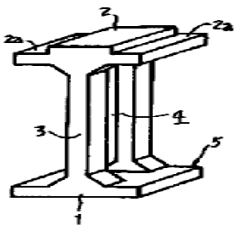
63. D6 discloses a 'rainwater storage tank for temporarily storing a large amount of rainwater', paragraph [0001]. Water flows in through an 'injection pipe' and out via a 'drainage pipeline' (paragraph [0014]). Therefore D6 meets the terms of features (i)-(iii) of claim 1.

64. The tank of D6 is formed according to one embodiment (Figures 7-10, paragraph [0016]) by assembling a number of 'main body blocks' 5 (Figure 10 reproduced below) in a two-dimensional array (Figure 7 reproduced below). The blocks 5 have a top plate portion 2 and a bottom plate portion 1. The lower and upper gaps between the blocks are filled by intermediate bottom plates 16 and intermediate top plates 18 respectively. The sides are completed with peripheral blocks 9 and corner blocks 14.

【図７】



【図１０】



65. Regarding feature (iv) of claim 1, the 'floor' of the tank is formed by a combination of the bottom plate portion 1 of the main body blocks 5 and the intermediate bottom plates 16. I agree with both Requester and Observer that the floor is segmented but in my view it is sufficient to meet the terms of feature (iv).

66. In D6 it is clear that the various structures may be precast and then assembled on site. In the embodiment discussed above, the perimeter wall of the tank is formed from peripheral blocks 9 and corner blocks 14. In an alternative embodiment shown in Figure 19 and discussed in paragraph [0020] the side walls may be formed by 'precast … outer wall plate 22'. Therefore D6 discloses feature (v).

67. Feature (vi) requires a precast internal wall. This is met by the main body blocks 5, in particular 'the strut plate portion 3' paragraph [0015].

68. The roof of the tank in D6 is created from a combination of the top 2 of the main body blocks 5 and a number of intermediate top plates 18. From Figure 8 and paragraph [0016] the plates 18 are seen to rest on a step portion 2a of the body blocks 5. This discloses feature (vii).

69. Paragraph [0015] states that the body block 5 and intermediate bottom plate 16 are made of 'reinforced concrete'. These are the components that form the floor as discussed above. However, there is no mention in the description of steel fibre reinforcement incorporating steel reinforcing elements as required for feature (viii). 'Reinforced concrete' could be achieved without using steel. The Requester refers to paragraph [0024] which discusses a 'reinforcing rib' but again there is no mention of steel reinforcing elements. The Requester submits that these ribs are steel but I am not convinced that this would necessarily be the case. The Requester also directs me to Figure 29 which illustrates a bolt inserted into the intermediate top plate 18. Paragraph [0033] discusses a 'PC steel material 32' being inserted through holes and being fixed by fixing member 33. This, however, seems to be referring to securing different components together rather than to a steel-reinforced floor. Therefore I cannot see sufficient disclosure to meet the terms of feature (viii).

70. The internal walls in the form of body blocks 5 have an enlarged base portion 1 which can be seen as an 'enlarged foot' (see Figure 10). As described above, this base portion or foot forms part of the floor and therefore cannot stand directly on the floor as required by feature (ix). This is acknowledged by the Requester. Therefore D6 fails to meet the terms of feature (ix).

71. In summary, the difference between the disclosure in D6 and claim 1 is that D6 does not disclose features (viii) and (ix).

Step (4): Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention.

72. As discussed above using steel fibre reinforcement incorporating steel reinforcing elements in concrete structures appears to be part of the skilled person's common general knowledge. I consider the skilled person would readily employ such reinforcement to the floor of D6 without requiring any degree of inventive skill. Therefore the difference defined by feature (viii) in my view is obvious.

73. Regarding the difference defined by feature (ix), the Requester refers to D4 which is a manual entitled "Recommended Practice for Precast Prestressed Concrete Circular Storage Tanks" mentioned above which has a publication date of July-August 1987, before the priority date of the Patent. In section 2.4, the manual discusses the floor design of such tanks. In particular in section 2.4.2 it describes a membrane floor which it explains is a continuous and flexible floor designed to transmit vertical loads directly to the sub-base. Further, section 4.1.2 of the manual notes that floors should be placed continuously in as large a section as practicable. The Requester argues that it was commonly known at the time of the invention that a tank could have a continuous floor. They suggest that it would be obvious to provide

a continuous floor in the tank of D6 with the internal walls of D6 sitting directly on top. This they argue would overcome the problem of possible leakage between the currently abutted components.

74. In response to these arguments, I am not convinced that the manual D4 in its entirety would form part of the skilled person's general knowledge. I do consider it reasonable though to assume that the skilled person would be aware that a storage tank could have a continuous concrete floor. However, in order to meet the terms of feature (ix) of claim 1, the skilled person would first need to provide this additional concrete floor and then position the inner walls of D6, body blocks 5, onto the floor without any fixing or sealing requirements. This appears to be a significant change of design. I can see no suggestion of an additional concrete floor being employed in D6. Instead the preferred approach here seems to be to create a matrix of closely fitted components and then employ a seal member between them (paragraph [0032]). Modifying D6 to satisfy feature (ix) would in my view require some inventive ingenuity. Therefore this difference involves an inventive step.

75. In conclusion I consider the invention as defined in claim 1 to involve an inventive step in light of D6 and D4.

76. I have found the invention of claim 1 to be valid in light of the documents provided. I therefore do not need to consider claim 11 or the remaining dependent claims.

Opinion

77. It is my opinion that on balance and in light of the evidence provided the invention of claim 1 of the Patent is novel with regard to an alleged prior use. Similarly, I consider the invention of claim 1 to be novel in light of standalone document, leaflet D2. I am also of the opinion that the invention of claim 1 involves an inventive step with respect to both patent documents D5 and D6 in light of common general knowledge and/or document D4. I did not need to consider claim 11 or the remaining dependent claims.

Susan Dewar
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.