





Fig.4

5 The latest set of claims was filed on the 18 February 2019 and includes a single independent, claim 1, reproduced below:

1. A roof structure for a single storey building, the roof structure comprising a roof frame structure and a covering supported by the roof frame structure,

the roof frame structure comprising a ring beam, one or more rafter beams and one or more of a ridge beam, a wall plate beam, a roof hip beam and a roof valley beam,

wherein at least one of the ring beam, one or more rafter beam, the ridge beam (if present), the wall plate beam (if present), the roof hip beam (if present) and the roof valley beam (if present) is pultruded, elongate and has a uniform cross sectional area and shape along its length, said beam comprising glass-reinforced plastic, at least 95% of the volume of the material making up the beam comprising glass-reinforced plastic, said beam having, in cross section, multiple walls which form a supporting box structure;

the one or more rafter beams comprising one or more laterally-extending arms for supporting insulating panel; and

insulating panels supported by the one or more rafter beams.

6 Also of note are claims 17-19, which read:

17. A roof structure according to any preceding claim comprising a ridge beam having, in cross-section, multiple walls which form a supporting box structure, and one or more support members internally of the box structure, the one or more support members extending between two walls.

18. A roof structure according to claim 17, the ridge beam comprising more than one support member internally of the box structure, the support members extending between the two walls.

19. a roof structure according to claim 17 or claim 18, the ridge beam comprising upper and lower walls of the box structure, each of which comprises sloping portions.

## The law

- 7 The relevant provisions in relation to inventive step are sections 1(1)(b) and section 3, which state:

*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) ...*
- (b) it involves an inventive step;*
- (c) ...*

*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).*

- 8 In the case of *Windsurfing*<sup>1</sup>, the Court of Appeal formulated a four-step approach for assessing whether an invention involves an inventive step. This approach was restated and elaborated upon by that Court in *Pozzoli*<sup>2</sup>, as follows:

*(1)(a) Identify the notional "person skilled in the art";*

*(1)(b) Identify the relevant common general knowledge of that person;*

*(2) Identify the inventive concept of the claim in question or if that cannot readily be 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 which would have been obvious to the person skilled in the art or do they require any degree of invention?*

## Arguments and analysis

### Independent claim 1

- 9 Both that applicant and the examiner agree that the skilled person is one who constructs and designs conservatory roofing systems. However, they disagree as to what constitutes the common general knowledge of that person.
- 10 The examiner has argued that the skilled person's common general knowledge would include information that materials in roofing systems are fairly interchangeable, i.e. a beam can be made from wood, plastic or aluminium for generally the same effect. Furthermore, as the commercial use of GRP materials has existed for nearly 90 years<sup>3</sup> and due to a number patent documents that he has found showing the use of GRP in the relevant field (US5706620, CA2206723, GB2334992, GB2234775, GB2430446 and US2009/0094929), the examiner believes that fibre reinforced plastics materials would form part of the skilled person's common general

<sup>1</sup> *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 49

<sup>2</sup> *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

<sup>3</sup> [https://en.wikipedia.org/wiki/Fibre-reinforced\\_plastic](https://en.wikipedia.org/wiki/Fibre-reinforced_plastic)

knowledge. While the examiner has noted that patent documents are not normally used to establish common general knowledge of the skilled person, he believes that they are illustrative that GRP is known in this field. The examiner also notes the description at page 9, lines 6-16 of GB2334992:

*“The glazing bars and the first glazing bead can in many respects be entirely conventional. They are preferably in the form of elongate components, formed by extrusion from suitable materials such as PVC-U or aluminium (they may of course be made from any suitable material, such as a reinforced thermoplastic or thermoset material like glass reinforced plastic or glass filled nylon). They may incorporate separate reinforcing elements. They are typically for use in supporting glazing panels/sheets such as of glass or polycarbonate or other plastics materials.”*

which suggests that the interchangeability of the materials used, including GRP, would be apparent to people skilled in the field.

- 11 Throughout correspondence, and reiterated at the hearing by Dr Haslam, the applicant has submitted that the use of GRP would not be within the common general knowledge of the skilled person at the priority date of the present application. The applicant considers the common general knowledge to include materials that were commonly used in the construction of conservatory roofing systems, i.e. wood, aluminium and uPVC, in particular wood and aluminium. While GRP is known and has been known for a long time, the applicant believes that this does not make it part of the common general knowledge of the skilled person of conservatory construction and design. The applicant considers that reference to six patent documents that disclose various components that may comprise GRP does not indicate that such a material is common general knowledge. Dr Haslam noted that two pairs of these documents (US5706620/CA2206723 and GB2334992/GB2430446) have a common inventor or owner, and thus would be expected to reference the same materials. Dr Haslam’s point is that the six documents identified by the examiner should be regarded as only four, thereby weakening the examiner’s argument about the prevalence of such knowledge. With regard to GB2334992, while this is a patent application that discloses that GRP can be used, it does not indicate that this was a standard material in the art. In particular, Dr Haslam noted that page 1 of this document states that it is plastics (PVC) and metals which are *typically* used in the construction of conservatory elements. The document then goes on to state (at page 9) that you could use a different material, such as GRP.
- 12 It is apparent that GB2334992, GB2234775, and US5706620 (at least) disclose structural components for conservatories made from GRP. While patent documents in themselves are not typically part of the common general knowledge, I consider that these documents *illustrate* that the use of GRP in structural components is common general knowledge in the art of conservatory roofing. Given that GRP is widely used in other fields of manufacturing and construction, and that there is no immediately apparent reason why the material could not find application in this particular field of construction, I think it is reasonable to assume that the skilled person would have known about GRP at the priority date of the application and would be at least aware of the possibility of using GRP in the construction of conservatory roofing systems.
- 13 The inventive concept of claim 1 is a roof structure comprising a frame structure including a ring beam, one or more rafters and one or more other beam, at least one

of the beams having a uniform cross-sectional area and comprising at least 95% by volume of GRP; the beam having multiple walls which form a supporting box structure; the rafter beam also includes a laterally extending arm which support insulating panels.

- 14 Both the applicant and the examiner agree that the difference between the roof structure of claim 1 and the disclosures of US2004/0163328 and GB2396629 ('the state of the art') is that neither of these documents disclose the use of GRP.
- 15 It is clear to me that the difference between claim 1 and the state of the art, viewed by the person skilled in the art and equipped with the common general knowledge that I have identified, does not require any degree of invention. In particular, the person skilled in the art would be aware of GRP and would consider such a material as an obvious choice for beams instead of wood or aluminium; indeed, the documents referred to by the examiner show conservatory beams made of GRP. Furthermore, there is nothing I can see that tends or leads away from the use of GRP in the construction of conservatory roofs that could render such a choice of material inventive.
- 16 Dr Haslam says that the commercial reception of the product, i.e. a roof structure with GRP beams, had been excellent, with a sales increase of around 60% year-on-year since the applicant had started selling the product, and that this is due to the product itself and not due to any marketing or sales activity. However, arguments that a commercial success indicates inventiveness are problematic<sup>4</sup>, and I can't see anything in such a commercial reception of the product that necessarily leads me to conclude that claim 1 is inventive.
- 17 Therefore, claim 1 is not considered to provide an inventive step.

#### Dependent claims 3-19

- 18 Claims 3-16 were not discussed at the hearing and, prima facie, I agree with the examiner that they do not introduce the required inventive step.
- 19 The examiner has argued that claim 17 is a collocation of roof parts, namely that claim 17 defines an additional ridge beam with a particular cross-sectional arrangement that does not interact or provide any synergy with the rafter and ring beams of claim 1. The examiner has cited GB2234775 and US5706620 to show that the cross-sectional arrangements of the ridge beam are known.
- 20 In the House of Lords judgment in *SABAF*<sup>5</sup>, Lord Hoffmann held that before you can ask whether the invention involves an inventive step, you first have to decide what the invention is. In particular, the first step is to decide whether you are dealing with one invention or, for the purposes of section 3 of the Patents Act, two or more inventions. If two integers interact upon each other, i.e. if there is synergy between them, they constitute a single invention having a combined effect and one applies section 3 to the idea of combining them. But if each integer performs its own proper function independently of any of the others, and the claim is a mere aggregation or juxtaposition of features, then each is, for the purposes of section 3, a separate invention. The combination of a series of known or obvious features, each playing its

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<sup>4</sup> See for example *Dr Reddy's Laboratories (UK) Ltd v Eli Lilly and Co Ltd* [2008] EWHC 2345 (Pat) (paragraph 187)

<sup>5</sup> *SABAF SpA v MFI Furniture Centres Ltd* [2005] RPC 10



noted that no such connector beam is used on the bottom portion of the ridge beam 27.

- 24 I agree with the examiner. The upper wall of ridge beam 27 clearly has at least some portions which are sloping. The fact that a connector beam 29 is required to support building components does not prevent such a beam 27 rendering claim 19 obvious, because claim 19 does not define sloping portions for any particular purpose. Furthermore, while figure 8 does not *explicitly* show the lower wall of the ridge beam 27, it is clear from panel 2 and the application as a whole that the ridge beam 27 also has a lower wall that has sloping portions that match the profile of the upper wall. Therefore claim 19 does not involve an inventive step.

### **Conclusion**

- 25 I have concluded that the invention as defined by claims 1 and 3-19 lacks an inventive step as required by section 1(1)(b). If the claims remain in their current form then the application will be refused under section 18(3). However, throughout correspondence and confirmed at the hearing, the examiner considers claim 2 to involve an inventive step. Therefore, I will allow the applicant an opportunity to amend the claims accordingly. The applicant should file amended claims within two weeks of the date of this decision, otherwise it will be refused.

### **Appeal**

- 26 Any appeal must be lodged within 28 days after the date of this decision.

**H JONES**

Deputy Director, acting for the Comptroller