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(71) Applicant: **IG-GRP Limited**
Cookstown, Tyrone BT80 9DG (GB)

(72) Inventors:
- **COYLE, Sean**
  Cookstown, Tyrone BT80 9DG (GB)
- **KELLY, Liam**
  Cookstown, Tyrone BT80 9DG (GB)

(74) Representative: **Hanna, John Philip**
Hanna IP
4th Floor
58 Howard Street
Belfast BT1 6PJ (GB)

(54) A BUILDING COMPONENT

(57) A building component (1) for a roof of a building, the building component comprising an outer covering component (3) for covering all or part of the building component. The outer covering component (3) comprising a panel having an outer rigid covering member (5) and an inner rigid covering member (6) and an insulation member (7) sandwiched between the outer and inner rigid covering members.

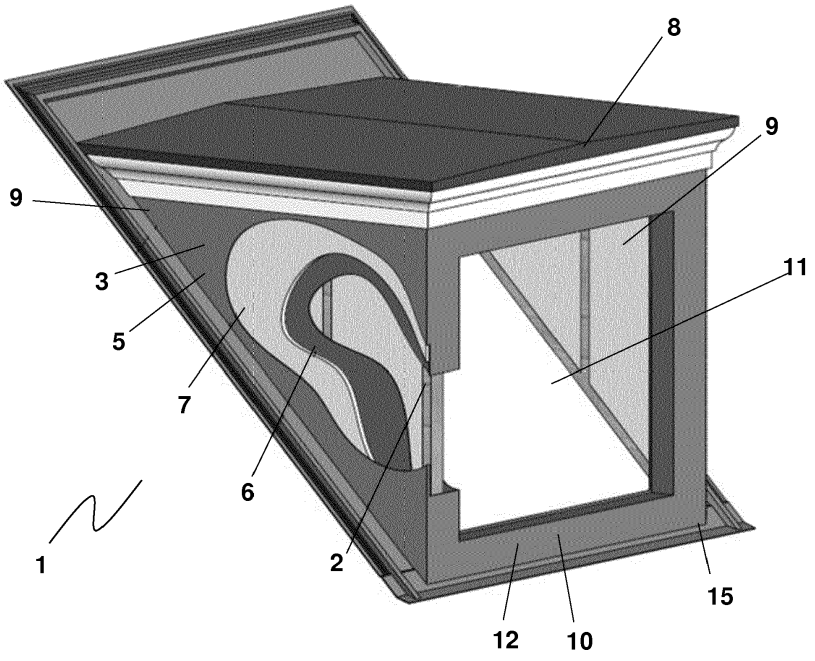


Figure 1

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Description

[0001] The present invention relates to a building component structure and in particular to a structurally enhanced prefabricated dormer window unit to be mounted onto a new build pitched roof or to be retrofitted to an existing pitched roof.

[0002] GRP dormer window units are well known structures in buildings located on and protruding from the sloping surface of a building's pitched roof either as part of a new build or a bespoke retrofit. They are designed to increase the amount of living space within the attic of a building. The conventional GRP dormer window unit is typically made up of a timber or steel skeletal frame encased within a thin GRP shell. The skeletal frame is typically filled out with PU foam insulation. The major problem arising is warping of the thin GRP shell between skeletal frame members. Additionally, cold bridging can occur across members of the skeletal frame.

[0003] There have been a number of attempts to limit the amount of cold-bridging within dormer window units. The use of insulation foams sprayed between the timber frame and at least parts of the external coverings is one such example. Further, this insulation foam can also be utilised as in some modern conventional dormer window units, to secure the timber frame to the outer covering; thus reducing the reliance upon brackets and the like. However while improving the thermal efficiency, the structural integrity of the dormer window units in these cases can prove problematic due to a lack of structural reinforcing features.

[0004] It is an object of the present invention to mitigate the problem of shell warping and of cold-bridging within building components such as dormer window units and provide a structure with increased thermal efficiency while improving the structural integrity of the building component.

[0005] Accordingly, the present invention provides a building component for a roof of a building, the building component comprising an outer covering means for covering all or part of the building component, the outer covering means comprising a panel having an outer rigid covering member and an inner rigid covering member and an insulation means sandwiched between the outer and inner rigid covering members.

[0006] Preferably, the building component comprising a structural support framework.

[0007] Ideally, the inner rigid covering member is mountable on the structural support framework.

[0008] Preferably, the outer and inner rigid covering members form an envelope completely enclosing the insulation means.

[0009] Ideally, the outer and inner rigid covering members form a plurality of envelopes completely enclosing a plurality of respective insulation means.

[0010] Ideally, the building component for a roof of a building is a dormer window unit.

[0011] Preferably, the building component comprises a roof.

[0012] Ideally, the building component comprising a structural support framework for supporting a roof, two lateral walls and a front wall defining an opening for a window.

[0013] Preferably, the building component comprising an outer covering means for covering all or part of at least the two lateral walls.

[0014] Ideally, the front wall which defines an opening for a window for the building component also comprises an outer covering means for all or part of the front wall.

[0015] Ideally the building component is prefabricated prior to on-site installation.

[0016] Preferably, the outer covering means of the building component is formed as a single piece.

[0017] Ideally, the outer covering means is moulded or pultruded.

[0018] Advantageously, having an outer covering means formed as a single piece providing at least both lateral walls of the outer covering means of the building component allows a quicker and simpler installation process when on-site beyond that of the conventional prior art. The outer covering means provides a shell like structure to enclose the structural framework of the building component. This requires that the outer covering means is secured onto the structural framework and hoisted into position into the roof of a building.

[0019] Alternatively, the outer covering means of the building component is a modular unit capable of being connectable together.

[0020] Preferably, the inner rigid covering member and/or the outer rigid covering member is a sheet.

[0021] Advantageously, the inner rigid covering member provides a rigid surface mountable to the structural support framework.

[0022] Furthermore, the panel structure of the outer covering means enhances the structural properties of the outer covering means further improving the overall durability and strength of the building component, beyond that of the conventional prior art.

[0023] Ideally, the outer rigid covering member and/or the inner rigid covering member are polygonal in shape.

[0024] Preferably, the outer rigid covering member and/or the inner rigid covering member are triangular.

[0025] Preferably, the outer and inner rigid covering members of the panel of the outer covering means form a uniform homogeneous one piece component.

[0026] Ideally, the uniform homogeneous one piece component is produced by moulding or pultrusion techniques.

[0027] Preferably, the homogeneous one piece component defines a cavity for the insulation means.

[0028] Ideally, the homogeneous one piece component has an access means for receiving the insulation means.

[0029] Preferably, the insulation means is pumpable/deliverable into the cavity via the access means.

[0030] Alternatively, the outer and inner rigid covering

members of the panel of the outer covering means are provided as connectable modular components.

[0031] Preferably, the panel of the outer covering means is formable by connecting the outer and inner rigid covering members together around a sandwiched insulation layer along at least their lateral edges which in the normal in-use orientation extends from the base of the building component to the roof of the building component.

[0032] Ideally, the inner and outer rigid covering members are separable components which are couplable together to form the panel of the outer covering means.

[0033] Preferably, the inner and outer rigid covering members are connectable to one another by at least two perimeter rigid covering members spacing the inner and outer rigid covering members apart.

[0034] Advantageously, this arrangement formulates a cavity within the panel of the outer covering means providing means for reducing the thermal conductivity of the structure.

[0035] Ideally, the perimeter rigid covering member is a portion of the length of one of the mutually opposing outer or inner rigid covering member.

[0036] Ideally, at least one perimeter rigid covering member is connectable to the front wall of the building component which defines the opening for a window.

[0037] Preferably, the at least one perimeter rigid covering member is integral to the front wall of the building component which defines the opening for a window.

[0038] Preferably, the inner rigid covering member of the outer covering means is mechanically coupled to the structural support framework along at least part of its length.

[0039] Ideally, the inner rigid covering member of the outer covering means is fixed to the structural support framework along at least part of its length.

[0040] Most preferably, the inner rigid covering member is strapped, clipped, slotted, riveted, bonded, adhesively bonded, adhered, glued or welded to the at least part of the structural support framework or coupled to the at least part of the structural support framework using any combination of these fasteners or fixing methods.

[0041] It will be appreciated that this list of coupling means/methods is in no way limiting and the invention covers any form of coupling suitable to provide sufficient rigidity and strength to retain the mechanical joint between the outer covering means and the structural support framework to withstand the range of forces acting on a building component such as a dormer window unit.

[0042] Ideally, the outer covering means comprises a means for retaining the structural integrity of the outer covering means.

[0043] Preferably, the means for retaining the structural integrity of the outer covering means comprises means for interrupting the span of the panel structure of the outer covering means.

[0044] Ideally, the means for retaining the structural integrity of the outer covering means comprises means for coupling at least a portion of the inner rigid covering member and the outer rigid covering member along all or part of the span of the outer covering means.

[0045] Advantageously, coupling at least a portion of the inner rigid covering member and the outer rigid covering member along the span of the outer covering means prevents the outer rigid covering member and/or the inner rigid covering member from warping away from and/or detaching from the insulation means and the adhesive/glue coupling the rigid covering members to the insulation due to mechanical stresses acting between the boundary of the outer rigid covering member and/or the inner rigid covering member and the insulation means. Further advantageously, coupling at least a portion of the inner rigid covering member and the outer rigid covering member along the span of the outer covering means improves the structural integrity of the outer covering means by providing reinforcing means along the span of the outer covering means.

[0046] Ideally, at least a portion of the outer rigid covering member and/or the inner rigid covering member extends out of its main plane towards and into contact with the other rigid covering member dividing the outer covering means into a plurality of panel regions.

[0047] Preferably, the portion of the outer rigid covering member and/or the inner rigid covering member extending out of its main plane towards and into contact with the other rigid covering member defines at least one channel traversing all or part of the span of the outer covering means.

[0048] Ideally, the channel divides the outer covering means into at least two panel regions.

[0049] Preferably, the at least one channel traverses the outer covering means away from the structural support frame.

[0050] Ideally, a plurality of channels traverse all or a part of the span of the outer covering means, most preferably in a spaced apart parallel configuration.

[0051] In an alternative arrangement, the outer and inner rigid covering members comprise a honeycomb structure there between for housing an insulation means.

[0052] Preferably, the outer covering means comprises a reinforcing means.

[0053] Ideally, the reinforcing means of the outer covering means is locatable along at least part of the span of the outer covering means.

[0054] Most ideally, the reinforcing means of the outer covering means is locatable along all or a substantial part of the span of the outer covering means.

[0055] Preferably, the reinforcing means of the outer covering means extends along all or at least part of the height wise span of the outer covering member. In the in-use orientation of the building component the reinforcing means extends from the base of the building component to the roof of the building component.

[0056] Most preferably, the reinforcing means of the outer covering means extends along all or part of the lateral span of the outer covering member. In use, this is substantially perpendicular to the height wise span.

[0057] Ideally, the reinforcing means of the outer covering means is connectable to the outer rigid covering member.

[0058] Preferably, the reinforcing means of the outer covering means is integral to the outer rigid covering member.

[0059] Ideally, the reinforcing means comprises a localised thickening of the outer rigid covering member.

[0060] Alternatively, the reinforcing means of the outer covering means is located between the outer and inner rigid covering members.

[0061] Ideally, the outer and/or inner rigid covering members of the building component is at least partly manufactured from fiber-reinforced polymers (FRPs), carbon-fiber reinforced plastic (CFRP) or glass-reinforced plastic (GRP).

[0062] Preferably, the matrix is provided by a thermoplastic composite.

[0063] Ideally, the thermoplastic composite is a short fiber thermoplastics, a long fiber thermoplastics or a long fiber-reinforced thermoplastics.

[0064] Alternatively, the matrix is provided by a thermoset composite.

[0065] Ideally, the outer and/or inner rigid covering members of the building component at least partly comprises aramid fibre and carbon fibre in an epoxy resin matrix.

[0066] Preferably, the FRPs include wood comprising cellulose fibers in a lignin and hemicellulose matrix.

[0067] Preferably, the insulation means comprises an insulation layer spanning between the outer and inner rigid covering members.

[0068] Ideally, the insulation means comprises an insulation layer spanning a substantial portion of the cavity of the outer covering means.

[0069] Preferably, the insulation means comprises an insulation layer spanning the entire cavity of the outer covering means.

[0070] Preferably, the insulation means comprises a foam such as a polyisocyanurate foam material or a phenolic foam material.

[0071] Most preferably, the insulation means is formed of polyurethane.

[0072] Ideally, the insulation means is pumped into the cavity between the outer and inner rigid covering members.

[0073] Alternatively, the insulation means is a foam sheet within the cavity produced by the enclosing outer, inner and perimeter rigid covering members.

[0074] Ideally, the thermal conductivity of the outer covering means is less than 1 W/m^2K.

[0075] Preferably, the thermal conductivity of the outer covering means is less than 0.5 W/m^2K.

[0076] Most preferably, the thermal conductivity of the outer covering means is 0.2 W/m^2K.

[0077] Preferably, the outer rigid covering member has a wall thickness in the range of 1.5mm to 4.5mm.

[0078] Ideally, the outer rigid covering member has a wall thickness in the range of 2mm to 4mm.

[0079] Most ideally, the outer rigid covering member has a wall thickness of 3mm.

[0080] Preferably, the inner rigid covering member has a wall thickness in the range of 0.5mm to 2.5mm.

[0081] Ideally, the inner rigid covering member has a wall thickness in the range of 1 mm to 2mm.

[0082] Most ideally, the inner rigid covering member has a wall thickness of 1.5mm.

[0083] Preferably, the insulation means sandwiched between the inner and out rigid covering members has a wall thickness in the range of 15mm to 35mm.

[0084] Ideally, the insulation means sandwiched between the inner and outer rigid covering members has a wall thickness in the range of 20mm to 30mm.

[0085] Most ideally, the insulation means sandwiched between the inner and outer rigid covering members has a wall thickness of 25mm.

[0086] Ideally, the structural support framework for supporting a roof comprises of a plurality of structural support members.

[0087] Preferably, the structural support members of the structural support framework are formed of an orthotropic material.

[0088] Ideally, the structural support members of the structural support framework are formed of timber.

[0089] Preferably, the structural support members comprise an auxiliary structural support means.

[0090] Ideally, the auxiliary structural support means are connectable to the structural support member.

[0091] Most ideally, the auxiliary structural support means are integral to the structural support member.

[0092] Preferably, the auxiliary structural support means is formed of a channel located within the individual structural support members.

[0093] Alternatively, the auxiliary structural support means is formed of a plurality of channels located within the individual structural support members.

[0094] Preferably, at least some of the structural support members are hollow.

[0095] Ideally in this alternative embodiment the plurality of channels forming the auxiliary structural support means of the structural support member provide the structural support means with an inner core cross-section comprising a plurality of hexagonal "honeycomb" like structures.

[0096] Advantageously, the channel(s) which form the auxiliary structural support means of the structural support member provide the structural support framework of the building component with a lightweight structural material formed of a minimal density whilst maintaining and/or increasing the relative high out-of-plane compressional properties and out-of-plane shear properties of the material.

[0097] Further advantageously, these channels reduce thermal bridging between the internal and the external surface of the building component; thus further increasing the thermal efficiency of the entire building com-

ponent.

[0098] Preferably, the channel and/or channels forming the auxiliary structural support means comprise an auxiliary insulation means for the building component in the form of cavity insulation.

[0099] Alternatively, the plurality of channels forming the auxiliary structural support means are filled with an auxiliary thermal insulation means.

[0100] Advantageously, channels located within the structural support members of the building component having an auxiliary thermal insulation means providing the building component with further thermal efficiency beyond that of simple cavity insulation.

[0101] Preferably, the auxiliary insulation means within the plurality of channels of the structural support members is formed of an insulating material that is different from that of the insulation means sandwiched within the outer covering means.

[0102] Alternatively, the auxiliary insulation member within the plurality of channels of the structural support members is formed of an identical insulating material to that of the insulation means sandwiched within the outer covering means.

[0103] The invention will now be described with reference to the accompanying drawings which show by way of example only one embodiment of an building component in accordance with the invention.

Figure 1 is a perspective view of the building component in the form of a dormer window unit.

Figure 2 is a front view of the building component in the form of a dormer window unit.

Figure 3 is a cross sectional view along the line A-A of figure 2.

Figure 4 is a detailed view of the outer covering means at region B of figure 3.

Figure 5 is a front view of the second embodiment of the building component in the form of a dormer window unit.

Figure 6 is a cross sectional view along the line C-C of figure 5 showing the second embodiment of the present invention.

Figure 7 is a detailed view of the second embodiment of the present invention at section D of figure 6.

Figure 8 is a detailed view of the second embodiment of the present invention at section E of figure 7.

[0104] In the drawings, there is shown at least part of a building component indicated generally by the reference numeral 1 comprising a structural support framework 2, an outer covering component 3 for covering all or part of the structural support framework 2. The outer covering component 3 comprising a panel 4 having an outer rigid covering member 5 and an inner rigid covering member 6 mountable on the structural support framework 2 and an insulation member 7 sandwiched between the outer and inner rigid covering members 5/6. The outer and inner rigid covering members 5/6 forming an envelope completely enclosing the insulation member 7.

[0105] The building component 1 for a roof of a building is a GRP dormer window unit and comprises a structural support framework 2 for supporting a roof 8, two lateral walls 9 and a front wall 10 defining an opening 11 for a window. The building component 1 further comprising an outer covering component 3 for covering all or part of at least the two lateral walls 9. The front wall 10 which defines the opening for a window 11 also comprises an outer covering member 12 for all or part of the front wall 10.

[0106] The building component 1 is prefabricated prior to on-site installation. The outer covering member 3 of the building component is formed as a single piece by for example moulding or pultrusion techniques. Having an outer covering component 3 which is a single piece by moulding or pultrusion techniques provides at least both lateral walls 9 of the building component 1 with a quicker and simpler installation process when on-site beyond that of the conventional prior art. The outer covering component 3 provides a shell like structure to enclose the structural framework 2 of the building component 1. This requires that the outer covering component 2 is secured once placed onto the structural framework 2 and hoisted into position into the roof of a building (not shown). In an alternative embodiment, the outer covering component 3 of the building component 1 is a modular unit capable of being connectable together.

[0107] The inner rigid covering member 6 and the outer rigid covering member 5 is a sheet of GRP or similar material and for the lateral walls 9 the sheets are generally triangular in shape. Advantageously, the inner rigid covering member 6 provides a rigid surface mountable to the structural support framework 2. Furthermore, the panel structure of the outer covering component 3 enhances the structural properties of the outer covering component 3 further improving the overall durability and strength of the building component 1, beyond that of the conventional prior art.

[0108] The outer and inner rigid covering members 5/6 of the panel 4 of the outer covering component 3 form a uniform homogeneous one piece component produced by moulding or pultrusion techniques. This homogeneous one piece component defines a cavity 13 for the insulation member 7. The homogeneous one piece component has an access component (not shown) for receiving the insulation member 7 so that the insulation member 7 can be pumped or delivered into the cavity 13.

[0109] Alternatively, the outer and inner rigid covering members 5/6 of the panel 4 of the outer covering component 3 are provided as connectable modular compo-

nents. The panel 4 of the outer covering component 3 is formed by connecting the outer 5 and inner 6 rigid covering members together around a sandwiched insulation layer 7 along at least their lateral edges 14 which in the normal in-use orientation extend from the base of the building component 15 to the roof of the building component 8. Connecting members such as male and female members mounted on correspondingly located positions of the outer and inner rigid covering members 5/6 are provided operating using such as press fit, snap fit interference fit or the like.

[0110] The inner 6 and outer rigid covering members 5 are separable components which are couplable together to form the panel 4 of the outer covering component 3. The inner 6 and outer 5 rigid covering members are connectable to one another by at least two perimeter rigid covering members 16 spacing the inner 6 and outer 5 rigid covering members apart. This arrangement formulates a cavity 13 within the panel of the outer covering component 3 providing means for reducing the thermal conductivity of the structure. At least one perimeter covering member is connectable or integral to the front wall of the building component 10 which defines the opening 11 for a window. The structure of the front wall 10 can be the same as the structure of the side walls 9 namely a laminated panel comprising inner rigid covering member, outer rigid covering member and sandwiched insulation.

[0111] The inner rigid covering member 6 is strapped, clipped, slotted, riveted, bonded, adhesively bonded, adhered, glued or welded to the at least part of the structural support framework 2 or coupled to the at least part of the structural support framework 2 using any combination of these fasteners or fixing methods.

[0112] It will be appreciated that this list of coupling methods is in no way limiting and the invention covers any form of coupling suitable to provide sufficient rigidity and strength to retain the mechanical joint between the outer covering component 3 and the structural support framework 2 to withstand the range of forces acting on a building component such as a dormer window unit 1.

[0113] The outer covering component 3 comprises a reinforcing member and the outer 5 and inner 6 rigid covering members are manufactured from glass-reinforced plastic. The insulation member 7 comprises an insulation layer spanning the cavity 13 between the outer 5 and inner 6 rigid covering members. The insulation member 7 comprises a foam such as a polyisocyanurate foam material or a phenolic foam material which is pumped into the cavity 13 between the outer 5 and inner 6 rigid covering members. Alternatively, the insulation member 7 is a foam sheet within the cavity produced by the enclosing outer 5, inner 6 and perimeter 16 rigid covering members.

[0114] The thermal conductivity of the outer covering component 3 is 0.2 W/m^2K. The outer rigid covering member 5 has a wall thickness of approximately 3mm and the inner rigid covering member 6 has a wall thickness of approximately 1.5mm. The insulation member 7 sandwiched between the inner 6 and outer 5 rigid covering members has a wall thickness of approximately 25mm.

[0115] The structural support framework 2 for supporting a roof comprises of a plurality of structural support members 17. The structural support members 17 are formed of an orthotropic material; most ideally timber. These structural support members 17 comprise an integral auxiliary structural support members (not shown). The auxiliary structural support members (not shown) are one or more hollow forming channel(s) (not shown) located within the individual structural support members 17. The one or more channel(s) (not shown) which form the auxiliary structural support members (not shown) of the structural support member 17 provide the structural support framework 2 of the building component with a lightweight structural material formed of a minimal density whilst maintaining and/or increasing the relative high out-of-plane compressional properties and out-of-plane shear properties of the material. Further, these one or more channels (not shown) reduce thermal bridging between the internal and the external surface of the building component 1; thus further increasing the thermal efficiency of the entire building component 1. A layer of foam 22 fills out the space between the outer covering component 3 and the skeletal support frame work 2.

[0116] The channel and/or channels forming the auxiliary structural support member (not shown) comprise an auxiliary insulation member (not shown) for the building component in the form of cavity insulation (not shown). Alternatively, the plurality of channels forming the auxiliary structural support member (not shown) are filled with an auxiliary thermal insulation component (not shown). This provides the building component 1 with further thermal efficiency beyond that of simple cavity insulation. The auxiliary insulation component (not shown) within the plurality of channels (not shown) of the structural support members 17 is formed of an insulating material that is different from that of the insulation member 7 sandwiched within the outer covering component 3. Alternatively, these insulating materials are identical.

[0117] Referring to the drawings and now to Figures 5 to 8, there is shown a second embodiment of the invention. In the second embodiment, the same reference numerals have been used to describe the same features illustrated in the embodiment described with reference to Figures 1 to 4. The outer covering component 3 has an arrangement 21 for retaining the structural integrity of the outer covering component 3. The arrangement 21 for retaining the structural integrity of the outer covering component 3 is an arrangement 21 for interrupting the span of the panel structure of the outer covering component 3. The arrangement 21 for retaining the structural integrity of the outer covering component 3 is provided by coupling a portion of the inner rigid covering member 6 and the outer rigid covering member 5 along all or part of the span of the outer covering component 3. Advan-

tageously, coupling at least a portion of the inner rigid covering member 6 and the outer rigid covering member 5 along the span of the outer covering component 3 prevents the outer rigid covering member 5 and/or the inner rigid covering member 6 from warping away from and/or detaching from the insulation member 7 due to mechanical stresses acting between the boundary/interface of the outer rigid covering member 5 and/or the inner rigid covering member 6 and the insulation member 7. Further advantageously, coupling at least a portion of the inner rigid covering member 6 and the outer rigid covering member 5 along the span of the outer covering component 3 improves the structural integrity of the outer covering component 3 by providing reinforcing along the span of the outer covering component 3.

[0118] A portion 16 of the inner rigid covering member 6 extends out of its main plane towards and into contact with the outer rigid covering member 5 dividing the outer covering component into three panel regions 24. The portions 16 of the inner rigid covering member 6 extending out of their main plane towards and into contact with the outer rigid covering member 5 define channels 23 see Figure 8 traversing all or part of the span of the outer covering component 3. The channels 23 divide the outer covering component 3 into three panel regions 24. The channels 23 traverses the outer covering component 3 away from the structural support frame 2. The three channels 23 traverse all or a part of the span of the outer covering component 3, most preferably in a spaced apart parallel configuration.

[0119] In an alternative arrangement, not shown the outer and inner rigid covering members comprise a honeycomb structure there between for housing an insulation means.

[0120] The outer covering component 3 has a reinforcing member 25 between two adjacent panel regions 24 comprising the combined thickness of the inner and outer rigid covering member. A layer of foam 22 fills out the space between the outer covering component 3 and the skeletal support frame work 2.

[0121] In relation to the detailed description of the different embodiments of the invention, it will be understood that one or more technical features of one embodiment can be used in combination with one or more technical features of any other embodiment where the transferred use of the one or more technical features would be immediately apparent to a person of ordinary skill in the art to carry out a similar function in a similar way on the other embodiment.

[0122] In the preceding discussion of the invention, unless stated to the contrary, the disclosure of alternative values for the upper or lower limit of the permitted range of a parameter, coupled with an indication that one of the said values is more highly preferred than the other, is to be construed as an implied statement that each intermediate value of said parameter, lying between the more preferred and the less preferred of said alternatives, is itself preferred to said less preferred value and also to each value lying between said less preferred value and said intermediate value.

[0123] The features disclosed in the foregoing description or the following drawings, expressed in their specific forms or in terms of a means for performing a disclosed function, or a method or a process of attaining the disclosed result, as appropriate, may separately, or in any combination of such features be utilised for realising the invention in diverse forms thereof as defined in the appended claims.

Claims

1. A building component (1) for a roof of a building, the building component comprising an outer covering means (3) for covering all or part of the building component, the outer covering means (3) comprising a panel having an outer rigid covering member (5) and an inner rigid covering member (6) and an insulation means (7) sandwiched between the outer and inner rigid covering members, the outer and/or inner rigid covering members of the building component is at least partly manufactured from fiber-reinforced polymers (FRPs), carbon-fiber reinforced plastic (CFRP) or glass-reinforced plastic (GRP).

2. A building component (1) as claimed in claim 1, wherein the outer and inner rigid covering members form an envelope completely enclosing the insulation means.

3. A building component (1) as claimed in claim 1 or claim 2, wherein the outer covering means of the building component is formed as a single piece.

4. A building component (1) as claimed in claim 1 or claim 2, wherein the outer covering means of the building component is a modular unit capable of being connectable together.

5. A building component as claimed in claim 4, wherein the inner and outer rigid covering members are connectable to one another by at least two perimeter rigid covering members spacing the inner and outer rigid covering members apart.

6. A building component as claimed in any one of the preceding claims, wherein the outer covering means comprises a means for retaining the structural integrity of the outer covering means.

7. A building component as claimed in claim 6, wherein the means for retaining the structural integrity of the outer covering means comprises means for interrupting the span of the panel structure of the outer covering means.

8. A building component as claimed in claim 6 or claim 7, wherein the means for retaining the structural integrity of the outer covering means comprises means for coupling at least a portion of the inner rigid covering member and the outer rigid covering member along all or part of the span of the outer covering means.

9. A building component as claimed in any one of the preceding claims, wherein the outer covering means comprises a reinforcing means.

10. A building component as claimed in claim 9, wherein the reinforcing means of the outer covering means is locatable along at least part of the span of the outer covering means.

11. A building component as claimed in any one of the preceding claims, wherein the building component comprising a structural support framework comprising a plurality of structural support members.

12. A building component as claimed in claim 11, wherein at least one structural support member comprises an auxiliary structural support means.

13. A building component as claimed in claim 12, wherein the auxiliary structural support means comprises one or more channels located within the structural support members, the auxiliary structural support means comprising an auxiliary insulation means for the building component.

14. A building component as claimed in any one of the preceding claims, wherein the building component for a roof of a building is a dormer window unit.

15. A building component as claimed in any one of the preceding claims, wherein the building component is prefabricated prior to on-site installation.

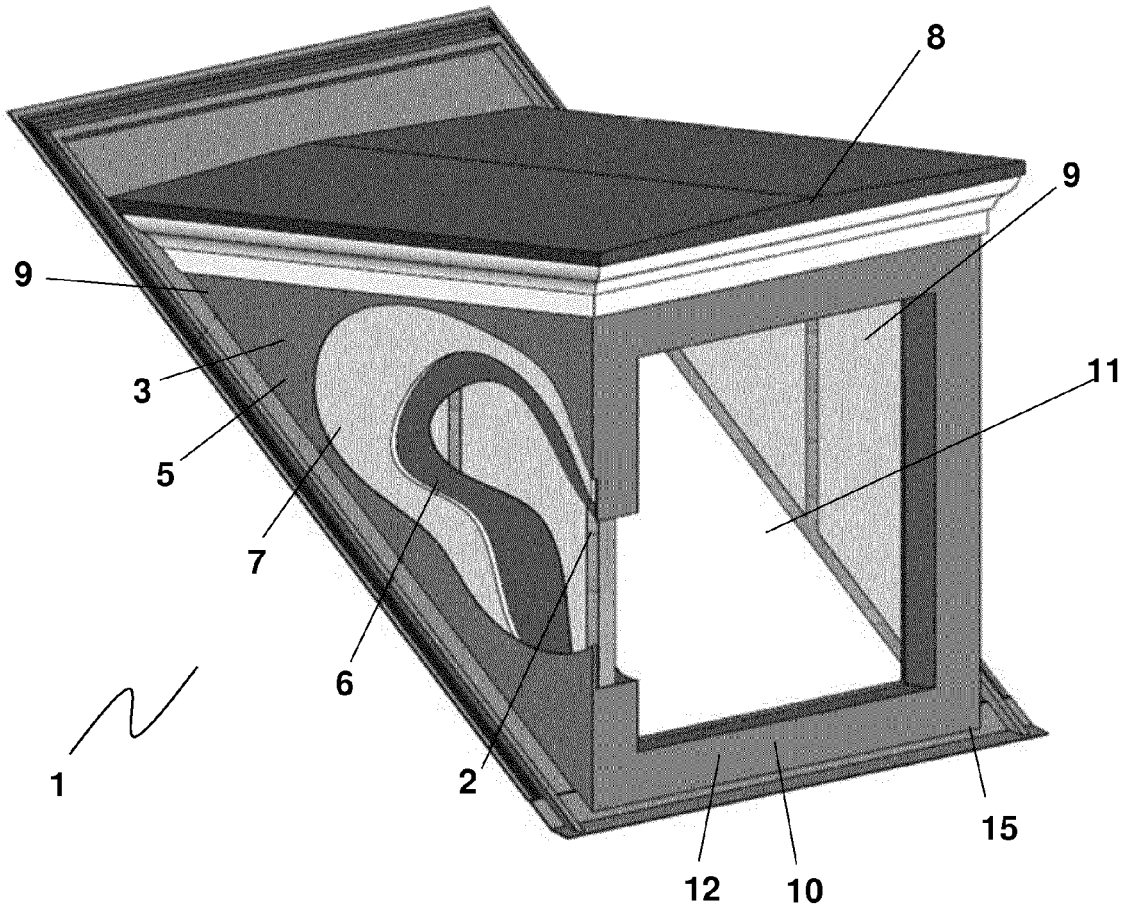


Figure 1

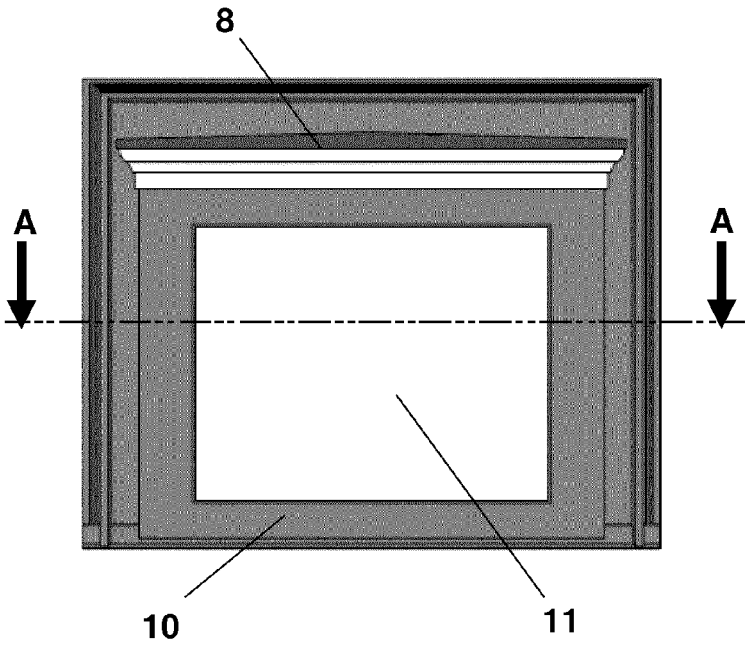


Figure 2

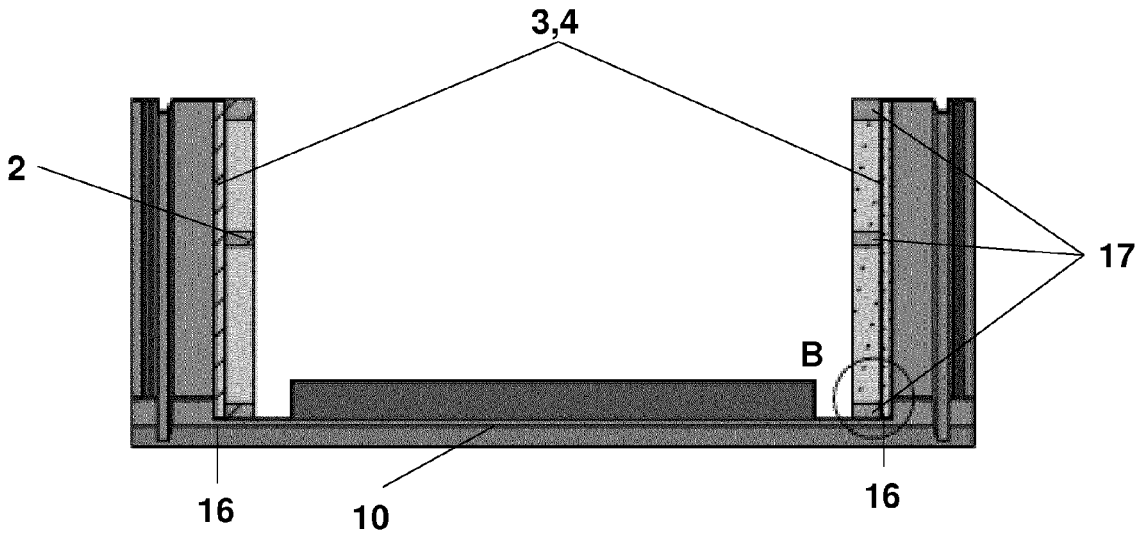


Figure 3

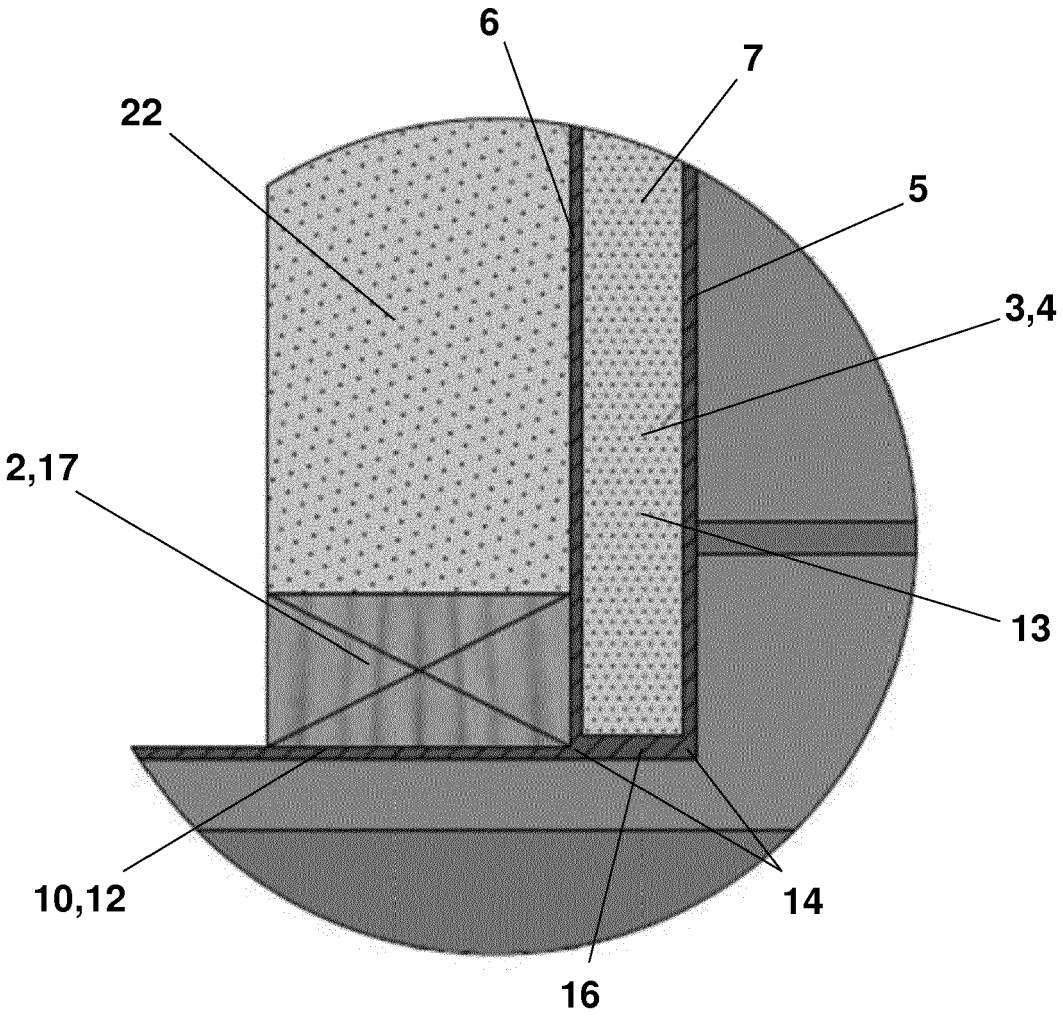


Figure 4

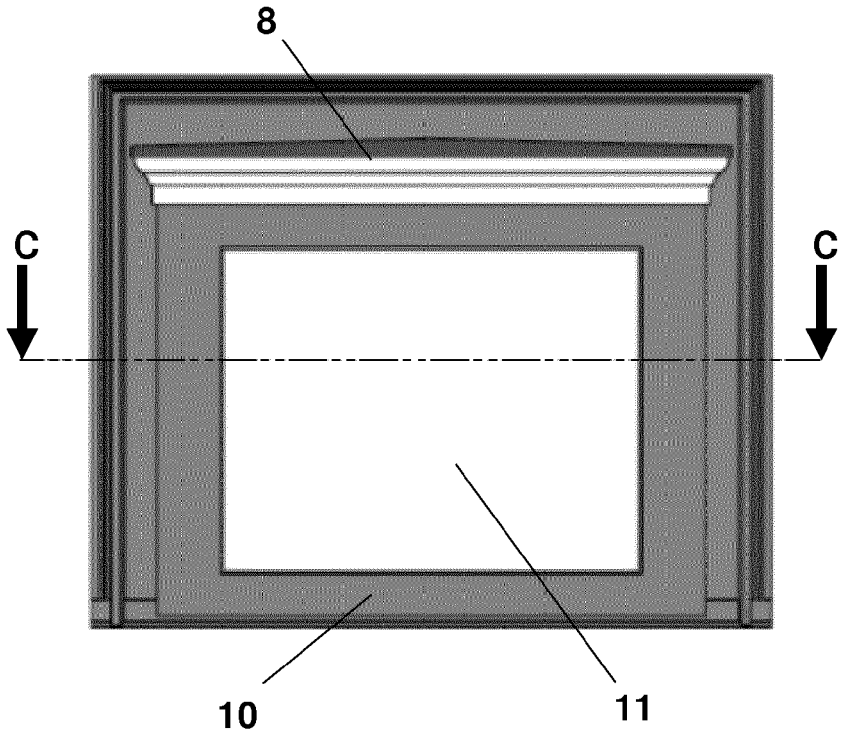


Figure 5

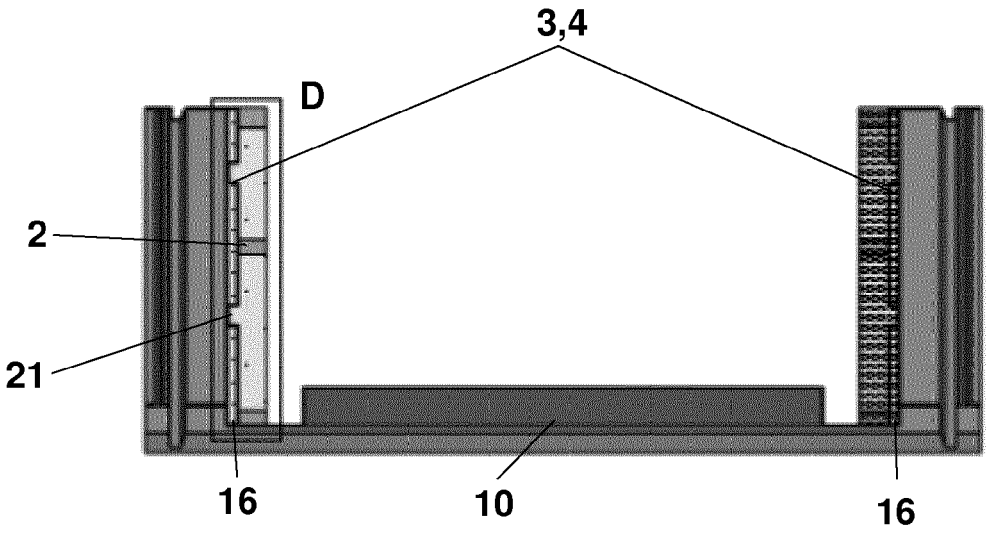


Figure 6

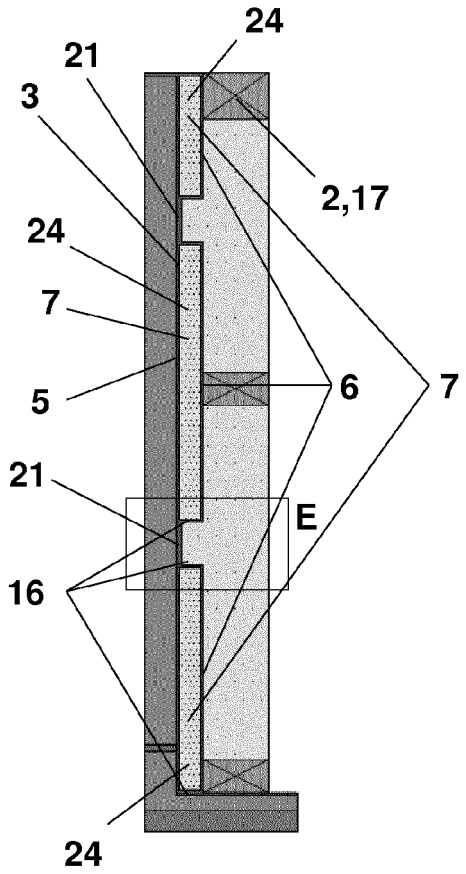


Figure 7

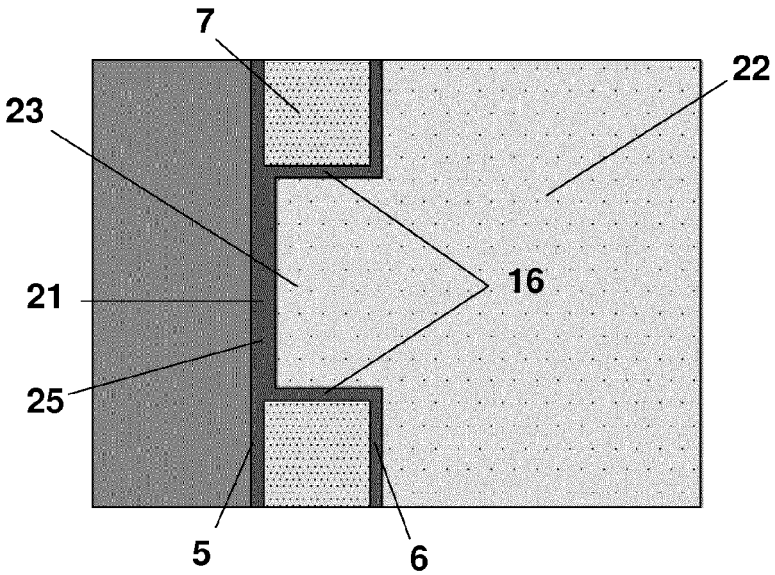


Figure 8

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EUROPEAN SEARCH REPORT

Application Number
EP 15 17 1078

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	21 October 2015	Righetti, Roberto

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