panel frame, first and second wall boards attached to opposite sides of the panel frame to define first and second major sides of the wall panel, each of the first and second wall boards including non-combustible material, and a waterproofing assembly enclosing the perimeter side of the panel frame and extending along a full length of the perimeter side, wherein the waterproofing assembly includes a non-metallic elongate member including first and second opposing flanges disposed against respective exterior surfaces of the first and second wall boards, and wherein the first and second opposing flanges are attached to the perimeter member, wherein the waterproofing assembly includes an aperture connected to a duct attached to the wall panel.

[004a] Another example system may include a pre-assembled wall panel, which may include a panel frame including a perimeter member that defines a perimeter side of the panel frame, first and second wall boards attached to opposite sides of the panel frame to define first and second major sides of the wall panel, each of the first and second wall boards comprising non-combustible material, and a waterproofing assembly that encloses the perimeter side of the panel frame and that extends along a full length of the perimeter side, wherein the waterproofing assembly includes a non-metallic elongate member comprising first and second opposing flanges disposed against respective exterior surfaces of the first and second wall boards, and wherein the first and second opposing flanges are attached to the perimeter member, wherein the waterproofing assembly includes an elongate member comprising a wall that separates an interior of the elongate member into at least a first cavity and a second cavity, and wherein each of the cavities is connected to a respective duct provided on respective sides of the wall panel.

[004b] Yet another example system may include a pre-assembled wall panel, which may include a panel frame including a perimeter member that defines a perimeter side of the panel frame, first and second wall boards attached to opposite sides of the panel frame to define first and second major sides of the wall panel, each of the first and second wall boards comprising non-combustible material, and a waterproofing assembly that encloses the perimeter side of the panel frame and that extends along a full length of the perimeter side, wherein the waterproofing assembly includes a non-metallic elongate member comprising first and second opposing flanges disposed against respective exterior surfaces of the first and second wall boards, and wherein the

first and second opposing flanges are attached to the perimeter member, wherein the waterproofing assembly is formed of two elongate members positioned on opposite sides of the wall panel and that abut one another, and wherein each of two elongate members is fluidly connected to a duct attached to the wall panel.

[005] An example multi-story building may include a structural frame including a first horizontal beam associated with a lower story of the building and a second horizontal beam associated with an upper story of the building and a pre-assembled wall panel attached to the structural frame between the first and second horizontal beams, wherein the wall panel includes a panel frame and wall boards attached to opposite sides of the panel frame, and wherein the wall panel further includes a non-metallic waterproofing assembly extending along a vertical perimeter side of the panel frame, the waterproofing assembly enclosing the vertical perimeter side and a vertical edge of each of the wall boards, wherein the waterproofing assembly includes an aperture connected to a duct attached to the wall panel.

[006] An example method may include attaching a first pre-assembled wall panel to a structural frame of a building, wherein the structural frame includes a first beam and a second beam opposite and spaced apart from the first beam, and wherein the first pre-assembled wall panel is disposed at least partially over the first beam. The example method may further include attaching a second pre-assembled wall panel to the structural frame opposite and spaced apart from the first pre-assembled wall panel, the second pre-assembled wall panel disposed at least partially over the second beam, wherein each of the first and second pre-assembled wall panels includes at least one non-metallic waterproofing assembly along a perimeter side of respective one of the first or second pre-assembled wall panels, and wherein the at least one waterproofing assembly includes an aperture connected to a duct attached to a respective one of the first or second pre-assembled wall panels. The example method may be used to construct a wall system for a building.

[007] The foregoing summary is illustrative only and is not intended to be in any way limiting. In addition to the illustrative aspects, embodiments, and features described above, further aspects, embodiments, and features will become apparent by reference to the drawings and the following detailed description.

CLAIMS

1. A pre-assembled wall panel, comprising:

a panel frame including a perimeter member that defines a perimeter side of the panel frame;

first and second wall boards attached to opposite sides of the panel frame to define first and second major sides of the wall panel, each of the first and second wall boards comprising non-combustible material; and

a waterproofing assembly that encloses the perimeter side of the panel frame and that extends along a full length of the perimeter side, wherein the waterproofing assembly includes a non-metallic elongate member comprising first and second opposing flanges disposed against respective exterior surfaces of the first and second wall boards, and wherein the first and second opposing flanges are attached to the perimeter member,

wherein the waterproofing assembly includes an aperture connected to a duct attached to the wall panel.

2. The wall panel of claim 1, wherein the waterproofing assembly comprises an elongate member formed of a fiber reinforced plastic (FRP).

3. The wall panel of claim 1, wherein the waterproofing assembly comprises a first waterproofing assembly that extends along a first perimeter side of the panel frame, and wherein the wall panel further comprises a second waterproofing assembly proximate a second opposite perimeter side of the panel frame.

4. The wall panel of claim 3, wherein at least one of the first waterproofing assembly and the second waterproofing assembly comprises an FRP pultrusion, wherein a sealing member is arranged between the first and second waterproofing assemblies, and wherein the sealing member is formed of a resilient material.

5. A pre-assembled wall panel, comprising:

a panel frame including a perimeter member that defines a perimeter side of the panel frame;

first and second wall boards attached to opposite sides of the panel frame to define first and second major sides of the wall panel, each of the first and second wall boards comprising non-combustible material; and

a waterproofing assembly that encloses the perimeter side of the panel frame and that extends along a full length of the perimeter side, wherein the waterproofing assembly includes a non-metallic elongate member comprising first and second opposing flanges disposed against respective exterior surfaces of the first and second wall boards, and wherein the first and second opposing flanges are attached to the perimeter member,

wherein the waterproofing assembly includes an elongate member comprising a wall that separates an interior of the elongate member into at least a first cavity and a second cavity, and wherein each of the cavities is connected to a respective duct provided on respective sides of the wall panel.

6. A pre-assembled wall panel, comprising:

a panel frame including a perimeter member that defines a perimeter side of the panel frame;

first and second wall boards attached to opposite sides of the panel frame to define first and second major sides of the wall panel, each of the first and second wall boards comprising non-combustible material; and

a waterproofing assembly that encloses the perimeter side of the panel frame and that extends along a full length of the perimeter side, wherein the waterproofing assembly includes a non-metallic elongate member comprising first and second opposing flanges disposed against respective exterior surfaces of the first and second wall boards, and wherein the first and second opposing flanges are attached to the perimeter member,

wherein the waterproofing assembly is formed of two elongate members positioned on opposite sides of the wall panel and that abut one another, and wherein each of two elongate members is fluidly connected to a duct attached to the wall panel.

7. A multi-story building, comprising:

a structural frame including a first horizontal beam associated with a lower story of the building and a second horizontal beam associated with an upper story of the building;

a pre-assembled wall panel attached to the structural frame between the first and second horizontal beams, wherein the wall panel comprises a panel frame and wall boards attached to opposite sides of the panel frame, wherein the wall panel further comprises a non-metallic waterproofing assembly that extends along a vertical perimeter side of the panel frame, and wherein the waterproofing assembly encloses the vertical perimeter side and a vertical edge of each of the wall boards,

wherein the waterproofing assembly includes an aperture connected to a duct attached to the wall panel.

8. The building of claim 7, wherein the waterproofing assembly comprises an elongate member formed of a fiber reinforced plastic (FRP).

9. The building of claim 8, wherein the elongate member comprises a FRP pultrusion.

10. The building of claim 8, wherein the waterproofing assembly further comprises thermally insulative material along internal cavity walls of the elongate member.

11. The building of claim 7, wherein the waterproofing assembly is configured to engage a gasket formed of a resilient material.

12. The building of claim 11, wherein the waterproofing assembly comprises a first FRP component that defines a cavity and a second FRP component received, at least partially within the cavity, and wherein the second FRP component is configured to interlock with the gasket.

13. The building of claim 7, wherein the pre-assembled wall panel comprises a first pre-assembled wall panel, and wherein the building further comprises a second pre-assembled

wall panel disposed over the second horizontal beam and that spans a full height of the upper story and a full length of an upper story unit of the building, and wherein the second pre-assembled wall panel comprises at least one non-metallic waterproofing assembly that spans a length or a height of the second pre-assembled wall panel.

14. The building of claim 7, further comprising another pre-assembled wall panel which spans at least part of a height of the lower story and part of a height of the upper story of the building.

15. The building of claim 7, further comprising a non-metallic waterproofing assembly that covers, at least in part, an end of at least one of the first and second horizontal beams, wherein the waterproofing assembly is disposed between the at least one beam and a column attached to the at least one beam.

16. A method to construct a wall system for a building, the method comprising:

attaching a first pre-assembled wall panel to a structural frame of the building, wherein the structural frame includes a first beam and a second beam opposite and spaced apart from the first beam, and wherein the first pre-assembled wall panel is disposed at least partially over the first beam; and

attaching a second pre-assembled wall panel to the structural frame opposite and spaced apart from the first pre-assembled wall panel, wherein the second pre-assembled wall panel is disposed at least partially over the second beam,

wherein each of the first and second pre-assembled wall panels includes at least one non-metallic waterproofing assembly along a perimeter side of a respective one of the first or second pre-assembled wall panels, and

wherein the at least one waterproofing assembly includes an aperture connected to a duct attached to a respective one of the first or second pre-assembled wall panels.

17. The method of claim 16, wherein each of the first and second pre-assembled wall panels includes a waterproofing assembly extending along respective vertical perimeter sides, and wherein the method further comprises:

forming a window wall between the first and second pre-assembled wall panels; and

providing a non-structural seal between the waterproofing assemblies of each of the first and second pre-assembled wall panels and respective sides of the window wall.

18. The method of claim 16, further comprising:

forming a lower story of the building;

joining additional structural members to the structural frame to form an upper story of the building; and

attaching an additional pre-assembled wall panel to the structural frame and the first pre-assembled wall panel, wherein the additional pre-assembled wall panel spans at least part of the lower story and part of the upper story of the building.

19. The method of claim 18, wherein the attaching the additional pre-assembled wall panel includes positioning the additional pre-assembled wall panel perpendicular to the first pre-assembled wall panel and pushing the additional pre-assembled wall panel towards the first pre-assembled wall panel to cause interlocking features of a gasket to engage respective interlocking features of respective waterproofing assemblies of the first and additional pre-assembled wall panels.

20. The method of claim 19, wherein:

the additional pre-assembled wall panel comprises a first utility wall panel,

the method further comprises joining a second utility wall panel to the first utility wall panel,

each of the first and second utility wall panels comprises a first waterproofing assembly along a first vertical perimeter side and a second waterproofing assembly along a second opposite vertical perimeter side of respective ones of the first and second utility wall panels, and

each of the first and second waterproofing assemblies comprises an insert configured to interlock with a gasket positioned between the first and second utility wall panels.

21. The method of claim 20, wherein the first utility wall panel is joined to the second utility wall panel before joining the utility wall panels to the first pre-assembled wall panel.