Claims

~~What is claimed is:~~

1. A partition plenum, comprising:

a hollow structure with an opening for admitting air that is cooler than ambient air;

and an array of perforations in a major face of said hollow structure that cause the air in the hollow structure to flow out of the hollow structure at a non-mixing air velocity.

2. The plenum of claim 1, wherein the hollow structure is of flexible material, and wherein the flexible material is tethered to prevent ballooning of the hollow structure.

3. The plenum of ~~any of claims 1-2~~claim 1, further comprising:

an internal inflatable support structure that provides a rigid frame when the support structure is filled with pressurized gas.

4. The plenum of ~~any of claims 1-3~~claim 3, wherein

the plenum is wound up into a roll when the plenum is not fully inflated with air.

5. The plenum of ~~any of claims 1-4~~claim 1, wherein the hollow structure is made of a transparent material.

~~6. The plenum of any of claims 1-5, wherein the flexible material is tethered to prevent ballooning of the hollow structure.~~

~~7~~6. The plenum of ~~any of claims 1-6~~claim 1, wherein the hollow structure is inflatable.

~~8~~7. The plenum of ~~any of claims 1-7~~claim 6, wherein the hollow structure, once inflated, is free-standing.

~~9~~8. The plenum of ~~any of claims 2-8~~claim 1, wherein

each of the perforations has a diameter D, and

said array of perforations discharges air at velocity of 100 fpm when measured at a distance of 10 D away from the wall such that the array forms a displacement register.

~~10~~9. A method of cooling an outdoor space, comprising:

providing one or more sections of a ventilated wall;

forming an enclosure from the one or more sections of the ventilated wall;

supplying cooled air into the one or more sections of the ventilated wall;

discharging the cooled air out of a permeable face of the one or more sections of the ventilated wall at a non-mixing air velocity, wherein

the cooled air discharged at non-mixing air velocity does not disrupt stratification of air within the enclosure up to at least a height of the ventilated wall.

~~11. The method according to claim 10, wherein~~

~~the permeable face includes a plurality of holes.~~

~~12. The method according to any of claims 10-11, wherein~~

~~the permeable face includes an air permeable fabric.~~

~~13~~10. The method according to ~~any of claims 10-12~~claim 9, further comprising:

inflating the one or more sections of the ventilated wall to create a self-supporting structure.

~~14~~11. The method according to ~~any of claims 10-13~~claim 9, wherein

the forming an enclosure includes hanging the one or more sections of the ventilated wall on a support frame.

~~15~~12. The method according to ~~any of claims 10-14~~claim 9, further comprising:

determining an air velocity at least at one of inside and outside of the enclosure;

comparing the determined air velocity to a threshold velocity value; and

suspending the supplying of the cooled air if the determined air velocity is at or above the threshold velocity value.

~~16~~13. The method according to ~~any of claims 10-15~~claim 12, further comprising:

restarting the supplying of the cooled air if the determined air velocity drops below the threshold velocity value.

~~17~~14. The method according to ~~any of claims 10-16~~claim 12, wherein

the threshold velocity value is an air velocity that disturbs stratification of air inside of the enclosure.

~~18~~15. The method according to ~~any of claims 10-17~~claim 12, wherein

the threshold velocity value is an air velocity that is sufficient to provide evaporative cooling of occupants within the enclosure.

~~19. A method of providing a mobile cooled space, comprising:~~

~~providing a mobile platform to which a mobile cooling wall is attached;~~

~~deploying the mobile cooling wall which includes at least one hollow wall section; and~~

~~discharging air colder than an ambient temperature at displacement air velocity from at least one of the mobile platform and the hollow wall section.~~

~~20. The method according to claim 19, wherein~~

~~the mobile cooling wall forms a fence enclosure when it is deployed.~~

~~21. The method according to any of claims 19-20, wherein~~

~~the deploying of the mobile cooling wall includes inflating the at least one hollow wall section with air.~~

~~22. The method according to any of claims 19-21, wherein the mobile platform includes one or more displacement registers.~~

~~23. The method according to any of claims 19-22 wherein the mobile platform includes a gate configured to close off the fence enclosure formed by the mobile cooling wall.~~

~~24. The method according to any of claims 19-23, further comprising:~~

~~sealing the space underneath the mobile platform to prevent airflow underneath the mobile platform when the mobile cooling wall is deployed.~~

~~25. The method according to any of claims 19-24, wherein the mobile platform includes a road going vehicle.~~

~~26. A vehicle with a cooled external space, comprising:~~

~~a source of cooled air that generates cooled air at a temperature lower than an ambient temperature; and~~

~~a mobile cooling wall deployable from the vehicle.~~

~~27. The vehicle according to claim 26, further comprising:~~

~~one or more displacement registers configured to discharge the cooled air at a displacement of velocity.~~

~~28. The vehicle according to any of claims 26-27, further comprising:~~

~~a curtain, a skirt, and or an inflatable partition that prevents or reduces airflow underneath the vehicle when the mobile cooling wall is deployed.~~

~~29. The vehicle according to any of claims 26-28, wherein the mobile cooling wall includes at least one inflatable wall section.~~

~~30. The vehicle according to any of claims 26-29, wherein the at least one inflatable wall section includes perforations that permit air to flow out of the inflatable wall section at displacement velocity.~~

~~31. The vehicle according to any of claims 26-30, further comprising:~~

~~a gate operable to open and close an enclosure formed by the deployment of the mobile cooling wall.~~

~~32. The vehicle according to any of claims 26-31, wherein the vehicle is a food truck.~~

~~33. The vehicle according to any of claims 26-32, when the vehicle includes a window facing toward the inflatable wall when the inflatable wall is deployed.~~

~~34. A cooled seating structure in an ambient temperature environment, comprising:~~

~~a plenum that conveys cooled air colder than the ambient temperature; and~~

~~a fluid connection between the plenum and a hollow seating structure, wherein the hollow seating structure includes a seating surface.~~

~~35. The cooled seating structure according to claim 34, wherein the plenum includes a perforated wall.~~

~~36. The cooled seating structure according to any of claims 34-35, wherein air flows out of perforations in the perforated wall at a displacement velocity in a direction toward the seating surface.~~

~~37. The cooled seating structure according to any of claims 34-36, wherein the seating surface is made of a material that conducts thermal energy and provides a cooling effect to an object on top of the seating surface.~~

~~38. The cooled seating structure according to any of claims 34-37, further comprising:~~

~~a ventilated base wall below the seating surface and having perforations that emit the cooled air at displacement air velocity.~~

~~39. A method of extending air-conditioned space from an air-conditioned building to an external area that is not covered by a ceiling, comprising:~~

~~enclosing the external area with a fence that prevents airflow underneath the fence; and~~

discharging cooled air at a temperature colder than ambient temperature into the enclosed external area at a displacement air velocity.

40. The method according to claim 39, wherein

the enclosing includes deploying of inflatable ventilated wall.

41. The method according to any of claims 39-40, wherein

the inflatable ventilated wall includes at least one perforated face that includes a plurality of openings that permit air from inside of the inflatable ventilated wall to discharge at the displacement air velocity.

42. The method according to any of claims 39-41, wherein

the deploying includes inflating the inflatable ventilated wall with a source of pressurized air.

43. The method according to any of claims 39-42, wherein

the discharging the cooled air includes supplying the cooled air into the enclosed external area through a displacement air register from the air-conditioned space.

44. The method according to any of claims 39-43, wherein the discharging of the cooled air includes supplying the cooled air into the enclosed external area through a door that connects the air-conditioned space to the external area.

45. The method according to any of claims 39-44, wherein the discharging of the cooled air includes supplying of the cooled air into the enclosed external area through a window that connects the air-conditioned space to the external area.

46. The method according to any of claims 39-45, wherein the cooled air is generated by a cooling device that provides cooled air for air conditioning of the air-conditioned space.

47. The method according to any of claims 39-46, wherein the cooled air is generated by a cooling device that it does not provide air for the air conditioning of the air-conditioned space.

~~48. A system for cooling an outdoor space, comprising:~~

~~an air-conditioned enclosed building;~~

~~an outdoor space that is not enclosed by a ceiling, adjacent to the air-conditioned enclosed building;~~

~~a ventilated wall surrounding the outdoor space and configured to supply cooled air at a temperature colder than ambient air into the outdoor space at a displacement air velocity.~~

~~49. The system according to claim 48, wherein the cooled air supplied at the displacement air velocity does not disrupt stratification of air inside of the outdoor space that is surrounded by the ventilated wall.~~

~~50. The system according to any of claims 48-49, further comprising:~~

~~a cooling device that is configured to generate air at a temperature colder than ambient air temperature.~~

~~51. The system according to any of claims 48-50, wherein~~

~~the ventilated wall is made of a rigid material.~~

~~52. The system according to any of claims 48-51, wherein the ventilated wall is made of a soft and/or flexible material.~~

~~53. The system according to any of claims 48-52, wherein the ventilated wall is inflated with a gas in order to hold its final shape.~~

~~54. The system according to any of claims 48-53, wherein the ventilated wall includes a plurality of wall sections connected to each other with air connections.~~

~~55. The system according to any of claims 48-54 wherein the ventilated wall includes an internal inflatable structure.~~

~~56. The system according to any of claims 48-55, wherein the ventilated wall includes internal ribs that hold the inflatable wall in its final shape when the inflatable wall is inflated with the gas.~~