**[0005]** Another recent cooling method is using direct evaporative coolers (DEC) to cool buildings and other enclosed spaces. Conventional direct evaporative coolers, although typically more energy efficient than vapor compression systems, have some drawbacks. The supply air temperature coming out of the cooler may be challenging to control and is dependent on the outdoor air temperature and humidity level. The supply air may be excessively humid. These systems need careful maintenance to ensure that bacteria, algae, fungi and other contaminants do not proliferate in the water system and transfer into the supply air stream. Since these systems utilize direct contact between the evaporating liquid water and supply air, carryover of contaminants into the air stream can occur, which can, in turn, lead to reduced indoor air quality, odors and "sick building syndrome." Also, buildup of mineral deposits in the unit and on the evaporative pads can reduce performance and require maintenance.

## SUMMARY OF INVENTION

**[0005a]** In one aspect, the present invention provides a system for controlling conditions in an enclosed space, the system comprising:

a scavenger plenum configured to direct scavenger air from a scavenger inlet to a scavenger outlet;

a process plenum sealed from the scavenger plenum and configured to direct process air from a process inlet to a process outlet, the process inlet receiving heated air from the space and the process outlet supplying cooled air to the space;

a liquid-to-air membrane energy exchanger (LAMEE) arranged inside the scavenger plenum, the LAMEE configured to use the scavenger air to evaporatively cool a first fluid flowing through the LAMEE, a temperature of the first fluid at a LAMEE outlet being lower than a temperature of the first fluid at a LAMEE inlet;

a first liquid-to-air heat exchanger (LAHX) arranged inside the process plenum, the first LAHX configured to directly and sensibly cool the heated air from the space to a supply air temperature using a second fluid flowing through the first LAHX;

a second LAHX arranged inside the scavenger plenum downstream of the LAMEE, the second LAHX configured to receive and cool the second fluid heated by the first LAHX using the scavenger air; and

a fluid circuit that transports the first and second fluids among the LAMEE, the first LAHX, and the second LAHX.

**[0005b]** In another aspect, the present invention provides a method of operating a conditioning system configured to condition the air in an enclosed space, the method comprising:

directing scavenger air through a liquid-to-air membrane energy exchanger (LAMEE) arranged inside a scavenger plenum, the LAMEE using the scavenger air to evaporatively cool a first fluid flowing through the LAMEE, a temperature of the first fluid at a LAMEE outlet being lower than a temperature of the first fluid at a LAMEE inlet;

directing process air through a first liquid-to-air heat exchanger (LAHX) arranged inside a process plenum, the process plenum being sealed from the scavenger plenum;

directing a second fluid through the first LAHX, , the first LAHX configured to directly and sensibly cool heated process air from the space to a supply air temperature using the second fluid flowing through the first LAHX;

transporting the second fluid from the first LAHX to a second LAHX arranged inside the scavenger plenum downstream of the LAMEE; and

directing the scavenger air through the second LAHX, the second LAHX configured to receive and cool the second fluid heated by the first LAHX using the scavenger air.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0006]** In the drawings, which are not necessarily drawn to scale, like numerals may describe similar components in different views. Like numerals having different letter suffixes may represent different instances of similar components, sub-components of a larger logical or physical system, or the like. The drawings illustrate generally, by way of example, but not by way of limitation, various examples described in the present disclosure.

**[0007]** FIG. 1 schematically depicts an example conditioning system with a liquid-to-air membrane energy exchanger and two liquid-to-air heat exchangers.

**[0008]** FIG. 2 schematically depicts another example conditioning system having a fluid storage tank.

**[0009]** FIG. 3 schematically depicts another example conditioning system having a pre-cooler.

**[0010]** FIG. 4 schematically depicts another example conditioning system having a mechanical cooling system with a liquid-cooled condenser.

**[0011]** FIG. 5 schematically depicts another example conditioning system having a mechanical cooling system with an air-cooled condenser.

**[0012]** FIG. 6 schematically depicts another example conditioning system having a liquid-to-liquid heat exchanger.

**[0013]** FIG. 7 schematically depicts another example conditioning system including separately located scavenger and process air plenums.