The overhead Airbitat cooling and purification unit is responsible for the dual-role of creating cool air and filtering harmful airborne particles such as PM2.5 from this air. The cooled and fresh air is then channelled through nozzles in air ducts near the roof of the bus stop, so that the cool and fresh air will be directed at commuters inside the bus stop. The cooling and purification unit creates cool air as low as 24°C and filters polluted ambient air with up to 70% energy savings compared to a conventional air conditioner with similar cooling capacity.

The Airbitat Oasis Smart Bus Stop is built with advanced machine learning and sensors that detects ambient conditions and commuter traffic to adjust modes and deliver energy-smart cooling. Sensors in the bus stop detect ground operating conditions (e.g. temperature, humidity, commuter traffic etc) and dynamically adjust the modes in which the air should be cooled. In lull period, the system powers down to standby mode.

The sensors also play the role of tracking data for analyses of average waiting time by commuters at the bus stop, commuter flow and the number of people at a bus stop at any one time. The bus stop’s inbuilt computer vision and advanced analytics also allows it to detect suspicious activities such as loitering and unattended bags, with the full potential of its use in a bus stop currently being trialled.

Finally, the sensors also trigger live updates of temperature and PM2.5 concentration level readings within and outside of bus stop which are displayed on the digital panel for commuters’ information. Bus routes have also been digitalised in an additional digital panel for commuters’ easy reference.