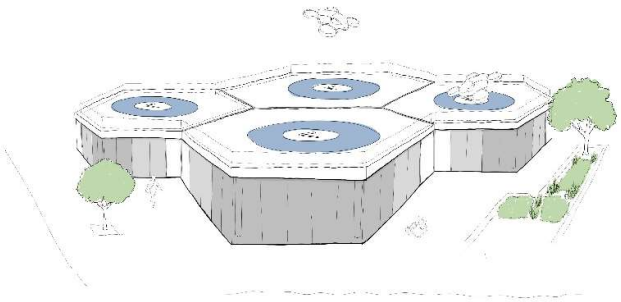
Advanced Air Mobility



As the transport system becomes increasingly decarbonised we are seeing how each mode of transport responds to the challenges and opportunities this presents. One of the biggest changes we will see in the next few years is the introduction of Advanced Air Mobility (AAM), known by some as the 'flying taxi' and more formally as electric vertical take-off and landing (eVTOL) aircraft. To date we have seen trials of drones, a predecessor of AAM technology, connecting communities by carrying high value and socially important freight. Our review of the pace of investment in the market suggests that AAM vehicles will be in our skies within the next three to five years.

There are many well-established aviation OEMs and new start-up companies that are developing eVTOL and large industrial drones and there is a race to receive regulatory airworthiness certification and approval going on as we speak. By their nature eVTOL will be small, agile and battery powered. Initially eVTOL will have a pilot and be able to transport 4 passengers. However, these aircraft and industrial drones are being built and developed with autonomy in mind so eventually there will be no need for an on-board pilot.

Arcadis has been developing tools and expertise to support the introduction of this emerging mode of transport, focussed on the locations where these aircraft will take off and land, commonly known as vertiports. For local authorities and planners key considerations will include spatial planning to accommodate vertiports and the way in which Local Transport Plans and Local Plans will need to take account of the introduction of AAM, as there is a risk that a vacuum will allow development without control. There are a number of challenges that every local authority, AAM operator or site will need to consider and overcome; we present these as the 10 P's:

- Problem – what problem is AAM trying to solve and where is it adding or creating value?
- Plan – what is the infrastructure strategy; national / regional / local / company?
- Places – where do you locate infrastructure?
- Planning and Permits – how do you secure the required permissions?
- Perception – how can you gain stakeholder support to build the infrastructure?
- Power – how can you meet the energy needs of the infrastructure?
- Payment – what is the business case and how will the infrastructure be commercially viable?
- Programme – how can the infrastructure be delivered?
- Procurement – how can the supply chain be scaled to meet future demands?
- Partnership – how can the relevant organisations work together effectively?

Iain Coutts is part of the Arcadis specialist Aviation and AAM team currently supporting the San Diego region in their development strategy for introducing these services into the region and transport networks.