

Terminal

DISINFECTANT

Insights:

# COVID-19 AND THE FUTURE OF AIRPORT DESIGN



**CHAPMAN TAYLOR**  
TRANSPORTATION



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AS THE WORLD COMES TO TERMS WITH THE SHORT- AND LONG-TERM IMPACTS OF THE COVID-19 CRISIS, THE HOSPITALITY AND TRANSPORTATION SECTORS ARE PERHAPS THE MOST EXPOSED, PARTICULARLY THE AVIATION INDUSTRY. IN THIS INSIGHT PAPER, OUR UK TRANSPORTATION DIRECTOR **PETER FARMER** LOOKS AT THE POSSIBLE CONSEQUENCES OF THE CURRENT EMERGENCY FOR AIRPORTS AND AIRLINES AND EXAMINES SOME POSSIBLE DESIGN SOLUTIONS TO HELP THE INDUSTRY NAVIGATE TO A “NEW NORMAL”.

COVID-19 is already a game changer for the aviation industry. We are witnessing perhaps the biggest aviation crisis of the 21st century.

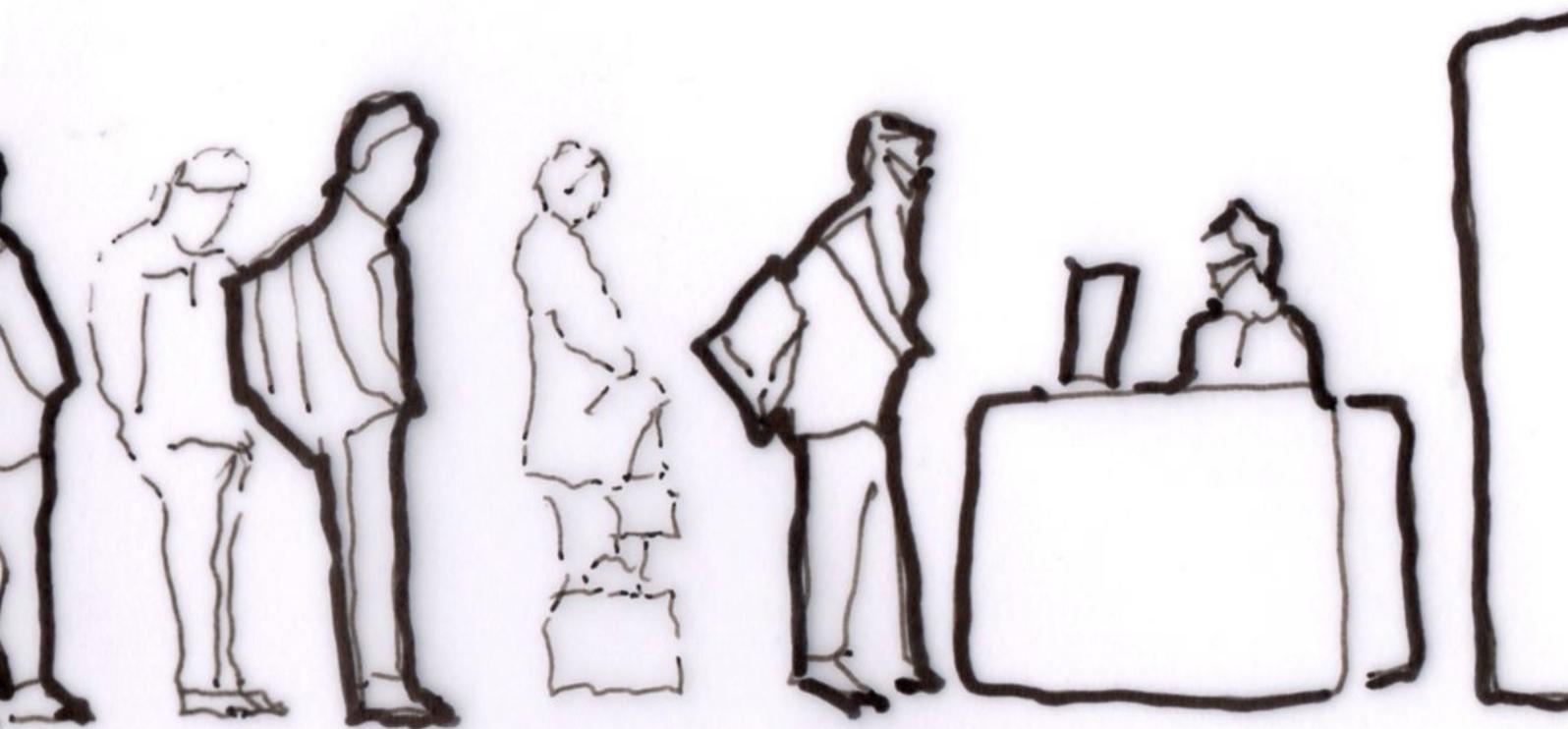
Detailed EU policy is still in development. However, the broad approach is: “...to protect passengers, crew and transport workers when air transport restarts. We approach seating arrangements as we approach all other aspects of resuming travel; we want to mitigate risk - we cannot eliminate it.”

The short term will see airports reducing capacity and closing down facilities, and recovery is likely to be more of a U than a V shape. Airports will need to ensure they are safe and make people feel safe while also ensuring that they can deal with any incident, should it occur. Airports generally, and particularly so in the UK, are very experienced and knowledgeable in doing this.

Some research suggests as many as 70 new measures and procedures could be needed through the passenger’s journey. Most of these are data-focused, some are about service, some are behavioural and some require physical adaptations to terminal facilities.

Arguably, now is a great opportunity to carry out any necessary maintenance or regulatory upgrades while there are fewer passengers to work around.





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## WE WILL SEE MORE THERMAL CAMERAS BEING INSTALLED AT ENTRANCES AND ALONG KEY FLOW LINES.

### **Spatial strategy**

Some solutions will be spatial and will require new facilities, but they will be more about collecting information and managing people more efficiently as a result of that data. It is unlikely that airport terminals will fundamentally change in the long term. In the short term, we will need to manage spaces and flows and provide additional welfare provision.

We will see more thermal cameras being installed at entrances and along key flow lines. These interventions will also increase staffing numbers and increase operating costs.

For many years, I have been fascinated but the concept of 'personal space', and this has now taken on a whole new meaning. Mass transport modes are, by their very definition, socially compact spaces that continually challenge one's sense of personal space.

People have varying attitudes to personal space, with different cultures and nationalities demonstrating different characteristics. In Scandinavia, the distance required is considered to be greater than, for example, in the UK. However, people from the former tend to be more forgiving of incursions than those from the latter.

Who among us hasn't had an issue with our own parameters on public transport, whether on a train, plane or at an airport? Who doesn't know what it's like to spend the majority of a flight making sure they have equitable access to an armrest or being jammed in by a passenger in a reclined seat in front of them? Following COVID-19, all of our attitudes are likely to change for at least a period of time.

### **The relationship between airlines and airports**

For some time, airports have had to deal with the impacts of social change - mostly revolving around security, but also immigration. This will be another key change that they will have to manage. There will be new regulations and conditions, but the biggest factor in the short term will be the impact on airlines.

To understand this, we first need to understand the relationship between airline and airport. An airport's role is to focus the delivery of passengers to an airline and to provide the necessary technical and logistical support to both core and subsidiary operations such as cargo. When considering this, we must remember that the vast majority of airports rely on secondary income, particularly from passenger spend within an airport as well as income such as from car parking.

Airlines have a business model which is based on aircraft configuration and load factor. A 2m separation within an aircraft is unsustainable within the current model. Current guidance for UK trains is to sit 2m apart, or at least two rows apart, bay or window, resulting in 25% capacity. For airlines, this would mean around 16% capacity, when most airlines would quote 70% or above as the minimum break-even level.

There are parallels here with the environmental debate. We must remember that travel is both a necessity and a personal choice. Some decisions to travel are discretionary and some are an economic requirement. Air travel is often perceived as more a discretionary choice, particularly in the leisure sector.

We work in a sector that seeks to fulfil the wish to travel while ensuring that every airport project is as environmentally low-impact as is practical.

While many airlines make their profit through premium passengers, it is those of us who use economy who get the aircraft moving in the first place (as with many rail business models)

While there is a healthy debate to be had over the economics and sustainability of short-haul travel modes, I am a strong believer in the educational and social cohesion benefits of international travel.

## SECURITY ISSUES HAVE MAINLY BEEN FOCUSED ON POTENTIAL ACTS OF VIOLENCE. COVID-19 BRINGS THE PHYSICAL TOGETHER WITH THE SOCIAL.

### Health security

Over recent decades, key events have had significant impacts on the processing of passengers through airports, particularly through security. While some of this cost has been passed on to the airlines, the onus has fallen on the airports, particularly in terms of investing in solutions which allow the airlines to operate safely and securely.

Security issues have mainly been focused on potential acts of violence. COVID-19 brings the physical together with the social.

Airports and airlines may also need to accommodate increased dwell times in terminals and ask passengers to report earlier to facilitate additional tests and screening.

From a design point of view, our role is to deliver passengers safely and economically to the airline. If, at that point, the airline chooses to space passengers out, not provide them with in-flight service or forbid lavatory visits, that is outside our remit.

It is important that we work to ensure that passengers feel as safe as possible and have the facilities they need to reinforce this feeling. Recent EU guidance says that: “We want to mitigate risk – we cannot eliminate it”. This is as much about reassurance about our fellow passengers as it is about ensuring clear and safe environments.

The core of the adaptations that airports are going to have to make is in processing. COVID-19 will require a new level of personal certification, whether people are traveling internationally or not, and airports and ground operations will need to accommodate this by way of a new visa to travel. It is likely that this will be mobile app-based. IATA has already considered using the proposed OneID identity management app, but any platform will need to be internationally recognised and enforced.

The OneID app is an initiative by ACI and IATA to enable a friction-free, passenger-centric process which allows an individual to confirm their identity online or in person to the required level at every process step while maintaining personal data securely. OneID, altered or appended with medical records and tracking systems in the case of passengers who will be required to self-quarantine on arrival, may help countries contain the pandemic.

Additional screening of both outbound and inbound individuals may become the norm. Technology and information could help this to become unobtrusive, but it is likely to become far more universal than terrorist profiling has ever been. The level to which we agree to subject ourselves to this will likely reflect the ease with which we can navigate processing procedures.

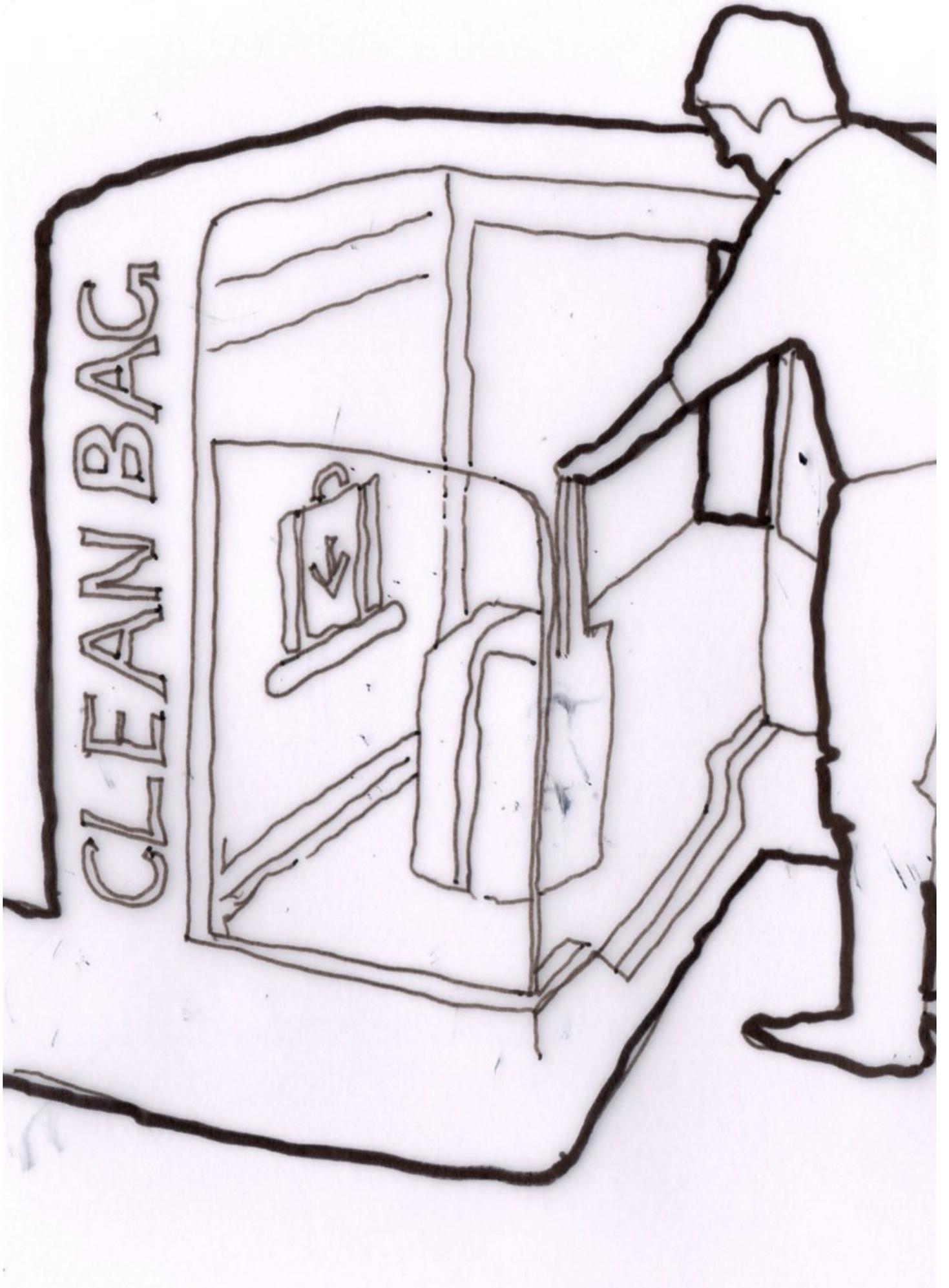
There are significant human rights issues with this type of information disclosure with which many people will be unhappy. However, it is likely that profiling based on health concerns will be more politically and socially acceptable than profiling associated with race, religion or other forms of cultural identity. We may find ourselves presenting medical and recent testing history upon booking, immediately prior to or at the point of departure.

### Possible design solutions

There will be a lag in passenger numbers as the impact of the virus slowly unwinds. Other aspects may also hold back recovery, such as employment issues reducing purchasing power, companies continuing with virtual meetings and a nervousness about the virus situation at the proposed destination.

Airport terminals will lose capacity in the short term, but this is likely to bounce back, particularly when there is an appreciation of the comparatively small spatial parameters on the train or bus to the airport in relation to the aircraft. The initial lag will, in fact, help airports in the short term to provide sufficient measures for passenger separation.

At the same time, key provisions will now need to increase as a norm. It is very likely that a similar situation will reoccur at some time in the future, for which we will hopefully be better prepared and more resilient. For our part as architects within the aviation sector, we will continue to ensure all our interventions are as sustainable, inclusive, personally respectful and healthy as possible.





### About the author

Peter heads up our Transportation sector in the UK. He undertakes a key role in the continuing development of this sector, related research, masterplanning, due diligence and sustainability.

With over 25 years' specialist experience across the UK, Central and Eastern Europe, the Middle East, Asia, Australia and the Caribbean, he has an in-depth understanding of the political and business drivers of projects with multiple stakeholders and complex design and delivery teams. Special areas of interest is the emerging PRS / Build-to-Rent sector where she is a regular contributor at round table events and guest speaker at residential sector industry events.

## SECURITY ISSUES HAVE MAINLY BEEN FOCUSED ON POTENTIAL ACTS OF VIOLENCE. COVID-19 BRINGS THE PHYSICAL TOGETHER WITH THE SOCIAL.

It is possible that airports will restrict entry to terminals and discourage or disallow transit waiting to a maximum of, say, four hours. Weepers and waiters and meeters and greeters may also be restricted or not allowed to enter the terminal. This will change the nature of external areas and may be something to be considered in the long term. To gain entry, passengers are likely to need to provide some “fit-to-fly” information and possibly subject themselves to temperature monitoring and disinfection measures.

From this point on, passengers may be required to wear gloves and masks.

Among the things we are likely to need to consider are:

- An increased number of operatives, including airline cabin crew, and more sight operations. Airports and airlines will need to train staff to manage the potential for customer dissatisfaction.
- Hand luggage may be subjected to UV disinfection and “sani-tagged”. We will need to provide accommodation and routes for denied passengers.
- Ways of introducing additional health screening on departure, and what to do to manage exceptions. This will potentially involve remote, and then on-site, health screening.
- Airlines are likely, at least in the short term, to reduce on-board service. Therefore, the need to take something with you will increase, requiring the provision of more ‘grab and go’ facilities, possibly in the form of ‘touchless vending machines’ managed by phone apps.
- The boarding process is likely to take longer, as separation is maintained at the gate and air bridge and as airlines board strictly by row number.
- Toilet layouts – changes in the short term to allow distancing, and changes in the long term informed by a better understanding of occupancy. This could also lead to more individual facilities, which may resonate with other influences such as inclusive provision. We will see more PIR and touch-free devices, taps, soap and driers, and may even see a bigger market for self-sterilising fixtures and fittings.

- We will need to provide more hand sanitising stations and, at departures, the provision of PPE such as masks and gloves.
- We may consider increased automation of doors and vertical movement.
- MEP systems will inevitably be reviewed in respect of capacity and filtering. Some airports may look to introduce processes such as photohydroionisation for regular or emergency anti-pathogenic treatment of spaces.
- We will see additional criteria for fast tracking, such as a clean bill of health, and the need for airports to be able to isolate certain ‘high-risk’ flights and individuals.
- At least initially, special arrangements for issues such as queuing.

### The new normal

In time, passenger behaviour will return to something close to normal, but not necessarily the current norm. However, in the short term, airports will need to learn from supermarkets, particularly their guidance on separation.

We need to distinguish whether these parameters are statutory, regulatory or just what Sainsbury’s determined, and consider how much we need them to be in place and how they can be enforced. A separation guideline or rule is only as effective as the willingness of everyone to observe them, unless they are policed.

It will be interesting to see if there are any ‘hangovers’ that truly change the way we behave, whether in the UK or internationally, and how public realm architecture in travel environments needs to respond. The social and economic conception of travel may change greatly, particularly air travel.

The maintenance of physical provisions, such as Perspex screens at checkouts, will be based on a risk-based assessment. It is hard to see how we move away from a push-button, touchscreen, 70% - 90% load factor world without turning the industry on its head, likely resulting in it becoming the preserve of only the wealthy and privileged. That is not a world I would want to move towards. We need to ensure, as owners, operators and designers, that air travel remains safe, open and accessible to all.

