Re-opening after COViD-19
User-Centered Strategies for Buildings and Public Spaces

Tony Nichol Transport Planner at Arup

ARUP

People movement, interaction and engagement

Pedestrian Journey

Transport rail stations, tram stops, airports, interchanges
Retail shopping centres, temporary retail spaces
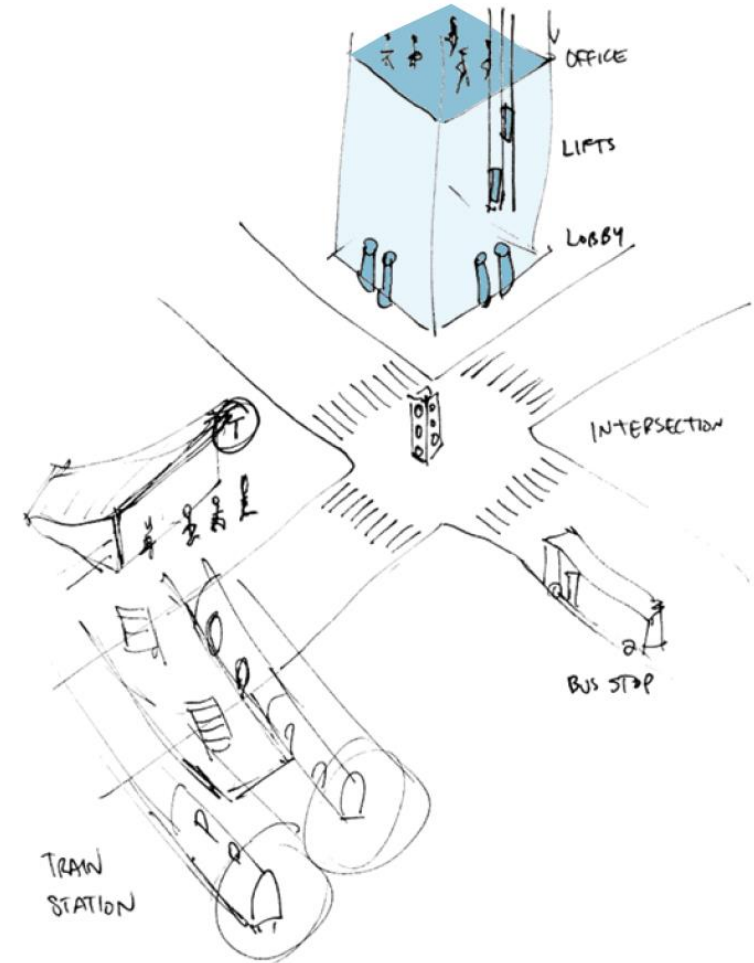Culture art galleries, museums
Venues stadiums, concert halls, arenas
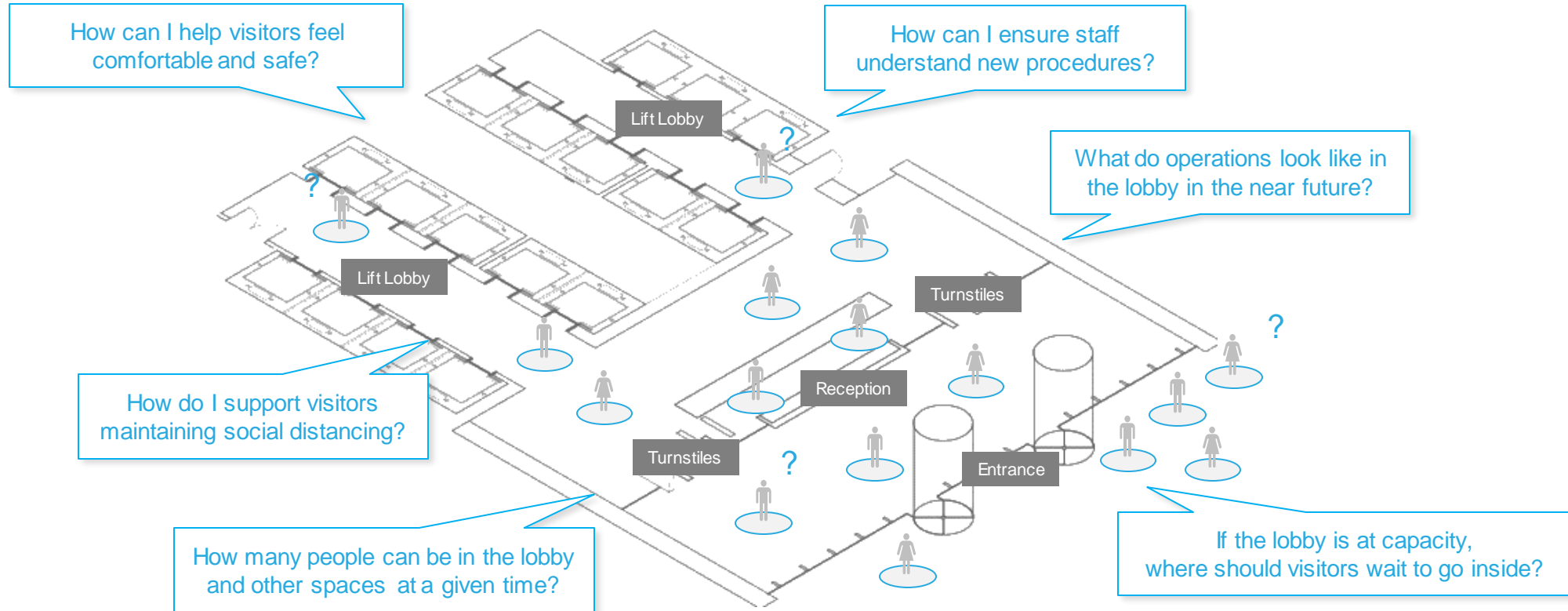Public Realm footways

Buildings and Public Spaces
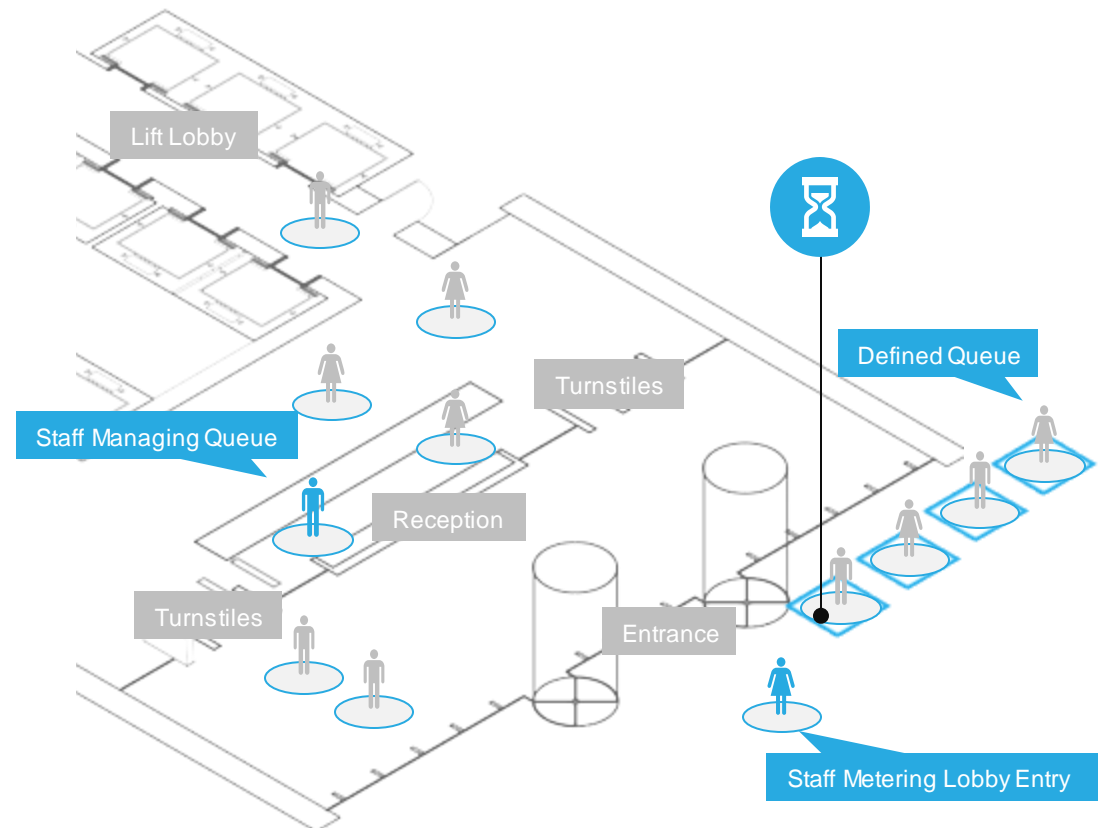
Requirements
Challenges
Outcomes

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New Questions

When restrictions begin to ease, users of buildings and institutions will face
many new questions.

How can I help visitors feel comfortable and safe?

How can I ensure staff understand new procedures?

What do operations look like in the lobby in the near future?

How do I support visitors maintaining social distancing?

How many people can be in the lobby and other spaces at a given time?

If the lobby is at capacity, where should visitors wait to go inside?

Lift Lobby

Lift Lobby

Turnstiles

Turnstiles

Reception

Entrance

ARUP

Queuing Strategy

- Define **maximum building occupancy** and **queuing areas** should demand exceed building occupancy

- **Monitor** when your building is **reaching capacity** and **implementation** of queuing strategy

- Ensure queuing strategy **minimises the impact on the public realm**

- Provide staff to **manage crowds** and **keep the visitors informed**

Lift Lobby

Defined Queue

Turnstiles

Staff Managing Queue

Reception

Turnstiles

Entrance

Staff Metering Lobby Entry

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Provide adequate room for queuing

- Provide for **clear paths of travel**

- Use **stanchions, ground markings and signage** to designate spaces

- Apply **universal design principals** and keep all users in mind, including **infrequent users and different abilities**

4 m

2 m
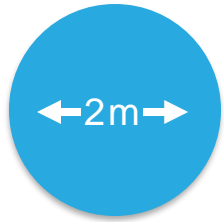
9 Person Queue Shown
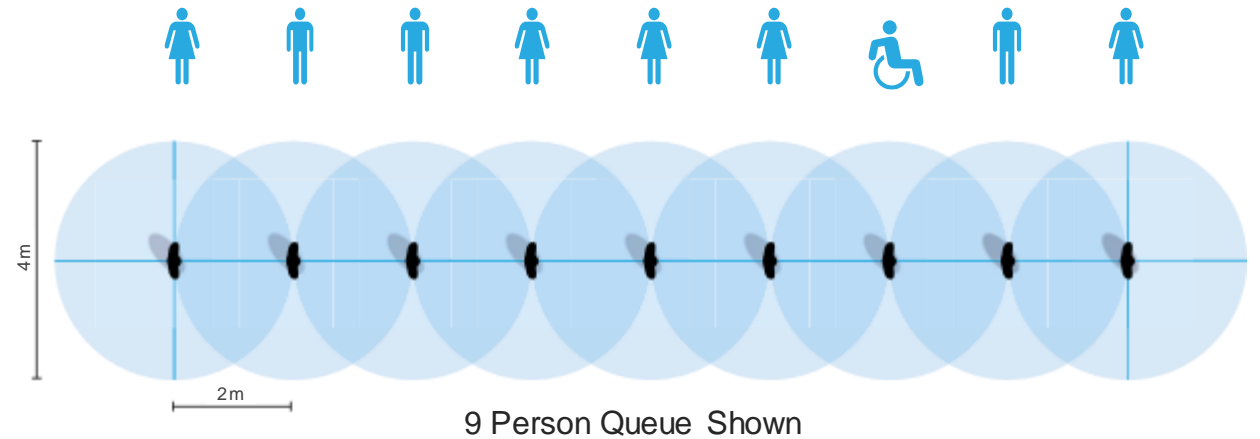
Stanchions

Floor Markings

Signage
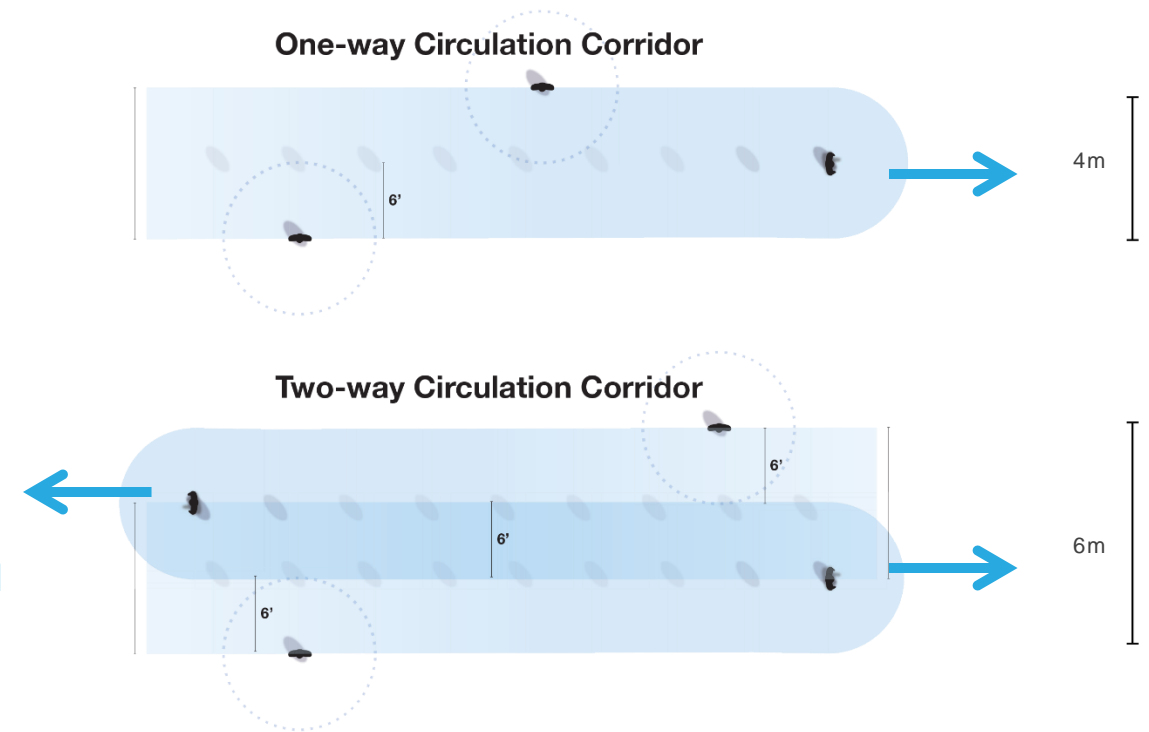
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Reinforce social distancing

- **Display signage** and **clear markers** reiterating need to maintain distance

- Have building staff to **monitor** and **manage social distancing** in lobby and public areas

- **Allow staff to maintain social distancing** themselves, such as by using only every other position at reception

- **Limit number of people in lifts** at given time
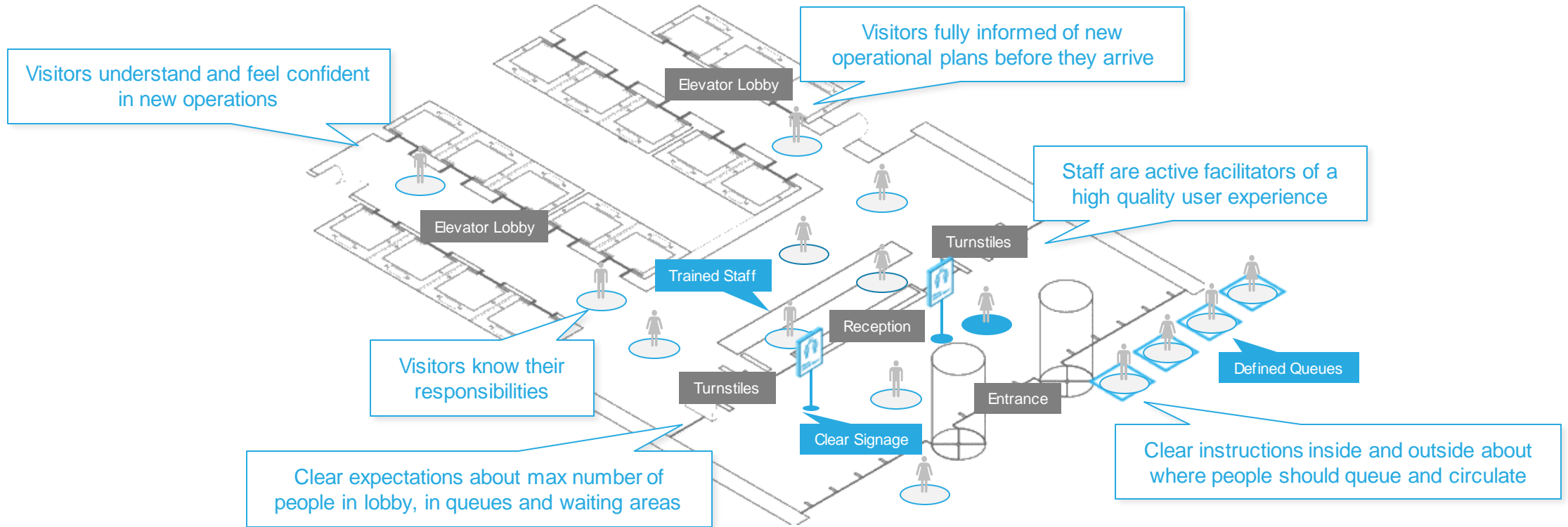
ARUP
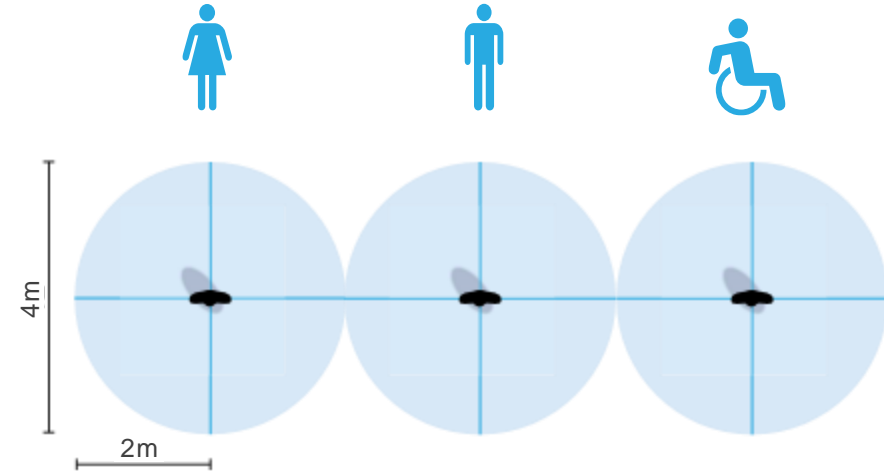
Provide space for circulation

- **Define flows** that **minimises contact**

- Use **one-way** circulation routes where possible

- Provide space to achieve **2m distancing**. This will change dependent on the operation i.e. **uni-directional** and **bi-directional**

- Consider implications on **access to buildings/areas** and **vertical circulation**

One-way Circulation Corridor

4m

Two-way Circulation Corridor

6m

6'

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Making it work

Careful planning and clear communication can allow for the phased reopening of

Visitors fully informed of new operational plans before they arrive

Elevator Lobby

Visitors understand and feel confident in new operations

Staff are active facilitators of a high quality user experience

Elevator Lobby

Turnstiles

Trained Staff

Reception

Visitors know their responsibilities

Turnstiles

Defined Queues

Entrance

Clear Signage

Clear expectations about max number of people in lobby, in queues and waiting areas

Clear instructions inside and outside about where people should queue and circulate

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Arup User Experience Toolkit

Pedestrian Modelling

3D

- Quickly **iterate** and **test** new alternative operations

- **Evaluate** impacts of new **procedures**, **staffing levels** and **other requirements**

- **Proximity Analysis**: report on all agents that move **within a set distance** (e.g. all agents **within 2m** of each other change colour) to directly compare **amount of time** within proximity (e.g. time within 2m)

- **New behaviours**: new personal space preference to understand **adherence scenarios**
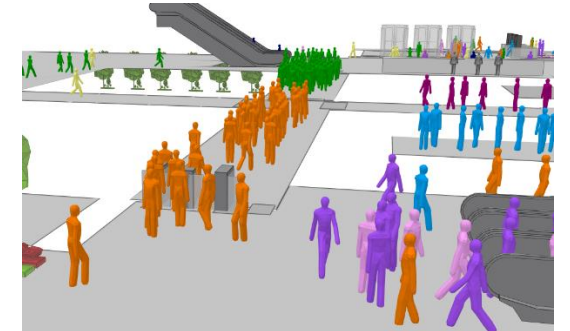

Security Procedures

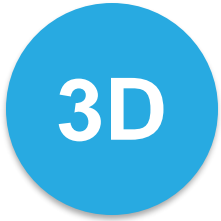Throughput / Capacity

Ticket Desk Operations

Queuing

Pre-COVID-19 Lobby Configurations Shown
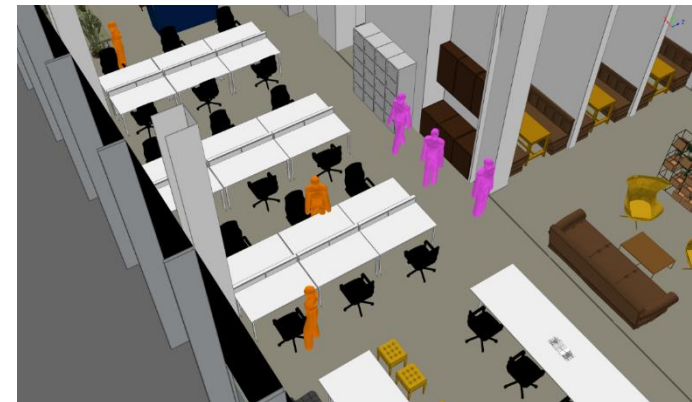
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Arup User Experience Toolkit

Arup Liverpool Office

3D

Office operations

- **Plan** for, and **test**, for the re-occupation of Arup's Liverpool Office

- Defined **maximum office occupancy**

- Using 2m distancing as **primary assessment criteria**

- Gave an understanding where the **pinch-points** are likely to occur and what **measures** will need to be implemented such as **one-system, designated hand sanitising points**

- **Allowed for rapid** testing of measures and how it will work operationally as part of building strategy
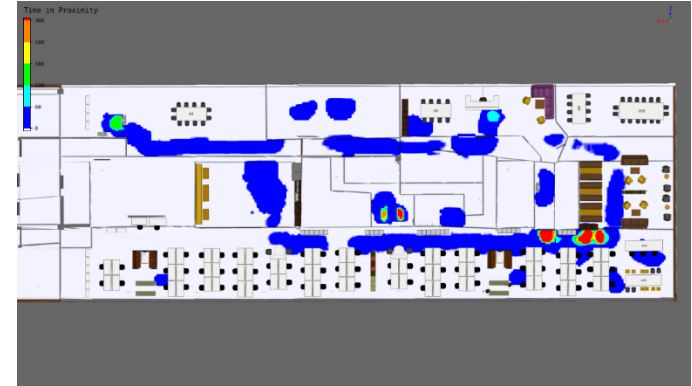
Detailed Analysis
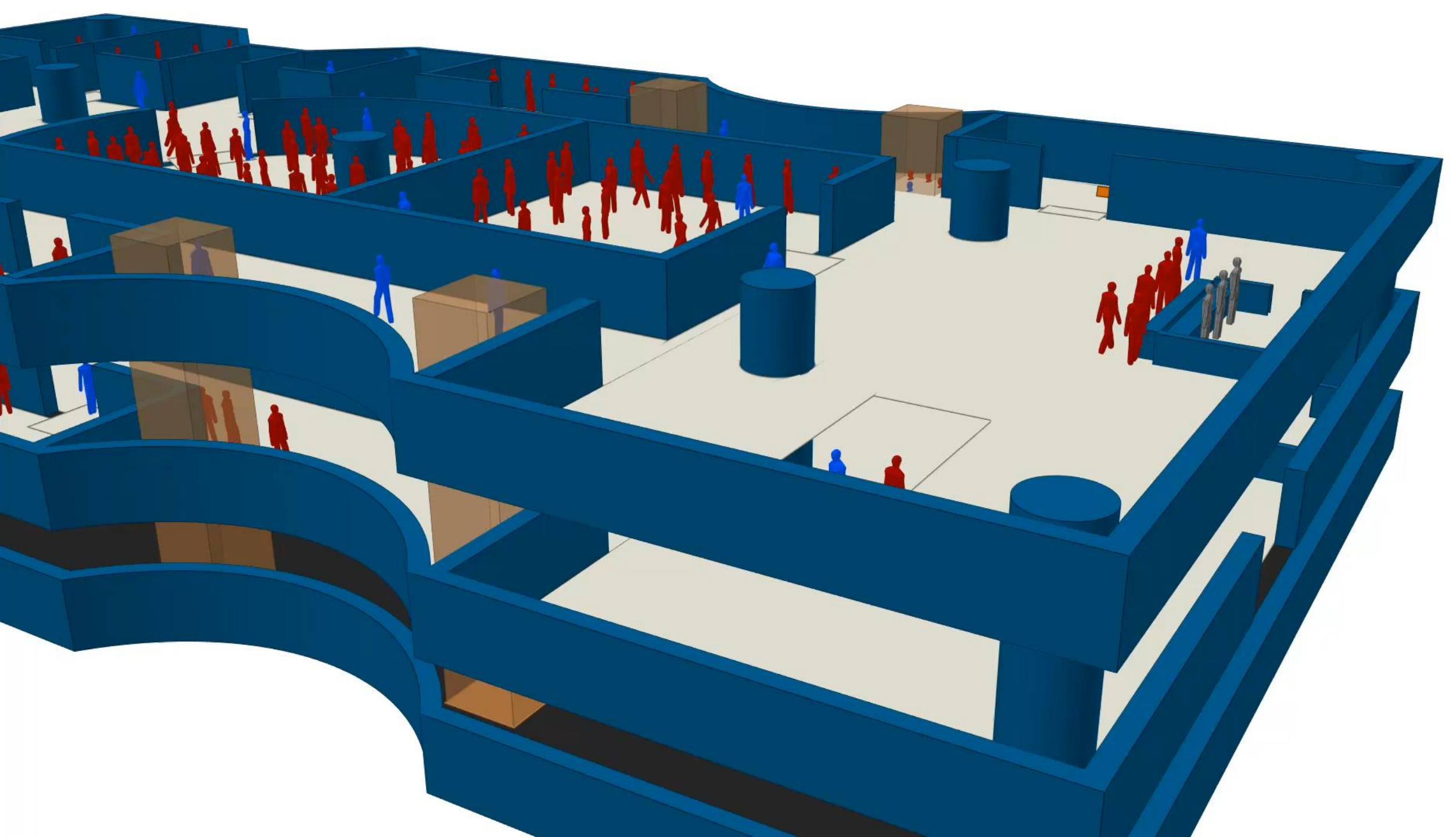
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Arup User Experience Toolkit

Useful Links

Crowd Simulation Software: MassMotion

https://www.oasys-software.com/products/pedestrian-simulation/massmotion/

Proximity Analysis Tool Update (new tool created in MassMotion to test physical distancing):

https://www.oasys-software.com/news/proximity-modelling-massmotion/

Proximity Analysis Tool Update (videos):

https://vimeopro.com/oasys/oasys-massmotion-proximity-analysis

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