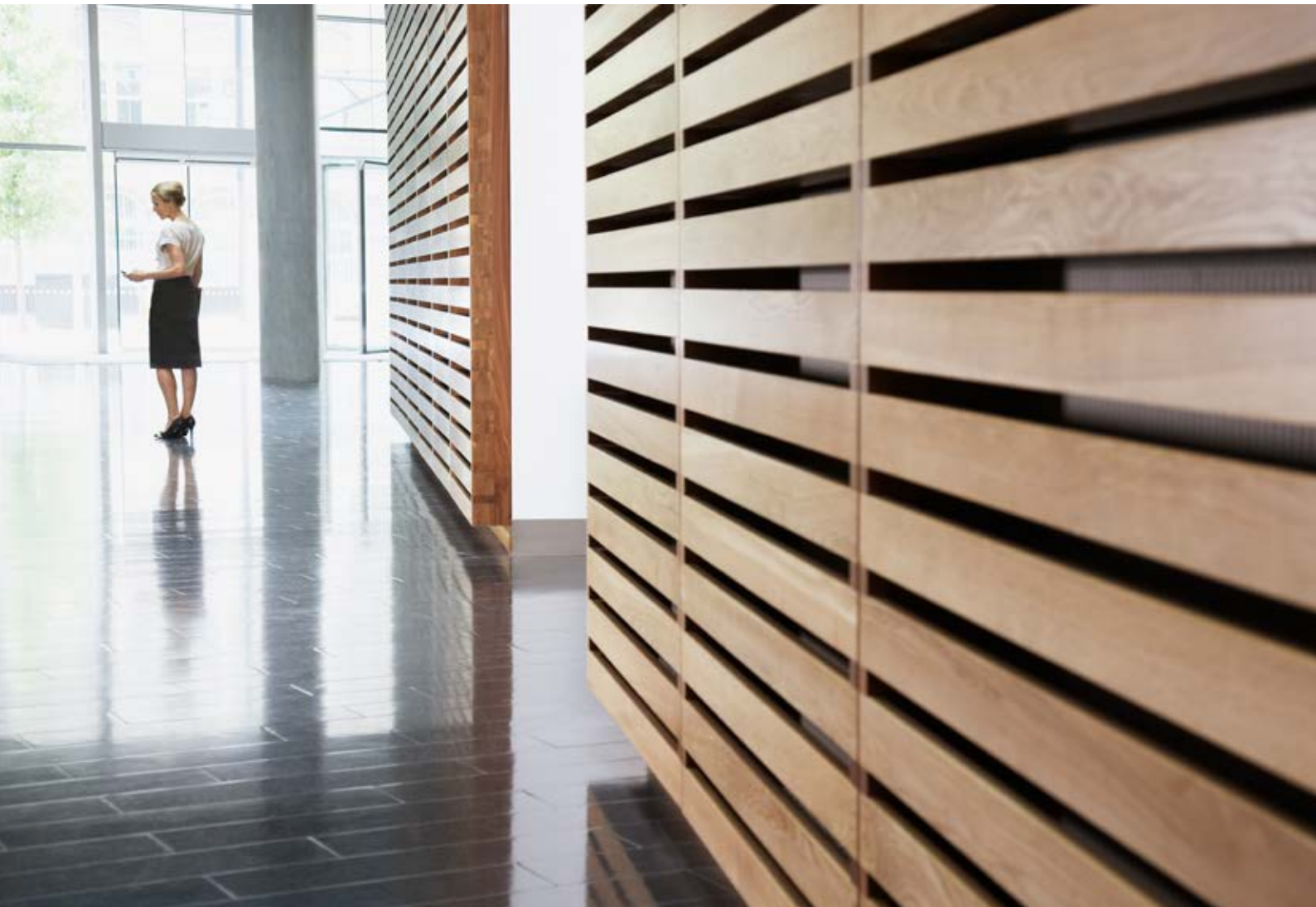


SAVILLS OFFICE FiT

Adapt, Evolve, Improve



SMART SOLUTIONS FOR LANDLORDS

Enhancing user experience
in office buildings



SAVILLS OFFICE FiT

Getting Office FiT - Design led suggestions for landlords to enhance user experience

The design requirements and operation of existing buildings, projects in development and future schemes have now changed as a result of Covid-19. Those who own and make decisions about investment in property need to carefully incorporate solutions to deal with the current pandemic and broader infectious disease controls.

Savills experts have considered a range of solutions for existing, in development and future office buildings and this guide shares our experiences and provides a framework for further discussion. We would be pleased to work with you to ensure your property meets new and emerging guidance to allow people to return to work and feel safe in the 'new normal' and beyond.

A collaborative approach is required and as your trusted advisor we can be the catalyst for the careful discussions needed to bring landlords and tenants together to agree the best solution for your building. We also understand the need to align expectations

and balance the CapEx cost of the works with available funding, as well as the need to support and work with you to develop a compliant tailored solution that addresses all stakeholders' concerns.

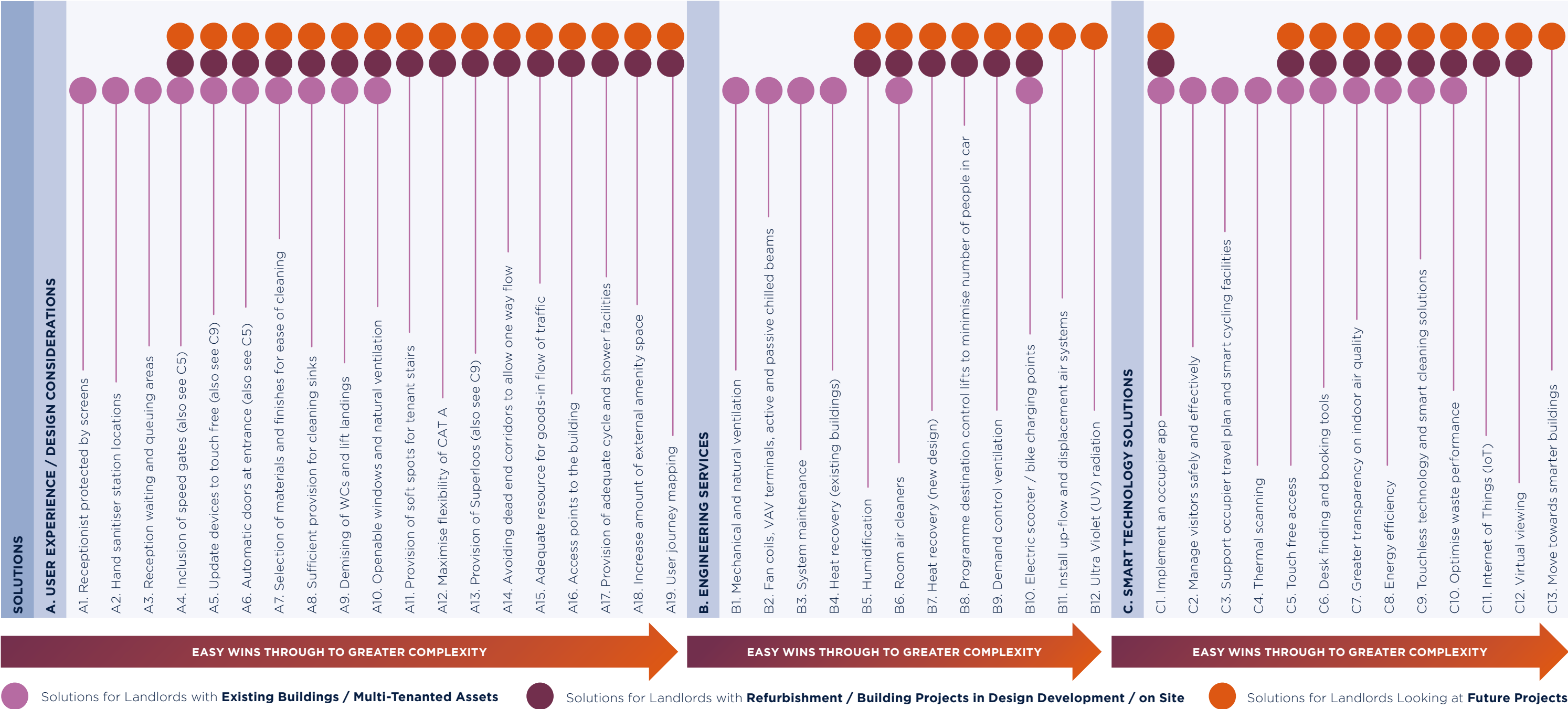
Drawing on experience from our global business and research, as well as the results of the Savills Office FiT survey, we have brought together our thoughts in this document. Framing the key issues, we explain how to facilitate the changes required to adapt and evolve your assets to meet new working practices and create a better environment for all occupiers.

Our multi-disciplinary teams provide a complete service to complement our Office FiT offer from our UK, EMEA and global platform and this guide is intended to demonstrate a range of solutions and options for your buildings.



SOLUTIONS MATRIX

The following matrix is an overview of the solutions to be considered.
The matrix is clickable and will take you to the relevant section in the document.



USER EXPERIENCE / DESIGN CONSIDERATIONS



A. USER EXPERIENCE / DESIGN CONSIDERATIONS

Wellbeing engagement and supporting occupier wellness

Occupier and employee health and wellbeing matters more than ever. A crucial element of a safe transition back to the workplace will be an increased understanding of the part played by our buildings and workplaces on our health and wellbeing and the possible anxiety for returning to the workplace.

As part of this, technology can support increased engagement with occupiers, and promote and provide access to a variety services including yoga, meditation and fitness classes, mental health events, along with other virtual services supporting health and wellbeing.

A1. Receptionist protected by screens

Receptions are the first point of contact and are in high traffic / high touch point zones. It is important to mitigate the risk of infection at reception points and demonstrate that they are clean and hygienic for reception staff and visitors alike. Clear screens around the desk offer protection whilst providing the reception team with a full view of people entering the building.

A2. Hand sanitiser station locations

Working with landlords to help design integrated and well positioned hygiene solutions that are uniform throughout the building. It is unclear for how long these measures will be required, therefore careful integration will assist with both intuitive occupier use and work with the design and planning of the office.

A3. Reception waiting and queuing areas

Reviewing of existing reception layouts is beneficial to determine appropriate circulation paths and define clear, safe waiting areas. Additionally there may be occupier demand to reduce the traffic to their floors (and reduce lift demand) so in larger receptions it could be possible to create meeting spaces. It is also likely that delivery points will be required, again to reduce external traffic.

With increased pressure on lifts and main entry points, options for alternative street-to-work-floor journey routes should be considered.

Consider upgrading finishes to escape staircases to encourage tenants to use these stairs as a healthy option to access their floors.

A4. Inclusion of speed gates (also see C5)

In recent years, the trend in new buildings has been to omit speed gates to allow a greater flow of people and provide more welcoming lobbies for tenants. Provision of speed gates or turnstiles should be designed in for a day 2 if not implemented in day 1. With the need for physical distancing and the need to control the flow of people entering the building speed gates are an ideal solution.

New schemes should consider this method for controlling pedestrian flow, in receptions certainly but also in other areas where traffic is potentially high and requires control such as front facing conference suites, event spaces, auditoria and amenities such as cycle parking and arrival.

A5. Update devices to touch free (also see C9)

Washrooms are a high risk area and a review and redesign of WC layouts may be needed to accommodate tenant needs. This will vary depending on the building and the occupier but may include increasing overall provision; converting traditional cubicles to Superloos and demising WCs to tenants to increase confidence in hygiene control.

Washrooms can also offer a greater hands free environment including automatic flush, taps and towel dispenser control.

A6. Automatic doors at entrance, (also see C5)

Providing automatic doors to entrances are likely to become a standard offering. The technology and design should align with the automatic solutions throughout the rest of the building.

A7. Selection of materials and finishes for ease of cleaning

There are many surfaces we touch every day; counters, tables, chairs, devices, doors and desks and there are products today which will help to inhibit the spread of infection. In order to prevent the unwanted spreading of germs and to aid the efficient cleaning of surfaces careful selection is required.

A8. Sufficient provision for cleaning sinks

Touching an infected surface can pass the virus on to other surfaces and other people therefore surface cleaning is a key strategy. Providing access to cleaning sinks on all floors and for all sub-tenancies will ensure desired hygiene levels can be met. Ensure that there are cleaners' cupboards located on every floor within the landlord areas to assist staff in undertaking increased cleaning regimes as required.

A9. Demising of WCs and lift landings

Ensure design proposals and refurbishment options are as future proofed as possible and look for opportunities to redesign elements to enhance the offering up to best practice provided for new buildings.

Configure office floorplate and service cores to maximise flexibility for demising WCs and lift lobbies to future tenants.

A10. Openable windows and natural ventilation

Natural ventilation can be utilised to replace (or assist) mechanical ventilation with the added benefit of fresh air, which may become an increased demand of occupiers.

Existing low level buildings will offer refurbishment opportunities for landlords to install openable windows. Work with MEP engineers to review solutions to install openable windows in new designs wherever possible.

A11. Provision of soft spots for tenant stairs

Access between floors is already an asset tenants are considering in their own spaces. Providing an accommodation staircase between floors instead of taking the lift is not only faster, but has health and communication benefits for occupiers.

We can review most practical locations for soft spots for stair installation.

A12. Maximise flexibility of CAT A

CAT A design for receptions, lobbies, WCs and building amenities to maximise flexibility to allow tenants to reconfigure their space easily. Consider designing reception spaces that allow multiple tenant receptions, if required with potential dedicated connections to level 1.

A13. Provision of Superloos (also see C9)

People like the self-contained aspect of Superloos providing comfort, privacy and the ability to be gender neutral.

Review WC layout proposals for refurbishments or new buildings to ensure that they align with BCO best practice provision and offer the flexibility to allow tenants to badge or un-badge as they see fit. Look at the design configuration to allow tenants to add additional WCs in their demise as well as on floor shower facilities.

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USER EXPERIENCE / DESIGN CONSIDERATIONS

A14. Avoiding dead end corridors to allow one way flow

To maintain one way circulation when needed in possible future outbreaks, it is important to avoid dead end corridors where possible.

A design review will address this aspect and determine circulation routes, both horizontal and vertical, providing clear guidance for best practice.

A15. Adequate resource for goods-in flow of traffic

Facilities management and seamless logistics ultimately underpin the success of the tenant's experience in a building. With the increase of deliveries from online retailers, and the convenience of having it delivered to the office, there is a greater need to accommodate the influx of parcels.

Working with in-house facilities management teams, ensure there is sufficient space provided to fully support a delivery screening system without interrupting the reception. Amazon and retailer locker locations can easily be identified in basement space to help elevate this. Food deliveries into the building, and their journey, should also be carefully considered.

A16. Access points to the building

High use areas such as reception lobbies need to be designed for the safety of both the building front-of-house team (receptionists, security, concierge etc) and the users of the space, be they tenants or visitors.

Review and redesign of lobby, access points, reception welfare and furniture, desks, finishes, access to wellbeing/sick rooms, inclusion of thermal scanning, speed gates, destination control lifts, visitor cycle and scooter storage, coat storage and strategies for employee and visitor access to floors, potentially via fire stairs over central lifts.

A17. Provision of adequate cycle and shower facilities

Review and design cycle parking layouts, showering and changing facilities in line with best practice layouts as well as BCO and the New London Plan requirements, in anticipation of changes in the near future following recent events.

Review future proposals for cycle layouts to ensure they provide the most flexible, and user friendly experience. These considered solutions may offer resilience for future pandemics. It is important to consider the increase and requirement for gender neutral capabilities.

A18. Increase amount of external amenity space

A high percentage of people working from home will have had access to outdoor space, this will be an amenity that users will want to replicate. Provision of greenery and quiet, biophilic spaces have a positive effect as time in green spaces benefits both physical and mental wellbeing.

Review and redesign existing external spaces to repurpose them as green space, tenant terraces, converting brown roofs, access to and security of external spaces.

A19. User journey mapping

Review the user's journey through the building. Identify the different experiences and touch points that users will have. Review the positive and negative components of their experience in order to create a safer and more enjoyable experience. Study the attitudes and emotions that come into play. The interactions with people throughout the journey are key in ensuring that the journey is in a logical order.

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ENGINEERING SERVICES



B. ENGINEERING SERVICES

B1. Mechanical and natural ventilation

Run office plant 24/7 or open windows.

The general advice is to provide as much outside air as reasonably possible.

Mechanical ventilation rates should be increased as far as possible.

The constant air volume systems should be converted to variable where possible.

Toilet ventilation plant should be set to operate 24/7 making sure they are at a negative pressure at all times.

Where it is likely for people to queue i.e. in common areas and transient spaces, enhanced ventilation should be considered.

Natural ventilation should be utilised where and when possible, especially in buildings that lack mechanical means.

B2. Fan coils, VAV terminals, active and passive chilled beams

Air terminal units should be cleaned and maintained at regular intervals and set to operate 24/7.

If the rooms served by the terminal air conditioning units are poorly ventilated, then it is advisable that the associated fans are switched off to reduce possible spread of the virus particles.

If a good amount of outside air is available to the space, then the use of the terminal units is recommended to provide air mixing and circulation, reducing the chance of air stagnation.

B3. System maintenance

Cleaning regimes should be regular and scrupulous.

HVAC plant should be inspected and returned to full operation at least 48 hours prior to reoccupation.

Check that the filters and coils are clean in the main supply air handling units (AHUs) to facilitate optimum airflow through the units (Note: High efficiency particulate air (HEPA) filters are not to be installed in commercial office AHUs). Current filtration, such as F7 grade is adequate and should be changed during routine maintenance on a pressure increase / calendar basis, as necessary.

B4. Heat recovery (existing buildings)

The use of air recirculation should be avoided to minimise the risk of cross contamination.

Where rotary heat exchangers are installed, they are to be switched off and subsequently checked to ensure that the pressure is greater on the supply side to preclude air leakage from the exhaust side.

Where mixing boxes are installed, the recirculation dampers should be shut off.

Plate heat exchangers' integrity for air leaks should be checked.

Run around coils and heat pipes can also be used safely since air streams are completely separated.

B5. Humidification

Maintain Relative Humidity (RH) to 40-60%.

The evidence suggests that Covid-19 transmission is not affected by the control in RH. The virus becomes susceptible only to RH values above 80%. Therefore control of the humidity is not a method to reduce the virus transmission.

However, nasal and mucous membranes appear to be more sensitive to virus infections when humidity levels are very low at 10-20%. This indirect need for humidification should be considered for the winter months for the UK climate.

B6. Room air cleaners

This provides a solution for smaller areas.

Portable air cleaner units that incorporate HEPA filters can provide a similar effect to mechanical ventilation. Their use should be intended for smaller areas up to 10 sq m due to low air exchange rates.

B7. Heat recovery (new design)

Minimise cross contamination but maintain efficiency.

Good practice design of the central air handling units should be considered during the design stage. Fan configuration is key to ensure cross contamination is eliminated whilst the efficiency of the heat recovery is not compromised.

Consideration for other forms of heat recovery such as plate heat exchangers, run around coils and heat pipes should be included to suit the building needs.

B8. Programme destination control lifts to minimise number of people in car

The number of people within lifts should be controlled and a destination control system is considered fit for this purpose. The associated software algorithm would be adjusted to the maximum number of people, but also ensure the lifts are used in their most efficient way (optimised performance). Further building controls integration can make this technology more accessible and it can become an integral part of new lift designs. Mobile apps and easy-to-use dashboards could also be used to ensure people do not have to queue in the reception or lobbies because they are waiting for the lifts.

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ENGINEERING SERVICES

B9. Demand control ventilation

Provide only what's required.

Centralised ventilation plant should be provided with the facility to alter the ventilation rates to suit different occupancy and times. The aim is to maximise ventilation rates when people occupy the building and also have the ability to divert the supply to the occupied zones and switch off areas not being utilised. Carbon dioxide control measures and pressure control air volume terminals should also be considered alongside the variable speed fan operation.

B10. Electric charging points

Should be considered to promote alternative means of transport.

Limitation in the use of public transport will naturally steer office workers to alternative transportation. Electric vehicles (scooters, bikes and cars) are a good alternative and their use will increase in future years. Retro-fitting and new installations of electric charging points are deemed relatively straight forward subject to the building's electrical capacity and space allocation.



B11. Install up-flow and displacement air systems

Promote good air distribution and minimise stagnation.

Maintaining good air change rates across all areas of the occupied floors in combination with plentiful outside air supply is important. Low velocity distribution air conditioning systems such as displacement ventilation and underfloor systems may prove popular in future years. These systems partially rely on the stratification effect of the warm air and they result in good air distribution eliminating stagnant spots. Their adoption are suitable for new builds rather than retro-fit installations and they offer a good alternative to the traditional ceiling mounted solutions, such as Fan Coil Units (FCUs).

B12. Ultra Violet (UV) radiation

It is known that UV lamps can provide benefits to the filtration of central ventilation air streams with their ability to kill viruses and bacteria. Although there is evidence that this technology can be put in practice for hospital installations, there is currently no use in commercial office applications.

It is possible that further research and development of this technology makes it a promising proposition for its use in central office air handling units.

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SMART TECHNOLOGY SOLUTIONS



C. SMART TECHNOLOGY SOLUTIONS

The interaction and collaboration between landlord and occupier is becoming increasingly important, and a move towards Smart Buildings helps facilitate this. Understanding what the customer wants will help landlords and asset managers to identify the most appropriate solutions for their buildings, enhancing the customer experience and making technology work for their benefit.

C1. Implement an occupier app

Now more than ever, the implementation of an occupier app can maximise engagement.

These tools aid effective communication between occupiers and building management, automating a number of processes to drive efficiency, share information, and enhance the occupier experience.

Apps can also be used to reduce the number of touchpoints with digital door access on the phone, pre-screening of visitors, remote controls of facilities, the ordering of food and various e-commerce services, as well as connecting occupiers and facilitating collaboration.

An occupier app should be the core system to centralise all communications, and be a 'one-stop-shop' connecting people with spaces and services within the building. This can be delivered via integration with other building systems and smart solutions to ensure the best experience possible for the occupants.

C2. Manage visitors safely and effectively

Although, the return to the workplace is likely to be gradual and visitors may come only at a later stage, the management of visitors needs to be considered.

A Smart Visitor Management System will enable you to;

- Prebook visitors in advance, allowing users to collect advanced visitor information and pre-screen.
- Send notifications to visitors informing them about building information.
- Issue a digital pass to avoid unnecessary contact with plastic or paper for visitor pass.
- Automate door access with a QR code or bluetooth technology embedded within the visitor pass.
- Instantly notify the occupier of guest arrival.
- Maintain a live digital log and monitor the number of visitors along with various other data insights benefiting building operations.

In order to facilitate an optimal use, it is highly recommended to integrate the visitor management system with the app.

C3. Support occupier travel plan and smart cycling facilities

It is important to engage with occupiers to understand how their travel plan to the workplace is evolving, so that smart solutions can be explored to adapt the building facilities accordingly and support the requirements with appropriate services.

Building managers will have to monitor the cycling facilities and optimise effectively the use of the cycling racks, lockers and showers, introducing a booking solution and using sensor technologies that can share live information on availability.

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C4. Thermal scanning

The normal internal body temperature of a healthy person is between the range of 36.1 to 37.2 degrees and anything above 37.6 degrees is considered a fever. Only a correctly calibrated system can take temperatures so as to minimise false positives.

The vast majority of solutions on the market purely scan the surface skin temperature which is not an accurate representation of internal body temperature.

There are four different types of solution:

- Fixed tripod solution
- Handheld devices
- Crowd monitoring
- Self service fever screening podiums.

This technology can be considered and positioned as a "public service initiative" subject to demand.

C5. Touch free access

The use of digital access credentials combined with bluetooth technology can allow touch free door access using proximity features via the occupier app.

Some access control providers can deliver this service with existing access control systems and readers. For a more agnostic approach, there are other solutions which are already integrated with a number of access control systems. It doesn't require any hardware replacement but usually relies on a good connectivity within the building.

There are also touch free exit solutions, with proximity sensors, which are replacing standard push buttons need for continuous cleaning.

C6. Desk finding and booking tools

For the return to the office, it is important for occupiers to enable management of the workplace, to ensure safe working practices, ease potential anxiety and provide reassurance to their staff.

There are various systems which can be used to inform occupiers of which desks and areas are available, in use, booked or out of use for cleaning.

Traffic light colour systems are often utilised to signify availability and, most importantly, when a desk has been used and requires cleaning before the next user can occupy it.

There are also solutions using unique ID tags for accurate contact tracing based on user consent. It utilises indoor positioning solutions to trace human and space interactions, giving the ability of contact tracing people in order to quickly being able to take mitigating action in case of infected staff.

C7. Greater transparency on indoor air quality

Indoor air quality monitors within the workplace should also be considered for better assurance and visibility, especially for volatile organic compounds (VOCs) and particulate matter.

There are various manufacturers and providers on the market. To ensure that data would be reliable, it is advised to pay attention to the sensor calibration standards, and it is recommended to use RESET standards as reference guidelines for commercial monitors.

This technology helps to ensure a healthy indoor environment and brings reassurance to the occupants about the quality of their workplace.

SMART TECHNOLOGY SOLUTIONS

C8. Energy efficiency

The increase of mechanical ventilation rates and review of Building Management System (BMS) settings is likely to increase energy consumption but the Heating, Ventilation and Air Conditioning (HVAC) systems should be run with energy efficiency in mind.

There are a number of actions which should be included as part of the maintenance strategy to maximise energy performance, including adjustments on the BMS. But it is also possible to use an Energy Management System (EMS), collecting energy consumption from automatic read meters to monitor and manage consumption effectively while maintaining a healthy indoor environment.



C9. Touchless technology and smart cleaning solutions

In order to reduce the number of touchpoints, it is recommended to consider a conversion to touchless wherever possible on; doors, taps, soap and sanitizer dispensers, hand driers or towels.

This can lead to reduction in frequency for cleaning surfaces and adopt a smarter cleaning approach, using data insights from the built-in sensors to optimise the cleaning regime based on the actual use and the need to replenish consumables. It will enable consumption, consumables and costs to be optimised.

C10. Optimise waste performance

The increase in the cleaning regime along with the use of PPE will require additional bins to maintain the good practice of waste segregation. PPE should be deposited in a waste receptacle that has a lid operated by a foot pedal and is lined with a bin liner. When full, bin liners should be removed and tied and disposed of within the general waste. This can notably help to preserve any potential cross contamination issues.

C11. Internet of Things (IoT)

The review of the workplace should integrate Internet of Things (IoT) sensor technology.

The convergence of all sensor technologies within the building connects directly the occupants with their workplace environment and services. They can see all facilities and services available and book them directly via an app. This gives a perception of control along with a greater degree of flexibility to get the most out of the building services.

Using beacon technologies allows personalised push notifications about the services and offers available in nearby amenities. It can also be used to enable wayfinding, supporting one-way flow systems implemented as part of social distancing measures.

In addition to the occupier experience, it also drives building efficiency, optimises service performance and enables smart building features. It provides invaluable data insights on how people use the space and services. This can be used to close the loop with customer feedback and satisfaction.

C12. Virtual viewing

There has been a noticeable surge in virtual viewings of commercial buildings during lockdown and we could expect to see this technology being more widely adopted going forward, to help prospective occupiers find new spaces and support remote management of operations within the building.

C13. Move towards smarter buildings

It is becoming more obvious that there is a need to move towards smarter buildings, with a greater level of integration and more automation in processes to deliver a safe and flexible experience for the occupants.

The amount of data collected from all building systems can enable you to monitor in real time the use of the buildings, conditions and occupier sentiment. This can lead to more automation and to a building which would self-regulate and automatically adapt to meet the needs of both businesses and individuals.

For existing buildings we have created a smart building audit to look at all these technical aspects, and define the strategy along with the implementation plan.

This perspective certainly opens a new field of exciting opportunities for improving building performance, also on enhancing customer experience, and potentially also exploring innovative technologies such as artificial intelligence, machine learning, robots or chat bot.



LESSONS LEARNT

Savills has now published the results of its Office FiT client survey. The overall conclusion reached is that the office remains vital, but needs to change and adapt. The results from the survey, combined with intel from our occupier base, will help us to frame our advice to clients on future plans for the provision, use and occupation of office space.

The collaboration between landlord and occupier is key and we saw a real increase in the sharing of information during the lockdown. It is essential for landlords to engage with their occupiers to understand what they need, how they use the building and what can be done to make their employees feel safe and secure in the workplace. It is not one-size-fits-all, as the needs vary from one occupier to another depending on their business requirements, workforce demographic and aspirations. This needs a coordinated and collaborative approach between all occupiers within multi-let buildings.

It is important for the landlord and occupier to keep an open dialogue throughout the return-to-the-office process. There is a large amount of cross-over when it comes to responsibility, particularly for things like mechanical and electrical statutory obligations. For this reason, both parties need to be fully aligned in order to successfully fulfil these requirements.

Our occupier base, on the whole, appears to be treading carefully when it comes to returning to the office. In fact, many return to work plans have been phased to allow for gradual reoccupation, depending on business requirements and the easing of government restrictions.

Technology has, and will, continue to play a crucial role in customer experience and engagement. That said, it needs to be fit for purpose and implemented in a structured way to support both operational and occupier experience. This technology needs to look further ahead to the future, rather than be put in place as a knee-jerk reaction.

As people feel safer in the workplace and on their commute, there remains the need for better communication and an increased awareness to the impact the workplace has on wellbeing. Greater collaboration can, and will, improve these interactions and is going to be at the forefront of future service delivery in offices.



SAVILLS REAL ESTATE ADVISORY

As trusted advisors we have learnt through experience how to adapt, evolve and improve buildings and the workplace environment, raising the bar by improving the quality of design and user experience, building services and smart solutions.

Our collaborative approach brings about agreed objectives which address current concerns and future-proof assets.

The diversity of individuals, businesses, office designs and locations means that every return to an office will present unique combinations of challenges.

No single guide will provide all the answers. Savills Office FiT is the framework within which global experience and evolving best practice can be individually applied to our clients unique needs. Savills is and will continue to apply them to our own offices and staff.

Make your challenges our challenges and we will use our innovative global resources to address them.

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