How to use the Government Workspace Design Guide

The Government Workspace Design Guide sets out the standards for our spaces; what they look like and the experience we want our people to have.

The Government Workspace Design Guide is intended for use by anyone involved in commissioning, planning, designing and managing new or major redevelopments of government office estate.

The Design Guide is to be used in conjunction with the Royal Institute of British Architects Plan of Works 2013 and GPA or departmental process plans at each project stage to communicate aspirations, design approach and standards.

This guide supports the Government Functional Standard for Property, Gova 004: Property.

THE GUIDE INCLUDES

Our Vision and Standards
Describes our smarter spaces ambition for government hubs and the wider office estate.

Our Design Approach
Illustrates our approach to design and how a smarter working environment really looks and operates.

Our Space Types
Explains the different types of workspaces and the work settings within them.

Our Technical Standards
Detailed and comprehensive guidance on the minimum compliance standards for our workspaces.

NAVIGATION

This guide is interactive and can be navigated via the contents and back/forward buttons on the top-right of the page. The contents page links to the five main sections in this guide, each of which contain their own contents with links to sub-sections. Section 5, Technical Standards, has sub-navigation links on the left of each page.
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Welcome

The Government Workspace Design Guide is the baseline standard for all buildings within the Government Hubs and Whitehall Campus Programmes and the aspirational standard for central government office estate.

The Smarter Working Programme, the Government Hubs Programme and the Whitehall Campus Programme are critical parts of the Government Estate Strategy and the ongoing drive to create a "Brilliant Civil Service". Hubs and Smarter Working and therefore smarter spaces lie squarely at the heart of two of the Civil Service's most important strategic priorities.

It is our ambition that this guide will be the minimum standard for the entire central government office estate. We will drive and encourage adoption of these standards across the wider office estate as part of delivery of the smarter working ambition.

“The creation of major multi-departmental government hubs – beacons of workplace excellence – will provide cutting-edge, innovative working environments across all four nations of the UK. This will help recruit the best talent, improve productivity and deliver a more diverse, brilliant Civil Service that can work in a smarter, more flexible way than ever before”.

Government Estate Strategy 2018

THE VIEW TO THE FUTURE

Government's ambition is to be a 'brilliant Civil Service' that helps to keep the United Kingdom prosperous and secure, supporting the governments we serve in implementing their commitments and delivering high quality services for the public.

Underpinned by the Civil Service values of integrity, honesty, impartiality and objectivity, this vision is supported by 4 thematic pillars:

We will provide efficient, trusted services designed around user need to deliver improved outcomes for the country.

We need effective leaders who are inspiring, confident and empowering and who live our values.

They will lead skilled people who are high performing, adaptable and take personal responsibility.

The Civil Service will be a great place to work. It will be inclusive, flexible, modern and connected, sitting at the heart of a wider public service. In everything we do we will encourage openness, challenge, innovation and excellence.
Achieving the best possible outcomes for both the organisation and its employees is what really matters.

The move to embrace Smarter Working practices is something that most civil servants will have heard about by now – if not experienced first-hand. Smarter Working is about creating a working environment focused primarily on an employee’s (and team’s) outputs, rather than how or where they are achieved. This is supported by creating smarter spaces in our office working environment.

“Smarter Working increases productivity, reduces estate costs, opens up the workplace to a more diverse workforce, and improves wellbeing and engagement. Framed by shared space, shared services and modern workplace design, these working environments will provide the platform for the skills, ethos and technology to help deliver the Workforce Plan and enable a Brilliant Civil Service”.

Government Estate Strategy 2018
Smarter Spaces

Our vision is to create great workspaces that inspire everyone to be brilliant.

Through people-first design our workspaces will enhance wellbeing and productivity; enable smarter ways of working and provide an excellent user experience. We want to make our spaces work for us.

Smarter spaces are workspaces that are truly fit for purpose:

» **Healthy and sustainable** to support and improve wellbeing at work and reduce impact on the environment.

» **Adaptable and efficient** so that we make the best use of our space, time and information.

» **Operates** to a consistent and modern standard that enables our people to do their work well.

» **Engaging, accessible and inclusive** so that the workplace is a desirable destination that looks and feels like a great place to work for all our people.

» **Future proofed** so they can adapt as working practices and organisations change over time.
Smarter Spaces in Practice

CASE STUDY: OFGEM, CANARY WHARF

The national energy regulator employs about 1000 people, all now located in new, modern offices, designed with smarter working principles in mind. Around a quarter of the workforce moved to their Glasgow office space, while the remainder took up residence in 10 South Colonnade.

Their new London home could not be any more different from their previous one in Millbank. In its place has come a facility designed around collaborative working and more contemporary working practices, (drawing heavily on the experience of what had already worked well in Glasgow).

“There’s a deliberate six to ten ratio of desks to people,” explains Sarah Cox, Ofgem Chief Operating Officer. “There are more chairs in meeting rooms and collaborative workspaces than there are behind desks. We’ve flooded the space with audio visual equipment and WiFi coverage and have even installed writeable walls. We’ve actually got less space than before but I don’t think anyone has really noticed (or cares) because we’re using that space so much more creatively.

All this is deliberately intended to help the organisation work in different, more productive ways. It’s about facilitating the move to a working environment based around outcomes and outputs, rather than presenteeism. We want to break down old, established team structures in favour of more agile project working; bringing new teams together when required and allowing them to use our collaborative spaces and technology in whatever ways suit them best. There are always colleagues who prefer their own space but I’ve been heartened by the changes that the majority of colleagues have made and how they seem pretty pleased with what’s on offer.”

Sarah Cox, Ofgem Chief Operating Officer

“Smarter working is about better work life balance and creating a better place to work. Ultimately a more attractive Civil Service encourages more people to want to work with us in our business of government.”

Minister for Implementation (Cabinet Office) Smarter Working Awards 2018
CASE STUDY: DEPARTMENT FOR EDUCATION (DfE), CHEYLESMORE HOUSE

DfE have merged two offices into a single modern, flexible space which has been redesigned with one clear principle in mind; the space must work for their people. By putting people at the heart of the project, the redesigned office is now a space which supports smarter ways of working.

User insight was at the heart of driving the design of the office space and the detail of the change management activity. People said that what made their workplace ‘a great place to work’ was created by the community within the office so the design focused on bringing colleagues together physically and prioritising health and wellbeing initiatives. DfE focussed on purpose-built facilities such as a reflection room, first aid room, wellbeing room and ‘book corner’ – all of which their people are loving. New communal spaces like the restaurant and balconies are designed to be adaptable and this has allowed people to use these areas as other great places to meet and work outside of the busy lunch period.

A wide ranging approach to change management has helped and supported staff whilst they adapted to their new spaces and ways of working. For example, the creation of a network of site champions, IT training to improve adoption of collaboration and productivity enhancing software and direct engagement with teams have helped influence and encourage behaviour change.

All of this has taken time and the journey continues. But with a comprehensive change management approach, a communications campaign and buy-in from senior managers, DfE are reaping the rewards from their investment as they see people enjoying and adapting to their new modern and flexible workspace.

“You don’t need to be tied to a desk during the day - embrace the wider office space and move around according to the type of work you’re doing.”

“I really like the different collaboration zones, so far I have always been able to find somewhere to work with my colleagues when they come to Coventry. I also really like the little booths, perfect for a telephone call when it is too noisy at your desk.”

“The One Coventry project has been as much about embedding cultural change, as about improving the physical space. We have all become very aware of the diversity of business that different teams undertake and the need to be able to bring them all on-board and make Coventry a great place to work for everyone.”

Alan Meyrick Chief Executive of the Teaching Regulation Authority and Coventry Site Lead
Smarter Spaces in Practice

CASE STUDY: DEFRA, 2 MARSHAM STREET

Two Marsham Street is an example of how a modern workplace should look and feel and has been developed with people in mind to enable smarter ways of working, wellbeing, inclusivity and sustainability.

For many Defra teams the move to 2 Marsham Street was a catalyst to start changing the way they worked.

“The new space prompted us to re-evaluate how we worked and connected – both as a team and across the organisation – and better understand the moments it was important for us to be together or work more flexibly. We found that the variety of space available enabled different kinds of collaboration as well as focussed independent work. We’re now much more aware of how good building design can positively impact the way we work.”

People like the new space. They say moving around the space to collaborate is easy and stimulating and the collaboration spaces are making impromptu meetings and conversations much easier.

“The cubicles are useful spaces for when you need to be in the office but need quiet.”

“Being able to connect to the system in collaborative spaces as well as workstations provides more flexibility in how and where we work.”

“We have met the ambition to have a modern effective workspace for Defra and the Wider Defra Group.”

Liz Buckle, Defra Executive Lead for London
What is a Hub?

Any government office operating to a required modern standard that enables smarter ways of working by civil servants.

A hub is much more than the design of a space. A hub is much more than a building and its contents. It enables a fluid way of working that integrates space, technology and policy to break down barriers and facilitate collaboration between teams and departments.

Hub environments will have a consistent look and feel, though the specific layouts and workspace mix will vary to reflect the different needs of the occupiers. Each hub should embody the best combination of design, planning factors and principles for the best quality of experience for its users.

Hubs will be:

» **Well located**, in major cities and towns supported by good public transport.

» **Accessible and inclusive for all**.

» **Modern, sustainable buildings** with ‘fit for purpose’ accommodation, newly constructed or refurbished.

» **A single building or a small cluster** accommodating a significant numbers of people.

» **Shared** by multiple departments and agencies, optimising utilisation. Some hubs may have single departmental occupancy, particularly where that department has a large presence; these will be designed with flexibility to allow for possible accommodation of other occupiers in the future.

» **Supported** by seamless technology and shared services, such as GovWiFi, security and facilities management.

**Create spaces that support smarter working** by enabling seamless service provision at accessible times for the public, employees and the organisation. The spaces will break down barriers and develop a sense of community within shared environments.

**Create an attractive adaptable and future-proof** contemporary environment that appeals to all generations and serves as a nationwide public example of advanced and adaptable workplaces.

**Maximise efficiencies** by designing and using hubs and other offices as shared spaces, delivering a Government presence where it is most needed and effective.

**BEHAVIOUR CHANGE**

**Space and Technology**

**Policy and Operations**
Core Principles for Workspaces

1. **Enhancing the Workplace Culture**
   We shall:
   - Support people in how to use the space through awareness, etiquette and leadership.
   - Provide work settings for focus, interaction and community that enables choice as to how, where and when work gets done.
   - Seek to enrich the user and visitor experience and create shared spaces that support a connected Civil Service community.

2. **Build Healthy Communities**
   We shall:
   - Aspire to achieve the highest environmental standards.
   - Through their design, ensure that our workspaces enable our people to work in a way that supports their wellbeing.
   - Ensure our workplaces are open to, and representative of, the communities in which they are located, help develop a sense of place and promote and support the local economy.

3. **Deliver Great People-First Design**
   We shall:
   - Use modern and functional design that understands the varying needs of the people it accommodates and that responds to best practice and smarter working principles.
   - Provide a choice of inclusive and accessible environments that support the changing nature of tasks our people deliver through the working day.
   - Embrace shared spaces that support social interaction and deliver a people centred experience.

4. **Maintain the Experience**
   We shall:
   - Maintain a great place to work for our people through low maintenance design and providing best in class workplace services.
   - Drive transformation of the estate through regular appraisal, feedback and calibration of our data.
   - Ensure we continue to invest in the areas that provide the most impact to our people and ways of working.

5. **Use Space Flexibly and Effectively**
   We shall:
   - Allocate space to activities, not individuals and not on the basis of seniority, custom or habit.
   - Design flexible and future proofed spaces that are responsive to changes in demand.
   - Ensure there will always be a great space for our people to work.

6. **Provide Seamless ICT, Technology and Security**
   We shall:
   - Provide trusted secure, agile and collaborative infrastructure technology that supports seamless work-flows between workspaces.
   - Deliver real-time management and maintenance of the environment through smart building technology.
   - Ensure the smarter working environment is balanced with specific requirements for physical security.
Standards

A summary of our key standards.
Smarter Working

Well designed and functional work environments are fundamental to providing a variety and flexibility that enables our people to work in different ways in different locations.

» Smarter working is about creating a working environment focused primarily on our outputs, rather than how or where they are achieved. It is also about creating a positive workplace culture and providing the necessary tools which allow an employee to be simultaneously at their most comfortable and productive.

» Government is moving away from a culture of presenteeism (the act of simply being seen in the office) and a rigidly structured, desk-based set-up and towards a culture where achieving the best possible outcomes for the department, its customers and its employees is what really matters.

» We shall hold ourselves to account through the 2018 Government Estate Strategy commitments where all departments and executive agencies will be required to work in line with PAS 3000 (the Smarter Working Code of Practice) by 2022.

VISION

People
Staff will be empowered through effective leadership, trust and technology to succeed in an output driven culture. The right policies, processes and tools will be in place to enable this.

Workspace
Workspaces will be designed to enhance output, meet business needs and remove barriers to collaboration.

Technology
Technology will enable a digital workplace that is mobile and accessible, enabling collaboration, document sharing and communication.

Leadership
Leadership will role model positive behaviours and empower staff through trust to embrace smarter working and explore the benefits for themselves and the organisation.
Inclusivity

Our workplaces shall be designed with the diverse needs of our users in mind. We shall create workspaces where everyone is welcome and can access all the facilities that enable them to operate to their full potential, independently, with dignity and with ease. We shall:

» Go beyond meeting minimum standards or legislative requirements where possible as detailed in the Inclusive Design Guide.

» Create workplaces, workspaces and work settings that can be used easily, safely and with dignity by everybody.

» Provide space and facilities that are convenient, avoid unnecessary effort, separation or segregation.

» Recognise that everyone benefits from improved accessibility.
Wellbeing

Work is an integral part of people’s lives, and the workplace should play an active role in supporting our people to live life well. Our workspaces will cater for the needs of our people; with wellbeing and the things that support this as key drivers in our designs. We shall:

» Adopt wellbeing best practice in the design and construction of workspaces wherever possible, as set out in the Government Hubs Healthy Building Guide.

» It will be easy to travel to our sites by public transport

» Provide sustainable, healthy working environments.

» Provide cycle and changing facilities suited to the site and occupants.

» Create a workplace environment which limits stress through the use of colours, acoustics and light.

» Provide access to spaces and facilities, wherever possible, for privacy, reflection and contemplation.
Sustainability

We are committed to delivering the targets and ambitions stated within the Greening Government Commitment (GGC), the 25 Year Environment Plan, Clean Growth Strategy, the Energy Efficiency Directive and the UK Net Zero 2050. Workplaces shall maximise the use of sustainable, clean technologies and low and zero carbon energy wherever possible. We shall:

» Deliver new builds to a minimum of BREEAM excellent and refurbishments to a minimum of BREEAM very good.

» Install smart or advanced metering systems to allow access to energy consumption data that can be used to identify and implement energy efficiency measures.

» Display Energy Performance Certification (EPC) and Display Energy Certification (DEC) and shall be in the upper quartile of energy performance.

» Achieve Minimum Energy Efficiency Standards (MEES) required for leased and rented buildings and the Private Rented Sector Regulations.

» Purchase all relevant equipment from the Government’s Energy Technologies Product List.

» Consider alternative sources of energy wherever possible e.g. connections to existing or planned heat networks.

» Learn from the Better Buildings Partnership’s Design for Performance pilot and seek to adopt recommended practice.
Security

Security will be unobtrusive and will balance the smarter working environment with specific and proportionate needs for physical separation. We shall:

» Apply secure by design principles as detailed in the Physical Security and Resilience Design Guide.

» Incorporate security measures into the design based on levels of permeability and transition through the four core zones (public, invited, shared and home zones).

» Maintain the principle of free movement of staff around government buildings in OFFICIAL working space.

» Manage the different security requirements and approaches to risk management of multiple occupiers through robust security strategy plans.

» Provide CCTV coverage at key access points, public zones and high security areas.

» Include Intruder alarms on external entry/exit points.
Brand Identity

A consistent branding approach will help to create a more unified feel. Whilst our workplaces will have similar shared elements and spaces each workplace will have a unique layout, occupier mix, cultural and regional expression, so some flexibility in branding and identity is expected. We shall:

» Use HM Government Branding used in public zones as detailed in the HM Government Identity and Branding Guidelines.

» Ensure signage and wayfinding are inclusive and accessible as detailed in the Inclusive Design Guide.

» Adopt wellbeing best practice in the design, colour, finish and materials as detailed in the Government Hubs Healthy Building Guide.

» Encourage occupier engagement in the colour, finish and materials in social and shared areas. Home zone look and feel will be based upon the occupiers’ organisational brand identity whilst complementing and supporting the identity of a government workplace.

» Incorporate regional and cultural references through the use of artwork, artefacts and graphics.
Technology

Our workplaces shall support work-flows between all teams and locations. To achieve this, technology infrastructure must provide the right balance of a seamless experience and trusted security. We shall:

» Install Full GovWiFi coverage that will enable users to choose the appropriate working environment based on the task in hand.

» Provide smart building technology that is compatible and easy to use.

» Provide suitably secure conferencing technologies (audio, video and document sharing).

» Deliver real-time intelligent management of the workplace environment via room booking systems, sensors and secure access gates.
Flexible & Future Proof Space

Workspaces will be designed with the future in mind, with adaptability built in to the architecture, electrical and technological infrastructure to ensure maximum agility and minimum disruption in response to change.

The environment should respond to both individual and team requirements for day-to-day changes and deliver inspirational and varied workplace solutions that can respond to the changing needs of the Civil Service. We shall:

» Design around the key principles of smarter working.
» Build spaces that are multi-functional, modular or can easily be reinterpreted (e.g. bi-folding walls between rooms, mobile furniture).
» Integrate technology wherever possible and allowance is made for all spaces to have digital connectivity.
» Maximise the use of sustainable technology and features.
» Use a variety of data sources, including utilisation, visitor personas, property and employee surveys to continuously improve the user experience.
Acoustics

Acoustic privacy is an important factor in defining the quality of the space and allowing our people to work effectively and in comfort. Our workplaces will have a variety of appropriate acoustic characteristics, depending on the function and purpose of each space. The open plan areas will allow for collaboration and openness, and more private or quiet spaces will support confidential working and tasks needing concentration. We shall:

» Deliver an acoustic environment that is in line with the latest British Council for Offices, British Standards and Building Regulation requirements.
» Ensure security and privacy considerations are incorporated into the acoustic properties of the workspace.
» Use ceiling, wall and floor materials that contribute to an acoustic environment that helps orientation and enables audible information to be clearly heard as detailed in the Government Hubs Healthy Building Guide.
Lighting

Throughout design and construction, efforts will be made to maximise the use of natural light whenever possible. The design of our lighting will complement the interior design and architecture of individual spaces and incorporate both natural and artificial lighting techniques. We shall:

» Deliver lighting strategies that are in line with the latest British Council for Offices, British Standards, Chartered Institution of Building Services Engineers and Building Regulation requirements.

» Promote a safe and secure environment as detailed in the Physical Security and Resilience Design Guide.

» Ensure the design of our workplaces will take into account illuminance on interior surfaces, the quality of lighting, good colour rendering and the avoidance of glare to ensure all our people can use our spaces conveniently and safely as detailed in the Inclusive Design Guide and Government Hubs Healthy Building Guide.
Ventilation

We will ensure that we achieve good comfort levels throughout our workspaces. Natural ventilation will be used wherever possible to maintain a sustainable and environmentally friendly approach to comfort and air quality. We shall:

- Ensure mechanical and hybrid solutions provide high and consistent levels of air quality, as set out in the Chartered Institution of Building Services Engineers Guide B and Building Regulation requirements.
- Supply clean and filtered fresh air.
- Include zoning on a case-by-case basis and reviewed in-line with departments’ functions and requirements.
Design Approach

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Users

Day-to-day User
Within my home workplace, I can mostly be found in the private and shared spaces, occasionally having meetings with professionals within the invited spaces. My daily tasks bring me across all the spaces that my building offers, and I can move between the areas that best support what I am doing.

» Has access to all the spaces within the workplace.
» Mostly working in private and shared spaces, occasional meetings within invited spaces.
» Can move easily between areas.

Visiting User
Sometimes I need to work from another location, to be in better touch with the relevant people. I can do everything I would do at my home workplace and keep in virtual contact with my team as we are always connected.

» From another hub location.
» Uses the host workplace like a home workspace.
» Good connectivity allows user to keep in virtual contact.

Business Visitor
When I need to meet in person with a workplace user I set up a meeting at the most appropriate location. During my visit, I have access to the booked meeting rooms as well as the welcome area and cafe, where I can work while I wait for my meeting.

» From another business or organisation.
» Access to the hub is pre-arranged with a user based in that location.
Zones & How to Use Them

PUBLIC
Public spaces are accessible and open to everyone. They can create a more transparent interface with the local environment and public realm. A welcoming zone for invited visitors and for staff.

INVITED
Day-to-day users can access this space and share amenities and support. Access by invitation only for visitors and partners, this is where collaborations happen when needed.

SHARED
Shared environments between different teams and organisations. Dedicated to social connections, learning and shared amenities.

HOME
This is the office day-to-day users can consider their base working space. Users can freely access this space at anytime.

How to use these zones

» Meet and greet
» Spontaneous interactions
» Social gatherings

» Events and conferences
» Board meetings
» Group work

» Ad-hoc work sessions
» Small group meetings
» Informal interactions

» Individual tasks
» Catch-ups
» Phone calls
Who Uses the Zones

**Public Zone**
Welcoming zone for controlled access.

**Invited Zone**
Special collaboration spaces for professional partners and consultants to access by invitation.

**Shared Zone**
Everyday users can access the space and share amenities and support.

**Home Zone**
Everyday users can freely access their work space at any time.

**Key**
- Full access
- Limited access
Public Zone: Identity

WELCOMING. TRANSPARENT. OPEN.

Spaces that allow staff to engage with the public and visitors securely and professionally; they are easily recognisable as the gateways to HM Government offices.

» Entry to the building promotes a unified feeling.
» Works with the natural elements and colours of the building and captures elements of the local or urban context.
» Balances security needs and aspiration for transparency and openness.
» Promotes a unified identity but allows for local regional and cultural expression through imagery, artwork and artefacts.
» Potential for local expression in finish, colour or materials choice, particularly in the more social areas.
» Recognisable government presence through signage and wayfinding.
Invited Zone: Identity

MULTIPLE SETTINGS. BRIGHT PERSONALITY.
Spaces for staff to engage and collaborate productively with invited visitors and partners.

» Retains the unified feeling with aspects of local context a sense of connection to the public zone.
» Where most co-working/meeting/training areas are likely to be located, provides a mixture of formal and informal space.
» A uniform colour and design approach and a balance of hard/formal/fixed materials with upholstered soft, moveable elements.
» Local expression in finish, colour or materials choices.
» Colour predominantly in furniture, some wall treatments, wayfinding and manifestations.
» The distinct (departmental) identity may be expressed in pockets of space or a few specific design elements.
Shared Zone: Identity

CENTRAL COLLABORATION. POINT OF CONNECTION.
Spaces that give staff and teams flexibility and a wide choice of how and where to work; they are accessible to all staff, departments and organisations based in the building.

» Typically planned between department and central shared support spaces on the working floor (refreshment hubs etc.)
» Predominantly for collaboration and group working separated from the home zone.
» A more relaxed feeling than any other space in the workplace with the strongest concentration of a distinct look and feel.
» Elements of local and unified expression centred near the core and main vertical circulation areas, maintaining a sense of connection to rest of the building.
» Materials and surfaces more textured and colour elements less uniform.
» Colour palette should strike a balance between department identity and hub identity.
Home Zone: Identity

ADAPTED TO THE TEAM. EVERYONE COMFORTABLE.
Spaces where teams will usually work on office-based, daily activities and are treated as a team’s default working area.

» Richly textured materials form a comfortable environment for working, and with a prevalence of neutral colours they provide a quiet backdrop for any activity.

» Home zones will be in close vicinity to shared zone elements, which will provide more colour as well as define the boundaries between the zones, facilitating the most appropriate behaviour from everyone.

» Team areas and internal showcase elements can have a soft, distinct presence.

» Home zones’ look and feel will complement, support and be based on the distinct, departmental brand identity.
Furniture & Decor

FURNITURE AND DECOR SHOULD:

Support Wellbeing
- Height adjustable desks should be used wherever possible.
- Task chairs in core work areas should be EN-1335 Type ‘A’ (European Standards).
- Complement the colour scheme of the space, adding warmth and/or vibrancy where possible, without causing visual distraction.

Support Smarter Working
- Be suited to the intended activity of the space.
- Be mobile and adaptable wherever possible.

Be Highly Sustainable
- Directly through the manufacturing and supply chain process, and indirectly through product longevity.
- Sourced from Crown Commercial Service (CCS) Framework.

Be Regularly Assessed
- To identify requirements for repair, replacement or update, as well as opportunities to reuse or recycle.

Compliment Zone Identities
- Allows for local and occupier expression through imagery, messaging, artwork and artefacts, yet retains a connection throughout the workplace.

Primary Palette

Accent Palette

All zones’ base decoration will be neutral. Highlight colours, departmental branding and location-specific themes will be provided through furniture, wall graphics, pictures and artefacts, and will be appropriate to each space’s intended use and occupants. Whenever possible, wayfinding signs will be of a consistent format throughout each building and across the estate.
Planning

RULES OF THUMB

Building Planning Basics
The form, configuration, structural and planning grid of each building will inform its potential planning. While each building will vary, in all cases consideration should be given to the following basics at the outset of the planning process:

The architectural grid
What is the basic planning module?

Primary entrance and circulation routes
How does the space flow?

Light and aspect
Which spaces are best for work or support zones?

Views out
Where are the best locations for shared support spaces?

WC counts and means of escape
How many people can work on a given floor?

Risers and core expansion zones
Where should tea points/hard support areas be planned?

Space Planning Basics
» Consider the floor plan as a landscape that encourages exploration of and mobility through the space. 
» Create interest and excitement while balancing the need for privacy or connection. 
» The public zone should be accessed in different ways (e.g. a cafe space could be accessed from both the street and the reception area). 
» Lounge, breakout and tea points should be in spots with a great view to provide the best experience for all, attracting people to stay and use the facilities. 
» Other shared spaces on the working floors can make use of darker or deeper areas. 
» Shared space should sit between the main circulation and/or core, acting as a buffer to the home zones. 
» Some shared spaces such as open meeting and quiet rooms may sit at the boundaries between departments. 
» Home zones should have access to natural daylight and views out. 
» Home zones should have a uniform planning approach and design language while allowing for varied departmental work-styles and space types.
Space Types

To support a flexible, smarter working environment our workspaces will provide a range of shared activity-based work settings.

CORE WORKSPACE

Focus
This work setting is equipped with facilities dedicated to routine work with customers and departmental systems, suitable for longer durations.

Informal
These informal work settings are ideal for frequently mobile users needing space to undertake tasks and activities of short duration or charging of devices.

Do Not Disturb
These work settings provide space in which individuals can concentrate, consider and work with complex information or conduct confidential activities, without being distracted or disturbed.

Interact
A variety of work settings ideal for group tasks and activities that can be carried out most effectively in an environment away from the Focus setting.

Book and Use
Bookable spaces that enable groups to meet, learn and work together. These include meeting rooms, showcase and business events space which provide multi-purpose space to accommodate conferences, meetings and training.

OTHER WORKSPACE

Support
A variety of non-directly work related settings such as those providing services and facilities or for social interaction and wellbeing purposes. These include areas such as refreshment hubs and cafes, for people to meet, relax or work.

Building Support
A variety of settings that provide operational support services to the workspace. These include areas such as ICT communication rooms; cleaners facilities and security rooms.
Workspaces and Worksettings

**CORE WORKSPACES**
This is intended as a guide and is not an exhaustive list.
It covers core space types which can be configured to meet specific requirements.

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<tr>
<td>PRIVACY BOOTH</td>
<td>MEETING BOOTH</td>
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<td></td>
<td>BUSINESS EVENTS SPACE</td>
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...
### Workspaces and Worksettings

**OTHER WORKSPACES**

This is intended as a guide and is not an exhaustive list. It covers core space types which can be configured to meet specific requirements.

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<td>BICYCLE STORAGE</td>
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Core Workspaces

- Task
- Touchdown
- Community Space
- Quiet Space
- Work Booth
- Privacy Booth
- Breakout Space
- Activity Space
- Meeting Booth
- Business Lounge
- Project Room
- Meeting Room
- Conference Room
- Business Events Space
- Showcase Space
- Classroom
**Task**

**FOCUS**

Bright, open and engaging environment allowing the individual and teams to conduct their core work.

There will be interactive and social spaces in between clusters of workstations. Workstations will be modular to meet the working practices of individual teams.

The workspaces may provide desktop-on-demand and docking stations to support flexibility, with acoustic control, access to natural light and a minimum of 1 sit and stand for every 8 desks, to support wellbeing and productivity.

**Furniture**

![Task chairs](image1)
- Task chairs
- Workstations
- Storage
- Lockers
- Plants
- Booths
- Stand & sit desk

**Technology**

![Desktop power](image2)
- Desktop power
- Screens
- Docking stations
- GovWiFi
- Bring your own laptop

**Characteristics**

- Open and engaging environment
- Modular for greater flexibility
- Bench style, not hierarchy
- Work surface: 1200mm
- Bookable: No
- Time of use: 1-8 hrs

**Activities**

- Individual tasks
- Ad-hoc meetings
- Catch-ups
- Phone calls

**Environmental Issues**

- Temp.: 22 ± 2 °C
- Lux.: 500 lux
- Noise: 45 – 50 dBA

**Finishes**

**Floor:**
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.
- Circulation route separation.

**Paint/wall applications:**
- 75% Durable finish white emulsion.
- 25% Durable finish selected from standard colour range to match branding colours/corporate branding.

**Ceiling:**
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
INFORMAL
Spaces that enable quick connectivity or short bursts of work for those who are on the move or very mobile in their daily work.

This area requires GovWiFi and power integrated into the furniture. Acoustic dividers can be used to provide privacy and acoustic buffering. Touchdown areas should be bright, open and neutrally decorated and branded.

A mixture of seating should be provided with some raised benches and stools, as well as bench seating to supplement standard desks and chairs.

**Furniture**

- Task chairs
- Touchdown bench
- Feature lighting
- Informal seats
- Plants
- Desk
- Stool

**Technology**

- Bring your own laptop
- Desktop power
- GovWiFi

**Characteristics**

- Mixture of seating
- Flexible solution adjacent to task space
- Drop-in space
- Bookable: No
- Time of use: 15 mins-1 hr

**Activities**

- Individual focus work
- Ad-hoc meetings

**Environmental Issues**

<table>
<thead>
<tr>
<th>Temp.</th>
<th>Lux</th>
<th>Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 ± 2 °C</td>
<td>500 lux</td>
<td>45 – 50 dB</td>
</tr>
</tbody>
</table>

**Finishes**

**Floor:**

- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.
- Circulation route separation.

**Paint/wall applications:**

- 75% Durable finish white emulsion.
- 25% Durable finish selected from standard colour range to match branding colours/corporate branding.

**Ceiling:**

- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
Community Space

INFORMAL

An inviting and flexible area for spontaneous, informal and social interactions.

Specifications will be project specific, but colours should be bright, vibrant and engaging with soft and informal furniture and furnishings.

### Furniture

<table>
<thead>
<tr>
<th>Sofa</th>
<th>Armchairs</th>
<th>Small table</th>
<th>Open shelving</th>
<th>Plants</th>
<th>Ambient lamps</th>
</tr>
</thead>
</table>

### Technology

<table>
<thead>
<tr>
<th>Power sockets</th>
<th>GovWiFi</th>
</tr>
</thead>
</table>

### Characteristics

- Functional and modular
- Semi-open
- Acoustic protection
- Bookable: No
- Time of use: 15 mins-2 hrs

### Activities

- Social events
- Recharge
- Group events
- Ad hoc meetings
- Informal touchdown
- Networking
- Located near tea point

### Finishes

**Floor:**
- Heavy duty contract grade 500 x 500mm carpet tile.
- 80% Field colour, 20% contrasting colour as feature.
- Mid-tone colour pattern.

**Paint/wall applications:**
- 75% Durable finish white emulsion.
- 25% Durable finish selected from standard colour range to match branding colours/corporate branding.
- Applied graphics.
- Acoustic wall tiles formed from individual proprietary fabric wrapped tiles. Standard range to compliment the Department brand.

**Ceiling:**
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

### Environmental Issues

<table>
<thead>
<tr>
<th>Temp.</th>
<th>Lux</th>
<th>Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 ± 2 °C</td>
<td>300 – 500 lux</td>
<td>35 – 45 dB</td>
</tr>
</tbody>
</table>
Quiet Space

DO NOT DISTURB

Quiet space that can be used for tasks requiring high levels of concentration or confidentiality.

They should be located in the quietest parts of the workplace away from high traffic areas. These spaces should be neutrally decorated with GovWiFi and power integrated into the furniture, where possible.

Furniture

- Task chair
- Desk
- Writeable/ pinnable wall /board
- Pod

Technology

- Desktop power
- Bring your own laptop
- GovWiFi

Characteristics

- High acoustic performance
- Small capacity: 1-2 persons
- Large capacity: 2-4 persons
- Bookable: No
- Time of use: 15 mins-2 hrs

Activities

- 1-1 meetings
- Focus work
- Phone calls

Environmental Issues

- Temp. 22 ± 2 °C
- Lux 500 lux
- Noise 35 – 40 dB

Finishes

Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.

Paint/wall applications:
- 100% Durable finish white emulsion.
- Acoustic wall tiles formed from individual proprietary fabric wrapped tiles. Standard range to compliment the department brand.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/ margins where required to form new room spaces.
Work Booth

DO NOT DISTURB

A task space that encourages collaboration, interaction and respite from desk-based tasks.

A holistic work solution to offer people choice and better ways of working. Designed to provide focus work activities and promote smart workplace design. The work booths encourage concentration times and wellbeing, elevating business productivity.

Furniture

Booths
Feature lighting

Technology

Desk power / data
Screens
Go/WIFI

Bring your own laptop

Characteristics

- Located on each floor
- Comfortable and flexible
- Drop in space
- Small capacity: 1-2 people
- Bookable: No
- Time of use: 15 mins - 3hrs

Activities

- Individual work
- 1-1 conversations
- Ad-Hoc work session

Environmental Issues

Temp. 22 ± 2 °C
Lux 500 lux
Noise 35 – 45 dB

Finishes

Floor:
- N/A

Paint/wall applications:
- N/A

Ceiling:
- N/A

Fabric:
- Surround 100% recycled, high flame retardancy, high durability and to aid cleaning / maintenance. Highly durable MFC / SGL table.

CORE WORKSPACES | SPACE TYPES | CONTENTS
Privacy Booth

DO NOT DISTURB

Quiet space that can be used for tasks requiring high levels of concentration or confidentiality.

Freestanding system to provide break-out space for employees to rest and conduct private activities and concentrated tasks. Privacy booths provide plug and play flexibility and can be relocated to meet business functionality and scale easily.

Furniture

- Pod
- Stools
- Ambient lamps

Technology

- Desktop power / data
- Screens
- Go/WIFI
- Bring your own laptop

Characteristics

- High acoustic performance
- Small capacity: 1-2 persons
- Large capacity: 2-4 persons
- Bookable: No
- Time of use: 15 mins - 2hrs

Activities

- 1-1 meetings
- Focus work
- Phonecalls

Finishes

Floor:

- Paint/wall applications:
  - Toughened frame-less clear glass with manifestation to meet BS 8300 2019.
  - Compliance walls to be fully upholstered and provide 100% recyclable, high flame retardancy (class 0) and high ceiling durability.

Ceiling:

- Acoustic ceiling panels to meet class A absorptions.

Environmental Issues

- Temp. 22 ± 2 °C
- Lux 300 - 500 lux
- Noise 35 – 40 dB
Breakout Space

INTERACT
An open, comfortable and inviting space that encourages mobility, interaction and respite from desk-based tasks.

Breakout spaces should offer some acoustic and visual protection from the core work space to prevent distraction. They should have access to natural light and provide GovWiFi and power access to increase the versatility of the space.

Furniture and furnishings should be soft and informal, with warm or vibrant colours adding some character to the space.

Furniture

- Informal chairs
- Armchairs
- Informal table
- Writeable/ pinnable wall /board
- Plants
- Ambient lamps
- Feature pendant lights

Technology

- Power access
- GovWiFi

Characteristics

- Comfortable
- Variety of meeting and social settings
- Centrally located
- Bookable: No
- Time of use: 15 mins-2 hrs

Activities

- Meetings
- Work sessions
- Catch-ups
- Informal conversations
- Small social gatherings

Environmental Issues

- Temp: 22 ± 2 °C
- Lux: 300 lux
- Noise: 30 – 35 dB

Finishes

- Floor:
  - Heavy duty contract grade 500 x 500mm carpet tile.
  - Mid-tone colour pattern.
  - 80% Field colour, 20% contrasting colour as feature.
  - Circulation route separation.

- Paint/wall applications:
  - 75% Durable finish white emulsion.
  - 25% Durable finish selected from standard colour range to match branding colours/corporate branding.
  - Applied Graphics.

- Ceiling:
  - Suspended acoustic baffle/ open ceiling with sprayed soffit and services above with feature lighting.
**Activity Space**

**INTERACT**

Centrally located meeting spaces that offer high levels of versatility and adaptability, through moveable partitions and writeable/pinnable walls or boards.

These spaces should have acoustic protection from other work areas to enhance their usability. Open meeting spaces enable more agile ways of working; allowing larger groups to benefit from informal collaboration and creative working. Open meeting rooms should utilise vibrant accents and furniture to add personality.

**Furniture**

- Informal seats
- Informal tables
- Mobile space dividers
- Plants
- Writeable/pinnable wall/board
- Soft seating
- Side table

**Technology**

- Power access
- GovWiFi

**Characteristics**

- Flexible environment
- Acoustic protection
- Maximises use of floorplate
- Small capacity: 2-6 persons
- Large capacity: 8-12 persons
- Bookable: No
- Time of usage: 15 mins - 1 hr

**Activities**

- Meetings
- Work sessions
- Catch-ups
- Time out
- Informal gatherings

**Environmental Issues**

- Temp. 22 ± 2 °C
- Lux 300 – 500 lux
- Noise 35 – 45 dB

**Finishes**

- Floor:
  - Heavy duty contract grade 500 x 500mm carpet tile.
  - Mid-tone colour pattern.
  - 80% Field colour, 20% contrasting colour as feature.
  - Circulation route separation.
- Paint/wall applications:
  - 100% Durable finish white emulsion.
  - Acoustic wall panelling.
- Ceiling:
  - Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
Meeting Booth

INTERACT
A task space that encourages collaboration, interaction and respite from desk-based tasks.

A holistic work solution to offer people choice and better ways of working. Designed to provide informal / interactive work activities and promote smart workplace design. The work booth encourages collaboration and wellbeing, elevating business productivity.

Furniture

Booths

Feature lighting

Technology

Desktop power / data

Screens

GoWiFi

Bring your own laptop

Characteristics

- Located on each floor
- Comfortable and flexible
- Drop in space
- Small capacity: 2-4 persons
- Bookable: No
- Time of use: 15 mins - 3hrs

Activities

- Small group meetings
- Ad-Hoc work session

Environmental Issues

Temp. 22 ± 2 °C
Lux 500 lux
Noise 35 – 45 dB

Finishes

Floor:
- N/A

Paint/wall applications:
- N/A

Ceiling:
- N/A

Fabric:
- Surround 100% recycled, high flame retardancy, high durability and to aid cleaning / maintenance. Highly durable MFC / SGL table.
Business Lounge

INFORMAL
A multi-purpose space for connecting and energising activities. Spaces are ideally suited for break time usage.

Work lounges should be located in high traffic areas to improve accessibility and encourage connection and collaboration across teams. These spaces should have warm colours and soft, informal furniture and furnishings to enhance comfort.

Furniture
- Informal chairs
- Informal table
- Sofa
- Informal seats
- Ambient lamps
- Plants

Technology
- Power access
- GovWiFi
- Bring your own laptop

Characteristics
- Shared space
- Located on each floor
- Comfortable and flexible
- Small capacity: 2-4 persons
- Large capacity: 6-10 persons
- Bookable: No
- Time of use: 15 mins-3 hrs

Activities
- Small group meetings
- Individual work
- Ad-hoc work sessions

Environmental Issues
- Temp.: 22 ± 2 °C
- Lux: 300 – 500 lux
- Noise: 35 – 45 dB

Finishes
Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.

Paint/wall applications:
- N/A

Partitions:
- ¾ Height plasterboard space dividers.
- Joinery space dividers.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

CORE WORKSPACES | SPACE TYPES | CONTENTS

GOVERNMENT PROPERTY AGENCY
Government Workspace Design Guide DRAFT v1.0
Project Room

**INTERACT**
Enclosed room for often intense and prolonged periods of collaboration. These spaces should therefore have access to natural light.

Project rooms should be equipped with various tools and facilities to enable group thinking and working. Including: pinnable/writeable walls, smart screens and VC facilities. The room should be neutrally decorated with bright and vibrant accents, furniture and furnishings to make the space more engaging.

### Furniture
- **Task chairs**
- **Stools**
- **Counter or standard height table**
- **Writable/pinnable wall/board**
- **Feature pendant lighting**
- **Project table**

### Technology
- **Screen/no screen**
- **Audio devices**
- **Smart board**
- **Web-cam**
- **Desktop power**
- **GovWiFi**
- **Induction loop amplifier system**

### Characteristics
- **Engaging room**
- **Located near workspace and teams**
- **Small capacity:** 2-6 persons
- **Large capacity:** 6-12 persons
- **Bookable:** Yes
- **Time of use:** 2 hrs-2 days

### Activities
- **Meetings**
- **Work sessions**
- **Presentation/reviews**
- **Scrum meetings**
- **Brainstorming sessions**

### Environmental Issues
- **Temp.** 22 ± 2 °C
- **Lux** 300 – 500 lux
- **Noise** 35 – 45 dB

### Finishes
**Floor:**
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.
- Circulation route separation.

**Paint/wall applications:**
- 100% Durable finish white emulsion.

**Ceiling:**
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
Meeting Room

BOOK AND USE
Enclosed rooms for private meetings, secure conversations and conference calls, with the appropriate acoustic protection to support privacy and confidentiality.

These should be a mixture of small and larger meeting rooms in line with the demand. Meeting rooms should be largely neutral with the addition of some vibrant accents and furniture to add character.

Furniture
- Task chairs
- Meeting room table
- Whiteable/pinnable wall/board
- Dim out blinds/glare control blinds
- Credenza

Technology
- Screen
- Audio devices
- Web-cam
- Smart board
- GovWiFi
- Power access
- Induction loop amplifier system

Characteristics
- High acoustic performance
- Enclosed rooms
- Located near the work space
- Small capacity: 4-8 persons
- Large capacity: 10-16 persons
- Bookable: Yes
- Time of use: 30 mins-4 hrs

Activities
- Meetings
- Work sessions
- Virtual meetings
- Catch ups
- Group calls

Environmental Issues
- Temp.: 22 ± 2 °C
- Lux: 300 – 500 lux
- Noise: 40 – 50 dB

Finishes
Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.
- Circulation route separation.

Paint/wall applications:
- 100% Durable finish white emulsion.
- Acoustic wall panelling.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
Conference Room

BOOK AND USE
An enclosed flexible room for large meetings, presentations, workshops, lectures and training purposes.

Conference rooms should be centrally located close to core work spaces. This space shall include a flexible floor power access grid and bi-folding walls to enhance flexibility.

Furniture

- Stackable chairs
- Mobile table
- Dim out blinds/glass control blinds
- Mobile space dividers
- Magnetic wallboards
- Lectern

Technology

- Projector
- Microphone
- Audio devices
- GovWiFi
- Induction loop amplifier system
- Power access
- Web-cam
- Screen

Characteristics
- High acoustic performance
- Flexible wall partitions
- Small capacity: 20-30 persons
- Large capacity: 80-100 persons
- Bookable: Yes
- Time of use: 2-8 hrs

Activities
- Conferences
- Presentations
- Training events
- Gatherings
- Large workshops

Environmental Issues
- Temp. 22 ± 2 °C
- Lux 300 – 500 lux
- Noise 40 – 50 dB

Finishes
- Floor:
  - Heavy duty contract grade 500 x 500mm carpet tile.
  - Mid-tone colour pattern.
  - 100% Field colour.
- Paint/wall applications:
  - 100% Durable finish white emulsion.
  - Acoustic wall panelling.
- Ceiling:
  - Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

CORE WORKSPACES | SPACE TYPES | CONTENTS

GOVERNMENT PROPERTY AGENCY
Government Workspace Design Guide DRAFT v1.0
Business Events Space

BOOK AND USE

For large scale events, multi-purpose space that can be enlarged through flexible walling.

This space should include adaptable and mobile furniture, including stackable chairs, podiums and microphone systems. The space should utilise some vibrant colours and some soft furnishings to make it more engaging.

Furniture

- Dim out blinds/glare control blinds
- Mobile space dividers
- Magnetic wallboards
- Stackable chairs
- High table
- Plants
- Lectern

Technology

- Projector
- Microphone
- Audio devices
- GovWiFi
- Induction loop amplifier system
- Power access
- Web-cam
- Screen

Characteristics

- Large multi-purpose space
- Created through flexible walls of small spaces
- Located close to main reception
- Small capacity: 50-100 persons
- Large capacity: 150-200 persons
- Bookable: Yes
- Time of use: 1-8 hrs

Activities

- Conferences
- Department gatherings
- All Staff Large Seminars
- Exhibition

Environmental Issues

- Temp.: 22 ± 2 °C
- Lux: 300 – 500 lux
- Noise: 40 – 50 dB

Finishes

Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.
- Circulation route separation.

Paint/wall applications:
- Veneer panelling.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
**Showcase Space**

**BOOK AND USE**
A multi-purpose space that can be enlarged through flexible walling.

These spaces should include adaptable and mobile furniture, including tiered seating and writable walls for presentation and collaboration. The space should utilise some vibrant colours, IT provisions and some soft furnishings to make it more engaging for all participants.

**Furniture**
- Exhibition tables
- Mobile space dividers
- Pinnable walls
- Tiered seating

**Technology**
- Screens
- GovWiFi
- Showcase display

**Characteristics**
- Inviting
- Encourages agile and dynamic discussion
- Small capacity: 10-14 persons
- Large capacity: 26-30 persons
- Bookable: Yes
- Time of use: 30 mins-1 hr

**Activities**
- Presentations
- Meetings
- Gatherings
- Huddle
- Informal training

**Environmental Issues**
- Temp. 22 ± 2 °C
- Lux 300 – 500 lux
- Noise 40 – 50 dB

**Finishes**
- **Floor:**
  - Heavy duty contract grade 500 x 500mm carpet tile.
  - Mid-tone colour pattern.
  - 80% Field colour, 20% contrasting colour as feature.
  - Circulation route separation.
- **Paint/wall applications:**
  - Veneer paneling.
  - Lacquer paneling.
- **Ceiling:**
  - Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

**CORE WORKSPACES | SPACE TYPES | CONTENTS**
Classroom

BOOK AND USE

A focus space to encourage collaboration, training and flexible working solutions.

An enclosed flexible classroom for training, team building, lectures and workshops. Classrooms should be centrally located close to core work spaces and provide flexible floor power to aid multiple desk configurations.

Furniture

- Stackable chairs
- Mobile table
- Dim out blinds
- Magnetic wall boards
- Lectern

Technology

- Projector
- Audio devices
- Go/WIFI
- Power / data access
- Web-cam

Characteristics

- High acoustic room
- Flexible furniture and IT
- Focus area
- Large capacity: 10-20 persons

Activities

- Training
- Events
- Team collaboration

Environmental Issues

- Temp. 22 ± 2 °C
- Lux 300 – 500 lux
- Noise 40 – 50 dB

Finishes

Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 100% Field colour.

Paint/wall applications:
- 100% Durable finish white emulsion.
- Acoustic wall panelling.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
Other Workspaces

- Reception
- Cafe
- Refreshment Hub
- Tech Bar
- Print & Copy
- Wellbeing & Recovery Room
- Reflection Room
- Lockers
- Storage
- Coat & Bag Area
- Superloo
- Bicycle Storage
- Gym
- Shower & Changing Room
- Security Room
- Cleaners' Cupboards
- MER Room
- SER Room
- Furniture & Facilities Store
- Mail Room
- Operational Staff Welfare
- FM Storage
- Drying Room
- Central Cleaners' Store
Reception

SUPPORT
An open, inviting space, with signage to illustrate the occupants and group.

The reception should offer information and support to visitors, so they can easily register, navigate the workplace and understand the procedures they need to follow. The reception area should include additional security measures, including access control, CCTV and panic alarms. Brand messaging can be displayed via digital or analogue means to create a sense of identity, but should be balanced with integration and cultural unity.

Furniture
- Task chairs
- Reception desk
- Soft seating
- Informal table
- Brand identity
- Plants
- Magazine rack

Technology
- Screen
- Phone
- Power access
- GovWiFi
- Web-cam
- Pass printer
- Security scanners
- Defibrillator
- Induction loop amplifier system

Characteristics
- Open and inviting
- Encourage interaction
- Brand space, visually interesting
- Comfortable waiting area for visitors
- Bookable: No
- Time of use: 10-20 hrs

Activities
- Registration
- Welcome
- Customer service
- Information point/wayfinding
- Waiting
- Security check

Environmental Issues
- Temp. 22 ± 2 °C
- Lux 200 – 300 lux
- Noise 40 – 50 dB

Finishes
Floor:
- Large format tile: 900 x 900mm, 1200 x 600mm, 1200 x 1200mm.
- Floor & Skirting: Natural stone or Ceramic tile.
- Barrier matting at external entrances.

Paint/wall applications:
- Veneer paneling.
- Lacquer paneling.

Ceiling:
- Monolithic sprayed acoustic ceiling/Profiled MF feature ceiling/acoustic baffles.

Contains information from the Government Workspace Design Guide DRAFT v1.0.
Cafe

SUPPORT

A large, open and engaging space for refreshment, meals and socialising with colleagues. Project specific space to be considered and approved on a case-by-case basis with consideration to local access to existing facilities.

This space will be versatile and adaptable to host gatherings and events.

The cafe can also be used for spontaneous interactions and informal meetings so should be supported with GovWiFi and power access. This space should provide some informal seating and soft furnishings to enable a relaxed feel. Bright and vibrant colours can be used on accent walls and furniture to add personality to the space, but should be balanced with the need for relaxation and recharging.

Furniture

Stackable chairs  Table  Banquette seating  Lighting  Plants  Recycling

Technology

Power access  GovWiFi

Characteristics

- Centrally located
- Engaging and modern
- Adaptable
- Bright social space
- Capacity: 30+ persons
- Bookable: No
- Time of use: 15 mins - 1 hr

Activities

- Breakfast
- Lunch
- Informal meetings
- Tea/coffee
- Social gatherings
- Events; town hall gatherings

Environmental Issues

- Temp. 22 ± 2°C
- Lux 200 – 300 lux
- Noise 40 – 50 dB

Finishes

Floor:
- Heavy duty contract grade 500 x 500mm carpet tile, mid-tone colour pattern.
- 100% Field colour.
- Large format, non-slip ceramic tiling.
- Sizes from: 600 x 600mm, 900 x 900mm, 600 x 300mm.
- Laid on interlocking raised floor substrate/screed.

Cafe Floor:
- Non-slip vinyl with welded seams and self-coved skirting.

Paint/wall applications:
- 100% Durable finish white emulsion.
- Applied Graphics.

Ceiling:
- Suspended acoustic baffle/open ceiling with sprayed soffit and services above with feature lighting.
Refreshment Hub

SUPPORT
A small-enclosed space for breaks or relaxed, informal interactions.

Tea points should be centrally located within the building, with acoustic and visual protection from other work areas. These spaces should be highly inclusive and accessible, with some lowered counters and refreshment facilities that have clearance underneath to provide easy access to wheelchair users.

Furniture

- Counter
- White goods
- Feature pendant lighting
- Informal seats
- Hot & chilled water taps
- Recycling
- Preparation surface

Technology

- Power access
- GovWiFi

Characteristics

- Can be combined with ‘Community space’
- Functional and centrally located
- Small capacity: 2-6 persons
- Large capacity: 6-12 persons
- Bookable: No
- Time of use: 15 mins-1 hr

Activities

- Grab and go coffee and tea
- Non vending coffee and tea
- Small group meetings
- Reading
- Relax and refuel

Environmental Issues

- Temp.: 22 ± 2°C
- Lux: 300 – 500 lux
- Noise: 35 – 45 dB

Finishes

Floor:
- Sheet rubber smooth texture with welding seams. Laid on plywood substrate.

Paint/wall applications:
- 100% Durable finish white emulsion.
- Applied Graphics.

Ceiling:
- Suspended acoustic baffle/ open ceiling with sprayed soffit and services above.
Tech Bar

SUPPORT
Tech bar space to source, enquire and resolve IT issues.

IT support space to aid business functionality and wellbeing. Open and engaging space to assist with IT problems and to allow back office functions to aid communication and integrated into standard office functions.

Furniture

- Stools
- Storage
- Feature lighting

Technology

- Power / data access
- Screens
- Gov/WIFI

Finishes

Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.
- Circulation route separation.

Paint/wall applications:
- 75% Durable finish white emulsion.
- 25% Durable finish selected from standard colour range to match branding colours/corporate branding.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/ margins where required to form new room spaces.

Characteristics

- IT support space
- Open and engaging
- Waiting space
- Small capacity: 1-2 persons
- Bookable: Yes
- Time of use: 15 mins

Activities

- 1-1 meetings
- IT repair works

Environmental Issues

- Temp.: 22 ± 2°C
- Lux.: 500 lux
- Noise: 35-45 dB
Print & Copy

SUPPORT
The print and copy area can be open or semi-enclosed, with printing, copying, recycling and other paperwork facilities provided.

Work counters should integrate storage and stationery into their design to maximise use of the space. This space should be easily accessible to the task workspace, utilising areas with less natural light or ventilation.

Print and copy areas should be acoustically protected when close to work spaces to minimise distractions.

Furniture

- Informal tables
- Task chairs
- Open shelving
- Drawers
- Notice board
- Confidential information disposal
- Recycling

Technology

- Multifunction printers / scanners
- Power access
- Gov/WiFi

Characteristics

- Functional and modular
- Enclosed or semi-open
- Acoustic protection
- Bookable: No

Activities

- Printing
- Mail drop
- Copying
- Scanning
- Confidential waste

Environmental Issues

- Temp.: 22 ± 2°C
- Lux: 500 lux
- Noise: 45 – 50 dB

Finishes

Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 100% Field colour

Paint/wall applications:
- 100% Durable finish white emulsion.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.
**Wellbeing & Recovery Room**

**SUPPORT**

Comfortable and neutral enclosed space, with soft furnishings to provide a calm and private space away from the office environment to aid rest, recuperation or when seeking a quiet place. There is the option for a separate Wellbeing Room and Recovery Room, depending upon the size of the workplace.

For further guidance on Wellbeing and Recovery Rooms refer to the Inclusive Design Guide.

**Finishes**

**Floor:**
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 100% Field colour

**Paint/wall applications:**
- 100% Durable finish white/neutral emulsion.

**Ceiling:**
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

**Characteristics**

- Clean and safe
- Sense of privacy
- Easy to maintain
- Dimmable lighting
- Occupancy indicator
- **Bookable:** No

**Activities**

- Recovery
- Nursing
- First Aid
- A place to confide

**Environmental Issues**

<table>
<thead>
<tr>
<th>Temp.</th>
<th>Lux</th>
<th>Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 ± 2°C</td>
<td>200 – 300 lux</td>
<td>35 – 45 dB</td>
</tr>
</tbody>
</table>

**Environmental Issues**

**Furniture**

- Soft seating
- Armchair
- Lockable storage cabinet
- Fridge
- Dim-out blind
- Plants
- Coffee table

**Technology**

- Phone
- GovWiFi
- Power access
Reflection Room

SUPPORT
Enclosed room for practise of prayer, meditation and contemplation or mindfulness activities in private or as part of a group.

The space should be neutral and muted and will have no decoration that would indicate any particular activity, religion or faith.

For further guidance on Reflection Rooms refer to the Inclusive Design Guide.

Furniture

- Open shelving
- Ceiling mounted curtains
- Shoe rack
- Stackable chairs
- Table
- Artefacts storage

Technology

- Power access

Finishes

Floor:
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 100% Field colour

Paint/wall applications:
- 100% Durable finish white/neutral emulsion.

Ceiling:
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

Characteristics

- A sense of privacy
- Flexible with adjustable seating
- Quiet and neutral
- Bookable: No
- Capacity/size: Variable

Activities

- Prayer
- Reflection
- Meditation

Environmental Issues

- Temp. 22 ± 2°C
- Lux 200 – 300 lux
- Noise 35 – 45 dB
**Lockers**

**SUPPORT**
Lockers should be located in a central area within close proximity to the main entrance points to the task areas.

Sufficient circulation space to allow ease of access to the locker unit.

Refer to Furniture CAT C – Lockers, for quantity and size of lockers.

**Furniture**

**Lockers**

**Technology**

Smart lock system

**Characteristics**

- Functional and modular systems
- Centrally located
- Near main access points

**Finishes**

**Floor:**
- Heavy duty contract grade 500mm x 500mm carpet tile.
- Mid-tone colour pattern.
- 100% Field colour.
- Circulation route separation.

**Paint/wall applications:**
- N/A

**Ceiling:**
- Located within open plan/task areas.

**Environmental Issues**

- **Temp.** 22 ± 2°C
- **Lux** 500 lux
- **Noise** 45 – 50 dB
**Storage**

**SUPPORT**

Centralised storage provided for work-related materials. Depending on size and security requirements, these spaces can be centrally located in open areas or within enclosed rooms. Some storage may require additional security, including: access control, additional security clearance requirements and lockable doors.

**Finishes**

**Floor:**
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 100% Field colour.
- Circulation route separation.

**Paint/wall applications:**
- 100% Durable finish white emulsion.

**Ceiling:**
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

**Furniture**

- Storage cabinet
- Drawers

**Technology**

- GovWiFi

**Characteristics**

- Functional and clean aesthetics
- Preferably centrally located
- Bright and neutral in their finish

**Activities**

- On-floor archiving of project files
- Storing office supplies and other corporate materials for easy access

**Environmental Issues**

<table>
<thead>
<tr>
<th>Temp.</th>
<th>Lux</th>
<th>Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 °C</td>
<td>100 – 300 lux</td>
<td>N/A</td>
</tr>
</tbody>
</table>
**Coat & Bag Area**

**SUPPORT**
Centralised drop/pick up coat store.

Coat and bag area to provide support facilities for staff members to store coats and bags to improve office welfare and facility management procedures and policies.

**Finishes**
**Floor:**
- Heavy duty contract grade 500 x 500mm carpet tile.
- Mid-tone colour pattern.
- 80% Field colour, 20% contrasting colour as feature.
- Circulation route separation.

**Paint/wall applications:**
- 75% Durable finish white emulsion.
- 25% Durable finish selected from standard colour range to match branding colours/corporate branding.

**Ceiling:**
- Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

**Characteristics**
- Semi-open environment
- Capacity to meet floor densities
- Visible but not a feature to aid security surveillance
- Improves office H&S policies and fabric maintenance

**Activities**
- Coat and bag storage
- PPE storage

**Environmental Issues**
- Temp. 22 ± 2°C
- Lux 300 – 500 lux
- Noise 20 – 35 dB
Superloo

**SUPPORT**

Inclusively designed WC layout, integrating sanitary provisions for all users.

A superloo is a self-contained and enclosed unit which compromises of a WC, wash hand basin, WC furniture and hand drying facilities. They provide a private, secure and acoustic environment to aid inclusivity. WCs are to be durable, maintainable and future proofed to traditional design standards if applicable to all.

For further guidance on the provision of accessible WCs, refer to the **Inclusive Design Guide**.

**Furniture**

- Sanitary bins
- Wall mirrors
- Cubicle hooks
- Hand dryer
- WC furniture

**Technology – N/A**

**Characteristics**

- Clean and safe environment
- Sense of privacy
- Easy to maintain and clean
- Accessible to all

**Activities**

- Sanitary use

**Environmental Issues**

- **Temp.** 22 ± 2°C
- **Lux** 200 – 300 lux
- **Noise** 40 – 50 dB

**Finishes**

- **Floor:** Non-slip, hard-wearing ceramic tile/natural stone to match shell & core specification.
- **Paint/wall applications:** 100% Durable finish white emulsion.
- **Ceiling:** Painted moisture-resistant plasterboard with access hatches, (appropriate for high humidity environment), to access service zones.
Bicycle Storage

SUPPORT
Bike store area located either in the basement or external covered area.
For further guidance, refer to the Government Hubs Healthy Building Guide.

Furniture
- Lockers
- Bike racks

Technology
- GovWiFi

Characteristics
- Located near shower and change
- Secure environment

Activities
- Bike storage

Environmental Issues
- Temp.: N/A
- Lux: 300 lux
- Noise: N/A

Finishes
- Floor: To Shell & Core specification.
- Paint/wall applications: To Shell & Core specification.
- Ceiling: To Shell & Core specification.
Gym

SUPPORT
Large open plan space for a variety of exercise machinery/equipment and classes.

Space to be bright and engaging to promote fitness and wellbeing.

Project specific space to be reviewed and approved on a case-by-case basis with consideration to local access to existing health facilities.

Furniture

Reception desk
Wall mirrors
Gym stations
Lockers
Water cooler / dispenser
First aid locker

Technology

Power access
GovWiFi
Screens
Defibrillator

Characteistics
« Clean and safe
« Easy to maintain
« Located near shower and change
« Acoustic protection

Activities
« Energise and refresh
« Relax
« Social and wellbeing

Finishes

Floor:
« Sheet rubber smooth texture with welding seams. Laid on plywood substrate.
« Rubber mats to free weights area.

Paint/wall applications:
« 100% Durable finish white emulsion.
« Applied Graphics.

Ceiling:
« Suspended CAT A ceiling reconfigured with plasterboard perimeters/ margins where required to form new room spaces.

Environmental Issues

Temp. 18 °C
Lux 300 – 500 lux
Noise 45 – 55 dB
**Shower & Changing**

**SUPPORT**
Enclosed space integrating shower, changing and locker facilities.

Minimise area required by positioning male and female changing rooms parallel in order to share waste and water services. Locate cleaners’ closet within the module to maximise space efficiency. The space should provide changing benches and hooks.

For further guidance, refer to the Government Hubs Healthy Building Guide and the Inclusive Design Guide.

**Finishes**
- **Floor:** XXX
- **Paint/wall applications:** XXX
- **Ceiling:** XXX

**Characteristics**
- Clean and safe environment
- Sense of privacy
- Easy to maintain and clean
- Accessible to all

**Activities**
- Change and wash

**Environmental Issues**
- **Temp.:** 18 °C
- **Lux:** 200 – 300 lux
- **Noise:** 40 – 50 dB

**Technology**

- GovWiFi

**Furniture**

- Shower
- Lockers
- Wooden bench
- Wall hooks
- Wall mirrors
Security Room

BUILDING SUPPORT

An enclosed secure room that meets the sites identified operational security requirements. The room to be located in a securable area away from the buildings main reception and any other external entrances/exits. Designed with sufficient power and amenities to allow security staff to monitor the security of the site utilising all the security systems at their disposal.

Additional changing room and rest area could be required.

For further guidance refer to the Physical Security and Resilience Design Guide.

Finishes

Floor:
» Heavy duty contract grade 500 x 500mm carpet tile.
» Mid-tone colour pattern.
» 100% Field colour

Paint/wall applications:
» 100% Durable finish white emulsion.

Ceiling:
» Suspended CAT A ceiling reconfigured with plasterboard perimeters/margins where required to form new room spaces.

Characteristics
» Secure space
» Easy to maintain and clean

Activities
» CCTV monitoring
» Security Office
» Incident Control

Environmental Issues

Temp. 22 ± 2°C
Lux 200 – 300 lux
Noise 35 dB

Other Workspaces
Space Types
Contents

GOVERNMENT PROPERTY AGENCY
Government Workspace Design Guide DRAFT v1.0
**Cleaners’ Cupboard**

**BUILDING SUPPORT**

Minimum of one per floor located adjacent to WCs to maximise efficiency by sharing waste and water services.

Lockable rooms. Should be fitted with cleaners’ sink, shelving and sufficient space to store mop, bucket and vacuum cleaner and provide separate storage for ammonia and bleach based cleaning products.

**Furniture**

- Cleaners’ sink
- Heavy duty shelving
- Lockable cupboard

**Technology – N/A**

**Finishes**

**Floor:**
- Sheet rubber smooth texture with welding seams. Laid on plywood substrate.

**Paint/wall applications:**
- 100% Durable finish white emulsion.

**Ceiling:**
- Suspended CAT A ceiling.

**Characteristics**

- Centrally located near services
- Safe and secure
- Water and drainage

**Activities**

- Storage of cleaning materials and equipment

**Environmental Issues**

- Temp. N/A
- Lux 200 lux
- Noise N/A

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**OTHER WORKSPACES | SPACE TYPES | CONTENTS**
MER Room

BUILDING SUPPORT

Primary IT network room with resilience.

The MER should be considered as part of the critical operational infrastructure for the government building.

Furniture

- Server rack

Technology

- GovWifi
- CCTV
- Access Control System
- Remote Monitoring Sensors

Finishes

Floor:
- Anti-static vinyl, factory integrated into raised access floor system.
- Raised access floor to be heavy duty to meet structure requirements.

Paint/wall applications:
- Painted plasterboard to meet acoustic / security / structure requirements set by client.

Ceiling:
- Suspended CAT A ceiling and to meet environment conditions.

Characteristics

- Main server room for Hub Location
- Back up MER to be included on case by case basis
- Secure room - limited access
- Environment conditions to meet BS Standards and rack capacity
- Min of 2 x 42U server racks
- Dual power feed and UPS resilience

Activities

- IT upgrades / repairs
- Utility connections

Environmental Issues

- Temp.: 19 ± 2°C
- Lux.: 300 lux
- Noise: 35 – 45 dB

OTHER WORKSPACES | SPACE TYPES | CONTENTS
**SER Room**

**BUILDING SUPPORT**

Secondary IT network room to support MER functions.

The SER room supports the MER room infrastructure and forms part of the critical operation infrastructure for the government building.

**Finishes**

- **Floor:**
  - Anti-static vinyl, factory integrated into raised access floor system.
  - Raised access floor to be heavy duty to meet structure requirements.
- **Paint/wall applications:**
  - Painted plasterboard to meet the acoustic / security / structure requirements set by client.
- **Ceiling:**
  - Suspended CAT A ceiling and to meet environment conditions.

**Furniture**

- Server rack

**Technology**

- GovWiFi
- CCTV
- Access Control System
- Remote Monitoring Sensors

**Characteristics**

- Secondary support for MER Room
- Security room - restricted access
- Environment conditions to meet BS Standards and rack capacity
- Min of 1 x 42U server rack

**Activities**

- Environmental Issues

- Temp.: 19 ± 2°C
- Lux: 300 lux
- Noise: 35 – 45 dB

- GovWiFi
- CCTV
- Access Control System
- Remote Monitoring Sensors

**Environmental Issues**

- Temp.: 19 ± 2°C
- Lux: 300 lux
- Noise: 35 – 45 dB
Technical Standards

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Technical Standards

SUMMARY NOTE

Government workspaces are to be designed, constructed, and operated in accordance with all relevant technical standards unless derogations are granted in writing by the GPA.

This summary provides an introduction to the four broad categories which form the Technical Standards.

These standards fall into four broad categories:

- Technical Legislation – the law.
- Building Regulations British Standards and Best Practice Guidance.
- Local standards and regulations.
- Government commitments to public estate quality and performance.

Standards quoted within this section are considered to be the most up to date version at the time of this document’s publication. Any revisions or amendments will then become the relevant standard to be adhered to by projects commencing after their date of incorporation into the Government Workspace Design Guide. This will be reviewed at different stages/phases of the projects to ensure the most current legislation is being followed.

Localised standards and regulations must also be considered due to the differences in law, best practice and environments. This is not an exhaustive list of standards and should only be considered the minimum to be satisfied.

Technical Legislation

Legislative requirements

Safety and Statutory Authority regulations should be followed. The following have been noted due to their links to responsible constructions works. This is not an exhaustive list and all works shall be carried out and completed to the highest standards:

- Electricity at Work Regulations 1989.
- Environment Act.
- Management of Health and Safety at Work Regulations 1999 (including 2006 amendments).
- Personal Protective Equipment at Work Regulations 1992.
- The Construction (Design and Management) Regulations 2015.
- The Control of Pollution Act 1974 and Amendment Act.
- The Control of Substances Hazardous to Health (Amendment) Regulations 2004.
Technical Standards

Building Regulations
Building Regulations define the expected minimum criteria for construction works; these are to be followed as a minimum standard for government construction and refurbishment works. The relevant regulations for each location shall be followed with considerations to the countries they are within. These include:
- Building Regulations for England and Wales;
- Building Regulations for Northern Ireland;
- Technical Standards for Scotland.

British Standards and Best Practice Guidance

British and European Standards
The following British Standards (BS) and British and European Standards (BS EN and BS EN ISO) are quoted throughout the design guide, any revisions and/or amendments to these standards are expected to be implemented going forward.

BS
- BS 476 series – Fire tests on building materials and structures.
- BS 559:2009 – Specification for the design and construction of signs for publicity, decorative and general purposes.
- BS 952 series – Glass for glazing.
- BS 5266 series – Emergency lighting.
- BS 5306-1:2006 – Code of practice for fire extinguishing installations and equipment on premises.
- BS 5499-10:2014 – Guidance for the selection and use of safety signs and fire safety notices.
- BS 5655 series – Lifts and service lifts.
- BS 5839-1:2017 – Fire detection and fire alarm systems for buildings.
- BS 5852:2006 – Methods of test for assessment of the ignitability of upholstered seating by smouldering and flaming ignition sources.
- BS 6150:2019 – Painting of buildings.
- BS 6465 series – Sanitary installations.
- BS 7671:2016 – Requirements for Electrical Installations.
- BS 8000-0:2014 – Workmanship on construction sites.
- BS 8204 series – Screeds, bases and in situ floors.
- BS 8588:2015 – Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.
- BS 9999:2017 – Fire safety in the design, management and use of buildings.
BS EN
» BS EN 438 series – High-pressure decorative laminates (HPL). Sheets based on thermosetting resins (usually called laminates).
» BS EN 572 series – Office furniture.
» BS EN 622 series – Fibreboards. Specifications.
» BS EN 635-1:1995 – Plywood. Classification by surface appearance
» BS EN 806 series – Specifications for installations inside buildings conveying water for human consumption.
» BS EN 1096 series – Glass in building. Coated glass.
» BS EN 1748-1; BS EN 1748-2 – Glass in building. Special basic products.
» BS EN 1863 series – Glass in building. Heat strengthened soda lime silicate glass.
» BS EN 10088 series – Stainless steels.
» BS EN 12337 series – Glass in building. Chemically strengthened soda lime silicate glass.
» BS EN 12464-1:2011 – Light and lighting. Lighting of work places.
Technical Standards

- **BS EN 12825:2001** – Raised access floors
- **BS EN 13024 series** – Glass in building. Thermally toughened borosilicate safety glass.
- **BS EN 13213:2001** – Hollow floors.
- **BS EN 13438:2013** – Paints and varnishes. Powder organic coatings for hot dip galvanised or sherardised steel products for construction purposes.
- **BS EN 16139:2013** – Furniture. Strength, durability and safety. Requirements for non-domestic seating.
- **BS EN 12056 series; BS EN 12056-3:2000** – Gravity drainage systems inside buildings.
- **BS EN 61439-2:2011** – Low-voltage switchgear and controlgear assemblies.

**BS EN ISO**

- **BS EN ISO 1461:2009** – Hot dip galvanized coatings on fabricated iron and steel articles.
- **BS EN ISO 9241-5:1999** – Ergonomic requirements for office work with visual display terminals (VDTs).
- **BS EN ISO 10545 series; BS EN ISO 10545-2:2018** – Ceramic tiles.
- **BS EN ISO 12543 series** – Glass in building. Laminated glass and laminated safety glass.

**BES6001** – Responsible Sourcing of Construction Products.
Technical Standards

Approved best practices and guides

CIBSE guides
The Chartered Institution of Building Services Engineers (CIBSE) provides guidance that should be consulted when designing and installing services. Where there is no prescriptive note of specific design requirements the following shall apply:

- CIBSE Guide A – Environmental Design
- CIBSE Guide B – Heating, Ventilation and Ductwork, Air conditioning and Refrigeration and Noise and Vibration Control
- CIBSE Guide C – Reference data
- CIBSE Guide D – Transportation Systems in Buildings
- CIBSE E – Fire Safety Engineering

- CIBSE F – Energy Efficiency
- CIBSE G – Public Health Engineering
- CIBSE H – Building Control Systems
- CIBSE K – Electricity in Buildings
- CIBSE L – Sustainability
- CIBSE M – Maintenance Engineering and Management
- CIBSE Technical Memoranda 13
- CIBSE SLL Code for Lighting

Other guides

- Approved Code of Practice and Guidance L8 – Legionnaires’ disease
- BR 135 – classified external cladding systems
- SCI Guide P354 and MOB PF2 PS/SPU

Government Workspace Standards

BCO
The British Council for Offices (BCO) provides best practice guidance and research for use in offices. Reference is made to the BCO Guide to Specification throughout this document and the latest version of the BCO Guide to Specification should be used.

Basis of area measurement
RICS Property Measurement, incorporating the International Property Management Standards should be used for measurements within the government estate.

BREEAM
Building Research Establishment Environmental Assessment Method (BREEAM) is an assessment tool for construction and refurbishment projects. Reference is made to this tool throughout this document and the latest version should be used. The tool works on a credit-based evaluation, highlighted credits within the design guide are in reference to Health and Wellbeing; Pollution; Transport and Waste, however, these are not the only credits to be considered or required in order to achieve this certification. Achieving the required BREEAM accreditation is mandatory under the Government Buying Standards and, therefore, it is mandatory as part of the workspace standards.
Technical Standards

Government Commitments
Government policies and strategies

The following provides a list of policies, standards and guidance that the government workspace standards are committed to, however, further publications and/or updates may need to be adhered to in future.

» Article 6 of the Energy Efficiency Directive
» Clean Growth Strategy
» Common Minimum Standards for Construction
» Construction 2025
» Digital Built Britain
» Eco-design for Energy
» Energy Information Regulations 2011
» Energy Technology Product List
» Government Buying Standards for Construction
» Government Estate Strategy
» Refer to document: Government Functional Standard for Property
» Greening Government Commitments
» Refer to document: Physical Security and Design Guide
» Refer to document: Government Hubs Healthy Building Guide
» Improving the energy efficiency of our buildings, a guide to display energy certificates and advisory reports for public buildings
» Refer to document: Inclusive Design Guide
» Refer to document: Smarter Working PAS 3000
» The Way We Work (TW3)
» 25 Year Environment Plan
Building Form

The design parameters set out within building form will aid how the building will function, allowing the space to be planned in the most efficient way.

Space Configuration

Every workspace will be within 12m of glazing, providing natural light and aspect (in most circumstances). Deeper spaces beyond this without an atrium, should be used for ancillary and support functions and not as primary people spaces.

Building depths recommendations: Window to window or atrium, ranges; 12.0-15.0m, 15-21m. Window to core; 6-12m.

Consideration should be given for inclusion of atria in deep floorplate buildings to bring natural daylight into deep zones. For campus type buildings, internal streets providing efficient connectivity should be considered.

Buildings must be capable of sub-letting floor by floor and across floorplates for large floorplate configurations.

Ceiling/Clear Height

For floor depths of up to 18m the recommended dimensions of ceilings/clear heights, from finished floor to the underside of ceilings is 2.75m. For deeper plan spaces, or deeper than 18m from the glazed perimeter, a height of 3.0m should be provided.

Occupancy Standards

The building should support smarter working, with workplace design density based, and dependant, upon the approved planning density.

Core Elements

Main/Principal and secondary core

A key driver in the efficiency and flexibility of a building is the design of the core. The main core contains the operational components of the building that provide vertical circulation;

» Passenger, goods and fire-fighting lifts.
» Escape stairs and access stairs.

Also, it will contain;

» WCs.
» Main distribution for mechanical, electrical, plumbing and data services.
» Cleaners’ sink and stores.
» Disabled refuges.
» Dry riser.

Secondary cores may have some or all of the components found in a primary core.
Architectural

Core Elements continued
SHELL & CORE

Location of cores
The location of cores will be designed to:
» Maximise floor plate efficiency.
» Reduce extensive travel from reception to lifts.
» Allow efficient floor plate subdivision into smaller, lettable units.

Design of cores
The core should be designed and reviewed to;
» Maximise NIA.
» Have few irregularities within the core, such as riser doors or access points.
» Space planning efficiency.
» Amenity planning.
» Internal cellularisation planning.
» Provide access to WCs and risers from the core. Necessary riser access on the floor plate should be located in relation to the planning grid to allow efficient planning of tenant cellularisation.

Escape and access stairs
Escape and access stairs should be designed to;
» Current British Standards BS 9999 series.
» Be easily accessible and finished to encourage everyday use.

Lifts and lift lobbies
Refer to Vertical Transportation section.
Lifts and their lobbies occupy a significant portion of the core and require the following elements as part of their design;
» Lifts ensure efficient people movement and sufficient for all building occupants/ the building in its entirety.
» Critical to achieving a productive workplace.
» Lobbies are important during emergencies, providing evacuation facilities for disabled people and secure access for fire-fighting personnel.
» Security and fire strategy are integral to lift lobby design.
» Floor by floor security is required and doors should open into the lobby.

Lifts and lobbies should be designed to the current and relevant British/ISO/EN standards and reviewed with local authorities fire and rescue to ensure maximum effectiveness is achieved.
Architectural

Core Elements continued

**SHELL & CORE**

**Washrooms**

The requirement for WC provision is based on the occupancy of the space and is defined by the overall NIA and the anticipated density of occupation.

The relevant and current UK standard BS 6465-1:2006+A1:2009 calls for occupancy to be calculated on the normal peak use. Where WC cores are provided based on an occupation density of one person per 8m² or less, then services and structures etc. should be designed to allow the WC accommodation to be extended at a later date.

**Washroom location**

Washrooms should be located no more than 100m away from users, with a maximum travel distance of 40m for wheelchair users and to BS 8300 2018 guidance.

**Gender neutral WCs**

All sanitary provisions should be located off core areas to minimise business disruption on floorplates.

Gender neutral sanitary provisions should be provided throughout to promote inclusivity and sharing culture. Sanitary layout designs should allow reconversion back to traditional layouts with limited cost and infrastructure change where applicable.

**Disabled WC provision**


**Cubicle size**

To British Standard and Building Regulations guide specification.

**Shower provision**

To current BCO guide specification and BREEAM requirements. WCs shall be provided within shower accommodation, including facilities for Mobility Impaired Persons (MIP).

**Cleaners’ cupboards**

To current BCO guide specification.
Entrance and Reception
SHELL & CORE

The location of the main entrance is determined primarily by local conditions: street address; proximity to thoroughfares; other building entrances and flows through the general environment. Government buildings should be welcoming, light, bright places to encourage a more open, accessible, transparent ‘place’ whilst balancing security needs. The degree of openness and permeability will depend on the departments who occupy the building, however, the building should not inhibit future relaxation or enhancement of security measures.

The entrance area may include the following:
- Concierge/reception
- Security and security control
- BS 8300 2018 compliant WC facility
- Gender neutral WCs
- Wayfinding
- Departmental signage
- Waiting/seating area(s)
- Informal meeting space
- Interconnection to vertical transportation
- Amenity spaces
- GovWiFi and connectivity
- Local expression
  such as artwork and artefacts

Main entrance doors are to be sliding type (not rotating) to avoid separate entrances for MIP staff and visitors. Add refer to Inclusive Design Guide.

External Spaces
SHELL & CORE

External spaces can affect the buildings that define them – particularly for government buildings preferred urban environments where green spaces are rare. The design of these spaces should consider shelter, shading, pollution dispersal and spacing to ensure that sunlight can reach the space itself and the surrounding buildings in accordance with the current BCO guide specification.

External spaces and terraces within the secure boundary should be configured to allow working in external environments, and include secure GovWiFi provision.

Vehicular Access, Cyclists and Parking
SHELL & CORE

Car parking provision at Government buildings will be minimal or none (dependant on location and the green travel plan), emphasis should be placed on cycle access and parking and related amenities. Electric car use should be supported by bays, again minimal, with charging points.

Space for proper servicing of the building should be carefully considered as should taxi drop-off to current BCO guide specification.

In accordance with BS 8300-1:2018 (Clause 7.4.2), seek to provide accessible parking spaces, where parking exists.
The loading bay area should be sized to suit the likely use of the building, this includes the number of users based on expected effective occupancy densities. The local authority requirements for waste collection and recycling should be considered as part of the whole building operations and waste strategy to current BCO guide specification.

Provide a facilities management office which will contain the BMS head end; security control room which will contain the security monitoring equipment and the mail room. Security requirements and procedures to be defined in accordance with Physical Security Design Guide, Threat and Risk Assessment and Strategic Security Plan.

Planning grids
The planning grid is a means of co-ordinating components of the structure, fabric, services and finishes. This includes the column grid; mullion spacing; ceiling layout and ultimately partition grid. The planning grid supports flexibility and adaptability of the space in use over time.

A planning grid of 1.5 x 1.5m is preferred for new buildings.

Structural grids
These should follow through on the discipline of the planning grid, the structural grid should be a multiple of 1.5m. To maximize flexibility, it should be a multiple of 1.5m.

This should be provided in line with current BCO guide specification.
Overview

The building envelope acts as the interface between the internal controlled environment of an office and the variable climate outside. The façade and roof combine with the structure of the building and give the building its visual appearance.

As such, façade designs for new buildings and performance specifications must be developed in tandem with factors such as the visual perception, the building services strategy, security threats, acoustic requirements, the structural design and the cost.

The building envelope should minimise the buildings energy consumption.

The other key elements the building provider and/or developer needs to consider are as follows:

- Façade types
- Structural loads and interfaces
- Water and airtightness
- Thermal insulation
- Solar control and light transmission
- Acoustic attenuation
- Fire separation
- Fire strategy
- Natural and smoke ventilation
- Movements and tolerances
- Materials and finishes
- Design life
- Cleaning and maintenance
- Sustainability
- Security
- Wayleaves
- Utility service impacts
- Cost
- Resilience infrastructure

Refurbishment projects will need to be considered on a site by site basis with the emphasis on:

- Windows
- Curtain walling
- Walls
- Roofs
- Public realm
- Canopies
- Entrance accessibility
- Façade maintenance
- Security

To current BCO guide specification.
FINISHES AND FIT-OUT

Definitions

SHELL & CORE | CAT A | CAT B & C

Shell & Core
Shell & Core works cover the essential base structure and services of a building and generally cover communal areas such as main receptions, lobbies, lifts, stairwells and WCs.

Types of fit-out

Category A (CAT A)
Category A works extend central services out onto floor plates and provide a basis for CAT B works. New builds are generally provided to CAT A finish to improve marketability of a building.

Category B (CAT B)
Category B works provides bespoke CAT A provisions to align with occupier brand, business functions and performance.

Category C (CAT C)
Category C works provides loose items such as furniture, fixtures and fittings.

Main Reception

SHELL & CORE

Main reception finishes
Generally, as current BCO guide specification.

Floor finishes
- Large format tile: 900 x 900mm, 1200 x 600mm, 1200 x 1200mm.
- Flooring: natural stone or ceramic tiling.
- Skirtings: ceramic tile or natural stone.
- Ceramic tiling shall conform to BS EN 14411:2016, EN ISO 10545-series.
- Natural stone tiling shall conform to BS EN 12057:2015 and BRE Information paper BRE IP 10/00, Flooring paving and setts.
- Barrier matting to current & relevant BS8300 & BS 7953 standards.

Wall finishes
- Feature panelling to class 0 flame spread standards.
- Panelling shall conform to BS 476 series and BS 6150:2019.
- For Glass: Refer to Standards and Requirements section.

Ceiling finishes
- Profiled painted plasterboard and/or Glass Reinforced Gypsum (GRG) feature ceiling with appropriate access and maintenance panels and environmental rating to allow access to building services.
- Suspended ceilings shall conform to the requirements of BS EN 13964:2014.

Reception desk
Reception desks shall be sized appropriately for the number of people required to staff the desk including equipment to be located on the desk. They shall comprise:
- Desktop linoleum working plane
- Space for printers, access card printers, web-cameras and signing-in books.
- Space for controls comprising but not limited to: turnstile controls, blind controls, lighting controls, panic alarms.
- Space for single monitor to allow CCTV images to be viewed
- Sufficient power and data points

The reception desk to be fully compliant with the Equality Act 2010 and BS 8300 2018.
Architectural

BUILDING FORM
ENVELOPE
FINISHES & FIT-OUT

Architectural Standards and requirements

Stairs
Shells & Core
To current BCO guide specification, with:

Standards and requirements
Stairs shall be provided to comply with relevant Building Regulations, Technical
Handbooks and BS 8300-1:2018; BS 8300:2:2018 Annex E.

Wellness criteria: stair accessibility
The following requirements must be met for at least one common staircase:

Wellness criteria: stair promotion
In buildings of 2 to 4 floors, at least one common staircase must meet the following requirements:

Lighting to stairwells should be well mounted to avoid lamp changing and / or servicing from ladders or platforms.

Polyester Powder Coated (PPC) shall be to the requirements of BS EN 12206-1:2004, BS EN 13438:2013
Stainless steel shall be to the requirements of BS EN 10296-1:2003; BS EN
10296-2:2005; BS EN 10297-1:2003

Lift Cars and Lobbies
Shells & Core
Generally, to current BCO guide specification, with;

Fixtures: Internal hooks for protective sheeting/padding when used to carry goods.

Audio floor caller and braille buttons.

Lift architraves and door
Brushed finish stainless steel.

Ceramic tiling shall conform to BS EN 14411:2016 and EN ISO 10545 series.

Natural stone tiling shall conform to BS EN 12057:2015 and BRE Information paper BRE IP 10/00,
Flooring paving and setts.

Lacquer panelling shall conform to BS 476 series, BS 6150:2019.

Stainless steel shall conform to BS EN 10088 series.

Suspended ceilings shall conform to the requirements of BS EN 13964:2014.

For Glass: Refer to Standards and requirements.

Definitions
• Main Reception
• Stairs
• Lift Cars and Lobbies
• WCs & Showers
• Internal Doors & Ironmongery
• Decoration
• Signage
• Outdoor Smoking Signage
• Cycle Racks
• Suspended Ceilings
• Raised Access Flooring
• Floor Finishes & Skirting
• Partitions
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WC and Showers
SHELL & CORE CAT A
WCs and showers will be provided in a variety of configurations and types to fulfill the needs of a modern workforce working smartly.
Generally, to current BCO guide specification, with addition of self-contained superloos and supershowers. Superloos are to have inclusivity design led entrances and be future proofed to convert back to standard sanitary design.

Floor finishes
Ceramic tiling with tiled skirting.

Wall finishes
Ceramic tiling to all wet areas with painted moisture resistant plasterboards in non-wet areas. Provide contrasting colour at dado height.

Ceiling finishes
Painted moisture resistant plasterboard with metal access panel (suitable for high humidity environment) building services access points.

Fixtures and finishes
Shower facilities should or may include the following:
» WC cubicles – proprietary cubicles with SGL veneer doors, laminate dividers and duct panelling. Cubicles to include all ironmongery and WC roll holders in stainless steel finish.
» White porcelain WCs with flushing arrangement to BREEAM requirements.
» White porcelain washbasin.
» DocM packs with white porcelain ware, stainless-steel grab rails and emergency call alarm.
» Brassware – infrared mixer taps, mains powered sensors, chrome finish and legionella testing facility.
» Brassware – vanity top mounted soap dispenser, chrome finish.
» Hand-dryers with full height splashback.
» Shaver sockets to shower areas.
» Hairdryers to shower areas.
» Mirror to full width of vanity top with paper towel dispensers behind.

» Waste bins below vanity top. Holes to be provided in top.
» Coat hooks.
» Air fresheners.
» Space provided for sanitary bins.
Shower provisions and configurations to be reviewed on a building-by-building basis.
Non-inclusivity changes to standard showers to provide cubicles with glass etched doors and door hooks and trams to aid drainage, non-slip approach. Showers to be adjacent to changing areas.
Supershower to be accessible to all and self-contained to provide full height room with space to change in private. Shower cubicle to be DocM compliant with tray and glass screen provided. Changing area to provide stool and wall hooks.
WCs and showers to comply with relevant Building Regulations/Technical Handbooks and BS 6465 series.
Internal Doors and Ironmongery
SHELL & CORE | CAT A | CAT B & C

Interior Doors shall be provided as follows:

Meeting rooms and offices
Full height, acoustic doorsets. (FSC/PEFC sustainability sourced/trackable timber) – to meet acoustic levels of room environment. Doors to have drop down and perimeter acoustic seals to meet acoustic performance criteria and appropriate ironmongery to BS EN 1906 inc. kickplates/doorstops/closers with HW lipping etc.

WC and circulation
HW Veneered. Fire rated as applicable for all doors.

Store rooms and back of house
Painted or Laminate finish. Fire rated as applicable for all doors.

Standards and requirements
- For fire rated doors, certified evidence shall be provided in the form of a product conformity certificate, directly relevant fire test report or engineering assessment, that each door/door assembly/doorset supplied will comply with the specified requirements for fire or smoke resistance if tested to BS 476-22:1987; BS EN 1634-1:2014+A1:2018; BS EN 1634-3:2004. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.
- Components, assemblies or sets shall be marked to the relevant product standard and/or third party certification rating.
- Laminates shall conform to BS EN 438 series
- Internal timber door frames and skirtings shall be finished in durable white eggshell and provide adequate contrasts to aid current BS 8300 guidance.

Ironmongery
- Ironmongery shall be satin stainless steel finish and comply to relevant Building Regulations/Technical Handbooks & BS 8300-1:2018; BS 8300-2:2018
- Ironmongery shall be selected to match the shell and core specification
- Ironmongery shall conform to the requirements of BS EN 1527:2013.

Decoration
SHELL & CORE | CAT A | CAT B & C

Generally:
- Core walls and drylining generally shall be painted in durable matt, water based white emulsion.
- Internal timber door frames and skirtings shall be finished in durable white eggshell and provide adequate contrasts to aid current BS 8300 guidance.
- Corner protection to be provided to vulnerable areas where trolleys may be used i.e. near goods delivery areas, mail room and service lobbies etc.

Feature painting
Feature painting to entire walls shall be of a durable finish and selected from standard colour ranges to match department branding colours.

Internal decoration shall conform to the requirements of BS 6150:2019.
Signage

**SHELL & CORE | CAT A | CAT B & C**

### Statutory signage

Statutory signage shall be provided to BS EN ISO 7010:2012+A7:2017. In front of house these shall be stove enamelled or stainless steel finish.

### Escape signage

Escape signage shall be provided to comply with BS 5499-4; BS 5499-10:2014 and BS EN ISO 7010:2012+A7:2017 and be selected to match the format of the shell and core signage.

### Departmental logo

The locations and presentation of departmental logos to be reviewed with occupants at design stages.

### Wayfinding signage

Wayfinding signage shall be two colour, laser cut acrylic wayfinding signage. Signage shall be consistent throughout the building.

### Feature manifestation and graphics

Feature manifestation shall be BS 8300 for collision of glazed partitions. Feature to include organisational logo and local influence graphics. Design to be approved. Feature graphics to drylined partitions. Features to include, organisational logo and local influence graphics, design shall be reviewed with occupants at design stages.

### Standards and requirements

- Signage shall comply with the requirements of BS 559:2009.
- Geometric shapes, colours and layout shall be in accordance with current BS standard.
- Design standard for mobility impaired persons (MIP) shall be in accordance with BS 8300-1:2018; BS 8300-2:2018.

### Outdoor Smoking Signage

CAT B & C

No smoking signage shall be provided to statutory requirements and local authority recommendations.

- A smoking and e-cigarette ban within 7.5m (or the maximum extent allowable by local codes) of all entrances, operable windows and building air intakes.
- A smoking ban on all decks, patios, balconies, rooftops and other regularly occupied exterior building spaces.
- The hazards of smoking, in all areas beyond 7.5m of the building entrances (if smoking is permitted in this areas). These signs are to be placed along all walkways with a distance of not more than 30m (100ft) between signs.

No smoking signage shall be two colour, laser cut acrylic signage.

### Cycle Racks

SHELL & CORE

Cycle racks to be provided to BCO specification. Quantities to be confirmed by local planning authority, racks should be located close by to showering and changing facilities, lockers and drying areas. Where cycle racks are sited in an external environment, they shall be under cover, with appropriate lighting. Location to be reviewed by and approved security assessment.

Racks shall be galvanized to the requirements of BS EN ISO 1461:2009 or Polyester Powder Coated (PPC) to the requirements of BS EN 12206-1:2004, BS EN 13438:2013.
Suspended Ceilings
CAT A | CAT B & C

Ceiling types
CAT A ceilings provided by landlords shall comply with GPA criteria in acoustics, performance, longevity and maintenance.
- Suspended ceilings shall conform to the requirements of BS EN 13964:2014.
- Decoration shall conform to the requirements of BS 6150:2019.

Feature open ceiling
Suspended acoustic baffle, open ceiling and moisture resistant ceilings (WC/shower – high humidity spaces) with sprayed soffit and services above.

Plasterboard ceiling
Painted MF plasterboard ceiling. Taped and jointed with paint finish.

Perforated acoustic plasterboard ceiling
Painted MF perforate plasterboard ceiling. Taped and jointed with paint finish.

Allowance to be made for jointing compound filling of perforations around ceiling mounted services and perimeters.

Breakout and collaboration areas
Painted MF plasterboard ceiling with feature lighting.

Refreshment Hub
Hygienic plain suspended ceiling tile system full accessible, reviewed on a case-by-case basis.

Meeting rooms
Subject to acoustic requirements of the room the CAT A ceiling may be modified during CAT B works.

Raised Access Flooring
CAT A | CAT B & C

Generally
- Raised access floors shall conform to the requirements of MOB PF2 PS/SPU or BS EN 12825:2001.
- Concrete slabs shall be dust sealed prior to pedestal installation.
- Sandbag tests shall be carried out to MOB PF2 PS/SPU to determine method of fixing pedestals.

Raised flooring types
SER/MER rooms
Heavy Grade, with integral antistatic vinyl finish.

Substrate to tiled floors
Interlocking Calcium sulphate raised floor substrate for tiled flooring.

Standards and requirements
- CAT A raised access floors to be capable of being modified to accommodate CAT B fit out.
- Provision and location of power and data access & cabling to be determined at CAT B fit out.
- Hollow floors shall conform to BS EN 13213:2001.
- Raised access floor: Medium Grade. General office use.
- For displacement plenum floors, stringers and gaskets shall be included to meet floor air performance criteria. Floor diffuser outlets, with lockable air outlet.
- Raised access floors to equipment rooms. Heavy grade with factory bonded anti-static flooring finish.

Additional requirements
- Systems shall be capable of accommodating bridging over floor void equipment as part of CAT B fit-out.
- All to be earthed in accordance with electrical requirements.
- Minimum floor zone of 150mm – including the thickness of the tile.
- Appropriate fire stopping to be included under an approved fire strategy with local authority and fire and rescue.
- Developer/landlord to provide an allowance on pedestals and flooring. Contribution to be confirmed.
Floor Finishes
CAT A I CAT B & C

Generally
» Carpet tile: to office floorplates. Carpet to be heavy duty contract grade.
» Carpet or textile flooring shall conform to the requirements of BS EN 1307:2014+A3:2018; BS 8300 2018.

Types
Feature carpet tile
» 500 x 500mm carpet tile. 80% of carpet area to be of a field colour CAT A specification and the remaining 20% contrasting colours as feature areas as part of the CAT B fit out.
» Carpet to be heavy duty contract grade.

Rubber sheet flooring
Sheet rubber smooth texture with welded seams. Laid on plywood substrate.

Entrance spaces ceramic tiling
» Large format, non-slip ceramic tiling. Sizes from: 600 x 600mm, 900 x 900mm, 600 x 300mm, 300 x 300mm.
» All laid on interlocking raised floor substrate/screed.

Refreshment Hub flooring
Non-slip vinyl with welded seams and self-coved skirting 100mm upstand to edges.

WCs and showers
» Large format, non-slip ceramic tiling. Sizes from: 600 x 600mm, 600 x 300mm, 300 x 300mm.
» All laid on interlocking raised floor substrate/screed.

Standards and requirements
» Sheet vinyl flooring shall conform to the requirements of BS EN ISO 10874:2012.
» Carpet underlay shall conform to BS EN 14499:2015.
» Ceramic tiling shall conform to BS EN 14411:2016, BS EN ISO 10545-2:2018; Natural stone tiling shall conform to BS EN 12087:2015.

Cafe spaces ceramic tiling
» Large format, non-slip ceramic tiling. Sizes from: 600 x 600mm, 900 x 900mm, 600 x 300mm, 300 x 300mm.
» All laid on interlocking raised floor substrate/screed.

Skirtings
Types
Timber skirting
Painted MDF 100mm recessed skirting.

Skirtings to tiled floors
» Ceramic tile/natural stone, 100mm high.
» Joints in skirtings to align with floor grout joints.

Standards and requirements
» MDF products shall conform to BS EN 622 series.
» Flooring screeds shall comply to the requirements of BS 8204 series.
**Architectural**

**BUILDING FORM**

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- Feature Lighting
- Additional Spaces
- Furniture

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### Partitions

#### SHELL & CORE | CAT A | CAT B & C

#### Types

**Plasterboard to meeting rooms**
- Plasterboard partitions. Slab to slab. Acoustic rating to meet acoustic section criteria.
- Paint finish and recessed skirting.
- Partitions to have deflection heads to accommodate building structural movement.
- Partitions shall be skim finished to receive decoration.
- Partitions to include plywood strengthening to walls earmarked for AV and/or IT additions.

**Plasterboard to semi enclosed spaces**
- Plasterboard partitions. Floor to ceiling. Acoustic rating to meet acoustic section criteria.
- Paint finish and recessed skirting.
- Partitions to include plywood strengthening to walls earmarked for AV and/or IT additions.
- Provision of sound insulation above ceiling to stop sound transfer.

#### ¾ Height plasterboard space dividers
- Plasterboard partitions. Acoustic rating – N/A.
- Construction to allow for internal steel stability structure bolted to structural slab
- Paint finish and recessed skirting.
- Partitions shall be skim finished to receive decoration.

#### Double glazed partition to general meeting rooms
- Double glazed partition system with PPC and/or anodized metal framing. Glass to glass joints to be dry gasket type. Glazed partitions to extend from floor to ceiling with drylined construction above and below to provide slab to slab acoustic separation.
- Acoustic rating to meet acoustic section criteria.
- Glazed partitions to have printed vinyl manifestation, to comply with relevant Building Regulations and/or Technical Handbooks.

#### Movable partitions/room dividers to meeting rooms
- Movable stackable room dividers to meeting rooms shall be top hung from ceiling track flush to the ceiling.
- Ceiling tracks shall be suspended from additional secondary steelwork as part of the CAT B Works as necessary.
- Panels shall be fixed via a 2-point suspension system and stack in a formed recess as part of the drylining works.
- Panels shall be finished both sides in acoustic fabric top and bottom with a magnetic writeable 1200mm high central band. Acoustic rating to meet acoustic section criteria.

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### Architectural Building Form

**BUILDING FORM**

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Partitions continued
SHELL & CORE | CAT A | CAT B & C

Standards and requirements

- Workmanship to glazing shall conform to the requirements of BS 6262-1:2017; BS 8000-0:2014.
- Glass generally shall conform to BS 952 series and relevant parts of:
  - BS EN 572 series for basic soda lime silicate glass.
  - BS EN 1096 series for coated glass.
  - BS EN 1748-1 for borosilicate glass.
  - BS EN 1748-2 for ceramic glass.
  - BS EN 1863 series for heat strengthened soda lime silicate glass.
- BS EN 12150 series for thermally toughened soda lime silicate safety glass.
- BS EN 12337 series for chemically strengthened soda lime silicate glass.
- BS EN 13024 series for thermally toughened borosilicate safety glass.
- BS EN ISO 12543 series for laminated glass and laminated safety glass.
- MDF products shall conform to BS EN 622 series.

Internal Blinds
CAT A | CAT B & C

Internal blinds to façades and atria
Glare control, manual roller blinds should be provided to external façades and building atria. Blinds shall be located in perimeter plasterboard upstand/recess to ceiling. Blinds shall include safety chains and provided with a manufacturer’s guarantee to industry standards.

Types
Glare control to façade – CAT A
Normally provided at CAT A fit out:
- Chain operated, manual roller blinds on integral, in a neutral colour. Blinds to cover extent of glazing and be sized to façade milliions.
- Blinds to meet glare standards dependant on building location.

Privacy blinds – CAT B
Normally provided at CAT B fit out:
- Manual control privacy blinds to meeting rooms, only where requested by departments. To be reviewed case-by-case.
- Manual roller blinds or integral, in a neutral colour. Blinds to cover extent of glazing and be sized to glazing panel sizes.
Acoustic Wall Treatment
CAT B & C

Acoustic panelling
- Acoustic wall panelling shall be provided to meeting rooms, open meeting rooms and conference rooms.
- Acoustic panelling shall be applied to one full wall to control reverberation within the space. Panelling shall be of a proprietary system sized to the room and be constructed with a concealed framing system with acoustic absorptive foam core and fabric wrapped to all visible faces. The fabric shall be chosen from a standard range and shall compliment the brand.

Acoustic tiles
- Acoustic wall tiles shall be applied to community spaces and quiet spaces.
- Acoustic panelling shall be formed from individual proprietary fabric wrapped tiles, chosen from a standard range and compliment the brand.

Magnetic Writeable Boards
CAT B & C

- Magnetic writeable panels to meeting rooms and breakout spaces shall be formed from proprietary magnetic writeable laminate bonded to a MDF base with PPC metal frame to perimeter. Boards shall extend along the length of one wall of meeting spaces and be 1200mm high.
- ‘Write on me’ vinyl graphics shall be applied.
- Boards shall be cleanable with water based products to manufacture’s recommendations.
- Laminates shall conform to BS EN 438 series.
- MDF products shall conform to BS EN 622 series.

Joinery
CAT B & C

Panelling
Hardwood (HW) veneer panelling
HW veneer panelling, shall form internal linings to the front of conference suites, and include: HW acoustic door assemblies; HW veneer gravity hung boards with concealed lippings on all sides and solid HW skirtings. Veneers generally shall be crown cut book matched, with doorsets in panelling systems shall be finished in same veneer stock as adjacent panelling. Paneling shall be finished in lacquer to meet surface spread of flame requirements to comply with relevant Building Regulations and/or Technical Handbooks.

Lacquer panelling
Lacquer panelling, shall form internal linings to reception areas, comprising high build up lacquer panels sprayed on visible faces. Installations shall include matching skirtings. Panelling to be finished to meet surface spread of flame requirements to comply with relevant Building Regulations and/or Technical Handbooks.
Joinery continued

CAT B & C

Refreshment Hub
Tea point provision will vary dependant upon size and location within the building and may comprise:
- Base and wall units with laminated doors, drawers and cabinets with stainless steel handles, heavy duty hinges and drawer runners.
- 30mm thick solid surface worktops, with underslung 1½ bowl stainless steel sink. Machined drainer grooves and hole for mixer tap – to meet appropriate capacity and flows per workstation.

Print and copy points
Print points may include:
- Base and wall units with laminated doors, drawers and cabinets with stainless steel handles and heavy duty hinges and drawer runners.
- Desktop linoleum work surface.
- Cut-outs and receptacles for recycled paper.
- Vinyl applied graphic icons.
- Wall mounted bulletin boards.
- Receptacles for mail drop.

Wall fixed shelving
HW veneered cantilevered wall shelving, with dividers to accommodate books, display artefacts.
4No shelves 300mm deep x 2500mm long.

Tea point bench table
High bench table formed from factory bonded laminate finished plywood 50mm thick. Table formed from solid sides and top in a goal post arrangement with stiffeners below.

Space dividers
1200mm high space dividers formed from a top rail and vertical uprights formed from painted timber. Dividers to include all necessary fixings for stability. Avoid use wherever possible.

Banquette seating booths
Banquette seating booths comprising two 2-seater banquette seats facing across a fixed rectangular table. Seating to be fully upholstered with high backs. Stain resistant fabrics to be used. Dividers between booths to be formed in painted or laminated joinery with a joinery dropped ceiling element to create booth enclosure. Power for screen, laptop and charging facilities to be provided.

Tiered seating/showcase display
Tiered seating shall include two rows of seating arranged around a central space forming a showcase space. Seating to be fully upholstered joinery with integral steps. The showcase space shall have movable/flexible enclosing panels formed with pinable surfaces to both sides.

Coat cupboards
Coat cupboards shall comprise:
- Full height units with laminated doors and applied graphics.
- Hanging rails with hangers.

Definitions
- Main Reception
- Stairs
- Lift Cars and Lobbies
- WC & Showers
- Internal Doors & Ironmongery
- Decoration
- Signage
- Outdoor Smoking Signage
- Cycle Racks
- Suspended Ceilings
- Raised Access Flooring
- Floor Finishes & Skirting
- Partitions
- Internal Blinds
- Acoustic Wall Treatment
- Magnetic Writeable Boards
- Joinery
- Feature Lighting
- Additional Spaces
- Furniture

GOVERNMENT PROPERTY AGENCY
Government Workspace Design Guide DRAFT v1.0
Joinery continued

**Standards and requirements**

Joinery shall conform to the requirements of:
- Visible hardwood in finished joinery shall be J2 class to BS EN 942:2007.
- Laminates shall conform to BS EN 438 series.
- MDF products shall conform to BS EN 622 series.
- Refer to Sustainability section for further requirements on materials.

**Additional requirements**

**Tea point**
Tea point provisions may also include:
- Tiled splash backs.
- LED concealed lighting to base of wall units.
- Cafe mixer tap, chrome finish.
- Wheelchair accessible facilities.
- Boiling and cold water tap with drainer and beneath counter equipment.
- Built in dishwasher.
- Built in fridges.
- All white good A+++ rated. Frost Free.
- FM own white goods, not departments.
- Microwaves.
- Built in waste receptacles for general waste, recycling.
- Provide hand towel dispenser, crockery and cutlery.

**Print and copy points**
Print and copy points may also include:
- Extract provision.
- Data points for potential printing machine use.
- Document shredder.

**Feature Lighting**

**CAT B & C**

The design process will identify areas which merit feature lighting. These areas will be reviewed and approved on a case-by-case basis.

**Feature light fitting to quiet rooms**
Suspended circular pendant fitting with opal diffuser. LED lamp source.

**Feature light fitting to project rooms**
Suspended linear luminaire to be positioned over rectangular tables. LED lamp source.

**Feature light fitting to cafe areas**
Suspended circular pendant fitting. LED lamp source.

**Feature light fitting to breakout area**
Suspended circular pendant fitting. LED lamp source.

Lighting to conform to relevant standards noted for office environments. Refer to MEP – Lighting Installation for reference.
Additional Spaces
**CAT B & C**

**Furniture/facilities store**
- **Floor finishes:** Sheet rubber finish to clause Rubber sheet flooring.
- **Wall finishes:** Painted wall finish to clause General decoration.
- **Ceilings:** None.
- **Fixtures:** None.
- **Furniture and loose items:** None.

**Mail room**
- **Floor finishes:** Sheet rubber finish to clause Rubber sheet flooring.
- **Wall finishes:** Painted wall finish to clause General decoration.
- **Ceilings:** CAT A suspended ceiling.
- **Fixtures:** None.
- **Furniture and loose items:** None.

**Central cleaners’ store**
- **Floor finishes:** Sheet rubber finish to clause Rubber sheet flooring.
- **Wall finishes:** Painted wall finish to clause General decoration.
- **Ceilings:** CAT A suspended ceiling.
- **Fixtures:** XXXXXXXXXX.
- **Furniture/loose items:** XXXXXXXXXX.

**Operational staff welfare**
- **Floor finishes:** Sheet rubber finish to clause Rubber sheet flooring.
- **Wall finishes:** Painted wall finish to clause General decoration.
- **Ceilings:** CAT A suspended ceiling.
- **Fixtures:** XXXXXXXXXX.
- **Furniture and loose items:** XXXXXXXXXX.

**FM storage**
- **Floor finishes:** Sheet rubber finish to clause Rubber sheet flooring.
- **Wall finishes:** Painted wall finish to clause General decoration.
- **Ceilings:** CAT A suspended ceiling.
- **Fixtures:** XXXXXXXXXX.
- **Furniture/loose items:** XXXXXXXXXX.

**Drying room**
- **Floor finishes:** Sheet rubber finish to clause Rubber sheet flooring.
- **Wall finishes:** Painted wall finish to clause General decoration.
- **Ceilings:** CAT A suspended ceiling.
- **Fixtures:** Towel rails.
- **Furniture and loose items:** One locker provided per six cycle racks. Refer to Government Hubs Healthy Building Guide.

**Mail Room**
- **Fixtures:** GovWiFi; blinds.
- **Furniture and loose items:** Heavy duty racking, desking/surface area, task chair and lockable storage units.

**Operational Staff Welfare**
- **Fixtures:** GovWiFi; phone; blinds.
- **Furniture and loose items:** Soft seating, coffee table, lockable storage cabinets, low level storage unit and fridge.

**FM Storage**
- **Fixtures:** None.
- **Furniture and loose items:** Storage Cabinets with hinge doors, drawer units and heavy duty racking.
Furniture

CAT C
The Crown Commercial Service (CCS) furniture agreement RM6119 is the default procurement route to market, with furniture requirements aligning to those identified as particular to this design guide within the CCS specification.

Task chair: general
Task Areas, Touchdown, Quiet Space, Project Room, Print & Copy and Security Room. To have the following:
- Upholstered seat with mesh back.
- Armrests.
- Five star base.
- To have double-wheeled hard castors for carpeted floors.
- Fully adjustable, ensure DSE compliance.

Task chair: meeting room
Meeting Rooms.
To have the following:
- Upholstered seat with mesh back.
- Armrests.
- Cantilever sled base.
- Glides/feet to suit carpet flooring.

Stackable chairs
Cafe, Conference Room, Event Space and Reflection Room.
- Moulded polypropylene shell.
- No armrests.
- 4 leg base.

Informal chairs
Work Lounge and Breakout Space.
- Fully upholstered seat and back.
- No armrests.
- Sled base.
- Glides/feet to suit carpet flooring.

Informal seats/stools
Touchdown, Work Lounge, Open Meeting Room and Refreshment Hub.
- Fully upholstered.
- Nominal size: (W) 425 x (D) 425 x (H) 435mm.
- Base with castors.

High stool
Project Room and Touchdown Areas.
- Moulded polypropylene shell.
- No armrests.
- 4 leg base.
- Glides/feet to suit carpet flooring.

Banquette seating: proprietary
Cafe.
- Nominal size: (L) 1100 x (W) 810 x (H) 790mm per module.
- Fully upholstered seat and back with factory applied stain guard.
- Base with stainless steel skirting.
- Power module integrated into each module base.
- Each module to have linking mechanism to connect other modules together.

Soft seating
Open Meeting Rooms, Reception/Concierge and Wellbeing & Recovery Room
- Nominal size per module: (L) 1100 x (D) 600 x (OH) 780/(SH) 450mm.
- Fully upholstered.
- Feet/glides to suit carpet flooring.
**Furniture continued**

**CAT C**

**Arm chair**
Community Space, Breakout Space and Wellbeing & Recovery Room.
- Nominal size: (L) 750 x (W) 750 x (H) 770mm.
- Fully upholstered.
- Timber leg finish.

**Two seater sofa**
Work Lounge and Community Space.
- Nominal size: (L) 1600 x (W) 850 x (H) 740mm.
- Fully upholstered.
- Timber leg finish.

**Workbench: desks**
Task Areas, Security Room and Touchdown Areas.
- Laminate finish worktops.
- 1.2m length nom.
- Metal goal post framing system.
- Accessible, below desk cable management system.
- Desktop privacy screens with acoustic absorbent fabric finish.
- Desktop modules with data, mains and USB power sockets.
- Monitor arms.
- Call centre arrangement to have increased height desk dividers with matching between desk dividers.

**Touchdown bench**
Touchdown Areas
- 10, 8, 6 & 4 person desk, face to face arrangement.
- 2 person side by side arrangement.
- 1 person arrangement.

**Sit/Stand workbench**
Adjustable height workbenches shall be selected from the same range as workbench desk but shall have electrically and/or manually operated height adjustment.
Minimum of 1 sit and stand for every 8 desks.

**Tables: small meeting rooms**
Meeting Rooms and Quiet Rooms.
- Round/square laminate finish table top.
- Nominal size: (DIA) 800 – 1200 x (H) 740mm.
- Central column leg with 4 star base
- Desktop modules with data, mains and USB power sockets.
- Concealed cable management system down central leg.
- For: 6 and 4 person meeting rooms; 1:1 meeting rooms; 2 person meeting rooms.

**Tables: informal areas**
Open Meeting Room, Reception/Concierge, Breakout Space, Print & Copy and Work Lounge.
- Laminate finish table top.
- Nominal size: (W) 800 – 1600 x (D) 800 x (H) 740mm.
- Goal post framing system.
Furniture continued

**CAT C**

**Tables: interact areas**
Project Room and Touchdown.
- Laminate finish worktops.
- Nominal length: 1200 – 1600mm.
- Nominal height: 740 – 1100mm.
- Metal goal post framing system.
- Accessible, below desk cable management system.
- Desktop modules with data, mains and USB power sockets.

**High table**
Conference Room and Event Space.
- Round laminate finish table top.
- Nominal size: (DIA) 600 x (H) 1050mm.
- Central column leg with 4 star base.

**Side table**
Open Meeting Rooms.
- Nominal size: (L) 450 x (W) 550 x (H) 650mm.
- Timber finish.

**Exhibition tables**
Showcase Space
- Nominal size: (W) 1200 – 2000 x (D) 1100 x (H) 1000mm.
- Laminate finish table top.
- A-frame base.

**Flip top/mobile tables**
Conference Room.
- Laminate finish table top with rubber edge strip.
- Nominal size: (L) 1500 x (W) 800 x (H) 740mm.
- Central T leg frame.
- Braking castors.
- Legs to be inset approx. 350 – 450mm from table top.
- Central rectangular cut out for power/data/USB module.
- Power/Data access flap with brush edged pull gap. Finish matching table top.
- Cable management along frame/leg of meeting table.
- Quick release folding mechanism.
- Top to top linking mechanism.
- To be easily stacked together.

**Tables: cafe**
Cafe
- Laminate finish table top
- Nominal size: (L) 900 – 2400 x (W) 900 x (H) 740mm.
- Central column leg with 4 four star base for square top tables.

**Coffee table/small table**
Community Space and Wellbeing & Recovery Room.
- Nominal size: (L) 1000 x (W) 700 x (H) 400mm.
- Oak timber table top and legs with white back painted glass top.

**Mediascape table**
Task Areas.
- Nominal size: (L) 1500 x (W) 1200 x (H) 740mm.
- Laminate finish worktop.
- Desktop modules with data, mains and USB power sockets.
- To have video screening connectivity.
Furniture continued

CAT C

Mobile space dividers
Conference Room, Event Space, Showcase Space and Open Meeting Rooms.
- Nominal size: (W) 1200 x (H) 1800mm.
- Mobile feet with castors.
- 50/50 acoustic fabric panelling and writable magnetic panelling.

Storage cabinet with hinge doors
Wellbeing & Recovery, Storage Areas and Security Room.
- Nominal size: (L) 1000 x (W) 470 x (H) 2100mm.
- Powder coated metal carcass, doors and adjustable shelves.
- 1 no hinge door with pull handle applied to one side, open shelves to other side.
- Standard name plate holder on front of each door for project reference.
- Lockable door with key lock.

Drawer storage unit
Task Areas, Print & Copy and Storage Areas.
- Nominal size: (L) 1000 x (W) 470 x (H) 1100mm.
- Powder coated metal carcass and drawers.
- Pull handles.
- Standard name plate holder on front of each door for project reference.
- Lockable drawers with key lock.

Open shelving unit
Print & Copy, Community Space and Reflection Room.
- Nominal size: (L) 1000 x (W) 470 x (H) 2100mm.
- Laminate finish carcass and shelves.
- Adjustable shelves.

Lockers
Task Areas, Security Room, Bike Area and Gym.
- 8No lockers per unit, 4 high x 2 wide
- Nominal size: (L) 1000 x (W) 470 x (H) 1500mm.
- Powder coated metal carcass and doors.
- Post slots.
- Standard name plate on front of each door.
- Lockable doors with smart lock system.
- Manual override/master key.
- Adjustable shelf.

Credenza
Meeting Rooms.
- Nominal size: (L) 1000 x (W) 470 x (H) 700 mm.
- Lacquered carcass and doors.
- Metal finish base.
- Pull handle to each door.

Magazine rack
Reception/Concierge.
- Nominal size: (L) 1000 x (W) 430 x (H) 1420mm.

Ambient lamps: desk mounted
Community Space, Work Lounge and Breakout Space.
- Nominal size: (DIA) 200-300 x (H) 500-600mm.
- LED.

Ambient lamps: free standing
Community Space, Work Lounge and Breakout Space.
Nominal size: (DIA) 400-500 x (H) 1600-2000mm.
- LED.
- Laminate finish table top.
- A-frame base.
Furniture continued

**Planters**

Planters throughout more open areas. Nominal size: (W) 600-1000 x (D) 400 x (H) 350 mm.

**Drop-in booth**

Task Areas.
- 4 person.
- Nominal size: Approx 2560 x 1800mm.
- Mains and USB power sockets.
- Central table.

**Acoustic pod: 1 person**

Task Areas and Quiet Spaces.
- 1 person.
- Nominal size: 1000 x 1000 x 2225mm.
- Mains and USB power sockets.
- LED downlight.
- PIR.

**Acoustic pod: 2-6 person**

Task Areas and Quiet Spaces.
- 2-6 person.
- Nominal size: From 2220 x 2005 mm to 4100 x 3000mm.
- Mains and USB power sockets.
- LED lighting system.
- Equality Act 2010 compliant.
- Acoustic walls.
- PIR.

**Standards and requirements**

Furniture shall comply to the requirements of the following standards:

- **BS EN 16139:2013**: Strength, durability and safety. Requirements for non-domestic seating.
- **BS EN 16139:2013**: Office furniture – Visitors chairs.
- **BS EN 14074:2004**: Office furniture. Tables and desks and storage furniture. Test methods for the determination of strength and durability of moving parts.

Any additional requirements or requests, fill out the form in Appendix A.
Detailed Requirements

SHELL & CORE | CAT A | CAT B & C

The sustainability requirements for government workspaces are based on the following standards and documents:

» Government Buying Standards for Construction that specify standards for purchasing decisions.

» The Government Buying Standard for Construction Projects that new build projects achieve a BREEAM Excellent Rating and refurbishment projects achieve a BREEAM Very Good rating and a Display Energy Certification (DEC) and Energy Performance Certificate (EPC) rating in the top quartile of performance.


» Energy Technology Product List of energy-efficient plant and machinery.

» The Greening Government Commitments, (relating to greenhouse gas emissions, operational waste and water consumption).

» The 25 Year Environment Plan.

» Government Soft Landings.

» The Government Hubs Healthy Building Guide.
Detailed Requirements continued

**SHELL & CORE**

The following tables set out the minimum sustainability standards expected of a shell and core building as described below for new construction and refurbishment projects.

<table>
<thead>
<tr>
<th>Shell &amp; Core Requirements</th>
<th>New build</th>
<th>Refurbishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BREEAM targets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BREEAM ‘Excellent’ rating in accordance with Government Buying Standards.</td>
<td>BREEAM ‘Very Good’ rating in accordance with Government Buying Standards.</td>
<td></td>
</tr>
<tr>
<td>Use BREEAM New Construction Shell and Core 2018 assessment or prevailing version of BREEAM.</td>
<td>Use appropriate BREEAM tool or prevailing version of BREEAM (i.e. BREEAM Refurbishment and fit-out 2015 for refurbishment, New Construction or Bespoke assessment).</td>
<td></td>
</tr>
<tr>
<td>Energy performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy performance of equipment</td>
<td>Energy consuming equipment including building services equipment, ICT and white goods should meet the relevant Government Buying Standards and Article 6 of the Energy Efficiency Directive.</td>
<td></td>
</tr>
<tr>
<td>Metering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy sub-metering should provide a breakdown of major energy end uses (lighting, small power, cooling, heating, ventilation) in line with Soft Landings requirements should provide accurate, useful information for building operators. The metering strategy should be designed in collaboration with the building operators, where possible, and include proving that the meters are providing accurate readings that are useful for energy management purposes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refrigerants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The refrigerants used in the cooling system in the building will have Direct Effect Life Cycle CO₂ equivalent emissions (DELC CO₂) of ≤1000kgCO₂/kW cooling/heating capacity as calculated using the BREEAM Pol01 tools.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare a travel plan that includes a survey of prospective occupants to provide views on the potential to use more sustainable transport modes in accordance with BREEAM requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water fittings shall comply with the flow rates set in the Best Practice Government Buying Standards including showers, taps, WCs and urinals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational waste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop an operational waste strategy and ensure that building design incorporates facilities to accommodate recycling including allowance for space within the tenant’s demise for intermediate storage.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Shell & Core Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>New Build</th>
<th>Refurbishment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timber</strong></td>
<td>Timber will be purchased in accordance with Government Buying Standards:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Timber must be purchased in accordance with <a href="#">UK Timber Procurement Policy</a>. Only timber and timber products originating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>either from independently verified legal and sustainable sources or from a licensed Forest Law Enforcement Governance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and Trade (FLEGT) partner can be purchased. Recycled timber is also accepted (TPAN April 2010 for further detail).</td>
<td></td>
</tr>
<tr>
<td><strong>Responsible sourcing of materials</strong></td>
<td>Obtain concrete, steel, cladding metals, bricks, gypsum, glass from manufacturer with BS EN ISO 14001:2015 or BES6001 (Minimum “Very Good” rating).</td>
<td></td>
</tr>
<tr>
<td><strong>Flood risk assessment</strong></td>
<td>Where the development is located in NPPF Flood Zone 2 or 3, use appropriate flood resistant and resilient construction techniques in accordance with BREEAM Pol03 requirements.</td>
<td></td>
</tr>
<tr>
<td><strong>Biodiversity</strong></td>
<td>Enhance biodiversity by creating two new habitats for a BAP species based on recommendations from ecologist.</td>
<td></td>
</tr>
<tr>
<td><strong>Functional adaptability</strong></td>
<td>Undertake a functional adaptability study of the building as set out in BREEAM Wst06.</td>
<td></td>
</tr>
<tr>
<td><strong>Health and wellbeing</strong></td>
<td>Assess the project using the WELL Building Standard and achieve “Core and Shell Compliance”.</td>
<td></td>
</tr>
<tr>
<td><strong>Access views out</strong></td>
<td>Achieve view out criteria, as set out in BREEAM, Hea01.</td>
<td></td>
</tr>
<tr>
<td><strong>Internal air quality</strong></td>
<td>All internal finishes including paints, coatings, adhesives, sealants, flooring, insulation, furniture and furnishings should achieve the WELL Building Standard for volatile substances in accordance with Air Feature 04.</td>
<td></td>
</tr>
<tr>
<td><strong>Green lease</strong></td>
<td>Provision of a “green clause” in the lease that states that the landlord and tenant will cooperate on sustainability issues, particularly relating to energy use, water use and waste generation.</td>
<td></td>
</tr>
<tr>
<td><strong>Soft landings</strong></td>
<td>Apply Government Soft Landings Framework, including design workshops, commissioning management, fine tuning &amp; post occupancy evaluation.</td>
<td></td>
</tr>
<tr>
<td><strong>Base build and fit-out criteria</strong></td>
<td>Developers to agree finishes and ceiling types to common areas with the fitout team prior to specification and installation.</td>
<td></td>
</tr>
<tr>
<td><strong>Sustainability, wellbeing and soft landings champion</strong></td>
<td>Contractor teams should include a member with specific responsibility for championing sustainability, wellbeing and Soft Landings.</td>
<td></td>
</tr>
</tbody>
</table>
### Detailed Requirements continued

**CAT A** | **CAT B & C**

The following tables set out the minimum sustainability standards expected of a CAT A and CAT B & C fit-out stages of projects.

The sustainability standards set out are the same for new build and for refurbishment works on the basis that all of these standards can be equally applied to the fit out of existing buildings.

In terms of the BREEAM targets, the BREEAM Refurbishment and Fitout 2014 assessment has been specifically designed for existing buildings and makes allowance for the constraints that are encountered on such projects. Therefore, a BREEAM ‘Excellent’ target should be achievable.

The RICS Ska Rating can be a useful alternative to BREEAM for projects that have a short design period. BREEAM requires early design stage credits to be completed and various studies to be commissioned that are difficult to implement on smaller projects that have a short design period (e.g. less than 2 months). [The implementation of this target is subject to the outcome of a cost/benefit study].

<table>
<thead>
<tr>
<th>Sustainable and Healthy Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL &amp; CORE</td>
</tr>
<tr>
<td>Detailed Requirements</td>
</tr>
<tr>
<td>Government Hubs</td>
</tr>
<tr>
<td>Healthy Building Guide</td>
</tr>
<tr>
<td>Environmental Plan</td>
</tr>
<tr>
<td>Sustainability</td>
</tr>
</tbody>
</table>

### Cat/A/B & C fit-out Requirements

- **BREEAM targets**
  - BREEAM ‘Excellent’ rating in accordance with Government Buying Standards.
  - Use BREEAM Refurbishment and Fit-out or prevailing version of BREEAM.
  - For small fit-out projects that have a scheduled design period of less than two months, achieve ‘Silver’ RICS Ska Rating (The implementation of this target is subject to the outcome of a cost/benefit study).

- **Energy performance**

- **Energy performance of equipment**
  - Energy using equipment including building services equipment, ICT and white goods should meet the relevant Government Buying Standards and Article 6 of the Energy Efficiency Directive.

- **Metering**
  - Energy sub-metering should provide a breakdown of major energy end uses (lighting, small power, cooling, heating, ventilation) in line with Soft Landings requirements to provide accurate, useful information for building operators. The metering strategy should be designed in collaboration with the building operators, where possible, and include proving that the meters are providing accurate readings that are useful for energy management purposes.

- **Refrigerants**
  - The refrigerants used in the cooling system in the building will have Direct Effect Life Cycle CO₂ equivalent emissions (DELC CO₂) of ≤1000 kgCO₂e/kW cooling/heating capacity as calculated using the BREEAM Pol01 tools.

- **Transport**
  - Prepare a travel plan that includes the considerations for travel plan by the BREEAM technical guide with the objective to achieve more sustainable transport.

- **Water use**
  - Water fittings to comply with the flow rates set in the Best Practice Government Buying Standards including showers, taps, WCs and urinals.

- **Operational waste**
  - Develop an operational waste strategy and ensure that building design incorporates facilities to accommodate recycling including space within the tenant’s demise for intermediate storage.
### Cat A/B & C fit-out Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timber</strong></td>
<td>Timber will be purchased in accordance with Government Buying Standards: Timber must be purchased in accordance with UK Timber Procurement Policy. Only timber and timber products originating either from independently verified legal and sustainable sources or from a licensed Forest Law Enforcement Governance and Trade (FLEGT) partner can be purchased. Recycled timber is also accepted (TPAN April 2010 for further detail).</td>
</tr>
<tr>
<td><strong>Responsible sourcing of materials</strong></td>
<td>Obtain gypsum, internal partitions and carpets from manufacturer with an EMS in accordance with BS EN ISO 14001:2015 or BES 6001 (minimum ‘Very Good’ rating).</td>
</tr>
<tr>
<td><strong>Biodiversity</strong></td>
<td>Consider opportunities to enhance the ecological value of the base build through tenant variations or additional works.</td>
</tr>
<tr>
<td><strong>Functional adaptability</strong></td>
<td>Undertake a functional adaptability study of the building as set out in BREEAM Wst06.</td>
</tr>
<tr>
<td><strong>Health and wellbeing</strong></td>
<td>Assess the project using the WELL Building Standard and achieve a ‘Silver’ rating [The implementation of this target is subject to the outcome of a cost/benefit study]. (For further guidance on Health and Wellbeing, refer to “Hubs Healthy Guiding Guide”).</td>
</tr>
<tr>
<td><strong>Access views out</strong></td>
<td>Achieve view out criteria, as set out in BREEAM, Hea01.</td>
</tr>
<tr>
<td><strong>Internal air quality</strong></td>
<td>All internal finishes including paints, coatings, adhesives, sealants, flooring, insulation, furniture and furnishings to achieve the WELL Building Standard for volatile substances in accordance with Air Feature C4.</td>
</tr>
<tr>
<td><strong>Soft landings</strong></td>
<td>Apply Government Soft Landings Framework, including design workshops, commissioning management, fine tuning &amp; post occupancy evaluation.</td>
</tr>
<tr>
<td><strong>Sustainability, wellbeing and soft landings champion</strong></td>
<td>Contractor teams are to include a member with specific responsibility for championing sustainability, wellbeing and Soft Landings.</td>
</tr>
</tbody>
</table>
Central to the design and fit-out of our buildings is the creation of workspaces that promote and enhance occupant health and wellbeing. The Government Hubs Healthy Building Guide seeks to provide an overarching standard. The criteria and features listed within this specification are based upon the WELL Building Standard. Whilst buildings will not necessarily be WELL Certified, this standard will allow for the delivery of features that are proven to have physical and mental health benefits. This guide is a working document, requirements should be delivered in line with the published addenda, equivalences and alternative paths of adherence.

**Government Hubs Healthy Building Guide**

The setting of environmental performance benchmarks shall follow the guidance set out in Government Soft Landings. Performance outcomes shall be set for operational energy consumption of all energy sources and resulting CO₂ emissions, operational water consumption, and operational waste disposal. As suggested by GSL, a project Environmental Plan should be produced.

The development of a robust target energy consumption is complex as it is dependent on the building design, the method and quality of its construction, how it is operated, and how it is maintained – each of which are likely to be under the control of different parties. Establishing this performance outcome should therefore follow a defined process such as that set out in CIBSE guidance TM54: Evaluating Operational Energy Performance of Buildings at the Design Stage. The modelling of operational energy consumption must take account of both regulated energy consumption (i.e. that assessed under Part L of the Building Regulations in England and corresponding approved documents in devolved administrations) and unregulated energy consumption (i.e. everything else; including specialist equipment such as catering, IT servers, etc), the approach to building services controls, the anticipated occupancy patterns of the building, management factors, and any other aspects likely to impact actual energy consumption. The model should also equate energy consumption to CO₂ emissions.

The Plan will need to be monitored and updated as the design progresses and should be used to support decision making where changes would have an impact on environmental outcomes. The final iteration of the energy model should reflect the ‘as built’ building and should be used as a guide to the process of optimisation by matching actual performance to the performance outcomes as closely and quickly as possible. This should be achieved through a collaborative process involving designers, constructors, facilities management providers, and occupiers. In order to ensure the support of all parties, activities during this fine tuning period should be explicitly defined in appointment contracts.

Note: At the time GSL was published, CIBSE had not finalised the reference number or title of the guidance, therefore GSL uses its working reference of TM99.

For further guidance, refer to Low Carbon Strategy.
Sustainable and Healthy Buildings

Sustainability
SHELL & CORE | CAT A | CAT B & C

More than half of the carbon dioxide emissions produced in the UK derive from the development and use of buildings. So, it is imperative that everyone involved in the building sector embraces and drives forward sustainable development.

The structural system of a building contributes to the sustainability agenda through various strategies, some of which are currently awarded BREEAM credits, and should be considered in the planning and design of a building; these include:

Re-use of existing built assets
Re-use all or part of existing structural frames, substructure, foundations or façade to minimise the demolition and impact of new development. This may require record searches to be undertaken for archive drawings and/or specifications of the existing building together with fabric surveys to establish the basis of the original design and identify the opportunities for re-use.

Re-use of furniture
Guidance set out in Government Buying Standards requires departments to consider their existing furniture stock (to use as is or with adaptations), if this does not provide a solution the Furniture Clearing House facility should be used. Where such furniture is available but no longer fits the footprint or supports the appropriate working style of the workspace, opportunities to remodel existing furniture should be explored.

Individual projects shall decide whether use of new or refurbished furniture is appropriate on the basis of the ability of suppliers to respond in a timely and cost-effective manner to the quality and scale of the requirement.

Reduced embodied energy
» Efficient design and criteria to minimise the use of new material and wastage.
» Consideration of off-site prefabrication to minimise on-site construction activity, reduce wastage and optimise safety.
» Use of recycled aggregates for non-structural concrete frame elements, sub-bases for temporary hard standing, piling mats or general fill to reduce the impact on new resources.
» Use of cement replacement products such as GGBS or PFA to reduce the carbon impact of concrete production.
» Use of recycled steel in reinforcement.

Reduced operational energy
Consideration shall be given to integrated structural and services systems to improve performance of the building, such as the use of thermal mass from concrete structures to reduce operational energy.

Design for flexibility
Ensure that the development is able to respond to users’ current and future needs to maximise the life of the building. If future changes to the building are envisaged then early consideration of these in the design process will influence the preferred form, layout and choice of structure – such as steel frame in-situ or post-tensioned concrete.
SMART BUILDINGS

A smart building is the linking of systems in a building which enables the building to be managed more effectively. Individual systems can be termed as smart if they allow additional control and an enhanced user interface, however installing these alone does not create a smart building.

Overview

SHELL & CORE | CAT A | CAT B & C

To create the smart environment, the GPA will connect live data from installed systems to enhance the operation of the building. Outputs from this will reduce cost of operation and enhance the user experience.

Systems must be connectable by one of the listed protocols:

- Application Programming Interface (API)
- Open Platform Communications Unified Architecture (OPC UA™)
- Open Platform Communications Tunneling (OPC Tunneling)
- Building Automation and Control Networks (BACnet)
- Simple Network Management Protocol (SNMP)
- Modbus

Systems may include but not be limited to:

- BMS
- Heating
- Cooling
- Lighting
- Security Barriers
- Internal Door Control
- Meeting room booking
- Occupancy sensors
- Desk sensors
- GovWiFi infrastructure
- Reception systems
- Plant room
- Computer-aided Facility Management (CAFM)
- BIM
- Smart metering BEMS
BUILDING SERVICES ENGINEERING

The building services installation shall be designed to meet the requirements of a quality office development, meeting current standards and known future standards that are in draft and in the public domain.

The installation shall be arranged to provide sufficient adaptability and/or flexibility to meet incoming tenants’ requirements.

General Provisions

The essential features will provide provision of a comfortable working environment throughout the year incorporating facilities to minimise building energy consumption and running costs.

Major vertical ductwork, electrical, and pipework runs shall be kept within riser shafts at services cores. Horizontal distribution shall be exposed or be either within the suspended ceiling or raised access floors. The necessity for floor and ceiling removal for maintenance and inspection purposes shall be kept to a minimum.

Separate soil stacks and domestic water risers shall be provided in each secondary core riser, to allow for future tenant tea points and additional future WCs to each floor. Stub connections shall be provided on main WC and office ventilation risers for additional tenant WC areas. Plant space shall be allocated for tenant’s generators with an access strategy for installation.

Riser space shall be allocated with the main cores for future boiler flues, oil lines, ventilation, chilled water, heating pipework, electrical, domestic water and drainage services for tenants’ distribution to any ‘cafe’ type places.

Space shall be allocated at low level for a telecommunication room capable of being sub-divided to provide separate and secure multi-tenant in full services. Multiple cable entry points shall be provided to increase system resilience.

All building services distribution and control will acknowledge the agreed sub-division of the floors.

All services to be fully accessible. Accessible rodding points throughout on foul drainage systems.

Plant Location

The majority of mechanical plant shall be located at roof level i.e. chillers air handling plant etc.

Heavy items of plant and the electrical installations will generally be provided on lower and/or basement levels i.e. water storage, HV switch rooms and generators.

Plant areas will require acoustic and fire separation as part of the building fabric design. Fire separation shall be in accordance with the requirements of the Fire Strategy Report.

Access to Plant and Plant Removal

Access to all services in ceiling voids shall be through removable ceiling tiles or via dedicated access panels.

General Provisions

SHELL & CORE | CAT A | CAT B & C

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MEP

**Distribution of Services**

**SHELL & CORE | CAT A | CAT B & C**

Services shall be distributed from the plant areas via vertical risers located within the cores. All ductwork and piped services to the office areas will then be distributed in the ceiling voids above the open plan office areas.

Drainage and water services shall be provided within all cores with facilities for future connection by tenants.

Access walkways shall be required in roof areas to enable inspection, maintenance and replacement to be undertaken safely and without disruption to the areas below.

The goods lift will serve roof and basement level to facilitate plant maintenance and replacement.

Removable panels in the plantroom walls shall be provided to allow removal and replacement of bulky items of plant throughout the building’s life.

Services access corridors shall be provided within lower and/or basement level plant room areas to allow for all maintenance and replacement requirements throughout the building’s life.

All risers, where not fire stopped at each level, shall be provided with removable open mesh grating to allow operatives to stand safely while maintaining plant and to dropped equipment and tools falling down riser shafts.

**Zoning**

**SHELL & CORE**

Services shall be designed and installed to provide fit-out flexibility by formation of perimeter and central zones, each with their own independent control of temperature. Perimeter control zones should typically be no more than 6m wide and 4.5m deep and be positioned between mullions and columns to allow for formation of partitioning against the façade without the need for services modifications. Space is to be allowed between terminal units at 3m intervals to allow high levels of cellularisation. Internal zones can be in the range of 50 to 70m² depending on the choice of system.
### Energy Metering Strategy

**SHELL & CORE | CAT A**

Systems shall be provided with energy meters to ensure at least 90% of the estimated energy consumption of each fuel can be assigned to the various end uses in the building in accordance with the requirements of Part L of the Building Regulations and CIBSE TM 39 and Guide M. Meters shall be connected to the Building Energy Management system and shall provide automatic meter reading, data collection and targeting facilities.

In addition to the primary utility supply meters, the following sub metering shall be provided:

- Power and light boards for each on-floor tenant and the landlord.
- Chilled Water flow and temperature to each floor from each core.
- Low Temperature Hot Water Heating flow and temperature to each floor from each core.
- Domestic Cold Water Supply flow to each floor from each core, separate for tenant and landlord area if WCs are in the landlords.

### Equipment Selection

**SHELL & CORE | CAT A | CAT B & C**

Plant, components and materials are to be selected from GPA approved manufacturers or equal and approved. All plant, components and materials shall have a minimum economic lifespan as stated in CIBSE Guide M. Submit technical information on all components for GPA comment prior to ordering. Allow for GPA attendance of 10% final witnessing.

Audio and visual recording of full training and maintenance demonstrations are to be included as part of the Operation and Maintenance (O&M) manuals and made accessible via link attachments embedded within the relevant sections of the O&M manuals.

**SHELL & CORE**

Chillers, generators, UPS systems, main electrical distribution boards and BMS (iBMS) systems are to be factory tested and GPA representatives are to be accommodated on the tests. Allow for GPA attendance of black building tests. Provide load banks to enable final testing.
MEP

SERVICES TO BE PROVIDED

Mechanical Engineering Services
SHELL & CORE
» Natural Gas Distribution
» Low Temperature Hot Water Heating
» Chilled Water Distribution
» General Office Air Conditioning
» General Office Supply and extract System
» WC Extract System
» Atrium Smoke Extract System
» Below Ground Car Park Smoke Extract System
» Generator Oil Storage and Distribution System
» Control Systems
» Building Energy Management Systems (BEMS)

Public Health Services
SHELL & CORE
» Mains Cold Water
» Boosted Cold Water Service
» Domestic Cold Water Supply
» Domestic Hot Water Systems
» Domestic Foul Water Drainage
» Rainwater Drainage

Fire Protection Services
SHELL & CORE
» Dry Risers
» Sprinklers
» Fire Suppression Systems in comms rooms

Electrical Engineering Services
SHELL & CORE
» Supply Authority Substation and Incoming Supply
» High Voltage System
» Low Voltage Distribution
» Landlords Only Small Power Installation
» Earthing and Bonding

DESIGN CRITERIA

INCOMING UTILITIES

MECHANICAL & PUBLIC HEALTH ENGINEERING SERVICES

PUBLIC HEALTH SERVICES

ELECTRICAL ENGINEERING SERVICES

ALLOWANCE FOR TENANT PROVISION

CAT A
CAT B & C
Low Temperature Hot Water Heating
Chilled Water Distribution
General Office Air Conditioning
General Office Supply and extract System
Control Systems

LANDLORDS ONLY LOW VOLTAGE
Emergency Systems Generator
Lighting Installation
Emergency Lighting
Fire Detection and Alarms Installation
Emergency communication systems
Security Systems and Door Access Systems
Lightning Protection
Power Associated with Mechanical Plant and Equipment
Public Announcement System
Structured Cabling (where turnkey CAT B is required)

CAT A
CAT B & C
Low Voltage Distribution
Earthing and Bonding
Lighting Installation
Emergency Lighting
Fire Detection and Alarms Installation
Emergency communication systems
Security Systems and Door Access Systems
Power Associated with Mechanical Plant and Equipment
Public Announcement System
**DESIGN CRITERIA**

### External Temperatures

**SHELL & CORE | CAT A | CAT B & C**

#### Temperature (use nearest location listed)

<table>
<thead>
<tr>
<th>Location</th>
<th>Winter</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belfast</td>
<td>-2°C db. 100% RH (Fabric heating)</td>
<td>25°C db. 20°C wb.</td>
</tr>
<tr>
<td>Birmingham</td>
<td>-5°C db. 100% RH (Fabric heating)</td>
<td>29°C db. 21°C wb.</td>
</tr>
<tr>
<td>Cardiff</td>
<td>-3°C db. 100% RH (Fabric heating)</td>
<td>27°C db. 20°C wb.</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>-4°C db. 100% RH (Fabric heating)</td>
<td>25°C db. 20°C wb.</td>
</tr>
<tr>
<td>Glasgow</td>
<td>-4.5°C db. 100% RH (Fabric heating)</td>
<td>26°C db. 20°C wb.</td>
</tr>
<tr>
<td>London</td>
<td>-3°C db. 100% RH (Fabric heating)</td>
<td>30°C db. 22°C wb.</td>
</tr>
<tr>
<td>Manchester</td>
<td>-3°C db. 100% RH (Fabric heating)</td>
<td>28°C db. 20°C wb.</td>
</tr>
<tr>
<td>Plymouth</td>
<td>1.5°C db. 100% RH (Fabric heating)</td>
<td>26°C db. 20°C wb.</td>
</tr>
</tbody>
</table>

**Note:** -5°C db. 100% RH (Air Handling systems all locations) -35°C db (heat Rejection Plant all locations)

### Humidity

**SHELL & CORE | CAT A | CAT B & C**

<table>
<thead>
<tr>
<th>Location</th>
<th>Cat A</th>
<th>Cat B &amp; C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office: Summer</td>
<td>No control</td>
<td></td>
</tr>
<tr>
<td>Office: Winter</td>
<td>Resultant minimum 40%</td>
<td></td>
</tr>
</tbody>
</table>

### Occupancy

Building Services systems to be designed on 1 person per 8m² at 100% occupancy.

### Ventilation rates

**Offices**

- 1.5 l/s/m² fresh air (12 l/s/person @ 1 person per 8m²).

Main ventilation risers sized to accommodate 15% increase in branch air volume, to allow for flexibility in distribution of air between floors.

### Internal Temperatures

**SHELL & CORE | CAT A | CAT B & C**

<table>
<thead>
<tr>
<th>Location</th>
<th>Office Temperature</th>
<th>WC Area: Summer</th>
<th>WC Area: Winter</th>
<th>Staircases and Circulation: Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belfast</td>
<td>22°C db. ± 2°C</td>
<td>23°C db. ± 2°C</td>
<td>18°C db. Minimum</td>
<td>18°C db. minimum</td>
</tr>
<tr>
<td>Cardiff</td>
<td>27°C db. ± 2°C</td>
<td>23°C db. ± 2°C</td>
<td>18°C db. Minimum</td>
<td>18°C db. minimum</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>25°C db. ± 2°C</td>
<td>23°C db. ± 2°C</td>
<td>18°C db. Minimum</td>
<td>18°C db. minimum</td>
</tr>
<tr>
<td>Glasgow</td>
<td>26°C db. ± 2°C</td>
<td>23°C db. ± 2°C</td>
<td>18°C db. Minimum</td>
<td>18°C db. minimum</td>
</tr>
<tr>
<td>London</td>
<td>30°C db. ± 2°C</td>
<td>23°C db. ± 2°C</td>
<td>18°C db. Minimum</td>
<td>18°C db. minimum</td>
</tr>
<tr>
<td>Manchester</td>
<td>28°C db. ± 2°C</td>
<td>23°C db. ± 2°C</td>
<td>18°C db. Minimum</td>
<td>18°C db. minimum</td>
</tr>
<tr>
<td>Plymouth</td>
<td>26°C db. ± 2°C</td>
<td>23°C db. ± 2°C</td>
<td>18°C db. Minimum</td>
<td>18°C db. minimum</td>
</tr>
</tbody>
</table>
Humidity continued

WC areas
WC areas will have 6 air changes per hour from dedicated extract plant. Make up air provided from a branch from the main office supply at a rate of 6 air changes per hour. This fresh air provision is to be in addition to the 12 l/s per person office fresh air.

Filtration standard

<table>
<thead>
<tr>
<th>Office areas</th>
<th>F7 (AHUs)</th>
<th>G3 (FCUs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F7 is the level of filtration (grading) required for the office environment. How this grading is achieved in the AHU will be designed by the AHU manufacturer who’s specification shall meet this requirement as stated in CIBSE Guide A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Internal heat gains/allowance in cooling system

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>12.5 Watts/m² sensible</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Watts/m² latent</td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td>12 Watts/m² sensible</td>
</tr>
<tr>
<td>Equipment</td>
<td>15 Watts/m² sensible</td>
</tr>
</tbody>
</table>

Cold water storage
15 litres/person allowance based on current BCO guide specification for a full day’s storage.

Hot water storage
Centralised hot water storage pre heated from roof mounted Solar Panels. Flow and return hot water distribution system storage requirement based on 3L/person with a 1 hour recovery.

Electrical Loadings
The estimated maximum demand for the office building is calculated from the loadings detailed below. An allowance of 25% shall be included for spare capacity (based on the total diversified load).

Electrical loadings to be reviewed with consideration to BCO recommendations and certain occupants requirements, designs to be approved at design stage.

<table>
<thead>
<tr>
<th>Office lighting</th>
<th>12 W/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office small power*</td>
<td>30 W/m²</td>
</tr>
<tr>
<td>Data areas*</td>
<td>5W/m² (over total nett lettable are of the building)</td>
</tr>
<tr>
<td>Cafe</td>
<td>100W/m²</td>
</tr>
<tr>
<td>Main reception lighting</td>
<td>20 W/m²</td>
</tr>
</tbody>
</table>

Fire Detection Systems
L1 classification defined in BS 5839.
Refer to Fire Section.
INCOMING UTILITIES

**Electrical**
**SHELL & CORE**
Dual UK-PN incoming 11kV supplies will be provided to the site and will feed dual HV consumer meeting units in separate UK-PN intake rooms. These in turn will serve dual transformers which will feed a split main LV panel to be connected by a none auto bus couple section switched by a Castell Key Interlock.

The LV supply to the site shall be at 400/230 V (+10%/-6%).

The HV to the site shall be at 11 kV (± 6%).

The frequency of the supply shall be 50 Hz (± 1%).

**Telecommunications**
**SHELL & CORE**
Infrastructure for the distribution of telecommunication suppliers’ lines shall be routed around the development site. There shall be diverse cable routes into office building one of which will lead to the frame room.

Diversely routed ducts to two separate intake points with internal diversely routed telecoms risers to avoid a single point of failure. To be used for the provision of BT secure plus service from two points of presence.

**Telecoms Chambers**
**SHELL & CORE**
There should be a provision for diversity access route on the boundary of the development and/or highway of a telecoms meet-me chamber. These should be provided with adequate separation that a single event should not affect both routes.

Each provide will have a dedicated duct, and the number for duct will be a minimum of four but this should be increased to reflect the number of local service providers.

**Communal Entry Chambers**
Cable ducting and trays should as a minimum be installed between the Telecoms entry points and one MER, this route should be direct and be designed with the minimum of bends and bend radius must meet telecoms standards.

**Water**
**SHELL & CORE**
A connection from the development site water main shall feed a meter position within the building.

**Natural Gas**
**SHELL & CORE**
The incoming natural gas supply will enter the building at low level directly into a meter room. Gas will then feed the boiler room. A separate branch shall be provided within the meter room for future extension to serve a tenant catering facility.

If eateries are to be provided as part of a CAT A & B turnkey solution, the main supply shall be extended to each food preparation area requiring gas and shall have separate meters connected to the energy management system for each food preparation area (each cafe, should there be more than one).

**Foul Drainage**
**SHELL & CORE**
Foul drainage from the building will enter the development site drainage system below ground.

**Surface Water Drainage**
**SHELL & CORE**
Surface water drainage from the building will enter the development site drainage system below ground. From where it shall be taken into a site surface water attenuation tank, and then pumped into the public sewers to be reviewed by the developer and approved by GPA on a case-by-case basis.
Mechanical Services

**SHELL & CORE**

Systems are to be designed to allow the control and plant turn down allowing a minimum of one floor fully operational and supported whilst services to other floors are shut down. This is to facilitate weekend working and night shifts.

Systems are to be designed to allow designated zones within the building (e.g. a 24/7 incident response room or emergency contingency room with appropriate WC and Teapoint facilities) to remain fully operational and supported whilst control or plant services to other zones within the building are shut down or reduced as well as 24-hour working. This will also facilitate weekend working and night shifts.

**CAT A**  |  **CAT B & C**

Where the services provision is based on an alternative ventilation, heating and cooling strategy, the CAT A and CAT B&C design is to carry forward the developer’s design principle and shall be designed to meet the GPA design criteria. Alternative proposals to those set out below will need to be presented to, and approved by, the GPA.

**Air-conditioning**

**CAT A**

The office areas shall be air-conditioned using a 4-pipe fan coil system with airside control providing heating and cooling to perimeter areas, with two pipe fan coil units providing cooling only, to internal zones.

FCUs shall have DC motors and multiple fan decks so that individual spigots from the units can provide independent variable volume supply to multiple control zones.

Fan coil units (FCUs) will be provided in the following areas as part of the CAT A works:

- Open plan office areas
- Reception

Fan coil units will be positioned to allow tenant addition of intermediate fan coil units to suit a partitioning/control zone of 3m. Services will be designed to allow ease of installation of intermediate FCUs with minimum disruption and/or alteration to existing services.

Chilled water to FCUs will be circulated at elevated temperatures to ensure ‘dry’ operation of the fan coil units. Each unit will have its condensate overflow piped to drain.

Discharges from FCUs will be ducted to linear slot diffusers integrated into the perimeter ceiling detail, and to modular louvre faced diffusers within internal zones.

Consideration should be given to stopping the dumping of cold air e.g. passive flow rates and use of swirl diffusers instead of linear slot diffusers and trench heating.

Configuration to be overseen by an independent commissioning engineer.

Ventilation ductwork will be extended from the main services core to supply filtered tempered air to the rear of each FCU. Fresh air will enter the occupied space via the FCU diffusers.

Ventilation ductwork will be extended from the services core to carry exhaust air from the ceiling void, used as a return air plenum. Extract ductwork will be extended to ensure all areas of the tenancies are adequately ventilated and to suit fire zoning arrangements.
### Air-conditioning continued

**CAT A**

Supply and extract ducts will be fitted with motorised constant volume shut-off dampers at their point of connection to the services risers, to allow systems to be isolated outside of occupied periods without affecting the balance of air flow to occupied floors.

Pressure independent VAV boxes to be provided to allow for future flexibility of space where agreed and required.

Perimeter trench heating shall be provided in office areas to counteract down drafts. If perimeter heating is insufficient to offset the total heat loss low temperature hot water shall be providing heating to perimeter fan coil units scheduled to suit external ambient conditions, thereby minimising energy usage.

**CAT B & C**

Modify and supplement the air conditioning system to meet the CAT B cellularisation, specific occupancy density and installed equipment loads.

These works will include, but may not be limited to:

- Relocation and addition of Fan Coil Units (FCUs) with associated pipework, ductwork, grilles and controls.
- Upgrading pipework and ductwork pipe sizes.
- Extending ductwork and adding balancing and fire dampers.
- Adding cross talk attenuators.
- Adding return air paths from cellular space complete with attenuators.
- Ceiling mounted, thimble type, temperature sensors within cellular spaces (local wall mounted user control not required).
- Rebalance of air, low temperature hot water and chilled water onto the floor and in the main riser where air is rebalanced between floors of higher and lower occupancy density.

Fan coil units will be positioned to suit partitioning whilst maintaining a control zone of 3m. Discharges from FCUs will be ducted to linear slot diffusers integrated into the perimeter ceiling details within cellular areas. Ventilation ductwork will be extended to supply air to the rear of each new FCU.

### Control Systems

**SHELL & CORE**

An Intelligent Building Management System (iBMS) shall be installed, with common open platform software, that brings together different systems into a single integrated database allowing for the sophisticated automation, optimization and control of the whole building, zones and meeting areas.

Advanced smart building technology should be considered where possible and will be reviewed through RIBA Stage 2. Refer to Smart Buildings section.

The automation and control network will include heating, ventilation, cooling, lighting, electrical (e.g. lifts and other machinery), leak detection (e.g. refrigeration and water), energy monitoring and metering, safety (e.g. fire), security and access systems.

The iBMS will:

- Enable the analysis and optimisation of building performance.
- Enable the identification of excessive and unnecessary energy and water use.
- Enable the identification of plant malfunction and failure.

All system information and performance shall be collated in a single front-end user interface, allowing web and wireless device access to facility operators.
Control Systems continued

**SHELL & CORE**

There shall be effective commissioning and handover of IBMS to facility operatives and other key stakeholders.

System shall be web based and accessible on any PC. Level of accessibility and ability to change set points shall be password controlled and changes logged automatically.

Fault and alarm messages shall be capable of being e-mailed and texted to any user account or mobile phone registered with and linked to the system.

Fireman’s HVAC switch panels shall be provided in positions to be agreed with the local fire and rescue service.

**SHELL & CORE**

Middle ground elements to be incorporated in the design will include items such as energy efficient LED lighting with daylight dimming, high efficiency ventilation and heating equipment, heat recovery element and power correction facilities; all of which is required to minimise the energy used to power the services.

Active elements such as renewables will be identified last in the design process. These are items such as solar panels and heat pumps.

Low and Zero Carbon Energies

To ensure the ongoing security of our energy supply alternative energy sources shall be considered. Low and zero carbon energy resources commonly used for building applications include solar, wind, geothermal, and biomass. Before selecting an appropriate low or zero carbon energy technology it is important to consider a number of factors such as:

- Available renewable energy resource at or near the building site, e.g. connections to existing or planned heat networks.
- Available area for siting of the renewable energy technology.
- Cost of energy purchased from the electrical or thermal energy provider for the building.
- Available incentives for offsetting the installation cost of the renewable energy system.
- Local regulations affecting renewable energy systems.
- Desire to preserve or not alter existing architectural features.
- Characteristics of the energy profiles to be offset by the renewable energy installation.
Natural Gas Distribution
SHELL & CORE
From the meter and governor chambers within the building, natural gas shall be distributed to the boiler room. Pipework shall be routed in ventilated ducts and shafts. The feed to the boiler room shall be provided with a gas solenoid valve (fire shut off). The solenoid valve shall be provided with battery backup. An emergency shut off system shall be provided at each exit from the boiler room.

Low Temperature Hot Water Heating
SHELL & CORE
Boiler plant shall be located within the boiler room and will comprise a number of natural gas fired boilers, each rated at proportion of the total design load. Modular engineered solutions with a minimum of three boilers with 30% redundancy.

Water shall be circulated to the buildings via duty and standby circulating pumps located within the plant room.

An automatic chemical dosing system shall be provided.

Chilled Water
SHELL & CORE
A chilled water supply shall be provided by a number of air cooled water chillers located at roof level on each building. The chillers will utilise a zero ozone depletion potential refrigerant.

Constant temperature chilled water shall be circulated by two centrifugal pumps, providing standby capacity for routine maintenance and in the case of unit failure. Inverter drives shall be fitted to all circulation pumps and the secondary pumped systems shall be variable volume.

The control of the chilled water temperature and the sequencing of chiller units shall be regulated by the packaged chiller controls and be monitored by the iBMS.

General Supply & Extract Systems
SHELL & CORE
The following describes the requirements where the developer is proposing a mechanical ventilated, 4-pipe fan coil unit system. The developer may propose an alternative means of providing ventilation, heating and cooling to meet the GPA design criteria where they can demonstrate enhanced efficiency and/or increased lifecycle value. Alternative methods of ventilation, heating and cooling to those set out below will need to be presented to, and approved by, the GPA.

The building shall be provided with mechanical ventilation.

Mechanical ventilation AHUs shall be ErP 2018 compliant. This ensures AHUs specified on any new build or refurbishment project shall incorporate fans with multispeed VSDs, heat recovery with thermal efficiency of no less than 73%, filters with visual alarms to ensure no excessive pressure drop is encountered in the AHU, compliant with specific fan power regulations.

Central air handling supply and extract units providing fresh air to fan coil units.
**General Supply & Extract Systems continued**

**SHELL & CORE**

Supply air, filtered, tempered with resulting humidity control shall be achieved from the effect of heating and cooling coils.

If recirculated air is used, the following requirements are met in ventilation assemblies in the main air ducts for recirculated air:

- a. Rack space and fan capacity is in place for future carbon filters.
- b. The system is able to accommodate additional filters.

Fresh air system temperatures shall be scheduled throughout the year to suit outside air temperature. The air handling units will comprise; low temperature heating coil, frost coil, chilled water cooling coil, low temperature hot water heating coil, fans and space for a packaged humidifier section within the air handling units.

Heat shall be reclaimed from exhaust air by recuperators or thermal wheels.

Air shall be distributed to all areas via galvanised steel ductwork. All supply and fresh air intake ductwork and plenums shall be insulated against heat loss and surface condensation. Exhaust ductwork shall be un-insulated.

Fresh air intakes and extract discharges (including WC extract discharges) should be a minimum of 12m apart.

**WC Extract**

**SHELL & CORE**

Each WC core shall be provided with a duplex extract fan set located at roof level. The extracted air shall be discharged to atmosphere via weather louvres.

Make up air to the WC areas shall be provided by a dedicated branch taken off the office system fresh supply system.

**Mailroom Ventilation**

**SHELL & CORE**

The mail room must be on a dedicated air supply and extract system. It must not be linked to the main building air supply system to be negatively pressurised with HEPA filter on exhaust to outside.

**Atrium Smoke Clearance System**

**SHELL & CORE**

Smoke control shall be in accordance with the fire strategy agreed with building control.

**Below Ground Car Park Smoke Clearance System**

**SHELL & CORE**

Mechanical extract systems will provide smoke control at 10AC/hour in accordance with relevant Building Regulations and Technical Handbooks for constituent parts of the United Kingdom to the below ground car parking and loading bay areas. Mechanical supply shall be provided where this cannot be achieved naturally via ventilation shafts.
PUBLIC HEALTH SERVICES

Public Health Services
SHELL & CORE | CAT A | CAT B & C

Connection points for foul drainage and potable water supplies will be provided in each of the main core and/or riser positions for future extension to serve tea points and eateries.

CAT B & C

Extend the foul drainage, potable water supplies and hot water services from each main core and/or riser positions to serve tea points and cafe.

All drainage to be via gravity and should not be pumped.

All tea points are to be bunded with leak detection which will shut off water supplies to the area on detection of a leak and will report both a local audio alarm (which can be silenced with a local acknowledgement button) and a critical alarm on the iBMS.

Mains Cold Water
SHELL & CORE | CAT A | CAT B & C

A metered water supply for the building shall be taken from the from the site wide water main into the building in Medium Density Polyethylene (MDPE) pipework to supply a two compartment GRP cold water storage tank. The tank will supply drinking water outlets and all other sanitary fittings on the upper floors via a packaged domestic booster set. The tank shall also provide the cold feed requirements to the centralised hot water storage calorifiers.

All systems shall be designed and installed in accordance with BS 8558:2015, BS EN 806 series, Approved Code of Practice L8-Legionnaires disease, CIBSE TM13, HSG274 Part 2 and the local water authority bye-laws.

Items of mechanical plant shall be supplied from this system.

Mechanical plant items being fed by the mains cold water system, such as LTHW pressurisation units shall be done so via a Cat 5 break tank. Branch for break tank to be taken off before feed to cold water storage tank. If the break tank option is not suitable then a RPZ valve can be used as a back up option to provide the minimum Cat 4 protection.

Domestic Cold Water Services temperature shall be monitored in storage tank and distribution with link to BMS to alert building manager of unsafe water temperatures between 20-45°C to mitigate risk of legionella bacterial growth. This is in line with guidance set out in HSG274 PART 2.
Domestic Hot Water Systems

SHELL & CORE | CAT A | CAT B & C

The hot water requirements for WCs hand basins, showers, cleaners’ sinks and tea points and future cafe areas shall be a closed system. A cold feed from the domestic water booster pump will feed the system. The system will comprise one or more packaged units comprising storage vessel, plate heat exchanger (fed from the low temperature hot water system) and shunt pump.

The flow and return pipe work from the packaged unit shall be run in copper to BS EN 1057:2006+A1:2010 and will feed the domestic hot water outlets throughout the building. A single circulating pump shall be mounted on the return pipe work to take account of system heat losses.

A central storage system is preferred but where this cannot be provided, and on approval from GPA, domestic outlets in WCs hand basins, showers, cleaners’ sinks and tea points could be served by either point-of-use instantaneous or local electric storage hot water heaters. Any pipework from a storage water heater shall be electrically trace heated in order to maintain its temperature and ensure delivery of hot water at minimum 50°C within one minute of opening any outlet and shall conform to guidance set out in HSG274 Part 2.

DHWS temperature shall be monitored at calorifier flow outlet to ensure thermostat is modulating as close to 60°C as practicable without going below. Calorifier return shall be monitored to ensure return in is no less than 50°C. Distribution shall be monitored and linked to BMS and shall be monitored with flow and return not dropping below 50°C. This is in line with guidance set out in HSG274 PART 2.

Consideration should be given to DHWS generated from solar heated calorifiers fed from the pressurised cold water system. A flow and return pumped circulation system shall distribute the hot water to the various sanitary fittings, tea points and future cafe. The solar water heating system shall be heated from a series of heat collectors mounted at roof level in which a fluid is heated by the sun. The fluid is used to heat up the unvented water storage Calorifiers. These Calorifiers are also provided with primary coils fed from the LTHW system.

Domestic Foul Water Sanitation

SHELL & CORE

Domestic sanitary fittings located in WC areas shall be connected into a fully ventilated system of drainage pipework. Anti-syphon and ventilation pipes shall be provided to prevent the loss of water within traps throughout the system. In all areas drainage pipework shall be accessible. Ground floor sanitary appliances shall be connected directly to the underground drainage system. Soil and waste pipes from upper floors will connect into the underground drainage system via main SVPs.

Stub stacks and AAVs to be used minimally throughout. Sanitaryware should be connected into SVPs where possible.

All SVPs should be fitted with slow radius bends at base of each stack. All stacks to be provided with rodding access 1200mm AFFL. Access shall be provided at all branches, changes of direction and connection to the drainage system. The system shall be designed and installed in accordance with BS EN 12056 series and the Building Regulations as a minimum. Where pipes pass through fire compartments all penetrations shall be fire sleeved.
Rainwater Systems

**SHELL & CORE | CAT A**

Rainfall intensity of 180 mm/hr.

SHELL & CORE

Rainfall intensities to be identified within BS EN 12056-3:2000 as per reference from current BCO guide specification.

A system of conventional rainwater gutters, outlets and down pipes shall be provided to drain all roof areas. All rainwater pipes shall be located in accessible positions for future maintenance should it be required.

Rainwater gutters and roofs shall be provided with a provision for overflow to protect the building fabric should the design rainfall intensity be exceeded and to indicate blockage of roof outlets and gutters.

Overflows shall be located where they are easily seen. Rainwater pipes will where possible be located in main riser ducts or located adjacent to structural columns and kept to a minimum in ceiling voids.

Access shall be provided at all changes of direction, branches and connection to the underground drainage system. On long vertical rainwater pipes access shall be provided at every other floor as a minimum. The system shall be designed and installed in accordance with BS EN 12056 series as a minimum. Where pipes pass through fire compartments, all penetrations shall be fire sleeved.

All rainwater pipework running through tenant space is to be acoustically clad.

Foul and Surface Water Under Slab Drainage

**SHELL & CORE**

The separate foul and surface water under slab drainage system will receive the above ground sanitation and rain water systems and will fall by gravity to the external systems. The foul water system shall discharge to the various drainage outfalls to the local authority’s system. The surface water system from the building will fall by gravity to the surface water attenuation tank.

The building foul water discharge from the basement level, below the level of the local authority outfall, shall discharge to a foul water pumping station. From the pumping station the foul water pumped discharge shall rise to high floor level and connect to the foul water gravity system.

The car park and loading bay drainage system shall pass through a petrol interceptor prior the connecting to the foul sump. From these sumps the waster products are pumped up to high level and shall connect into the foul water gravity system.

All systems of foul and surface water drainage shall be installed to BS EN 12056 series as a minimum and all local authority by laws.
ELECTRICAL ENGINEERING SERVICES

Supply Authority
Incoming Supply

A separate supply authority room shall be provided housing the ring main units. The ring main units will serve composite Low Voltage (LV) panels incorporating transformers located in the building.

Low Voltage Distribution

LV switchboards shall be fitted with power factor correction equipment.

The LV switchboards shall be constructed to form 4 type 5/6 as defined in BS EN 61439-2:2011.

All LV distribution cabling shall be Low Smoke Zero Halogen (LSOH) type, however, emergency systems cabling will also be fire rated.

Tenants’ supplies

Tenant electrical risers shall be provided in each core. The risers shall be provided with a rising busbar, which will serve the tenants’ distribution boards. Adaptable boxes will be provided to house CT meters to act as check meters on each floor. Tap off points will exist on the busbar, from which tenants can provide an additional board to derive their own supplies e.g. under floor power.

The tenant distribution boards shall be provided on each floor in each electrical riser i.e. within each possible split floor tenancy for FCUs, lighting etc.

Space within the risers and associated switch room space shall be provided on the lower levels of the building to permit the future installation by the tenant of their own independent and/or essential supplies.

Landlords supplies

Common service areas shall be supplied electrically from the landlord distribution boards, which shall be located within risers within the main and lift cores. The distribution boards will provide electrical power for local lighting, small power and mechanical services.

Small Power Installation

Landlord supplies shall be provided in core areas, as necessary to serve cleaners’ equipment, future hand dryers, water heaters etc. Surface mounted metal clad socket outlets shall be provided in plant rooms.

GPA will provide all small power within their areas including the under floor electrical installation.

Miniature circuit breaker type distribution boards shall be used throughout to serve lighting and general power circuits.

Distribution boards shall be provided with 25% spare capacity for future circuits for both landlords and tenants supplies.

The use of hardened PVC conduit in lieu of galvanised conduit is acceptable where regulations allow.

The use of plastic power sockets is acceptable.

All ring circuits and electrical items within shower rooms to be protected by RCBs.

CAT A  |  CAT B & C

The supplies at high level for fan coil units shall be provided and fed from the tenant distribution boards serving their demises. Consideration given for split floor demises.
Earthing and Bonding

**SHELL & CORE | CAT A | CAT B & C**

Earthing and bonding shall be provided in accordance with the 18th Edition of the IET Wiring Regulations (BS 7671:2018) and British Standard BS 7430:2011 +A1:2015 and local electricity supply authority regulations.

A TNS earthing system, as defined in BS 7671:2018 (The IET Wiring Regulations 18th Edition) shall be applied to the building.

A main earth bar shall be provided within the switch rooms for connection to building structure, piped services, HV and LV switchgear, transformers and plant.

From the earth bar two sets of earthing rods shall be independently connected via separate earthing conductors with corresponding test links.

Earth bars will also be located within riser cupboards for bonding of local services and structure.

Facilities for connection to low noise earth (clean earth) shall be provided within each of the tenant electrical risers.

Low Voltage Emergency Generator

**SHELL & CORE | CAT A | CAT B & C**

A separate landlord’s generator shall be provided to serve the essential supplies of the building. Under a mains failure the generator will start and supply power (after a 30 second to 1 minute interval) via auto-change-over switches to the emergency circuits.

The emergency supplies which shall be fed from the landlord’s generator are as follows:

- Firefighting lifts.
- Sprinkler and sump pumps.
- Smoke extract systems
- Fireman’s control panel.
- Fire detection and alarms.
- Sequential return of the passenger and goods lifts to the ground floor.
- Firefighting stair lighting.
- BMS head end.
- Oil circulating pumps.

Space shall be allocated in the building for the future provision of tenant generators. The space shall be adequate to house generators of a size capable of supporting client specified essential services load and an additional standby unit N+1.

Lighting Installation

**SHELL & CORE | CAT A | CAT B & C**

The lighting design will strive to achieve the architectural vision, promote commitment to sustainable design, and provide technical compliance with all relevant good practice lighting design guidance and local statutory legislation.

Lighting strategies are intended to promote the creation of a useful and visually appealing environment. Strategies shall be developed which respond to how general, ambient and task lighting can be balanced with architectural furniture layouts and space and zoning requirements.

Different lighting strategies shall be applied within different space-use types to create a sense of place and focus, as well as to allow for intuitive navigation to other areas.

Lighting shall focus on texture, colour and architectural finishes. Careful attention shall be given to lighting design and control to limit interference with multi-media walls, conference screens or glazed walls.

Bulk fuel storage shall be provided to serve the building (full load for 12 hours) with associated duty and standby pumps to serve both the landlord and future tenant generators.

Load bank connection facilities shall be provided to enable testing of the generators.
Lighting Installation continued

Strategies will address building occupant needs by:

» Promoting a safe and comfortable environment.

» Achieve light levels which meet the needs of required visual tasks.

» Be controlled in a user-friendly fashion to provide an optimum visual environment.

» Promote flexible use.

Design for internal lighting will follow requirements and recommendations provided in the following documents:

» BS EN 12464-1:2011 – Lighting of Indoor Workplaces

» Current BCO Guide Specification

» CIBSE Code for Lighting 2012 (superseded by the SLL Lighting Handbook, 2018)

» CIBSE Lighting Guide 7 – Office Lighting with the LG7 (2015)

» Building Regulations Part L requirements for England and Wales.

» Non domestic building services compliance guide for Scotland.

» Building Regulations (Northern Ireland) 2012.

Part L2a for new build and Part L2b existing buildings in England and Wales.

These standards and guides provide lighting characteristics and qualitative design metrics for all areas such as light levels, uniformity of light, glare, and colour temperature.

Careful consideration will be given in particular to the lighting control systems for how spaces are used and to allow for the maximum use of natural light on each floor, where available. Space use controls will utilise presence detection via PIR with time clock, manual override and flexible lighting control groups and zoning. High levels of natural light are expected to be available to areas adjacent to glazed façades and the controls system should consider daylight switching or dimming in perimeter areas for these floors.

Individual offices are to use absence detection with daylight controls if they have external windows.

Lighting on each floor will be provided by energy-efficient luminaires and use of high output LEDs for efficiency and control flexibility. Feature lighting elements will be incorporated into the design in some locations, responding to space type and intended space use.

The final design should minimise the types and quantities of light fittings and lamp sources used to ease future maintenance requirements. The long life from LED will also allow for the reduction of maintenance stores that would normally be expected.

Recommendations made in BREEAM are to be incorporated into the design. BREEAM reflects good practice guidance, even if ratings according to their criteria are not required to achieve an ‘Excellent’ rating, they are still to be adapted for long-term sustainability aspirations. It is important to identify these recommendations early in the design process to promote achieving a compliant building.

Emergency Lighting and Signage

A system of emergency lighting shall be provided throughout the building to permit safe escape during times of power outage.

All emergency lighting should be provided and installed so that building occupants can safely navigate through the building to an exterior location or safety point served by the public street lighting circuits. The emergency lighting system shall be supplied and installed in accordance with BS 5266-1:2016. BS 5266 series requires external emergency lighting to designated muster points.

Internal and external emergency lighting uses self-contained luminaires with three hour battery packs which are connected to and monitored by the iBMS either directly or via a designated control system. Dedicated non-maintained emergency luminaires shall only be used as a last resort if deemed necessary in certain areas to fulfill statutory requirements.
Emergency Lighting and Signage continued

**SHELL & CORE | CAT A | CAT B & C**

All light fittings that require emergency battery packs should meet with the relevant BS and manufacturers’ recommendations.

Provide an emergency lighting self-testing facility, which is to be monitored by the iBMS via the DALI control system or a separate self-testing control system.

The architect shall develop an emergency exit signage strategy to suit the fire exit strategy. Self-illuminated emergency exit signs are to be supplied and installed over all doors and at all changes of directions along all escape routes up to and including final exit locations.

**Task Areas**

**CAT A | CAT B & C**

Task areas are interpreted as standardised work and project spaces which will use a consistent approach. Luminaires will be arranged to provide general ambient light to defined spaces, with individually controlled task lighting provided to allow for personalisation and customisation of local brightness.

Finishes of luminaires will typically coordinate with the interior design and maintain a consistent appearance throughout.

**Areas with finished/suspended ceilings**

Lighting design developed in areas which have suspended ceilings shall comprise suspended LED luminaires with a direct and/or indirect distribution, surface mount or recessed and/or semi-recessed luminaires with good optical controls.

It is assumed that meeting rooms will have finished ceilings to ensure audible privacy allowing lighting to be integrated more fully within these smaller spaces.

**Areas without ceilings / with exposed services**

Lighting design developed in areas which have exposed services shall comprise suspended LED luminaires with a direct and/or indirect distribution. Alternatively, luminaires could be directly fixed to or suspended from exposed cable tray strategically arranged to run other services across the ceiling neatly.

**Office Areas**

**CAT A | CAT B & C**

Current recommendations for office lighting consider two standard target bands:

- 300+ lux which is assumed to be sufficient for undertaking the majority of tasks; and
- 500+ lux for activities that require a high degree of visual clarity

Typically, a 'target maintained' average falls between 300 – 500 lux. Standard office lighting is often designed to provide 300 lux with the ability to increase local light levels through local task lighting or though lighting controls.

**CAT B & C**

To meet Wellness ‘Silver’ requirements at least one of the following is to be met:

a. Light models or light calculations (which may incorporate daylight) show that at least 250 equivalent melanopic lux is present at 75% or more of workstations, measured on the vertical plane facing forward, 1.2m (4ft) above finished floor (to simulate the view of the occupant). This light level is present for at least 4 hours per day for every day of the year.

b. Electric lights provide maintained illuminance on the vertical plane of equivalent melanopic lux, greater than or equal to the lux recommendations in the Vertical (Ev) Targets for the 25-65 category in Table B1 of IES-ANSI RP-1-12. For example, Reception Desks are provided with 150 equivalent melanopic lux from the electric lights.
Meeting Rooms
CAT B & C

Current recommendations for meeting rooms lighting consider two standard scene sets:

- 300+ lux which is assumed to be sufficient for undertaking the majority of tasks; and
- 500+ lux for activities that require a high degree of visual clarity

Individual meeting rooms, quiet rooms and conference rooms create opportunities for more specialised lighting design. Thoughtful design in these areas will help to contribute to welcoming working spaces and a combination of downlights, indirect ceiling cove lighting and decorative pendants shall be used within these spaces to create flexible light scenes.

Special consideration should be given to the lighting of video conference rooms where requirements are more stringent and need to be confirmed by the AV specialist. Typically, vertical illumination targets range from 400-750 lux on the faces of participants and illumination should be as even as possible in the ‘field of view’.

LED sources provide additional flexibility with output and control over traditional light sources both in application and scene setting. Lighting control will be provided by Scene Set Controls with auto ON/OFF responding to occupancy and allow for BMS interface with the A/C control.

Public Facing Areas
CAT A | CAT B & C

Light levels recommended for public facing areas are aligned to CIBSE SLL guidance and address the architectural aspiration to achieve the appropriate solution.

Public facing areas are expected to have a variety of design requirements, including working towards achieving the design aspiration for more public spaces. The following areas are considered to be public facing spaces:

- Cafe, CAT B & C.
- Events Space, CAT B & C.
- Showcase Space, CAT B & C.
- Conference Room, CAT B & C.

The lighting for these spaces shall focus on aesthetic and architectural aspects, using feature lighting techniques to enhance materials and details. These techniques create focal points and spectacle, communicating a sense of quality and prestige.

The lighting design within these spaces is the result of collaborative effort as they depend on the interior design aspiration to create harmony and ambiance. The final lighting solution combines functional architectural lighting with accent lighting, decorative object lighting, and feature lighting elements.

WCs and Showers
SHELL & CORE

Current recommendations for WCs and showers include:

- 200+ lux for open spaces.
- 100+ lux for cubicles.
- 200 lux for disabled WC and shower.
- Shower lights protected by an RCBO.

Lighting of WCs and showers shall comprise general illumination to common areas, vanity lighting, and cubicle lighting. Vanity areas and showers shall be provided with the appropriate ingress protection rating (IP) for the areas that luminaires will be installed and be appropriately sealed against water vapour.

General and cubicle lighting shall be provided by recessed LED downlights and/or linear LED strips concealed within architectural details.

Vanity lighting shall be provided by either concealed LED strips, wall mounted decorative luminaires or by recessing and/or surfacing mounting luminaires into ceiling soffit.

The lighting control shall facilitate presence detectors throughout.
Circulation and Stairs

Current recommendations for circulation areas include:
» 100+ lux, although it is not uncommon for 150 lux to be targeted.

Lighting for general corridors shall be provided by recessed or surface mounted LED downlights, while the stairs will utilise surface mounted luminaires. Control will be provided by presence detection for all circulation areas and illuminate set areas or zones, as agreed.

Circulation areas shall be illuminated for the zone that is being travelled in plus the zone before and behind once presence has been detected. Stair cores shall illuminate one floor up and one floor down from the level that presence is detected.

Plant Rooms

Current recommendations for plant room areas (unless otherwise stipulated) include:
» 200+ lux
» All plant and switchgear to have 15 lux on the work plane for emergency lighting in accordance with BS 5266 series.

Plant rooms will be provided with an LED batten style luminaire enclosed to protect against accidental impact, dust and liquid splashes, as required.

Works Associated with Mechanical Plant

Power supplies shall be drawn from Individual Starter Isolators or Motor Control Centres to mechanical plant. All equipment fed from MCCS shall be provided with local lockable isolating facilities to enable safe maintenance operations.

The chillers shall be supplied with separate electrical supplies from the main low voltage switchboard.

Field sensors and controls shall be wired to the Building Management System panels via dedicated cable trays/trunking.

External Lighting

External security and accessibility lighting shall be provided. In addition, external feature lighting shall be provided to the landscaping, main entrance and façade, the extent of which shall be agreed with the architect.

External lighting shall be provided to the building façades and entrance areas, the extent of which shall be agreed with the architect. Lux control sensor on north face of building to control ON/OFF times.

Lighting Control

For energy conservation purposes and compliance with statutory legislation, all lighting circuits should be automatically switched OFF or DIM for daylight energy-saving and automatically switch OFF in areas that are not in use. The lighting control system shall also test and monitor the lighting system and report on malfunction or unoperational.

An intelligent Digital Addressable Lighting Interface control system (DALI) with individually addressable and compatible luminaires shall be used throughout the building and shall connect to the IBMS.

The control system shall also allow programmable timers to be used in all areas which use presence detection. The control system shall be capable of controlling exterior lighting using a remote photocell to switch ON and OFF. In addition to an astronomical timeclock override, in the event external lighting is required to DIM or turn OFF during the hours of darkness.

Organic response systems can be considered, subject to cost benefit studies.
Lightning protection shall be provided in accordance with BS EN 62305-1:2011; BS EN 62305-2:2012; BS EN 62305-3:2011 and BS EN 62305-4:2011.

Steel framed buildings
For steel-framed buildings it is acceptable that the structure be utilised as far as practicable as part of the lightning protection system.

The steel columns shall be utilised as the down conductors, this structure must provide good electrical continuity such that there is a low resistance earth path from the top to the bottom.

A bonding connection shall be required at the top and bottom of each steel column to connect the air termination network at roof level and the earth termination system which may include foundation earth electrodes.

Concrete structures
The reinforcing bars of the steel reinforced concrete of the building structure shall be utilised as far as practical as part of the lightning protection systems.

An air termination network shall be provided at roof level and will consist of PVC covered aluminium tapes or the roof decking (should this prove suitable). All metallic items of equipment, services and roof coverings at or above roof level shall be bonded to the network.

The reinforced concrete pile foundations could be utilised as the earth electrodes.

It shall be necessary to measure the newly formed foundations to establish whether they are adequate alone or whether earth electrodes shall be required in addition. If earth electrodes are required, earth electrode pits shall be provided.

Specialist Areas
Non-standard floors such as those containing cafe and meeting facilities will require significant modifications to the ceiling and air conditioning services within the ceiling void. GPA to review with commercial, developer and design consultants through early RIBA stage 0 to establish whether it is beneficial to leave these floors as shell and core rather than to install a CAT A design which will be stripped out at CAT B.
ALLOWANCE FOR TENANT PROVISION

**Cafe**  
**CAT A | CAT B & C**

A plant space allowance to service an cafe and associated kitchen prep space shall be made within the riser and plant area allocation. Early provisions to be reviewed on a case-by-case basis dependant on location, structural restrictions and fit-out costs.

**Electrical power**

It is assumed that the majority of the cooking shall be carried out by gas, however, the base build small power allowance has been increased to serve the cafe. Provision to distribute the additional allowance shall be made in the form of spare cubicles on the main LV panel and the identification of a route for cabling.

**Ventilation**

Provision is made in the central core within the building for the installation of ventilation ducts to provide supply air and extract to meet the anticipated needs of kitchen prep and cafe areas.

An interlock of the ventilation system to the gas supply serving the cooking equipment shall be installed so that, in the event of air flow failure, the gas supply is switched off. The supply fan shall also be isolated when a fire suppression system is activated in fire mode. This will involve the fitting of an automatic solenoid valve in the gas supply pipe work and an airflow-sensing device such as a pressure switch, vane switch or torque switch. The inclusion of this interlock is a requirement for all new powered extract systems. For existing installations where cooking equipment replacement is like for like, no action is required. However, the contractor shall quote for the inclusion at all times – this is in compliance with BS 6173 and recommended in DW172.

Allocation in the riser has been sized to allow to ventilate the cafe and kitchen prep space at the following rates:

<table>
<thead>
<tr>
<th>Cafe Prep</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Supply</td>
<td>25 Air Changes per hour</td>
</tr>
<tr>
<td>Extract</td>
<td>40 Air Changes per hour</td>
</tr>
</tbody>
</table>

NB: The rates above assume that the supply air to the cafe shall be extracted via the cafe and kitchen prep.

This should be regarded as a minimum for comfort in the absence of any other information. Dedicated make up air systems to be 85% maximum, of the extract flow rate (from DW172).

The exact extract rate should be calculated appropriately in line with DW172 requirements when cafe fit details become available.

**Cafe**

Supply: 12 l/s/p 1 person/2.0m²

Extract: 12 l/s/p 1 person/2.0m²

Provision for cafe extract equipment is made at roof level; however, supply air handling plant will need to be located in a plant area created within the cafe and kitchen prep area.
**Public health**
Space for a dedicated boosted potable cold-water riser shall be provided to serve the future cafe and kitchen prep areas.

Space shall be provided in risers for future gas and water services risers.

Space is allocated at roof level for installation of tenant’s gas fired hot water generating plant with provision in the riser for distribution pipework to serve the kitchen prep. Space will also be provided to install additional solar heating panels.

Waste stacks shall be provided in the core service riser for connection by the tenant to sanitary and cafe equipment.

NB: Stacks shall be sized to allow for the connection of the future cafe, tea points, and installation of additional WCs to meet an increased floor occupancy density.

**Gas**
Services have been provided assuming that the cooking facilities shall be predominately gas heated. A separate connection to the building’s gas distribution system shall be provided at the main incoming gas room for future connection to a tenant dedicated gas rising main.

**Electrical power**
Provide power as detailed by the cafe consultant.

**Ventilation**
Provide plant and fire rated distribution ductwork as a minimum of the following ventilation rates:

<table>
<thead>
<tr>
<th>Kitchen Prep</th>
<th>Supply</th>
<th>25 Air Changes per hour</th>
</tr>
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<tr>
<td></td>
<td>Extract</td>
<td>30 Air Changes per hour</td>
</tr>
</tbody>
</table>

NB: The rates above assume that the supply air to the cafe shall be extracted via the cafe and kitchen prep. Where the cafe consultant has selected an extract canopy with extract rates in excess of the rates above these rates shall be increased to suit the hood requirements.

Carbon filters are to be used on extract plant where there is a risk of smells to neighbouring buildings.

Canopies are to contain ultra violet filters.

---

**Public health**
Extend potable cold-water, drainage and gas to the cafe areas.

A dedicated tenants gas fired hot water generating plant shall be provided.

**Refreshment Hubs**

**Cafe**

<table>
<thead>
<tr>
<th>Supply</th>
<th>12 l/s/p</th>
<th>1 person/2.0m²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extract</td>
<td>12 l/s/p</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 person/2.0m²</td>
</tr>
</tbody>
</table>

**Cafe continued**

**CAT A | CAT B & C**

**Cafe**

**Public health**

**Ventilation**

**Refreshment Hubs**

**CAT A**

Provision shall be made within each core for tenant provision and connection of drainage and water services to serve tea points or vending areas.

**CAT B & C**

Provide drainage and water services to serve tea points and vending areas.
Security and Resilience

Security Design Principles

SHELL & CORE | CAT A | CAT B & C

Ensuring sufficient security of the personnel, physical location and assets (including information) within a government building is an essential requirement.

Project managers must refer to the Security and Resilience Guidance.

Design to be in accordance with CPNI recommendations. Design to be carried out by CPNI accredited designers. The following headings summarise the security measures expected to be delivered as standard at a government occupied building. These will be supplemented by location and tenant specific needs.

Refer to our Physical Security and Resilience Design Guide for further detail.

CAT A | CAT B & C

Reasonable allowance should be made to reflect potential costs of these requirements, with more detailed pricing and requirements to be developed with the successful bidder.

CAT B & C

On the main entrance speed gates install Swipe Card controls and data storage to CPNI recommendations.

Physical Security Standards

SHELL & CORE | CAT A | CAT B & C

General

A new or refurbished building with physical security built into the design that will protect assets and enable modern ways of working.

Layout

A layout that, through design, mitigates the risks of having vulnerable space located at the base of the building.

Building

In addition to meeting UK Building Regulations, protective, preventative and deterrent measures reduce the likelihood of damage and injury being caused to assets.

Reception

Protection of publicly accessible space where assets are vulnerable to a number of threats. Security measures protect staff, prevent or delay unauthorised incursion into government areas and support the earliest detection and verification of potential threats.

Security control room

A secure facility (onsite or remotely) where security functions are centralised and provide the ability to monitor and control security measures, communicate and coordinate an appropriate response to the threat.

Guard force

A physical guard presence that deters, provides additional surveillance and is able to respond quickly to incidents.

Secure storage facilities

Protect government assets at an appropriate level for the material classification.

Mail/deliveries management

Controlled delivery routes into a building to mitigate against threats posed from mail, delivery vehicles and associated personnel.

Vehicle management

Measures that protect against vehicles being used as a weapon, which will protect the building and staff.

Incident response

Measures to protect people, delay hostile and standard threats and to communicate clearly with people internally and the emergency services.
Resilience

Resilience and business continuity will be considered, along with the need for “security-mindedness” at an early stage of a government building project. Physical resilience measures will be considered using a risk based approach on a site by site basis.

The approach will depend on the nature of the client’s requirements: departments that play a major role in crisis management or whose services are time-critical will require a greater level of resilience and security-mindedness than departments that do not fit these criteria. GPA will work with customers to ensure that government buildings are designed with this balance between operational need and cost in mind.

Minimum requirements

» Compliant with Security Policy Framework
» Broadband and GovWiFi
» Telephone – as least one landline and an ISDN line
» Audio and or video conferencing
» Printing, copying and shredding ability
CORE & BUILD

MER – SER Through Floor Cable Routing

**CAT A | CAT B & C**

During the build phase the provision for IT duct routes should be installed with sufficient capacity for the proposed cabling. This should be as direct as possible with minimum bends possible and any bend must meet telecom standards.

MER

**CAT A | CAT B & C**

These should be built with a UPS to provide resilience power; the batteries should have enough capacity to provide 30 minutes supply to cover generator start-up time. If the building does not have a backup generator then this capacity should be increased to 1 hour to allow the graceful shutdown of the core network. The UPS should also have the capacity for provide external monitoring and status information to the core network Infrastructure. These should be located in a separate room to provide a firebreak and both rooms should have independent fire suppression systems that are appropriate to the equipment in operation.

The MER should be sized to allow for the minimum:
- Minimum of 2 x 42U server racks
- Patching racks for the number of SER within the building.
- 1 x 42U for client patching if the MER is also use to provide floor port connectivity.
- 1 x 42U rack per floor, this should be increased to allow for 2 SERs per rack if SERs per floor is >2
- CAT3 Krone frame

Inter MER cable Ducting trays should be installed.

SER

**CAT A | CAT B & C**

Floor SERS do not require a room UPS, but should have diverse power and should be sized to allow for:
- 1 x 42U rack for equipment.
- 1 x 42U rack to support cable patching number dependant on the port density of the floor.

MER Power Provision

**CAT A | CAT B & C**

The MER should be considered as part of the critical operational infrastructure for the government building. For this reason, it should be provided with dual and resilient power feed and also have a supply from any building generator and provide power to the IT systems and cooling for the MER.
OTHER CONSIDERATIONS

BMS
SHELL & CORE | CAT A | CAT B & C
As Smart Building and remote management systems technology evolves, consideration must be taken about the security and management of these systems. In future, these systems may need to be integrated with other systems so an open standards approach must be considered. Good cyber-hygiene for this systems is mandatory.

MER–MER Cross Connect
CAT B & C
The MERs should have connecting fibre and copper this should be as a minimum:
- 30-60 pair CAT3/voice cabling.
- 48 Cat6 ports (if cable route is less than 80 Meters).
- 48 Core OM4.
- 24 pair OS 1/2.

MER–SER
CAT B & C
Each SER should connect to both MERs to provide diverse routes for the core network. The minimum cabling should be as flows
- 20-30 pair CAT3/voice cabling.
- 48 CAT6 ports (if cable route is less than 80 Meters).
- 48 pair OM4.
- 12 pair OS 1/2.

SER to Floor Ports
CAT B & C
A key principle to encourage the move away from fixed desk phones and to wireless networking the principle of 80% ratio of wired points per desk.

Outside of this the CAT B fit should provide CAT6 cabling and:
- 2 network points per GovWiFi Access Point location.
- Single network point per CCTV Location.
- 2 network points per digital signage location.

Basic Meeting Room Fit-out
CAT B & C
The technology delivery should be done by the ICT provider, they should be consulted by the fit-out contractor during the design.

The CAT B contractor should provide all the enabling works such as network cabling, HDMI, A/V and USB between the TV locations and meeting room tables, and the installation of the VESA standard wall bracket to the appropriate size for the screen specified.

It is assumed that all meeting space types (bookable and non bookable) must have provision for a CAT6 point to allow for future introduction of tablets or digital signage. The design and cable requirement will be dependent on the technology specified for the room but as a minimum room should have:
ICT

Network point
» 1 x outside meeting room for meeting tablet.
» 2 x behind TV or screen.
» 2 x per floor box under table.
» 1 x ceiling Mic location if IP Mic are used.

A/V connection
» Between the screen location and meeting room table there should be as a minimum.
» HDMI connection.
» USB-B.
» Trunking should be sized to allow the replacement of cable and connectors without having to damage and reinstate the wall finish.

Additional Spaces Fit-out

Main comms room
Floor finishes: Anti-static raised access floor to clause: SER/MER rooms
Wall finishes: Painted wall finish to clause: General decoration
Ceilings: CAT A suspended ceiling.
Fixtures: None
Furniture/loose item: None

ICT SER
Floor finishes: Anti-static raised access floor to clause: SER/MER rooms
Wall finishes: Painted wall finish to clause General decoration
Ceilings: CAT A suspended ceiling.
Fixtures: None
Furniture/loose items: None

ICT build room
Floor finishes: Anti-static raised access floor to clause: SER/MER rooms
Wall finishes: Painted wall finish to clause General decoration
Ceilings: CAT A suspended ceiling.
Fixtures: None
Furniture/loose items: None

Furniture/loose items:
» Task chairs to clause: Task chair: general
» Desking to clause: Workbench: desks
» Lockers to clause: Lockers
» Storage cabinets to clause: Storage cabinet with hinge doors

ICT MER
Floor finishes: Anti-static raised access floor to clause: SER/MER rooms
Wall finishes: Painted wall finish to clause: General decoration
Ceilings: CAT A suspended ceiling.
Fixtures: None
Furniture/loose items: None

ICT store
Floor finishes: Sheet rubber finish to clause Rubber sheet flooring
Wall finishes: Painted wall finish to clause General decoration
Ceilings: None
Fixtures: None
Furniture/loose items: None

CORE & BUILD

OTHER CONSIDERATIONS

BMS
IT Cabining Infrastructure
The MER & SER Racking
MER-MER Cross Connect
MER-SER
SER to Floor Ports
Basic Meeting Room Fit-out
Additional Spaces Fit-out

SHELL & CORE
CAT A
CAT B & C
BMS

IT Cabining Infrastructure
The MER & SER Racking
MER-MER Cross Connect
MER-SER
SER to Floor Ports
Basic Meeting Room Fit-out
Additional Spaces Fit-out

IT TECHNICAL STANDARDS CONTENTS
Acoustics

THE ACOUSTIC ENVIRONMENT

External noise surveys to be undertaken in line with current BS/BCO guidance. Surveys to provide a baseline measure to aid internal acoustic analysis for noise sensitivity and background noise measures. Full octave band measurements should be recorded.

Finishes

SHELL & CORE | CAT A | CAT B & C

Acoustically absorbent Class A ceilings (ref: BS EN ISO 11654:1997) to cover area equal to the floor area in open plan spaces with plasterboard margins. Room height to be no greater than 3m. Where exposed soffits are used additional absorption will be required.

Carpeted floors having good sound-absorbent properties and are a desirable floor finish to control impact noise, such as footfall.

Reverberation time limit criteria are presented as an average of the 500Hz, 1kHz and 2kHz octave band centre frequencies.

Internal Sound Insulation

SHELL & CORE | CAT A | CAT B & C

- Sound level difference between floor to floor or demise to demise should be at least 45dB (S&C) or 48dB (if fitted to CAT A) and capable of being upgraded at CAT B to at least 53dB without affecting warranties.

- Flanking transmission – 45 dB Dnf,w with potential to be upgraded.

To meet current and appropriate BCO/BS/ISO/EN standards for acoustic specifications.

Location | Reverberation Time Limit (seconds)
--- | ---
Task areas | 1.0
Reception area | 1.5
WCs | 1.5
Other non-critical spaces | Not applicable
To attain the required sound insulation, between adjacent cellular spaces and meeting rooms, partitions rated 52 to 58 dB Rw must be constructed from slab to structural soffit.

With the proposed double glazed partition system to office fronts, it is not expected to be practical to run the partition from slab to soffit, as the interface with the suspended ceiling and raised access floor would be problematic. As a result, acoustic void barriers need to be included in the ceiling and floor void above all glazed office fronts. It is recommended that these should be installed such that the ceiling line is broken at the head of the partition to minimise noise flanking via this route. The ceiling and floor void barrier should attain the following specification:

> **Weighted sound reduction index of at least 48dB Rw:** This can be attained with two void barriers spaced by 100 mm, the first made from a foil faced rockfibre insulation with central heavy membrane to give 18 kg/m² total sufficient mass. The second barrier can be a single vertical hung barrier circa 40 mm thick to give a total of 10 kg/m² total.
### Acoustics

**Partitioning Performance**

**CAT B & C**

<table>
<thead>
<tr>
<th>Minimum Weighted Sound</th>
<th>Example Partition Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>2 x 12.5mm high density plasterboard (e.g. Soundbloc) each side of 70mm acoustic stud (e.g. British Gypsum ‘AcouStuds’), 25mm Isowool 1200 in cavity with a total nominal partition thickness of 122mm.</td>
</tr>
<tr>
<td>56 Movable wall</td>
<td>Movable wall sound insulation inclusive of panel head track and drop seals. Typically a side stacking, composite, acoustically specified, movable wall system with manually operated seals would be suitable such as the Accordial Premiwall or equivalent.</td>
</tr>
<tr>
<td>54</td>
<td>2 x 15mm high density plasterboard (e.g. Soundbloc) either side of a 70mm metal stud with 25mm Isowool 1200 in cavity.</td>
</tr>
<tr>
<td>52</td>
<td>2 x 15mm high density plasterboard (e.g. Soundbloc) either side of a 70mm metal stud with 25mm Isowool 1200 in cavity.</td>
</tr>
<tr>
<td>48 Glazed meeting/Office front</td>
<td>Double glazed office front system with wide spaced frame to hold 1 x 2mm glass and 1 x 12.2mm laminated glass separated by at least a 62mm cavity such as the Optima Revolution 97 or 2 x 12.5mm of standard density wallboard either side of a 70mm metal stud with 25mm insulation in the cavity.</td>
</tr>
<tr>
<td>41 door</td>
<td>Solid core acoustic doorset inclusive of substantial frame and seals, typically 4.7mm thick solid timber door and rebated frame including mechanical drop down threshold seals such as the Huet Club 39 Medium Performance Timber Doorsets.</td>
</tr>
<tr>
<td>38 door</td>
<td>Solid core acoustic doorset inclusive of frames and seals, likely to include full perimeter acoustic seals and mechanical threshold.</td>
</tr>
</tbody>
</table>

Examples of partitioning construction to meet partition acoustic ratings.

Note that these examples are to achieve acoustic performances only and security considerations may also need to be taken into account.

#### External Noise Intrusion

**SHELL & CORE \ CAT A \ CAT B & C**

Internal ambient noise levels are influenced by external noise ingress, predominantly from road traffic, and by noise from within the building, such as from building services.

The following levels shall be achieved within the various spaces:

<table>
<thead>
<tr>
<th>Space</th>
<th>Indoor Ambient Noise Level Design Range $L_{Aeq,T.(dB)}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boardroom</td>
<td>35</td>
</tr>
<tr>
<td>Meeting rooms</td>
<td>40</td>
</tr>
<tr>
<td>Open plan office</td>
<td>45</td>
</tr>
<tr>
<td>Circulation/entrance lobby</td>
<td>45</td>
</tr>
<tr>
<td>WCs</td>
<td>50</td>
</tr>
</tbody>
</table>
Acoustics

THE ACOUSTIC ENVIRONMENT

External Noise Intrusion continued
SHELL & CORE | CAT A | CAT B & C

In addition, LAmax (fast) noise ingress levels should not normally exceed 55 dBA in open plan and/or speculative offices or 50 dBA in cellular offices. In the case of naturally ventilated buildings, it may be appropriate and/or necessary to accept higher external noise intrusion levels than shown above (e.g. +5 dB relaxation in maximum ventilation mode provided occupants have the choice). Rain noise should be controlled so it does not exceed 60 dBA LAeq during heavy rainfall (as defined within BS EN ISO 140-18:2006).

External noise criteria
As per DS/EHO requirements, noise levels at the boundary of the site are not to be increased. Levels to be determined by an ambient noise survey and tested for compliance on completion. An allowance to be made for tenants plant. Existing buildings shall be required to demonstrate compliance with the above criteria.

To current and appropriate BCO guide specification and BS/ISO/EN Standards.

Building Services Noise to Internal Areas
SHELL & CORE | CAT A | CAT B & C

To current and appropriate BCO guide specification and BS/ISO/EN Standards.

Services should be designed to accommodate partitioning on an agreed planning grid.

Building services should be controlled to meet the following ratings:

<table>
<thead>
<tr>
<th>Space</th>
<th>Building Services Noise Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference room</td>
<td>NR35</td>
</tr>
<tr>
<td>Meeting rooms</td>
<td>NR35</td>
</tr>
<tr>
<td>Cellular offices</td>
<td>NR35</td>
</tr>
<tr>
<td>Open plan office</td>
<td>NR40</td>
</tr>
<tr>
<td>Circulation/entrance lobby</td>
<td>NR40</td>
</tr>
<tr>
<td>WCs</td>
<td>NR45</td>
</tr>
<tr>
<td>Loading bays/underground</td>
<td>NR55</td>
</tr>
</tbody>
</table>

Building Services Noise to External Areas
SHELL & CORE

To meet BS 4142:2014 guidance and any tenant or local authority requirements typically based on existing measured background noise levels.

Emergency and Standby Plant
SHELL & CORE

To meet BS 4142:2014 guidance and any tenant or local authority requirements.

Vibration
SHELL & CORE

Vibration transfer from building services plant to internal areas should not be more than 0.01 m/s² peak acceleration (based on Wb weighting as defined in Clause 3.3 of BS 6472-1: 2008).

Vibration transfer from intermittent sources, such as underground trains, to internal areas should not lead to re-radiated noise level in occupied cellular offices and meeting rooms of more than 45 dBA Lmax (fast) or 50 dBA Lmax (fast) for open plan offices.

Lift and escalator noise and vibration criteria, including within the lift car, lift lobbies and adjacent office areas – should be controlled to meet the requirements.
Vertical Transportation

Lifts and Escalators
SHELL & CORE

The provision of vertical transportation systems in multi-storey office buildings is critical to their operation. These include: passenger lifts; firefighting lifts; evacuation lifts; goods lifts and escalators to be reviewed on a case-by-case basis.

Passenger lifts shall meet the current BCO guide specification and performance requirements. These shall include but not be limited to:

- Lift calling management system to be included and linked to appropriate call out response team agreed between developer and GPA FM teams.
- Provide an up-peak handling capacity of at least 12% of the design population in a five-minute period with 85% up, 10% down and 5% inter-floor traffic demand.
- Provide an up-peak average waiting time across all floors served of no more than 25s. Average waiting times of up to 30s may be acceptable in cases where the average time to destination is 80s or fewer.

- Provide an up-peak average time to destination across all floors served of no more than 90s. Average time to destination of up to 110s may be acceptable where the morning up-peak average waiting time is fewer than 25s.
- Provide a 2-way handling capacity of at least 13% of the design population in a five-minute period with 45% up, 45% down and 10% inter-floor traffic demand. Where buildings offer cafe facilities in-house, assume this to be the case, a greater inter-floor allowance of 20% should be made with the commensurate reduction in up and down traffic.
- Provide a two-way average waiting time across all floors served of no more than 40s.
- For all traffic conditions the average car loading in any five minutes including scenic lifts should not be more than 80%, allowing 0.21m² of floor space per person.
- Where not all lifts in a group serve all floors, care should be taken to check that lift performance remains acceptable to and from the specific floors with restricted lift service.

Goods Lift
SHELL & CORE

A minimum of 1 No. electric traction goods lift (between 2000 and 2500 kg) shall be provided serving all floors including roof plant room and basement.

Firefighting Lift
SHELL & CORE

10 persons, 630kg firefighting lift shall be provided within each core of the building, (subject to agreement with the local authority). The firefighting lifts shall be installed in accordance with BS 5655 series and BS 9999:2017.

Fire Evacuation
SHELL & CORE

The use of either an evacuation lift or a conventional lift providing the functionality of an evacuation lift should be incorporated into an evacuation strategy. Conventional passenger lifts that are provided to evacuate mobility impaired persons in an emergency will also meet the relevant recommendations in BS 9999:2017. Where firefighters lifts are used for evacuation, they will conform to BS EN 81-72:2015 and BS 9999:2017.
Structural Fire Resistance

The principal aim of structural fire protection in buildings is the preservation of life; integral to this is the protection given to the building itself. Structural fire protection will limit the temperature increase in structural components. Limiting complex thermal effects – such as thermal expansion of members and the degradation of material strengths. This controls the risk to occupants in the building during a fire, reduces the risk to firefighters and reduces the danger to people in the vicinity of the building in relation to falling debris. Ultimately structural fire protection can prevent buildings collapsing and should be reviewed on a case-by-case basis, dependent on location and building height.

**Pros and cons of the two main protection systems for steel**

<table>
<thead>
<tr>
<th>Board protection</th>
<th>Intumescent paint protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pros</strong></td>
<td><strong>Pros</strong></td>
</tr>
<tr>
<td>Drytrade</td>
<td>Can be applied off site to assist with program</td>
</tr>
<tr>
<td>Can combine fire protection and architectural cladding</td>
<td>Allows protected structure to be exposed aesthetically</td>
</tr>
<tr>
<td><strong>Cons</strong></td>
<td><strong>Cons</strong></td>
</tr>
<tr>
<td>Difficult to apply to circular sections</td>
<td>Structure and services must not intrude into the expansion zone</td>
</tr>
<tr>
<td>Difficult to protect where services penetrate cellular beams</td>
<td>On site applications is a wet trade</td>
</tr>
<tr>
<td>Boards are manufactured in discrete sizes so material thickness may not be optimal</td>
<td>May require re-applications to damaged areas</td>
</tr>
<tr>
<td>Protection may be compromised by clamping services or secondary steelwork to protected members</td>
<td></td>
</tr>
</tbody>
</table>
**Guidance and Assessment**

**SHELL & CORE**

The most common way to specify fire protection requirements is to follow the guidance in Approved Document B (or the Scottish Technical Handbook or Technical Booklet E in Northern Ireland). This guidance is assumed to be conservative for traditional building designs, but it does not address the real behaviour of a building structure when exposed to a severe fire. Therefore, the building is assumed to be ‘safe’, with no specific evidence of robustness of the structure against fire.

An alternative to following simple guidance is to conduct a performance based structural fire engineering assessment of the building. The current design tools for such assessments are based on large scale building tests conducted at the Cardington facility. This approach allows the design team to fully understand the response of the building to a fire and may suggest design details which can enhance the robustness of the structure.

Consideration should be made, and guidance sought with respect to the building being treated as an asset and the level of fire protection that is deemed necessary and the insurance requirements for property.

**Façade Fire Resistance**

**SHELL & CORE**

A number of different documents are used in the UK to provide guidance on how to comply with Part B of the Building Regulations. In England, Approved Document B (AD B), or BS 9999: 2017 Code of practice for fire safety in the design, management and use of buildings, are used. In Wales, a different edition of AD B is used, and in Scotland, the equivalent guidance is taken from the Technical Handbooks.

These guidance documents include the same recommendations for insulation in external walls, i.e. the external envelope should not provide a medium for fire spread if it is likely to be a risk to health or safety.

- For any building less than 18m high, no guidance is provided which limits the façade insulation material.
- For buildings with a storey of 18m or more in height.

All insulation products in the external wall construction should be non-combustible (e.g. mineral wool) or of limited combustibility.
### Fire

#### SAFETY & SECURITY SERVICES

**External Hydrant Main**

**SHELL & CORE**

Provision shall be made to serve hydrant locations from the incoming site water main.

**Dry Riser**

**SHELL & CORE**

- A riser installation shall be installed to BS 5306-1:2006.
- A dry main shall be provided to the firefighting core within the building with a landing valve at each level including the roof.
- The dry risers will incorporate a two-way breaching inlet, forming the fire brigade inlet point, which shall be located on the face of the building at a location to be agreed with the District Surveyor.
- A dry dropper shall be provided to serve the lower levels.
- A test point shall be provided at roof level.

Wet and dry riser installations shall be reviewed on a case-by-case basis with consideration to the building structure, cost, programme deliverables and local authority fire strategy.

**Sprinkler Protection Systems**

**SHELL & CORE**

Where required by building control a sprinkler system shall be designed fully in accordance installed with BS EN 12845:2015; BS 5839-1:2017 with later amendments including the latest LPC bulletins, and any insurance company regulations.

The system shall be to Ordinary Hazard Group III and be suitable for life safety, or as advised by the fire consultant.

Coverage shall be provided in accordance BS EN 12845:2015 and as advised by the fire consultant an LPC 1048 certificate or conformity shall be provided by the installing contractor upon the completion of the project.

The system for the building shall be fed from a dedicated storage tank at ground or basement level. The building sprinkler pumps and alarm valves will also be located at low level within the tank room.

The building alarm valves will each incorporate a valve assembly with a life safety system by-pass.

The systems will incorporate monitored zone isolation valves with flow switches to each branch and these shall be connected to the fire alarm and monitoring system.

The systems will incorporate test drains which shall discharge over gullies.

Sprinkler system pipework shall be routed from the alarm valves to the core risers.

Where sprinkler pipes are routed through areas not protected by sprinklers, the pipe work shall be provided with 2-hour fire resistant insulation.

Areas which are not provided with sprinkler protection, shall be provided with cut off heads at the exits and entrances from and into the unprotected areas.

It is recommended that sprinkler protection systems are always considered. A risk assessment and cost benefit analysis should be undertaken. If a sprinkler protection system is considered unnecessary, the decision will need to be treated through the exceptions management process and supported by evidence from the risk assessment and cost benefit analysis.

Industry accepted fire stopping installations maintenance and management systems to be certified and presented to FM suppliers with hard copy records retained with O&M manuals for future reference.

Fire stopping to conform to British and EN Standards applied at date of design.

Design consideration into future expansion to include for additional dampers and ducting through compartmentation boundary walls.

### STRUCTURAL FIRE RATING

<table>
<thead>
<tr>
<th>SAFETY &amp; SECURITY SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Hydrant Main</strong></td>
</tr>
<tr>
<td><strong>Dry Riser</strong></td>
</tr>
<tr>
<td><strong>Sprinkler Protection Systems</strong></td>
</tr>
<tr>
<td><strong>Fire Detection and Alarms Installation</strong></td>
</tr>
</tbody>
</table>
Fire Detection and Alarms Installation

A holistic approach to security and fire evacuation is recommended, particularly where there may be public facing areas.

Each building shall be provided with autonomous fire detection installations with automatic detection in plant areas, lift lobbies and break glass call points on all escape routes within the cores and plant areas in accordance with an L1 installation of BS 5839-1:2017.

A voice evacuation system shall be provided to the core and plantroom areas and configured to suit phased evacuation.

The fire detection and alarm systems shall be fully addressable monitored type; mains powered with battery backup.

Assessment of doors requiring hold back devices should be undertaken and should hold back devices fitted when the alarm is being installed. The fire alarm will interface with mechanical plant, lifts etc to control or shut down plant under a fire condition. Interfacing units will accept local automatic extinguisher trip signals and provide fire status indication to BMS panels.

Door closers and card access readers shall be installed as necessary by tenants should they be required. Including a review on fail ‘secure’ on double knock strategies.

The systems will conform to BS 5839-1:2017 and also meet with the requirements of the appropriate authorities.

Provision shall be made for each tenant to add additional automatic detection and additional sounders, if required.

Fireman’s telephones shall be provided within firefighting shafts.

Early engagement with Crown Fire Safety Inspectorate Group (CFSIG) is advised a part of the security and fire assessment process.
Structures

Structural Systems

SHELL & CORE

The structure is the integral asset of the building. The choice of structural system for a building will be influenced by many factors including site location and constraints, building form, planning and structural grids, loading requirements, budget, occupier flexibility and sustainability issues.

Loadings

Historically buildings have been designed for far higher loadings than regulations require and beyond what they experience in practice. This over specification has become the norm based on a perception in the market place that this provides a degree of flexibility. Generally, a loading capacity of 2.5 + 1.0 kN/m² however, reference must be made to the proposed use of the floorplate.

Loading allowances

The standard allowances for imposed load should be:

- General area: A minimum of 2.5 kN/m² for floors above ground floor and;
- 3.0 kN/m² at, or below, ground floor level (refer to BS EN 1991-1-1:2002 and the UK National Annex).

- Higher load area: It is recommended that provision of a higher loaded area is made for storage and/or IT purposes: 7.5 kN/m² over around 5% of each potentially sub-lettable floor area and not in primary circulation routes. Final locations should be agreed with the design team.
- Demountable partitions: 0.5-1.2 kN/m² depending on the self-weight of the partition used (refer to BS EN 1991-1-1:2002 and the UK National Annex).
- Where the partition material is not known, a load of 1.0 kN/m² should be used.

The standard allowances for permanent load should be:

- Raised floors, ceiling and building services equipment: 0.85kN/m² – consideration of actual materials proposed and the layout of building, services may increase or reduce this.

Imposed loading allowances for other areas typically used in office developments are:

- Car parking: 2.5 kN/m².
- Loading bays: 5.0 kN/m² to 10.0 kN/m² depending on vehicle capacity.
- Plant room loading: 7.5 kN/m² (subject to specific loading requirements).
- Retail: 4.0 kN/m².

(Refer to BS EN 1991-1-1:2002 and the UK National Annex.)

Some areas may require project specific considerations, these include;

- Façade systems.
- Heavy partitions.
- Building maintenance units (bmus).
- Heavy plant room items such as water tanks.
- Transformers.
- Heavy storage.
- Fire engine access.
- Landscaping.

The preparation of loading plans to illustrate the specification for the permanent and imposed loads for inclusion in the record drawing set. It is useful in understanding the assumptions made in the original design when considering a change of use of the building fit-out, temporary imposed loads or re-use of the foundations in the future.

Frame and materials

Office buildings will be formed generally from a combination of steel, concrete (reinforced and/or post-tensioned) and in some cases timber frames.
Structures

Structural Systems continued
SHELL & CORE

The building super-structure comprises generally an internal stability core and surrounding frame. The core usually stabilises the building using concrete and/or timber walls or steel braced frames as well as containing lifts, stairs and service risers. In some cases, the perimeter or internal vertical load bearing structure can also be used as frames to provide lateral stability in lieu of the core.

The lateral stability of the structure can have a major influence on the design and should take into account various construction techniques such as slip forming, where the walls must be shaped to allow it to freestand prior to construction of the floors.

Previous site uses
Some sites, city centre ones in particular, can be affected by archaeological remains and previous usage. Avoiding or accommodating areas of special interest can impact the structural solution, especially the foundations. However, existing structures will often have removed any strata that might contain items of archaeological interest. A geotechnical desk study, undertaken in the early stages of the design process, should outline any potential archaeological or contamination issues on the site.

Flexibility and future adaptability
A clear strategy for flexibility and future adaptability of the structure should be developed. Depending on the structural framing and materials chosen some changes can be accommodated more easily than others. It is therefore important to test the viability of future changes early in the design process.

Future adaptability should be defined in the structural brief, for example:
- New (service) openings
- Internal accommodation stairs
- Risers
- Infilling
- Staircases
- Lifts
- Extended service risers
- Infill of any atria

These are to be agreed and clearly identified as part of the structural brief and structural design report.

Deflections and tolerances
The overall dimension of structural zones, and all non-structural elements and finishes connected or applied to the building frame, should be detailed to accommodate:
- Permanent load deflections.
- Setting out and constructional tolerances for the building structure.
- Building frame deflections due to design criteria arising from the lateral forces applied to a building which is specific to its particular location

A clear set of interface requirements between the structure and those connecting elements which require specific movement or tolerance criteria should be identified. These are likely to cover elements such as:
- Lift equipment – pit provision, guide rails, static and dynamic loads
- Escalators and travellators
- Building maintenance units (BMUs) such as cleaning cradles or moving gantries
- Envelope and cladding
- Internal partitions

To reduce the deflection of any structural element of a frame, whether it is in steel or concrete, its stiffness or rigidity has to be enhanced. This will result in strengthening of the section and also an increase in the size or weight of the construction material, hence increasing its cost.
Structures

Vibration

SHELL & CORE

Cause and effect

The building structure will be subjected to a number of actions that cause vibration. These can be internal such as footfall, mechanical plant and operation of equipment, or external, such as road traffic, under or over ground railways and air traffic.

The primary source of internal vibration tends to be footfall; acceptable criteria for this is subjective and will depend on the type and quality of office space being considered. External vibration sources need to be assessed using specialist advice; this will normally begin with a vibration survey.

Footfall-induced vibration tends to be significant in lightweight, medium and long span floors. Particular care should be given to the performance criteria of the building with sensitive uses, to be considered and evaluated to ensure that movement is fit for purpose.

Values

Recommended multiplying factors (response factors) provided by the SCI Guide P354 are:

<table>
<thead>
<tr>
<th>Place</th>
<th>Multiplying factor for exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>8</td>
</tr>
<tr>
<td>Areas sensitive to vibration</td>
<td>4</td>
</tr>
</tbody>
</table>

The values proposed by the SCI have been accepted as best practice for a number of years giving a good balance between floor performance and structural economy. This has led some designers to move towards providing a greater floor performance, or lower the multiplying factor, for a typical office; this has dropped to six in many cases. This action will most probably increase the cost of the floor structure and needs to be considered carefully with reference to the building’s use. There are many existing buildings designed to eight or more which have performed satisfactorily and continue to do so without any adverse comments.

Reducing vibration

In order to mitigate other sources of internal vibration it is often necessary to install plant, particularly larger items such as AHUs on anti-vibration mounts. The requirement will depend on many factors such as the mass and stiffness of plant room floor, the running speed and size of the plant and the proximity to office space. All plant with oscillating elements should be isolated from the building structure.

Robustness and Security

SHELL & CORE

Building should be design as robust structures to avoid disproportionate collapse. These requirements are set out in the Building Regulations and Eurocodes to ensure that a minimum degree of robustness is provided in all buildings.

The primary approach to avoid the disproportionate collapse of buildings is to provide effective horizontal and vertical tying of the structural frame elements to achieve a level of inherent robustness. Where tying provisions cannot be met the structure must be verified by alternative load paths or through the design of key elements.

Building Regulations also require that certain offices, depending upon the number of storeys, occupancy and floor area, will need to be assessed for abnormal hazards. They must be designed for those which may be reasonably foreseen during the life of the building – for example being hit by a vehicle.

Certain buildings may require a specialist security or threat assessment to be carried out which may have further implications for the structural design of the building, this may impact on abnormal and/or adverse loadings which may require additional key elements and detailed analysis for onerous conditions.
BIM

The Government has mandated that all centrally funded capital projects shall be designed and constructed to BIM Level 2. BIM is a process which manages 3D design models, data and information throughout the asset lifecycle. It is an integrated part of project delivery (it is not a ‘bolt on’, an addition or something you buy). The processes could also be described as good practice project management.

BIM Level 2 has been defined as the level industry is currently working at or towards.

Government has committed to the further development of BIM through the Digital Built Britain strategy.

The implementation of BIM should be considered in relation to the terms of the lease agreement and the projected whole life cost benefits. The implementation of BIM for refurbishments projects/existing assets will be agreed for each individual project by the project manager and operations directorate.

BIM Standards

- SHELL & CORE
- CAT A
- CAT B & C

BIM Standards

All projects should work in accordance with the latest standards for BIM Level 2. These standards apply modelling principles across the whole life cycle of a built asset – from strategic definition through to in-use.

Fundamental Principles of BIM Level 2

- SHELL & CORE
- CAT A
- CAT B & C

There are a number of fundamental principles of BIM Level 2 for capital delivery and operation as defined within the standards. The GPA BIM Plan refers to these principles in detail. To summarise, a BIM delivered project should have the following in place:

Organisation Information Requirements (OIRs)

OIRs define utilisation of asset data throughout the operation phase to support strategic decision making. OIRs provide an overall strategy for data utilisation which can be applied across an asset portfolio.

Employers/Exchange Information Requirements (EIRs)

Defines key requirements relating to the provision of models, data and information. The EIRs broadly comprise three sections; Technical, Commercial and Management. The EIRs should be incorporated into all building or asset related contracts where assets or asset information is to be produced. It applies to all engaged parties employer, supplier and their supply chain, stakeholders and partners.

Asset Information Requirements (AIRs)

AIRs should be appended to the EIRs and define new requirements for data and information to support asset operation. This should be delivered and validated throughout design, construction and operation. AIRs include a definition of the Asset Hierarchy – how assets will be identified by location and classification (e.g. Uniclass 2018). It is important that the AIRs are followed by suppliers, as this will ensure asset data is in the correct format to support integration to operational systems, including the Functional Model.
**Fundamental Principles of BIM Level 2 continued**

**SHELL & CORE | CAT A | CAT B & C**

**BIM Execution Plan (BEP)**

The capability and capacity of suppliers to meet these requirements should be articulated via a BIM Execution Plan (BEP). The BEP is a direct response to the EIRs and is typically delivered in two phases – pre and post contract.

**BIM Protocol**

Is appended to main contractual documentation to ensure Level 2 BIM is captured as a contractual requirement. The version supported by government is the CIC BIM Protocol, which is generic and adaptable to suit unique project requirements. The Protocol extracts certain information from the Employers Information Requirements (EIRs), however it is often sensible to capture the EIRs within the Protocol as a single appendix to avoid conflict and/or confusion.

**Common Data Environment (CDE)**

CDE supports structured file storage and management and a collaborative working environment between client and the supply chain. All 3D models, data and information should be held and shared within centralised, web-based file store, referred to as a CDE. For consistency in data quality and management, it is imperative that the client and all members of the supply chain adhere to working within the CDE.

**Information Manager (IM)**

Is appointed to:

- Ensure the BIM Protocol and EIRs are implemented.
- Oversee the use of the CDE and information exchange.
- Ensure handover of the Asset Information Model (AIM).

**Project Information Model (PIM)**

PIM is the term given to the development of models and data held within the CDE. The PIM becomes the AIM upon project handover.

**Asset Information Model (AIM)**

AIM is the name given to the product containing the as built models and data at project handover. The AIM should transfer to the Functional Model where it will be suitable for integration to CAFM systems.

To support the transition of project data to operations, the Functional Model should be implemented.
BIM for Operations – The Functional Model

SHELL & CORE | CAT A | CAT B & C

The ‘Functional Model’ bridges the integration of models and data at handover to support operational functions. The model defines ‘a technical standard for the common language of assets in operation (post-construction)’. It works through the alignment of the following data classification standards:

- **Uniclass**: For design and construction – (3D).
- **NRM 1 and 3**: For capital and revenue life cycle costing (5D). **SFG20**: For operations and maintenance (hard FM) – (6D).
- **CIBSE Guide M expected economic life**: For asset renewal planning of building services – (6D).

The model enables asset information to be exchanged in a digitally enabled environment, in a functional format and applicable for specific purposes/uses, as follows:

- BIM to FM/operations (at project handover).
- Lifecycle costing (5D).
- Planned inspections and preventative maintenance (PPM) regimes (6D).
- Tender and contract resource modelling and change control.
- CAFM integration.
- Condition surveying and development of condition based maintenance.
- Audits and benchmarking of compliance with information requirements.
- Knowledge capture and insights, to inform strategic decision making.

BIM Technical Annex Core Documents

SHELL & CORE | CAT A | CAT B & C

GPA has defined its modelling requirements through the following documents:

- Asset Information Requirement (AIR).
- Employer Information Requirements (EIR).

These are available as part of the BIM Technical Annex. These support delivery of any BIM project.
Government Soft Landings (GSL) will be implemented on the project. The guiding principles of the GSL Policy are:

» GSL will be a key element of the design and construction process maintaining the ‘golden thread’ of the building purpose through to delivery and operation.

» Early engagement of end user and inclusion of a GSL champion on behalf of the government client to direct this engagement with the project team during the design and construction process.

» There must be a commitment to aftercare post construction from the design and construction team.

» Post Occupancy Evaluation (POE) feedback to design and construction teams and capture of lessons learnt to inform future projects will become part of standard practice. POE data will be stored on the asset information model.

» Building Information Modelling (BIM) will provide a fully populated asset data set to feed into Computer Aided Facilities Management (CAFM) system. This data will need to be maintained throughout the building life cycle.

To achieve GSL, the following actions will be taken:

» Clear targets are to be set for required business outcomes at the start of the project. These targets need to be aligned with the strategic objectives and they should be cascaded through the supply chain. These targets and their measures need to be reviewed during the design, construction and operation. Targets and measures should consider statutory requirements, mandated government policy, previous experience, operational knowledge and end user needs.

» End users and operators should be involved to represent the client during design, construction and handover.

» The transition from construction to operation must be planned throughout the project and should be a smooth process enabling optimum performance to be reached as quickly as possible. The transition needs to consider the transfer of operational data as well as training, commissioning, handover and aftercare.

» Performance reviews will be undertaken post completion for up to 3 years and lessons learnt from this should be recorded and shared for future projects.

Government Soft Landings (GSL) will be implemented in accordance with the Cabinet Office guidance available here. A Government Soft Landing Strategy shall be provided. This must be approved by GPA.
Appendices

Occupancy Space Targets
Employer Information Requirements (EIR)
Inclusivity
Security
Building Information Modelling (BIM)