This is Data Centre

Our world of Data is changing. Locational constraints demand that Data Centres evolve from anonymous sheds to become a positive part of the communities they serve. Apt is an architectural studio at the forefront of this paradigm shift.

Within this document, we demonstrate our project experience in this sector. This has focused on complex client briefs and challenging sites. The unique spatial requirements of Hyperscale Data Centres and the lack of local planning zoning for suitable sites creates a challenging planning context for development.

Apt's proven track record of unlocking complex sites through effective engagement and innovation, combined with our technical expertise and aptitude for problem solving offers the Data Centre sector a unique opportunity. Apt's exceptional design skills and innovative approach can realise data centre projects in challenging contexts.

Data Centre design is continually evolving as it keeps pace with developing technology. Now it must also respond to its evolving political and spatial context.

18 acres of newly created green biodiverse space of which 11.3 acres will be accessible to the public with lakes, streams and walkways

Iver Heath Data Park

Apt's plans for Iver Heath Data Park reflect a new approach to data centre design, with sustainability, community and biodiversity at its core.

The project will restore and reconnect the landscape, improving the site's biodiversity through the creation of an ecologically rich parkland and new habitats that will enhance the quality of the Colne Valley Regional Park.

The facility is designed to be integrated into the landscape delivering a 71% Biodiversity Net Gain and a host of community benefits.

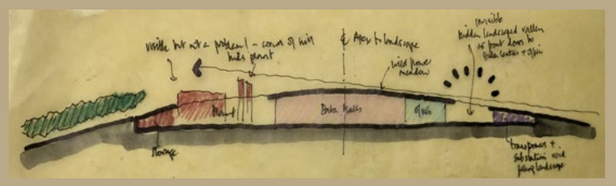
Extensive landscaping plans include the planting of 670 trees and over 7,000 square metres of woodland. The newly created parkland will be accessible to the public, with an edible landscape, a biodiverse lake, woodland walks and a cycle path for the local community to enjoy.

Reconnecting the community and nature

The proposals were developed through community and stakeholder engagement. A key benefit for the community is the reconnection and improvement of the local Public Rights of Way network. An accessible, landscaped route is provided through the site that connects with nearby bridleways and footpaths.

The significant tree planting is positioned to reconnect two neighbouring areas of ancient woodland, creating a biodiverse foraging corridor for local wildlife. Balancing ponds and swales provide a sustainable on-site drainage and water treatment system as well as creating new habitats to support biodiversity.

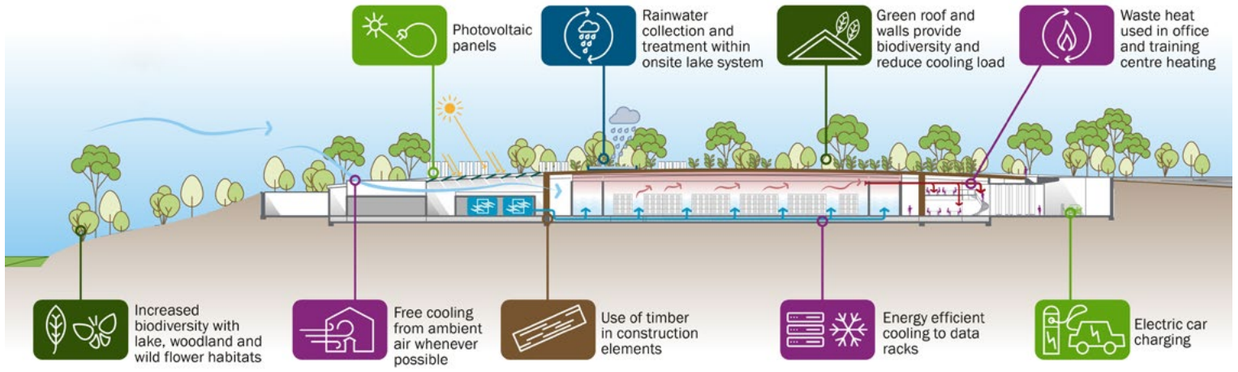
Planning consent was granted under delegated powers for this significant developmeng in the Green Belt



The project will deliver a large scale, highly complex technical infrastructure project that is designed to be fully integrated into the landscape and will deliver a 62% Biodiversity Net Gain, over six times the minimum requirement, and a host of community benefits.

The project represents an investment of over £1bn into the local and national economy, and addresses the need for further digital capacity to support economic growth. The 90MW, best in class facility is composed of ten 9MW Data Halls, arranged over Ground and Lower Ground Floors.

The campus includes a gabion clad training centre with industry-specific facilities for employees and students. This long-term commitment to developing specialist skills extends CyrusOne's successful partnership with the UTC Heathrow to improve economic and educational opportunities for the local and wider area.



Sustainable design ethos at the heart of the initial concept

A sustainable design that prioritises well-being for its occupants

Screened from the newly created park, a hidden valley provides access around the building, with landscaped terraces providing daylight, fresh air and striking views from the workspace.

The workspace's timber structure reduces embodied carbon, allows for a faster build time and and provides a warm, comfortable environment with great aspect in this landscape setting.

Rainwater collection is treated and reused within the site, alongside free air cooling from ambient air whenever possible and half of the designated parking spaces will provide on-site charging hubs for electric cars.

The data center is designed to achieve a BREEAM “Excellent” certification and with on-site photovoltaic panels to deliver 64% of the regulated office energy demand. Powered from Iver Grid Supply Point, the facility uses 100% certified renewable electricity provided by SSEN.

Placemaking, with a Data Centre led, mixed use development that creates a new heart for Southall

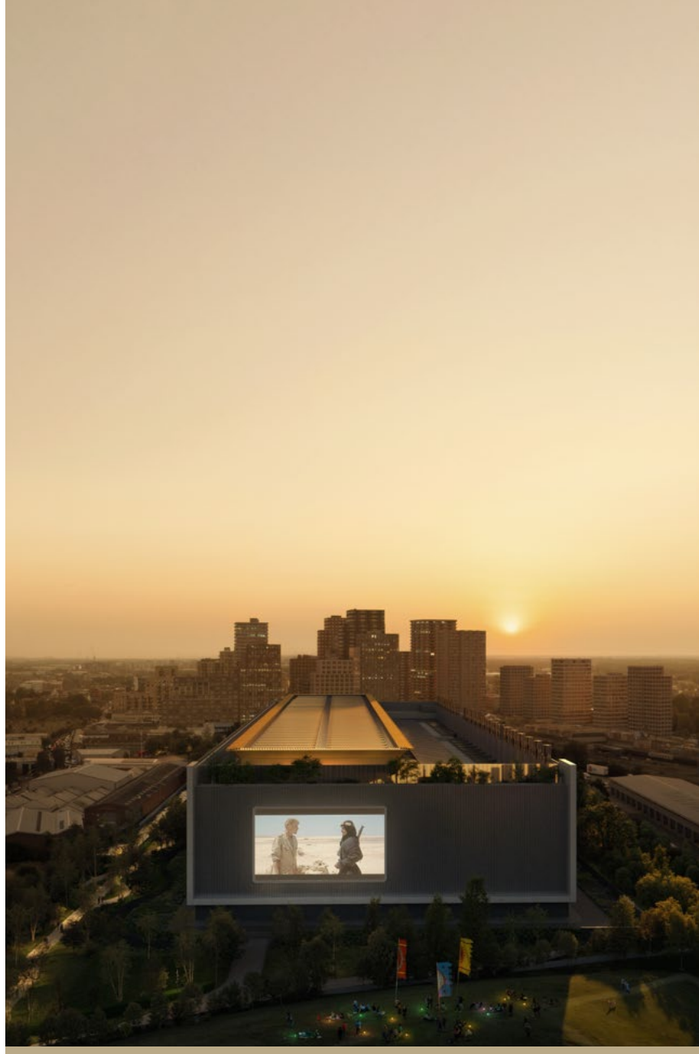
London 7
Honey Monster

London 7 is a state of the art Data Centre, set within a significant area of new public realm for Southall.

The masterplan knits into the surrounding urban context and provides new cycle and pedestrian routes across the site, improving connectivity and community access to green space.

An affordable workspace, tailored to the needs of local start ups, complements the data centre workspace and together provide the critical mass to activate and animate the new public realm.

The project includes the repair and activation of the Maypole Canal Sput, creating a new canal side experience on this previously inaccessible site.

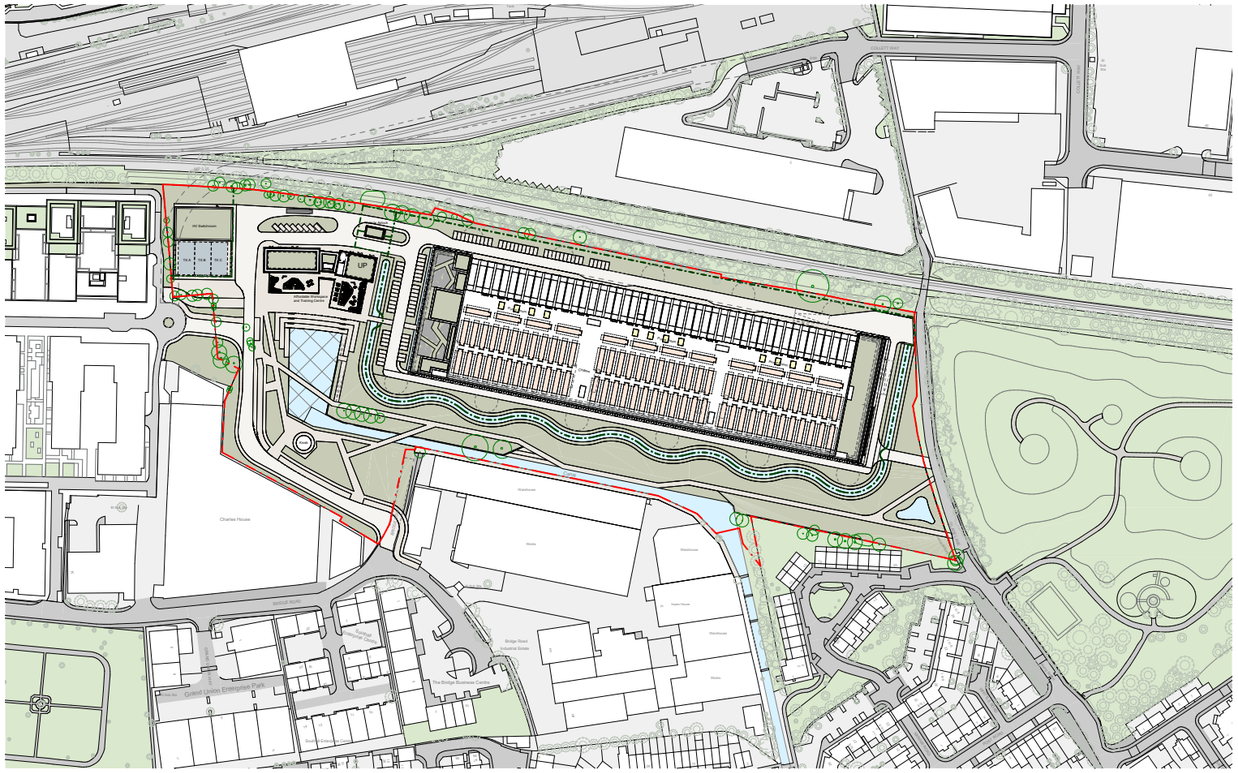


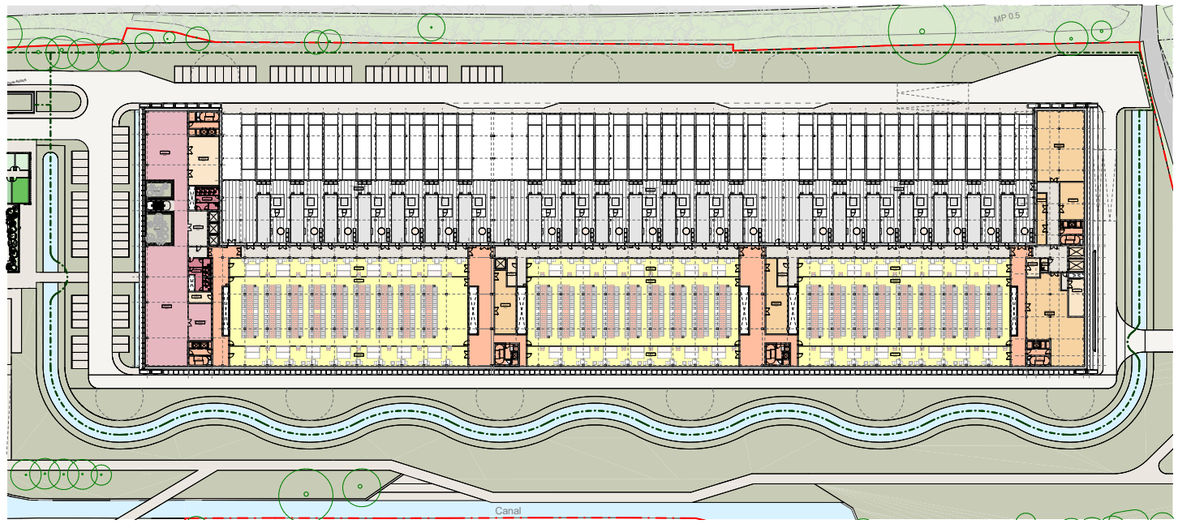
The Data Centre will provide 108MW of IT Capacity, within twelve 9MW Data Halls arranged over 4 floors.

The south facing facade takes advantage of its aspect with the world's largest facade mounted PV Array. This on-site renewables intallation will generate 1 million KW hours of electricity per year.

Recovered heat from the Data Centre will supply energy to a District Heating Network being developed by Ealing Council. Phase 1 of the network is proposed to serve Ealing Hospital, located a mile to the East.

Masterplan

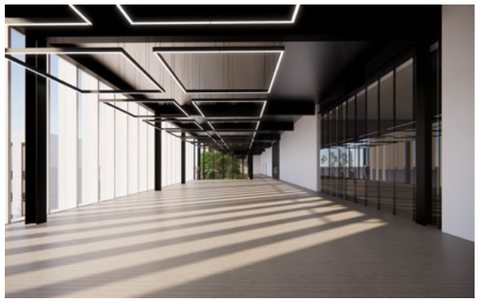




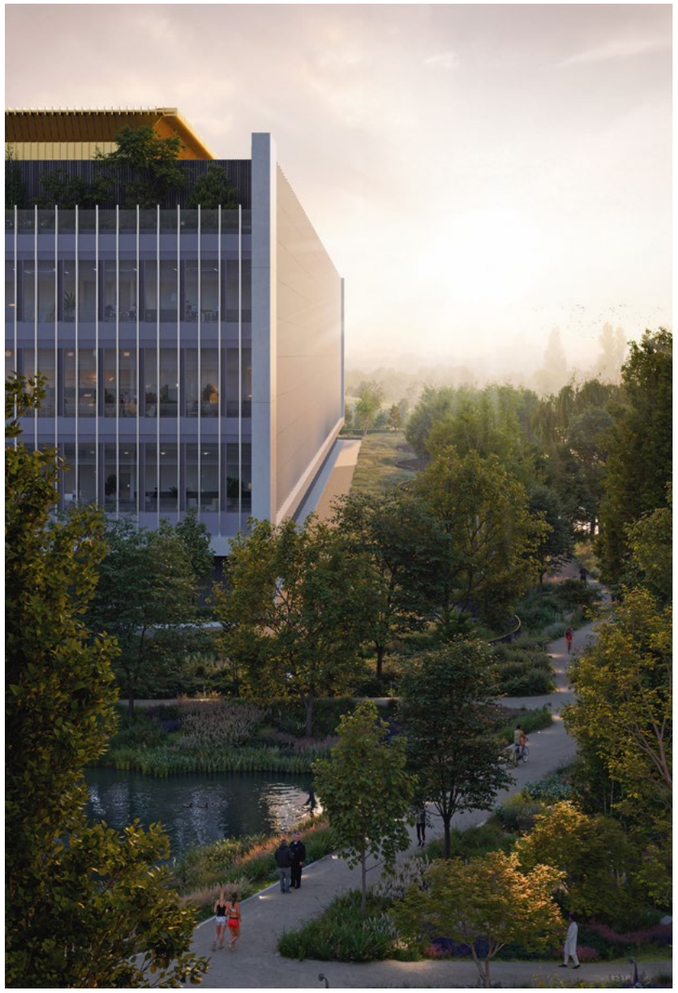
Community Art Space - Ground Floor

The secure line is crafted to satisfy the security requirements whilst minimising its impact on the public realm. Set below eye level, it is ntegrated within a landscape ha-ha feature that acts as a swale as part the site's sustainable drainage strategy.

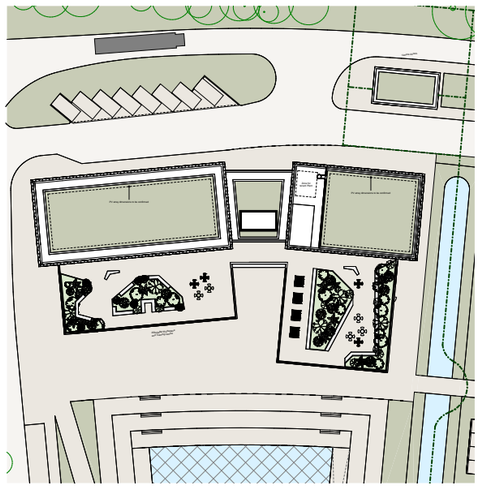
The combined swale and secure line meanders back and forth to create a series of canal-side outdoor rooms for the public, alternating with crane deployment areas inside the secure line to support mission critical plant replacement.



Best in class workspace for leading technology tenants

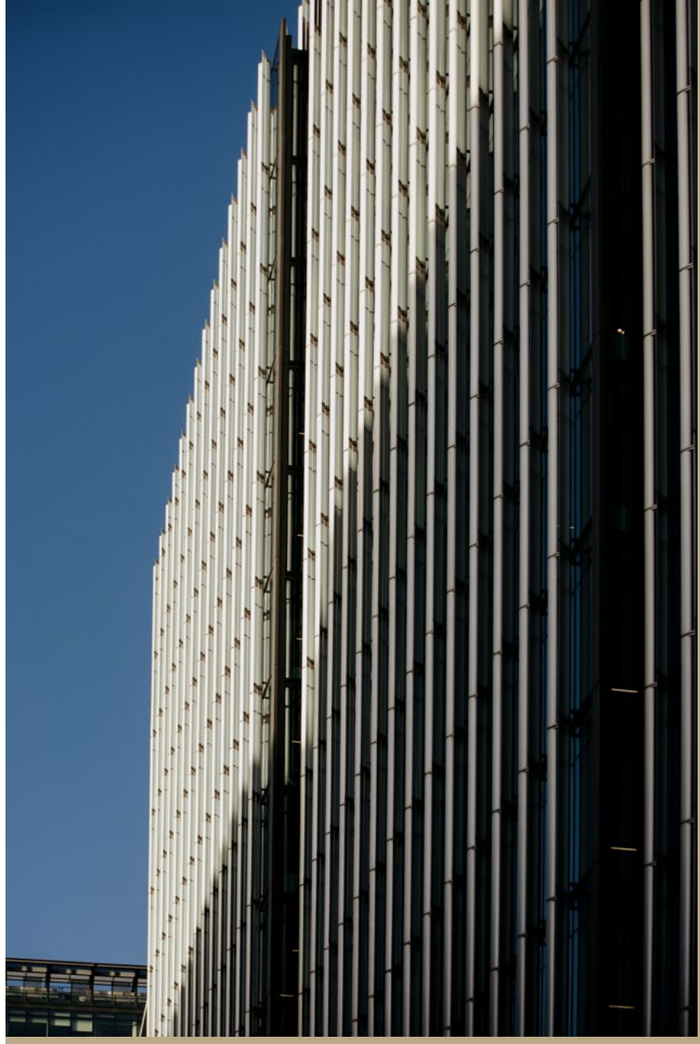


The proposals achieve a generous public realm on a constrained site providing much needed urban greening to Southall



Community Art & Exhibition Space - Lower Ground Floor

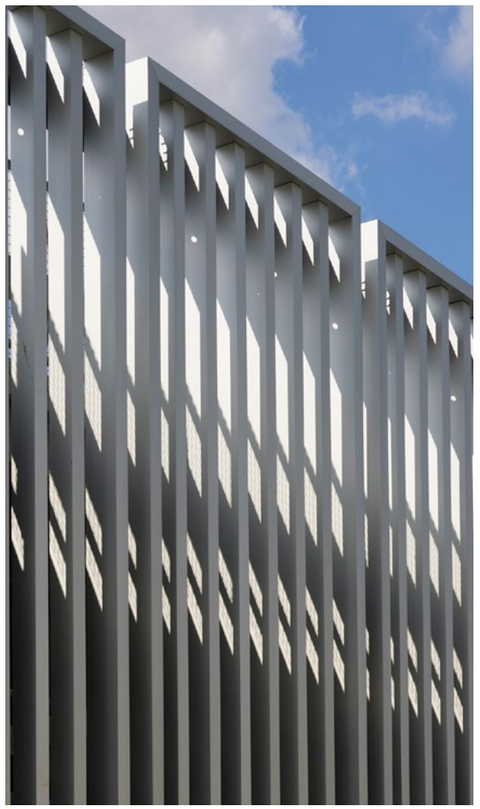
The buildings respond to the local climate, providing a resilient framework to protect and serve the IT



Kuwait Alpha

Kuwait Alpha has been designed to respond to the particularly aggressive local environment and its surrounding context. The site sits to the west of Kuwait City to the north of Highway 80. It is approximately 1.5km from the Arabian Gulf.

The architecture successfully address key environmental constraints, including sun path and wind driven sand, develop a response to its geographical features including the Arabian Gulf and the desert and address the emerging context of Jaber Al Ahmad.



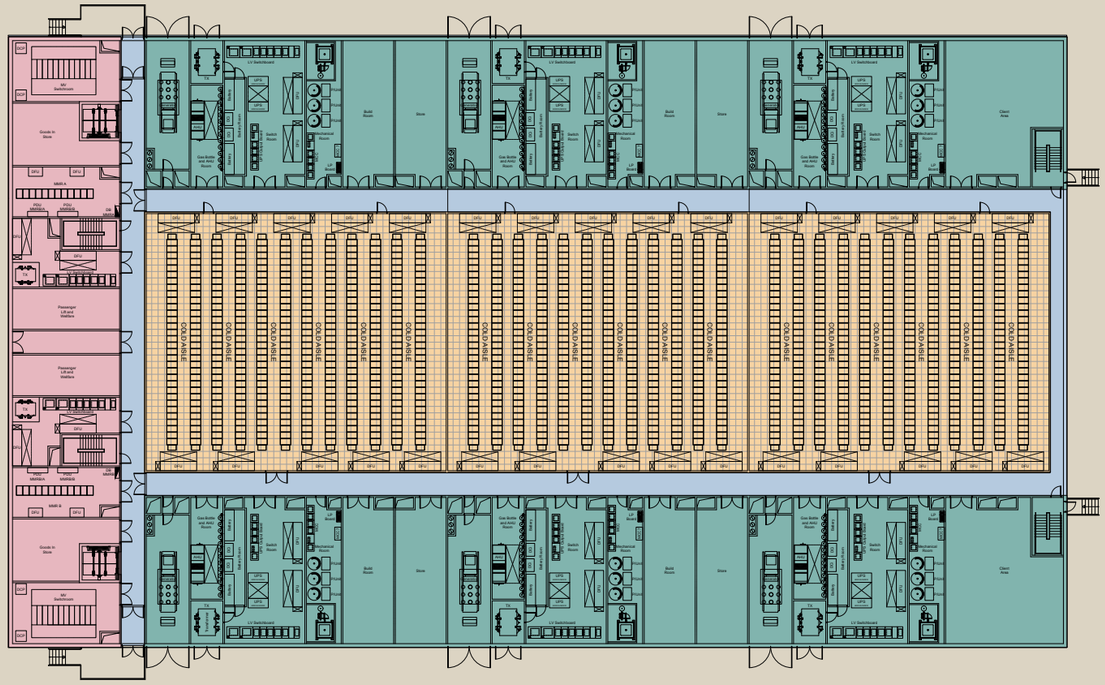
The two buildings are arranged in the centre of the site, away from the perimeter to maximise privacy and provide security. Access is controlled by secure vehicle locks allowing a logical circulation around the site and good access to maintain the perimeter of the building.

Client and staff accommodation is arranged at one end, allowing for an attractive landscaped area to be explored as the masterplan develops.

The external façade is solar protected, and security screened The high quality design of the exterior architecture provides good visual amenity to the nearby residential apartments, and the rooftop plant is visually screened by extending the cladding up.

The external screening at roof level and low noise plant required to meet local regulations, will mitigate any impact on nearby residents .

The building's unuique form creates an attractive environment for the nearby residential apartments.

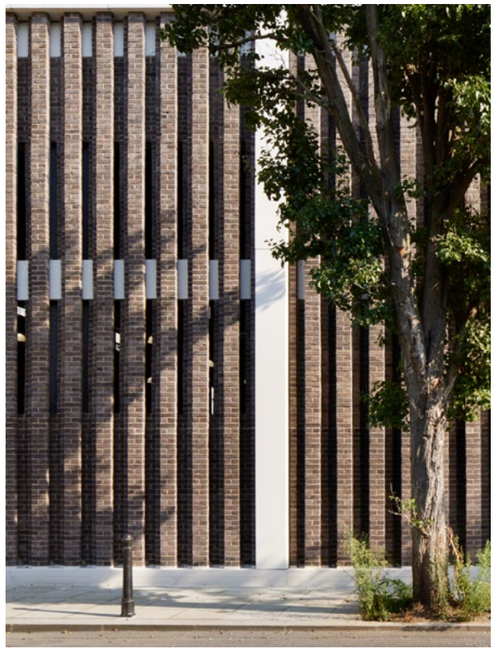


The data hall solution is flexible and scalable, with a roof gantry and open space dedicated to each hall load and chosen typology.

The three data halls per floor have been designed as an insulated structure, that sits within a further insulated structure to protect it from the extremities of the external environment. The proposals have been designed to a 50 year high temperature requirement and future climate change model, operating up to 52°C at full duty and to an external ambient temperature in excess of 55°C.

To achieve this, the building has been designed with multiple air locks and lobbies, whilst the roof has two waterproof layers.

Rooftop equipment has been designed to be sand and salt air resistant, is capable of withstanding high ambient temperatures and also radiant temperatures in excess of 85°C. Service equipment has been designed with additional capacity to be replaced and repaired regularly without loss of cooling and or power to each data hall.



Reflecting the surroundings with a subtle shift creates a dynamic interplay of light and shade

Long Cross Surrey

The site's location nearby to Chobham Common, required an architectural response to the landscape and the sensitivity of views of the facility from the Common.

Whilst he building is screened in short distance views by mature trees and dense hedge rows, the buildings would be visible through gaps in longer distance views and during winter when the deciduous trees lose their leaves.

The solution is an articulated facade which breaks up the built form, with a rhythm helping to mask the mass when read against the vertical tree trunks.

By using brushed stainless steel, the facade provides a diffuse reflection of the surrounding foliage, changing colour with the trees through the seasons.

Exploring Opportunities

At Apt, we understand that not every opportunity is right or that every concept will see the light of day. We have many clients come to us for early input on schemes – our advice can often help them decide whether a site is worth further exploration.

This can range from an initial 2-week feasibility to more in-depth studies developing a variety of design solutions to help support bids, financial appraisals, or a first pre-application meeting with the planners to test the waters on a proposal.

We draw on our wide range of experience to give the best advice possible. We are not afraid to challenge a brief or client if we feel it is unachievable; bad news is better than bad advice.

01 Initial Consultation

A low commitment way to quickly test the viability of an opportunity.

An initial high-level exercise to test massing on a site to generate indicative GEAs based on an assumed use class. This will include investigating the opportunity to retain and reuse any existing buildings on site.

Duration: 2 weeks

Deliverables:

- GEA Area schedule
- Initial height bulk and massing
- Simple 3D chalk models in context (subject to availability of information)
- Identify possible 3rd party risks which may affect the site's potential

02 Initial Feasibility

Testing a variety of approaches to a site, enabling an initial brief to be set for financial appraisals or bids.

A detailed exercise to test a variety of approaches and generate areas, floorplans and some initial architectural responses to a site.

Duration: 4-6 weeks

Deliverables:

- As Option 01 +
- Indicative typical floorplans.
- Accommodation schedule
- Additional iterations of design massing to refine the proposal.
- Investigation into site history, planning context, and site constraints
- Illustrative material to explain the main architectural concepts and principles of the scheme

03 In Depth Feasibility

Developing an initial brief to a point where the principles can be discussed with the Local Planning Authority.

An in depth review of a potential site to test a variety of approaches and refine a solution which could represent the first step towards a planning application.

Duration: 4-8 weeks

Deliverables:

- As Option 02 +
- Design development sufficient for initial pre-application with the Local Authority
- Attendance at initial pre-app meeting
- Sketch models of context and proposal
- Sketch perspectives / in house renders showing the scheme in context.
- Initial GA drawings

04 Existing Consent Review

Review an existing consent and discuss ways it could be optimised or improved to suit your brief.

Review of an existing scheme and identification of any potential improvements, or test alternative uses within the same footprint.

Duration: 2-6 weeks

Deliverables:

- Alternative scheme with indicative typical floorplans
- GEA and accommodation schedule
- Identify possible 3rd party risks which may affect the site's potential

Our Commitment
to Our Collective Future

Our commitments to building a better future are centred around our projects, the people we work with, and our studio. We have set out three ambitious commitments and timescales in which to achieve them.

01 / Net Zero Projects
We will design all projects to be net zero carbon by 2050 or sooner.

02 / Carbon Negative Studio
Practice what we preach and remove more carbon from the environment than what we produce as a studio by 2030 or sooner.

03 / Adopt Post Occupancy Evaluations
This is the only way architects, and the industry will learn and improve. We will include post occupancy evaluations as a service on all of our projects.

Sustainable design is not a facet or an add on, it's an integral part of our design process and ethos at Apt.

Europe's Largest Passivhaus
Our 2 Trafalgar Way project which is currently on site, will be Europe's Largest Passivhaus Certified building. Our client will see the benefits of significantly reduced running costs and energy use.

Aspirational Carbon Targets
Our Hill House scheme in the City of London is projected to be well below the GLA's aspirational targets for both upfront and whole life carbon, targeting sub-600kgCO_2e/m² A1-A5.

Retrofit, Retention & Re-use
We have demonstrated significant carbon savings through retrofit and reuse across a number of projects. Our 81 Dean Street project retained the entire structural frame as we gave this unloved office building a new lease of life as apartments in the heart of Soho.

Innovation
We strive for innovation across all of our projects and are always looking for new ways to create a more sustainable built environment. Below are some examples

- Repurposed steel columns
- Calcine clay cement replacements
- Thermally Activated Building Structure
- Apt Terrazzo

We create architecture that inspires through great design, innovation & craftsmanship.

This is Apt.

At Apt we are always interested in working with like-minded, motivated, and progressive people who want to deliver great buildings.

We believe our studio approach allows us to robustly evaluate briefs and challenge preconceptions, ultimately helping our clients find the best solution to any given opportunity. We enjoy working collaboratively and believe this is why we build long lasting relationships with many of our clients.

Let’s create the unexpected.

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