This is Data

Apt

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.

Apt's considerable experience within the data centre sector includes a number of complex projects with particularly demanding site constraints.

The unique spatial requirements of hyperscale data centres and lack of local planning zoning for suitable locations creates a challenging context for development. However, our innovative, engagement-led approach to design – combined with our technical expertise and aptitude for problem-solving – allows us to realise even the most complex briefs.

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.

Data
Driven Design

The exponential growth of data centres is pushing them out of the shadows and into the public eye. What can they offer to our built environment and wider society?

Our relationship with data has advanced at an extraordinary pace. It now underpins almost every aspect of modern life, shaping how we work, learn, communicate and navigate the world around us. Data enhances productivity, drives innovation, provides entertainment and guidance, and connects our communities. Despite this level of digital integration, the physical infrastructure that makes it all possible, the data centre, remains largely unknown and misunderstood.

The UK government recognises the essential role that data centres play, designating them as Critical National Infrastructure and embedding them within the national growth agenda. With the AI Opportunities Action Plan, data centres sit at the heart of efforts to improve prosperity, health and education through digital innovation.

Demand for data capacity is accelerating at a staggering rate. Around 90% of global data was generated in just the last two years, and the data centre sector is growing more than ten times faster than the wider economy.

However, big data requires big buildings. As our cloud computing and AI capacity expands exponentially, these once anonymous facilities will become an increasingly visible part of our built environment – and their relationship with our towns, cities and countryside will become ever more significant.

This visibility and increased public awareness brings opportunity; by engaging meaningfully with local communities, the teams behind data centre development can help people understand their role and relevance.

The Data Centre becomes a key part of the placemaking strategy.

Despite growing up online, Gen Z is the least aware of the physical infrastructure behind platforms like TikTok or WhatsApp. Clear communication informing a thoughtful design process can bridge this gap and foster local pride rather than resistance.

Beyond national economic and technological advantages, data centres can deliver real benefits to their surrounding communities. They can create high-quality jobs, support district heating through heat recovery, reduce traffic by shifting to a low-impact operation, accelerate investment in renewable energy production and contribute to local environmental improvement.

The data centre itself can become a key part of the placemaking strategy. The challenge of scale presented by these buildings demands a response – big buildings need big ideas. The architecture of the building should respond to the opportunities offered by the site's unique context.

With their scale and investment, data centre developments are able to transform underused Brownfield or Grey Belt sites into vibrant, accessible places. Through high quality design and meaningful engagement these projects can improve local connectivity, boost biodiversity and create much needed amenity space. Considered architecture and landscape design can sensitively accommodate security requirements, integrating pedestrian routes and green infrastructure to ensure that these developments enhance the local area.

Apt's experience in this sector shows that placing community engagement at the centre of the design process can create data centres that improve their environments and are welcomed by stakeholders. Coupling this with a high level of innovation and a collaborative approach to technical design can result in buildings that make their users and neighbours smile.

Case Studies

Iver Heath Data Park

Kuwait Alpha

Longcross Surrey

London 7 Honey Monster

A landscape led masterplan reconnecting the community and nature

90 MW IT
10 Data Halls

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 a biodiverse lake, woodland walks, a cycle path, and edible planting for the local community to enjoy.

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

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 through the site 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.

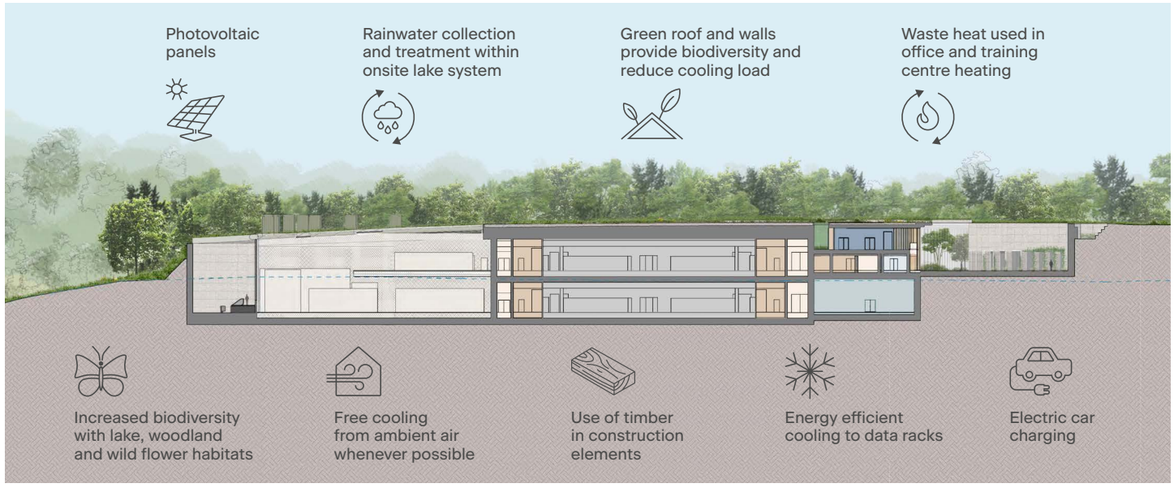
Planning consent was granted under delegated powers for this significant development in the Green Belt

A campus combining data with training and industry-specific facilities.

The development will deliver a large scale, highly complex technical infrastructure project that is designed to be fully integrated into the landscape. It will deliver a 71% 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 allows access around the building, with landscaped terraces providing daylight, fresh air and striking views from the workspace.

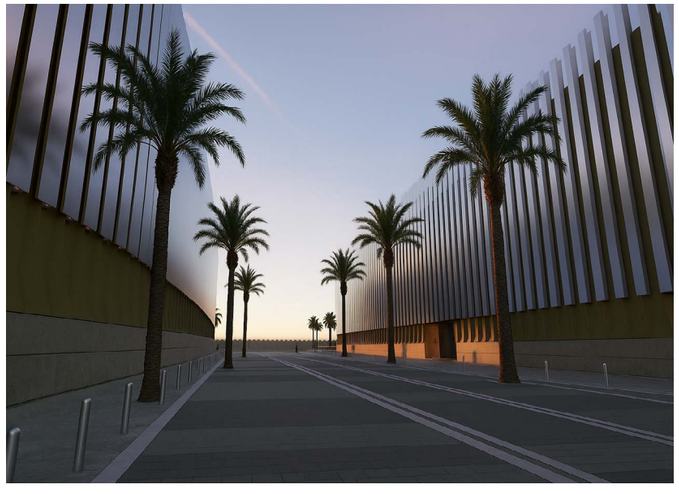
The workspace's timber structure reduces embodied carbon, allows for a faster build time and creates a warm, comfortable environment with great aspect in this landscape setting.

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

The data centre is designed to achieve a BREEAM “Excellent” certification, 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.

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

36MW IT
4 Data Halls



Kuwait Alpha

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

The architecture successfully addresses key environmental constraints, including sun path and wind driven sand, while also responding to its geographical features including the Arabian Gulf and the desert.

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

72MW IT
8 Data Halls

Longcross Surrey

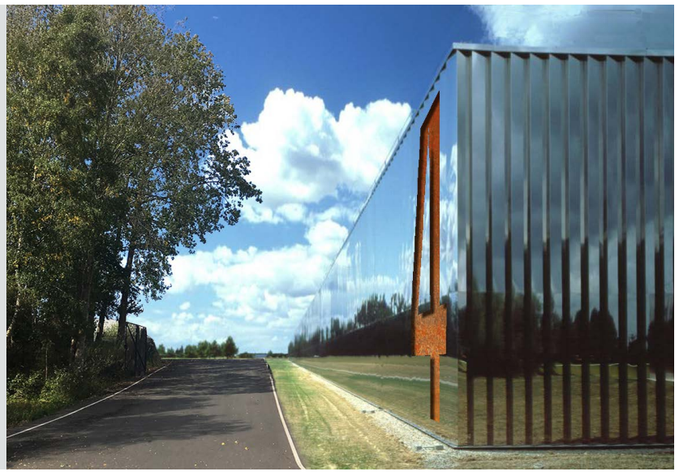
The site's location, nearby to Chobham Common, required an architectural response to the landscape and the sensitivity of views of the facility from the Common.

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

The Solution:

An articulated facade which breaks up the built form, creating a rhythm that reduces 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.



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

108 MW IT
12 Data Halls

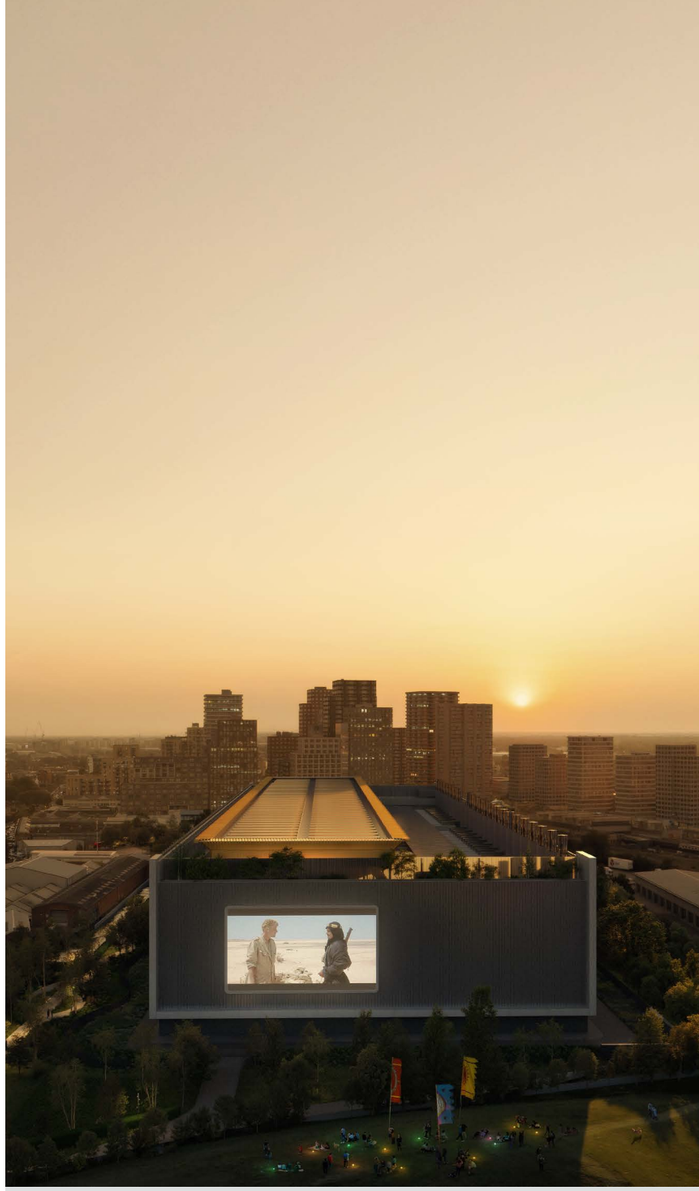
London 7
Honey Monster

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 startups complements the data centre workspace, together providing the critical mass to activate and animate the new public realm.

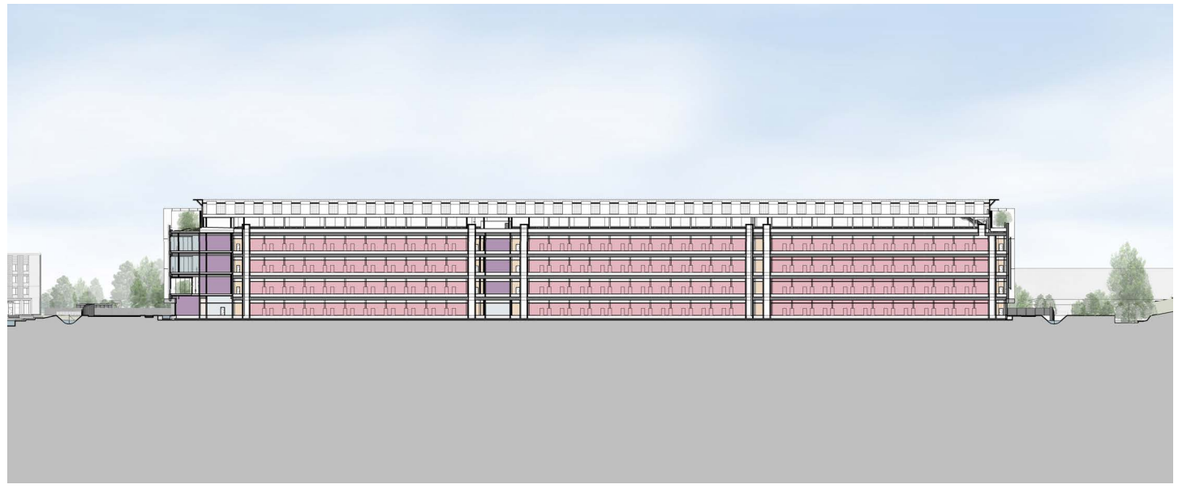
The project includes the repair and activation of the Maypole Canal Spur, creating a new canal side experience on this previously inaccessible site.



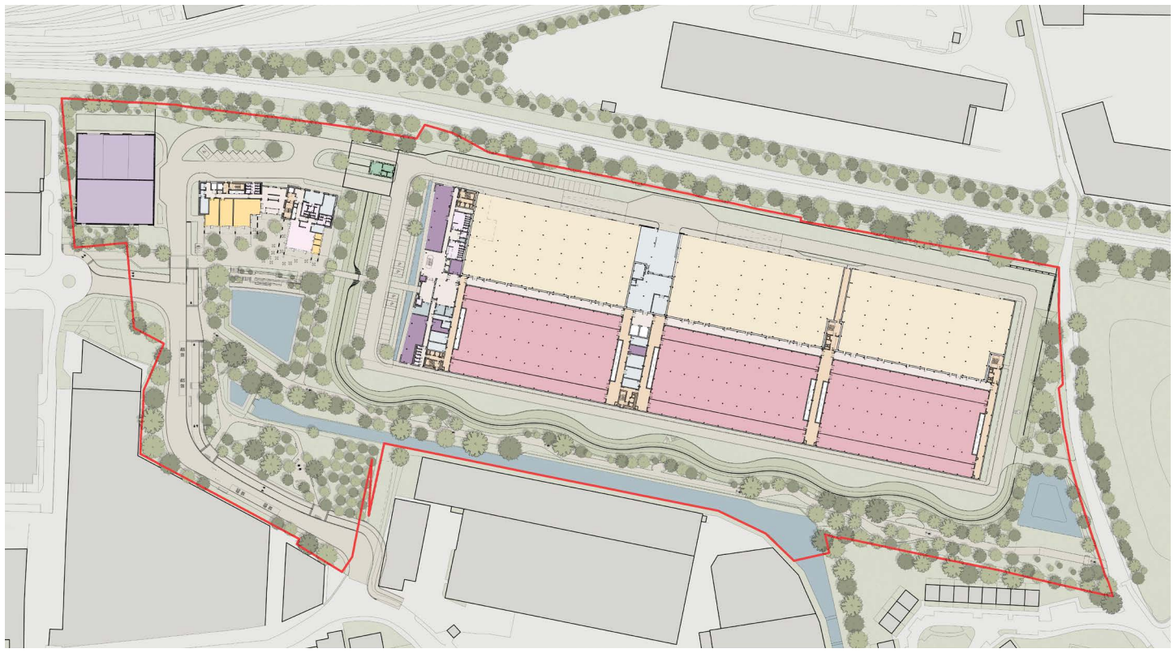
The Data Centre will provide 108MW of IT Capacity, within twelve 9MW Data Halls arranged over 4 floors.

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

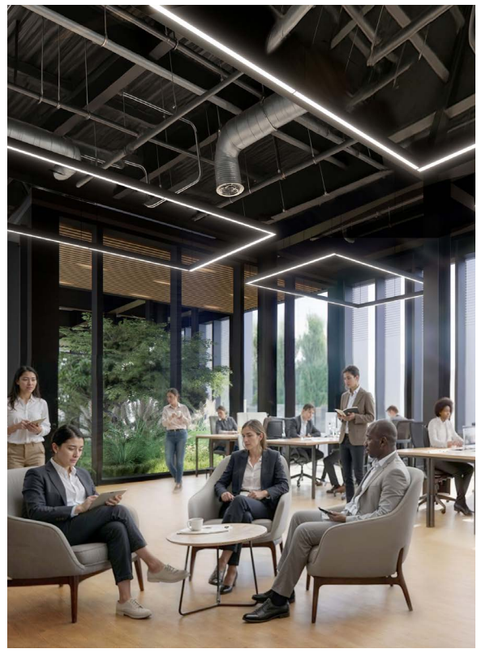
Recovered heat from the Data Centre is available to supply energy to a District Heating Network being developed by Ealing Council. Phase 1 of the network is proposed to serve Ealing Hospital, located a mile to the East.



Masterplan



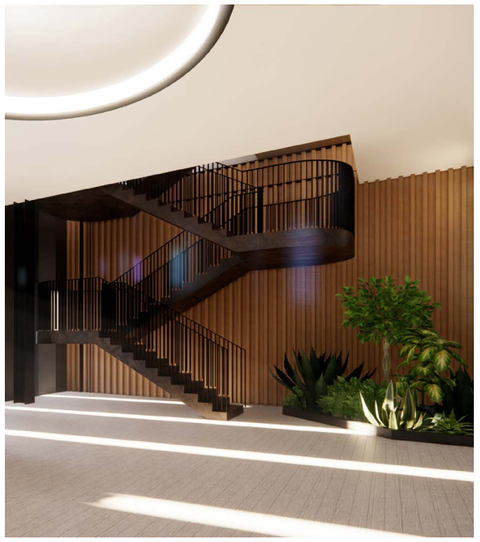
Best in class workspace for leading technology tenants

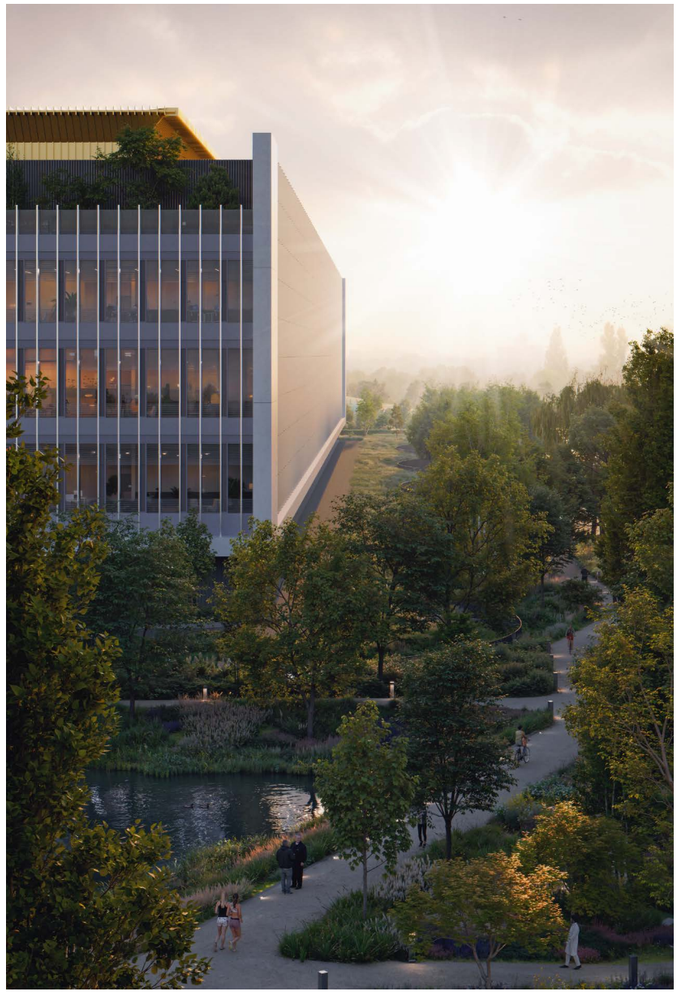


The secure line is crafted to satisfy security requirements whilst minimising its impact on the public realm. Set below eye level, it is integrated within a landscape ha-ha feature that also acts as a swale as part the site's sustainable drainage strategy.

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.

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





Exploring Opportunities

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

This can range from an initial 2-week feasibility study identifying the site's potential capacity and proximity to established availability zones, to more in-depth studies developing a range of design solutions to help support bids, financial appraisals, or a first pre-application meeting with the local planning authority 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, assess the potential IT capacity and generate indicative GEAs. 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

Reviewing an existing consent and exploring how it could be optimised or improved to suit your brief.

Review of an existing scheme to identify 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

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

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 and 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.

Apt
235 St John Street
London EC1V 4NG

T. +44 (0)20 7419 3500
E. mail@apt.london
W. www.apt.london

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