
# Growing up – densification of our roofscapes

Megan Jones shows that the eased permitted development rules do not result in completely un-regulated and inappropriate schemes

**Megan Jones is a senior architect at Farrells.**

In dense urban centres such as London, where scarce undeveloped land is at a premium, looking upwards remains a firm choice for development opportunities in the capital. The airspace above existing buildings has proved an untapped resource for sensitive densification of the urban grain, but only when carefully selected sites befit and will benefit from such interventions.

Last year's loosening of certain permitted development constraints has facilitated greater levels of unfettered airspace intervention. This change has brought about exciting opportunity to carve out new homes in the capital, but also a risk that greater numbers of rushed or ill-thought through designs could begin to pepper our roofscapes. Ultimately, permitted development offers ample positive opportunities, but shouldn't be to the detriment of robust design and spaces that work for the end users that will inhabit them. The importance of prior approval submissions is key in these scenarios – though they are lighter-touch applications than those required for full planning, they can (and should) set parameters that dictate the heights and massing of any proposed intervention.

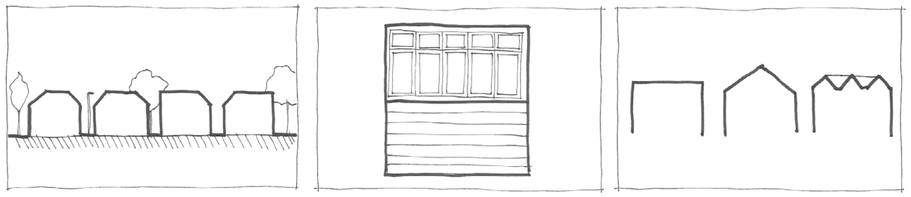
Different scenarios will befit different solutions for utilising airspace. These deserve to be explored in ways that are tailored to specific demographical and contextual requirements, with an aim to generate viable and architecturally valuable solutions for existing communities. This is the distilled ideal – creating new homes and amenity spaces by building on that which is already built. This respects the pre-established urban grain, whilst allowing a considered upward densification to address the need for more homes.

In carefully adding one or two residential storeys where there is a specific and identified need, the adjacent high-streets and communities can also be bolstered. If freeholders of existing commercial or industrial premises, that have a distinct presence on the local street scene, can sensitively develop their airspace, this could be the key to unlocking their evolution and ensuring their survival. In this way, densifying upwards could have a tangibly positive effect on communities' longevity.

There is also a sustainable ambition inherent to airspace development. By developing in this way, the existing host building is regenerated in its own right; with its external fabric, circulation cores and structure often enhanced, refurbished or added to. This serves to both enable the structural integrity and safety of the whole development, but also to ensure that the existing building looks well-kempt and in-keeping with the holistic design. In this way, airspace design is a positive enactor of a genuinely sustainable approach to development.

There are, however, regulatory challenges that are presently intertwined with residential airspace development. These come to the fore once the initial idea of developing on top of the existing has been established, and an appropriate design has been progressed. One of these challenges is ensuring that any additional residences are sufficiently supported by robust means of escape and fire strategies. This element can have further complication when the intent is to build above an existing commercial or light industrial function below, which already come with their own separate fire risks and considerations. Early engagement with fire engineers and Building Control officers is essential to developing a design that is feasible from a life safety perspective, and this should be a critical consideration from the outset.

Buildability is another important consideration to be explored during initial feasibility stages. Early engagement with a structural engineer to assess the capability of the existing structure is crucial to establish if the scheme is viable. The structure can have significant implications both in terms of the internal spaces and layouts, but also externally. If an external exo-skeleton or additional bracing is required to support the rooftop extension, it is important to consider how this could be successfully integrated with the pre- >>>



1 Scale
Consideration for the existing scale and proportions of neighbouring buildings

2 Detailing
A study of detailing found in surrounding housing examples which can be incorporated into the design

3 Roofs
A roof form which responds to the context and creates an animated exterior

4 Materiality & Colour

RIGHT:
Toolkit of Design Considerations

existing architectural language of the host building and any overriding contextual vernacular. Again, the need for a bespoke design solution comes to the fore – some scenarios may befit an extension that reads as entirely separate to the existing building beneath, whereas some scenarios will suit a holistic and unified palette that seamlessly bridges between old and new.

Another potential obstacle to airspace development is untangling occasionally complex leasehold or freehold arrangements, which may involve various different stakeholders and liabilities, and any associated party wall implications that would need to be worked through to ensure that the scheme can progress.

It is key for us to collectively learn how to ameliorate the aspirational ideal of airspace development with the practical challenges faced when realising it. The more that rooftop extensions are seen delivered and achieved as a reality, the more that stakeholders and consultants alike will become accustomed to overcoming statutory, regulatory and administrative obstacles, to ensure that successful airspace projects can be achieved. From a buildability perspective, if different construction methodologies and systems are adequately fire tested and certified by modular or steel framing contractors, this can help ensure compliance with Building Regulations. This in turn will help achieve the confidence of fire engineers, statutory bodies and design professionals, and will develop a suite of standard construction systems that can be regularly adopted with confidence.

In addition to residential extensions, we can also consider alternative possible tangents for airspace developments. The common desire is to increase residential provision by adding one or two storeys onto an existing either residential development, or commercial or industrial unit. But perhaps the idea of adding storeys can also be cross-functional, or more mixed-use in its directive.

The after-effects of nearly two years of disrupted lifestyle patterns and working from home as a result of the COVID-19 pandemic are still being experienced. Commonly those with office jobs are still looking to work flexibly, perhaps adopting a hybrid working pattern of in-office attendance for three days a week, and working from home two days a week. Could airspace development be used to create co-working environments that are home-adjacent, instead of being within the home itself. This could potentially be a way for people to still avoid lengthy commutes, but also enable them to work without encroaching on the square metre-age of their own apartment. Alternatively, could airspace be used to create calm, green oases floating above the urban scene – interspersed with rooftop restaurants, co-working cafes, or residential apartments.

A new tranche of airspace approaches and typologies could help unlock and regenerate existing and sometimes unloved buildings to be functional components of the city organism. In the same way that our cities are made up in layers of development over time; when approached sensitively, rooftop extensions can provide the latest additive stratum of the city, as a response to the current needs of a population in flux.

In providing some of the need for housing in this bite-sized way, across several rooftop projects each with their own architectural justification and identity, this could in turn open-up the rarer, undeveloped pockets of land for significant and communally valuable mixed-use schemes.

There are several ways in which developing upwards can add meaningful value to local communities. However, it is important that the existing quality of adjacent developments is not compromised as a result of infill airspace intervention. This can involve preserving sensible setback distances between facades with windows, or introducing measures such as obscured privacy screens or inset terraces to minimise any potential risks of overlooking.

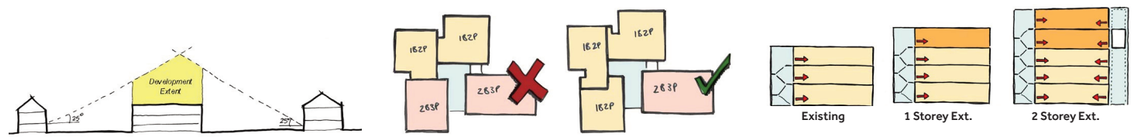
Rooftop extensions will always be an act of balance, by virtue of their having to seamlessly slot into a pre-existing urban condition. Having identified the merit of adding residential provision atop existing buildings, it is key that certain moves are made to ensure the scheme can successfully enmesh into its context. These moves include assessing whether the adjacent context is being respected, that the additional mass is appropriate without becoming overbearing, that the existing architectural language is complemented or, where appropriate, is sensitively contrasted with, and that the function being added has a justifiable need in that specific context. This simplified checklist could provide a way to sense check whether airspace development can be made to successfully operate in any given scenario.

The Association of Rooftop & Airspace Development (ARAD) is a collective of organisations and developers that aim to uphold members to a code of design standards for such developments. This is a positive approach, allowing invested parties to share best practices and maintain principles to ensure that the relationships of airspace developments to the host below can be in-built and not bolt-on. Our experience to-date suggests that local authorities are increasingly open to well-designed and considered airspace schemes, providing that they are demonstrably to the benefit and not to the detriment of the surrounding communities that they should be designed to serve.

The obstacle to be tackled through airspace design is ensuring that the eased permitted development rules do not result in completely un-regulated and inappropriate schemes. The risk with situations where full planning consent is not required is that a carbon copy approach could be found to be adopted, where a one-size-fits-all design is shoe-horned into multiple possible airspace opportunities for the ease of the developer. What is essential to successful airspace designs is that they are responsive to the existing built context, and adaptive to the needs of the community context. This means designs that are tailored to their specific scenarios, that can add meaningful value to an existing user group, building, street, locality and, in turn, to the wider city context. When airspace development is approached as a part of a holistic whole, potential for real growth and quality can be found. ■

LEFT:
Harmonising Old & New - Current Farrells Project in Bermondsey

BELOW:
Exploring a Site-specific Architectural Response


1 Potential to expand vertically on site

2 Reconfiguring proposed footprint to meet london plan space requirements.

3 Providing new access via the extended circulation core extending the existing stair core and possible provision for new lifts.

BELOW:
Assessing Site Opportunities