by Rebecca Foster

ADDING SPACE & VALUE

PART 2: BASEMENT EXTENSIONS

- Building Regs
- Structural know-how
- Waterproofing options
- Heating & ventilation
- The costs

IMAGE: TIGG & COLL ARCHITECTS, PHOTOGRAPHER ANDY MATTHEWS

Extending underground can be a cost-effective way to boost your home's square footage — especially if you live in a period property with an existing cellar or coal chute. The tricky part is that the subterranean spaces in most Edwardian and Victorian homes were typically used for storage rather than as living areas. Excavation and structural work will likely be needed, which is where costs tend to ramp up.

If it's only internal works that are required, such as waterproofing the existing space, a conversion may not be beyond the realms of possibility for an experienced DIYer. However, in most cases, a host of complex factors including damp, structural issues, ceiling heights and ventilation crop up. It's best to consult an expert if you're keen to create a light, well-ventilated zone that functions as a beautiful addition to the rest of your home.

Here, we lay out the essentials for establishing a bright, airy liveable basement.

IMAGES: CLOCKWISE FROM TOP: PROCTOR AND SHAW, PHOTOGRAPHER BEN BLOSSOM; ST ALBANS BASEMENT, PHOTOGRAPHER MARK SIMMS PHOTOGRAPHY; NICHE DESIGN ARCHITECTS

REINFORCED CONCRETE WORKS
Above: This semi-basement construction, designed by Proctor and Shaw Architects, needed extensive underpinning and reinforced concrete works. The fair-faced concrete construction has been left exposed to authentically express the idea of carving into the ground.

STORE ROOM CONVERSION
Right: The basement of this townhouse previously consisted of an integral garage and store rooms. The brief for Niche Design Architects was to transform the basement into a space that could function as a separate living area with direct access to the garden.

PLANNING PERMISSION

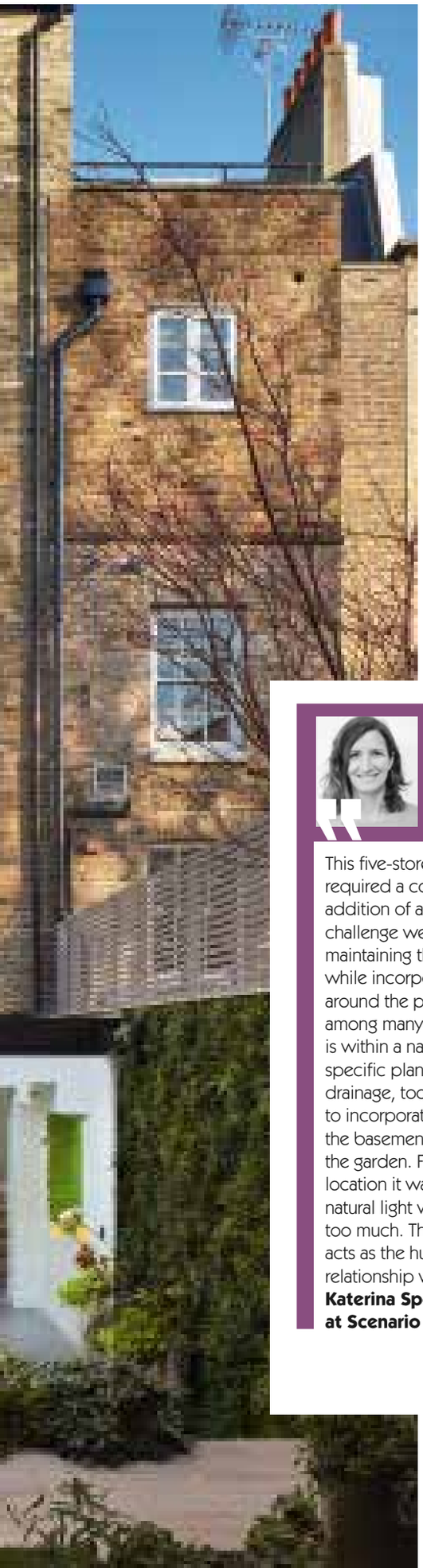
Converting an existing cellar into a habitable space is unlikely to require planning consent, providing the use of the space is not significantly altered or no changes are made to the exterior of the property (such as the addition of a lightwell or windows). Even if your project is covered by Permitted Development (PD) rights, it is still worth obtaining a Lawful Development Certificate from your local council for peace of mind.

Historically, it was possible to construct a new subterranean space under PD allowances. However, many local authorities have clamped down on this type of development in recent years to prevent issues surrounding the creation of multi-level, iceberg basements. Remember, if you live in a listed building you will need to get listed building consent for the works, too. And, if your property shares any walls with adjoining owners, the Party Wall Act 1996 also comes into play.

GETTING CEILING HEIGHTS RIGHT

One reason that many cellar conversion schemes tend to come unstuck is down to ceiling heights — never fall into the trap of skimping on head space. You'll want a minimum clearance of 2m. There's no minimum ceiling height in the Building Regs but, ideally, you should aim for somewhere around 2.3m to 2.4m — especially if you want to establish a sense of continuity with ceiling heights in the rest of the house. If you're incorporating an additional layer of insulation at floor level and laying flooring on top, don't forget that even a few mm of build-up will eat into the overall height of the space.

IMAGES: SCENARIO ARCHITECTURE, PHOTOGRAPHER MATT CLAYTON (MAIN); RISE DESIGN STUDIO (TOP RIGHT); ST ALBANS BASEMENT, MARK SIMMS PHOTOGRAPHY (BOTTOM RIGHT)



DESIGN: CEILING HEIGHTS

This five-storey house in south west London required a complete renovation, plus the addition of a new underground gym. The challenge we faced with our design was maintaining the existing ceiling heights while incorporating a gym with views around the property. We were digging among many party walls, as the property is within a narrow terrace. There were specific planning requirements regarding drainage, too. To get around that we had to incorporate a 1m drainage system above the basement that had to work as part of the garden. Finally, because of the gym's location it was a challenge to bring in natural light without disrupting the garden too much. The open-plan ground floor now acts as the hub of the home with a direct relationship with the garden.

Katerina Spetsiou, project director at Scenario Architecture

SPACIOUS BASEMENT
Above: This Victorian house was stripped back at lower ground floor level to reveal its structural shell, prior to the full installation of new services infrastructure, simple rear extension and creation of a more spacious workable basement, designed by Rise Design Studio.

STAIRCASE CONNECTION
Below: The cellar of this house was converted by St Albans Basement into a habitable basement. It retains the original lightwell, however, the new timber staircase was added to connect the subterranean level, that's now an office and playroom, to the accommodation above.

STRUCTURAL KNOW-HOW

For most schemes, the lion's share of the budget will be allocated to excavation and other structural works, which will require the input of a structural engineer. "This could include underpinning or strengthening works, as well as new structural slabs/foundations," says Rachel Davidson, director of Hut Architecture. Underpinning is a process that usually involves building a concrete support directly underneath the walls of the property above to ensure they're adequately supported. The concrete is typically cast in metre-long sections to hold back the load of the surrounding earth. If you're retaining the ground floor above the cellar, supporting steelwork may need to be integrated, which will likely add time and cost.

BUILDING REGULATIONS

The implications of converting your cellar into a habitable zone means that it needs to comply with Building Regulations (key areas covered include parts A, B, C, E, F, H, K and L). The basement will need to conform to the required standards for waterproofing, drainage, ventilation, insulation, electrics and access. Providing a clear escape route in case of fire is another area your building control officer will look at closely. Ideally, an additional flight of stairs or ladder should lead out of the basement in case the main staircase is blocked.

The basement ceiling needs to be made fire retardant to comply with Building Regulations, too. This is achieved by applying a non-combustible material to the surface. The basement structure should be fire resistant for at least 30 minutes, with this time increasing to 60 minutes for properties with four storeys or more.

WALK-ON ROOFLIGHTS

Hut Architecture masterminded the design of this subterranean zone in East London, to create more space for the family who live here. The compact mid-terrace townhouse was modernised and expanded via the infill of an existing basement courtyard. Four walk-on rooflights have been incorporated at ground floor level, allowing plenty of light to flood down into the basement below. The fresh new space is used as a living area. Bespoke built-in joinery helps to maximise space in the new family zone, ensuring it remains sleek and clutter-free.

KEY FACTOR: VENTILATION

In addition to trickle ventilation [via a window] mechanical ventilation can be introduced. It is a necessity if you're integrating a bathroom or utility room, for example, or you have no means of achieving more traditional forms of ventilation such as an openable window. A mechanical setup will ensure the environment is filled with fresh air. With the correct specification, it will be able to identify moisture in the air and remove it as part of the humidity settings.

Liam Dower, director & chartered builder at St Albans Basement (www.stalbansbasement.co.uk)

IMAGE: HUT ARCHITECTURE, PHOTOGRAPHER HEATHER HOBHOUSE