Case Study: Black Box

3 Battishill St, London, N1
Islington, London

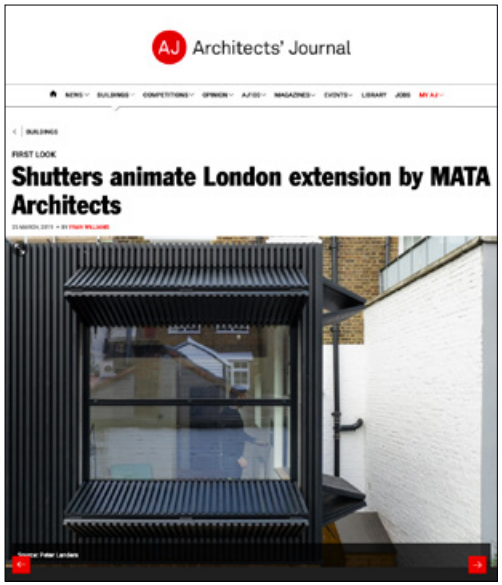
"We loved the idea of the first floor as this dynamic black box that could be reconfigured and were delighted that, following a lengthy and, at times, delicate planning process, MATA was able to obtain full consent. While the consent included the ground-floor extension we chose to prioritise and phase the works, beginning with the first floor.
MATA prepared detailed drawings and specifications for tenders, which they invited and managed. They negotiated savings with contractors on our behalf and administered the building contract. While the construction phase was bumpy at times, they remained professional throughout and a genuine ally. We now have a beautiful and highly functional, if rather unconventional, first-floor extension."

— Marc and Gerard (Client)

RIBA
Chartered Practice

MATA
ARCHITECTS

Selected Press:


Architects' Journal

FIRST LOOK

Shutters animate London extension by MATA Architects

Architects' Journal. March 2019.

enki FOR MODERN LIVING

THE HOME OF DESIGN & ARCHITECTURE

Waterside living

INTERIORS...ECOLOGY...DECORATING...ERGONOMICS...DESIGN...
TECHNOLOGY...NEW BUILDS...ARCHITECTURE & OUTDOOR SPACES

In the balance

Two bespoke counterbalanced shutters form the dynamic new façade of this mid-terrace Victorian house in Islington

Enki Magazine. June 2019.

THE SUNDAY TIMES
SUNDAY MARCH 24 2019

Build it off site This stained larch box with bespoke shutters doubles as a guest bedroom and office for a Victorian terrace in Islington, north London. An Edinburgh factory built it for less than it would have cost locally. *mata-architects.co.uk*

Home Improve

THE BIGGER PICTURE

From loft conversions to log cabins, *Martina Lees* explains how to add space and value

SHED HEAVEN

Sunday Times. March 2019.

Introduction

Black Box is a small first floor rear extension to a mid terrace Victorian era house in Islington. Our client, a professional couple; lawyer and management consultant, wanted a place that could double as a home office and as a self contained guest bedroom with en suite. The challenge, with such a small footprint, was to develop a design that was able to adapt to these two very different requirements.

Situated on a dense urban site with neighbouring buildings in close proximity, any proposed extension would be overlooked from multiple sides – a typical London situation. At the same time, driven by a desire to maximise natural daylight provision and celebrate key views across adjacent gardens, we wanted the new space to benefit from large windows. We asked ourselves, can we introduce large glazing whilst regulating levels of shading, natural daylight, privacy, and security at different times of the day?

The result is a small and seemingly simple first floor extension conceived as a 'reconfigurable box' in dark stained Siberian Larch. Two bespoke counterbalanced shutters are manually operated internally using winches, allowing for multiple configurations; from fully open with window overhang to counter summer solar gain, to shut tight.

The dynamic nature of the façade encourages the user to interact physically with the architecture and adapt their environment for comfort.

The apparent simplicity of the box masks a high degree of precision engineering that is packed into it. The carefully crafted result is borne out of a close collaboration with our structural engineer and specialist fabricator. The extension was largely prefabricated with the shutters tested in factory conditions before delivery to and installation on site.

Key Data:

Begun (design work): September 2015
Begun (construction): February 2018
Completed: December 2018
Floor Area: 13m^2 / 140 sq.ft
Construction Cost: Confidential

Client: Private
Structural Engineer: Entuitive
Specialist Fabricator: Old School Fabrications

Original Condition On Project Start:

Battishill Street is located on the Eastern boundary of the Barnsbury Conservation Area, in the London Borough of Islington. The area contains many of the best examples of formal late-Georgian/ early-Victorian residential buildings in London.

The initial brief given to us by our client was to design a contemporary single storey extension at first floor to replace a failing conservatory and a side return at ground floor. The scheme was to be phased with the first floor element being a priority.

On our first visit to site we identified key views across adjacent gardens as something we wanted to maximise. Countering this was a sense of being overlooked and exposure to neighbouring properties - a feeling we wanted to address through the design.

Rear elevation prior to works being undertaken

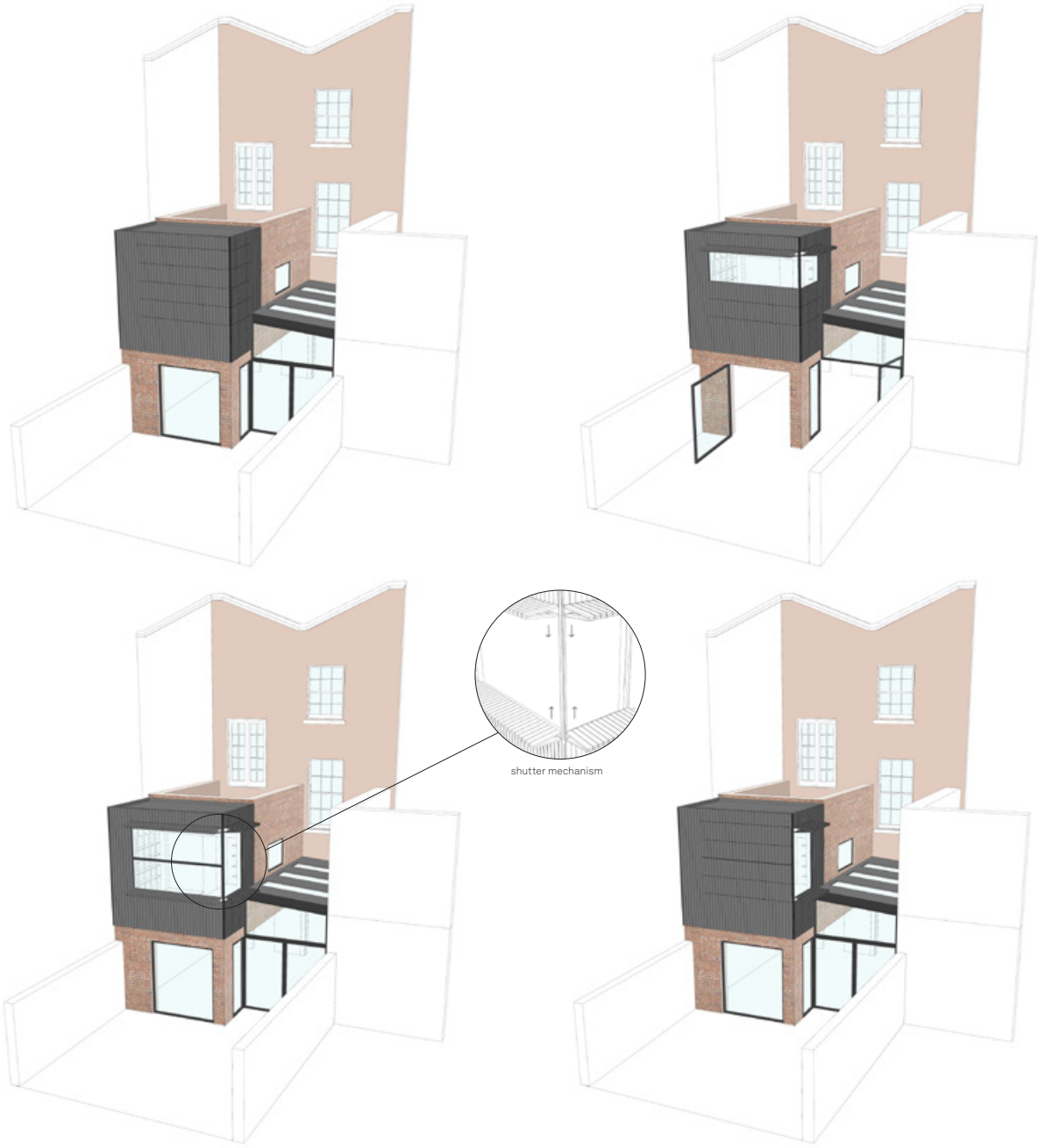
Process:

The initial design period is always a messy one involving moves on multiple fronts. The main areas we focused on initially were:

- Creating an internal space that could regulate natural daylight and privacy as well as maximise the best view across adjacent gardens.
-
- Developing a contemporary aesthetic language externally to contrast the more typical existing Victorian building.
-
- Ongoing conversations with our client to help formulate the brief; including aesthetic preferences, functional requirements, budgetary and other constraints.

After sketching a variety of forms, we settled on the idea of a dark stained, minimal timber clad box - a cost effective solution that also maximises the internal volume. The simplicity of this design allowed us to experiment with more dynamic and reconfigurable methods of regulating daylight and views through the facade.

Our first 'work in progress' meeting with the client explored these ideas in both 2D and 3D.



Concept diagrams showing how opening shutters animate the facade

Concept Design (RIBA Work Stage 2):

The design was then critiqued and refined through a number of 'work in progress' meetings and iterative conversations with our client. Throughout the design process we communicated the evolving scheme through a series of 3D visualisations, drawings and diagrams, allowing the client to engage with and contribute to the scheme throughout it's evolution.

We discussed preferences on big decisions, such as the format of the glazing frames, as well as small details such as the rhythm and sizing of the timber batons forming the cladding.

The images we produced at the end of the concept design stage indicate the full extent of the ground and first floor scheme and ultimately led to our engagement with the London Borough of Islington for pre-application advice.

Planning Process:

In order to protect the special character of the conservation area, development or alterations to a property located within a conservation area are subject to more stringent design guidance.

Barnsbury Conservation area guidance on extensions above ground floor states that these should use “traditional materials and should be sympathetic to the host property in terms of the colour and texture used”. Further, the guidance suggests that new extensions should “blend in with the materials used for 18th and 19th Century buildings”. We would argue against this approach that promotes and encourages pastiche architecture - a modern and inauthentic copy of a style used many years ago. Rather, we believe that the juxtaposition of existing and historic building fabric with contemporary extensions is a more authentic and genuine celebration of old and new alike. It is this tension between the old and the new that ultimately produces architecture that is both thought provoking and durable.

In order to achieve planning for a more contemporary design we set out to provide a robust argument and reasoning We engaged the local authority with a pre-application meeting on site prior to submitting a full planning application, enabling us to begin a two-way conversation with the planners. During this process we met with the case officer and had a number of direct conversations. Despite initial ‘by the book’ reservations, we persevered and responded in writing to all of the concerns raised by the planners.

Ultimately, we managed to convince them that, whilst the proposed design did not strictly comply with all aspects of the design guidance, it complied in spirit and was of sufficient architectural merit to allow a minor departure from strict guidelines. This was achieved through negotiation and the supply of detailed information, drawings and specifications so as to counter any concerns the planners had. Our written response to the pre application included the following:

Long section through first floor

“The proposed timber cladding is not a material that is present on the rear elevation of the host terrace, at least not in the form of solid cladding as proposed...However it is noted that the ground and first floor extensions are designed to be read together and display a well thought out and integrated design which is welcome. The extensions still read as subservient to the host building and offer a visual improvement over the existing built form on site. Therefore within this context and subject to further details on the final choice of materials, officers would be willing to accept the use of timber cladding in this case.”

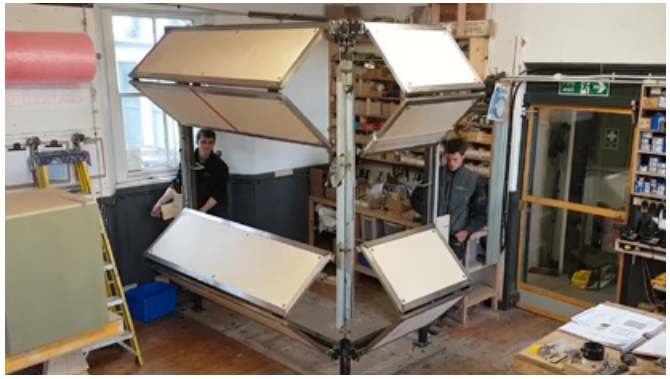
The above is an excerpt from written response by London Borough of Islington to our pre application proposals.

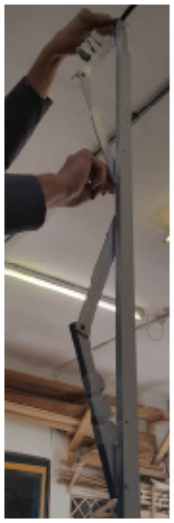
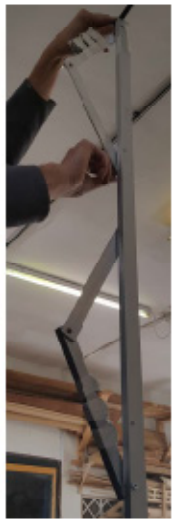
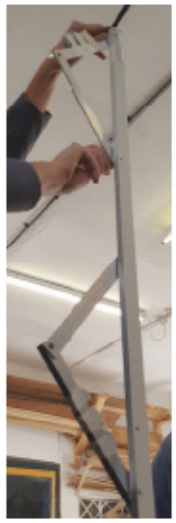
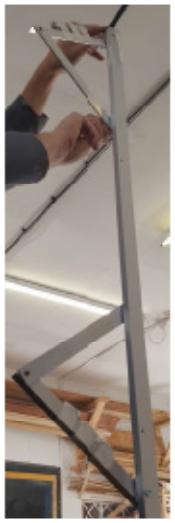
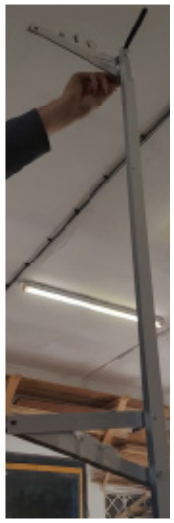
Black stained Siberian larch samples

Developed Design (RIBA Work Stage 3):

Following planning approval, we began to develop areas of the design in more detail and visualise interior spaces.

At this point, we tend to develop the 'feel' of the building. This involves testing materials through research, visual testing and, ultimately, commissioning samples and mock ups. We bring these material samples to our meetings and encourage our clients to pick them up and feel them.



Prototypes produced by Old School Fabrications

Collaboration:

We researched and invited quotes from a number of fabricators that we identified as having the capability to deliver the shutters and cladding. From these proposals, we, together with the client, chose to work with Old School Fabricators - a specialist based just outside of Edinburgh. Over a number of months the technical design of the shutters were developed in close collaboration with OSF and our structural engineer, Entuitive. Working together we tested the mechanism, scale and materiality.

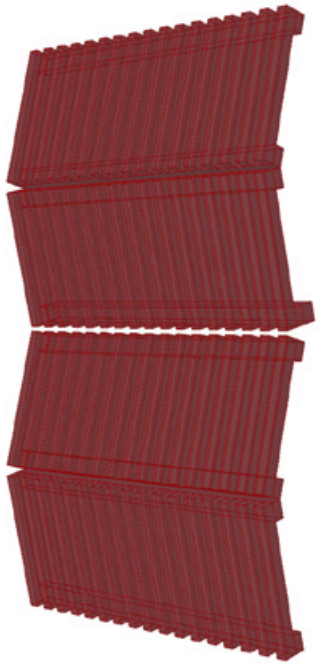
Old School Fabrications also created a working prototype of the shutters in their workshop before beginning construction.

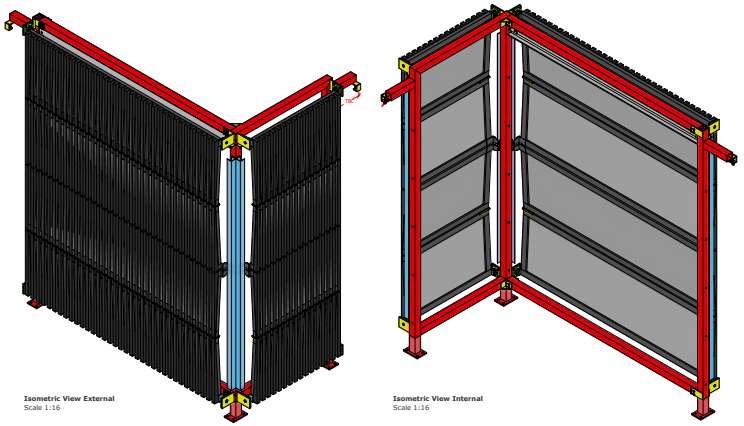
Detailed Design (RIBA Work Stage 4):

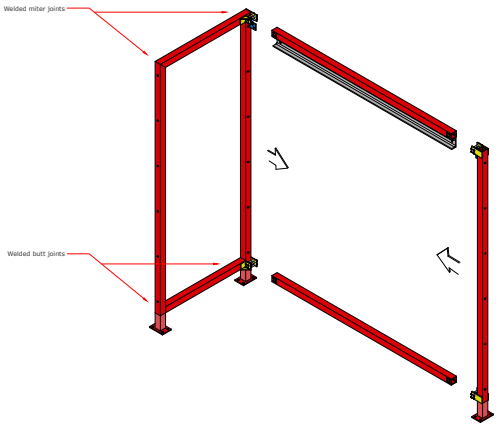
The technical design of the bespoke shutters and surrounding structure were finely tuned with complex details and junctions between fixed and moving parts. Coordinating and weaving these components into the fabric of the building required a collaborative and close working relationship between the design team which included ourselves, Old School Fabrications with structural engineering services provided by Entuitive.

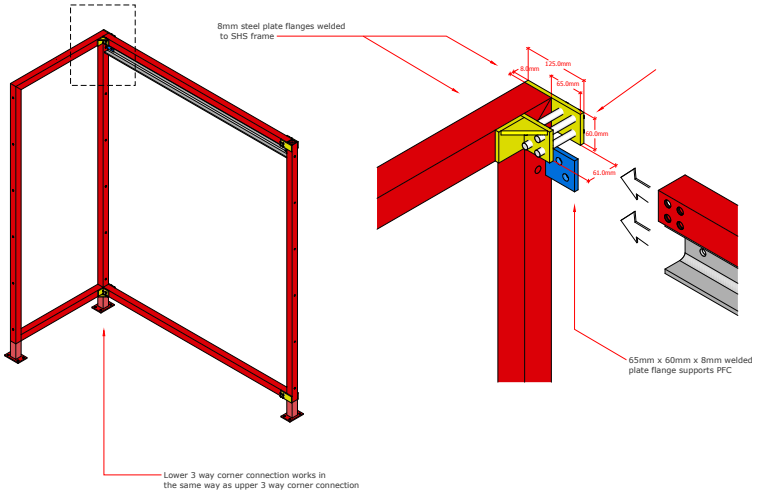
The design team worked hard to pre-empt potential issues and resolve them prior to assembly on site. An example of this is that due to access restrictions on site the steel box frame supporting the shutters had to be designed and fabricated in small sections, carried through the house into the garden and assembled on site.

To ensure there were no clashes between the movement of the shutters and the glazing, we combined the details of the mechanism provided by OSF, the window dimensions and the cladding design to create a parametric model. The adjustable 'rotation' parameter allowed us to simulate the opening and closing motion of the shutter system in 3D and ensure coordination during the detailed design stage before moving to construction.



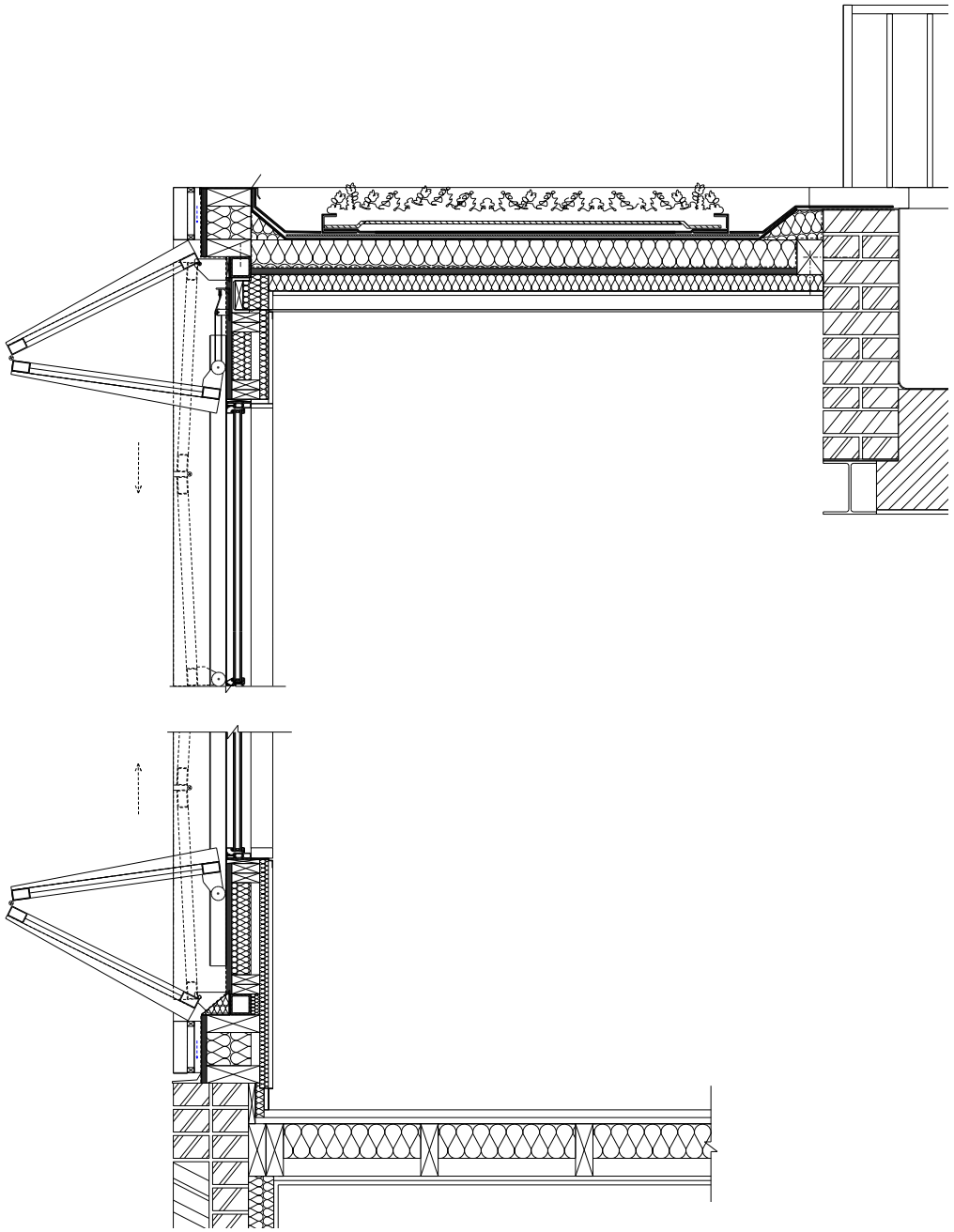






Technical drawings by Old School Fabrications

MATA produced a full set of detailed drawings with a corresponding schedule of works/specification document as well as commissioning quotes for high value products such as the glazing system. Our documents were used alongside the structural engineer's information to accurately price the scheme.

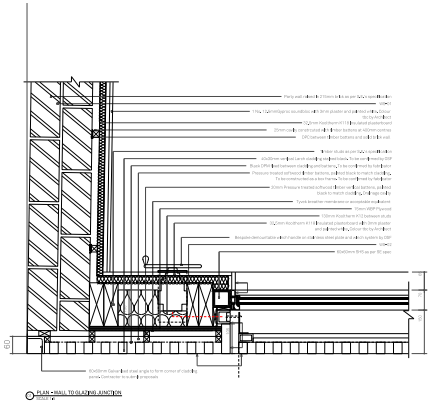


Detailed section through shutters and green roof

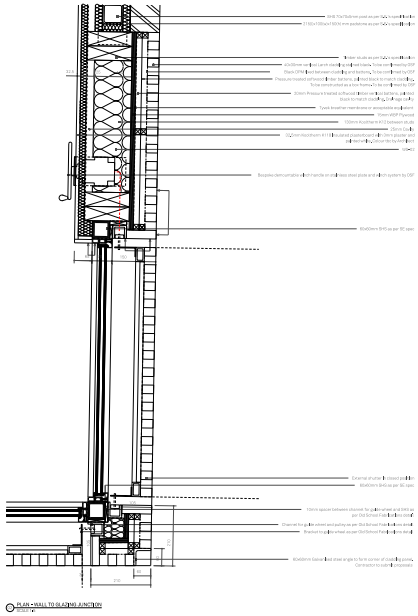
<u>Tender (RIBA Work Stage 4):</u>

There is always a balance between time/speed, cost and quality for any build. Whilst our client sought a quality product, they were simultaneously pushing to keep costs as low as possible but placed less importance on the length of the programme. The mix of these priorities led us to approach small scale contractors who were more likely to have lower overhead costs. We tendered the works competitively to 5 contractors and obtained 4 qualifying tender returns.

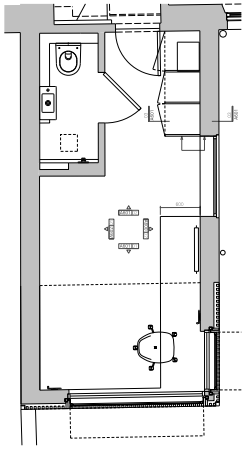
On behalf of our client we met and negotiated with the top two tenderers. The negotiation involved working through the schedule of works and drawings to identify opportunities for cost saving measures. Often the contractors that are the most forthcoming during this process go on to win the job as it demonstrates a proactive and committed approach from the outset.



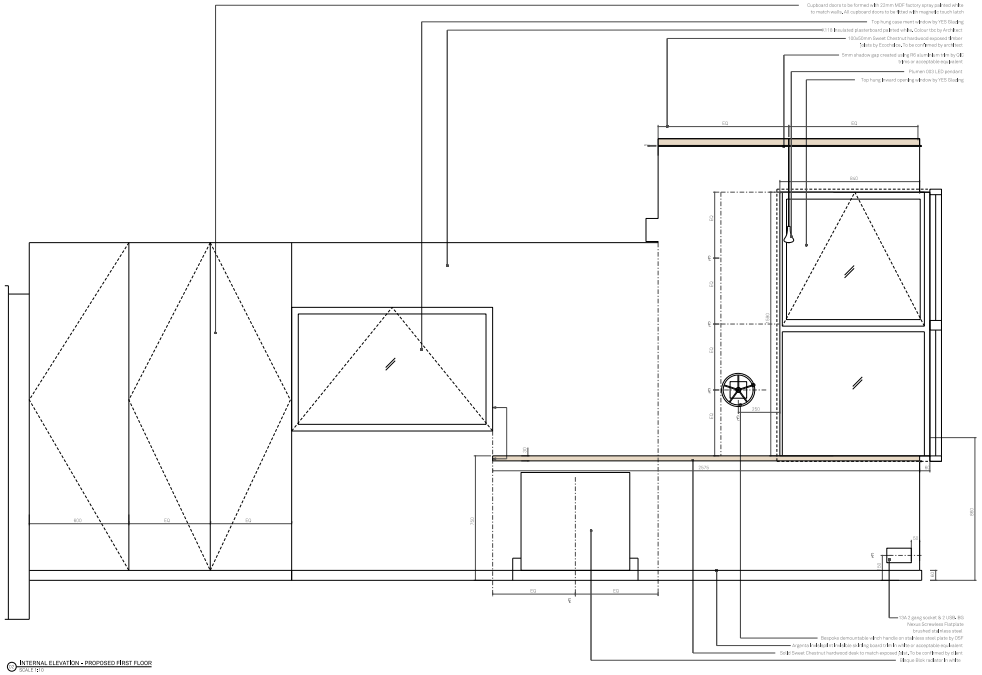
PLAN - WALL TO GLAZING JUNCTION



PLAN - WALL TO GLAZING JUNCTION



PLAN - PROPOSED GROUND FLOOR

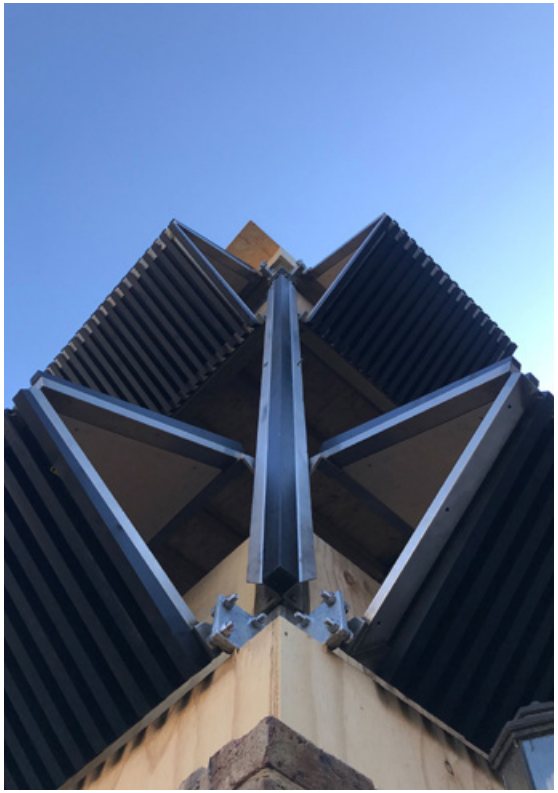


INTERNAL ELEVATION - PROPOSED FIRST FLOOR

Construction (RIBA Work Stage 5):

Delivery of the Black Box extension was divided between the main contractor that won the tender and OSF. The main contractor was responsible for all demolition, general building works, plumbing, electricals and finishes whilst OSF were responsible for the cladding and shutter fabrication and installation.

This division of labour was also expressed in separate contracts for discreet parts of the works, ultimately to save the client money. However, whilst both parties coordinated and cooperated effectively on site, a number of issues arose as a result of this contractual separation that caused minor delays to program. For this reason (and others, to do with wanting a single point of liability) we would be very cautious entering into a similar arrangement in future and would always prefer that the main contractor take ultimate responsibility for the works.

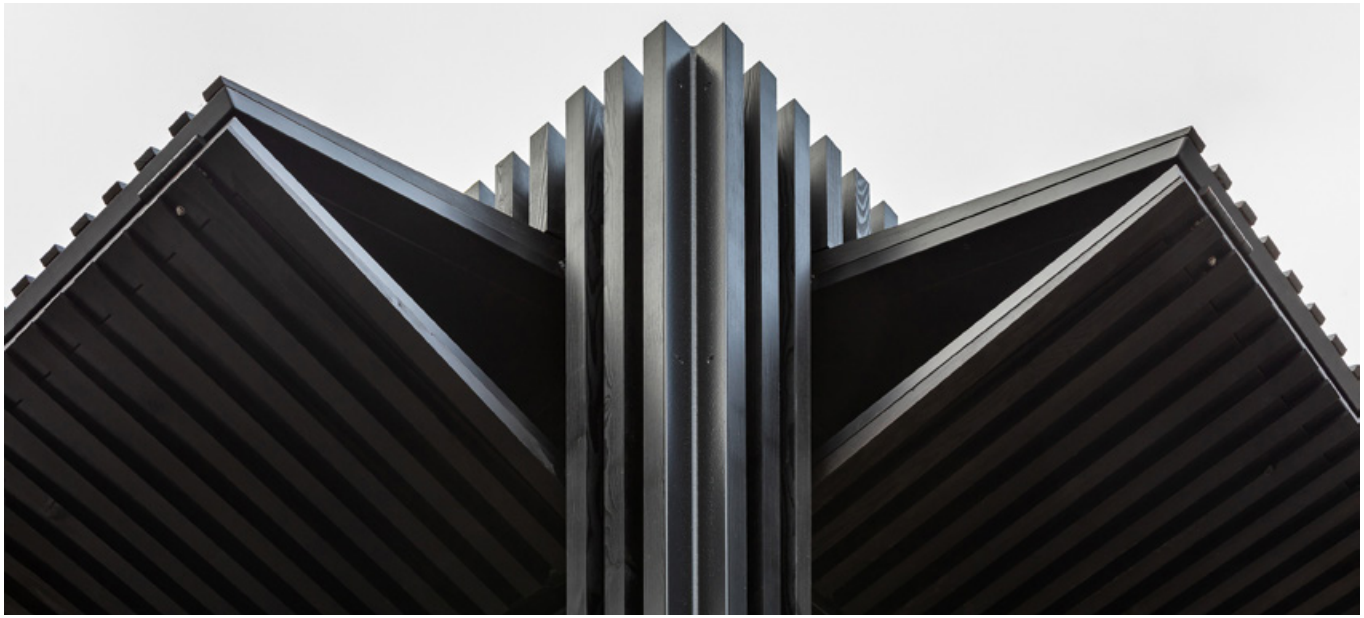


Internally, the space is pared back and minimal, a bright and airy blank canvas to be dressed. We have designed using warm and tactile materials, expressing the roof joists in European Oak, a material again echoed through shelving, door frames and window cills. Existing brickwork has been cleaned and exposed internally and the chunky I-Beam supporting the existing roof above has been left exposed and painted a striking black to read alongside the glazing frames and timber cladding.

Two wall mounted marine-grade brake winches give the occupant individual control over the daylight, privacy and security of their space. Six rotations and the shutters are completely open or closed.

The winch mechanisms are self-locking allowing the shutters to be safely held open at any point.

When open, the shutters form overhangs that prevent direct solar gain during the summer months and help to frame views out. When closed the space is completely locked away.



Externally, the black stained Siberian larch timber battens create a striking and contemporary contrast to the traditional yellow London stock brick of the existing Victorian house.

At first glance, when closed, the monolithic Black Box appears as a blank timber clad facade. The magic begins as the shutters creep open, commanding your attention and directing you to look up as they widen.

MATA ARCHITECTS

Studio 114
Great Western Studios
65 Alfred Road
London W2 5EU

t: 02037948128
m: 07870572201

www.mata-architects.co.uk