

— KNOW YOUR WOOD: OSB —

# HOW DO YOU TURN AN INFILL CAR PARK INTO BEAUTIFUL HOUSING?

**Edward Williams Architects' first CLT project has transformed an underused car park into a welcoming mews-style development. Directors Laura Carrara-Cagni and Edward Williams explain how they went about it.**

INSPIRATION



A stylish landscaped housing scheme now sits on what was once a World War II bomb site. This is Stratford Courtyard Housing, a 900m<sup>2</sup> housing scheme in the London Borough of Newham. Designed by

Edward Williams Architects for developers Cliveden Land, it consists of four new buildings in the rear former car park of a brick housing development in Stratford, East London. The car park was unloved, having become an area for fly tipping and local

drug transactions. The new buildings comprise two L-shaped blocks positioned alongside existing housing to create two courtyards. Together they provide nine new apartments, including four three-bed, three two-bed and two one-bed semi-detached homes. →



### You never forget your first time

While both Williams and Carrara-Cagni had investigated CLT at length, this is their practice's first CLT project. They are a practice who thrive off research and experimentation, and they did their homework thoroughly.

"We have investigated CLT in the past and had been wanting to use it," explains Carrara-Cagni. "This was the right project at the right time."

They thoroughly researched the qualities, benefits and design considerations of CLT, deciding what they did and did not like about CLT usages in other projects. They determined that Stratford Courtyard Housing would be as 'dry' as possible, avoiding wet trades wherever they could to be coherent with the CLT dry timber construction nature.

### Bringing in the CLT contractors nice and early

They tendered for the CLT contractors some three months before the main contractors. They considered it important to involve them in the choice of main contractor. But they were also aware they needed to allow time for the CLT manufacture before going onsite with the structure. The



CLT contracting was carried by Italy's Canducci Group, who had joint ventured with KLH UK for the installation.

The car-park site had poor ground conditions – one of many reasons why the architects were keen to use CLT. The lightness of a CLT frame would minimise the requirements for piling and foundations on top of being a more neighbour-friendly construction for its quiet and fast process.

Canducci assisted Edward Williams Architects' mission

to use timber instead of steel wherever possible. Together they designed out any steel elements in any areas that needed more rigidity, opting for glulam beams where the structure required it. Some terrace parapets couldn't avoid steel, but everywhere else is timber-based.

### A clean, consistent 'dry' design

The scheme is clad with a striking hit-and-miss façade made of Scandinavian pine.

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***“There are many interesting, challenging aspects to designing with CLT, but it goes up so fast and so silently. The neighbours were very appreciative about how quiet the building site was.”***

Edward Williams

“We didn’t do it because it happens to be fashionable,” states Carrara-Cagni. “We wanted coherency with the CLT structure. Also Newham Borough wanted a mews-like building. Timber is a warm material, which we felt complemented the neighbouring brick buildings.”

The timber façade sticks to the overall ‘dry’ ambitions

of the project. The only wet trades in the buildings lie in the foundation slab, Carrara-Cagni reveals. There is not even a concrete screed to the floor make-up.

This ethos extended to the look of the interiors. They designed every timber ceiling to be visible – keeping fire alarms, lighting and cabling on the walls.

“You can see where the timber is sloping and where it is straight,” enthuses Carrara-Cagni. “Where there is a glulam beam, you can see it. We thought that was beautiful – residents occupy a place whose design is clear and understandable.”

CLT also helped provide generous floor-to-ceiling heights. The CLT slabs they used are slim – around

140mm – and not using suspended ceilings also helped. Carrara-Cagni notes that she often sees other projects using CLT more often for slabs than for walls – designers appreciate its slimness and its strength.

### Explaining timber’s efficiency

It did take a little persuasion for Edward Williams Architects to convince their client that CLT was the way to go. The project’s planning application described three different possible systems. Even after the contractor was appointed, the client suggested that a Metsec system – which uses an extruded aluminium structure – might be a better option.



Edward Williams Architects demonstrated that it was less viable: the size of the structural elements, slabs and walls would increase significantly. Ultimately, they were able to prove that timber was the most efficient option.

### Super safe and super insulated

Every element of the façade buildup is fire rated B or better, from the insulation to the timber treatment. It was not a requirement as the building is less than 18 metres in height, but the designers wanted a building that went beyond the regulations.

They carried out a CDM risk assessment process which led to a few revisions. Originally, there was exposed timber externally on the terraces soffits. This was then enclosed, and moisture sensors added as the practice was concerned about potential rot and moisture issues. Moisture monitoring sensors were embedded in key areas like the cantilevers for balconies.

These connect back to the landlord store, underneath one of the blocks' staircase, so the client can measure the timber's moisture in several locations from a central point. Doing so is as simple as checking a boiler

– not that there are any gas boilers in the buildings, where all power is electric.

“We made sure all CLT rests on a minimum 150mm in situ concrete upstand,” states Williams. “So if there is any risk of water getting into the ground floors, none of the CLT walls will ever be sitting on it.”

### A quick and quiet build

Interestingly, the architects had originally specified entirely prefabricated

cladding panels. But both client and contractor decided it would be more cost effective to build the façade panels onsite by the contractor's team. Once they understood how to make them, the panels could be assembled and built very quickly and efficiently: a simple matter of nailing vertical battens to two horizontal battens, fixed to helping hands in the insulation zone to the CLT structure. **DT**

