

06: SLO – Simple Living Opportunities – an approach to high density, low rise family homes

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At Proctor and Matthews we have been working primarily in inner city areas, building at the Mayor's middle densities of about 450 habitable rooms per hectare. We have discovered that it is actually very difficult to deliver family housing at those sorts of densities. Knowing that a lot of our RSL clients were struggling to achieve their targets for family housing we started to look at lifting densities in suburban locations whilst trying to deliver better space standards and, in particular, two-storey family dwellings.

We were asked quite recently by a client to do some rapid research on space standards across Europe and to look at the comparables; they too were concerned about how space standards appeared to be going down in Britain. In illustration 1 you can see that all the countries of Europe, I think with the exception of Luxembourg, are building at higher space standards in their new accommodation than we are here in the UK.

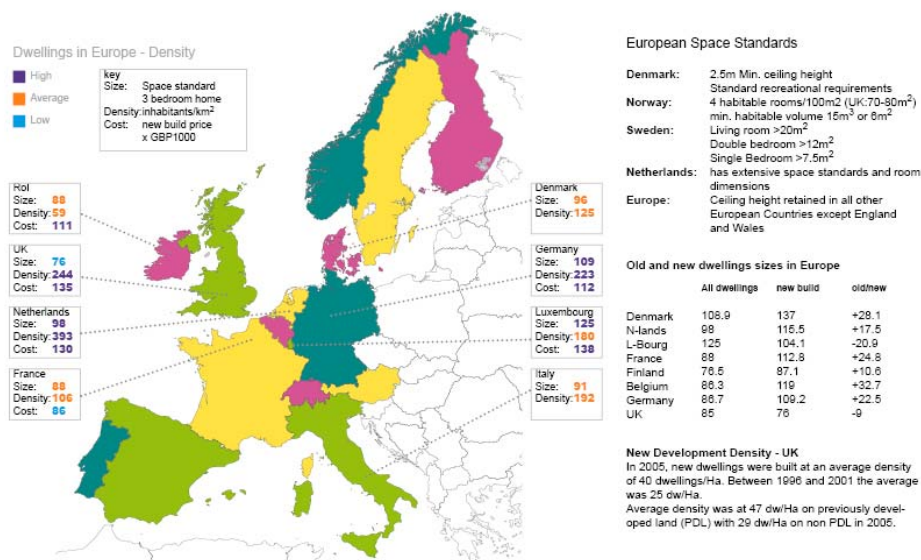


Illustration 1: Dwellings in Europe – Density

We in the UK seem to be the only country in Europe whose space standards are going down; the average size of a three-bed unit in Britain is 76 square metres. Our density targets in the inner cities are also among the highest, so we have high densities as well as decreasing space standards. It appears that those countries that are building at higher densities across Europe understand the need to deliver higher space standards at the same time. In the UK we do not seem to be doing that. Another interesting point that has not been discussed today and one that we have not got to the bottom of is that our construction costs are among the highest in Europe as well. There must

be a correlation between size and cost in Britain, but I do not quite understand why construction costs are so much higher.

Case Study 1 - Dale Mill, Rochdale

For some years we have been involved in a Pathfinder Project in Rochdale, along with English Partnerships, the Rochdale Development Agency, East Pennine Housing Association and Artisan. This is a market renewal project. It will be a mixed tenure development but primarily the houses on this site will be for sale. Traditionally on inner city sites in Rochdale developers have been delivering semi-detached dwellings at around 25 units per hectare. The space standards are relatively high for those units and the local community is buying them. The low densities are however driving down the population, the community is not being held together and as a result the local services are under stress.

Dale Mill, Rochdale



People always talk about important issues at election time; afterwards it's all forgotten. It's about time they delivered. They should do something about all areas.

Mr Azim, a Rochdale shop owner, born in Kashmir. He was a textile worker in the UK for 27 years.



There's nothing good in Rochdale, apart from the Chinese chippy. Mum takes us to Bradford for the shopping. We don't have anywhere to go, so we hang out on the street.

Farhana, who lives in the Hamer area of Rochdale with her mother Shahana and brother Farhan.

Illustration 2: Dale Mill Rochdale – engaging with the community



Illustration 3: Dale Mill Rochdale – engaging with the community

We wanted to engage in a different way with the local community, to understand the kind of housing they aspire to and also to have a conversation with them about density issues (illustrations 2 & 3). This research into the nature of the place enabled us to develop typologies which pushed the densities on this site up, but which still delivered higher space standards and a very particular kind of housing for this area. The local community is predominantly South East Asian and they were not particularly interested in large gardens; they preferred to see private external space embedded in the plan of the house. This led us to think quite hard about better internal/external relationships and achieving this led to housing with larger perimeter wall areas. We are also very aware that delivering higher densities requires more and better quality public realm. The success of this public realm, however, also requires an effective ongoing management and control of this space.



Illustration 4: Dale Mill Rochdale - site layout

Illustration 4 shows the site layout, which is currently under construction. The densities here are about 41 units per hectare (as opposed to 25 to 30 before). This is based very much upon the existing back-to-back street layouts that create the urbanity of this place. Our proposal however delivers a very different kind of typology across the plan, with both terraced and semi-detached courtyard houses.

There was also, as you will see on some of the other schemes, the problem of car parking which if not handled carefully can completely undermine the sense of place we are trying to achieve. In Rochdale we are required to provide 1.7 spaces per dwelling and in some instances two; so there is a real need to create a typology which will enable cars in some instances to park on plot and some to park in the public realm, but not to dominate the public realm. The housing typologies developed here allow this flexibility and we will see as we move on how we tried to employ and advance this solution on other sites.

We also addressed the issue of future proofing. The houses on Roch Street are interconnected four-bed with two-bed mews houses. This will enable the housing association and private buyers to have a large seven-bed house, for the demands of

the extended families that are going to live here, but will also enable them to split those houses up with ease so that they can deliver different accommodation going forward. This is a particular issue for RSLs rather than developers who are more concerned at the point of sale.

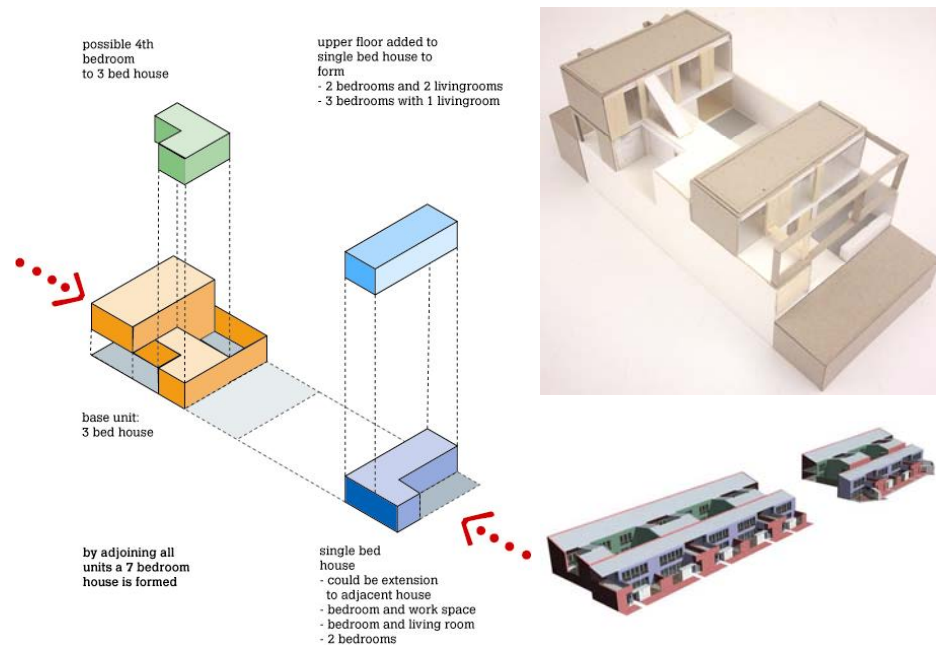


Illustration 5: Axonometric of future proof houses on Roch Street

Illustration 5 shows an axonometric of these future proof houses on Roch Street. They are a kind of modern back-to-back courtyard house, delivering the higher densities required. You very often find you need to develop a typology, a higher density typology, that has two fronts and so this is that house; that is two houses in one.

Then of course there is the evolution of a language, looking at the particular urbanity of Rochdale, and working with the local community to consider how materials and façade treatments can deliver the kind of architecture that is culturally relevant to this place. The community seemed to like the semi-detached housing that was being proposed on other sites by developers not only because they delivered more space but they also provided individual expression to the street. Conscious of this, both the terraced and courtyard houses were designed to create a saw-tooth form to the public realm and in so doing, despite being in a terraced format, deliver this sense of individual expression.



Illustration 6: 3D view from the River Roch

Illustration 6 is a three dimensional view from the River Roch of the final layout and a fragment of the proposed elevations both to Roch Street at the bottom and the courtyard houses within the scheme. So we achieved a higher density, we achieved the space standards, these are EP's new space standards, and we hope a development that will deliver a mixed tenure environment that will support the retention of the existing community and in turn the local services.

Case Study 2 – £60K House

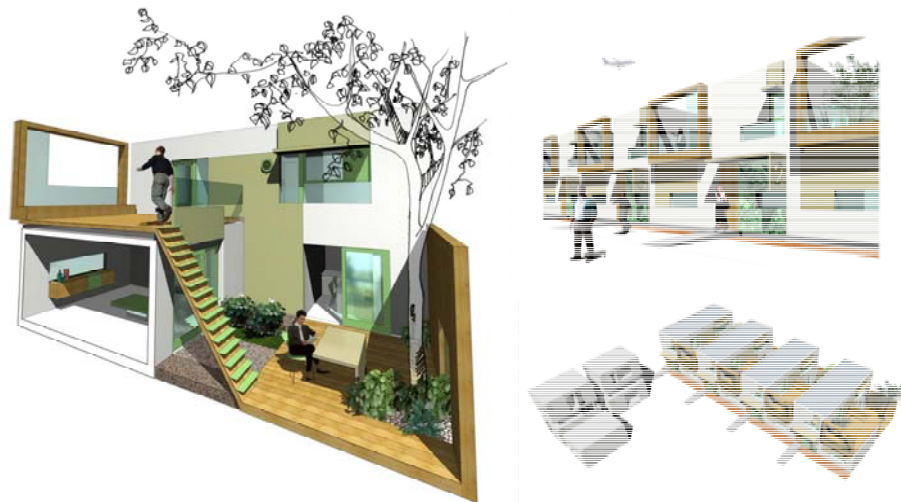


Illustration 7: £60k house

We took some of this thinking forward to the £60K house competition (illustration 7) and continued to explore how we could try and deliver a greater perimeter wall area - which seemed to make better plans, more interesting plans - for the same cost that developers were building traditionally constructed terraced housing to. We were managing to achieve the same sorts of densities with a broader footprint, shorter gardens, but with a greater perimeter wall area. Working closely with manufacturers we were able to square the construction cost equation by considering modular construction. This construction research was related to work originally done at the Greenwich Millennium Village but had moved on from pre-fabricated wall panels to full steel modular finished units. This research was about trying to extract better quality housing, better space standards, but also to deliver an adaptable technology for different locations so that the architecture or the housing did not wear the technology 'on its sleeve'; it was responsive to context.

Case Study 3 – Pre-fabulous Homes

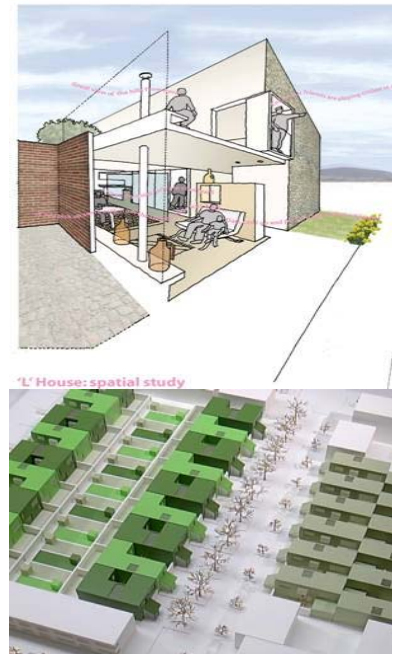


Illustration 8: Pre-fabulous Homes Exhibition

That work was then taken forward to the Pre-fabulous Homes exhibition at the Building Centre where we wanted to demonstrate that with this model of housing you could achieve about 75 units per hectare on a traditional suburban site and still develop better space standards at two storeys. The issue of two storeys is quite important because, as we know, the building regulations impose fairly draconian rules on us above two floors. At three floors we require a protected shaft for the staircase or an alternative means of escape from the third floor. If we can keep the densities up with low-rise family housing, deliver the space standards and keep it at two storeys then it liberates the plan and enables us to do more exciting things with circulation space. The circulation space need not become protected unusable space; it can become properly lit and part of the enjoyment and usability of the dwelling.

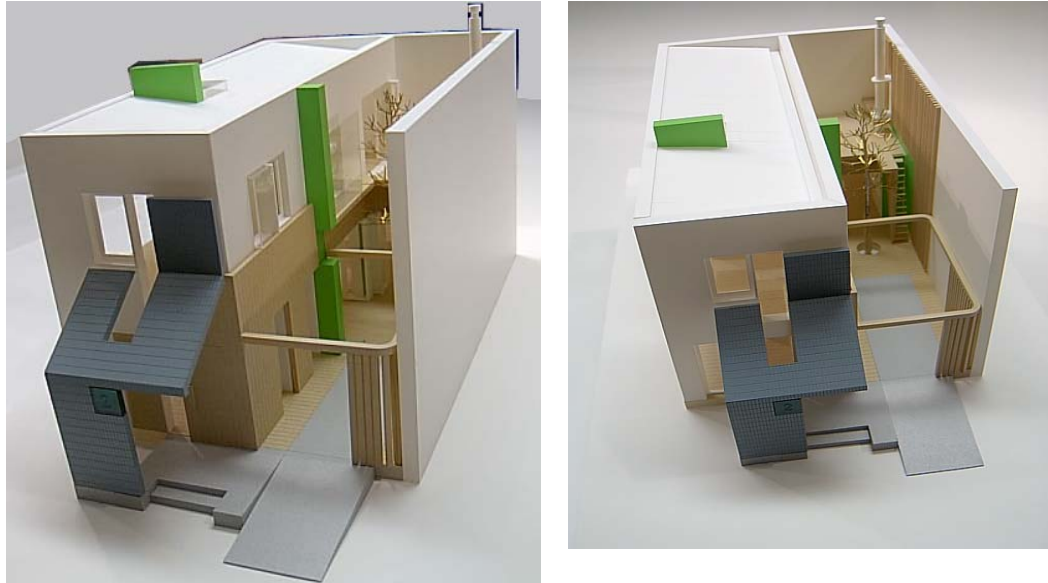


Illustration 9: Pre-fabulous Homes Exhibition

So illustration 9 is the first early prototype for a 78 square metre two/three bed terraced courtyard house, built of three modules with prefabricated bin and bike stores at the front forming the threshold. If in suburban places we have local authorities that still believe two cars are needed per house, the second space becomes one that is in the courtyard of the house, and the other space is out on the street. So we avoid flooding the street with cars and can develop a proper shared surface public realm for pedestrians and children. There is a sort of 'stick and carrot' approach then to the ownership of two cars – if you lose the second car you gain a proper extended external living environment.

Case Study 4 – Smartlife

SmartLIFE





Illustrations 10 & 11: Smartlife – developing typologies

These design ideas were then moved forward to a live project that is now recently completed known as Smartlife. This is a joint venture initiative involving English Partnerships, Cambridgeshire County Council, Home Group, Fenland District Council and the BRE. The Smartlife initiative examined appropriate typologies for lifting densities on suburban sites and also used various MMC (modern methods of construction) systems to test their appropriateness for wider application across the house building industry.

On three sites we developed typologies that were agreed across three sets of architects and were all tested against the particular requirements of the MMC systems chosen. The idea was that the BRE would look at the productivity and efficiencies of these systems and indeed they looked at virtually everything to see which would be the best systems and which could be adopted by industry. I believe the report is due for publication in the not too distant future. Again, it was about looking at MMC systems that do not wear the technologies 'on their sleeve', but which are adaptable and enable us to consider contextual responses in housing on the various sites across Cambridgeshire.

In terms of higher density, traditionally our site would have been developed out at about 25 to 30 units per hectare; here we are up at 45 with a real mix of two, three and four-bed houses shown in illustration 12. They are all houses with gardens or courtyard gardens and of course the need for good quality shared surface space is paramount because again we need the public realm to work that much harder (Illustration 13).



Illustrations 12 & 13

Our particular MMC system was a poured, insulated concrete system onto which a pallet of materials was applied as a contextual response to the site. Illustration 14 shows the units now completed in March, Cambridgeshire. The report by the BRE will look at the time taken to construct with the different systems, the design time, and the issues and complexities that arose on site. It was a very thorough project to examine opportunities to use new forms of construction and also to demonstrate that there is versatility in the MMC systems that we have available to us.



Illustration 14: Completed units in March, Cambridgeshire

Case Study 5 – SLO – Simple Living Opportunities



Illustration 15: SLO - Simple Living Opportunities

We wanted to take some of these ideas even further. Unfortunately we were not able to get developers to come forward and support us in using full modular construction. We firmly believed that this approach could deliver better space standards at higher densities whilst also delivering what we thought would be better quality. We were particularly looking at courtyard housing, so with our manufacturing colleagues we approached the Moens at Newhall in Harlow and developed a housing approach called SLO – (Simple Living Opportunities) which we have attempted to brand for the market.

This is now under construction (a great time to be under construction with your own development!) at South Chase in Newhall. It comprises 78 dwellings of which 48 are for rent and shared ownership and have been bought by the housing association MOAT (illustration 16). We think it is the largest modular scheme, delivering family houses, in the country. With SLO we wanted to demonstrate, particularly to the Moens, who have a very interesting development at Newhall, that this particular form of MMC could deliver the kind of contextual response that they wanted out of their master plan, and also provide better space standards in a cost effective way. All of the houses on this site exceed EP's current standards. EP's current standards are about Parker Morris plus 10 per cent.



Illustration 16: South Chase, Newhall

The two-bed house in illustration 17 below is about 78 square metres. This plan places the stair as a manufactured object - manufactured in the factory - at the centre of the plan. It enables the stair then to be clipped to a double height volume which brings natural light into the heart of the home. The design approach relies upon precision assembly and the ability to test with prototypes possibilities. The construction system adopted enabled us to hone the way we finished the core of the building with the manufacturers.



Illustration 17: The two-bed house in Newhall

Again with the three and four bedroom houses we were able to keep to EP's space standards; we are about a metre and a half bigger than their requirements. With the construction system we have been able to develop these as courtyard houses

extending the perimeter wall and allowing more light into the house. With this configuration we can also start to think about how external spaces (these houses have a garden and a courtyard) can be enjoyed and inform the internal plan a great deal more than we see with straightforward terraced houses. Again, here the staircase becomes a component at the centre of the plan, so rather than it being non-usable space, as was examined in a previous speaker's presentation, we start to think about this staircase being a breakfast bar, a storage area, a light-well and a place to do homework. It doubles as all sorts of things and the light that is brought to the circulation space in this house makes even the landing, which we would have liked to have made slightly larger, potentially usable space for things like a library or computer station.



Illustrations 18 & 19: Parking 'on plot'

Cars are again an issue at Newhall. The masterplan requires 1.7 cars per dwelling and with about 40 to 45 units per hectare, most as family houses, parking needs integrating carefully to achieve a proper shared pedestrian-friendly environment. The children tend to ride bikes, as they are encouraged to do, in the public realm at Newhall so there is a very delicate balance between integrated car parking and usable public realm space. To achieve this balance we again adopted our 'carrot and stick' approach to parking. Most of the courtyard houses have one designated space in the public realm and the other is on plot in the courtyard (illustrations 18 & 19). So if you own a second car then the space it occupies is at your expense and not the streetscape, but if you lose the second car then the courtyard which is connected to your living room and your kitchen becomes usable space. The hope is that in time people will much prefer to use it as a proper external room, than a place to put a second car. This courtyard house demonstrates, with sliding screens, how residents are given the flexibility going forward (illustration 19). The courtyard is a kind of 'space reservoir'.

Illustration 20 shows how the properties arrive on site. They are fully fitted out and we are able to snag them in the factory. We are also able to sit down with the manufacturers and talk about how we can make improvements to interior fit-outs. There is a long way to go: the technology employed to fit these units out is still relatively traditional but we did not want to run before we could walk. The future will bring more adventurous assembly including wiring looms that offer more versatile options, properly integrated kitchens etc. Eventually the manufacturers hope that on a website, somebody selecting a house can actually choose, relatively easily, different configurations. SLO currently offers two configurations in the plan, two configurations for kitchens, so the next generation of SLO homes will provide

opportunities for people to have choices and also for us to work with manufacturers to improve the quality.



Illustration 20: the properties arriving on site

They look quite frightening in this state, but they are clad in fairly straightforward blockwork and render shown in illustration 21. The application of the materials palette at Newhall includes clay tiles, slate roofs and dark-stained timber boarding. There are prefabricated porches on the front of the dwellings which hide all the paraphernalia of the bin stores and the bike stores, all those things which, if we do not take care, dominate streetscapes. So these elements are prefabricated as well and create those threshold zones to the street.



Illustration 21: the properties once they are rendered and clad

Illustration 22 shows a recently completed terrace of two bedroom houses now occupied. It also shows the modelling achieved particularly at the window reveals. Because the modules arrive with the windows set on the module face, when they are clad with the blockwork and render we achieve quite deep reveals, so there is a real sense of solidity about the buildings appearance. In many ways this gives entirely the opposite impression of what most people imagine a factory assembled dwelling would be like. In fact the steel frame combined with the cladding make these houses far more robust than those constructed conventionally.



Illustration 22: a recently completed terrace

Illustration 23 is the show home, not actually furnished by us, but you can see the part covered courtyard space which in this four-bedroom house forms a large entrance. It is a flexible, non-labelled space; it gives a covered area for buggies and bikes as well as providing potential expansion space. We are very interested in the idea that plans of this nature, those with different connected spaces, do not have labels on them. They actually give opportunities for people to think about all sorts of different ways in which they can live in this house.



Illustration 23: The show home

So this house has three external environments all connected to the internal living spaces, one that is covered that you walk into, a courtyard space (a sun trap) and then beyond there is a garden. As before the pre-fabricated stair sits as a piece of furniture at the centre of the plan. The drawing at the bottom is an exploration with the manufacturers about how we might actually manufacture stair components to make more effective storage. It has a breakfast bar (a focus for family life) it also has storage beneath it, it organises the circulation which is well lit and becomes a unique three-dimensional experience.

