Offsite housing for social landlords

John Skivington - Director, LHC

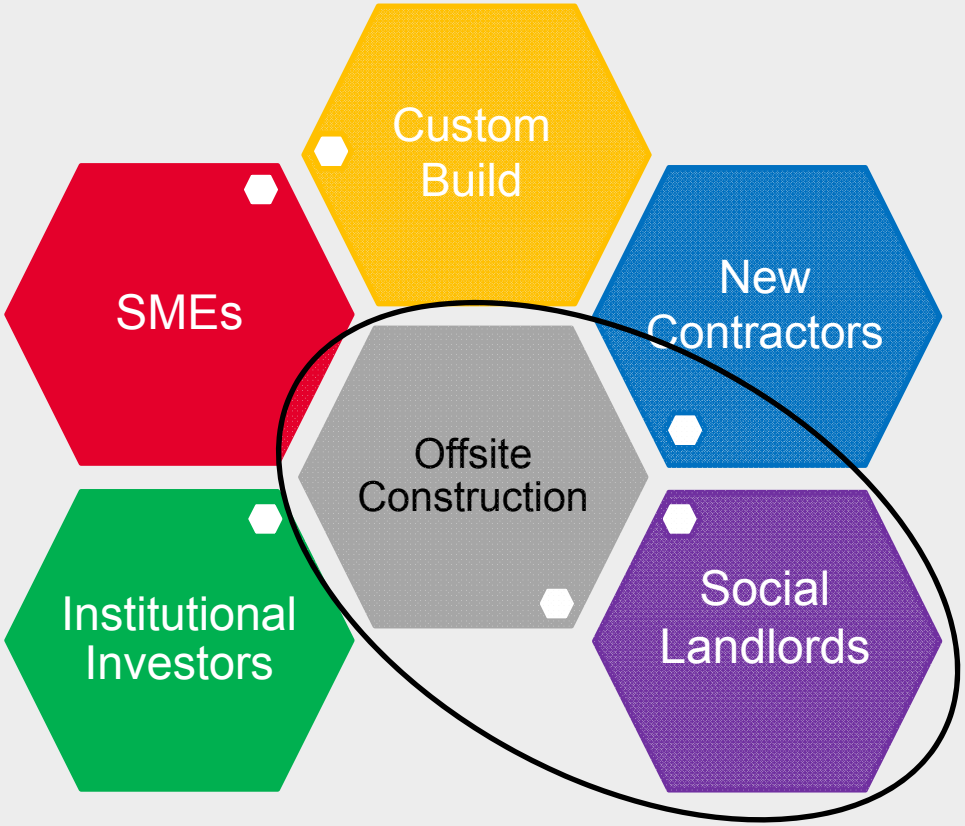
APSE

Housing, construction and building maintenance advisory group

21 June 2018

Diversifying the Housing Supply Market

The wider housing market



LHC/Inside Housing Survey, December 2017

Purpose

- To find out to what extent offsite construction is being embraced by social landlords

Method

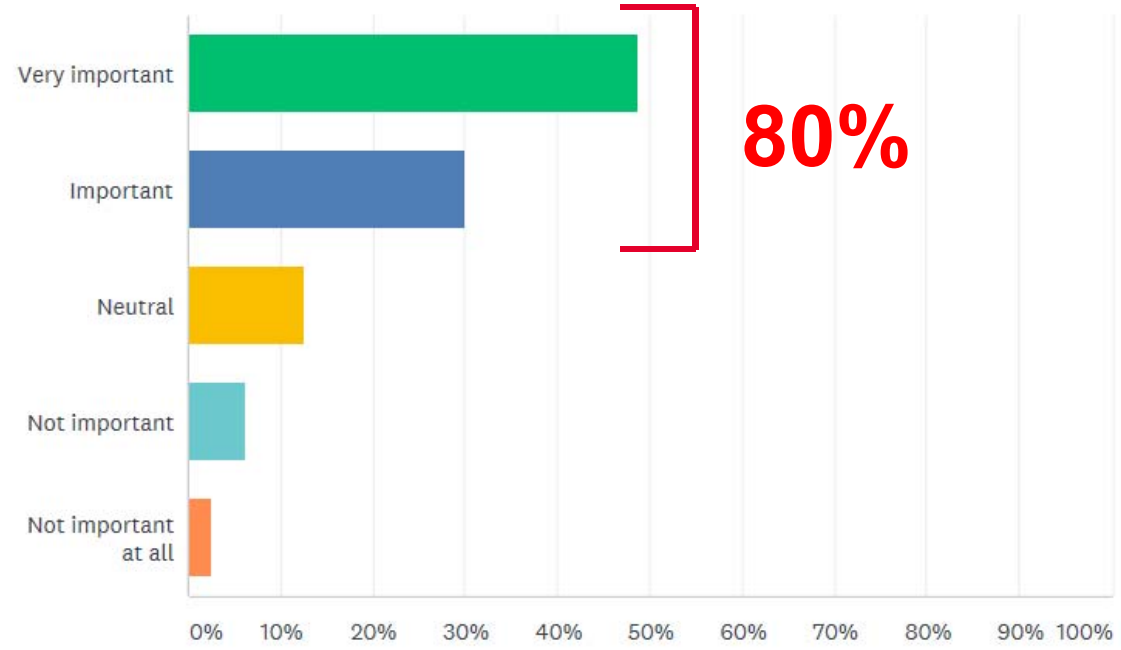
- Online survey of 96 social landlords in England and Wales

Importance

Q10

How important do you think offsite techniques will be in delivering the number of homes the UK needs?

Answered: 80 Skipped: 16

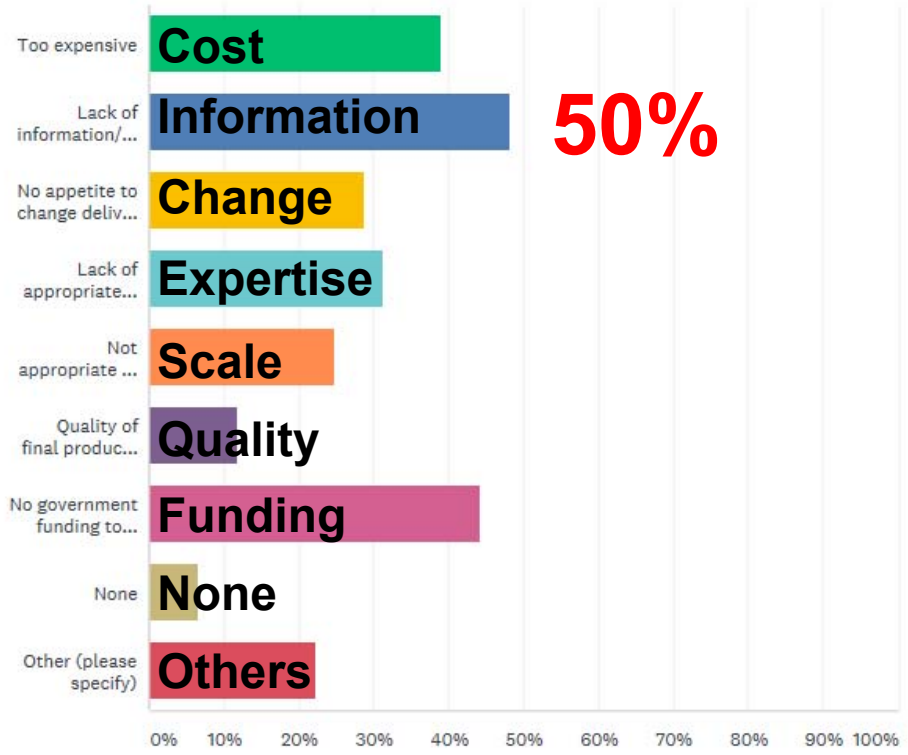


Barriers

Q13

What are the barriers which prevent your organisation from taking up of offsite methods of construction? (Tick all that are applicable)

Answered: 77 Skipped: 19

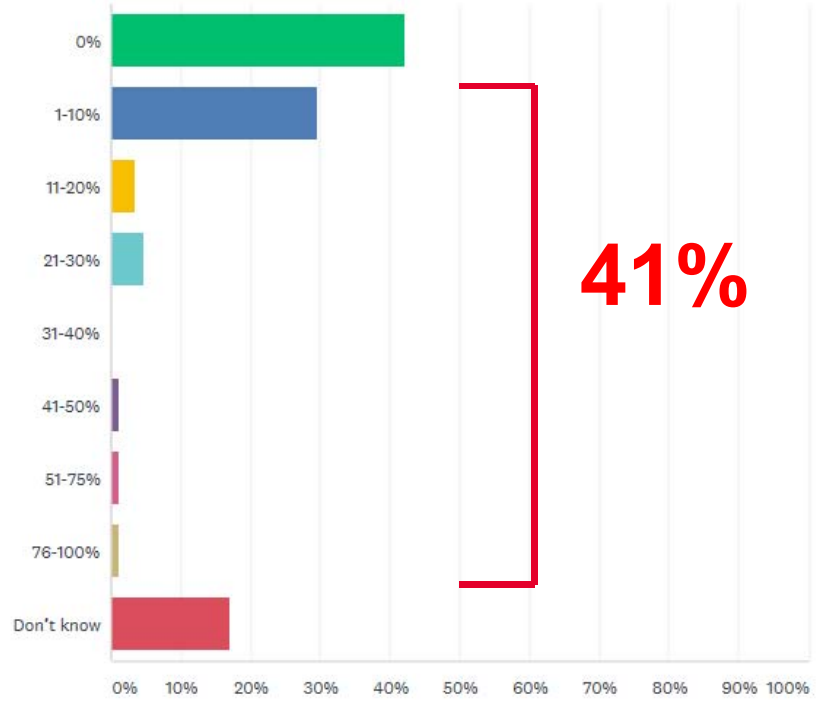


Current activity

Q4

What percentage of the homes your organisation plans to build in the next 12 months will be built using off-site methods of construction?

Answered: 88 Skipped: 8

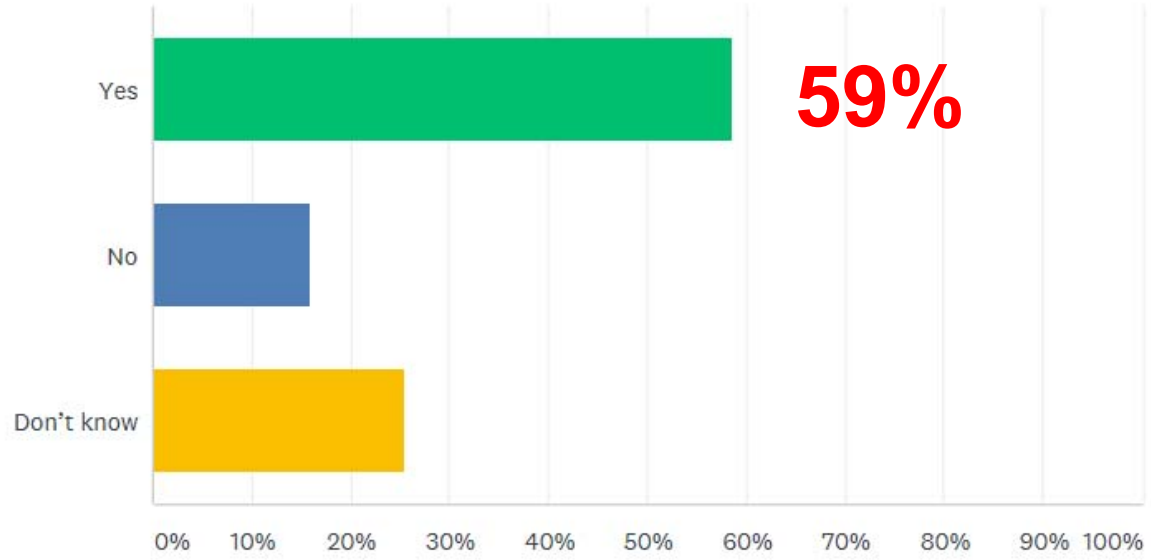


BY 2020

Q7

Is your organisation intending to increase the number of homes it builds using offsite construction within the next three years?

Answered: 82 Skipped: 14



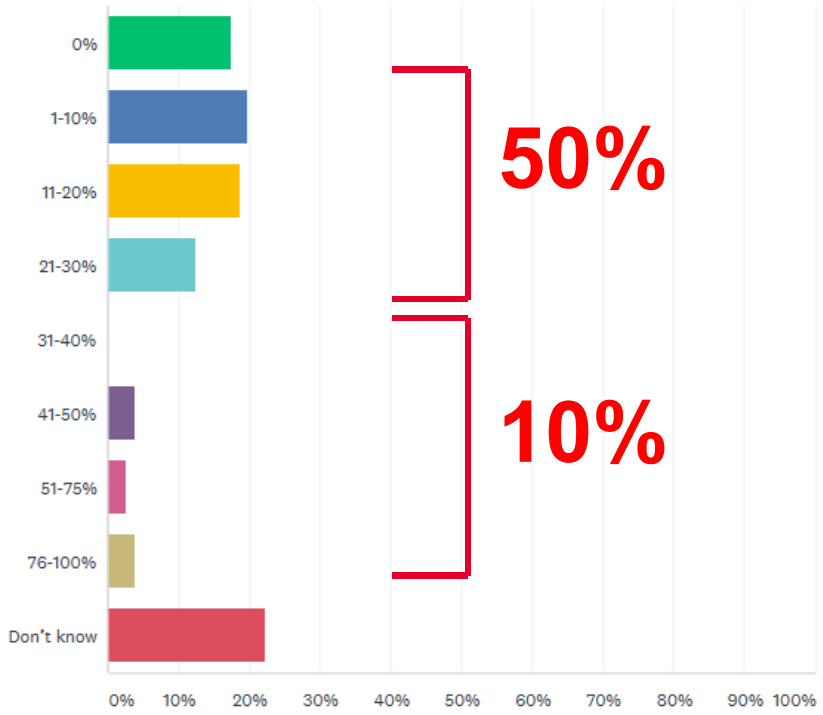
59%

Growth in proportion of offsite

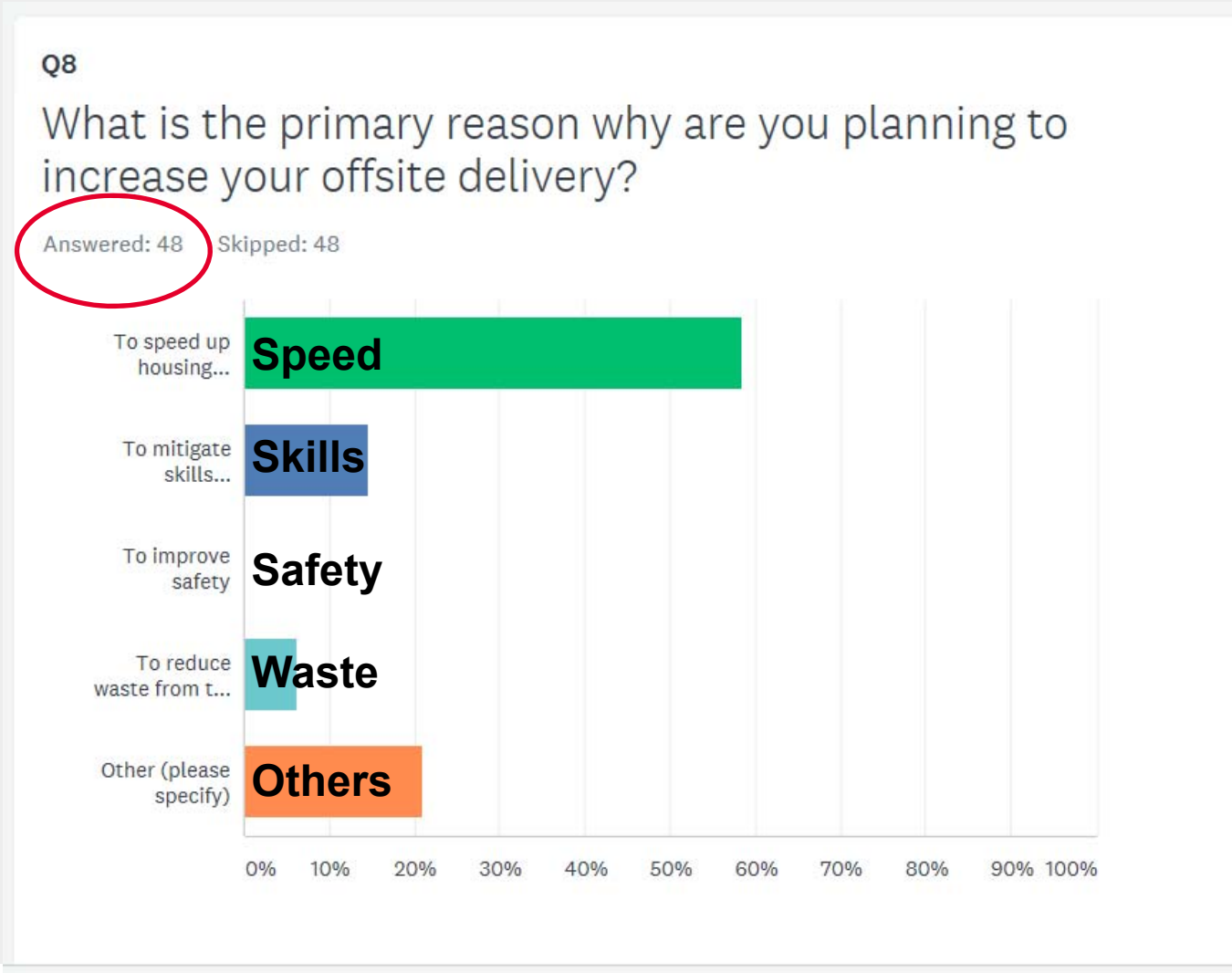
Q9

What percentage of the homes your organisation plans to build in the next three years do you expect will be built using off-site methods of construction?

Answered: 81 Skipped: 15



Drivers


Q8
What is the primary reason why are you planning to increase your offsite delivery?
Answered: 48
Skipped: 48
To speed up housing...
Speed
To mitigate skills...
Skills
To improve safety
Safety
To reduce waste from t...
Waste
Other (please specify)
Others
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

Success factors

- Education
- Proof of concept
- Grow capacity

LHC NH1 Offsite Housing Framework

10 Steps to Better Housing

Following the right process will maximise the positive outcomes, including delivering higher quality homes much quicker and reducing labour and wastage

Offsite construction requires leadership commitment to new ways of working

Define

Define your strategy with early engagement with contractors

Design

Ensure product design freeze is in place before manufacture commences

Develop

Re-engineered site process needs to accommodate the offsite product

Deliver

Quicker, high quality build with less labour and waste

- F1 Modular
- Caledonian Modular
- Rollalong
- LoCal Homes
- Stewart Milne Group
- CCG (Scotland)
- ForWorks
- Galliford Try Partnership
- Keepmoat/Engie
- Hill Partnerships
- Seddon Construction

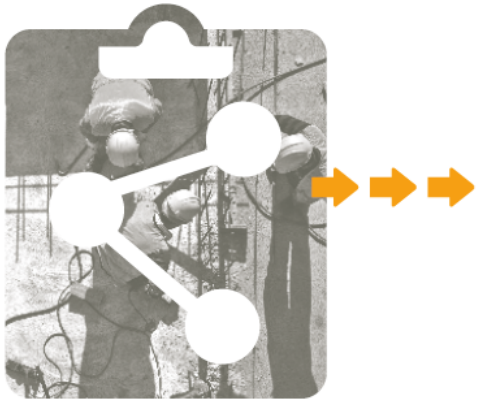
LHC NH1 Offsite Housing Framework

DEFINE

1 2 3

1 Prepare to change

Align your leadership team and organisation behind the need to embrace offsite construction. Ensure they're committed to the new ways of working it entails and open the way for changes to be made.

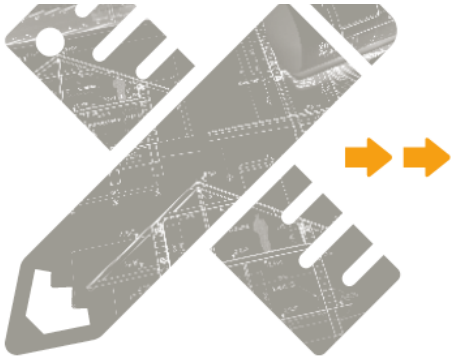


DESIGN

4 5 6

4 Feasibility assessment

Let the contractor lead all assessments, working with your advisors or their own architects to establish which land is suitable for site layout and offsite construction, most notably for access reasons..



LHC NH1 Offsite Housing Framework

DEVELOP

7 8

7 Offsite manufacture

Commit to the manufacture of required volume of components allowing the contractor to deliver the agreed benefits. Potential to maximise cost and time savings by making and storing components ahead of requirements, if the budget is available.

DELIVER

9 10

9 Onsite assembly

Site Managers, experienced in offsite construction and familiar with the manufactured product are in place to oversee the synchronisation of delivery of the offsite product with onsite installations.

LHC NH1 Offsite Framework

Offsite Construction of New Homes (NH1)

This framework offers a full turnkey solution for offsite construction of new homes that includes construction, design, manufacture, supply and installation of volumetric and panelised building systems. Alternatively, our members can also access a supply only solution.

This OJEU compliant framework offers:

-- Easy access to offsite manufactured building systems for new build projects

-- Our clients with standard house types houses that comply with Building Regulations, the Housing Quality Index (HQI) and funding authority requirements

-- Panelised systems that come factory fitted with insulation to meet national Building Regulations

-- Volumetric systems that are fully finished internally with the option of external wall and roof cladding systems that can be factory fitted

-- The opportunity to choose your own window and cladding suppliers or select from a range of suppliers provided by the manufacture

LHC NH2 Offsite Framework

NH1 ➡ NH2

Help to shape LHC's new offsite housing framework

- Pre-tender engagement: June/July 2018
- Contract Notice: July 2018
- Launch: October 2018

Q&A Session

LHC NH1 Offsite Framework: Case Studies - Modular

Regents Wharf, Walsall

Standard specification includes: PVC-u Double glazed windows and doors, 30i ERP condensing combi boiler with radiators/heated towel rails to all rooms, Light fixtures and switches, Softwood timber staircase, Internal doors and ironmongery, Sanitaryware including bath with universal bath/shower mixer, shower enclosure and thermostatic mixer shower to en-suite.

Traditional roof structures and brick facades were applied by the Developer's onsite teams.

** The Developer took responsibility for NHBC and EPC applications and fees upon completion.*

LHC NH1 Offsite Framework: Case Studies - Modular

ROLLALONG
PERMANENT
MODULAR
CONSTRUCTION

Rollalong Residential Housing

As a leading provider of modular buildings in the UK, Rollalong has been delivering accommodation for over 50 years. With an emphasis on quality our modular homes are manufactured to exacting standards to provide high performance buildings in a short build programme, with minimum site disruption and at a comparable cost.

The Rollalong Building System is an innovative lightweight steel frame system, designed to provide buildings up to seven storeys in a variety of shapes and sizes to suit the client's requirements which include residential housing and apartment blocks suitable for the Student, Key Worker, Social Housing and Private Residential markets.

The design of the building system ensures production efficiencies are maximised resulting in high quality and durable buildings with very accurate tolerances, compliant with Building Regulations and the relevant British Standards.

ROLLALONG
PERMANENT MODULAR CONSTRUCTION
HOMES

www.rollalong.co.uk

Rollalong has a portfolio of residential projects including a prestigious development in Weymouth consisting of 2no. residential apartment blocks. These high specification dwellings demonstrate the "flexibility" of modular construction to aid with reduced site times.

Rollalong are also proud to be part of the LHC off-site construction framework for the provision of a full turnkey service for new residential homes in London, the South West and South East.

LHC is a public sector procurement specialist and this new framework provides local authorities, housing associations and other social landlords with easy access to off-site manufactured volumetric and panelised building systems, for the use in new home build projects.

LHC
Appointed Company

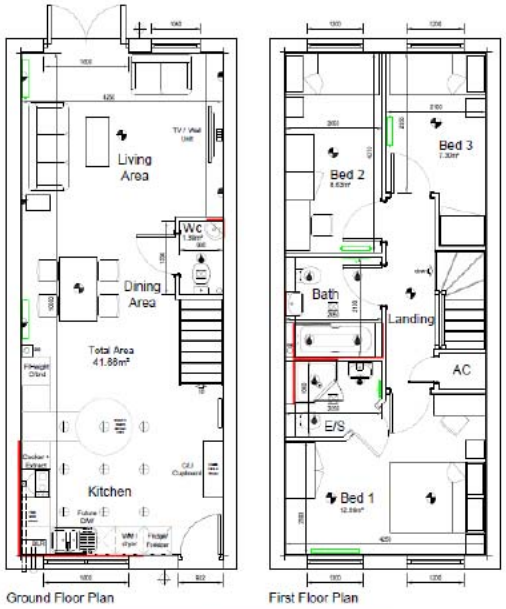
Rollalong are also accredited by the NHBC.

www.rollalong.co.uk

LHC NH1 Offsite Framework: Case Studies - Modular

ROLLALONG
PERMANENT MODULAR CONSTRUCTION
HOMES

Typical Three Bedroom Layouts and Elevations

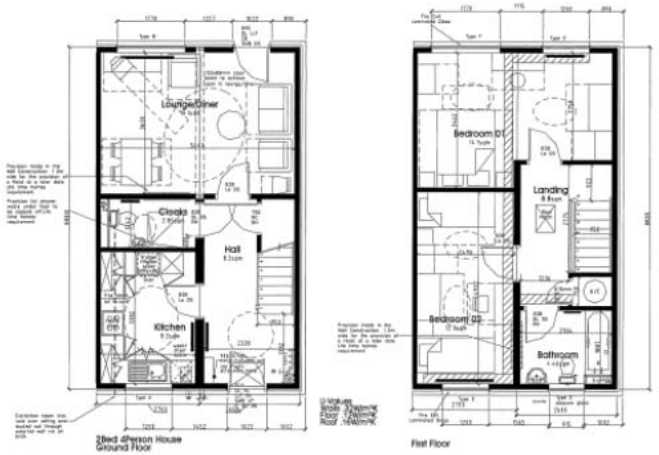


Ground Floor Plan First Floor Plan

www.rollalong.co.uk

ROLLALONG
PERMANENT MODULAR CONSTRUCTION
HOMES

Typical Three Bedroom Layouts and Elevations



www.rollalong.co.uk

LHC NH1 Offsite Framework: Case Studies - Panelised

SPA framework:
Offsite Construction of New Homes (NH1)

SCOTTISHPROCUREMENT.SCOT

Perth & Kinross Council

Location: Perth

Offsite Construction of New Homes

PERTH & KINROSS COUNCIL

SPA SCOTTISH PROCUREMENT ALLIANCE

Appointed Company

SPA framework:
Offsite Construction of New Homes (NH1)

SCOTTISHPROCUREMENT.SCOT

About Perth & Kinross Council

Perth & Kinross Council engaged with SPA to access their Offsite Construction of New Homes framework. As part of the council's Local Housing Strategy, SPA helped recruit renowned offsite manufacturer CCG, via the framework.

CCG WAS APPOINTED VIA A DIRECT AWARD TO BUILD:

24 NEW HOMES

NIMMO AVENUE: SIXTEEN COTTAGE FLATS
CAIRNS CRESCENT: SINGLE BLOCK OF EIGHT COTTAGE FLATS

Mary Mitchell, Corporate Procurement Manager Perth and Kinross and Chair of the SPA Founding Partners Board commented:

"We used SPA's Offsite Construction of New Homes framework to ensure an efficient and compliant procurement process for a number of projects. The framework offered a quick route to market and enabled us to direct award CCG for the project. As the Chair of the SPA board, I would encourage other Scottish public organisations to utilise the expertise of SPA which is completely free to use."

PROJECT DELIVERY

All of the properties have been constructed using CCG OSM's Closed Panel Timber System complete with pre-installed windows, doors and insulation which ensures quality, enhances environmental efficiency and ensure a faster speed of construction.

Both projects were started in October 2016 and have been successfully delivered to enable new tenants to move into their homes in the summer of 2017.

All of the flats have been designed for future adaption and are fully accessible to people that may require the use of a wheelchair.

LHC NH1 Offsite Framework: Case Studies - Panelised

CASE STUDY

BUILDING FUTURES

CCG

NAME: Athletes' Village
LOCATION: Glasgow
CLIENT: City Legacy
CONTRACT VALUE: £150M/ £7.5M Timber Kit Package
COMPLETED: May 2014

AWARDS
Winner of 24 Industry Awards

The Athletes' Village is located in the East End of Glasgow and is one of the most significant regeneration schemes in the UK. It was delivered by City Legacy, a consortium of Glasgow based companies that included CCG, Cruden, McTaggart and Mickel and WH Malcolm in partnership with Glasgow City Council.

During the Games, the development hosted 6,500 athletes and officials. Now, the Athletes' Village is a large residential community of 700 homes, comprising 400 affordable rent homes and 300 that were available for private sale. The 88 acre site also boats a 120 bed care home, and visual and amenity space. Twelve house types are spread across the site comprising 1 and 2 bedroom apartments and 2,3 and 4 bedroom terraced houses.

The homes, as well as the adjacent Emirates Arena, is powered by a state-of-the-art district heating system which supplies instantaneous heat and constant hot water. The system is approximately 30% – 40% more efficient than conventional heating schemes, providing residents with substantial cost benefits. This system, alongside a Fabric First Approach to housing design as well as the use of solar PV panels, contributed to a 95% carbon reduction on 2007 levels. >

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CCG

BUILDING FUTURES

CCG iQ Lab were responsible for the design of all of the development's house types and our construction division were responsible for delivering 237 of the new homes. CCG OSM were utilised for the construction which saw the use of the iQ4 enhanced closed panel timber system, inclusive of insulation, service zones and pre-installed windows and door screens that were also manufactured by CCG.

Clear span floor and roof cassettes were installed to create open-plan arrangements and flexible living space with home grown Cross Laminated Timber (CLT) used in the structural walls achieving a wall U-Value rating of 0.12.

As the Commonwealth Games had a fixed start date, site management was crucial in the delivery of the housing. The use of the CCG OSM timber system enabled full construction delivery within 15 months with a typical terrace of 8 townhouses constructed, wind and water tight, in just 10 days.

CASE STUDY

NAME: Athletes' Village
LOCATION: Glasgow
CLIENT: City Legacy
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LHC NH1 Offsite Framework: Case Studies - Panelised

CASE STUDY

BUILDING FUTURES

CCG

NAME: The Schoolhouse
LOCATION: Edinburgh
CLIENT: CCG/ PFP
ARCHITECT: HFM
CONTRACT VALUE: £7M
COMPLETED: March 2015

CCG, in partnership with Parc Craigmillar Ltd, part of the EDI Group, has successfully regenerated the site of the former Niddrie Mill Primary School, Edinburgh, through a stunning mix of Private for Sale and Affordable housing. Of the mixed tenure homes created at the development, 28 are mid-market rent flats for Places for People, 6 are flats for Social Rent for Castle Rock/Edinvar, while 32 Private for Sale properties were also constructed in a mix of flats and houses by CCG Homes which include a block of 17 apartments carefully constructed behind the retained Schoolhouse façade.

Given the historical importance of the former to school to the community of Craigmillar, CCG was challenged with retaining as much of the building as possible. However, due to the age and dilapidated condition of the building, retaining and converting the property in its entirety was commercially unviable and spatially inefficient once taking into account energy efficiency and other building regulations considerations. >

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CCG

BUILDING FUTURES

An alternative arrangement combining 'old and new' was ultimately achieved through detailed design work and the application of CCG OSM's enhanced closed panel timber frame system. CCG was able to retain the non-listed but valuable façade following extensive retention and preservation work including the locally iconic cupola and weather vane. The Wauchope War Memorial that resides in the foreground of the school façade was also carefully preserved and is now accompanied with new landscaping.

Thanks to the use of CCG OSM's enhanced timber frame system, a typical terrace of 3 homes had it's superstructure fully installed in just nine days with the full fit out of each of the plots completed within seven weeks, a key aspect when considering the size of the site and the restricted access arrangements. This compounded with an outstanding sales effort ensured the site was fully sold and occupied in just over a year and ultimately allowed the future private homeowners a faster speed of entry.

CASE STUDY

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CLIENT: CCG/ PFP
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CONTRACT VALUE: £7M
COMPLETED: March 2015

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LHC NH1 Offsite Framework: Case Studies - Panelised

CASE STUDY

BUILDING FUTURES

CCG

NAME: The Observatory
LOCATION: Glasgow
CLIENT: Red Eye Developments
ARCHITECT: Street Design
CONTRACT VALUE: £4.4M
COMPLETED: January 2015

AWARDS
Herald Property 2015
Development of the Year

The Observatory is a stunning private sale development located on Highburgh Road in the centre of Glasgow's West End. Designed by Fitzsimons, a Glasgow-based property management company, The Observatory comprises 19 one and two bed luxury bespoke apartments including three duplex penthouses, each with their own private rooftop garden terrace as well as an additional communal rooftop garden accessible to all residents.

The Observatory was constructed on an existing brownfield site adjacent to existing 1800's sandstone tenements as well as social hotspots The Rock Bar immediately and resident gardens. Traditional blockwork was used for the construction of the ground floor, as well as the stair and lift shaft, with CCG OSM's enhanced closed panel timber solutions used for the construction of the additional 4 storeys.

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CCG

BUILDING FUTURES

CASE STUDY

A mix of steel and timber frame was used for the construction with CCG OSM being utilised for the design, manufacture and installation of enhanced closed panel wall solutions for the main structure of the building and, to compensate for the more complicated elements of the structure, such as the vernacular roof design, a hybrid system of steel and timber was used. This system was a steel frame skeleton, shaping the spaces, with timber cassette panels inhabiting the frame between. Whilst this installation process was predominantly site based, the roof cassettes were also manufactured by CCG OSM and contributed to the offsite delivery of the project.

The exterior of the building utilises a strong palette of materials including rustic white facing brick, white acid-etched concrete and contrasting black aluminium to provide a building that is sympathetic to the end-user whilst retaining the character of the industry that once took place in this area of Glasgow.

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LOCATION: Glasgow
CLIENT: Red Eye Developments
ARCHITECT: Street Design
CONTRACT VALUE: £4.4M
COMPLETED: January 2015

AWARDS
Herald Property 2015
Development of the Year

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LHC NH1 Offsite Framework: Case Studies - Panelised

CASE STUDY

BUILDING FUTURES

CCG

NAME: Anderston Regeneration
LOCATION: Glasgow
CLIENT: Sanctuary Scotland
ARCHITECT: Collective Arch
CONTRACT VALUE: £50M
COMPLETED: Phase 3B May '15

AWARDS
Winner of 7 industry awards including a 2015 Scottish Home Award

CCG are currently live on site at Phase 4 and 5 and will deliver 206 homes in 2018

The Anderston Regeneration is changing the face of a key urban quarter in Glasgow city centre by creating 549 affordable homes for our client Sanctuary Housing Association.

Anderston is one of the most densely populated areas in the city and is an area that has undergone a number of changes from Victorian tenements to concrete low rise blocks of flats. The new, five-phase development, which began construction in 2009, is a modern interpretation of a tenement block with an ordered but varied system of vertical opening proportions plus the use of prominent pitched gables to set up an appropriate reference to Anderston's historical tenemental language without imitating the original housing typology reaching up to five and six storeys.

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BUILDING FUTURES

CCG

CASE STUDY

Each phase of the Anderston masterplan has been delivered using off-site Modern Methods of Construction with CCG OSM designing and manufacturing the enhanced closed panel timber solutions that were installed upon 2 storeys of traditional brickwork. The housing was designed using the Fabric First approach and achieve a Silver Eco Rating, an important factor in reducing fuel costs to tenants.

The most recent phase to be completed was Phase 3B comprising 109 flats spread across four blocks. Each block has protruding glazed balconies housed within a large zinc frame complete with double glazing. Blocks A and B are finished in the same exterior palette as the adjacent housing whilst Blocks C and D, located on the extension of William Street, are finished in the same family of materials but are finished in buff brick to reflect the earlier phases of the masterplan.

NAME: Anderston Regeneration
LOCATION: Glasgow
CLIENT: Sanctuary Scotland
ARCHITECT: Collective Arch
CONTRACT VALUE: £50M
COMPLETED: Phase 3B May '15

AWARDS
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CCG are currently live on site at Phase 4 and 5 and will deliver 206 homes in 2018

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LHC NH1 Offsite Framework: Case Studies - Panelised

CASE STUDY

BUILDING FUTURES

CCG

NAME: Panmure Street
LOCATION: Glasgow
CLIENT: Queens Cross HA
ARCHITECT: MAST
CONTRACT VALUE: £12M
COMPLETED: October 2015

AWARDS:
Best Large Affordable Housing (Private) Scottish Home Awards 2016

Panmure Street is the latest phase of regeneration to be completed in the Maryhill area of Glasgow. Delivered in partnership with Queens Cross Housing Association and Scottish Canals, Panmure Street comprises 108 mixed tenure homes occupying a prominent position on the banks of the Forth and Clyde Canal.

Prior to construction, the Panmure Street site was in receivership after failing to acquire the necessary funding for development. There was also a demand for a local community benefit initiative to improve and kick-start investment into the Canal. After negotiating with Scottish Canals, CCG took forward the project at risk by purchasing the site in order to encourage future development.

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CCG

BUILDING FUTURES

CASE STUDY

Three house types exist across the site: four-storey pavilion' blocks arranged along Panmure Street offer panoramic views across the site and City; 2-storey terraced homes that line the canal edge, and a 6-storey feature block located on the corner of Firhill Road.

The exterior aesthetic of the project had to have an iindustrial' finish to reflect the industrialisation in this area from the early 20th century and therefore a mixed palette of brick was specified. However, due to the shortfall in labour and materials this could not fulfilled and so CCG utilised an enhanced stage of the CCG OSM manufacturing process by deploying a fully enhanced closed panel timber system for the build, complete with a factory-applied lightweight cladding solution.

This exterior finish, supplied by Alumasc Facades, replicates a traditional brick façade by using individual acrylic 'brick slips'. Fully BBA accredited, the Alumasc Acrylic Brick Slip' finish was used throughout the development.

NAME: Panmure Street
LOCATION: Glasgow
CLIENT: Queens Cross HA
ARCHITECT: MAST
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Best Large Affordable Housing (Private) Scottish Home Awards 2016

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LHC NH1 Offsite Framework: Case Studies - Panelised

CASE STUDY

BUILDING FUTURES

CCG

NAME: Goosecroft Road
LOCATION: Stirling
CLIENT: Stirling Council
ARCHITECT: Michael Laird
CONTRACT VALUE: £5.4M
COMPLETED: March 2016

Goosecroft Road is a landmark, mixed-use residential development for the Stirling. Located on a prominent city centre site across from Stirling Train Station, the development comprises 54 one and two bedroom flats available for affordable rent, with 3 retail units located on the ground floor.

The Goosecroft Road site was once home to one of Scotland's finest art-deco cinemas that was subsequently demolished and replaced with smaller independent buildings during the 1970's/80's. The development presents a new urban edge that responds and integrates with the existing typology of the Stirling Conservation Area and so, Goosecroft Road is designed as a series of three blocks five and six storeys connected via four storey infill blocks, offering unmatched views toward the Wallace Monument and even as far as Bridge of Allan. >

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BUILDING FUTURES

CCG

CASE STUDY

As an extension of the historical context of the City, the building is formed by the use of black and grey brick for the exterior façade and a soft grey render finish applied to the south elevation. Facing Station Road, Goosecroft also plays homage to the artistic merits of Stirling by including five, contemporary stone panels, commissioned in partnership with Creative Stirling.

Goosecroft Road is innovative in its construction with a mix of steel and timber frame used throughout. The ground floor utilises a steel frame and block work, whilst the first floor has a steel frame with CCG OSM manufactured timber infill panels. CCS OSM's closed panel timber system was used for the additional two storeys complete with pre-installed windows and doors. The curved façade, facing Maxwell Place, was formed using structural timber posts and beams with closed panel infill panels.

NAME: Goosecroft Road
LOCATION: Stirling
CLIENT: Stirling Council
ARCHITECT: Michael Laird
CONTRACT VALUE: £5.4M
COMPLETED: March 2016

WWW.C-C-G.CO.UK

Q&A Session