

# → Delivering Precast Concrete

## Crosswall construction

**HIGH SPEED MODULAR  
CONSTRUCTION**

**FACTORY ENGINEERED  
QUALITY**

**HIGHLY FLEXIBLE LAYOUT**

Precast Concrete Crosswall Construction is a fast convenient way to produce multi-unit structures such as student accommodation, hotels, apartments, prisons, schools and hospitals in a fraction of the time and trouble of traditionally built structures.

It has all the advantages of a factory engineered system including ISO 9001 quality assured production and a highly flexible layout. It can be tailored to meet the needs of the client, architect, engineer and builder.



# Precast Concrete Crosswall Construction

...the fast, convenient way to produce multi-unit buildings

## CONCEPT

The concept of crosswall is simple; unlike the conventional building process where one trade has to follow on after the other, this system allows the main structure to be completed very quickly and finishing trades to commence simultaneously.

Once the foundations are laid, the speed of construction then takes over; Buchan supply the pre-formed units including all walls and floors and a flat slab concrete roof to provide an enclosed working area. Within weeks the main load bearing structure is complete and protected from the weather.

If required, fully fitted out bathroom pods can be incorporated during this stage, ready to be attached to service connections.

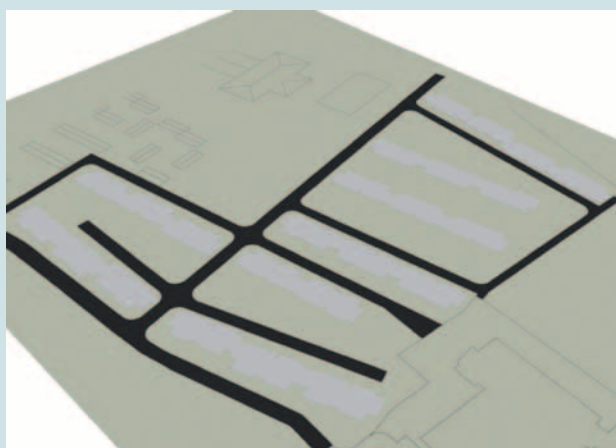
All follow-on trades can be programmed to commence simultaneously. Roof, brickwork, window, services and floor screed sub-contractors all work together to drastically reduce the time required to complete the final construction.



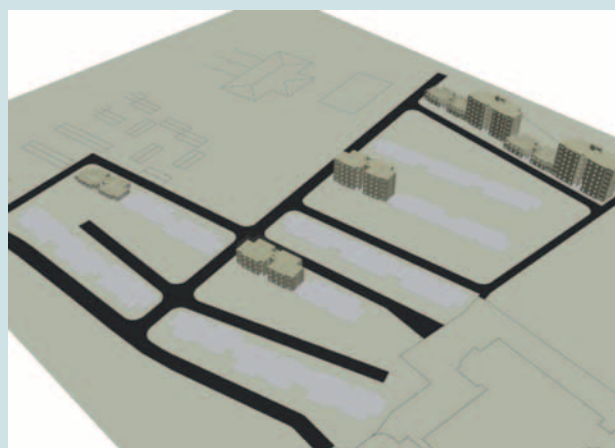
## DESIGN

Buchan has established a reputation for providing a wide range of concrete solutions for technically demanding projects that require a precision seldom associated with precast concrete. Client's designs are progressed at Buchan's head office, using the latest CAD and drafting systems.

The crosswall system is designed in accordance with Building Regulation requirements and current British Standards, particularly BS 8110 – Structural Use of Concrete. The design life of the structure is a minimum of 50 years.



WEEK 1



WEEK 10



WEEK

## PRODUCTION

Loadings – unless specified otherwise – are generally to the latest revision of BS 6399.

Walls are generally designed as plain walls to BS 8110, Cl. 3.9.4., they are reinforced locally over windows and at openings etc, and are otherwise provided with nominal reinforcement. Floors can be prestressed hollowcore planks or solid reinforced or prestressed concrete.

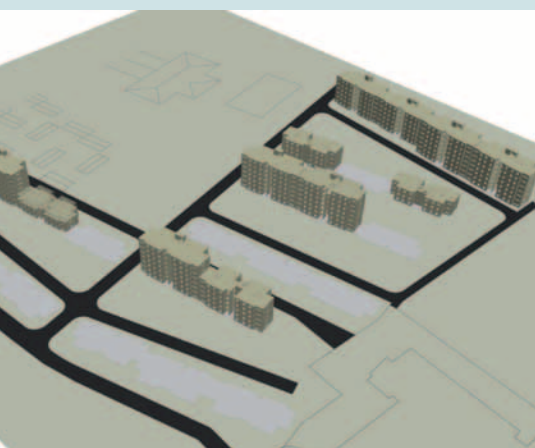
(Tolerances on manufacture are well within those permissible to BS 8110).

The surface finish to walls and ceilings – as built – is ready to accept direct paint finish with a minimum amount of final surface preparation.

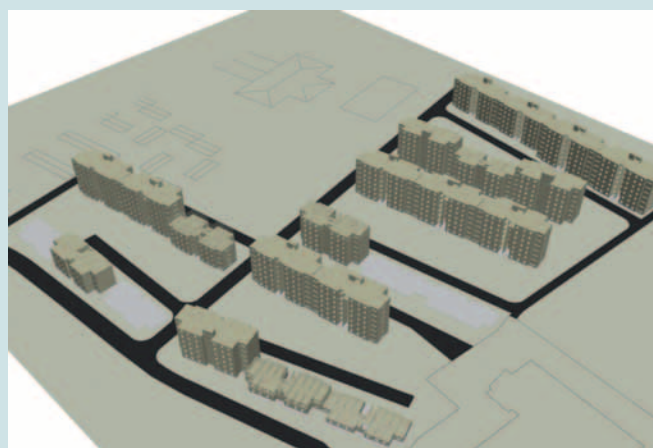
Precast crosswall components are produced at Buchan's modern factory, which is Quality Assured to ISO 9001.

All aspects of the production cycle are carried out in strict accordance with British Standards and the clients own requirements. Buchan's experience and knowledge of on-site construction ensures that all products are designed and manufactured for ease of assembly.

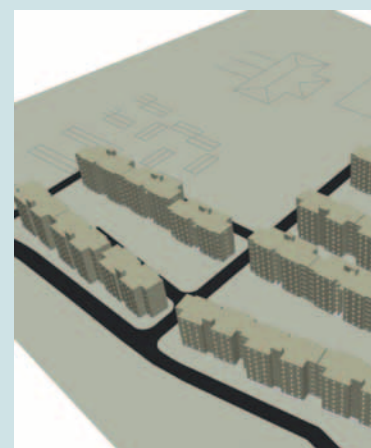
The manufacturing process is carried out by a highly skilled and experienced workforce and concrete of the exact specifications is batched automatically by the computer controlled mixing plants then distributed by bullet skips to a precise location within the factory.



20



WEEK 30



WEEK 40



## QUALITY ASSURANCE

Quality Assurance is a major factor in the production of these items. Buchan is accredited to both design and manufacturing in accordance with the exacting demands of ISO 9001.

Buchan is committed to working closely with its customers, providing products and services to meet their construction and engineering needs. Buchan has its own independent Quality Team Leader, with a number of

Quality Inspectors to ensure compliance with these requirements.

In addition to the benefits of quality, programme saving and robustness, the thermal storage capacity of concrete can be used to reduce the heating costs of the building and provide an even internal climate:

### APPLICATIONS:

- Schools
- Hotels
- Student accommodation
- Secure accommodation
- Apartments
- Hospitals
- Acoustic walls.



# Precast Concrete Crosswall Construction

...the fast, convenient way to produce multi-unit buildings



## SYSTEM

The precast crosswall structural engineering system comprises large concrete panels, providing internal structural loadbearing and partition walls, together with all elevational panels.

The whole of the loadbearing structure is integrated within and provides the majority of the building fabric.

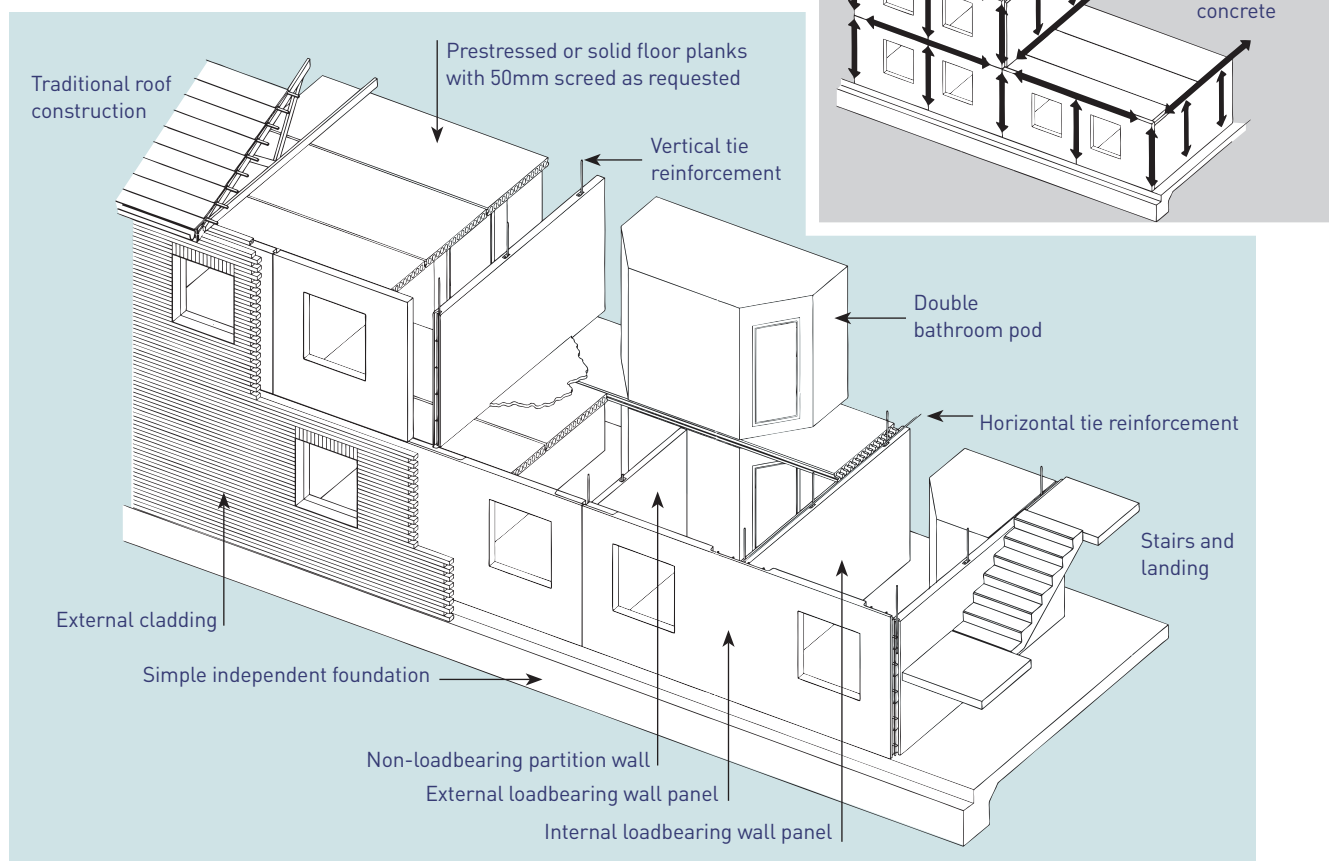
Overall stability is achieved by the diaphragm action of the floor planks acting between the precast crosswall panels in two directions acting as shear walls. In common with all other wall units used in the system the shear walls are structurally connected together by in-situ concrete stitched joints which are designed, detailed and constructed to ensure full transfer of all forces acting on the structure and to ensure transfer of loads to the foundations.

Robustness of the structure is achieved through the provision of horizontal internal and peripheral ties, together with vertical ties.

The provision of these ties ensures that disproportionate collapse of the structure is prevented in the event of an explosion or other localised accidental damage. Floors can be hollowcore, prestressed, widespan, planks or solid.

The flights and landings of the staircases are of precast concrete, supported and connected into the supporting wall panel system by means of support angles and grouted joints.

The system allows for very simple structurally independent foundations and roof constructions to be used.



## How TO FIND US

### Directions to Byley:

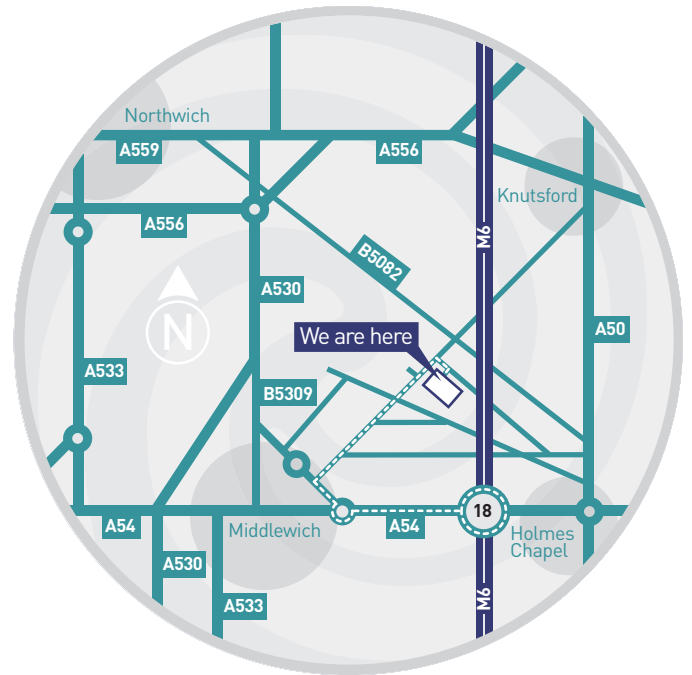
#### From North and South

Exit M6 at junction 18. Follow A54 towards Middlewich for approximately 2 miles. At the first roundabout (Salt Cellar pub on left) turn right sign posted Northwich/Knutsford for approximately 200 yards. Take the first right sign posted Knutsford/Byley (B5081).

Follow road for approximately 2.7 miles passing Byley village crossroads, look for Stublach Dog Kennels on the left hand side, turn immediately right into Kings Lane and Buchan is approximately 200 yards on the right.

#### For satellite navigation systems:

Latitude: 53°13'49.93"N  
Longitude: 2° 24'19.66"W



Buchan Concrete Solutions (Head office)  
King's Lane Byley Middlewich Cheshire CW10 9NB  
T: +44 (0) 1606 843500 F: +44 (0) 1606 842214

Buchan Concrete Solutions  
Walton Road Drakelow Burton-on-Trent Staffordshire DE15 9UA  
T: +44 (0) 1283 525050 F: +44 (0) 1283 512233



[www.buchanconcrete.com](http://www.buchanconcrete.com)

