

# WHY MODULAR CONSTRUCTION is the FUTURE

10 Reasons Why Major House Builders Are  
Investing In New Construction Methods



 **BISHOPS GATE**  
DEVELOPMENTS





## Forward

After spending over 25 years as a bricklayer, building residential homes, and commercial buildings, I always knew at some point in the future a better, more efficient, and faster way to build structures of all kinds would arrive.

A modern method of construction that would mitigate many if not all of the variables faced by the construction companies, tradesmen and clients engaged in traditional methods, including but not limited to those of changes in weather conditions, levels of training, standards of workmanship, not to mention availability and waste of materials.

Having been involved in every stage of the construction process from operating machinery, installing the foundations, laying the bricks and even wiring the electrics and installing the plumbing, I feel I have a better understanding of the build process than most. I understand the costs associated, the *real* timescales of a project, and am convinced that finally technology has reached a level, a tipping point if you will, where it can make a real and positive impact on the construction industry.

We are, in my opinion at the beginning of a new industrial revolution, one that has the ability to create efficiencies in productivity, reduce waste and standardise quality across the breadth of the construction industry, finally removing all of the inefficiencies typically associated with traditional construction.

Modular and modern methods of construction refer to structures, which in full or part are built wholly off site. Utilising the efficiencies of modern production techniques, combined with precision engineered craftsmanship in carefully controlled conditions, manufacturers are able to deliver consistent levels of quality, eliminate climate related delays, reduce waste and in most cases possible contract penalties, not to mention shorten overall development length by installing a finished product to site in a very short timeframe.

**In this report I'll share with you 10 reasons why I firmly believe Modular Construction is fast becoming the future for developers big and small, and why by 2019, we at Bishops Gate Developments Ltd aim to have completed the transition to a fully modular developer.**

Each of the items covered in this report are indicative of why modular and modern methods of construction are the future of the construction industry.



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# 1. Speed

## Modular Construction vs Traditional Construction

### ***Modular***

Perhaps one of the biggest benefits of Modular construction is its impact on construction and overall development time.

As a result of 95%+ of the construction process occurring offsite, *foundations must still be laid prior to installation, a typical 3 bed house can be installed, and ready for habitation in as little as 24 hours.*

The impact of this on a development of any size are numerous and include, reduction in time on site and subsequent disruption to the neighbourhood, reduction in term over which funds are required, where the developer is utilising investment and or bank lent finance, not to mention the ability to deliver a greater volume of houses in a shorter period and therefore addressing the immediate housing shortfall.

### ***Traditional***

Building the traditional way with Brick and Block or Timber Frame has many variables that can affect the build time, including but not limited to, weather, manpower shortages, material delays and many more.

These when combined with the linear and sequential way in which traditional construction works i.e. many trades not being able to begin until another has finished can and often results in project delays, which for a developer under contract, can mean financial penalties.



## 2. Predictable costs

### Modular Construction vs Traditional Construction

#### ***Modular***

Modular and modern methods of construction typically occur in a factory environment.

These closed, quality controlled facilities utilise precision engineering machinery in conjunction with highly engineered, computer generated designs to deliver a uniform product time after time.

The size of each component piece is carefully considered and calculated to reduce material waste and therefore maintain **a high level of predictability around material quantity and cost.**

As modular homes are delivered to site complete, they can be more effectively secured and therefore are less prone to damage or theft whilst on site.

#### ***Traditional***

Costs of Traditional construction are difficult to control.

Many things can impact the associated costs of a development, including but not limited to, material damage - this can happen during transportation, and/or on site handling, poor or reckless workmanship and perhaps more common than you would imagine, theft.

Due to this unpredictability, developers are required to add a contingency into each development project, the level of this varies but is typically 5% of the development cost.

On a large site, this can mean a significant amount of money, which even though only a contingency must still be accounted for and where development finance and/or investment finance is being used, borrowed, adding to the over cost of the development.



## 3. Predictable timeframes

### Modular Construction vs Traditional Construction

#### ***Modular***

Perhaps the biggest benefit of Modular Construction is the accuracy with which you can predict the timeframe for a build.

As previously discussed, it is possible to install a 2-3 bedroom house on site in as little as 24 hours, commission the utilities and install the floor coverings, meaning the house is habitable far sooner than on a traditional build.

The benefits of this predictability are many, however as a developer there is one that may sway your decision between traditional and modular and that is profitability.

Due to the reduced build time and predictability (giving confidence) there will naturally be a huge saving in interest on any development finance used on a project, which inevitably results in greater profits for the developer.

#### ***Traditional***

Traditional Construction would use a Gantt chart to predict the build schedule.

When building a house over 12 weeks there are various things that can alter the build programme, any alteration results in time that cannot be bought back due to the linear and sequential nature of the build i.e. one trade follows on from another.

Meaning increasing the levels of labour on a project won't necessarily speed up the process or reduce the delay.

When building multiple units the completion date can only be an estimate and very rarely is this time frame met resulting in further interest payments, homeowners delayed from the hand over, and perhaps for a developer most painfully - the activation of penalty clauses and fines.



## 4. Better quality of workmanship

### Modular Construction vs Traditional Construction

#### ***Modular***

The conditions under which a modular factory operates are typically well managed, **efficient, highly process driven, and quality controlled**, resulting in more consistent production standards.

With an emphasis on health and safety, good working conditions and without the unpredictable nature of the elements to contend with staff are typically happier, more motivated and therefore tend to produce a better quality of workmanship and ultimately a better end product

#### ***Traditional***

I've worked through some pretty harsh winters and seen some poor quality work on site. Materials get wet, hands are cold and a building site can be pretty miserable place to be. Rain soon produces mud, which taken altogether doesn't make for a great working environment.

Tradesmen, however proud and dedicated are only human and on occasion let standards slip when the conditions turn against them, and with one day never the same as the next standards and quality of workmanship can vary more than you imagine from one house to the next.





## 5. Material wastage

### Modular Construction vs Traditional Construction

#### ***Modular***

Factory conditions and precision machinery allow for greater accuracy and less waste of all materials, which can only be a good thing for the environment.

With the majority of materials used for modular construction stored internally or undercover/wrapped in a waterproof covering, they are not prone to the harsh UK weather conditions.

This reduces waste of a common building material like timber, which needs to be kept dry to stop it swelling and twisting, something that happens all too often on site, yet is eliminated completely with modular construction where factory conditions are perfect.

The order, systems and efficiencies of the modular production facility mean separating and recycling waste is far easier to manage than on a building site, which ultimately means less waste being sent to landfill.

#### ***Traditional***

I've seen untold quantities of materials simply thrown into skips earmarked for landfill due to water damage or as a result of being dropped from forklifts.

With procedures for handling materials that could be deemed waste often low on the list of priorities for a site management team, the standard operating procedure is often to simply dispose of them, even though it could be that some of the materials are in fact salvageable.

Material wastage is gradually reducing on sites but with the people who manage the costs not on site to see the wastage that occurs they tend primarily to focus on bringing that one site in on an overall profit.



## 6. No site labour

### Modular Construction vs Traditional Construction

#### ***Modular***

Most modular facilities offer a turnkey solution, meaning they build, deliver and install each home on site. This means there is no need for site labour beyond that required for the completion of the ground works.

This dramatically **reduces build costs, labour management and shortages.**

Other benefits of this include the elimination of the need for large parking areas for site tradesmen and where access to a site is tight, the planners when considering disruption to neighbours during construction often view modular as a preferable option.

#### ***Traditional***

Traditional construction requires a huge range of different and often costly tradesmen on site at any one time.

In addition to the obvious costs involved with hiring skilled tradesmen for a long period of time, it also means higher quantities of people in an often limited area potentially resulting in lots of vehicles on or close to the site .

If there is no allocated parking on site then trades have to park in the streets and carry their tools and materials to site, this can throw out the build schedule very early on resulting in a rise in associated costs, not to mention inconveniencing local residents and creating waste and soil hazards on surrounding roads.



## 7. No materials on site

### Modular Construction vs Traditional Construction

#### ***Modular***

As we have discussed before modular construction is the method of building off site, this therefore negates the need to deliver to or store materials on site.

This has many advantages, including removing the need for storage space on site, stopping material damage and/or theft from site and a reduced carbon footprint as a result of all material deliveries being made in bulk direct to the factory.

Material storage and deliveries can be a huge problem when building apartments or any other development in a small space. One consideration to note here is the need to consider access cranes and lorries required to install modular constructed houses.

#### ***Traditional***

Typically a building site will have a storage compound set up specifically to store materials. Some of the disadvantages associated with this are outlined here.

On smaller sites, it is not always possible to create a materials compound, which usually means a greater frequency of deliveries to site, which will ultimately push the build costs up.

At the end of a development, materials are often left over - these more often than not end up having to be disposed of, any additional cost.

Site compounds are often the target of vandals and criminals who will either cause damage to materials stored or steal them, both of which serve only to increase the overall cost of the project.



## 8. No development experience required

### Modular Construction vs Traditional Construction

#### ***Modular***

Modular Construction comprises of two stages; the factory build, delivery and installation and the groundwork.

Groundworkers completing everything from DPC and below and the factory completing the build from DPC upwards.

**This simple but effective construction solution virtually eliminates the need for development experience as the work is handed over to the two teams of professionals.**

#### ***Traditional***

When considering a development using Traditional Construction methods, you have two options:

Manage the build yourself. For this you will at the very minimum require the services of an experienced and full time project manager and a competent procurement person, if you don't already have these skills in-house.

Appoint a main contractor. Although perhaps easier this will increase your overall development costs.

Development finance lenders will want to see your previous experience in development to ensure their investment is safe, and although by following either of the routes suggested above this can be satisfied, this can prove a big obstacle for many first time developers.



## 9. No expensive labour rates or shortage of tradesmen

### Modular Construction vs Traditional Construction

#### ***Modular***

There has always been and always will be a shortage of good tradesmen on site.

Modular construction allows for a reduction of the need for specific trades in favour of larger quantities of semi-skilled to skilled people being trained to do what are essentially repetitive tasks performed in a controlled, production environment. These skills can be taught to a larger demographic of the population and learned far quicker than those of a time-served tradesman.

**Staff are typically employed by the factory and therefore receive paid holidays, pensions, sick pay and other benefits associated with employed status,** something site workers, who are traditionally self-employed, don't receive.

#### ***Traditional***

A shortage of quality skilled labour results in that labour becoming expensive.

This is a phenomenon that has affected the construction industry at various times for the past 20 years, and is occurring today. As tradesmen recognise this, they begin to dictate the rates they command, which ultimately pushes up the cost of development.

Although many companies are now beginning to reintroduce apprenticeships, skilled tradesmen are a dying breed and with housing in such demand, there will for the foreseeable future be a shortage of skills.



## 10. Modular will rapidly outstrip traditional

### Modular Construction vs Traditional Construction

#### ***Modular***

As I'm sure you can see, Modular will eventually overtake Traditional as the preferred method of construction.

**There are currently more and more factories being built around the UK primed to build houses quicker, cheaper and at a higher, more standard level of quality.**

This is not a new process, *in fact we've seen it before in many industries*, none easier to see than McDonalds and the food industry... where in systemising everything from the production of their burgers, fries and shakes to the speed at which they can acquire, build and open a new store they have been able to dominate an industry through the economies of efficiency and standardisation.

#### ***Traditional***

This method will slow down if for no other reason than due to shortage of trades and rising labour costs, yet that is as you can see only one reason.

Those that don't adapt or adapt soon enough, will be left behind, we are seeing this in other industries, well established, long served industries, like the automotive industry where through his drive and innovation Elon Musk has forced an entire industry to embrace new technology.

Traditional methods of construction simply will not allow us to keep up with the ever increasing demand for new housing due to the slow process of the build.

Investors will start to switch to developers who choose to build in modular due to the de-risking of the development with predicted timescales and costs, and the speed at which modular projects can be completed, allowing investors to recycle their investment multiple times over a similar timeframe.



Are you ready?

So, now you are more familiar with just some of the reasons why modular and modern methods of construction are the future... let me ask you this:

Are you ready for the change?



Will you embrace these new methods of construction, or will you hold on to the past, hoping, just like Kodak when digital cameras begin to appear, that it will never happen.

I know where I'm putting my money.



## About the Author

### **Andy Hubbard**



An award winning Bricklayer by trade, building over 150 homes. Now an active property investor and trusted developer in his own right Andy is a highly sought after property consultant and mentor advising on project feasibility and planning.

### **Bishops Gate Developments Ltd**



A Peterborough based property development company with a clear focus on creating quality, functional living spaces for a new generation throughout East Anglia, The Midlands and South East of England.

From planning and design right through to applying the final lick of paint we strive to create fabulous homes you'll love to live in.

Our innovative approach to property development means we're constantly researching the building materials of the future to help us create sustainable homes for tomorrow, safely, on-time and on budget, which is why, many of our homes are built using Modular, SIPs (structural insulated panels) and CLT (cross laminated timber) construction methods.





## Want to learn more?

To learn more about Modular and Modern Methods of Construction, why not connect with us, learn from us and perhaps even partner with us as we embrace the future of the construction industry.

Visit us at [www.bishopsgatedevelopments.co.uk](http://www.bishopsgatedevelopments.co.uk)

Contact us at [enquiries@bishopsgatedevelopments.co.uk](mailto:enquiries@bishopsgatedevelopments.co.uk)

Join our growing community and stay up to date with the latest advancements in modular construction:

<https://www.facebook.com/bishopsgatedevelopments>