**Glossary**

**Modern methods of construction (MMC)** is a way of combining manufacturing processes, new technologies and new methods of building to be more efficient and effective when compared to traditional forms of construction.

**Off-site construction methods** refers to the completion of elements or components of a construction project at a different location, off-site to where they will be permanently installed. Typically, this can involve planning, design, fabrication and assembly in purpose-built off-site factories. The completed item is then transported to site and assembled in place.

**Modular construction** is where standardised and repeatable building elements are made in the factory, then brought to the building site and joined together. Modular building can include construction of either two-dimensional panels (panelised construction) or three-dimensional volumes (3D volumetric construction).

**3D volumetric construction** involves three-dimensional modules produced in controlled factory conditions prior to final installation. Volumetric modules can be brought to the final site in a variety of forms ranging from basic structure only, to one with all internal and external finishes and services installed, ready for installation.

**Panelised construction** involves flat panel units built in a factory and transported to site for assembly into a three-dimensional structure or to fit within an existing structure.

**Structural insulated panels (SIPs)** comprise of two layers of sheet material bonded to a foam insulation core.

**Sandwich panels** consist of two layers of a rigid material bonded to either side of a lightweight core.

**Sub-assemblies and components** are smaller elements of off-site construction. They include pre-manufactured components such as: pre-assembled units including roof and floor cassettes, precast concrete sections and cladding panels, framed panels (timber or steel) and pre-assembled structural steelwork.

**Pre-assembled units/elements/foundations** are larger components that can be incorporated into either conventionally built or MMC dwellings. These items are not full housing “systems” and are usually factory made. These include prefabricated foundations, floor cassettes and roof cassettes.

**Prefabricated foundations** area series of prefabricated ground beams or structures and other components assembled to form foundations quickly and accurately.

**Floor cassettes** areprefabricated panels specifically designed for floor construction.

**Roof cassettes** areprefabricated panels designed specifically for pitched roofs.

**Precast concrete sections and cladding panels** arepreformed panels that slot into a cladding rail system on a steel or concrete framed building and save time and on-site work required to erect formwork (the mould) and pour in-situ concrete.

**Concrete panels/sections (including flatpack)** is a termoften used in industry interchangeably with precast concrete sections.

**Complete or modular units** are complete units such as, for example, kitchens and bathrooms, which are fully fitted, then can be lifted into place, and fixed in before the main services are connected up.

**Framed panels (timber/steel)** are panels made with timber/steel frames, made in a factory and put together on-site.

**3D printing** isthe construction of a three-dimensional object from a digital 3D model, by adding layers of material together. This can be used for creating construction components, including structural elements, walls, and even entire buildings, often using concrete.

**Steel framing systems (SFS)** is a system of steel components (columns, beams, trusses, fixings, etc.) which can be used to create a framed structure, from a garden shed to a multi-storey office building. However, the construction industry now widely accepts SFS as being an infill system for primary structures which is used to support the building’s facade systems. SFS comprises studs and tracks, which are precision-engineered from light-gauge cold-rolled steel, together with associated fixings and accessories.

**Pre-assembled structural steelwork** aresteel framing systems that have been pre-assembled to form part of the structure, e.g. roof truss, before being transported to site.

**Construction-integrated manufacturing (CIM)** means the integration of Building Information Modelling (BIM) within the manufacturing process. This means that pre-manufactured items will not be required to be adjusted once on-site. The process of BIM will help to pre-determine any errors so the design can be adjusted before manufacturing. Some professionals use this term interchangeably with MMC.

**Hybrid construction** is also referred to as semi-volumetric construction. Highly serviced areas, such as kitchens or bathrooms, can be constructed as volumetric units off-site, with the rest of the dwelling constructed with panels. It is an approach that combines both panelised and 3D volumetric methods of construction.

**Digital twins** are interactive, virtual representations of the real construction project. These help construction teams to understand the physical requirements and constraints during the initial design and planning phases, and to determine how the buildings will perform in terms of energy efficiency, for example.

**Mechanical, electrical and plumbing** **(MEP)** refers to these services, which combine to make sure buildings are functional and fit for purpose.

**Design for manufacture and assembly (DfMA)** is the use of methods to optimise the design process of a building. The end goal of DfMA is to simplify a design to such a level that there are fewer (or more standardised) components and therefore will take less time and work to complete. MMC and DfMA are both methods of optimising construction projects, but MMC is a much broader term covering more than just the design phase – it is a range of construction techniques that improve productivity and efficiency throughout the full construction process.

**Building information modelling** (**BIM)** is a broad term that describes the process for specifying, creating, and managing digital information about a built asset, such as a building, bridge, highway or tunnel.