**Workbook**

# Producing a guide to MMC

You are going to carry out research to produce a guide for clients who have no experience of the construction industry. You need to outline what types of MMC are available and the materials used in each method.

As part of your guide, you will also need to discuss how emerging technologies can be used to enhance the process, for example, robotics, computer numerical control (CNC), building information modelling (BIM), 3D concrete printing.

You will be guided through the research process in seven steps:

1. Plan what you need
2. Watch videos
3. Check your plan
4. Research other methods
5. Write your guide
6. Reflect on your work
7. Take it further

## Step 1: Plan what you need

You are going to research the following MMC methods:

* 3D Volumetric
* Structural insulated panels (SIPs)
* Pre-manufactured components

To help you with your research, you are going to watch three videos to find out:

* how these methods work and what specific materials are used;
* the benefits/limitations of each method and cost implications;
* if and how emerging technologies are being used.

What do you already know about these methods?

How will you record the information you need from the videos?

Make a list of specific questions you would like answered as you watch the videos.

## Step 2: Watch the videos

You can use the grids which follow to help you make notes as you are watching the videos.

1. Video about 3D volumetric

<https://vimeo.com/1069606578>

1. Video about structural insulated panels (SIPs)

<https://vimeo.com/1070001660>

1. Video about pre-manufactured components

<https://vimeo.com/1070001877>

Use the prompts in these grids to help you make notes on each of the videos you watch.

|  |  |
| --- | --- |
| **Video 1: 3D volumetric** | |
| How does 3D volumetric construction work? |  |
| What specific materials are used? |  |
| Benefits |  |
| Limitations |  |
| Cost implications |  |
| Are emerging technologies being used, and how? |  |
| Any other notes |  |

|  |  |
| --- | --- |
| **Video 2: Structural insulated panels (SIPs)** | |
| How do SIPs work? |  |
| What specific materials are used? |  |
| Benefits |  |
| Limitations |  |
| Cost implications |  |
| Are emerging technologies being used, and how? |  |
| Any other notes |  |

|  |  |
| --- | --- |
| **Video 3: Pre-manufactured components** | |
| How do pre-manufactured components work? |  |
| What specific materials are involved in this example? |  |
| Benefits |  |
| Limitations |  |
| Cost implications |  |
| Are emerging technologies being used, and how? |  |
| Any other notes |  |

## Step 3: Check your plan

* Did you find all the information you need?
* Go back to the videos to find any missing information from your plan.
* Is there anything you need to research further before continuing?

## Step 4: Research other methods

Research what is involved in these other methods:

* Pre-assembled units/elements, such as floor and roof cassettes
* Precast concrete sections and cladding panels
* Framed panels (timber/steel)
* 3D printing
* Steel framing systems
* Pre-assembled structural steelwork

Find out enough to be able to write a brief definition of the **materials and techniques** and describe any **emerging technologies** that are used to enhance the process.

## Step 5: Write your guide

Write a guide for clients without construction experience about types of Modern Methods of Construction (MMC).

This should include:

* an introduction – make it clear what the guide will be about;
* a list of different types of MMC and a brief description of each;
* a focus on one type of MMC – with in-depth information about how it works, the material used and the use of emerging technology (include diagrams and images);
* any personal experience you have had with different types of MMC (e.g. on your placement);
* a conclusion – summary of the information you have included in your guide.

You could use the grid below to help you make your initial notes.

|  |  |
| --- | --- |
| Introduction | Welcome to your guide to Modern Methods of Construction (MMC)… |
| List of different types of MMC | There are several types of MMC used in the construction industry, including… |
| A focus on one method | More information about (*add type of MMC you have chosen to describe in depth*) is provided…  The materials used in… include…  The benefits are…  The limitations are…  Cost implications include…  Emerging technology is used in this method of construction by… |
| My experience | I gained experience of (*add types of MMC you have experienced*) when I … |
| Conclusion | In summary, MMC have had a major impact on the construction industry because… |

## Step 6: Reflect on your work

* Did you find out everything you needed to?
* What would you have done differently when researching?
* What did you find hard when writing your guide?
* How would you improve your research and writing next time?
* What questions do you still have regarding types of MMC?

## Step 7: Take it further

* If you enjoyed researching different types of off-site construction methods and would like to find out more, consider searching for “using emerging technologies for Modern Methods of Construction (MMC)”, or researching how the NHS are planning to adopt more MMC into their infrastructure.
* Can you now answer any of the questions you raised yourself in Step 6?