# Unit 106: Introduction to emerging technologies in construction and the built environment sector

# Worksheet 9: Off-site construction (tutor)

1. What are the sustainable benefits of off-site construction?

* Economic
* Social
* Environmental

1. What value is off-site construction?

* Technical: the factory environment guarantees higher quality, more predictable product behaviour.
* Quality: quality control is achieved by the regularised and dry environment, producing components with predictable better performance and fewer defects.
* Customer satisfaction: a consequence of improved quality within an efficient process.

1. What materials are used in off-site production?

* Timber
* Steel
* Concrete

1. Under which heading do the benefits of off-site construction belong:

| **Benefits** | **Sustainability** | **Value** | **Efficiency** |
| --- | --- | --- | --- |
| Time: savings can be made, carrying out site operations at the same time as manufacturing off-site components. |  |  | x |
| Technical: the factory environment guarantees higher quality, more predictable product behaviour. |  | x |  |
| Customer satisfaction: a consequence of improved quality within an efficient process. |  | x |  |
| Economic: achieved by the speed of production. | x |  |  |
| Social: achieved by the reduced risk to construction personnel than on-site. | x |  |  |
| Quality: quality control is achieved by the regularised and dry environment, producing components with predictable better performance and fewer defects. |  | x |  |
| Flexibility: is a consequence of improved quality, within an efficient (possibly automated) process. |  |  | x |
| Environmental: is achieved with the higher quality products. | x |  |  |
| Waste: reduction in the production of waste can be achieved when mass producing components accurately with fewer defects. |  |  | x |

1. Match the types of off-site construction to their description by drawing arrows to link them:

|  |  |
| --- | --- |
| Hybrid systems | Made with structural elements only, non-insulated. |
| Volumetric units | These are a combination of more than one system. |
| Panelised open systems | Are three-dimensional units that enclose usable space. |
| Components | Usually self-contained items and sourced from one supplier. |