# Unit 301: Understanding construction practice in Wales.

# Learning Outcomes 4: Know the changes in construction methods over time.

**Learner Task Criteria 4.3**

This section deals with 21st. techniques and technologies for chosen trades.

Research and answer the following questions relating to this topic area. Use the links listed below to help you and any other relevant web links.

1. Research and compile a list of modern-day materials, tools, and techniques relevant to your chosen trade.

2. What is meant by the following terms and what they mean in relation to construction and their trade?

* circular economy
* sustainable design and retrofit.
* insulation
* moisture management
* ventilation.

1. Learners to know modern methods of applying internal functional and surface finishes (performance plasterboard, specialist metal interior systems, fire proofing and acoustic control) using relevant modern resources (hand/mechanical taping and jointing, aerated and fast-setting chemical jointing adhesives including primers and sealers).
2. Research types of beads and trims extensively used for modern internal and external finishes.
3. Research and list the types of performance plasterboards and render carrier boards used in twenty-first century applications.
4. Explain how tools and resources are used in twenty-first century plastering and rendering applications which relate to the following, telescopic board props, projection plastering/render machines, mechanical sponge floats.

7. From your own trade specific area, research emerging methods of construction for twenty-first century buildings, including the materials, tools, and techniques.

8. Explain how the following modern surveying and design applications are used including: BIM, CAD, 3D modelling, simulation and drones.

9. Consider and explain how traditional methods of building survey and design are relevant to your chosen trade. Refer to City & Guilds Construction (Level 3) Timber Frame Erection Qualification Handbook 31.

10. What is meant by the following terms and what they mean in relation to your trade:

* circular economy
* sustainable design and retrofit.
* insulation
* moisture management
* ventilation.

11. Explain what impact the development of modular construction and prefabricated flatpack will have in the construction industry.

12. Explain what composite materials and modified timber are and their impact on performance, aesthetics, and design when used.

13.Research and explain the increased range and use of cordless power tools available.

Suggested website links:

[Overview: All 13 Plaster Types And 17 Plaster Techniques – Concrete Sage](https://concretesage.com/plaster-types/)

[Complete Guide to Render Options and Costs - Build It (self-build.co.uk)](https://www.self-build.co.uk/design-guide-modern-render-systems/)

[Spra [Machine Renders A Wall In Minutes - YouTube](https://www.youtube.com/watch?v=BCraa_nVnpk)y Plastering Specialists - Spraywall Interiors Ltd](https://www.spraywall.co.uk/)

[Rendering Walls Made Easy With This Bagged Render ("I Should’ve USED THIS YEARS AGO!!!") - Bing video](https://www.bing.com/videos/search?q=machine+projection+for+airless+systems+of+rendering+walls&docid=603486477556663106&mid=F422BFFCCE350E2DF0EDF422BFFCCE350E2DF0ED&view=detail&FORM=VIRE)

[What is a Modular Building? A Guide to Modular Construction - TWI (twi-global.com)](https://www.twi-global.com/technical-knowledge/faqs/what-is-a-modular-building)

[what does circular economy mean in relation to construction industry - Search (bing.com)](https://www.bing.com/search?q=what+does+circular+economy+mean+in+relation+to+construction+industry&cvid=d2eabc7899b944a7b4f4cb419a502edf&aqs=edge..69i57j69i11004.29511j0j1&pglt=41&FORM=ANNAB1&PC=U531)

[What is retrofit? | Centre for Sustainable Energy (cse.org.uk)](https://www.cse.org.uk/news/view/2687)

[Moisture Control | Department of Energy](https://www.energy.gov/energysaver/moisture-control)

[What Is BIM and Why Is It Important in Construction? (yardlink.com)](https://yardlink.com/blog/what-is-bim-and-why-is-it-important-in-construction)

[What is CAD? Definition, Advantages and Uses Explained - 3DSourced](https://www.3dsourced.com/guides/what-is-cad-guide-modeling/?utm_content=cmp-true)

<https://www.dezeen.com/2023/03/16/andrew-waugh-interview-timber-revolution/>