



## Our Community + Our Buildings + Our Future = A STEM Construction Project

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*“When Wood is the only answer”*

S3/S4 Project which uses cross-curricular skills to construct a model vision of the local community's integral public use buildings. The only prerequisite is that the principal construction material is wood.

Wood is a renewable resource, economical and a very strong building material. This knowledge should be used in the context of developing our own community for the future. Wood is a store of carbon and it reduces the greenhouse effect by removing carbon dioxide from the atmosphere.

Classes to be divided into teams of 5. Community buildings to be allocated to each team (e.g. School, Library, Swimming Pool or Sports Centre, Shopping Centre/Supermarket, Community Centre).

1. The building must have at least the same capacity as the current building. All current user activities must be accommodated.
2. The new building must be more energy efficient than the current building with monthly energy bills estimated from current data.
3. Building materials should be sourced from the closest available timber source.
4. Construction costs for the new building should be compared directly to the total cost estimate for re-building the existing building using existing materials.

- Science – Planning session to emphasise storage of carbon in wooden building materials – photosynthesis.
- Design Technology – Major contributor throughout the project as a heavy emphasis on design and construction materials is evident.
- Engineering – Required for building construction and also to demonstrate construction engineering required to drive energy efficiency.
- Maths – Numeracy across learning including costings of construction, energy usage and floor area of buildings.

Project Time = 6 hours:

- 1 hour project introduction session
- 2 x 1 hour research and planning sessions including outdoor learning to research buildings
- 3 hour (1/2 school day) construction session.

Curriculum for Excellence Experiences and Outcomes from the following areas covered extensively in this project:

- Health and Wellbeing
- Science
- Technologies
- Mathematics/Numeracy Across Learning

Costed building materials will be provided to construct a model of a community building on a 1 metre by 1 metre “architect” model mat.

**It's important that we can see the wood from the trees (unlike in this poster!) so that we can make good use of it.**