

ACTIVITY 3: Deconstruction Project

Activity Objective: Select an old building in your area and create a detailed plan on how to deconstruct that building and make a presentation on how you will carry out your plan.

Materials: Chapter 16, paper, computer, printer, Internet Access, materials as needed for this activity

Definition:

Deconstruction is construction in reverse, which involves carefully taking apart a building to maximize the reuse of materials, thereby reducing waste and conserving resources.

Deconstruction can capture materials and some components from existing buildings that were poorly designed for high level reuse but it is not a favored approach from a Zero Waste point of view. Zero Waste favors the building designs as assemblages of high level components, not their creation from rough materials such as lumber, cement or plaster.

The goal of Zero Waste design idea is to build entire rooms, entire walls, roofs or floors or entire utility systems that can be pre-built and installed as completed components. Until buildings are built as components capable of later dismantling, deconstruction is a stop-gap procedure that we can use to minimize the waste of building materials. For now, the largest parts that we are able to save are the architectural elements, windows, doors, and metals, of which many are being saved and resold. The main parts that still need to be crushed are wood flooring, brick walls, and structural timbers.

The demolition of traditional buildings has been long done by a wrecking ball. Approximately 70 pounds of the waste is generated for every square foot of the residential building demolition. It is questionable that this is artificial economics, based on the cultural preference for wastefulness and that Zero Waste designs of dismantlable components will eventually be the cheapest as well as the most conservative way to reuse these materials.

Brick, wood and stone are among the oldest truly recyclable materials used in construction. A historic review of old buildings, barns and bridges shows that brick, stones and timber are reused from older buildings. Some of the oldest structures are built with materials that were recycled from previous structures. For example the Mayflower Barn just north of High Wycombe, UK was built from reused timbers, possibly sourced from the salvage of the Mayflower ship.

In more recent construction, structural timber components, including large timbers, glued laminated beams, floor joists, studs and flooring are some of the most valuable structural components salvaged when a structure is demolished. You can go to any local construction salvage yard and look at the trusses, wood beams, floor joists, studs and flooring that were saved

Unfortunately the bias of building code officials and building departments that discriminate against reusing materials is one of deconstruction's barriers. Codes and building departments require compliance to codes, including the source of materials. Your average contractor cannot just use salvaged floor joists because the building department requires a graded joist. The contractor then has to find an engineer or wood technologist to verify the material suitability for its use.

REVIEW VIDEOS:

Deconstruction, salvage, reuses https://www.youtube.com/watch?v=ND-EN_YrcD0

Extended Producer Responsibility (EPR): A conversation on EPR:

<https://www.youtube.com/watch?v=ZvoC76S8cDg>

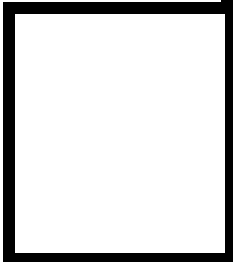
Procedure:

1. Work as partners or small teams.
2. Research and brainstorm the subject of deconstruction on the Internet.
3. Select an older building in your geographic area.
4. Develop a detailed plan on how to deconstruct that building.
5. Include what materials will be reused.
6. Make a presentation on how you will carry out your plan.



RUBRIC

4 World-Class Learner	3 Proficient Learner	2 Developing Learner	1 Emergent Learner
Learner at this level has gone beyond mastery of knowledge, skills, & attitudes described in project. World-class learner consistently exhibits high-quality performance.	Learner at this level has had opportunities to apply knowledge, skills, & attitudes of component of project. Proficient learner has mastered essential attributes, thus proving mastery.	Learner at this level has been exposed to & had opportunity to apply knowledge, skills, & attitudes of project. Developing learner may have only a few essential attributes to master before mastery.	Learner at this level may or may not have been exposed to knowledge, skills, & attitudes required by academic standards of the project.



- 1= Emergent Learner
- 2 = Developing Learner
- 3 = Proficient Learner
- 4 = World-Class Learner