Building a House Using Waterfall and Agile Methodologies

	Waterfall Methodology	Agile Methodology
How a house would get built:	• Construction phases would occur sequentially, with design completed and signed off on before construction started • Categories of work would be completed all at once, rather than whole portions of the project. Thus, all the framing would be done, then all the electrical, then all the plumbing, etc. No portion of the house would be livable until the entire house was livable.	• Construction would occur in cycles, with the house designed modularly. Subcontractors (carpenter, electrician, etc.) would complete their work on one module, and return to finish another module later. • Changes to design, materials, etc. could be accommodated as each module is done separately. • Portions (modules) of the house would become livable before other portions.
Advantages of each methodology:	• If changes can be managed to be small or not allowed, then sequential work by each subcontractor is probably more efficient and cost effective • Test and inspections can be done less often with fewer sign offs	• Construction could begin sooner, before a fully finished design was completed • The order in which modules were done could be flexibly re-arranged depending on resource availability and homeowner preference • Homeowner could “test” and “accept” parts of the house individually rather than the whole house all at once at the end
What is the Minimum Viable House under each methodology?	• Almost the complete house. This is because the work done by each subcontractor (carpenter, electrician, etc.) must be completed before the next subcontractor would then do all of their work.	• Completed infrastructure (power, water, sewer, etc.) and one bedroom, one bathroom, and kitchen. • A person could live in those completed rooms while other bedrooms and bathrooms were completed. Landscaping and other supporting aspects could be done later as well.
What would happen if the homeowner decided to change the design mid-construction?	• Changes to a subcontractor’s work would be expensive and difficult to schedule and accomplish – the subcontractor would have to return to the job site (which might take time for them to become available again) and work being done by other subcontractors might have to be paused or rescheduled as well.	• The changes would be much more easily incorporated into the work on the next modules of the house, and changes to completed modules could be scheduled as needed and resources were available