Housing for two crises

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As if we needed more proof, the weather of the past year has shown that the world is already deep in a climate crisis. Conditions are changing faster and more drastically than predicted, almost everywhere. While we need to dramatically reduce our collective carbon footprint to keep things from spinning further out of control, as architects we also need to shift much of our short-term thinking to resilience - how to design and build environments that will allow humans to survive in the age of the Anthropocene. Almost none of our existing buildings meet the performance level that we desperately need.

At the same time, our society is in a housing crisis - we have a deficit of four million dwelling units, and we are unable to produce them at a cost that 60% of people can afford. Most units are built right on the edge of what codes allow, in order to keep costs down; they may perform at a much higher level than older ones, but they still fall far short of what we need, as all of our decisions are driven by short-term thinking - what can be built profitably under our current socio-economic-political system. In twenty years time, we will look back and wonder why we made such bad investments, wasting capital on buildings that won’t provide adequate shelter in the easily-foreseen future. We need to design housing that doesn’t meet the needs of today, but the needs of 2075.

This studio will focus on first principles - coming up with what will likely be radically different approaches to housing in the Willamette Valley. But while incremental improvements won’t meet our needs, neither will ungrounded or purely speculative proposals: all studio designs will have to show how they will be able to shelter people and society under the imminent severe conditions:

• The Willamette Valley will continue to be a temperate, habitable environment, but on average having even wetter winters, and hotter and drier summers. The flip side of this is that millions of climate refugees will arrive, as this will be one of the few good places in the country to live.
• We cannot expand our urban growth boundaries to accommodate the new arrivals, as we will need all the farm land we have, especially once the Central Valley in California is unable to produce food.
• There is an impending major earthquake, after which our buildings will still need to provide shelter. (Current codes are based on the requirement that the building doesn’t kill you during an earthquake, not that it should still be inhabitable afterwards.) Earthquake-resilience involves not just building structure and enclosure, but also dealing with the disruption of all utility systems (water, sewer, electricity, internet) for quite a long time.
• The Tubbs (and now Lahaina) fires demonstrated that it is not just isolated houses on the wildland/urban interface that are in danger of wildfire, but also solidly suburban neighborhoods.
• Winter design conditions of increasingly severe storms, flooding, and extended power outages will become more common. Atmospheric rivers such as those of 1862 will flood the Valley for months.
• Summer design conditions will have temperatures over 110º, with the likelihood of serious wildfire smoke at the same time. (We had particulate levels over 450 for three weeks in 2020.)

While the agenda above may achieve basic resilience, we will still have to work with the current housing crisis: how can we afford to build housing that will clearly cost more on a per square foot basis? The answer will probably be smaller, denser housing than we are used to, spending our money on the certainty of shelter, rather than on large, obsolete McMansions. This will require innovative approaches to social arrangements, household definition, typology, infrastructure, and urban design.

Students will:
• Research impending disaster scenarios (building on analyses from the housing terminal studio of 2020)
• Complete a series of sketch problems addressing individual design parameters separately.
• Apply your knowledge from our ECS curriculum (since you have all just completed this). You will be expected to demonstrate how your proposals will meet necessary performance levels.
• Produce a final design proposal which integrates all the lessons learned in the sketch problems.

I don’t know, this may be the first time I ever been to Oregon it didn’t rain, and now it’s too damn hot.
- Bob Weir, Veneta, Oregon. August 27, 1972