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## **Ubiquitous housing crisis: AI to the rescue? - by Daniel Calano**

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It's clear that there is a paucity of affordable housing, be it from the homeless to the middle class. Articles abound from New York Times to Wall St., to the best universities and think tanks, and of course from our own real estate newspapers and journals. The "news" generally says it has been caused by the rise in mortgage interest rates... but there are many more scoundrels to blame, from inflationary costs of building materials, to labor, to population and job movements, demographics and geographics.

Yes, there are many scapegoats, but few solutions to date. Depending on your source, there is a housing shortfall of hundreds of thousands across the country. All true, but little thinking about the whole housing production system.

On the other hand, Artificial Intelligence chatter is everywhere, so much so that the science is overtaking the uses of AI. In fact, while hundreds of billions of dollars are being spent, AI has rounded some corners, with a few sprints, but nowhere near any finish lines. Apple, Google, Microsoft, Meta are all competing to create the best platforms. That's what got me thinking about improving Housing with AI.

Now, I am in no way a "techy," but I am a "wannabe" futurist. To me, this is a Henry Ford moment, a time to study the components of housing production, not just the one-off solution, here and there. AI, there are some uses you can address, and help ease the housing crisis.

Start with Design: Conceptual building design can be creative, sometimes fun, but also time-tedious, with its many iterations. Not new news, AI can produce unlimited designs, given a few parameters, within a very short timeframe. CAD was a beginning design step decades ago, and AI has begun to meld with that level of a simplifying solution.

Construction "drawings" should be able to "piggy-back" on concepts, thus improving design, and structure, in a fully integrated system, within a very short timeframe. Moving from construction plans, and scanning for engineering symbiosis, in a fully re-iterative process, will produce designs that are attractive, safe, more affordable, and actually buildable.

"Approvable plans" are also facilitated, for early stakeholders, to myriad regulators, to neighborhood review. Once again, the review process can be shortened, with real time modifications, within 3-dimensional presentations, for all to participate. This step can be extremely helpful, as some review processes have already become "wonderfully" graphic, as opposed to boringly tedious.

Next, think financial feasibility. New financial pro-formas can be linked easily to the dynamic movements of the above discussed processes. At a blindingly fast pace, with fluidity of construction costs at hand, feasibility can be improved, for example, by AI searches for material and labor pricing, substitutions and modifications, as the process evolves.

The reality of "affordable" housing actually becomes more real. Land purchases are facilitated

through search, for pricing, location, and financing. Lenders can better judge financial feasibility equity capital stacks, variable interest costs, liabilities, and so on. Again, all of these steps can be accomplished “by hand”, but obviously much better at a faster pace, with a fully integrated and re-iterative process.

We already have some futuristic starts, including robotics, computer molded materials, assembly lines, etc.

So AI, you are looking for a use? Help produce some affordable housing. Let's get started.

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