

Abstract Submitted
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Designing a Zero-Energy Home for the Colorado Highlands LI-
ONEL D. HEWETT, Texas A&M University, Kingsville — This presentation illustrates how the basic principles of physics (particularly, structural integrity, energy resources, and heat transfer) can be used to design a (hopefully) comfortable home for a high altitude environment of prolonged sub-zero winters and sweltering summertime highs. The resulting design incorporates a monolithic dome structure imbedded into a hillside utilizing both passive and active solar energy components to regulate its internal temperature and solar technology (photovoltaic collectors and wind turbines) to supply its off-grid electrical needs.

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