

My Father is the Pastor of a church built in 1929. Growing up, I was the kid who ran around that church building, exploring all the nooks and attic spaces as a means of entertainment. Climbing rusty steel ladders and opening roof hatches is not the safest way for a kid to play, but it laid groundwork for my appreciation of historic buildings (and it was quite fun). The construction methods and materials comprising the structure never crossed my mind, except that I knew they were old and that was cool! While I was on an adventure, foundation was being built.

The past two summers, I've had the privilege of working on historic building renovation projects. The first summer, I was only involved in the construction management of projects, but I yearned to take part in the more interesting, technical aspects. Therefore, this past summer I sought an internship in structural engineering design work. This was interesting! I helped professional engineers with structural design tasks on both new and historical building projects. The new projects were exciting and enjoyable to work with, but the renovation projects were thought provoking and challenging my understanding of the modern process by which structures are designed and built. Many of these buildings didn't come to us with construction documents and those that did were in historical format with less than ideal levels of detail. *What exactly makes up the lateral system in this building? Where are the shear walls and braced frames?* "Well, it's a bit more complicated than that" was the answer I got from my mentor as he went on to talk about concepts from classes I'd yet to take. It soon became evident that not all structural engineering problems can be solved with the black box of structural engineering software. A sound understanding of structural mechanics, finite element analysis, vibrations and more must be a part of the knowledgebase a structural engineer has in order to approach, brainstorm, and determine an efficient and effective solution to problems encountered in the built world.

While there may be simpler career paths I could choose, perhaps simpler problems and less abstract structures to spend my time designing, I like the complexity. With the historic renovation projects, I like the history the buildings hold. The pan joists and terra cotta remind me of the church I spent years exploring as a kid, the same church that held generations of services, weddings, funerals, and personal relationships. Historic buildings tell a story of life and purpose, one that I want to help preserve for years to come. I want to spend more time studying the mechanisms of structures so that I have the preparation and understanding of how to help preserve the buildings we already have and design new ones for future stories to be told.