

Thesis Project Portfolio

A look into Bridges to Prosperity

(Technical Report)

Case study of prior experiences with B2P and reflection on “white savior” mentality

(STS Research Paper)

An Undergraduate Thesis

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Bachelor of Science, School of Engineering

Robert Lee Peacock III

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Department of Engineering Systems and Environment

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Sociotechnical Synthesis

It is a known fact that engineering solutions have the ability to improve quality of life and overall health. I worked alongside Bridges to Prosperity (B2P), a non-profit organization, to help design and build a footbridge in a local, isolated community in Bolivia. As a civil engineer and working with a bridge organization, we set out to identify problems in local communities in Africa and South America and design solutions to solve these problems. However, I understand that it is important as an engineer to address ethical concerns and potential unintended consequences when designing these solutions.

As part of my technical project, my capstone group and I partnered with Bridges to Prosperity in facilitating the design and construction of a footbridge in Guayabitos, a local community in the heart of Bolivia. With the help of that local community and the government of Bolivia, they have expressed the need for the footbridge, so that the people of the community can still have access to essential services when the river floods for months at a time, making it almost impossible to cross without serious injury. My capstone group and I completed the design of the footbridge and are currently working on putting the finishing touches on our technical project.

My STS thesis examined Bridges to Prosperity and its non-profit and global humanitarian efforts. Unlike many other non-profit organizations with failed humanitarian efforts, how has B2P been so effective in interacting with communities from different backgrounds? Using a case study of someone who worked for Bridges to Prosperity in the late 2000s, I focused in on first assessing B2P's efforts and practices in their past that weren't effective. With the help of extensive research, I then created my own rubric of evaluation of "best practices" to assess B2P's current efforts that have been effective in helping student engineers interact with different cultures and backgrounds. I found that it is important for engineers to be well-rounded and utilize

a multi-disciplinary approach that is deeper than simply knowing how to design and build a bridge.

The technical project ended up being a success as we were able to successfully design a footbridge tailored specifically for the Bolivian community. Next steps in development include finalizing of construction documents and then the actual construction of the footbridge. My STS research reiterates the importance of training engineers to address not only the technical aspect of a solution, but the ethical implications that the design may have.

I would like to thank prof. Ferguson for his tremendous help and guidance along the way with my STS thesis. I also would like to thank my entire capstone group, my mentors, and my technical advisor, prof. Gomez. Without the help of you all, this wouldn't have been possible.