

# **Thesis Portfolio**

Reston Site Redevelopment Project  
(Technical Report)

Moving People Into Cities: Are Cities Ethical  
(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science  
University of Virginia · Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree  
Bachelor of Science, School of Engineering

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Thesis Prospectus

The technical report will detail the capstone project my group and I were challenged with to complete. Our capstone project was based on a redevelopment site in Reston, Virginia. A metro station was built on the adjacent parcel. This allowed for a higher Floor Area Ratio (FAR) which allows for essentially more building space per total acreage of the site. Higher density living can then be achieved in this space. We were tasked with redesigning the site to achieve the goals outlined in the Request for Proposal (RFP). The client wanted a site that was 50% residential and 50% commercial. We also had to think about phasing of the project, scheduling, stormwater, grading, and landscaping. Each aspect of the site was drawn in AutoCad and plotted to create a plan set for the client. Included in the report will be design decisions and explanations to each component and some calculations attached in the appendices.

With the population growing, space to live will become limited and as with most of the population they too will have to live in cities. The STS portion of the thesis will question the sustainability and ethics of living in cities. Using two ethical frameworks, utilitarianism and egoism, exploration of the different perspectives will help to draw conclusions to the question stated above. Various points are brought up in favor and against living in a city. Limitations about the research conducted will also be addressed and how the frameworks have their own weaknesses. Ultimately a free country will not be able to force people to live in cities, but can change regulations so that they are more sustainable, more equitable, and therefore become more appealing. Making this step alone, while huge and again will take time, will ultimately let all people live happier and higher quality lives.

The two topics overlap in that when designing new layouts for cities or developing in general a designer has to be conscious of how each piece will impact society. How a designer

will include green space, amenities, and stormwater facilities all has impacts on the people in that area. If they decide to provide more stormwater to lessen the impact on aquatic life then the people living in there would also benefit by seeing more green in their lives. It would also potentially future proof the site in that with the current concern of climate change then the increase in rains will not impact the people living there as much. They can create cities that have low impact on the environment while also providing a place that is fair to all. What a lot of land development teams run into as an issue is trying to please the client. What a client wants out of the site will generally dictate how a site is designed. Hopefully this paper will bring to light some of the issues within cities and how designers as a whole can bring about change.