

Mitigation of Stormwater Runoff from Ivy and Emmet Street
Redevelopment Site
(Technical Report)

Climate Change: Fossil Fuel Companies' Responses
(STS Research Paper)

An Undergraduate Thesis Portfolio
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School of Engineering and Applied Science
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Bachelor of Science in Civil Engineering

by

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Preface

How has human development impacted the environment and its natural processes?

How can stormwater runoff from the redevelopment site near the intersection of Ivy and Emmet Street be mitigated? Effective stormwater management takes into account water quality (concentrations of pollutants) and water quantity (the volume of runoff leaving the site). Without the Ivy and Emmet Street Project, this parcel of land would continue to serve as an unconnected, separate unit dividing the University of Virginia grounds. AutoCAD Civil 3D was used to design the site design plans, and Virginia Runoff Reduction Method (VRRM) and Storm Water Management Model (SWMM) to analyze the stormwater management systems and site hydrology. The proposed design provides adequate building space with plentiful green areas, and applies three Best Management Practices (BMPs) that appropriately reduce the stormwater runoff and pollutant levels from the redevelopment site. Future work could include development of alternative site designs with comparative construction cost analyses.

How have fossil fuel companies responded to evidence of climate change and consequent public pressure? The share in the atmosphere of carbon dioxide has increased steadily every year, and major sources of carbon dioxide emissions include the burning of fossil fuels. Global climate movements and shareholders pressure fossil fuel companies, including Exxon Mobil, Chevron, and Shell Oil. Fossil fuel companies acknowledge the significance of climate change and emphasize their commitment to help combat it, thus striving to present themselves as responsible corporate citizens. Climate change is a pressing issue, and with rising pressures for policy and corporate change, the current efforts may only be the beginning.

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