Thesis Portfolio

Identyti: Digital Storage of Personal Identification Documents

The Zero Energy Building: A Driver of Change Towards Environmentally Focused Technologies

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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Spring, 2020

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Sociotechnical Synthesis

Introduction

The motivation behind the Capstone Project is to create a much more convenient way to store important personal documents electronically. The client that presented this project faced a problem. From his past in the military, he was required to keep and maintain lots of documents that were disorganized and confusing. When applying for new documents, like renewing a passport, he also faced a struggle in knowing which personal documents were necessary for the process. With this in mind, the client envisioned a virtual storage system for personal documents. In this way, documents could easily be organized and maintained with little effort. Getting new documents could also be made easier by the application telling the user what documents he/she has that are necessary for a new document.

The motivation behind the STS Research Paper is to find out the ways in which the issue of climate change can be categorically fixed. Since there is no single solution to climate change, exploring ways in which a shift in priorities occurs in technology to benefit the environment is both necessary and incredibly pressing. The zero-energy building is a fascinating concept, with principles behind its design that are virtually unseen before. The principles behind the zero-energy building design can be explored deeply to find interesting answers to the problems of climate change. The motivation to find these answers is one that is extremely important to me and to the entire world.

Capstone Project Summary

Throughout a lifetime, an individual must maintain various documents in order to get by, including identification like a driver's license and a passport, banking information, pay stubs from previous employers, and much more. These documents are not needed physically, so storing them electronically provides both ease and organization. With documents being stored electronically, all of the important documents that you may have misplaced at some point can all be found in a single location. This solves the problems one has with trying to keep all of their important documents together and safe. Another problem that arises with personal documents is trying to get new ones. It is hard to know exactly what is necessary to renew a document or apply for a document one does not have. This project allows users to easily view the exact requirements for a document and automatically provide you with the ones you do have. Users can also share documents with others, including companies or enterprises. This way, a user can easily onboard when starting a new job by automatically providing all the necessary documents. All of these features provide ease of use in storing important personal documents.

STS Research Summary

The zero-energy building is a building concept that prioritizes the environment before anything else. The zero-energy building aims to limit energy usage to a minimum, and produce its own clean, renewable energy as much as possible. In this way, all the energy that the building uses is created sustainably through the building's own processes. Therefore, the zero-energy building achieves carbon neutrality. The concept of the zero-energy building is one that has a rare property: its entire design is based around being good for the environment. Unlike so many

other technologies that only hurt the environment, this one was created just to benefit the environment. This philosophy can be used to resolve the issues that climate change presents. The necessary solution to climate change is one that requires a paradigm shift in the design of new technologies towards benefiting the environment. This paradigm shift is one that is exemplified perfectly by the zero-energy building.

Conclusion

In doing these two projects, I have learned a great deal. These two projects present very different problems. One is a global issue that requires massive global changes, and the other is developing a product for a smaller user issue. However, although the problems were very different, the approach to the solutions became very similar. To approach the issue of climate change and researching the zero-energy building, I had to reduce the problem down to simpler factors. Similarly for the Capstone project, my group and I had to reduce a client's request to simple functionalities and requirements. The biggest lesson I have taken from working on these two projects at the same time is just that; how to take a large, complicated problem and boil it down to simple terms that are easy to understand and straightforward to work on and make progress on.