Reston Parcel Redevelopment

(Technical Paper)

Reverse Salients in the Zoning Systems of Smart Cities

(STS Paper)

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Overall Introduction

My STS thesis and technical report are both about related to construction and how spaces will be used by people. In the technical report, I will discuss how I will contribute to planning the redevelopment of a parcel of land in Reston, VA nearby an almost built metro stop. Thus far, our redevelopment plan is to destroy the current office buildings and replace them with 4 to 5 other buildings that will be a combination of residential, office, and retail. The proposal will have six components: a site concept plan, stormwater strategy and design, development plan, site model, preliminary phasing plan, and written narrative to explain all the components. As we have worked on that, we have tried to take into account what we think people would want to see and would be most likely to use right after they get off the metro.

With my STS thesis, I have done research as to how people let designers, owners, and the government know what kinds of buildings they support in certain areas. In this research, I also wanted to find out what opportunities were given to people to intervene in these systems and what opportunities were actually taken. I will be comparing two very different systems: the US and China. In the USA, I will be focusing on San Francisco, what could be considered the technological smart city of the USA, and Shenzhen, which was once a small fishing village and has recently turned into a giant technologically advanced, global city.

Reston Parcel Redevelopment

In Reston, VA next to the almost finished Reston Town Center metro station, there is parcel of land with two office buildings on it. Given the two nearby transit-oriented communities being built nearby it and an artificially increased allowable floor area ratio (FAR) for the area, we want to make a lot of changes to the area to make it more like the transit-oriented communities nearby in order to satisfy our client's desire for redevelopment. (West, n.d.)

Currently one office building is 319,519 square feet (sf) with 12 stories and neighboring office building is 6 stories with a total of 134, 615 sf. Both buildings were built in 1999 with a total of 1,548 parking spaces available. ("Boston Properties bxp," n.d.) That's fairly recent in terms of buildings, but the buildings would definitely need to be significantly renovated soon to keep them up to code and looking attractive for tenants in the area according to our advisors. It would be expensive to the point of not being worthwhile for us to make the buildings taller, and yet we need to increase the current FAR, half of which needs to be residential. We propose making the other half 3% retail and 47% office or commercial space, given that there is already a desire for office space at this location and there will be a desire for retail, such as food or gifts, when the metro station starts running. Given these factors, we have decided to tear down the two buildings for our proposal. We will include economic comparisons for keeping the buildings to help show the client the monetary benefits of demolition and new construction.

According to WalkUP, the best ways to increase the development around transit are to increase the walkability and the job density of the area, thus by developing a lot of office space next to a lot of residential space we would be increasing the ease of walking to work. (*Walkup-report.pdf*, n.d.) Adding more office space to the Reston area next to a transit station, the new metro station, will increase the walkability of the parcel and the ease of access to jobs for anyone

that lives near one of the metro stations. This would increase the desire for companies to rent the office space because it would be easier for their employees to get to work and their office would be visible from the Dulles Greenway, which would give them good exposure.

We are also trying to apply aspects from the Transit Oriented Development (TOD) certification. The aspects we will likely incorporate include outdoor spaces, mixed use buildings, a good pedestrian experience, tree lined streets, easily accessible by bicycle, hidden parking, expandability, and close proximity to transit. All these qualities in combination create a community that promotes best sustainability practices near transit services. ("TOD Certification How it Works," n.d.)

We will also be incorporating Leadership in Energy and Environmental Design (LEED) certification elements. We will be proposing our office buildings to be built to LEED Gold and our residential buildings be built to LEED Silver. We want to build to the highest level of LEED realistic for our circumstances because taking care of our environment is important and the client will likely save money long term by having LEED certified buildings due to the resource saving techniques required by LEED. There are numerous other reasons for having LEED certified buildings including faster rates of filling the buildings, a healthier space inside the building, and increased resale value. ("LEED green building certification | USGBC," n.d.)

The fall semester is focused on completing the conceptual planning for the project and the spring semester will be focused on filling out the details and creating a full proposal for the redevelopment.

Reverse Salients in the Zoning Systems of Smart Cities

Introduction

Zoning seems inherently only related to real estate and those involved in the construction industry, but the fact is it affects anyone that uses buildings or infrastructure. Zoning determines what types of buildings and structures can be built in a particular area, zone, or parcel. In terms of smart city values, zoning is important because it can pave the way for an inclusive society, that is culturally vibrant and happy and makes use of open data and transparency. An inclusive society is a place where those who struggle can address their grievances and have the power to alter the system. A culturally vibrant and happy space would be an area where people feel they can express themselves and their culture. Infrastructure and architecture would reflect the cultural history of the space. Open data and transparency indicate how the government and local groups would work together to make sure people are able to easily access all information about their community and about how their community policies. This is why zoning is relevant to us and why I am going to research how different reverse salients affect the system builders in the zoning system in two different smart cities: Shenzhen, China and San Francisco, California in the United States.

Literature Review

Zoning in the US is typically coordinated by the local government. In general, there are numerous ways that citizens have interacted with their local government in the past. There's the standard council meeting, letters to your representative, and the occasional protest. As times are changing in the digital age, so too are the ways we interact with our local government.

San Francisco is a good example of a growing city with a powerful stakeholder that influences zoning among other government functions. In an effort to be a more global city, San Francisco has zones that are dedicated to private enterprises. Tech companies, like Apple and Google, bring in more workers and more money, but they also take up space and their well-paid workers can have expensive tastes. There is evidence in San Francisco that the government has not been suitably responsive to all of its residents. There have been protests about the incoming tech companies that involve citizens stopping buses of the employees on their way to work. Some consider this a sort of class warfare, with the tech employees being part of an elite "tech class" and the protesting citizens being part of a lower economic class that is being pushed out by rising housing costs that they attribute to the tech class. This has led to various branches of an "Anti-Eviction Movement." Another way the residents of San Francisco have been trying to communicate with their government is through various studies around an "Anti-Eviction Mapping Project," which includes information about how residents in certain areas of San Francisco have been evicted. (Laurent, 2019)

Researchers from Sydney School of Design, Planning, and Architecture at the University of Sydney, Australia suggest that the way systems builders like the local government and local business and corporations handle reverse salients depends on the type of smart city. They suggest that there are two types of smart cities: corporate smart cities and alternative smart cities. Corporate smart cities are focused solely on maximizing innovation, which doesn't leave much room for other voices or citizen engagement. While they are involved in movements that encourage education and benefitting from smartification, they typically don't look into what citizens really want or need. Alternative smart cities are the foil to that; they are focused on a bottom-up, small scale approach. The Sydney Researchers suggest that inventions like the internet and social media have made alternative smart cities a possibility given that these platforms allow for previously unorganized groups to come together. Many citizens also voice complaints on social media that can be very useful to the local government, from pot holes to snow damage to a fire or other emergency, a lot of governments just don't look for it. The researchers used machine learning to sort this data and use it too figure out residents' opinions on various urban projects and other topics. The internet and social media are valuable innovations in preventing future reverse salients and creating a more inclusive momentum. (Alizadeh, Sarkar, & Burgoyne, 2019)

STS Framework and Method

We will look at the zoning system in San Francisco through the lens of large technical systems (LTS). The LTS framework is a means of looking at how technologies and systems builders interact to create a general momentum, which can be changed or challenged by reverse salients. (*Hughes—1989—The Evolution of Large Technological Systems.pdf*, n.d.)

The radical idea that initiated the LTS of zoning in San Francisco is the discovery of modern urban planning. The main systems builders there are the local government and various technology companies, specifically Google and Apple. They influence who wants to live in San Francisco as they grow and their employees frequently have different needs than the longstanding residents, namely luxury apartments, higher end restaurants, and other amenities. (Laurent, 2019) Given that the technology companies have a lot of influence over the local government and zoning, a momentum is created that is very positive for the tech company system builders, but not for the system builders that are the original residents. Since the residents are as strong system builders since they aren't an organized group, there's more potential for reverse salients to happen. With the emergence of the internet and social networks, there has been more potential for these groups to organize into stronger system builders. With this greater communication, there have been opportunities for reverse salients to organize and come to light, like with people from gentrified neighborhoods protesting by stopping Apple and Google commuter buses. These protests are organized through the internet to change the momentum, ironically the same internet created by the technology based companies to advantage their employees, many of whom are new to the area. The various forms of protests are the reverse salients of the zoning system. A good local transportation system also helped the protesters come together to be reverse salients that are noticed by the San Francisco government. (*Hughes—1989—The Evolution of Large Technological Systems.pdf*, n.d.; Laurent, 2019)

Future Work/Timeline

I will research through primary document analysis of statistics from DataSF, a website run by the San Francisco government with a lot of information about evictions, crime, and other events. There's also zoning data and history on the San Francisco government website. I will research Shenzhen through interviews with a research assistant at UVA, Yuying, who's from Shenzhen and also looking to find out more information on the UVA perspective of the global track partnership.

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