

THE REDESIGN OF CROZET ELEMENTARY SCHOOL
THE IMPACT OF URBAN REGENERATION IN DOHA, QATAR

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By
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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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Introduction

How can new infrastructure design be beneficial to communities as a whole?

Infrastructure design is vital to every community. It is the foundation of providing a sense of identity and pride to a community. When one travels to foreign land, the first thing physically noticed is the uniqueness of infrastructure. It is what breeds the culture in that area. This could be from simply traveling to another town close to home or can be as drastic as traveling abroad exposing yourself to cultures you have no resemblance of. Whenever new additions of infrastructure are added, it is important to note both the technical advancements this structure provides, as well as, how it can be socially implemented and accepted among the community. Communities are a crucial factor to every child's upbringing. Families deciding to relocate with newborns or young children prioritize their choice of location by how it will affect their children, more specifically, their education. Keeping all of this in mind, my technical project's objective is the redesign of Crozet Elementary School following the approval for a new wing to the school.

With new design comes ethical implications. Infrastructure has a lot of weight on culture. Every new design will influence the culture of the community and it's important to incorporate all stakeholder beliefs during the design process. Urban regeneration projects have transformed many cities in the Arab Gulf. With massive population growths, countries in the Arab Gulf are putting much more emphasis on the improvement of neighborhoods, the introduction of art and culture, construction of local architecture or the revitalization of communities, to enhance the social, economic, and physical configuration of a neighborhood (Scharfenort, 2013). The effects of this include demolishing old run-down buildings and constructing new housing or adding new features and facilities to upgrade the revamped part of the city scene. With the upcoming 2022

FIFA World Cup taking place in Qatar, the country now has more demand to improve its infrastructure, especially in their capital, Doha. Considering the World Cup, Doha plans to open plenty of new tourist attractions including Fuwairit Kite Beach, Quetaifan Island North, The Outpost Al Barari, West Bay North Beach, and a Winter Wonderland (Qatar Tourism, 2022). With these instrumental projects in the works, the city of Doha is bound for a massive transformation. To address these changes, my STS project will be an assessment of the effects of city identity with the urban regeneration of Doha, Qatar.

Technical Topic: The Redesign of Crozet Elementary School

How will the balance of incorporating stakeholders and abiding by code of ordinance affect the final design of Crozet Elementary School?

Attention to detail is vital for large-scale projects. One small alteration to any plan can influence almost every other plan. For my technical topic, I am working alongside four other peers, Michael Barbuti, David Coppi, Joshua Robin, and Zach Robinson, as well as, Timmons Group, a multi-disciplined engineering and technology firm, with the redesign Crozet Elementary School. 328 students attend Crozet Elementary and that number is expected to constantly increase (U.S.News, 2022). With a growing population in Crozet, Virginia, and the elementary school expected to expand their staff, a new wing was approved to be added to the south side of the building where the basketball court is currently located. Crozet Elementary School is located at 1407 Crozet Avenue, Crozet, Albemarle County, Virginia. Crozet Avenue (State Route 810) is a minor collector road under jurisdiction of the Virginia Department of Transportation (VDOT), which means all alterations to the road and access points must abide by their standards. Other aspects of the site include one primary loop west of the school building

that services as the pick-up/drop-off area for busses, a secondary loop north of the school building that services as the parent pick-up/drop-off area, 86 parking spaces, a basketball court that must be relocated due to the wing extension, a gravel area that includes three tennis courts sectioned off by a chain linked fence, and a soccer field that cannot be relocated. Figure 1 details the existing conditions of Crozet Elementary.

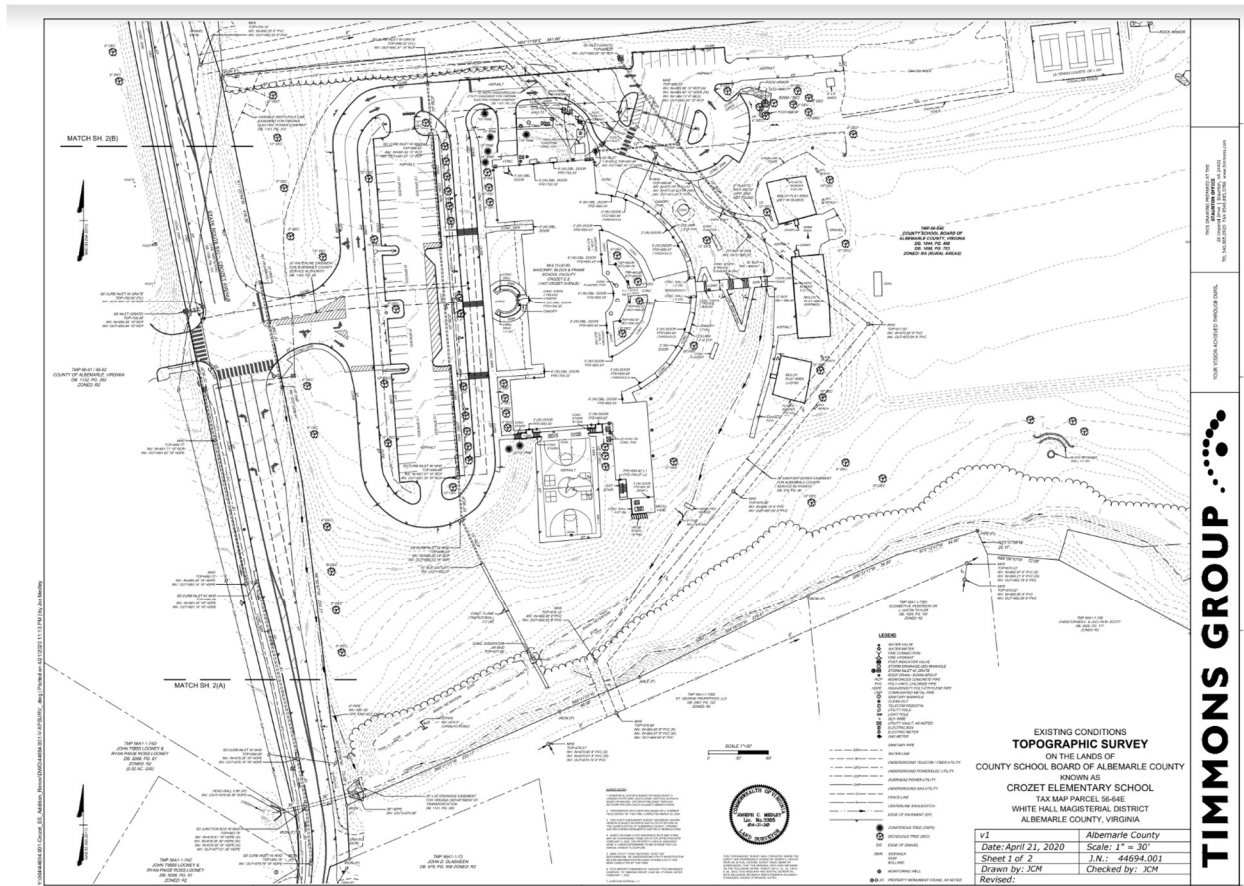


Figure 1. Existing Conditions of Crozet Elementary.

Incorporating stakeholder values and beliefs to our design will maximize how well-received our design is. Before any designs can be thought of, my team and I reviewed comments made from parents, teachers, and staff regarding their desires for the redesign. All these comments were sorted by how important they were to incorporate in the redesign. From there,

we began drafting design concepts that attempt to resolve as many of the reported issues as possible while also abiding by local code of ordinance. One big complaint received is congestion during pick-up times. During pick-up hours, parents picking up their children, busses departing, and teachers and staff are all leaving at the same time. With there being only one access point to the site, this is a cause for massive delay and build-up along Crozet Avenue. My team and I have redesigned the driveway and parking area with the intent of separating busses and passenger vehicles as much as possible. To reduce busses and passenger vehicle traffic mixing, there will be a bus-only exit and the northern parent pick-up/drop-off loop will be turned into a bus parking lot for the 12 school busses. Branching off bus parking, another reported issue with the site is the bus pick-up/drop-off area doesn't allow for teachers and staff members to see all the doors of the busses. This is a safety concern because it is not visible for teachers and staff to see the students board all the busses. By implementing staggered bus parking spaces, all the bus doors can be visible to teachers and staff members. Because of the increase in students, teachers, and faculty, a major requirement for the site is to increase the parking supply from 86 parking spaces to 136. As seen in Figure 1, there are no parking lots along the exterior of the loop. Adding lots to the exterior of the loop will satisfy this parking requirement. These lots will be designed following Albemarle County Municipal Code, which requires parking spaces to have a minimum width of 9 feet, minimum length of 18 feet, and minimum aisle width of 24 feet (Albemarle County, 2022). Other factors that will be incorporated into our design is the relocation of the basketball court, stormwater management, topography, greenery, aesthetics, and safety. As much as the redesign process is centered around the stakeholders, factors can arise that impede my team and I from accomplishing some requests made from the stakeholders. If VDOT rejects our site access application, then there will be only one access point to the site which increases congestion.

Overall, my team and I intend to maximize incorporating requests made by the stakeholders while working within our limits.

STS Topic: Assessment of the Urban Regeneration in Doha, Qatar

How does the reconfiguration of the economic and social presence of neighborhoods affect a local population and nation as a whole?

Urban regeneration is common trend among Arab Gulf countries. These nations are reidentifying neighborhoods, which has been preserved for generations by locals, with higher-class status. This comes at the price of communities losing their original structures that Qatar has adopted, through neoliberal policies, to create a global urban image. There is now little left in Doha which is truly original or representative of the traditional architecture and townscape that once existed (Scharfenort, 2013). This STS project will assess the effects of the urban redevelopment of Doha and how local residents acclimate to the sudden changes.

Background

Doha is the capital of the Arab Gulf nation, Qatar. Doha is rapidly adapting with new and high-quality infrastructure. It is thought that this process began in the 21st century, but it has been in action since the late 1980's. This all began with The Old Doha Regeneration, which was the first heritage-led regeneration project in Qatar with the intent to renew historic streets and buildings in neighborhoods (Makower Architects, 2016). The project focuses on two neighborhoods, Al Doha Al Jadeeda and Al Ghanem. These neighborhoods date back to the 1950's, each having their own unique culture and design. Doha initially took small strides in the with their urban regeneration plan. Throughout the 1980's and 1990's, Doha built their first high-rise developments, with buildings that were higher than ten stories (Building Doha, 2022). The

urban regeneration process accelerated following the Foreign Ownership Law being passed in the early 2000's. Mega projects quickly went underway including elite hotels, high-class restaurants, and sports arenas as foreigners were now allowed to own property for 99-year leases.

On December 2nd, 2010, Qatar was announced to be the host of the 2022 FIFA World Cup. It's estimated that \$220 billion was invested in new construction for the event since the tournament was awarded to Qatar (Worden, 2022). With Qatar in the world's spotlight, the pressure was put on their workers to construct the infrastructure needed for this event. Due to the scorching heat, reaching 120 degrees Fahrenheit on some days, and poor working and living conditions, five nation's embassies such as India, Pakistan, Nepal, Bangladesh, and Sri Lanka were all able to confirm at least 6,750 migrant workers have died because of these conditions.

Literature Review

Qatar is a fast-growing nation home to nearly 2.7 million people present day (World Population Prospects, 2022). Since Qatar accelerated its urban regeneration plan in the twenty-first century, there has been a massive spike to its population. In 2000, the population was 613,300. That is nearly a 15.5% annual growth rate, and the country expects to see this trend continue projecting to hit three million by the year 2035. This is a much higher rate than seen in previous years. From 1980 to 2000, Qatar had nearly a consistent 6.6% growth rate. The city of Doha had massive population growth rates from 1950 to 1970, growing from a 5% growth rate to a 13% growth rate (macrotrends, 2022). In contrast to the country of Qatar, Doha has been consistently declining in population growth rate, aside from a temporary spike from 2005 to 2010. Doha currently sits at an all-time low in population growth rate at 0.93%. One may question why Doha is not having consistent population trends with Qatar? The new prestige infrastructure is pushing residents out of Doha. With high demand in light of the upcoming

World Cup, landlords have ruthlessly increased rent. Qatari law allows for an increase of 10% for a lease renewal, but some districts in Doha have seen increases as much as 40% over the last year (France 24, 2022). Further research and analysis will be conducted on if urban regeneration policy relates to the declining population rate in Doha. This will be done by looking at the population trends at the time of Doha implementing an urban development policy or law affecting the living conditions of residents. These statistics will assist with knowing why population rates in Doha don't correspond to Qatar's national population rate.

Theoretical Framework

Nadine Scharfenort's (2013) theoretical framework, *Large-Scale Urban Regeneration: A New "Heart" for Doha*, was a driving force for inspiration in my STS research topic.

Scharfenort tackles the effects of urban regeneration honing in on Msheirebm, an area of Doha that Scharfenort states is "losing its status as the cultural heart of the city". Scharfenort discusses many of the social implications of urban regeneration, dealing with the response of residents to this culture change. Understanding the reaction of the local population to urban regeneration will assist with research for my STS topic and attempting to discover the effects of Doha's regeneration efforts. The distinction between gentrification and redevelopment was properly addressed. It was stated, "while the construction of new buildings on previously developed land is considered redevelopment, the rehabilitation of old structures is generally known as gentrification" (Smith, 1982). This distinction is vital because it shows Scharfenort focusses on the construction of new and modern infrastructure in her theoretical framework and not the adaptation of old buildings. This is important to keep in mind when using this framework to study the effects of urban regeneration. What is also noted is Doha's efforts to preserve some

lasting structures and architecture, though it is extremely limited. Aerial maps, dating back to 1959, will assist with physically viewing the changes made to Doha.

Methods: Evidence/Data Collection and Analysis

All information gathered will assist with the assessment of urban regeneration in Doha. This information will include raw data and analysis of the local population's reaction to urban regeneration. Population data at the time of a regeneration policy change will be used to locate any correlations between the declining population rate in Doha and their regeneration efforts. Research on the reactions from the local population to urban regeneration will also be conducted. This includes Scharfenort's theoretical framework and data on the breakdown of jobs in Doha. Seeing which jobs are more popular each year in Doha will provide a better understanding of what the city prioritizes. With all this data and information, it'll allow me to properly analyze and connect social and economic implications with the urban regeneration of Doha.

Conclusion

Through the design process of Crozet Elementary School and my extensive research of urban regeneration in Doha, this project will be able to link how innovative design affects a community. To add on, this project can provide key factors in innovative design that attribute to preserving culture and advancing society. My technical topic will show step-by-step how a design process goes and how much weight stakeholders have at the final product. My STS topic branches off my technical topic by seeking to address the effects of implementing or not implementing stakeholder values and beliefs. If these topics are addressed clearly and supported by data, my project can serve as a guide for future design projects intending to preserve culture and appease stakeholders.

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