

# How the Combination of Zoning, Design, and Gentrification Enhance de facto Segregation

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On my honor as a University Student, I have neither given nor received  
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## Introduction

The recent death of George Floyd has sparked a global investigation and acknowledgment of systemic racism in several aspects of society. Historically, de jure segregation successfully instilled the idea that white was superior and black inferior (“What are”). Although de jure segregation was declared unconstitutional in 1964, de facto segregation remains a preeminent issue across the nation. De facto segregation is rooted in the same discriminatory practices as de jure segregation. Socioeconomic and political disadvantage successfully creates the same division as once was determined by race (“What are”).

De facto segregation is well illustrated through the history of zoning ordinances. Zoning ordinances were first established in 1916 in response to market failure. In the early 20th century, businessmen began opening shops on the popular Fifth Avenue street. The upscale residential place soon morphed into a commercial shopping strip. At the same time, cheaper stores began to capitalize in the same district resulting in opposition from upscale businessmen. As these cheaper shops emerged, the clientele began to change and what was once an upscale shopping experience became mainstream (Schrager, Allison, et al.). The elite businessmen then argued that market failure occurs in response to increased competition, which rations a form of government response (Clingermayera). While it is clear to see the economic drive for the technology of zoning, the social drive is also connected. The mainstream shops invited a lower class, which arguably drove the upper class away.

Today, zoning ordinances are largely defined by their ability to create separation of differing commercial, residential and mixed-use property. However, in doing such, social factors of class and race are innately segregated, a direct connection to de facto segregation. Systemic Racism is

defined by both systems and structures installed within society that disproportionately affect minorities. Confederate statues serve as obvious physical remnants of racism but are not the only physically constructed memorandums. This research paper illustrates how zoning is used to select objects, whilst gentrification and design serve as a selection of people. Civil engineering design can abet segregation through the combination of zoning ordinances, design considerations, and gentrification. However, engineers fail to grasp this social dynamic. This paper seeks to answer why this social construct is misunderstood and what can be done to break this cycle.

### **Literature Review**

Christopher Silver evaluates the racial origins of zoning, claiming social reformers used zoning as means to "not only exclude incompatible uses from residential areas but also to slow the spread of slums into better neighborhoods" (Silver). Rather than accept that racial segregation was unconstitutional, policymakers proceeded to justify segregation through stereotypical statements. This concept that you may change the laws, but not ideals of individuals has manifested into de facto segregation and systemic racism today. This being said, while Silver builds on the racist origins of zoning, there is no advancement of where zoning is today and how exactly it has left lasting impacts. A presentation by Richard Rothstein investigates the modern effects of zoning by looking at factors such as the education systems in lower-income neighborhoods as he believes that school segregation reflects neighborhood segregation (Rothstein). Zoning alone, however, cannot racially segregate residents, as discussed in lawful reasons by Silver. It is not zoning alone that regulates race but zonal segregation as an inexplicit goal with design and gentrification as the modes of accomplishing this goal.

Some of the most critical works concerning design surround Robert Moses, a renowned public official who primarily worked in New York. "Race Place and Play" by Marta Gutman, exposes some of Moses' innately racial-driven designs through the evaluation of the Work Progress Administration (WPA) swimming pools. Gutman concludes that the construction of the WPA pools was "architects [embracing] a central insight of modernism" (Gutman). Even more, Gutman remarks that the pools were built to extraordinarily high standards and racially integrated depending on location (Gutman). This link between modernism and integration depending on location alludes to segregation where needed. Seemingly defining modernism as building to suit the needs of the majority and exclusion through architectural design. Schindler also argues that there is a failure to recognize urban design as a form of regulation at all (Schindler). While there has been lawful attention to address zoning ordinances little has been done to less obvious tactics such as design (Schindler).

Gentrification also plays a role in supporting racial segregation. Unlike zoning, but much like design, gentrification serves to displace a group that is already a majority in an area. More specifically, gentrification serves the needs of the middle class in a predominantly lower-class area. A study done by Lance Freeman found that gentrification does not decrease neighborhood diversity; however, there is a weaker and less robust correlation between gentrification and race segregation (Freeman). Freeman considered factors of education, income, and race to generate a regression model, which illustrated a weak relationship between gentrification and racial segregation. Freeman concludes that given the "often pernicious effects of racial segregation, attention should be warranted" (Freeman). Freeman's conclusion however lacks defense of why people leave, where they go, and how this affects them in the long term.

### **STS framework/research method**

There are a plethora of studies about the effects of zoning, gentrification, and design on social patterns; namely, the effects as they relate to race and socioeconomic spatial distributions. A majority of the present literature focuses on these variables as individual components. However, this research will examine how these components function together to strengthen de facto segregation in modern residential areas. To formulate this research, Langon Winner's perspective and Social Construction of Technology (SCOT) theorem will be applied. Langon Winner's perspective will allow for the analysis of artifacts and their politics. Namely, how did the invention of zoning impact social order and decision-making? Langon Winner's perspective will ultimately reveal how deeply political zoning is. SCOT theory will be employed to consider how these artifacts affect minority communities, the problems they create, and the solutions, if any, that can be recommended. SCOT theory will illustrate the intended exclusion of the specific social group of African Americans.

The actor-network theory will also be used given the innate connection between non-human technology and the number of people it affects. Understanding this connection is crucial to understanding why these same standards of zoning, gentrification, and design are still used today. Following suit, the actor-network theory will be performed at the conclusion of this report after all actants are identified.

A case study of a city such as Charlottesville will provide an opportunity to better understand if such a link exists. Explicitly answering if racial zoning is upheld through gentrification and design. Because Charlottesville is a college town, gentrification, as well as design, are often at the forefront of consideration to conform to the needs of students. To execute this case study, policy studies regarding planning standards as well as interviews of key actors will be essential

in understanding societal trends. Additionally, Charlottesville in recent years has been the stomping grounds of racial tension that will aid in understanding community opinions concerning racial segregation.

### **Data Analysis**

From the data collected in this research, it is clear that there is a connection between gentrification, design, and zoning, which ultimately leads to de facto segregation. Using two case studies in the Charlottesville area, my goal was to unpack this connection and analyze why it occurs. This location was especially interesting because of the recent racial turmoil from the 2017 “unite the right” rally as well as notoriously being a college town that has recently emphasized diversity. Following suit, the two areas I chose to research included both Friendship Court located downtown and the University planned Contemplative Sciences Commons (CSC). The downtown area reveals de facto segregation by gentrification and design within the community. On the other hand, the CSC both illustrates the desire to diversify, along with weary concerns when creating a space to fit multiple comforts.

#### *Zoning*

I began investigating zoning on a more broad level for the entirety of the Charlottesville area, before honing in on design and gentrification as mediators for the identified case studies. The first source was an interview with Ellen Bassett, a professor in the architecture school who has a degree in urban and regional planning. During this interview, Professor Bassett introduced me to many valuable sources. Professor Bassett insisted on socio-economic disadvantage being the main actor in de facto segregation (Bassett 2021). To evaluate this perspective, I employed Landon Winner’s framework. More specifically, I wanted to understand the relationship between

zoning as a technology used to fix a societal problem. How this technology was dispatched and how society uses it today revealed the lasting negative impacts zoning has inflicted on the Charlottesville community.

Ellen explained that much of the racial clusters we see in communities today are the result of old tactics and laws (Bassett 2021). For instance, *Shelley vs Kramer*, a supreme court case that put an end to racially restrictive housing covenants. In summation, covenants stated that racial status could prevent an owner from selling a home. A covenant might prevent a black family from purchasing a home in a white neighborhood. Following Winner's perspective, Covenants were the technology that prevented integration, allowing for what then would provide social comfort in racist times. That being said, this process was deemed unconstitutional in 1948, a mere 73 years ago. Undoubtedly not enough time has passed to mitigate these effects.

I also had the opportunity to attend a webinar by the Virginia Institute of government, where the author of *The Color Of Law*, Richard Rothstein, was presenting. Rothstein reiterated that we tell ourselves that residential segregation happened by accident. However, he states, “[residential segregation] began at the root” (Rothsetin 2021). Much the same as Professor Bassett, it was accentuated that the issues we see today were created by a technology used to solve the societal complications of the past. Rothstein elaborates that when World War 2 ended, soldiers both black and white returned home, needing housing and jobs. Although they may have been working in the same factory, blacks and whites were placed in separate neighborhoods, and loans were not given to developers with the intent to build for blacks (Rothsetin 2021). Much the same as Covenants, while a practice as this is no longer legal, its effects have not diminished.

However this analysis then led me to wonder: If this technology is no longer constitutional, how is it that it is still working? Is passing time aiding the recovery of these former laws? These questions directly relate to the overarching research goal, which is to determine why this cycle remains intact today. Take for instance the dissimilarity index, a relative measure of separation between races across all areas of a metropolitan area. Ideally, the dissimilarity index would be zero. The dissimilarity with respect to blacks and whites in Charlottesville is 52% (Segregation). Meaning, 52% of blacks would need to move in order to be fully integrated with whites.

Winner's perspective highlights that many technologies are inherently political. While this is a political matter pertaining to old state and federal laws, in modern times, it reflects the systemic racism most plainly brought to light after the tragic death of George Floyd. To this comparison of residential segregation, his death was no accident. This led me to consider, who is at fault?

In short, the courts claim that the current segregation of schools and residential areas is not the fault of law and hence de facto segregation (Rothsetin 2021). Ironically, covenants, segregation of schools before 1954, loan refusal, and separation of veterans post World War 2 were supported and the fault of the law. From Winner's perspective, we can see that all these technologies solved the societal problems rooted in racism, so well in fact, that they cannot be undone. Although these technologies are no longer valid, their deployment was so vast by federal and state governments that even though the law may no longer be involved the impact has lasted. Law will not go back and fix what it has created, but will rather no longer claim responsibility. This irresponsibility is quintessential of systematic racism. Understanding that zoning law could not be fixed judiciously, I turned to gentrification and design in order to answer why the dissimilarity index in Charlottesville is still so high.



## *Gentrification*

Through Winner's perspective, I was able to understand how zoning has left lasting impacts as a result of attempting to solve a problem that was not timeless. However, a new problem persisted as de facto segregation, a dilemma that could not be solved by a court ruling because the court claimed no responsibility. This raises the question: why have communities not made steps to mitigate de facto segregation? My research was to specifically determine if gentrification upheld these racial clusters formed by zoning practices.

I turned to the book *There goes the hood* by Lance Freeman, to gain an understanding from a personnel perspective rather than a legal one. Freeman reveals that there is a failure to understand gentrification because "it means different things, under different circumstances to different people" (Freeman 2006) So, what does gentrification mean to Charlottesville? To answer this question, I reviewed two case studies. The analysis of the downtown area was particularly useful in developing the synthesis of complex components. To better organize my data, I employed the social construction of technology (SCOT) theory. I began by identifying the artifact as gentrification and the surrounding social groups as the black community, white community, and UVa community. Defining the innate problem of gentrification was more difficult. Was the problem that people do not want to live together, or that people simply preferred to live with a similar demographic?

A case I found particularly helpful when addressing this question was Friendship Court in downtown Charlottesville. This area was historically known as Garret Square. In the 1970s' the Charlottesville Redevelopment Housing Authority (CRHA) bought and bulldozed the area (Friendship 2021). Today, the area is owned by the Piedmont Housing Alliance (PHA) which

strives to reverse this gentrification, giving the power back to the community. The majority consisting of black low-income residents have had mixed opinions about the initial strategy proposed by the PHA in 2016. The goal was then to add an additional 490 units, priced for household incomes 6 times as much as the current resident (The reimagining). This concept is defined as Mixed-income housing, where development is made to fit the needs of varying incomes. One community member Devin Gentry notes that “maybe [mixed income housing] is a different name for gentrification (Charlottesville).” Another Community Member, Nikuyah Walker, shares “they are only talking about mixed-income, because of who currently lives on it (Charlottesville).” Walker also touched on an important factor outside of income, which is that in the past, the groups have not mixed well together. It is worth noting that this strategy was proposed in 2016; prior to the unite the right rally that took place in 2017 and the exposing of systematic racism during the summer of 2020. Through the analysis of Friendship court, I concluded that the problem and main argument is that low-income neighborhoods should never have to invite higher-income residents into the community in order to thrive. Walker sums up this argument by asserting “[you’re saying] we cannot live amongst ourselves and be happy and successful if we are all black, or low income (The reimagining).”

This argument, of course, is met with counter-arguments from the other identified social groups; the white community and UVa community. These communities however have a more similar defense in they want valuable land to draw a profit. However, at the expense of the black community to what extent can this argument be justified? The simple solution of course would be to conclude that people can live where they want. This of course is true, so long as that group of people is of a certain tax bracket. This goes back to what Professor Bassett insisted on when

discussing zonation, which is that socioeconomic disadvantage is the main actor in de facto segregation (Bassett 2021).

### *Design*

When contemplating how design might affect segregation, I was fortunate to have the opportunity to interview David Germano. The University of Virginia is currently funding the construction of a new building, the Contemplative Commons. David Germano is the Executive director of the Contemplative sciences center, which drives the mission behind this building. In short, the mission is to design a space where students may flourish. My immediate thought was, why has UVa not designed all spaces with this in mind? Germano explained that spaces designed within academic areas function to fit the needs of students for all aspects concerning academia. Our lives as students, of course, encompass many more aspirations than those we strive to achieve in the classroom.

The study of this building design was intriguing as it aims to fit the needs of everyone; from students of all backgrounds to community members. Using a simple technological view as a solution to such a feat would fail miserably. Technology alone is not flexible enough to encompass so many actors. This is demonstrated through the prior discussion on zoning law. The commons must be flexible enough to fit the needs of today's society but also keep in mind how society will undoubtedly change for the future. Is this a feasible goal for a rigid structure?

Some of the physical designs within the building discussed by Germano, included flat floors, with no tier auditoriums. Germano shares that the floors will be "friendly for our bodies," and empty of furniture with "no expectation that there would be much of anything." These design elements play into the vision of designing a space for everyone. However, as anticipated not all

desires could be met. For instance, some students rather study where they are not seen. This contradicted the biophilic design, which contributes to the theme of integration through the connectivity of nature. Perhaps more importantly, the glass design further harmonies the center with the Charlottesville community. Germano explains that this is not just a space for students but all for the Charlottesville public. This building will be open on the weekends, with its minimal furniture and level floors, ideal for extracurricular activities such as dance. This involvement with the community is to avoid the prior discussion of gentrification between UVa students and the Charlottesville Community.

The exterior design of the Commons is much more Modern than any preexisting building on grounds. The University of Virginia has stringent design standards symbolic of red brick and white columns. However, while these features may be considered classic to some, they are indicative of a time unaccepting to all. Before interviewing Germano, I found it interesting that the advertising for the commons used contradictory language. For instance, it is stated that “No other site on Grounds so faithfully corresponds in design and intention to Thomas Jefferson’s vision for the original Academical Village (The contemplative).” I found it striking that a space that is supposed to be designed inclusively could be related to a vision that most definitely did not include the diversity UVa advertises today. Another press release praises the center for “returning to UVa’s roots (Coy, 2020).” As a black woman in the engineering school, I would not want to experience anything that has to do with UVa’s roots. When discussing with Germano, I expressed my concerns and he agreed that this was wrongfully worded. He has since vowed to change this context. And still, this language must have undoubtedly resonated with those who support the center as it was used in not one article but two. This then brings to question who is

supporting the commons and is it once again failed at the root as many other processes discussed prior in this research.

This led to a discussion in relation to the new multi-cultural center. The multicultural center was formerly located in the basement of Newcomb. When the center was in the basement, not many white students visited the center. In the spring of 2020, the multicultural center was relocated to the main floor of Newcomb. The area included various seating arrangements, conveniently located adjacent to the Starbucks location and dining halls. At the grand opening of the center, many students visited the new space, the majority however were white. One student made a public announcement, regarding the ratio of white students to ethnic students in the room (UVA reacts). This announcement, filmed and posted on Twitter, went viral. The comments were a mix of opinions, but the student was put at risk due to death threats from racist individuals. I asked Germano how a scenario like this could be avoided in the new commons.

Germano honestly admitted that he does not know if the staff he has now is up to such a challenge. He questions “is [UVa] giving our staff the skills to address these challenges (Germano 2021).” Germano goes on to say that maybe the contemplative sciences center is not where it should be 10 years out, but that is all the more reason to push for these commons. These next two years will be crucial but necessary.

### **Discussion/Conclusion.**

Gentrification, zonation, and design are all actants in a very complex yet hardly anticipated actant network. By this I mean they are all connected and causing the problem of segregation but it is rarely addressed by actors in the field such as engineers, developers, designers, and planners. In short, at one point in history, the problem was that whites did not want to be integrated with

blacks. Racism and stereotyping of black men and women created common goals between businesses, schools, and housings. Actants in the form of racial zoning, segregated schools, differing designs, and gentrification worked within the network to solve this “problem.” This system was so robust that even now these non-human actors in combination with deep political and economic factors still segregate black and white communities.

While places such as the friendship court and The Contemplative Commons provide hope of a different built environment, will they succeed? The contemplative commons is turning away from the technologies traditionally used in the actor-network theory. I believe the only way to turn away from the cycle is to do such. Friendship court however remains deeply rooted in socioeconomic status as well as a political argument. I think friendship court is destined to follow a similar path of poor diversity and integration.

All in all, my research question can be answered simply as yes, design and gentrification can mediate zoning segregation. It becomes more complex when investigating why we still take part in these practices today. There is no clear answer to this question and as Rothstein states, we would like to believe that it happens by accident. To this, it is obvious that it is not an accident, and those in charge of building, design, and planning need more training to refrain from designing as we have in the past.

## Works Cited

*Annual Report*. DRIVE SMART Virginia. (2019).

<https://www.drivesmartva.org/about-dsv/annual-report/>.

Bassett, E. (2021, February 26). Planning, Law and Regulation [Online interview].

Bensley, Virginia. (n.d.). Retrieved October 19, 2020, from

<https://www.city-data.com/city/Bensley-Virginia.html>

Charlottesville tomorrow • the reimagining of Friendship Court. (n.d.). Retrieved March 27,

2021, from <https://www.cvilletomorrow.org/specials/friendship-court/1965>

Clingermayer, James. “Distributive Politics, Ward Representation, and the Spread of Zoning.”

*Public Choice*, vol. 77, no. 4, 1993, pp. 725–738. *JSTOR*, [www.jstor.org/stable/30027185](http://www.jstor.org/stable/30027185).

Accessed 20 Sept. 2020.

Coy, B. (2020, December 14). Contemplative Commons Building announced. Retrieved March

27, 2021, from

<https://csc.virginia.edu/news/contemplative-commons-building-announced>

Freeman, L. (2009). Neighbourhood Diversity, Metropolitan Segregation, and Gentrification:

What Are the Links in the US? *Urban Studies*, 46(10), 2079-2101.

Freeman, L. (2006). *There goes the 'hood views of gentrification from the ground up*.

Philadelphia, PA: Temple University Press.

Friendship court. (2021, February 19). Retrieved March 27, 2021, from

<https://piedmonthousingalliance.org/friendship-court>

Germano, D. (2021, March 17). Contemplative Commons [Online interview].

Ginsburg, R. B. (2015, February 16). Ruth Bader Ginsburg on abortion, race and the broken

Congress [Interview by 1018494972 782891523 M.]. Retrieved October 30, 2020, from <https://www.msnbc.com/msnbc/ruth-bader-ginsburg-abortion-race-and-the-broken-congress-ss-msna530626>

Gutman, Marta. "Race, Place, and Play: Robert Moses and the WPA Swimming Pools in New York

City." *Journal of the Society of Architectural Historians*, vol. 67, no. 4, 2008, pp. 532–561.

*JSTOR*, [www.jstor.org/stable/10.1525/jsah.2008.67.4.532](http://www.jstor.org/stable/10.1525/jsah.2008.67.4.532). Accessed 27 Sept. 2020.

NBC12 Newsroom. (2020, April 7). Chesterfield police identify a man hit, killed by a vehicle.

*NBC12*.

New Projection: 2019 Pedestrian Fatalities Highest Since 1988.

<https://www.ghsa.org/resources/news-releases/pedestrians20>.

Richmond Times-Dispatch. (2019, December 2). Pedestrian killed while Crossing Jefferson

Davis Highway in Chesterfield. *Richmond Times*.

Rothstein, B. (2014). Modern Segregation: *A presentation to the Atlantic Live Conference*,

*Reinventing the War on Poverty, March 6, 2014, Washington, D.C.* Retrieved from

<https://files.ric.ed.gov/fulltext/ED558146.pdf>

Rothstein, R. (2021, March 4). The color of law [Webinar]. The Virginia Institute of

Government.

Schindler, Sarah, Architectural Exclusion: Discrimination and Segregation Through Physical



Design of the Built Environment (April 16, 2015). 124 Yale Law Journal 1934 (2015),

Available at SSRN: <https://ssrn.com/abstract=2595294>

Schrager, Allison, et al. “A Brief History of Zoning in America-and Why We Need a More

Flexible Approach.” *Economics21*, 5 Aug. 2019,

[economics21.org/history-zoning-america-flexible-housing-approach](https://economics21.org/history-zoning-america-flexible-housing-approach).

Segregation: Dissimilarity indices. (n.d.). Retrieved March 08, 2021, from

[https://www.censusscope.org/us/s51/p14968/chart\\_dissimilarity.html](https://www.censusscope.org/us/s51/p14968/chart_dissimilarity.html)

Silver, Christopher. “The Racial Origins of Zoning: Southern Cities from 1910–40.” *Planning*

*Perspectives*, vol. 6, no. 2, 1991, pp. 189–205., doi:10.1080/02665439108725726.

Snyder, T., Schmitt, A., & Goodyear, S. (2013, August 16). *500+ Complete Streets Policies in*

*Place, But Not the Most Important One*. <https://usa.streetsblog.org/2013/08/16/500->

[complete-streets-policies-in-place-but-not-the-most-important-one/](https://usa.streetsblog.org/2013/08/16/500-complete-streets-policies-in-place-but-not-the-most-important-one/).

The reimagining of friendship Court: How did we get here? (n.d.). Retrieved March 27, 2021,

from

<https://www.cvilletomorrow.org/specials/friendship-court/story/how-did-we-get-here>

The contemplative commons. (2020, June 26). Retrieved March 27, 2021, from

<https://csc.virginia.edu/feature/contemplative-commons>

UVA reacts to online video Concerning Multicultural Student Center. (n.d.). Retrieved March 27,

2021, from

<https://www.cbs19news.com/story/41694988/uva-reacts-to-online-video-concerning-multicultural-student-center>

What are De Jure and De Facto Segregation? (2018, June 17). Retrieved October 30, 2020, from

<https://www.theedadvocate.org/edupedia/content/what-are-de-jure-and-de-facto-segregation/>