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The “Economics of Aesthetics” at Southern California Edison

Rebecca Wright

In August 1965, *Electrical World* ran a special issue on “Operation Beauty”, a dynamic program dedicated to improving the appearance of electrical facilities across the nation. Following on from President Lyndon B. Johnson’s high profile White House Conference on Natural Beauty held in May that year, *Electrical World* outlined the problem facing utility companies across the country: “energy itself is invisible,” but “we cannot have it without power plants, switching stations, substations, transmission and distribution networks” cluttering the environment.¹ The campaign for “beautification” led by LBJ’s wife “Lady Bird” Johnson swept the nation in 1965, focusing attention on the tangle of overhead lines, billboards, litter and junkyards cluttering the American landscape, and leading to the Highway Beautification Act in 1965. The “beautification” movement ushered in a new phase for utility companies, increasingly under pressure from environmentalists, regulatory bodies and the public, who protested against the continued expansion of energy facilities into increasingly urbanized districts.² During this period, private utilities, such as Southern California Edison, incorporated aesthetics into their public relations campaigns in an effort to manage an increasingly strained relationship with its consumer base.³ From 1965 onwards, Southern California Edison put into action a range of programs to improve the appearance of its electrical facilities, ranging from repainting to launching new design models for transmission lines and converting overhead lines to underground systems.⁴

While private utilities, such as Southern California Edison, were quick to realize the importance of aesthetics to their public relations programs, not everyone supported the beautification groups that sprung up in neighborhoods.⁵ In fact, homeowners put up considerable resistance to attempts by utility companies, state regulators and municipal authorities to carry out aesthetic improvements in residential areas. One of the reasons for this was that aesthetic modifications to existing energy facilities (such as undergrounding electricity wires) came at a substantial economic cost that had to be covered by the consumer through lump-sum payments, tariff hikes, or extra taxation. This led to an extensive debate: “Who Pays for “Beauty?”.. Should it be the consumer, the utility supplier, the property developer, city

municipalities or the federal government?⁶ This debate was not simply about who should foot the bill, however. As the visibility of energy infrastructures had an impact on house prices and zoning regulations (key mechanisms used to shape the racial demographics of neighborhoods) the debate was set within the context of land development in Southern California. In a period defined by Civil Rights reforms, rioting in downtown neighborhoods, and an increasing sense of insecurity in white neighborhoods, how energy infrastructures looked became part of a wider battle to control of the urban fabric of Los Angeles.

The “economics of aesthetics” thus threw into relief the complex network of interests invested in the “visibility” or “invisibility” of the energy landscape. This ranged from private utilities to federal, state and municipal bodies, property developers, environmentalists, homeowners, and minority communities.⁷ This civic battle was not restricted to the problem of how energy infrastructures looked. Instead, the consequences of the visual field extended far beyond the physical sites, reflecting broader social pressures emerging in American society at the time. This ranged from the role of the federal government in the utility industry to the broader civic and municipal politics of land development in Southern California. The tensions that arose around Southern California Edison’s beautification programs, although specific to the California context, reflected and exposed broader conflicts surrounding the aesthetics of energy in the United States after 1965. Indeed, Southern California Edison’s negotiation of beautification reveals how far energy landscapes were embedded in American social and urban politics of the late 1960s. In order to expose these pressures, this article examines the perspectives of three distinct interest groups invested in energy aesthetics within the Los Angeles region: Southern California Edison, federal and state regulatory bodies, and homeowner groups. These perspectives reveal how the aesthetics of energy was not unitary but fractured along conflicting social, political and class-based lines. The aesthetic experience of energy in the Los Angeles metropolitan region reveals how far diverging standards of beauty and orderliness were extensions of broader struggles within American society, including racial tensions, demographic shifts, and the role of the federal government. It demonstrates how energy aesthetics is less the experience of the eye alone, than a reflection of broader powers and interests within community, state and nation.

Aesthetic Management at Southern California Edison

In 1970, Southern California Edison included a section devoted to “Progress in Esthetics” in its annual report. The section described the many ways SCE was investing in making its “facilities more esthetically compatible with the environment,” from enhancing the design of its generating plants and substations to tackling the problem of overhead electricity lines.⁸ The activities it detailed ranged from cosmetic adjustments, such as the use of decorative walls and external lighting to the creation of “park-like” buffer zones, the use of attractive colors and professional landscaping, and eradicating “aerial blight” by rolling out an extensive undergrounding program, re-designing transmission lines and working out “joint right-of-ways.”⁹

As the biggest supplier of electricity in Southern California, SCE required an extensive infrastructure to produce and transport electricity to its consumers. By 1960 SCE had approximately 5096 miles of high-voltage transmission lines and 99,918 miles of distribution lines across its service area. In 1958, it served approximately 1,358,737 electric customers, of whom 1,156,852 were residential, meaning that the considerable infrastructure to carry electricity directly into the home had moved into built-up areas where people lived.¹⁰ Overhead electrical lines hung over residential streets like “spaghetti” and substations were dotted across neighborhoods emitting a low, steady hum.

Hiding this infrastructure from the public was not a new problem in 1970, however. Ever since SCE had emerged as the dominant power utility in the Los Angeles area, aesthetics had been a critical strategy in managing its relationship with customers and growing its consumer base. Consolidated as Southern California Edison in 1909, SCE had a long adversarial history with public power, not least because the city of Los Angeles had one of the largest municipally owned electrical utility systems in the U.S. To win over public trust to its investor-owned service, throughout the 1910s and 1920s, SCE stressed the value of appearances in building up its corporate image and conveying its company motto, “Good Service, Square Dealing, Courteous Treatment.” During the early years of the company, for example, SCE’s official newsletter *Edison Current Topics* (published later as *Edison News*) carried countless opinion pieces reminding employees of the value of appearances to

the company's financial success. Articles hailed the business value of maintaining energy facilities in a neat and tidy fashion, urging station managers to keep substations clean, free from rubbish and well-landscaped. Another body of literature focused on Edison employees, stressing the importance of good character and physical appearances, urging that each individual stood as a representative of the entire company.¹¹ One article, published in 1917, entitled "Appearances, An Asset of the Greatest Value," reminded employees of the importance of its "appearance army" employed across its electricity system in keeping its customers content. At the time of writing the company had to manage and maintain 4482 miles of distribution cables, 1555 miles of high-tension transmission lines, 106 substations, and 2,861,948 incandescent lamps connected to its system.¹² To keep this expansive network in good shape, the article told managers to acquaint employees "with the virtues of soap, water, brooms and duster," since "the effects of filth and untidiness will find a reflection throughout your entire organization."¹³ It thus promoted the value of "whitewashing," promising that "if it is used properly it will sometimes make a dollar look like twenty."¹⁴

In addition to placing a high value on cleanliness and order, SCE also developed aesthetic strategies to mitigate the impact that its electrical facilities were having in residential areas across its network. From the 1920s onwards, SCE concentrated on improving the design of its substations. During the 1920s, the demand for increased domestic load meant that to maintain a good distribution economy, substations moved further into residential areas. This meant that they could no longer be situated on isolated plots, but had to be located close to domestic properties, sometimes placed directly next-door. To blend substations into residential areas, SCE ran a design program focused on improving the architectural fabric of structures so that they could be camouflaged within these neighborhoods. The first of these substations was built in Arro and resembled a domestic property typical to the area, with a well-cultivated garden. Other substations came to resemble bungalow style houses, modernist statements, local schools, or were hidden in underground caverns. They were adorned in local vernaculars and were artfully landscaped with lawns and shrubbery and installed with equipment with low noise level regulation. SCE was proud of these architectural innovations and would recount occasions when they were so well-designed that they fooled the milkman, newspaper

boy, real estate brokers, or prospective home-buyer into thinking the substation was a home.¹⁵ [INSERT FIG.1 HERE]

Although aesthetic strategies had long been used by SCE to expand its electricity network into residential areas, it was not until after 1965 that the term was used explicitly as part of the company's corporate strategy. From 1965 onwards, SCE's annual reports included details about the company's "beautification" program, including discussions of the new transmission poles planned by the industrial designer Henry Dreyfuss and the company's extensive undergrounding efforts.¹⁶ 1969, furthermore, saw the addition of a special brochure, "Edison and the Environmental Crisis", which detailed aesthetic improvements occurring at 136 existing substations; one of which, Brookhurst Substation in Orange County, had led to a Beautification Committee Award.¹⁷

The introduction of aesthetics into SCE's corporate lingo reflected the new social and political climate SCE found itself in during this period. Concern about aesthetics, as Samuel Hays demonstrated, grew in the post-war period as non-materialistic values took on increasing prominence.¹⁸ With this shift in public opinion, by the mid-1960s, SCE was facing a unique set of challenges. This ranged from ever-tighter government regulation, growing opposition from environmentalists and community activists, difficulties with fuel plant siting and increasing fuel supply issues. During this period, SCE was faced with considerable resistance from public and civic groups who blocked many of its projects. Residents in Malibu, Culver City and Burbank, amongst others, protested against the erection of transmission lines and substations in their communities.¹⁹ During this period, tighter state and federal regulations meant that a number of long-term investment projects stalled. California's Supreme Court ruling on Orange County's Air Pollution Control District put a moratorium on building at SCE's largest steam plant at Huntington Beach. Construction at one of their nuclear plants, San Onofre, halted along with new nuclear projects across the country. Added to this, SCE was fighting a number of lawsuits relating to air and water pollution, initiated by environmental groups.

In this adversarial climate aesthetics became an important public relations strategy in promoting SCE's environmental efforts. In 1971, for example, SCE established an "environmental orientation program" that included a section devoted to aesthetics to educate its 12,000 employees about SCE's environmental programs, so that they could relay the company's "environment-related philosophies and activities

to the public.”²⁰ The development of its aesthetic program, however, did not just serve as an important public relations strategy. As government regulations tightened with the introduction of the National Environmental Policy Act (NEPA), as well as the Californian Environmental Policy Act in 1970, demonstrating how SCE was reducing the aesthetic impact of its facilities became vital to the sustained growth of SCE’s supply network, and most importantly, its nuclear program.

During the high-profile hearings run by the Atomic Energy Committee on the Environmental Effects of Producing Electric Power in 1970, for example, SCE would use its aesthetic program to justify the limited impact its electrical facilities, especially San Onofre nuclear plant, were having on the environment.²¹ The same techniques of blending structures into surrounding environments and varying architectural treatments to local vernaculars were presented as evidence of SCE’s environmental efforts. The report included new methods, such as the strategic profiling and positioning of buildings, combined with the tactical use of colors, screening and landscaping used to moderate visual impact. Other methods, also applied to SCE’s coastal generating stations, included setting them back sufficiently from the ocean to restore the beach area to its earlier condition and facilitating continued beach access. The report went on to detail the aesthetic treatment used at its most controversial project, the San Onofre nuclear plant. Because of the plant’s unique location in front of sea-cliffs, San Onofre had been designed with a low station profile, which could not easily be seen from highway or ocean. Because of the relative height of the sea cliffs (at 60 to 80 feet) and the prominence of the Santa Margarita Hills, the project had a low profile whether seen from either the adjoining road or ocean. Furthermore, the station was painted in SCE shades of green and blue to “contrast pleasantly” with sky and ocean. All of these cosmetic adjustments, it maintained, were making its plants “compatible with the environment to the greatest degree practical.”²² [INSERT FIG.2 HERE]

Of course, in reality the environmental and health risks of San Onofre extended far beyond its aesthetic impact on California’s coastline and beaches. SCE, for example, admitted that some ecosystem disturbance had been registered in the Pacific Ocean, due to increased heat and turbulence from the plant (levels of benthic algae had decreased while fish populations had increased).²³ SCE played down this environmental interference, even managing to spin it into a positive, defending it on aesthetic grounds, claiming that further building work at the plant would improve the

quality of the beaches for recreational users, with warmer water and the presence of outfall structures encouraging more fish varieties.²⁴ Unsurprisingly, this did not fool local residents who remained concerned about the possibility of a technical fault or security breach at the plant that would lead to a catastrophic leak of radioactive substances into the atmosphere. As science fiction scenarios rehearsed, were this to occur local residents three miles away in San Clemente had little chance of escape, a fact picked up by the local citizens' organization GUARD (Groups United Against Radiation Danger).²⁵ However, these reasonable fears were countered by the argument that the dangers of nuclear energy were outweighed by its aesthetic benefits. This was the conclusion of the President's Council on Natural Beauty Working Committee on Utilities, which in 1968 claimed that because nuclear energy plants were more attractive, reduced smoke pollution, and could be sited close to consumers (reducing the need for excess transmission lines) more research into improving the safety of fueled-steam-electric-plants was an urgent priority.²⁶

Although aesthetics was used to reduce fears over SCE's nuclear program, the biggest and most costly aesthetic activity that SCE confronted was its undergrounding program. The pressure for undergrounding overhead electricity cables had emerged parallel to the intrusion of unsightly poles and wires into residential areas at the turn of the century.²⁷ Since the 1920s, SCE had been undergrounding some high-end residential tracts, but the cost remained unaffordable across the majority of its system. It was not until developments in the technology in 1963 reduced the cost of undergrounding by 50% that SCE committed to a comprehensive undergrounding plan. In 1965, SCE announced a \$145.5 million program (with \$6.5 spent annually) to convert existing overhead lines underground, with an additional \$1.5 million dedicated to the installation of new distribution lines underground. [INSERT FIG.3 (A and B next to each other) HERE] This cost did not go near the amount needed to underground lines across its entire system, which SCE maintained would be prohibitive and equal to its entire investment in plants. What is more, these funds applied only to distribution lines, as high-voltage transmission lines remained prohibitively expensive to underground. As a partial solution to this, the industrial designer Henry Dreyfuss was commissioned to develop one of the first "aesthetic transmission-tower designs", installed in the City of El Segundo and other selected locations across SCE's network. Designed by the master of modernist

design, the lines were “ultra-modern” responding to the functionalist credo “form follows function”.²⁸

By the 1970s, therefore, contouring, coloring, perspective, landscaping, and disguising had become central to SCE’s corporate model. Responding to constructed aesthetic frameworks, including high modernism, allowed SCE to expand and manage its power network as it entered a period of increased opposition.

Aesthetics and the battle of private versus public power

SCE’s strategic investment in aesthetics was a direct response to the growing emphasis on aesthetics within groups opposing the company’s expansion. Environmentalists, for example, weaponized aesthetics to oppose the development of new production sites like San Onofre, situated on the coast. This had become particularly prominent in California, the “Golden State” renowned for the beauty of its environment, where aesthetics played a large role in anti-nuclear protests, such as those at Bodega Bay between 1960-1964.²⁹

Not only were aesthetic justifications used by environmentalists, however, but they also strengthened the power of state and federal legislators in controlling private utilities. Ever since the emergence of public power in the Progressive Era, government competition was understood to be the prime threat to SCE’s network. The expansion of government into the power business in the 1930s, with New Deal projects such as the Tennessee Valley Authority and the Rural Electrification Administration, heightened SCE’s fears over the sovereignty of its private business. During the Cold War, increasing paranoia about ever-tighter regulations was framed by SCE as a socialist revolution on behalf of the federal government to control the electrical industry, and in 1964 an internal memo detailing external challenges to SCE’s corporate image identified the biggest threat as a government takeover of its network.³⁰

In the context of this long-standing struggle, aesthetics became central to the ongoing battle between private and the public power. Between 1964 and 1968, a number of federal committees were tasked with monitoring the aesthetic impact of utility companies. This included the Committee on Recreation and Natural Beauty (1966), which set up a separate Electrical Utility Industry Task Force on the Environment (1968) as well as a Working Committee on Utilities (1968). Although

each task force had a slightly different focus, a core recommendation that emerged was that federal and state legislatures should extend their regulatory jurisdiction to monitor the routing of transmission lines. The Report on Recreation and Natural Beauty prepared by the Working Committee on Utilities recommended that “rights-of-way” crossing any public owned land, or land designated as a National Park or National Monument, had to be applied for by the Department of Interior or the Department of Agriculture respectively.³¹ Furthermore, the report pointed out that the Federal Power Commission had jurisdiction over any non-federal power lines coming from hydroelectric projects and their surrounding lines. In addition to this, the report suggested federal involvement in drafting government contracts for purchasing transmission lines and federal grants-in-aid, as well as amendments to the Rural Electrification Act that allowed the construction of cable facilities to be built with federal grants.³² Alongside these recommendations, the report outlined some basic principles for mitigating the scenic impact of transmission lines, including suggestions that transmission lines should be placed at a diagonal axis rather than perpendicular to highways and valleys, and that “rights-of-way” should not be located on top of hills but built half-way down so as not to be silhouetted against the sky.³³

The report on Recreation and Natural Beauty also considered the importance of state regulatory bodies in enforcing aesthetic standards. At the time of the report, only six states had jurisdiction over transmission line construction, with 25 having no control whatsoever. Furthermore, in a survey carried out for the report, 16 states agreed that they would consider “aesthetics” as part of their transmission line-siting review, whereas others indicated that their review process was limited to matters including safety, necessity, and propriety of investment. To overcome the piecemeal approach to planning, the report suggested that state legislators review the transmission lines across all utilities, whether they be privately, publically or state run. They also recommended provisions for the participation of planning agencies to ensure all scenic, historic and recreational values were preserved.

Although these regulations would impact utility companies across the nation, SCE had good reason to be concerned by the new state and federal regulations. California had a high percentage of federally owned land, making it almost impossible to avoid when negotiating rights-of-way. Between Big Creek (SCE’s largest hydroelectric facility) and Los Angeles, SCE’s transmission lines crossed nine national forests, including Sierra, Sequoia, Toiyabe, Inyo, Cleveland, Los Padres, San

Bernardino and Angeles. Each of these fell under the jurisdiction of the Department of Agriculture and demanded individual permits. As Charles Whitney, the head of the Right of Way and Land Department put it, “in order for our company to go over, under, around of through, we must pay numerous fees, and obtain all sorts of licenses and permits.”³⁴ In addition to the problem of federal permissions, California had been one of the first states to enforce a coordinated plan for “aesthetic conversions” of overhead wiring to underground installations. In 1967, the California Public Utilities Commission (CPUC) passed a bill calling for the undergrounding of “aerial blight”. The bill called for utility companies to designate 2% of their annual budget to undergrounding electricity cables. This was one of the first of such ordinances passed by a regulatory body in the U.S., leading one commentator to recognize that “this is the first quasi-legislative acknowledgement that undergrounding is here to stay.”³⁵

Inside SCE, these aesthetic regulations were read as a further attack by government on the private utility sector. One article describing the new federal regulations in *Edison News* designated them as alarming, not only because of the practical challenges they posed to the company, but because of the new role of government in the power business it exposed. Not only would the regulations place too much power in the Secretaries of Interior and Exterior, taking it away from Congress and the people, but it was also seen as an attempt to discourage the expansion of the investor owned grid within the United States. The new aesthetic regulations would allow the government to demand federal access to excess capacity, and this was read by SCE as an attempt by federal government to wrest customers away from its own network. It concluded with the dire warning that the “government could use the company’s own line to take away one of its customers on that line.”³⁶ New aesthetic regulations were thus received by SCE as another offensive by the federal government on the autonomy of the private utilities in the United States. Aesthetics had become another battle-ground in the war between public and private power.

The relative value of beauty

In spite of CPUC and SCE’s efforts to mitigate the aesthetic impact of electrical facilities, the economic burden ultimately fell to consumers. This was because, even though under the CPUC order utility companies were required to spend 2% of their

annual investment converting overhead lines underground, in residential areas this did not cover the cost required for individual customers to hook these lines up to private properties. This additional cost had to be shouldered by homeowners at a price that varied from between \$300 to \$500 depending on the size of the property. To organize successful undergrounding districts, therefore, whole communities had to agree that the value of beauty was worth paying for. This proved far from easy. As it only took one cash-strapped homeowner to prevent the creation of a utility district, consensus over the value of aesthetics remained elusive. As one utility manager put it: “beautification is a funny thing--everyone is in favor of it if it doesn’t cost him.”³⁷

Communities and city municipalities across Southern California responded to this challenge in different ways. One option was for cities to pass an ordinance forcing whole areas to pay the cost of undergrounding. Another was for communities to get together and organize utility-districts. Pasadena, which had a municipal electrical service (and was thus not covered by the CPUC 1967 ordinance), enforced a compulsory 2% surtax on electricity bills across the city. This universal tax, however, did not take into consideration residents who already had underground lines, or residents who would never get their lines undergrounded. While the bill was defended on the grounds that undergrounding would benefit the entire community, protests from outraged citizens claimed the tax was undemocratic and against the American way of life.

The question of undergrounding split neighborhoods; some groups were willing to pay for undergrounding, while others opposed it. Groups of residents in Buena Park, Anaheim and Rancho Mirage, to name a few, created neighborhood associations to protest the creation of utility districts in their areas.³⁸ As one multiple home-owner in Montebello (who faced an estimated conversion cost of \$2,500) noted, “I don’t think this is necessary. It isn’t like we’re some kind of district like Beverly Hills.”³⁹ Surveys carried out in Anaheim and Rancho Mirage revealed that people were in favor of undergrounding, but were not willing to pay the additional cost to facilitate it. One interviewee, Pollyanna Golding, detailed how she had no objection to undergrounding, but felt that “too many people will be hurt by it; many are on fixed incomes.”⁴⁰ Instead, she hoped that the city would pay for things residents needed such as better streets, concluding that “those (telephone) poles don’t hurt me one iota.”⁴¹

By 1970, three years after the CPUC ordinance, only a few communities had completed successful undergrounding programs. A progress report published that year by Art Arthington, who headed the Pacific Telephone Undergrounding project, estimated that less than one half-mile of utility lines had been pulled down, and only eight city-approved undergrounding districts were under construction.⁴² A number of affluent communities with powerful beautification movements did manage to organize utility districts. These tended to be in exclusive neighborhoods, such as in the coastal areas of Palos Verde, Malibu and Orange County.⁴³ One notable case occurred in the Hollywood mountains. As early as 1963, aided by Los Angeles Beautiful, residents in Mulholland Drive established the Mulholland Drive Property Owners Association and Mulholland Beautiful in order to transform the area into a “scenic highway” with utility poles transferred underground.⁴⁴ Despite the early enthusiasm, seven years later little progress in undergrounding had actually occurred. One city councilman continued to demand that the Department of Water and Power underground electric poles, claiming that Mulholland Drive not only looked like “a back alley” but “looks worse than most of the alleys in the city.”⁴⁵ Reminding the city council how long residents had demanded undergrounding, he noted, “we cannot continue to ruin the esthetic values of the entire area while waiting for these improvements.”⁴⁶

The pressure for undergrounding was not solely about preserving environments and their aesthetic value, as campaign groups such as Mulholland Beautiful maintained, however. Instead, as Mike Davis argues, those protecting the Santa Monica Mountains and Mulholland Drive from development were more akin to “limousine conservationists” rather than environmentalists wanting to preserve natural environments.⁴⁷ As such, beautification movements reflected the rapid transformations occurring in the metropolitan environment of Los Angeles where development had sped up. Civil rights activism, growing federal intervention, and the 1965 Watts riots that erupted close to downtown Los Angeles, raised fears in white communities that neighborhoods were increasingly under threat from new developments, such as apartment blocks, that would alter the demographics of communities. The crystallization of support behind beautification movements and undergrounding in particular can thus be situated in a broader metropolitan context of white homeowners’ attempts to preserve the racial demographics of their neighborhoods, and consequently their property values, the market for which had

been institutionalized on racialized grounds for decades.⁴⁸ The most prominent argument for undergrounding used by developers and planners, as well as homeowners, was that it raised property values. This was not only a boon to the homeowner's pockets but, as David Freund has demonstrated, justifications based on the housing market and preserving property values built upon a well-developed racialized discourse about exclusion that extended back to the turn of the century.⁴⁹ The claim that undergrounding not only raised property values but also helped improve the economic and "social" prospects of a community signified how undergrounding was tied in with issues of preserving the racial demographics of neighborhoods. This connection was made in a City of Oakland Planning Study, which found that there was strong evidence for the "social" benefits of undergrounding, maintaining that it led to stronger and more stable neighborhoods.⁵⁰ In fact, the report determined that there was evidence that overhead lines in subdivisions were a "contributing source of decay and blight"; racial descriptors commonly applied to ethnic minority and black communities.⁵¹ The study found that property values in undergrounding districts not only maintained their economic value, even when situated next to these "deteriorating" neighborhoods, but that property values doubled in areas with underground lines.⁵² The case put forward by the Oakland Study about improving the stability of neighborhoods was influential, and was cited by the City Planning Department of Los Angeles as one of the key benefits of undergrounding for Los Angeles.⁵³

The construction of new transmission lines, substations and industrial facilities similarly fed into battles about residential zoning erupting across Los Angeles. Once the enforcement of restrictive covenants was deemed unconstitutional in 1948, zoning became the principal means for homeowners to shape settlement patterns and control the demographics of neighborhoods, at the expense of minority communities who were deemed "undesirables". Zoning ordinances dictated land-use, with the highest zones for single residential homes, excluding apartment buildings, rental properties, commercial and industrial usages. This meant that renters, the majority of low-income, ethnic minority and black residents were limited to areas with lower zoning ordinances. The construction of an electrical substation would pose a challenge to the zoning category of a neighborhood, opening it up to lower categories, threatening house values, and as the argument went, lowering the "quality" of a neighborhood. As homeowners became increasingly vigilant to protect

their neighborhoods, in the late 1960s, SCE began to fight zoning regulations on every front. Having won a planning victory to rezone a residential area in Culver City to “manufacturing” to build a new \$6 million substation, for example, homeowners mobilized to block the planning request at the City Council in 1969. Emotions ran high, with 450 spectators overflowing the city hall chambers to see the request blocked on the grounds that the substation would be an unnecessary intrusion into a residential area. This was about preserving the value of the neighborhood, the vice-president of the Culver City Homeowners Association maintained: “we suggest that the (council’s) rejection of the proposal will go far to dispel the notion that Culver City is an easy zoning mark, anxious indiscriminately to embrace any and all propositions without regard for their long-term effect on the community.”⁵⁴ The argument that the construction of a substation, or other electrical facilities, would not only depreciate home values, but permanently damage the “quality” of the community--bringing with it all the associated “hazards”--was an argument that occurred in city halls across the region.⁵⁵ Even when SCE promised to build a decorative wall and landscape the area around a substation in Abalone Cove, Palos Verdes to reduce its aesthetic impact, residents maintained that despite these aesthetic modifications it was “not in the spirit of the county’s zoning ordinance” and would negatively affect the community in perpetuity.⁵⁶

Property speculators, downtown merchants, banks, large corporations, urban planners, architects and city officials also used the same arguments to support urban renewal programs. Urban renewal programs sprang up in cities across America in the post-war period, as urban centers deteriorated and white families fled to the suburbs.⁵⁷ These programs targeted “blighted” areas for redevelopment, and in the process demolished entire communities, replacing them with private developments such as office buildings and urban malls. “Blight”, a descriptor often applied to utility cables and substations, was a racialized term that had long been used to describe areas with a high density of African Americans and ethnic minorities. “Blight”, furthermore operated as an economic concept that signified declining property values and acted as a rationale for public and private officials, from the federal government to private developers, to intervene and overhaul areas through the establishment of urban renewal programs. These “slum clearance” programs displaced poor black and minority families, with only a small number of units replaced in renewal areas.⁵⁸ Los Angeles had been a focus for urban renewal programs as developers looked to

reinvigorate its “deteriorating” downtown area. Los Angeles Beautiful, which led the charge for undergrounding, was at the center of this movement. Founded in 1948, Los Angeles Beautiful was supported by the LA Chamber of Commerce, with the objective of “gentrifying” the deteriorating downtown area of Los Angeles. Valley Knudsen, the founder of the movement, would spend her time arguing the case for aesthetics, pointing out that it was not just for “posie pluckers” or “bleeding hearts”, but that it “is a good investment” for businessmen.⁵⁹ ““Beauty” Knudsen would maintain, “has been injected into the vocabularies of those who have the power to effect it [...] We couldn’t use the word ‘aesthetics’ for years, but now we do, and ‘they’ use it--both government and business.”⁶⁰

To many communities then, beautification programs and the creation of undergrounding districts signified a loss of control over neighborhoods. This revealed diverging aesthetic perspectives as it came to focus on energy environment; what was aesthetic to some carried another set of meanings for others. In fact, planners, who entered minority neighborhoods with clearly defined ideas about aesthetic beauty came to understand that the primary stumbling block to urban regeneration was the need to alert the “public” to their “ugly surroundings”. A Conference organized by planners and government officials held in 1967 at California State College, Dominguez Hills, confronted the problem of citizen inaction, determining that one of the principal hurdles to urban beautification was that “the public” on the whole seemed wholly unaware of their “ugly” and cluttered surroundings. As one commentator noticed, “the aesthetic sense of many residents remain underdeveloped, and their awareness to their surroundings deadened by constant exposure to inferior design and superficial color.”⁶¹ The problem, Jack E. Patterson from *Business Week* recognized, was not that the public was dissatisfied with their surroundings, but instead, that they were *satisfied*:

most of the residents of these subdivisions whom the designers and sociologists deplore for their physical and emotional monotony, feel in fact--the residents feel--that they have bettered themselves [...] They seem content with their carelessly-planned tract developments, miniscule patches of lawn, and shopping centers that offer a well-rounded life of bowling alleys and movie theatres.⁶²

To build up citizen participation, planners set out to educate the public and retrain their “aesthetic” sensibilities. For example, a report published in 1967 by the Los Angeles Committee on Goals for Open Space, Parks, Recreation and Urban Beautification went so far as to formulate a set of universal aesthetic principles for beauty to be extended across the region. Recognizing that planners have a different idea of beauty from the ‘masses’ or the merchant, the planning group went back to identify historic principles that captured what made a city beautiful, including enduring values, such as “form”, “Zeitgeist” and the “act of will”.⁶³ As planners and developers tried to categorize and impose universal standards of beauty, different publics clung to their own aesthetic standards. The view from the drawing board and the street continued to diverge.

Conclusion

Across the Los Angeles region energy infrastructures carried different meanings for different groups. To residents in Mulholland Drive, overhead electricity lines were aerial “blight”. Over in Buena Park and Anaheim they were familiar elements of the urban fabric, not worth paying to remove. The problem of aesthetics as applied to the energy environment thus did not emerge from consensus as to what beauty was. Instead, aesthetics fractured along institutional, class, and race lines. For private utility companies, aesthetics existed as both a threat to business and an important corporate strategy to expand its electricity network in the face of growing opposition. For federal and state legislators, aesthetics afforded greater regulatory powers and an increased role for government in the private electricity industry. City planners and property developers used it to help boost property prices, while white homeowners recognized its value in preserving neighborhood boundaries. Across Los Angeles, therefore, the aesthetics of the energy environment was a relative field over which competing interests confronted one another, foregrounding opposing perspectives on cost, governance, race and community. These tensions and conflicts were reflected in the evolving energy infrastructures, which in turn were embedded in and shaped by the changing social fabric of Los Angeles. As this case demonstrates, the aesthetics of energy infrastructures was not a neutral category, limited to what the eye can see, but a powerful instrument utilized by multiple groups in their struggle to shape the social and political environment of a region.

¹ Walker Cisler, "Operation Beauty...A Dynamic Utility Program," *Electrical World*, August 1965, 108-109; See U. S. President's Council on Recreation and Natural Beauty, *Beauty for America: Proceedings of the White House Conference on Natural Beauty* (Washington, D.C.: U.S. Government Printing Office, 1965).

² Gordon D. Friedlander, "Esthetics and Electric Energy," *IEEE*, June 1965, 46-55.

³ See the special edition dedicated to "Keeping America Beautiful," *The General Electric Forum*, Oct-Nov, 1965.

⁴ Eugene Levy has given a thorough account of how utility companies in the U.S., including SCE, utilized aesthetics to naturalize its transmission network. However, his account assumes a unified public which responded to modernist and post-modernist aesthetic frameworks. See Eugene Levy, "The Aesthetics of Power: High-Voltage Transmission Systems and the American Landscape," *Technology and Culture* 38, no. 3 (1997): 575-607.

⁵ "Utility Lines Lead to Controversies," *Los Angeles Times*, July 25, 1965.

⁶ Albert J. Hamilton, "How Much Beauty, and Who Pays for It?" *Public Utilities Fortnightly* 78, no. 3 (1965): 18.

⁷ Shermer L. Shibley, "Industry Must Take the Initiative," *The General Electric Forum* 8, no. 4 (1965): 18.

⁸ *Southern California Edison Annual Report, 1970*. Box 13, 5, Southern California Edison Collection, Huntington Library, Art Collection, and Botanical Gardens, San Marino, California. From now on shortened to the Southern California Edison Collection.

⁹ *Southern California Edison Annual Report, 1970*.

¹⁰ There is a considerable literature on the emergence of energy systems in Southern California. See, for example, James C. Williams, *Energy and the Making of Modern California* (Akon: University of Akon Press, 1997); For histories of Southern California Edison see William A. Myers, *Iron Men and Copper Wires: A Centenary History of Southern California Edison* (Los Angeles: Trans-Anglo Press, 1983); William B. Fredericks, *Henry E. Huntington and the Creation of Southern California* (Columbus: Ohio State University Press, 1992).

¹¹ See Edward H. Mulligan, "Courteous Service," *Edison Current Topics*, July 1915, 127-129; A. W. Childs, "Individuality of the Intelligent Salesman," *Edison Current Topics*, May 1915, 91-94. Box. 305, 4, Southern California Edison Collection.

¹² Benjamin F. Pearson, "Appearances, An Asset of the Greatest Value," *Edison Current Topics*, October 1917: 190. Box. 305, 6, Southern California Edison Collection.

¹³ Pearson, "Appearances, An Asset of the Greatest Value," 194.

¹⁴ Pearson, "Appearances, An Asset of the Greatest Value," 194.

¹⁵ Al Bunte, "Edison's Little Gray Homes in the West," *Edison News*, July 1953, 12-13. See also "Edison Home, Sweet Home," *Edison News*, Dec 1943, 5. Box. 310, 7 and Box. 309, 3, Southern California Edison Collection.

¹⁶ See *Southern California Edison Annual Report, 1966*, 9. Box. 13, 3, Southern California Edison Collection. For more about Henry Drefuss's role in designing electric transmission lines see Levy, "The Aesthetics of Power."

¹⁷ Brochure "Edison and the Environmental Crisis" included in *Southern California Edison Annual Report, 1969*. Box. 13, 4, Southern California Edison Collection.

¹⁸ Samuel P. Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985* (Cambridge; New York: Cambridge University Press, 1987); Thomas Raymond Wellock, *Critical Masses: Opposition to Nuclear Power in California, 1958-1978* (Madison, Wisconsin: The University of Wisconsin Press, 1998).

¹⁹ "Homeowners Fighting Malibu Power Lines: Hearing Slated," *Los Angeles Times*, Oct 19, 1967; Burt Wuttken, "Substation Foes Encouraged by Council's Action," *Los Angeles Times*, April 3, 1969; Walt Secor, "Power Poles, Once Hailed, Now Shunned," *Los Angeles Times*, Nov 28, 1965.

²⁰ Eugene N. Cramer and R. C. Gossling, "The Evolution of the Southern California Edison Company Environmental Orientation Program," *The Atomic Industrial Forum, Second National Conference on Nuclear Public Information*, March 21-24, 1971. Box 466, 4, Southern California Edison Collection.

²¹ William R. Gould, "A History of Southern California Edison Company Research and Development on Protecting the Quality of the Environment," presented to the Joint Committee on Atomic Energy United States Congress during the Hearings on the Environmental Effects of Producing Electric Power, Feb 25, 1970. Box. 466, 3, Southern California Edison Collection.

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- ²² Gould, "A History of Southern California Edison Company Research and Development on Protecting the Quality of the Environment."
- ²³ "In the Matter of The Application of Southern California Edison Company and San Diego Gas & Electric Company for a Certificate that Present and Future Public Convenience and Necessity Require or Will Require the Construction and Operation by Applicants of Two New Nuclear Steam Electric Generating Units, to be Known as Units 2 and 3, at Their San Onofre Nuclear Generating Station", Presented Before the Public Utilities Commission of the State of California, July 16, 1970, 19
- ²⁴ Permission. Presented Before the Public Utilities Commission of the State of California, July 16, 1970, 20.
- ²⁵ Joseph D. Schleimer, "The Day They Blew Up San Onofre," *Bulletin of Atomic Scientists*, Oct 1974, 24-27.
- ²⁶ Working Committee on Utilities, *Report to The Vice President and to The President's Council on Recreation and Natural Beauty*, Dec 27, 1968, 109.
- ²⁷ See Adam Ward Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge; New York: Cambridge University Press, 2001).
- ²⁸ Quoted in Levy, "The Aesthetics of Power," 593.
- ²⁹ See Wellock, *Critical Masses*, 10.
- ³⁰ Southern California Edison Company, *Corporate Image Program for Employees*, prepared by Public Relations Staff, November, 1964. Box 463, 8, Southern California Edison Collection.
- ³¹ Working Committee on Utilities, *Report to The Vice President and to The President's Council on Recreation and Natural Beauty*, Dec 27, 1968, 35.
- ³² *Working Committee on Utilities*, 3.
- ³³ *Working Committee on Utilities*, 5-21.
- ³⁴ "Put it in Writing, Please," *Edison News*, Nov 1964, 12-13. Box 313, 5, Southern California Edison Collection.
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- ³⁶ "Proposed Revisions in Federal Transmission Line Regulations," *Edison News*, Feb 1963. Box 313, 3, Southern California Edison Collection.
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- ³⁸ John Gregory, "Utility Poles: Costly Legacy," *Los Angeles Times*, Aug 25, 1970. John Hussar, "Underground Lines Wanted-But Not the Cost," *Desert Sun [Palm Springs]*, April 22, 1976; Mary Barber, "Residents Protest Plans to Underground Utilities," *Los Angeles Times*, Feb 16, 1975.
- ³⁹ Mary Barber, "Residents Protest Plans to Underground Utilities," *Los Angeles Times*, Feb 17, 1975.
- ⁴⁰ Hussar, "Underground Lines Wanted-But Not the Cost."
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- ⁴³ "New Utility District Sought by Residents," *Los Angeles Times*, Oct 7, 1965; Helen Johnson, "Progress Seen in Eliminating County's Pole Blight," *Los Angeles Times*, Dec 8, 1968.
- ⁴⁴ "Group Urges Scenic Drive: Underground Utilities Asked Along Mulholland," *Los Angeles Times*, Feb 17, 1963.
- ⁴⁵ Irv Burleigh, "Potter Calls for Power Line Action," *Los Angeles Times*, March 11, 1970.
- ⁴⁶ Burleigh, "Potter Calls for Power Line Action."
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- ⁴⁸ There is a large body of literature looking at racial segregation in America. See David Freund, *Colored Property: State Policy and White Racial Politics in Suburban America* (Chicago: University of Chicago Press, 2007); Douglas S. Massey, *American Apartheid: Segregation and the Making of the Underclass* (Harvard: Harvard University Press, 1993). For studies focusing on Los Angeles see Becky M. Nicolaides, *My Blue Heaven: Life and Politics in the Working-Class Suburbs of Los Angeles, 1920-1965* (Chicago: University of Chicago Press, 2002).
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