Building the Excavated City: Material Extraction and the Making of Kansas City, Missouri

Ethan James Starr

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Committee Members:
Erin Putalik
Andrew Johnston
Sheila Crane

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Listen: the even knocking of hammers,
So much their own,
I project on to the people
to test the strength of each blow.
Listen now, electric current
cuts through a river of rock.
And a thought grows in me day after day:
the greatness of work is inside man.

[The Quarry, I, Material, 1] - Pope St. John Paul II

Introduction

Every American city has an origin story, a starting point from which the human footprint spreads across the surrounding landscape. For Kansas City, one can identify the location of this spatial genesis with a fair amount of ease, but only in retrospect, and only after narrowing upon the small riparian settlement situated amidst other, more established, settlements. It is, perhaps, impossible for the contemporary scholar to divest from the sense of inevitability suggested by modern-day Kansas City's primacy over the region. Any commentary tracing local history back to the mid-19th century, however, must recognize the young Kansas City's status as just one of many opportunistic Euro-American trading posts springing into existence in the vacuum left by the absence—indeed, engineered relocations—of the area's previous inhabitants.

Transience was, undoubtedly, the defining characteristic of the band of settlements then straddling the border between the state of Missouri and the Kansas Territory in the mid-19th century. Its description applies well to the human actors who predominated in the area's settlements—French fur traders, Native Americans, and migrant newcomers--but it also encapsulates the physical movements of those constituent groups. Whether crisscrossing the state border, floating up and downstream the Missouri River, or plodding overland on the Oregon and Santa Fe Trails, respectively, each group made use of the region south of the River, east of the border, and west of Fort Independence as a sort of way-station. Therein lay the trading post of Westport, which competed with neighboring Independence as final outfitting station for wagon trains crossing into the Kansas Territory. Travelers might see fit to bypass Independence entirely if they could approach Westport from a landing point further upstream. Town founder John Calvin McCoy knew the best opportunity for such a bypass lay immediately to the north, near

Francois Chouteau's fur trading operation.[1] This initiative was complicated, however, by towering bluffs that lined the south banks which, eroded by the combined output of the nearby confluence, carved a precipitous face of rock and soil.

There was, however, one exception to this rule, a 20-foot thick ledge of stone flanking the river that could serve as a suitable wharf for steamboats. Crucially, this ledge lay at the foot of a steep ravine, through which goods could be transported southward. This corridor conveyed its first large shipment of goods in 1833 after McCoy cleared some of the thick tree cover and fallen branches that had hitherto obstructed the route. The natural quay, which gained for the strip of land along the riverfront the moniker "Westport's Landing," became the centerpiece of the newfound Town of Kansas. The settlement consisted of a strip of buildings lining the rock levy to the east of the wharf, sustaining a population approaching 700 by the year 1848.[2] It can be said without exaggeration, therefore, that this ledge of limestone gave birth to Kansas City.

The earliest extant visual depictions of Kansas City, an 1855 wood engraving showing view of the town from the opposite side of the river (Figure 1) and an 1853 German etching (Figure 2), underline the centrality of this formation to the functioning of the young settlement. While the German etching, based on an 1848 daguerreotype, shows a smaller wooden dock projecting along the water level toward the east side of its cluster of buildings, the renderer seems to highlight the continued use of its surface as a gathering point of wagon trains and carts preparing for the overland journey to the south. Indeed, the image's vantage point, situated beside the ledge, captured from along the river's surface but from a height that could only be

[1] Richard J. Gentile, *Rocks and Fossils of the Central United States, with Special Emphasis on the Greater Kansas City Area*, Lawrence, Kansas: University of Kansas Dept. of Geology and Paleontological Institute, 2011, Pg. 13.

[2] George Ehrlich, *Kansas City, Missouri : an Architectural History, 1826-1990*. Rev. and enl. ed.. Columbia: University of Missouri Press, 1992. Pg. 4.

attributed to the roof of a steamboat, suggests that some waterborne craft might have required the raised platform for unloading.

The ledge is likewise memorialized in a 1956 mural *Old Kansas City* (or *Trading at Westport Landing*) by Thomas Hart Benton (Figure 3), the city's most celebrated artist, wherein a pair steamboats are shown transferring their goods to an array of covered wagons. Benton's painting depicts the wharf as an anchor of one of two formal medallions surrounded by swirling landscapes and foregrounded human figures, situating the ledge and adjoining levy at the nexus of activity of the burgeoning city. The town's formal prominence holds true despite its spatial situation as the mural's background scene; it is from this plane that the oxen-drawn wagons spring and, in doing so, help frame the levy town as a cradle of civilization. A stroke of parallelism renders the traders of the foreground, both white and Native American, sitting atop smaller exposed slices of limestone.

Topography featured just as prominently in early historiographies of Kansas City, where the consequentiality ascribed to landscape features often endowed them with a sense of their own agency in guiding the directionality of urban growth. This rhetorical tradition of geographic determinism, which began with speculative musings by outsiders like William Gilpin, was inherited by local boosters of the 19th and 20th centuries, who integrated this rhetoric into arguments for various developmental schemes. Whereas Gilpin's famed geopolitical declarations, asserting the inevitable development of a great city of "Centropolis," incorporated a continental approach to defining nature, Kansas City's boosters focused less on the city's geographic centrality and more on comparative advantages owed to local terrain.[3] In a 1960 article tracing the early development of Kansas City's historical self-understanding, however,

[3] Richard R. Wohl and A. Theodore Brown, "The Usable Past: A Study of Historical Traditions in Kansas City." *Huntington Library Quarterly* 23, no. 3 (1960): 237–59. Pg. 239.

authors Richard Wohl and Theodore Brown observe similarities between Gilpin's approach and that of early Kansas City newspaper editor Robert Van Horn. Both operated a "premise rest[ing] on a geographic determinism" that "stated simply that Kansas City's growth was predestined by natural advantages" (240).[4] The spatial emphasis of these boosters' rhetoric combined with their self-acknowledgement of inhabiting 'frontier' environs, formulated a remarkably Turneristic synthesis, however chronologically inappropriate the comparison may be. In the version of Manifest Destiny peculiar to 19th-century Kansas Citians—who, notably, had chosen to put down their routes midway across the American continent, despite the ease of access from their chosen ground to western thoroughfares—God's bounty was ripe for exploitation not only in the outward expanse of the American continent, but in the ground under their own feet.

In the words of Van Horn, editor of the *Kansas City Enterprise*, recorded speaking at a merchants' Christmas dinner in 1857, one need only

> *study these great tracings of the Almighty's finger that the pioneer of trade and the herald of civilization has selected the site of those gigantic cities of the Republic, and which has fixed upon the rock-bound bay of the Missouri and Kansas [Rivers] as the last great seat of wealth, trade, and population in the westward march of commerce.*[5]

Van Horn's implications are twofold; he not only asserts that the physical features of Kansas City would inevitably contribute to its rise as a center of economic growth, but that the man who studies topography will ultimately rise to the top. Champions of commerce, in his vision of urban development, necessarily harness these natural advantages in a way that converts God-given

[4] Ibid, Pg. 240.
[5] Ibid, Pg. 240.

resources to liquid cash. Notably, Van Horn's declaration identifies the wharf's rocky foundation as natural asset that best characterizes the settlement around it. Rather than highlight the presence of the great river highways that formed the city's bounds—fluid bodies, as transitory as surrounding human populations—he chose the solid, staid qualities of stone to evoke the spirit of the city's future. Functioning as a metaphor for the city's staying power in the newspaper man's words, the centrality of this resource to the city's expansion would become increasingly visible in generations to come. Assuming new forms and, in some cases, a new degree of mobility, stone would continue to serve the city as a familiar resource, and—in both literal and figurative terms—remains enmeshed among its very foundations.

History is not made just by writers and boosters, documentarians and prognosticators, however, and Kansas City's story is no different. Its founding narrative abounds with do-ers, individuals who set themselves to the task of accomplishing these ambitious projects that so excited the expansion-minded boosters. It is this population that does most of the actual *building* of a city, and their stories are all-too-rarely preserved in a manner that allows for adequate reflection on their role in the city-building process. Yet some accounts that do survive of those individuals responsible for the hands-on component of Kansas City's earliest urban development, like that of Father Bernard Donnelly—Kansas City's first true resident Catholic priest—communicate an appreciation for Kansas City's natural resources analogous to that of the civic boosters.

These builders communicated a vision of natural resources as advantageous only in the scenario that they could be harnessed as a useful commodity. Their outlook toward the city's topography was more determined than determinist, and they enthusiastically identified with the physical processes of converting material resources away from any preexisting 'natural' state.

Matter which, in the words of the boosters, constituted the essence of the city's solidity were to these actors best harnessed when broken down into more manageable, marketable units. Sedimentary stone, to these successive generations of 'do-ers,' represented not the immutable bedrock of Kansas City's dynamic landscape, but foundations of opportunity ripe for their personal exploitation. This approach is perhaps most evident in the short chapter that Father Donnelly's biographer, a protégé priest, felt obliged to write into his superior's memoir, describing "Father Donnelly as a Secular Laborer, Engineer, Map Maker, Brick Maker, Stone Cutter, Lime Burner," before proceeding to study "His Work as an Actual Toiler."[6] The sentiments revealed by this description are revealing. In a booming frontier town like Kansas City, practical skills—of management, of promotion, of working with one's hands—were identified as essential virtues of civic life. Sheer labor was required to overcome the community's most pressing concerns, and it was incumbent upon local citizens, regardless of one's skills, to make lasting contributions to the city-building process.

Formulating a retrospective narrative of this process of urban expansion, the principal corollary to the community's horizontal and vertical growth becomes clear. Kansas City's processes of city-building have always been predicated on parallel efforts of excavation. Kansas City's limestone-laden topography has continually occupied a role at the intersection of these forces—of boosters and laborers, of culture and commerce—throughout successive generations of urban expansion. While never occupying the role of the hero, Limestone always maintains its centrality to the story of Kansas City's growth and development, and its presence remains—as a prop, a setting, and occasionally an independent actor—amidst this still unfolding epic.

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[6] William J. Dalton, *The Life of Father Bernard Donnelly: With Historical Sketches of Kansas City, St. Louis and Independence, Missouri*. Kansas City: Grimes-Joyce Publishing Company, 1921. Republished by Forgotten Books, 2018.

Few Kansas City residents, even today, would fail to recognize the ubiquity of quarried stone in the built landscape of Kansas City, particularly those areas developed during the first century of municipal growth. The rough-hewn texture of limestone masonry—of blockish, roughly quadrilateral stones wedged against one another with a schmear of mortar—makes up a fundamental component of any sensory experience of the city. Texturally, this experience exhibits contrasts between outwardly projectile volumes and flatter, more uniform surfaces. Mortar might be neat or sloppy, and individual stones vary from the rigidly fixed in place, pasted together in wobbly assemblages, or even crumbling at the touch of a hand. Color can be integral to the stone itself, with an array of blue, yellow, and orange tones occasionally found alongside the chalky white and ashy grey, or as a result from those influences—soot, dirt, and rain—that contribute to the nondescript phenomena of 'weathering.' Locals today accept as a given the ever-presence of this 'native' stone, at once composing grand facades and humble home foundations. It rises out of the earth in waist-high walls around every corner, whether or not the terrain requires retaining, and remains fixed in many embankments, crags, ledges, and cliffs city-wide. The impulse to harness 'native' stone to a given architectural construction would seem, given the structures that remain from earlier periods of the city's growth, to have been an inborn impulse for local builders. How, exactly, this material palette came to be so closely associated with the city's built environment should, therefore, be of primary concern to any architectural analysis of Kansas City.

Yet material commonalities, in this case, would seem to be the enemy of curiosity. For as omnipresent as Kansas City's deployment of 'native' stone came to be throughout the late 19th and early 20th-century periods of urban development and expansion, neither a historiographic review of scholars' inquiries into the city's built environment, nor primary source documentation of particular buildings and builders reveals serious inquiries into the subject. It would seem that, amidst the abundance of architectural examples and association of certain stone materials as 'commonplace,' that scholars have neglected to address some of the central defining characteristics of Kansas City's urban landscape. How did limestone come to be incorporated into Kansas City's public and private buildings with such frequency? From where did this stone originate, and what did its use communicate to neighbors, passers-by, and outsiders? What does the denotation of 'native' stone imply, and what how does it shed light on the seeming invisibility—at least, in the eyes of architectural commentators—of the region's vernacular material palette?

Scholars are not wholly responsible for the lack of prior investigation of these questions. Indeed, it is the paucity of commentary found in primary sources—the deliberative bodies, the builders, and the critics associated with aesthetic taste-making—that renders this subject so enigmatic. Many of the associated questions surround the connotative meanings of 'native stone' according to the perception of turn-of-the-century Kansas Citians. What geographical constraints are builders imposing upon themselves through use of the term? What standards of quality are associated with its application, and how widely understood might these expectations be among those supplying building materials? Finally, terms like 'native' and 'local' undeniably imply a demarcation of a not-too-distant periphery to the market space. What areas within the Kansas

City region might have qualified as belonging to this resource hinterland, and how truly localized was the process of procurement for these materials?

Ultimately, an investigation of these lines of inquiry requires analysis of more than just finished products like built structures and designed landscapes, the latter of which having been known to command attention in Kansas City for innovative planning and construction practices. Nor would it be sufficient simply to catalogue the countless quarry sites dotting the burgeoning city's outskirts. Crucial to comprehending the story of extraction, distribution, and application of quarried stone are the cultural components of the continuum. What motivating factors, for example, drove both the impoverished quarry worker and the prosperous architect to traffic in the same commodity, and can those impulses be reinterpreted as indicative of a broader civic identity? A cultural analysis must lend attention not just to the grand builders and enterprising stonemasons of the early 20th century, but also to their forebears, individuals like Fr. Donnelly, who set a precedent for this penchant for excavation within the city's immediate hinterlands. Conversely, scholarship in this area must study perceptions and on-the-ground realities of the aftermath from these heady decades of expansion.

This thesis endeavors to formulate a cultural and environmental history of the material application of limestone, scrutinizing the relationship of this principal vernacular building material with the rapid development of Kansas City, Missouri. This investigation aims to explore not simply the geographic and geological distribution of this material on a natural level, but the human processes of extraction, deployment, and negotiation of the aftermath of these activities in the built landscapes of Kansas City. The interplay of landscapes marked by excavation and the harnessing of those same materials by adjacent sites of building is integral to the creation of the community's urban fabric. Accordingly, physical sites of interest to this project are distributed

throughout the city center, from quarry sites and public parks to entire neighborhoods of homes, shops, and churches, in order to catalogue the constructed and de-constructed environment as they relate to the medium of limestone.

While constituent parts of this thesis maintain thematic continuity due to material commonalities, the investigation as a whole is meant as an inquiry into the cultural, social, and economic history of Kansas City. Insofar as it examines both man-made and pre-existing 'natural' landscapes across the region bounded by the Missouri River, Blue, River, Brush Creek, and the Kansas-Missouri state line, this text is meant to develop a narrative of environmental history for the region. The following chapters aims to accomplish this interdisciplinary exploration by following the story of limestone's movement throughout the Kansas City area alongside the municipality's development over time.

The first chapter will focus on the groundwork for a persistent culture of excavation as a means of enabling Kansas City's growth southward. In addition to chronicling the levelling of the once formidable loess bluffs in the vicinity of today's Downtown Kansas City, this section investigates documentation of early quarrying establishments distributed among the city's outer limits. Importantly, it the 19th-century projects of bluff-clearing and quarrying that establish precedent for excavation as a means of civic problem-solving, as well as a source of quality building materials. It is in second chapter that this investigation turns to buildings, examining the application of quarried stone in public, domestic, and religious contexts. These case studies allow for discourse surrounding social and financial influences on the deployment of limestone throughout the city. They also demonstrate the remarkably consistent material palette of 'native' stone observed across divisions of time, typology, and class association.

The subsequent chapters probe similar instances of extraction and deployment of limestone and their impacts on civic projects, as local 'boosters' sought to implement far-reaching and aesthetically-minded reform policies. Chapter 3 devotes particular attention to the development of neighborhood parks in the interstitial areas that, marked by varied topography and rock outcroppings, had served as previous quarry sites. Moreover, the chapter demonstrates the extent to which the limestone and laborers associated with these sites of extraction were manipulated to further the process of 'naturalization' necessary for adhering to City Beautiful aesthetics. The fourth and final chapter reflects upon the aftermath of Kansas City's culture of extraction coupled with urban expansion. It considers the impact of continued—and, indeed, expanded—quarrying operations on the surrounding city-scape, before turning to issues of preservation of buildings and landscapes associated with the legacies of extraction.

In short, this thesis aims for a cultural landscape-based inquiry into the dynamics of urban expansion and civic boosterism as manifested in the making and re-making of late 19th and 20th-century Kansas City's physical landscape, with an emphasis on its distinguishing material components, namely, concentrations of limestone distributed among riparian bluffs, visible outcroppings, and subterranean deposits. By tracking the relationship between human actors and their material surroundings through stages of confrontation, commodification, and utilization across roughly a century of Kansas City's historical development, I hope to produce a cohesive narrative that thematically unites these various instances of intervention in the urban landscape.

Chapter 1 | Defining a Culture of Excavation

From the period of the city's founding in the mid-19th century, Kansas City residents were well aware that their collective destiny was dependent on the capacity of land lying just south of the Missouri River to support urban expansion and ease of access to transportation corridors. They also knew that securing these corridors for trade, travel, and expansion of the urban footprint required one major public investment project; the city would have to be excavated. What began as the clearing of streets, one at a time, became a project to re-make the face of one of the nation's fastest-growing cities, as well as a central preoccupation of urban elites, city government, and average residents. This chapter will review the monumental municipal project of street excavation and other early adjustments to the local landscapes that facilitated outward expansion of the urban footprint into today's Downtown and Midtown areas of Kansas City. It is the aim of this writing to examine how these early efforts, including the sequential pursuit of building programs of street excavation, road, paving, and sewer construction, and recruitment of working-class immigrant populations provided a precursor for the widespread establishment of quarries turn-of-the-century Kansas City.

These defining achievements of the mid-to-late 19th century in Kansas City allowed for overland travel southward toward the trading depot of Westport, eventually contributing to the coalescing of the two outposts into a single community. This rapid process of expansion, interconnection, and consolidation of Kansas City's settled areas along a central north-south axis was aided by the sustained advocacy of prominent boosters. Yet each grand project of civic improvement was accompanied by a new set of unforeseen consequences, which, in turn, prompted further excavation endeavors. Each instance of intervention in the landscape, whether peeling back existing layers or contributing new artifices, contributed to the re-making of the

'natural' environment upon which urban builders and boosters forecasted further construction. A topography defined for millennia by passive processes of deposition, therefore, gave way to an engineered landscape, one tailored for the whims of 19th-centry city-builders.

Enterprising city residents consistently pursued opportunities for leveraging the natural resources in their immediate surroundings in the built environment they created. This widening of the urban footprint corresponded with an expansion of the city's resource hinterlands. The ample demand for building stone and other lime products fueled by this feedback loop spurred the development of an extensive quarrying industry, wherein entrepreneurs and their employees contributed to a budding commodity market. As a successor industry to earlier coordinated efforts of urban expansion and excavation, the quarry industry secured itself an integral role in the continuation of the city-building process. In doing so, quarrying of stone functioned as an outlet for the dreams of all sectors of society—a path to riches for the quarry owner, an opportunity for the down-and-out laborer, and an outlet for reformist endeavors from city boosters. Reviewing this multi-faceted history of material extraction and relocation, of urban expansion and natural resources leads to the inevitable conclusion that, far from separate phenomena, Kansas City's cult of expansion and culture of excavation remained mutually interdependent processes stretching well into the 20th century. At their intersection took place fascinating relationships between residents and authorities, boosters and laborers, and, most of all, the people of a city and their geological inheritance.

Cultivating a Culture: Clearing the Bluffs

Fundamentally speaking, the terrain of today's Downtown Kansas City has always been a depository landscape. These subterranean strata, "characterized by thick marine deposits that are represented mostly by limestone and thin, nonmarine deposits that contain mostly shale, fluvial

sandstones, and coal," according to longtime University of Missouri Kansas City geology Professor Richard Gentile.[7] The oldest exposed rock layers of the Kansas City area date from as early as the Pennsylvanian Period, some 300 million years ago, and the more recent soil deposits stem from glacial advances and retreats during the more recent Pleistocene Epoch.[8] A "blanket of loess" about eighty feet thick was left covering Downtown Kansas City after the final retreat of these glaciers.[9] This easily eroded, unconsolidated silt had been elevated off of the flood plains surrounding the Missouri and Kansas Rivers, but its deposition atop the sturdy layers of limestone protected these great heaps of soil from the wrath of the Missouri River.

Kansas City is and has always been, consequentially, a community of hills and gullies, an undulating terrain that spans from the Missouri River in the north, the Kansas (or Kaw) River on the west, and the Blue River on its east. South of the Missouri River, situated between today's Downtown and a plateau demarcating the entrance to Midtown, lies the Turkey Creek Valley, the channel for a prehistoric waterway draining west-east toward the outlet of the Blue River, and OK Creek, a drainage system draining the far west of this topographic depression into the Kansas River. Midtown is demarcated on its southern border by Brush Creek, which feeds eastward into the Blue River basin. When the loess deposits were left behind by the last of the receding glaciers, they sat atop the highest layer of limestone bedrock, the Argentine layer, south and north of the Turkey Creek Valley, while sloping downward toward the highest layer of exposed bedrock along the Missouri River (Figure 1), the hardy Bethany Falls limestone.

It is this Bethany Falls formation, which projected a flat shelf of stone along the shore of the Missouri River, that gave rise to the settlement of Kansas City. The formation, which

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[7] Richard J. Gentile, *Rocks and Fossils of the Central United States, with Special Emphasis on the Greater Kansas City Area*, Lawrence, Kansas: University of Kansas Dept. of Geology and Paleontological Institute, 2011, Pg. 13.
[8] Ibid. Pgs. 2, 22.
[9] Ibid, Pg. 22.

originally served as a landing point for the conveyance of goods southward, also formed a natural levy on which the storefronts, homes, and hotels came to be established in the decades to follow (Figure 2). The river landing gained importance due to its spatial relationship with the nearby settlements of Westport and Independence (Figure 3); landing farther upstream at the Town of Kansas saved travelers from enduring an overland trip, and it required only a short distance journey south to reach Westport. Prior to the Civil War, the fledgling town was marked by "river bluffs and deep ravines," which extended down to the riverbank and served as access roads for traveling southward.[10] Streets were "little more than trails and became impassable quagmires after rain."[11] Four of these large gullies developed the named streets Gillis, Holmes Street, Market, and Broadway, and the first improvements addressed two of the new thoroughfares with the widening of Market Street by a team of mean with shovels, and a wagon road was cut through the bluff approximating the route of today's Main Street in 1856, just three years after the community incorporated as a city.

Few authoritative sources exist of this period of the city's history, but it is known that the municipal leaders who had emerged in those earliest years identified clearing of the loess bluffs as a goal worthy of public investment, and the city issued its first bonds in 1855, raising $10,000, before a second bond issue in 1858 raised $100,000 for bluff clearing efforts.[12] A series of images captured during a post-Civil War resumption of bluff clearing (Figures 4-7) captures the stunning scenes of a discordant landscape of trenches dug around multi-story homes elevated more than two or three times their own height. Naturally, this scenario caused most homes to face risk of collapse, and entire neighborhoods, like that of the bluff-top Pearl Street, were

[10] Ibid, Pg. 22.
[11] Ibid, Pg. 22.
[12] Dory Deangelo, Jane F. Flynn, Rosanne Wickham, ed. *Kansas City style : a social and cultural history of Kansas City as seen through its lost architecture*. Kansas City: Fifield Pub. Co., 1992.

eliminated in the spirit of civic improvement for all. Some residents, finding themselves in isolated hilltop homes, pursued acts of resistance like the addition of multi-story staircases or, in the case of Cyprien Chouteau, erecting stone retaining walls to hold in the otherwise precarious piles of loess (Figure 8). Richard Gentile conveys one of the more humorous anecdotes from this period of bluff clearing and residential displacement:

> *Dr. Lester, a physician, had an office on Main Street between 2nd and 3rd street. He left for a week, and during his absence, the street was graded and lowered 10 feet. He just added another floor. One year later the street was lowered another 12 feet. He just added another floor. Thus, he built a 3-story office building from the top down.*[13]

This period of obvious spatial disjuncture was temporary, however, and gave way to an levelling of the city at an elevation substantially lower than its original surface. By the mid-1890s, Kansas City boosters had largely succeeded in shedding the nickname of "Gulley Town," and the few piles of loess that remained, usually supporting older private residences, were soon cleared away. The Cyprien Chouteau House, which had been built by city father John Calvin McCoy, continued to stand on its 35-foot perch until 1946.

As a result of this dramatic re-making of Downtown Kansas City's material landscape, with a period of three short decades bringing not only the clearing of streets and levelling of bluffs, but also the filling of ravines, Kansas City's civic elite shifted their focus toward the championing of other endeavors, like the opening of the Hannibal Bridge. However crucial the region's obtaining railroad infrastructure might have been to its continued growth, the clearing of

[13] Richard J. Gentile, "The rock ledge along the Missouri River that gave birth to Kansas City," Lecture, Big Muddy Speaker Series, Kansas City, August 2013.

the bluffs also necessitated additional projects of excavation. Completion of this initial phase of the city's development, wherein nearly the entire surface of the city center was dramatically lowered, marked three important developments relevant to local discourse, political activity, and entrepreneurial endeavors. The bluffs' removal, after all, had been a necessary precondition for the expansion of the city southward. Several other developments would be similarly impactful for enabling the city's further expansion. It was these corollary efforts that rendered the bluff-clearing project more than a great singular accomplishment of the city 'fathers.' Rather, its example served to cement a long-lasting, multi-generational impulse to tackle the city's foremost problems through means of excavation.

Firstly, the issuing of city bonds for payment of excavation workers had the effect of commodifying the very soil on which the city had been built, affirming the notion that monetary value could be extracted from the immediate surroundings of Kansas City just as the loess had. Additionally, the decades-long project had initiated a recruitment drive for immigrant laborers, many of whom would settle permanently in the community, continuing to seek out excavation-oriented work and facilitating a further pipeline of hard-working Irish immigrants. Finally, sequential levelling of Downtown Kansas City's bluffs set a precedent of support among civic boosters for programmatic excavation projects, inspiring an sense of enthusiasm around subterranean infrastructure development in particular. The installation of adequate sewer and drainage mechanisms, among other excavation endeavors supported by self-styled luminaries exemplifies the formation of this broader culture of excavation.

The mid-to-late 19th century in Kansas City also gave marked the introduction of industries associated with extraction and commodification of materials found in the immediate vicinity of Downtown. Few records survive of quarrying or brick making activities occurring

prior to or during the clearing of Downtown's bluffs; whether that is because these activities had yet to be commercialized or that builders were able to extract materials from their own land remains unclear. However, the biographies of Fr. Bernard Donnelly, a towering figure in the early decades of the city, would suggest both that landowners sought to leverage their own properties, and even the bluff-clearing process itself, for production of building materials. These early records suggest that some level of commoditization of brick and stone had become commonplace. Discovering sometime in the early 1850s that the ten acres of land owned by the Catholic Church along the western portion of the Downtown bluffs contained "ideal soil for brickmaking," Donnelly and his parish community went about establishing what he claimed to have been the largest brickmaking operation in the young city.[14] This process was begun after the adjacent eastern and southern streets had already been graded, thus Donnelly and his workers were saved "hundreds of dollars."[15] Donnelly's brick making and quarrying operations would go on to furnish building materials for the forerunner of Kansas City's Immaculate Conception Cathedral, as well as for St. Patrick's Church on the east side of the Downtown area; his biography mentions "several business houses and many residences" as having made use of these bricks. His protégé priests took inspiration from this hyper-local strategy of material sourcing; The first pastor of Sacred Heart Parish, a recent immigrant just three years removed from County Limerick, established a brickyard during the period he was conducting services in a rotation of parishioners' homes. Sourcing clay exposed from the "downgrading of nearby hills," parishioners of Sacred Heart built a school and rectory atop foundations of quarried stone, and

[14] William J. Dalton, *The Life of Father Bernard Donnelly: With Historical Sketches of Kansas City, St. Louis and Independence, Missouri*. Kansas City: Grimes-Joyce Publishing Company, 1921. Republished by Forgotten Books, 2018. Pg. 57.

[15] Ibid, Pg. 150.

the area at least temporary assumed the material palette of the cathedral's brick-filled Quality Hill neighborhood.[16]

Just as crucial to the construction of Fr. Donnelly's Immaculate Conception Church was the extraction of limestone materials from the western portion of Downtown Kansas City. Stone for the church's construction was also sourced from the property, as was the case for a later orphan home built on the parcel and, supposedly, the window tracings for St. Benedict Church in distant Atchison, Kansas.[17] Most of the limestone deposits on the property's "Rocky Point," likely of the uppermost Argentine layer, were of lower quality than building stone, so Donnelly opted to sell the "softer stones" to "contractors who were riprapping the Missouri.[18] It was on a "hard white vein," hidden below these crumbling upper layers, that Donnelly exercised his skills as a "competent stone cutter."[19] The sale of limestone and lime products derived for these lower quality stone deposits contributed alongside revenues from the brickyard to the 1856 church's construction through "the sale of bricks made on the ten acres and of stone taken out of the property, and of lime from two lime kilns he had in operation for months."[20] Fr. Donnelly supposedly reveled in how the labor-intensive process of removing said stone reminded him of the "old country," establishing for him cultural impetus, as well as financial and material reasons, for the promotion of quarrying activity among his expanding body of parishioners.

It was in his capacity as a partner to city boosters as the primary recruiter of immigrant laborers, however, that was ultimately Fr. Donnelly's greatest contribution to the city-building

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[16] Elaine B. Ryder, "Sacred Heart Church, School, and Rectory," National Register of Historic Places Nomination Form, February 1978. Item No. 8, Continuation Pg. 0.

[17] William J. Dalton, *The Life of Father Bernard Donnelly: With Historical Sketches of Kansas City, St. Louis and Independence, Missouri*. Pg. 151.

[18] Ibid. Pg. 150.

[19] Ibid. Pg. 151.

[20] Ibid, Pg. 60.

process. This international appeal for workers, initiated by the city's determination to clear the bluffs, presented manual labor as an enticing opportunity for employment as well as a means to moral self-improvement. Tt was at an early public meeting of the city's residents that Fr. Donnelly proposed to remedy a shortage of willing labor that had, up to that point, inhibited rapid progress in alleviating the problematic topography of the loess bluffs.[21] Fr. Donnelly proposed, and proceeded to execute, a letter-writing campaign eastern newspapers—usually the Boston Pilot and Freeman's Journal of New York—as well as employment agencies in each city, offering to pay travel expenses and better wages, with the sole condition "that all the men be from the same county in Ireland."[22] Indeed, the priest hoped to ensure that the group of men might feel a strong sense of cohesion from a shared geography of origin. Accordingly, their settlement was referred to as "Connaught Town," over which Fr. Donnelly presided and ensured that the 300 men attended Mass on a regular basis.[23] This was not the only the priest's only effort to instill a measure of compliance with his moral standards, however; Donnelly also "insisted that every man pledge himself to abstain from liquor, at least while employed in Kansas City."[24] This recruitment effort sustained lasting changes to the population growth of Kansas City; "one in five unskilled laborers in Kansas City in 1870 was Irish-born," and many moved on from the bluff-clearing project to pursue other jobs aiding the outward expansion of urban development.

The connection between growth of Kansas City's urban footprint and projects of terrestrial excavation is best understood as a mutually reinforcing relationship that reveals the essentiality of successive booster-supported projects of extraction, enclosure, and subterranean tunneling to the success of above-ground expansion. It was, therefore, a direct result of the

[21] Ibid, Pg. 48.
[22] Ibid, Pg. 48.
[23] Ibid, Pg. 49.
[24] Ibid, Pg. 49.

completion of the bluff-clearing project, alongside continued population growth and individuals working to build southward, that both road and subterranean infrastructure grew in tandem following the initial period of bluff-clearing. These further civic projects of excavation came about due, at least in part, to the public support of the city's booster class. The most persistent advocacy for these sprung from a new generation of entrepreneurs and landowners. One of the 'newcomers' among this group was William Rockhill Nelson, the owner and publisher of the *Kansas City Star* evening newspaper, whose personal and financial interests laid transparently in support of the city's rapid expansion. Nelson's adulatory biography, written on the occasion of his death by newspaper staff, sums up the conditions of the city's roads upon Nelson's arrival in 1880:

> *And there was mud everywhere. The site of Kansas City was rough and hilly and seemed with canyons. In the clearing away of trees and brushwood and the breaking of ground for buildings, the red earth was bared to rain and snow, and the great gullies were worn in the slopes, down which mud ran in streams. The streets were almost impassable*.[25]

The attestation clarifies the full extent of earlier bluff clearing on the city's transit infrastructure. Where the city had previously suffered from mud in its topographical weak spots—its natural gullies and creek beds—had now become the condition of the whole. Levelling of the city's bluffs and lowering of its street grid may have reduced the encumbrances of topography, but it fueled the acceleration of the city's drainage problems. This imperiled all forms of transit, from the primitive wagons and carts to the mule-drawn and, later, motorized, streetcars.

[25] Kansas City Star Staff, William Rockhill Nelson: The Story of A Man, A Newspaper, and A City, Cambridge: The Riverside Press, 1915. Pg. 25.

In his capacity as a leading city booster and chief editorialist of its chief publication, Nelson championed the improvement of city roads through unapologetic leverage of his platform. This coordinated and innately political agitation, as in the case of many city boosters, was couched in the language of civic pride, moral uplift, and reference to the great city-builders of the ancient world. As is often the case in booster rhetoric, the appeal to high-minded values and lessons of human history was anything but self-effacing; Nelson's reference to the Caesars' greatness as evidenced in their road construction uttered an unsubtle nod to his own pretension to wield absolute power over public monies.[26] His editorial production continued to place emphasis on this self-styled rhetorical position of omniscient and magnanimity:

> *Everything depends on accessibility, and in human intercourse accessibility means pathways, roads, streets. Markets are beggared when buyer and seller cannot meet. Education languishes when mud blocks the road to the little red schoolhouse. Literature must have circulation, or be impotent. Art cannot ennoble or uplift or delight the multitude it cannot reach*.[27]

Residents of Kansas City in later decades might have remembered Nelson most for his post-mortem contributions to the arts, his grand estate property of Oak Hall having been donated for the site of a world-class art museum following the newspaperman's death. Yet it is notable that road improvements remained the most consistent object of advocacy throughout his tenure atop the *Star*. Nelson's political actions extended to the support of state legislators who passed "good-roads laws, and [he] preached the gospel of good roads and good streets in every conceivable

[26] Ibid. Pg. 25.
[27] Ibid. Pg. 24.

form of argument," by sending out newspaper staff to conventions and printing out pamphlets on the subject for free distribution.[28]

Numerous accounts of road conditions of the late 19th-century can be found in the pages of the Kansas City Star from that period, with many intermingled with editorial pleas for greater public support in the improvement of road conditions through new paving schemes, improved design, or discourses on curbs and catch-basins. What is perhaps, most compelling for attaining a better understanding of the city's continued impulse to excavate its surroundings are the statistical records published toward the end of the century. The *Star* published fiscal allocations to individual contractors in annual reports on the state of road construction, with the various awards in 1898 combining to over $1.1 million[29] The article also details the pavement schemes of all existing roads—a sum of over 138 miles—at the outset of the year. Deployment of certain quarried materials, notably crushed rock, was prodigious; While stone blocks only composed 2½ miles of city streets the plurality of existing roads in are shown in 1898 are shown to be of crushed stone, with "51½ [miles] of macadam and gravel," while most of the remainder consisted of bituminous asphalt, a substance that would have employed crushed rock for use as aggregate. Streets paved with brick or cedar blocks, the latter having been a favorite method of Nelson's during his early years in Indiana, totaled less than 40 miles together. Once again, the accomplishment of grand schemes of civic improvement brought with them a new set of problems; the less permeable surface of asphalt and macadam roads required the adoption of new drainage systems.

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[28] Ibid. Pg. 29.

[29] *Kansas City Star* (Kansas City, Missouri), September 19, 1898: 2. *NewsBank: America's News – Historical and Current*.

Accordingly, the city's next booster imperative entailed the development of a comprehensive sewer system that could effectively and speedily convey waste from the growing population spreading south along Main Street to the Missouri, Kansas, and, later, Blue Rivers. A 4400-foot long sewer system for Main Street had been completed by 1871, but with the surge of water consumption and waste production that accompanied increases in population in the area of today's Downtown.[30] The system soon proved inadequate, and a combined sewer and runoff system was decided upon as the most expedient method of drawing the city's waste toward its rivers; its lengths had reached nearly 30 miles by 1884.[31] Expansion of sewer infrastructure remained highly popular among the general population, outsourcing the foul smells to the outskirts of the city along the body of the rivers. As put by one Kansas City engineer in 1898, the city's expansion and pending merger with Westport foretold that "many sewers will be built [next year]. There is a mania for sewers. Every district wants them."[32]

These sewer systems manifested a profound re-making of some aspects of city life, permanently removing familiar natural features from sight and profoundly altering others. As a combined system required a high capacity "trunk," or final outlet before the river, the city had to sacrifice its smaller creeks during the 1910s and 1920s—OK Creek, Turkey Creek, and Mill Creek (in Westport)—for enclosure as part of the combined system.[33] Most 19th-century sewers, and many from the following decades (Figure 9), were lined with brick and stone, which would have been plentiful in the depths at which most were dug beneath Downtown, a depth which

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[30] Amahia Mallea, *A River in the City of Fountains: An Environmental History of Kansas City and the Missouri River*. University Press of Kansas, 2018. Pg. 71.

[31] Ibid, Pg. 71.

[32] *Kansas City Star* (Kansas City, Missouri), September 19, 1898: 2. *NewsBank: America's News – Historical and Current*.

[33] Ibid, Pg. 73.

reached forty feet below surface level in some areas.[34] Brush Creek, which was not enclosed but played a significant role in directing sewage and storm runoff toward the Blue River, was lined with limestone walls and bridges in anticipation of its increased flow due to weather events (Figure 10).

Subterranean efforts of excavation for the transmission of waste and runoff were joined by a limited number of examples of transit-oriented excavation. Both of these developments occurred as a result of the railroads' colonization of traditional corridors of trade within the city. The forward-thinking Nelson, who had lobbied for a collection of rail lines to traverse the city, contributed funds on multiple occasions for the return of the anachronistic steamboat trade through dredging of the Missouri River. These sequential projects were envisioned as a means of undoing upcharges imposed by rail companies without substantial competition. Rail lines were installed below the west bluffs and along levy-side cradle of early Kansas City in the 1880s and 1890s, bisecting of pedestrian routes cordoned off the West Bottoms, home of the Kansas City stockyards and the city's largest employment center. [35] This problem prompted a new imperative to link the principal streetcar lines of the city center with an offshoot that could traverse this steep topographic decline. Following the introduction of viaducts on 9th and 12th streets a project was also initiated for an 8th street tunnel. This project, Kansas City's first use of subterranean transit routes, was accomplished by gangs of Irish and African American laborers tunneling through layers of limestone on the western edge of Downtown (Figure 11).

Quarry Town

As Kansas City's development continued its march ever-southward, and momentum for building only increased, demands for quarried stone and other limestone products grew with

[34] Ibid, Pg. 75.
[35] James R. Shortridge, *Kansas City and How It Grew, 1822-2011*. Lawrence: University Press of Kansas, 2012.

leaps and bounds, facilitating the widespread proliferation of commercially operated quarry sites. Just as new areas were incorporated into the built landscape of the urban core, adjacent landscapes—often marginal or interstitial zones—were increasingly marketed and operated at working quarries. This pattern of urban expansion, though imposed on a landscape south of the Downtown area, closely mirrored that of the 1870s and 1880s by successive exploitation of surrounding stone deposits, commoditization of property with an eye to its resource potential, and leveraging unskilled labor opportunities for programmatic efforts of economic and moral uplift.

Attestations from geological surveyors document working quarries throughout mid-to-late 19th-century Kansas City, as the earliest pioneers of the trade on a local scale set out to establish commercial enterprises centering on excavation of limestone. One of the first comprehensive nationwide efforts to report on the status of the quarrying industry, as well as other potential unexploited resources, was published in 1880 through a partnership of the Census Office and the National Museum (a precursor to the National Museum of American History). In this 400-page *Report on The Building Stones of The United States, and Statistics of the Quarry Industry for 1880*, actually published in 1883, its authors reflect on the diversity of rock and stone species distributed across the United States and examine contemporary quarrying practices. While not actually attempting a complete census of working quarries, they document quarries visited by researchers during the execution of their research. Despite documenting over 20 of these quarrying operations in St. Louis and St. Louis County, just two are noted for the younger, less established settlement of Kansas City:

1. ***The John Bauman Quarry****, East of Kansas City, Jackson County, Limestone/Magnesian limestone, color: gray; quarry opened in 1869.*
2. ***The James Dowling Quarry****, Bluffs of Kansas City, Jackson County, Limestone/Limestone, color: drab; quarry opened in 1865.*[36]

The rest of the report on the state of Missouri's quarrying industries is organized geologically, such that each stratum of stone identified within the report receives its own paragraph, three of which mention operations in Kansas City.

The following paragraphs reflect on the material character various limestone layers of interest to Kansas City quarrying operations. "The stratum designated … as 'No. 87, general section, Upper Coal Measures'," for example, was observed to be quarried extensively at quarries in bluffs of Kansa City and for 2 miles further east; also in a quarry opposite the Union depot, Kansas City, now abandoned on account of expense of stripping."[37] The surveyors rated highly the stone's color as expressed locally, "a bluish-gray, and, when exposed, a lighter and often ferruginous gray," and its applicability for building, as it "works freely and is easily dressed."[38] It is this stratum, according to the report, that occurred in high concentrations within the bluffs which, in 1880, were only partially cleared.[39] An adjacent layer, "Limestone No. 90, Upper Coal Measures," was noted for being "used for ordinary foundation work," perhaps due to the fact its stones are "durable and of more than usual strength."[40] The authors identify the drab gray stone as having been used in some of the newest Downtown constructions: the "Merchants'

[36] George W. Hawes, *Report on The Building Stones of The United States, and Statistics of the Quarry Industry for 1880*. Pg. 273.
[37] Ibid. Pg. 273.
[38] Ibid, Pg. 273.
[39] Ibid, Pg. 274
[40] Ibid, Pg. 274.

Exchange, the Journal office, and the building at Twelfth and Washington streets."[41] Finally, the report turns to "Limestone No. 96, of Upper Coal Measures," characterized by fossils preserved in its "irregular bedding."[42]

Most notable, however, is the appraisal of the preceding decades' work of quarrying, for which the surveyors offer definitive estimates:

An examination of the various quarries in Kansas City indicates that about 50,000 cubic yards of rock have been removed and used in the city during the past twelve or fourteen years. This includes from 9,000 to 10,000 cubic yards from the bluff opposite the Union depot, 30,000 cubic yards from southwest (sic) Kansas, and the remainder from south Kansas. The various railroads have probably taken out and used 10,000 cubic yards not included in the above.[43]

The above measurements, which the authors decline to offer for other peer Missouri communities, demonstrate the great extent to which locally quarried stone extracted within early Kansas City generally found its destination somewhere within the same community. This large-scale extraction, which certainly issued from more than a pair of commercial quarries prior to 1880, facilitated a positive feedback loop in which the city's expansion begets further extraction from its immediate resource hinterland, a process which, in turn, contributes toward the process of city-building.

Further documentation of 19th-century quarry developments can be attained from Geologist G.E. Ladd's report, "Notes on The Clays and Building Stones of Certain Western

[41] Ibid, Pg. 274.
[42] Ibid, Pg. 274.
[43] Ibid, Pg. 274.

Central Counties Tributary to Kansas City." Ladd's reports are consistent with the patterns presented in earlier operations of resource extraction exhibited by Fr. Donnelly; many quarries leveraged the already excavated landscapes associated with bluff-clearing process. Ladd observes that Kansas City quarries "operated under the stimulus of the large local demand," that they are characterized by "openings in the sides of the bluffs and hills," and are "rarely worked to any considerable depth, owing to the rapidly increasing amount of stripping as the hill or bluff is penetrated."[44] Yet a Stone Magazine article from later that decade states that "A good many stone-cutters of this city are cutting curbing at present. … But cemet (sic - cement) is coming more and more in use, all imported Portland. The stone yards have very little to do."[45] Indeed, it remains difficult to comprehend the success of the industry just prior to the turn of the century, a time when quarry operators seem to avoid placing advertisements in local newspapers, yet advertisements for property sales are laden with references to a given property's material potential.

Reports from the early 20th century confirm that the commodified excavation of stone had proliferated throughout the southern regions and on the outskirts of the expanding city, as the expanding city exerted dramatic influence on its surrounding resource hinterlands. Through informational descriptions from of in-person observation of some three dozen quarry sites in Kansas City, *The Quarrying Industry of Missouri,* by state geologists E. R. Buckley and H. A. Buehler, acts as a vital resource in for tracing the variable concentration of quarrying operations across the expanse of the urban footprint. The map they produced (Figure 12) illustrates clusters of active quarry operations located along the marginal spaces of city development. As Kansas

[44] G. E. Ladd, "Notes on The Clays and Building Stones of Certain Western Central Counties Tributary to Kansas City," Assistant Geologist in *Bulletin No.* 5, Geological Survey of Missouri, Jefferson City, July 1891, pp. 46-86.

[45] *Stone Magazine, Vol. XVII, No. 1. June, 1898,* Pg. 46.

City's growth during this period was still emitting from the central nodes of Downtown and Westport, it is not surprising to find these clusters occur between each historic settlement, as in the case of the Roanoke and Spring Creek areas, as well as beyond the southern limits of Westport's development, approaching Brush Creek.[46]

Having examined the proliferation of limestone quarrying operations on a commercial scale, the third pillar of Kansas City's culture of excavation—the opportunity it represented to working-class individuals, and its association with moral and economic uplift—continued, despite changes in technology's influence over operations. Accompanying the spatial shift and decentralization of Kansas City's quarrying operations were changes to the preexisting conditions of quarried land; the absence of loess bluffs, for example, necessitated a great deal less effort to process the limestone deposits of some Midtown quarries. In their summary of the Kansas City quarry surveys, Buckley and Buehler observed that "[h]and tools are used almost entirely in quarrying," though they did visit at least two quarries that utilized "hand derricks" as means to ease the physical burden, or perhaps increase productivity.[47] In any case, while "[m]ost of the crushing plants which have been erected are modern in all respects," the two geologists were not of the conviction that the quarry laborer might soon to be replaced by a machine.[48] The report also concluded that "[m]ost of the quarries are operated intermittently, depending upon the demand for stone," suggesting both a variable demand for quarried stone, with reference to the commodity itself, as well as a fluctuating schedule of work for the laborer. It is perhaps for this reason that newspaper 'wanted' advertisements for quarry laborers and stone cutters are far more

[46] E.R. Buckley H. A. Buehler, *The Quarrying Industry of Missouri,* Missouri Bureau of Geology and Mines Vol. II, 2nd Series, 1904.
[47] Ibid.
[48] Ibid.

numerous around the turn of the century than advertisements for any sort of limestone products; quarry work was at best a temporary means of employment for most workers.

In light of the continued prevalence of potential quarry sites under ownership of local governmental authorities, the consistent demand of stone for public works projects, and the low barrier to employment for unskilled laborers, the quarrying industry presented an ideal venue for a government-driven employment program. This is exactly the kind of program pursued by Kansas City's Board of Public Welfare, founded in 1910 by wealthy philanthropist William Volker, sought to apply the logic of civic boosterism and progressive reform ideals to the formation of a public employment program. The Municipal Quarry (Figure 13), as this entity became known, was not so much a single location but an outlet "to insure [sic] every unemployed man sufficient employment to earn his necessities during the midwinter months, when there was positively no work to be secured."[49] Consequently, the Municipal Quarry did not act as a year-round entity, nor was it portrayed as a steady source of employment. In 1911-1912, the quarry opened on December 2nd and closed on April 1st, working all the while to ensure it could secure and maintain contracts with public entities, like the Board of Parks and Recreation, and private companies, like the Kansas City Terminal Railway Company, without intention of producing a profit.[50]

Reports from the Board are rich with anecdotal evidence of the deservedness of those laborers taking part in the project, reporting on the down-and-out decorated war veteran who got back on his feet through employment at the quarry, or of the two one-armed "champion stone breakers."[51] The reports nervously justify the organization's expenses on meal tickets and

[49] Board of Public Welfare Report, 1911-1912, Pg. 147.
[50] Ibid, Pg. 148
[51] Board of Public Welfare Report, 1911-1912, Pg. 149.;
Board of Public Welfare Report, 1910-1911, Pg. 149.

grocery vouchers (which acted as methods of payment, the latter being required for those responsible for families), and the reports make perceptible the difficulties in balancing its charitable mission and avoiding a financial loss. Like all employment assistance programs, however, the program primarily expressed self-justification on instilling an appreciation of a day's work. Stories of laborers arriving at the quarry sites hours before the 8:00 am start of the workday, for example, are indicative of a deeper-held belief of the manual labor's capacity to facilitate moral self-improvement. Reform-minded boosters like Volker, who reflexively pursued grand civic projects to alleviate the city's greatest problems, would have looked to their predecessors in the era of bluff-clearing for guidance. In crafting a project like the Municipal Quarry, Volker pursued every booster's dream; in an era in which poverty was associated with moral decay, he created a venue in which men could pursue self-improvement. More importantly, the project sought to involve those with the least in society in the city-building process.

Chapter 2 | Builders and Buildings: Taste-Making and 'Native' Stone

The following chapter will focus on Kansas City's early 20th-century period of rapid, southward growth with the establishment of new, fashionable centers of public and private life. This era of construction utilized limestone as a principal construction material for churches, public buildings, and residential structures. Beginning with the recognition of this common material palette, the following pages include an examination of the varied application of limestone across building typologies and throughout a decades-long period of expansion and professionalization of Kansas City's architectural trade.

The sheer ubiquity of limestone's application in Kansas City's turn-of-the-century built environment, while acknowledged by scholars of the locality's architecture, is rarely engaged beyond the surface level. This lack of academic scrutiny contributes to widespread assumptions of inevitability concerning the architectural forms that emerged in both vernacular and 'high style' edifices erected throughout the burgeoning city. Beyond the reality of limestone's geological distribution, the processes of its extraction, or the story of those who labored for its removal, however, lies a similarly multifaceted narrative of the widespread application of local stone. It draws its complexity from the multitude of considerations attendant to the material acquisition, stylistic development, and deployment of limestone in Kansas City's buildings. Through analysis of these decisions, the agency of individual human actors, whether professionalized architects, masons, or average citizens, becomes discernable.

Such an investigation must begin with the experience of builders and architects as they sought to comprehend the materials available for their use. How did specifications of buildings under construction refer to locally sourced stone, and what do they reveal about material classifications adopted by local tradesmen? Designations like 'native' and 'local' are of

particular interest here, but other demonyms, like ‘Carthage,’ deserve careful attention as well. What does the use of these terms, and the addition of other information in building records, reveal about the geographic sourcing of limestone? Were classifications of stone associated with a hierarchy of prestige? How did contemporaries reflect on these structures and their respective material palettes as symbolic of status and wealth? How did the architectural styles predominant in Kansas City support the use of ‘native’ stone, and what practitioners served to drive a cultivation of aesthetic taste sympathetic to local limestone? As elite subdivisions and middle-class neighborhoods, grand churches and humble storefronts, rose simultaneously across this axis of expansion, it is worth considering how these limestone-based structures differed in their material composition and design pedigree. This material and stylistic analysis can help explain the variety of reactions among Kansas City builders to the ready supply of locally-sourced stone.

Building on the Bedrock

The decade following the Civil War marked a great point of demarcation for the development of Kansas City. By its conclusion, this period saw not only relief from the social animosities associated with mixed loyalties toward Union and Confederate, slave-state and free-state politics, but a complete reorientation of commerce away from the wharf and toward the rail lines that now crisscrossed the city’s low, flat bottoms, the Turkey Creek bed (dry since times immemorial), and, eventually, the levee itself. Accompanying this advent of new, reliably year-round transport technologies was the realignment of the city’s commerce along the north-south axis of Main Street. The much-heralded architectural feature of this new identity was the 1869 Hannibal Bridge, stretching northward across the Missouri River from nearly the same point on the levy where John Calvin McCoy had accepted his first goods shipment back in 1833. Designed by French transplant Octave Chanute, the bridge featured a central rotating span

alongside a trestle-supported north side, whereas the southern portion could be secured to the existing stone ledge, which still lay exposed along the levy. While the main body of the bridge was composed of iron, and its individually designed piers were anchored to the river floor with concrete footings, each of its supports made use of stone at least for exterior facings.[52]

Along the now-bustling Main Street, however, stone remained somewhat less visible, used mostly for foundations and gutters, as well as decorative items of trim, like lintels and quoins, but only rarely encompassing entire facades.[53] Photographs from the late 1860s evidence a material palette "of frame and brick buildings, a few reaching to three stories," but devoid of stone, as was characteristic of an up-and-coming boomtown. As many streets had yet to experience excavation, however, the material palette was also consistent with the character of the ground level itself in its general lack of exposed stone. This changed with the arrival of professional architectural practitioners and further development of commercial districts, however, as individual businesses strove to stand out amidst their peers. Built in 1866 or 1867, the three-story commercial building at 310 Delaware (Figure 1) was a pioneer use of dressed limestone in its neat arrangement of rectangular blocks and repeated dentils in both the cornice and belt course. While architectural historian George Ehrlich speculates that a well-practiced hand might have been responsible for the limestone cladding of 310 Delaware, it is known with certainty that Asa B. Cross is responsible for a series of late-19th century structures, beginning with his 1869 Vaughan's Diamond, that are characterized by a diverse assemblage of Victorian ornament.[54] Situated at the corner of The Junction, a highly visible intersection of Main Street

[52] Michael Wells, "THE HANNIBAL BRIDGE: KEEPING IT "RAIL" SINCE 1869," Kansas City Public Library Blog, July 2, 2019.

[53] George Ehrlich, *Kansas City, Missouri : an Architectural History, 1826-1990*. Rev. and enl. ed.. Columbia: University of Missouri Press, 1992., Pg. 21.

[54] Ibid, Pg. 22.

Figure 2), Delaware Street, and 9th Street, the four-story, mansard roof-bearing structure appeared monumental over the its contemporaries, and its triangular pedimented entries and projecting keystones leveraged their materiality to evoke a sense of elegance, authority, and permanence.

Cross, who remained the only recognizable, professional architect practicing in the city for decades following his 1858 arrival from St. Louis, received most of his income from working as a lumber merchant prior to 1871.[55] Most of his later commissions, while of masonry construction and, as in the case of Union Depot or the Exchange Building, central to the functioning of a fast-growing city, Cross' later *oeuvre* remains reflective of the material limitations that had earlier precluded the erection of all-stone facades. Perhaps surprisingly, considering the architect's background as a lumber dealer, brick became the principle material of fine homes and public buildings, with stone employed mostly in foundations and accents. One of the larger commissions from the latter portion of his career is the Italianate Old St. Patrick's Church (Figure 3), built in 1874 and 1874 on Cherry Street in the northeast of the Downtown area. St. Patrick's was only the third parish church established within Kansas City's limits, and it is likely the oldest for which records of construction costs survive. As was the case with the earlier cathedral, St. Patrick's materials were obtained at reduced expense not because the bricks were sourced from Fr. Donnelly's brickyard. Indeed, as the church's construction took place at a "slow time in the construction trades," parishioners fashioned the bricks themselves, achieving a cost of only $5 per thousand bricks.[56]

[55] Ibid, Pg. 21.

[56] Rev. Michael Coleman, *This Far by Faith: A Popular History of the Catholic People of West and Northwest Missouri*. Kansas City, MO: Diocese of Kansas City-St. Joseph, 1992. *Volume II: The Story*. Pg. 260.

The entire 120'x64' structure, with its twin bell towers and ornamented front gable, cost a total of $45,000, with the exclusion of interior finishing, which took place only over successive years.[57] Cross applied stone in neat quoins to each corner of the bell towers and projecting gable, and he dressed each window on the front façade with stone surrounds. Each doorway is topped by a simple carved pediment, and the entire church lay atop a sturdy foundation of large limestone blocks. The foundation blocks, distinctive in their size and texture, were relocated to the site from the congregation's attempt to build a church on a nearby block, which had failed in the early 1870s due to a lack of strength of its supporting walls. The blocks were likely excavated from this first construction site, as records mention excavations as deep as 35 feet on one side of the projected church.[58]

An example of a parish church for which more detailed construction records survive is found in Annunciation Parish, a congregation to which three successive church structures were associated throughout the century following its 1872 founding. Beginning in the working-class and rapidly industrializing West Bottoms area, the Annunciation congregation and Fr. Dalton upgraded from their original frame structure to a respectable 68'x130' brick church in 1880 (Figure 4), having briefly assumed the status of the largest Catholic parish in the state of Missouri.[59] This success would not last, however; the Rock Island Railway Company began rapidly purchasing land from area property owners following an 1882 flood, and the congregation had largely disappeared by 1897.[60] The Rock Island Railroad purchased the church, which had cost $40,000 to build, for a mere $35,000, and Fr. Dalton relocated to a largely rural

[57] Ibid. Pg. 260.
[58] Ibid. Pg. 259.
[59] Ibid. Pg. 110.
[60] Ibid. Pg. 110.

area in the east of the city, where he re-founded the parish on what would become the intersection of Linwood and Benton Boulevards.[61]

Invoices and receipts from both the earlier brick church in the West Bottoms and the later stone church erected along Linwood Boulevard reveal some aspects of parish budgeting for the acquisition and application of limestone during construction phases. A parish finance report from 1882, for example, appears to enumerate sources of parish income alongside each of the remaining debts owed shortly after the completion of the brick church in the West Bottoms.[62] While income had derived mainly from a January 1880 parish fair, "subscriptions received" for the construction of the new church, and loans from Fathers Donnelly and Dalton, most expenses were allocated to two men's names (or their namesake companies) marked as having contributed "brick work," as well as an individual by the name of James Murray, listed instead with just the word "masonry." The payments owed to stone-specific contracts featured as much lesser expenses, with "I.H. Roberts, for cuts-tone [sic] masonry" listed with a total of $365.00 and the firm of Hughes and Dugan due $367.20 for raw stone.

For Fr. Dalton's new parish, situated along what would become Linwood Boulevard, construction of a permanent church structure occurred in two phases over the span of over two decades. Unlike the case in St. Patrick Church, wherein parishioners were said to have donated time to ferry building materials and even assemble the church structure from the ground-up, a solitary time sheet from October 30th, 1903 provides a snapshot of allocations to seventeen laborers, each of whom were paid fifty cents per hour, all of whom appear to be identified as stone cutters.[63] These men would have been employed either in completion of the foundation,

[61] Ibid. Pg. 110.
[62] Parish Finance Report, Annunciation Parish, April, 1882.
[63] Employee time sheet, Annunciation Parish church construction, October 30th, 1903.

which had begun in May 1903 under the supervision of Joseph C. Fraas, or in building the first sections of large, rusticated blocks, in which most of the first story was lain. The cornerstone, integrated into the cut stone water table, had been dedicated just earlier that month, on October 11th.[64] Also surviving is a May 9th bid from an unnamed contractor, offering Fr. Dalton and the Building Committee a proposal to "do all necessary work and furnish all material necessary to complete walls of sanctuary, chapel, and sacristy [sic] and carry up walls of church to a point on line with bottom of cornice in nave" for a sum of $13,485.00.[65]

It remains unclear whether this particular contractor ever began work that year, or how far exactly the walls had progressed on all sides before construction ceased, but Fr. Dalton was ordered to proceed no further with the church's construction until the Bishop could observe there was sufficient revenue for the parish to pay its own bills.[66] The rear worship space of the church was enclosed, and it was not until 1924, under the tenure of Fr. Matthew D. Tierney and following a successful $75,000 fundraising drive, that construction was resumed.[67] Another isolated sheet of tabulations, marked with the header "BILLS PAID TO DATE ON ARCHITECTS CERTIFICATES," records the some of the parish's construction expenses in the months preceding February 15th, 1923.[68] Most of these payments were designated for Frank H. Pavlick, who would likely have served as a general contractor for the project. Weekly descriptions vary from the nondescript, "labor, 218.40," to hyper-specific, referencing "cut stone steps … 21.00."[69] Dollar values associated with "stone wk." were marked $65.00, $105.80, and $115.00 in successive weeks throughout the month of March, suggesting that Pavlick would

[64] Coleman, *This Far by Faith*. Pgs. 110-111.
[65] Bid from unknown contractor, Annunciation Parish, May 9th, 1904.
[66] Coleman, *This Far by Faith.* Pg. 111.
[67] Ibid. Pg. 111.
[68] "BILLS PAID TO DATE ON ARCHITECTS CERTIFICATES," Rev. M.D. Tierney. February, 1923.
[69] Ibid.

have likely employed a few men solely for the task of cutting and assembling the church's stone walls. The contrast between the heavy, rusticated, and uniform blocks of that characterize the lower layers of the earlier construction and the varied pattern of stones of its upper layers—the apse, gable ends, and front towers—underlines the profound influence individuals like Pavlick likely would have held in determining the final appearance of a major architectural undertaking Figure 5).

Above all, the third and final Annunciation Parish church is emblematic of the cost-cutting measures and inevitable pitfalls faced by many congregations involved in financing the construction of such large-scale stone edifices through generosity of a limited population of middle and working-class families. Annunciation's pattern of stop-and-start building, wherein intermittent periods of construction are alternated alongside a parish's functioning within a more modest compromise, mirrored the experience of many other peer congregations facing similar constraints (Figure 6). In the case of 23rd Street's Holy Name Parish, for example, the resident Dominican priests' extravagant building plans gave way to moderated approaches even before the structure reached ground level. The "cathedral-size church, seating 1000) that had been designed by the architectural firm Wight and Wight gave way when, in 1911, the parish ran out of money after having only completed the basement level; progress did not resume until thirteen years later, when architect H.W. Brinkman implemented drastic alterations to the existing plans (Figure 7).[70] Only after the receipt of substantial loans from the Dominican Province and the Diocese (most of which was never paid back), as well as the 1924 hiring of Frank Pavlick as general contractor, was the church finally ushered to completion in 1928.[71]

[70] Coleman, *This Far by Faith*. Pg. 150.
[71] Ibid.

These same trends are observable in the trials of a congregation from the outlying neighborhood of Leeds as they sought to construct a permanent home for Holy Family Parish. The 82'x52' church (Figure 8) was begun in 1905, and original plans for a multi-story structure to house both church and school was soon compromised, resulting in a single story subdivided between chapel and classroom space.[72] A 1913 discovery of defective footings under the north wall of the church, however, "proved to have a flaw, to such an extent that one half of the building threated to collapse."[73] With most of the building secure, the parish opted to tear down the faulty portion and rebuild. The result narrowed the structure to 38' in width, as well as adding a 42' tower to adorn the front entrance.[74] The structural failure and partial demolition must have delivered a particular disappointment to parishioners, as they had previously taken responsibility "for the work of excavating, quarrying, and hauling the stone" for the building's first iteration.[75] Contributions of free labor, as was observed in the building of the earlier St. Patrick Church in Downtown, is not the only measure by which this lower-class, hinterland parish saved funds in the construction of their church; a "Mr. Chaffey," who owned the quarry from which parishioners had been ferrying stone blocks, offered to sell all needed materials for a. nominal fee of $5.[76] It is as a result of these charitable actions that the church was erected for only a paltry $6,600.[77]

While Kansas City's limestone-clad churches would seem to maintain a basic level of material uniformity across several decades of construction, each structure varies in its employment of reinforcing technologies, and records referring to each building's material

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[72] Ibid. Pg. 300.
[73] Paulinus Kranz, "Holy Family Church, Leeds, Mo.," January 1st, 1917.
[74] This Far By Faith, Pg. 300.
[75] Paulinus Kranz, "Holy Family Church, Leeds, Mo.," January 1st, 1917.
[76] Ibid.
[77] Coleman, *This Far by Faith*. Pg. 300.

identity display a surprising diversity of diction. The 1904 contractor bid for the resumption of progress on Annunciation parish reveals both an unseen consideration in stone church construction, as well as a material hierarchy among the stone itself:

> *This bid does not include any mouldings or carvings of any kind except trimmings on windows and all exposed work to be rock-faced Carthage work backed up with native lime-stone and lad in mortar composed of sand and lime tempered with Ft. Scott cement in sufficient quantities to make a first class mortar."*[78]

The unnamed contractor illuminates preferred methods of supporting a stone superstructure in the period immediately following the turn of the century, which relies on a multi-layered stone wall in which designated façade stones are interlaced with interior-facing stones through liberal use of mortar. Visual evidence from demolitions, like that of Holy Name Church (Figures 8 and 9), as well as attestations of church construction with the use of "monolithic concrete," as in the case of St. Vincent de Paul, reveals that standard construction practices had, by two decades later, led most builders to attach exterior-facing stones more or less directly into a concrete interior.[79]

Yet perhaps the most perplexing of revelations from both the Annunciation Parish contractor, as well as decades of parish history chroniclers and pastors' notetaking, is the extent to which descriptors of stone material vary between a few common labels. Frequently mentions in accounts of church construction describe use of 'Carthage' stone for exterior facades. Supplanting the usual alternatives and often praised for the clarity of their white or blue

[78] Contractor bid for Annunciation Parish, 1904.
[79] Coleman, *This Far by Faith*. Pg. 288.

complexions, these churches—Annunciation, Guardian Angels, Holy Family, and others—seem intent on differentiating their exterior materiality from alternative options that remain unstated. The same can be said for mentions of Bedford stone, mostly mentioned in the context of treasured accents in the design of a church's façade, like in the copings, tracery, and decorative courses on churches like those at Redemptorist. St. Vincent Parish's famous twelve-ton crucifix, carved in deep relief on its church exterior, is noted for having been carved from Indiana Bedford limestone.[80] Why is it the case, raises the question, that one label should implicitly be understood as superior to the 'native' stone that is (only occasionally) noted as the primary material of most church edifices? While it comes as no surprise that church histories tell of the liturgical furnishings imported from Italy, for example, what caused place-names associated with other locations in the American Midwest (Carthage, Missouri and Bedford, Indiana) to accede to a favored position over the stone of Kansas City's immediate hinterlands?

This line of inquiry raises several frustratingly unanswerable questions, as references to so-called 'native' limestone are used neither in a disposition of disdain nor prestige among builders and chroniclers alike, but are characterized most by indifference. This nonchalance is visible in the lack of reference to point sources for stone materials as part of recounting a building's larger story. For the innumerable limestone houses, public buildings, and churches (nearly every early-20th century religious structure in the area now defined as Midtown), and taking into account the hundreds of quarry sites in Kansas City's 20th-century resource hinterlands, so few structures have documented evidence for the source of their stone as to be eligible to count on one's fingers. Indeed, even in the scenario of attestations to ties between churches like Redemptorist and Good Counsel parishes to the Roanoke neighborhood, it remains

[80] Ibid.

unknown what quarry exactly would have contributed the resources. Alas, it might serve the purposes of scholarship best not to privilege the imposition of these labels over other considerations when comprehending a structure's network of environmental relationships. The use of the place-name 'Carthage,' in particular, ought not to be interpreted at face value as denoting any particular regional source of a given structure's materials. For example, the Carthage stone façade of 39th street's St. James Catholic Church (Figure 10), which were recycled from the piers of an aborted bridge project originally intended to supplement the Hannibal Bridge. This episode is revealing not just in displaying another instance of resourcefulness among parish building committees, but of engagement of Kansas City's stone market with distant hinterlands in all directions; the stone was originally mined in 1887 not in southwest Missouri, but in far-off Cotton Falls, Kansas.[81]

What the complex and varied, yet in many ways thematically recurrent, stories of Midtown Catholic churches demonstrates most of all is the desire of average citizens, in addition to civic boosters and professionalized architects, to cultivate a sense of grandeur and refinement in the architectural product on which they exert their influence. Parish building committees and individual pastors, who would have held the decision-making power over the pursuit of any construction plans, held a significant sway over this process of aesthetic taste-making. Their influence can be seen in not just the choice of canonical styles expressing the cultural sophistication and religious triumphalism of Catholic ascendancy taking place around turn-of-the-century Kansas City, but they also held sway over the rhetorical expression of a parish's architectural identity. In the case of the monumental, monochromatic stone edifice of Sacred Heart Parish in Kansas City's Westside neighborhood (Figure), this identity is expressed by the

[81] Continuation sheet churches survey, St. James

assertion of its essentially Richardsonian character as being representative of a distinctly Irish Romanesque style.[82] For the overwhelmingly Irish population that made up the congregation during the early 20th century, many of whom, once again, contributed toward the church's construction with their own labor, this would have been reiterated a familiar melding of their ethnic and religious identities characteristic of many homogenous Catholic congregations of the time.[83]

It is important to recognize the agency of these laborers as well; whether parishioners or outsiders, as it is by the methods of their stone cutting and assemblage, working under supervisors like Frank Pavlich, that determined much of the final appearance of these structures. The labor-intensive means by which stone, whether locally quarried or of some more abstract origin, was cut to specifications and applied into a cohesive exterior facing involved a startingly large number of parishioners and community members in a unified effort of aesthetic uplift. This truth underlines the perceived value associated with a stone façade, regardless of the material's origins, a desire also evident in the efforts financially strapped congregations to persevere in the face of construction delays. The influence of parishioners and contract workers is most visible in the portions of church structures that are found to be substantially amended from their original, architect-drawn designs. Annunciation's builders left the two frontal half-finished and they lowered roofline in changes that not only negated architect Frederick Gunn's intentions to project a Norman Gothic styling (a reason, perhaps, for later interpretations of the church as Romanesque), but also deprived the finished structure of Gunn's most frequent architectural signature of steeply pitched gable roofs. Abandonment or downscaling of plans for frontal bell

[82] Coleman, *This Far by Faith*. Pg. 199.

[83] Elaine B. Ryder, "Sacred Heart Church, School, and Rectory," National Register of Historic Places nomination form, February 1978. Item No. 8, Continuation Pg. 1.

towers—as occurred in the building of Guardian Angels, St. James, and even the mighty Redemptorist—are most easily interpreted as arising from a lack of sustained fundraising.

Yet one ought also to consider the difficulties these features presented for a process reliant on the provision of free or discounted labor; as scaffolding grew to increasingly lofty and dangerous heights, concern for worker safety among building committees, contractors, and pastors would presumably heighten. In a time marked by the proliferation of labor-friendly theology throughout much of the Catholic world, these factors would have likely influenced the spiritual justifications inherent in the process of church-building. There can be little doubt, however, of the appeal to these same actors of the permanence projected by an all-stone façade. Despite the frequent adjustments and cost-cutting maneuvers implemented throughout the church-building process, rarely was an alternative material employed to fill in the gaps.

Many similar considerations—a desire for permanence, prestige associated with an all-stone façade, and easy access to locally quarried materials—would have been equally present in the erection of secular structures in this same time period. Rough-hewn of 'quarry-cut' limestone seems to have fallen out of favor for public buildings in the region sometime in the outset of the 20th century, however, and cut stone (often imported) would go on to serve as the default material for many of the public building projects pursued by the city's all-powerful political machine through the 1920s and 1930s.

There appears a pattern that, among those public, secular structures clad in 'native' stone, most are oriented toward service of a particular neighborhood, rather than projecting city-wide influence. This is true of the 1896 Allen Library, the final structure commissioned by the Town of Westport before its 1897 incorporation into Kansas City. Permanence and durability were certainly on the mind of its builders; this squat structure "of native limestone and slate" and

costing a price of $5,500 was emblazoned with the name Allen—that of the state senator that secured its funding—above the front door, which is flanked by two fortress-like turrets (Figure 12).[84] Farther west in the Midtown area lies the Norman School (Figure 13), hailed at its 1906 opening for being the "first of its kind" in Kansas City. Described as composed "in part of rubble stone, with Carthage Stone trimmings," its suspiciously close proximity to the network of quarries in the Roanoke area suggest that its yellow-hued, monumental presence might have been sourced from the nearby depressions it overlooks in Roanoke Park.[85] Like the aforementioned churches, these neighborhood-level institutions were very likely assembled from the very rock of their immediate constituencies, drawing upon a material hinterland as limited as the one in which they exercised their educational mission.

Practical Practitioners

The fact that the decades surrounding the turn of the century featured prolific use of 'native' stone in design-by-committee projects like parish churches, happening alongside a growing governmental preference for different stone products, did not deter Kansas City's professional architects from innovating with the use of locally quarried limestone. In fact, quite the opposite is the case; it is in the work of a cohort of impactful architectural practitioners that the true versatility of this material becomes most comprehensible. Local architectural historian George Ehrlich articulated similar ideas on the role of stone as a catalyst of innovation in local domestic architecture:

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[84] "Westport's New Library. it Will be Finished and Opened to the Public next Spring." *Kansas City Star* (Kansas City, Missouri) 17, no. 65, November 22, 1896: 2. *NewsBank: America's News – Historical and Current*.

[85] "Of Rubble Stone in Part. The Norman School the First of the Kind Here." *Kansas City Star* (Kansas City, Missouri) 27, no. 182, March 18, 1906: 7. *NewsBank: America's News – Historical and Current*.

A contributing factor in stylistic variety was the wider use of stone. Local stone, which had been common for foundations, was now also being used for half or full exteriors. A number of houses were made of rough-hewn local stone, with random ashlar or even rubble walls.[86]

This wider adoption of local limestone as an acceptable, and even superior, material component of upscale housing, alongside the growing success of industrialists and entrepreneurs in growing Kansas City's role in the national marketplace, resulted in a surge of commissions for the city's small in-town cohort of professional architects. Each of these personalities and their design *oeuvre*—indeed, eccentrics might apply just as accurately, to both practitioner and product in many cases—were known to create buildings that varied greatly and sometimes even contradicted one another. Yet each devised his or her own response to the perceptible closeness to nature and geological indigenousness that characterized Kansas City limestone. Their high-style interpretations in the area of domestic architecture, in particular, would prove highly influential toward the cultivation of regional stylistic preferences prevalent in so-called 'vernacular' architecture.

This reciprocal relationship of stone's materiality and architectural, stylistic identity is clearly visible in a great number of Late Victorian mansions, like the Dr. Flavel J Tiffany Residence (Figure 14), built in 1908-1909 by Clifton Sloan. While Sloan himself is not a figure of note, Ehrlich notes his success in stone to produce a "medieval fantasy" for a patron that evidently idealized the picturesque aesthetics of Old-World castles, while using the material "in conjunction with reinforced concrete" and other modern techniques.[87] Louis Curtiss, perhaps Kansas City's best known architect, began his experimentation with Kansas City stone in a

[86] Ehrlich, *Kansas City, Missouri: an Architectural History, 1826-1990*. Pg. 63.
[87] George Ehrlich, *Kansas City, Missouri: an Architectural History, 1826-1990*. Pg. 63.

similar idiom during his years-long tenure as junior partner to Frederick C. Gunn, a period that included the construction of the similarly storybook-derived Sacred Heart Church. The two men had also assumed responsibility for a series of additions to the sprawling estate house of Kansas City newspaper magnate William Rockhill Nelson, known as Oak Hall. Gunn and Curtiss designed a new rear façade for Oak Hall which, consistent with the neat, simple, yet monumental Shingle Style of the existing structure, employed repetition of front-facing limestone gables (Figure 15).[88]

Upon Curtiss' opening an independent practice, the self-styled "bohemian artist-aesthete" proceeded to explore melding of Second Empire, Art Nouveau, and Neoclassical architectural styles, among others, in domestic commissions like the so-called "Mineral Hall" (Figure 16) a 1903 home designed for R.E. Bruner across the street from Oak Hall. Unlike the flattened surfaces of the gables at the Oak Hall edition, or even the rough-hewn, though uniformly bulbous stone blocks of Sacred Heart, Mineral Hall's stone is lain horizontally, with irregular, jagged edges blurring lines between individual stone courses. Looking past the ostentatious ornamentation and polychrome archway, the façade's haphazard arrangement and slab-like stones highlights the natural, sedimentary state of limestone. Given this dominant force of horizontality and embrace of locally-sourced materials, Mineral Hall is often classified as Curtiss' earliest interpretation of the nascent Prairie Style.[89]

This early period of Curtiss' career marked the end of his substantial use of native limestone, however; his increasing preference for the sleek horizontality and robust forms of sawn limestone guided the design of mansions like the Bernard Corrigan House (Figure 17), for

[88] Houses of Missouri, Pg. 56.

[89] Edward J. Miszczuk, ""Mineral Hall" – Residence of R.E. Bruner," National Register of Historic Places nomination form, February, 1975. Item No. 7, Pg. 1.

which he became best known. Other early Kansas City Modernists working in similar stylistic idioms also made extensive use of imported sawn limestone in upscale domestic and commercial architecture. Architect John W. McKecknie famously deployed Carthage limestone, both carved and flat-faced, in his all-stone façade at the Calvert Hunt Residence (Figure 18), built on behalf of a quarrying baron with substantial stakes in the Carthage, Missouri limestone business.[90] Unsurprisingly, the stone for use in the home's construction (as well as Curtiss' Corrigan house and many other elite structures) was imported from these sources. While it remains unclear whether hewn "Carthage" stone adorning aforementioned structures would have truly been similarly sourced, these elite mansions make clear that large influxes of sawn limestone were, in fact, entering Kansas City from a broadening resource hinterland.

One must wonder if it is in reaction to the increased use of sawn limestone that other prominent architects and homebuilders turned to locally quarried limestone in the coming years. In any case, Kansas City's pair of ascendant female architects continued to prominently utilize limestone in the decades to come. Nelle Peters, an architect specializing in colonnaded apartments and apartment-hotels and known for her sheer prolific production totaling near 1000 buildings across Kansas City and other Midwest locales, nearly always incorporated some form of decorative limestone onto the foundation levels of her otherwise brick and concrete multi-family structures.[91] Her Tudor style Vanity Fair Apartments (Figure 19), just to the west of the Country Club Plaza exemplify the whimsical character of her decorative application of limestone, wherein stones cling to the corners in a random distribution, as if to suggest their active ascendancy from the level of the foundation.

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[90] George Ehrlich, *Kansas City, Missouri: an Architectural History, 1826-1990*. Pg. 63.
[91] Ehrlich, *Kansas City, Missouri: an Architectural History, 1826-1990*. 67-68.

Similar creative material intermingling of brick and limestone characterizes much of the local works of Mary Rockwell Hook, a well-connected architect who planned and designed a subdivision of upscale homes in the steep terrain lining the hillsides of the Sunset Hill neighborhood. A particular cul-de-sac of this development, including the homes of the architect, her parents, and her sister, showcase her appreciation of native stone in the execution of multi-level structures that embrace the surrounding landscape and offer numerous liminal spaces in patios porches, and courtyards that serve to facilitate appreciation of the wooded and rocky surroundings (Figures 20 and 21).[92] Indeed, some of these houses are built directly into the hill's bedrock, with the effect that they are lined by windows on one side and stone on another, with the displaced stone having been applied to the homes themselves. Hook adjusted her anticipated material palette to accommodate the added stone (and its attendant costs) after the discovery of significant deposits in the locations set aside for each home.[93]

These professional architectural practitioners assumed the role of taste-makers in the Kansas City region, and it is due in part to their influence that the Tudor Revival style gained an enduring popularity that it retained up to and even after the Second World War—supplanting the Colonial Revival styles as dominant in suburban developments of that era. Subsequent usage of 'native' stone throughout 1920s and 1940s growth periods of vernacular, suburban home-building derive at least some level of inspiration from the eccentric and spontaneous designs of both women, just as Curtiss' work in pioneering Modern architectural styles contributed in some manner to the preference of monolithic, planar facades of sawn limestone. Their story, like that of Midtown churches, details shifting opinions among Kansas Citians as to how builders sought

[92] Sherry Piland and Elaine Ryder, "Residential Structures in Kansas City by Mary Rockwell Hook TR," National Historic Register nomination form, June, 1983. Item No. 7, Pg. 0.
[93] Ibid. Item No. 7, Continuation Pg. 6.

to make use of their immediate and long-distance resource hinterlands to contribute to the process of city-building. Most of all, they provide a crucial narrative in the story of how Kansas Citians, in order to build outward and upward, looked to the limestone under their feet as an ever-versatile resource.

Chapter 3 | Extraction and Concealment: Parks, Neighborhoods, and 'Naturalization'

Almost all of the most essential elements of Kansas City's contemporary cityscape—its planning apparatus, its parks and boulevards system, and its greatest concentrations of enduring built landscapes—stem from the decades of furious expansion marking the onset of the 20th century. It was during this period that Kansas City solidified the coherence of its 1897 annexation of the town of Westport, solidifying a north-south axis of development that extended from the Missouri River south to Brush Creek. This swath of urban-adjacent family farms and estates were soon parsed out to residential developers for the demarcation of neighborhoods. Accompanying this surge of construction and enlargement of the city's boundaries was, perhaps unsurprisingly, a corresponding shift in the geography of its material sourcing. New neighborhoods prompted the formulation of new resource hinterlands. The new patchwork of residential subdivisions, containing both clusters of high-end mansions and streets of modest middle class dwellings, would have to function alongside these material point sources.

Booster agitation and professional design expertise partnered to produce a series of 'grand' parks as centerpieces of a parks and boulevards system, and the new dedicated green spaces proceeded from conceptual status to 'naturalistic' landscapes within just a few short years following the landmark 1893 Report of the Board of Park and Boulevard Commissioners. This platform would continue to lend boosters a means of influencing urban planning and growth in the decades ahead. Besides the vast expanses of grassy vegetation, trees, and the occasional decorative plantings anticipated in the respective parks' designs, the use of stone in retaining walls, structures, and decorative elements proved to be a character-defining feature of these parks. In later years, the Board received several smaller, neighborhood-scale reserves of park lands into the Parks and Boulevards System, many of which were current or former quarry

spaces adjacent to upscale neighborhoods. The subsequent assignment of these interstitial, 'natural' spaces to the care of the Parks Board, as well as their later augmentation, served as objects of celebration by residents of adjoining neighborhoods.

Upon further examination, it becomes clear that many of the contributing parcels of these 'natural' preserves were in many ways artificial landscapes. While marketed as arcadian settings of intact urban forests and grasslands, some sections were composed of refashioned quarry sites, others atop the site of reclaimed waterways or even condemned residences. In fact, many of the genuinely natural, pre-existing features of these interstitial landscapes were tampered with, or erased amidst a pattern of extraction and concealment that corresponds to the decades surrounding the land's designation as subject to the Parks Board's jurisdiction. Originally envisioned by activist investors or designers active in the pursuit of Kansas City's southward expansion, the process of park designation, reclamation, and 'conservation' both exerted and received influence in relation to affluent residential communities. This reciprocal relationship of these designated 'natural' spaces and the residential enclaves involved exertion of numerous influences upon each other. Consequently, a park and its adjacent neighborhood served to formulate material, aesthetic, and financial identities that were innately linked with one another. As dictated by the desires of boosters and residents alike, the forces facilitating 'naturalization' of these park spaces also prompted not just the re-making of their use patterns, but also displacement of peopled communities.

Planning the "South Side"

The areas that developed into Kansas City's most notable turn-of-the-century neighborhoods and parks were considered, for the first several decades of Kansas City's existence as a recognized entity, as distant locations from the city center and difficult to reach, on

account of the undulating terrain of the early Downtown settlement and its peripheral road infrastructure. Situated on the far side of the OK Creek ravine and corresponding bluffs that separated the area south of today's 31st Street from the early industrial and commercial centers of activity along the Missouri River (and, later, along Main Street north of Union Station), these areas existed more within the orbit of the town of Westport than Kansas City proper.[94] Importantly, the dramatic expansion of the Parks and Boulevards envisioned by city boosters designated locations that occupied adjacent, though not conflicting, real estate to fashionable residential enclaves. It was due to the persistent advocacy of the booster class, as well as considerable support from residents anticipating the benefits of parks infrastructure, that Kansas City's next great civic project came to fruition, sequestering vast portions of land under the control of the Parks Department.

A substantial real estate boom in the 1880s increased the value of parcels even south of Kansas City's new southern terminus of 31st street, adopted in 1885, over a decade before the following instance of annexation would include the entirety of Westport's territorial extent. What had existed heretofore as a semi-rural collection of farmsteads and orchards in the area of the neighborhoods that later would bear the name "Hyde Park" began seeing an influx of stately Victorian homes constructed in its northern portions during the 1880s.[95] Farther west, the spaces that would later become the Roanoke neighborhood played host to Kansas City's Interstate Fairgrounds throughout the duration of that same decade.[96] Later sources detail some of the alterations affected on the area's landscapes beginning around this period. A 1945 article on the Fairgrounds, for example, told of a grading operation for the horse-racing track, located north of

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[94] Patrick Alley and Dona Boley. *Kansas City's Historic Hyde Park*. Arcadia Publishing, 2012. Pg. 9.
[95], Mary Jo Draper, *Kansas City's Historic Midtown Neighborhoods*. Arcadia Publishing, 2015. Pgs. 11-14.
[96] "KC Interstate Faigrounds." *Kansas City Times*, 21 June 1945. Accessed via Valentine Neighborhood Association Website.

38th Street along Summit Street which left a "hollow" in the middle of the track, later forming a year-round lake.[97] The site, according to the same observers, witnessed the drowning of "a few" of the young boys that would frequent its deep reservoir. The article's author claims that, as part of the construction allowing "excursion trains" to approach by way of Roanoke Road, "[a] tunnel was bored through a bluff in Roanoke," but it "soon began to fall in" as a result of insufficient reinforcement, and was never used.[98] Recalling his youthful discovery of the leaky tunnel's lack of structural integrity, and fallen pieces of rock, the article recorded interviewee Ed Dixon as he bore witness to the incompatibility of this particular natural limestone formation to satisfy both natural and people-centered functions.

A plateau extended southward from roughly 31st Street, as the ascent from the Turkey Creek basin bridged disparate elevations and revealed significant outcroppings of stone topped, of course, with a layer of silty loess. The 'South Side' of this ridge provided, not yet annexed by Kansas City proper prior to the 1890s, provided an ideal environment for affluent families to erect their mansions on paved, occasionally privately developed streets. Yet this landscape also maintained some rugged qualities, punctuated with 'hollows' or depressions, which often served as conduits for runoff from higher surroundings and a handful of natural springs with outlets interspersed alongside hills, bluff faces, and natural caves. The 1893 Report of the Board of Park and Boulevard Commissioners, which landscape architect George Kessler co-authored with Commission Chair August R. Meyer, describes the state line-adjacent portion of the 'South Side,' soon to be developed as the Roanoke neighborhood, as defined by this dichotomy. The "southern plateau swings around into the Turkey Creek valley," the report details, "and its edge is cut into by numerous ravines that produce a picturesque and wild region, abounding in rocky

[97] Ibid.
[98] Ibid.

gulches and ridges, steep limestone terraces and high limestone walls." This entire area, the authors continue, "is densely covered with short timber."[99]

The Commission felt compelled to grapple with the "topographic enigma" of the South Side in order to set aside land for future parks, as well as scenic boulevards, out of recognition of increasing desires among Kansas Citians to migrate southward. Facing limited connectivity across the north-south transition due to steep limestone bluffs to both the east and west of the city, they articulated the conclusion that a ravine surrounding the northward-running OK Creek ought to be seized as park land, to be named "Penn Valley."[100] Alongside the southern terminus of this park, the commissioners determined that Linwood Avenue, an east-west street, could be transformed into the much longed-for "Southern Boulevard."[101] It "seemed desirable," the 1893 report claims, justifying the decision to expand Linwood (approximating 33rd Street), "to give weight to the important residence development at Hyde Park and the handsome ground to the west of Hyde Park, including Roanoke Addition, all of which lands are sure to be used for residence purposes in the near future."[102] The commissioners' devoted close attention to the varied topography south of 31st Street and the suitability of the 'South Side' for neighborhood construction, revealing their close alignment with speculative real estate interests pursuing southward expansion of residential construction.

Intervening in the Landscape

In the 1893 report mentioned above, commissioners expressed their awe of the natural scenery surrounding the area slated for the grand, topographically diverse Penn Valley Park,

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[99] Kansas City (Mo.) Board of park commissioners. *Report of the Board of park and boulevard commissioners of Kansas City, Mo. embracing recommendations for the establishment of a park and boulevard system for Kansas City: Resolution of October 12, 1893.* Kansas City, Mo.: Hudson-Kimberly, 1893. Pg. 26.

[100] Ibid. Pg. 41.

[101] Ibid. Pg. 34

[102] Ibid. Pg. 34.

situated just north of 31st Street and providing a buffer zone between the business districts and the fast-growing residential zones of the Roanoke and Hyde Park neighborhoods. Commissioners expressed weariness toward any effort to "place over this irregular terrain a gridiron system of streets," fearing that it would mar the 'natural' beauty that must have proceeded the earliest infrastructural elements of urbanization.[103] Their expression that the land "must have possessed rare beauty before it was touched by the hand of men" demonstrates how they perceived the 'restoration' of the 'natural' landscape as a central objective in the demarcation of dedicated park lands. What this admission also implicitly acknowledges, however, is that substantial alterations to the landscape had already occurred as a result of ongoing stages of the city-building process. This rendered their desired 'natural' appearance of park landscapes a goal that would require intensive intervention and imposition of a new set of values—aesthetic and financial—upon these existing parcels of land, all of which contribute toward a newly transformed appearance in keeping with the simple, if vague, principles of the City Beautiful Movement. This 'naturalization' of landscapes brought under control of the Parks Board, accordingly, would involve the insulation of designated park landscapes from various market forces, as well as influence from the public at-large. Throughout the decades on either side of the year 1900 in Kansas City, this process of refashioning or tampering landscape features resulted in substantial new forms of human intervention in Parks Department-governed spaces, which can be generally described as following cycles of extraction and concealment.

Beyond the highly visible installation of boulevard infrastructure, composed of chunk limestone foundations and macadam surfaces and designed to facilitate the exploration of

[103] Kansas City (Mo.) Board of park commissioners. *Report of the Board of park and boulevard commissioners of Kansas City, Mo. embracing recommendations for the establishment of a park and boulevard system for Kansas City: Resolution of October 12, 1893.* Pg. 23.

the parks system by way of the automobile, as well as many of the expected recreational *accoutrement* characteristic of American parks infrastructure, the approach of landscape architect (and, in 1893, 'secretary' to the Parks Board) George Kessler involved the removal of landscape features that might have interrupted perception of park landscapes as representing the arcadian ideal. The above-mentioned Penn Valley Park, a city-wide infrastructural commitment, unlike smaller neighborhood parks in Roanoke and Hyde Park, provides an illustrative examples of this cycle of parks development. For example, William Henry Wilson notes how Kessler imposed new patterns of drainage onto the ravine terrain of Penn Valley, devising "a system of underground drains, "as complete as if it were to serve a similar area covered with houses," was built to catch the destructive little rivulets and funnel them harmlessly away."[104] Because not even these measures enabled drainage of the whole park into the lake, the installation of "cement gutters" alongside the boulevards served to "carry more water away from their macadam roadbeds wound for over three miles through the 130-acre park."[105] This engineering of the landscape, in fact, extended to the lake itself; after the Board had issued recommendations for its "enlargement and improvement," the development phase of Penn Valley Park actually resulted in the creation of an entirely new reservoir, distinct from that genuinely natural body of water which had which had preceded it.[106]

Kessler, after being hired as a landscape architect by members of the Hyde Park neighborhood in 1887, affected similar changes upon the existing parks landscapes. His "transformation" of the new park included "walks, shrub plantings, and seating" in addition to sturdy limestone retaining walls reinforcing some of the steeper drop-offs in the ravine's

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[104] William H. Wilson, *The City Beautiful Movement In Kansas City*. Columbia: University of Missouri Press, 1964. Pg. 122.

[105] Ibid.

[106] Deon Wolfensbarger, *Historic Resources Survey of the 1893 Parks & Boulevard System*. Pg. 80.

terrain.[107] These additions served to augment the recreation infrastructure, like tennis courts, croquet grounds, and archery ranges that were installed by area residents in the 1890s.[108] Notably, however, a resident-installed "high fence and locked gate" were removed with the assumption of care for the parcels by the Parks Department.[109] In Penn Valley Park, Kessler's design utilized the imposition of boulevards across the park's main axes to highlight 'natural' features; curves in the boulevards—particularly that of Penn Valley Drive, the park's primary throughway—that adjoined cut limestone terraces, or a stone masonry wall that seems to purposefully mirror the surface texture and sedimentary pattern of the intact ledge of stone hanging above it (Figure 1).

Stone retaining walls were nearly ubiquitous features of Kessler's park designs, and they were employed with regularity for the routine task of negotiating human-scale variability in terrain, as well as monumental constructions spanning the greatest elevational discontinuities in the city. Exemplary of the more daring landscape interventions pursued by Kessler are the multi-tiered terraces, flanked with sheer stone walls and elegant galleries, employed for major staircases in West Terrace and North Terrace parks (Figures 2, 3). More so than the architect-designed gallery of North Terrace Park, which led a short distance from the fashionable residential zone of Gladstone Boulevard down to the scenic boulevard of Cliff Drive, the 'grand' staircase of West Terrace Park fulfilled a utilitarian purpose of connecting a major residential neighborhood, Downtown's Quality Hill, with the city's largest employment center, the stockyards of the West Bottoms. Also unlike the cut stone and architect-designed colonnade of

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[107] Janice Lee, et al. *A Legacy of Design: An Historical Survey of the Kansas City, Missouri, Parks and Boulevards System, 1893-1940*. Kansas City Center for Design Education and Research, in Cooperation with the Western Historical Manuscript Collection-Kansas City, 1995. Pg. 37.

[108] Ibid.

[109] Patrick Alley and Dona Boley. *Kansas City's Historic Hyde Park*. Pg. 39.

North Terrace Park, the multi-story 'grand' staircase was built of rough-hewn, yellowed limestone, and it was designed to exist in harmony with the intact stone outcroppings that remained visible on either side of its pavilion towers and along the length of the entire staircase. Where the staircase split toward its outlet on Kersey Coates Drive—named for an early booster advocate of the city's expansion of parks development—it formed a half-circle surrounding an arched grotto. Railings on the uppermost observation tier, as well as spring-fed fountain on a landing below, represent the isolated uses of sawn stone in this monumental public works project. Its contrast of clean lines and rock-bound rubble masonry is emblematic of the stylistic muddle of the competing aesthetic principles of City Beautiful ideology, which sought to balance core values of refinement and naturalism.

As William H. Wilson—the first historian of Kansas City's Parks and Boulevards System—attests, the kind of aesthetic formulations "sought by City Beautiful advocates was scarcely ever specifically defined," conjuring only vague objectives of "proportion, harmony, symmetry, and scale" in pursuit of preserving "what attractiveness remained in nineteenth-century urban settings." Kessler seized upon these ideas in his Hyde Park design with the production of a neighborhood park that emphasized accessibility for immediate neighbors and commuters by automobile, as well as clarity of form.[110] One of Kessler's key design features to increase the park's visibility involved simply circling the tracts with roads out of hope that it would "encourage home builders to front their residences upon it," rather than create a sort of "collective back yard."[111] This strategy was successful insofar as it stimulated the rapid sale of park-facing land and facilitated the erection of "gracious facades" of many larger-than-average

[110] William H. Wilson. *The City Beautiful Movement*. Baltimore: Johns Hopkins University Press, 1989. Pgs. 78-79.
[111] William H. Wilson, *The City Beautiful Movement In Kansas City*. Pgs. 43-44.

homes along its frontage.[112] The dearth of built structures and the disciplined avoidance of monuments adorning these open park spaces alleviated a sense of congestion for those few areas of park-adjacent turn-of-the-century development that included multi-family structures, like the western portion of Roanoke Park and the east and west-facing edges of Hyde Park.

The material palette of native limestone factored prominently into the design calculus of both built structures of the parks system and interventions to highlight existing landscape features. On the occasions in which full-scale stone buildings were integrated into park designs, as in the park shelters of Holmes Square and Budd Park (Figures 4, 5) or the parks maintenance buildings of Parade Park or Hyde Park (Figures 6, 7), they were nearly always constructed of rough-hewn limestone, perhaps with infusions of brick material as well. These substantial interventions in the landscape, which appropriated existing material palettes and familiar textures of exposed limestone, allowed these interstitial spaces, formerly recognized as empty ravines, to be reimagined as aesthetic assets. This pattern of aesthetic recognition of 'natural' materials held true for rock outcroppings themselves, which were often cleared of brush, stabilized, and employed as scenery flanking boulevards and pedestrian thoroughfares throughout the parks system. Kessler, who notably took enough interest in one rock outcropping to stage a rare self-portrait in front of a jagged limestone stack, alongside a Parks Board member, an architect, and their wives (Figure 8), clearly envisioned highlighting the presence of these exposed crags and jagged cliff-faces of several park landscapes. This strategy permeated not just the designs in which Kessler was directly involved, like the construction of Cliff Drive's automobile access under the precarious rock faces of Kansas City's Northeast (Figure 9), but also for stone

[112] Ibid, Pg. 44.

outcroppings in neighborhood-scale spaces like Roanoke Park (Figure 10), which possess no documentation of Kessler's direct involvement.

Not all alterations in Kessler's design were meant to be visible, however, and Hyde Park's drainage infrastructure illustrated methods of concealment that were utilized to erase certain pre-existing features of the landscape. Whereas the ravines comprising the low-lying nortern axis of Hyde Park once contained "the water of Harris Creek spread out into a large shallow bog," Kessler's design instituted systems of concealment that allowed neighboring springs to drain into city sewers.[113] Due to their concurrent development alongside surrounding areas of affluent residential development, Hyde Park and Roanoke Park would have been early beneficiaries of Kansas City's combined sewer and runoff system. "New neighborhoods," recalls Amahia Mallea, an environmental historian specializing in Kansas City's waterways, "tended to install infrastructure all at once and had the best access to urban innards," a benefit that would have applied to both Roanoke and Hyde Park neighborhoods, neither of which adopted significant bodies of water in the manner of nearby Penn Valley Park.[114] As in the case of Hyde Park's Harris Creek, the "underground system disguises the watershed characteristics" within the surrounding landscape, as "extension of sewer systems entailed enclosing streams."[115] Such was also the case for Mill Creek Park, situated southwest of the Hyde Park area and stretching toward Brush Creek; its eponymous stream was rendered invisible upon the site's incorporation into the parks system. In yet another application of stone retaining walls installed to enhance the aesthetics of naturalism in one of Kessler's design specimens, a rock-bound spring was augmented with a scallop shell basin in 1906, before its encirclement with stone retaining walls

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[113] Patrick Alley and Dona Boley. *Kansas City's Historic Hyde Park*. Pg. 37.

[114] Amahia Mallea, *A River in the City of Fountains: An Environmental History of Kansas City and the Missouri River*. University Press of Kansas, 2018. Pg. 74.

[115] Ibid, Pg. 73.

in 1910 (Figures 11, 12).[116] Low-lying, arched bridges of native stone were constructed for a minimal number of water crossings in Penn Valley Park, but seem to have served to conceal the origins of water just as they provide a vantage point for admiring the central reservoir (Figures 13, 14).

Perhaps the most notable example of sustained human intervention in the landscapes of Kansas City's future neighborhood parks was the operation of a number of quarry sites throughout the area, which would have extracted the stone upon which the later parks infrastructure and surrounding neighborhoods were later constructed. While written secondary sources on Kansas City's history make only brief allusions to the existence of quarry sites within the contemporary bounds of Roanoke Park and Hyde Park, reports from contemporaneous geologists of the late 19th century allow for the spatial reconstruction of this once-thriving industry of material extraction. Digital reconstructive maps, including a collation of data points and shapes for quarry sites mentioned by location in an 1891 geological survey by G.E. Ladd and a 1904 report from Director of the Missouri Bureau of Geology, E.R. Buckley, and represented in a map accompanying the latter written text, allow for some assessment as to how these installations might have affected the development of neighborhood parks in the two areas. Hyde Park, as visualized in Figure 3, played host to a series of these sites of extraction, with the 1890s quarries clustered around the middle of the park, straddling the low ravine on either side, while the early 1900s quarry activity extended farther to the south as well. Slight mismatches of some of the 1904 verbal site descriptions with the map points indicated by black rectangles in Buckley's map (Figures 15, 16), point toward the conclusions that some operations might be only intermittently active, and that the quarry sites perhaps varied in size.

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[116] Wolfensbarger, Deon. *Historic Resources Survey of the 1893 Parks & Boulevard System*. [online] Kansas City, Missouri: Prairie Gateway Chapter, American Society of Landscape Architects.

The limited descriptive material surrounding these quarry sites provides insight into the scale of their human operations, as well as their impacts upon the surrounding landscapes. Buckley's attestation of the layers of gray limestone alone as constituting the "uppermost seven feet of this ledge," with stone layers "covered with from three to five feet of clay and loess," speaks to the verticality of these hewn limestone bluffs as rising to at least double the height of an average man.[117] Moreover, Buckley says of the "Lions" quarry located at "45th and Charlotte streets," owned by "Mrs. Squires and operated by James Lyons," that "[the quarry] has been opened along the north side of the hill for 240 feet and has been worked into the hill forty feet," providing a basic dimensional understanding of the alterations that would have shaped the contours of Hyde Park's central ravine of during the park's planning and development stages.[118] The mention of five quarry sites in the central portion of this ravine in 1891, contrasted with 1904 accounts of the Lions quarry to the south and the Walls and Feebeck limestone quarries lining Virginia Avenue to the east raises questions surrounding the duration of a quarry's active operations. For how long did these quarrying operations actively extract limestone from Hyde Park's limestone bluffs, and what took place following their being decommissioned, in advance of their integration into surrounding park lands? Given the scarcity of source material discussing the quarry sites, finding precise answers to these questions might prove unattainable, but elements of these written accounts with few available pictures documenting limestone extraction within these neighborhood parks can help illuminate the web of human, material, and spatial interaction occurring between these quarry sites, neighborhood parks, and residential subdivisions during simultaneous phases of development.

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[117] E. R. Buckley, Director and State Geologist, and H. A. Buehler, *The Quarrying Industry of* Missouri,Missouri Bureau of Geology and Mines, Vol. II, 2nd Series, 1904.

[118] Ibid.

Records of quarry sites in the area of the Roanoke neighborhood, recalled almost exclusively in the 1904 survey, indicate the existence of at least two or three quarry sites along the bluffs on the west side of Roanoke Road, particularly the blocks also framed by Wyoming Street as it veered alongside undeveloped, wooded lands on the west side of the street. The other nearby site of limestone extraction was centered around the corner of 31st and Summit Streets, just west of Penn Valley Park's territorial bounds.[119] Buckley's 1904 records that some similarities between the output of these quarry sites; just as Eagle Contracting Co.'s quarry at 3030 Summit Street "is equipped with a crushing plant and the production is exclusively broken stone," the Samuel and Holmes Construction Company (located at approximately 34th and Wyoming) also quarried and crushed limestone "into sizes suitable for macadam, concrete and ballast."[120] A trio of historic images showing the road resurfacing of the intersection of (roads now known as) West Roanoke Parkway and Karnes Boulevard (Figures 17, 18) and Karnes boulevard around the corner to the northeast (Figure 19), capture a glimpse at what likely would have been crushed limestone from the adjacent quarry sites put into application as base layers of macadam-paved boulevards. Further images and postcards (Figures 20 and 21) depict the paved roads and exposed seams of limestone bedrock that resulted from these efforts.

Finally, following Buckley's 1904 accounts of quarry places in both Roanoke and Hyde Park containing layers of stone suitable for building lends toward the conclusion that quarry sites located in what would become Roanoke and Hyde Park served as material sources for ongoing campaigns of home-building in adjacent subdivisions. Buckley mentions the Lions Limestone Quarry, at 45th and Charlotte Streets as containing a "'building stone' ledge," located just under the bluff's top layer of loess soil, and Roanoke's Turner Bros. Limestone Quarry, found at "35th

[119] Ibid.
[120] Ibid.

Street and Roanoke Boulevard," also obtained its stone from a "building stone" layer, for use "chiefly by the company in contract work."[121] Given that the majority of Roanoke homes, numbering over forty, were built during the decade of 1900-1910, it would seem likely that building-grade stone extracted along the western fringe of Roanoke Park would have served in the construction of the neighborhood's homes.[122] As mentioned in the second chapter, much of the building stone for the nearby Redemptorist Church is said to have originated in one of the Roanoke-area quarries.[123] As with Hyde Park, however, references of material originating from the park may actually refer to adjacent quarries; the 1904 quarry map, as well as several other sources, for example, point to a commercial quarrying operation northwest of Summit and 31st Streets, between Roanoke and Penn Valley Parks, as operating for an extended period.

As subdivisions situated in the immediate vicinity of Roanoke Park and Hyde Park quarry spaces made frequent use of limestone as a building material during the early late 19th and 20th century periods of construction, it can be deduced that at least some of the material would have been sourced from the parks themselves. A survey of housing surrounding Roanoke and Hyde Park, respectively, yields results that lend credence to the theory that home construction in each area involved made use of limestone from immediate surroundings; it is evident, for example, that homes and buildings lining the east side of Hyde Park, where there was a higher concentration of quarry spaces, employed more prominent use of building stone than those on the western fringe of the Park's borders. In the case of Roanoke Park's adjacent neighborhoods, several large dwellings composed nearly entirely of limestone lay just to the north of the park, while the northern half of the Roanoke contains the highest concentration of stone homes among

[121] Ibid.
[122] Roanokekc.org. n.d. *Roanoke Historic District | Roanoke*. [online]
[123] Pat O'Neill, *From the Bottom Up: The Story of the Irish in Kansas City*, Kansas City, Mo. : Seat O' The Pants Pub., 2000.

the 12-square-block survey area of the neighborhood. Given that many of these immediately adjacent private homes were constructed prior to the parcel's dedication as park land, it is highly likely that their native stone facades draw from the most immediate of resource hinterlands.

However poorly recorded these material pathways might have been in reference to limestone extraction and application, it served as only one mode of interchange among the side-by-side existence of conservationist, developmental, and appropriative impulses exerted on the landscape. How Kessler and the Parks Board commissioners grappled with continued operation of these quarries is generally unknown; the 1893 reports examined above contain no mention of their presence in the surrounding area, nor do the landmark reports make sufficient note of the sourcing for stone constructions within park boundaries. The Parks Board notes in its 1907 report the former state of commercial quarrying activity within Roanoke Park while articulating their intention to proceed with the 'naturalization' of the resulting landscape:

> *This property should be held as a bit of wilderness, which is now its charm, and which would be entirely lost if attempts were made to finely finish any part of this valley...In the old quarry west of Roanoke Ave. and north of 38th St., the very fine spring there should be developed; a pool and a modest water garden.*[124]

The Board's stated preference for an aesthetic that avoids the appearance of a 'fine' or 'finished' qualities illuminates their admiration for a rugged aesthetic that mirrors the jagged surfaces of quarry sites that, for whatever reason, halted their processes of excavation around the outset of the 20th century.

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[124] Lee, Janice et al. *A Legacy of Design: An Historical Survey of the Kansas City, Missouri, Parks and Boulevards System, 1893-1940*. Pg. 83.o

Unlike this former commercial operation that was annexed into the park, the land occupied by the Haydite Concrete Company plant through the 1920s continued to extract limestone and lime products from the bluffs adjoining Roanoke Park and the Coleman Highlands neighborhood (Figure 22). Indeed, 1922 aerial photographs indicate that the plant even made use of a ramp-like service road constructed across park property in order to access their operations from Karnes Boulevard (Figure 23). The fact that this uncomfortable side-by-side existence with continued operations of resource extraction is not better recorded—as the result of silence on the part of the Parks Board—represents a sort of rhetorical concealment of continued exploitation of the surrounding landscape through commercial activity.

Boosterism, Building, and the Politics of Beautification

Kansas City's booster class, as well as homeowners among the vanguard of urban expansion southward, had a variety of reasons behind their championing of Kessler's integrated Parks and Boulevards System. Their motivations for support of incorporating planning techniques associated with the City Beautiful 'movement' ranged from ideological and aesthetic—the justifications most often associated with campaign rhetoric of parks supporters—to financial and reputational concerns. Just as, for city luminaries, the prospect of allying with a skilled designer like Kessler afforded the opportunity to court attention for their endeavor from across the nation, homeowners in south Kansas City's residential neighborhoods who involved themselves with advocacy for parks expansion envisioned comfortable landscapes for strolling, driving, and other recreational activities just outside their doorstep. While it is possible both boosters and residents spoke the same language of 'naturalization,' they reached such a favorable perspective on re-making of space for different reasons; the former hoped to further local cultivation with high art and contemporary planning practices, while the latter likely sought the

elimination of 'nuisances' like quarrying operations or low-income residents. Regardless, both groups stood to gain financially, as the homeowners could ascribe higher values to their property, and the boosters often had the good foresight—or weighty influence—to ensure that extension of the parks system did not bypass their own property holdings. In short, successfully negotiating the politics of parks extension, as well as concealing of sites of extraction, remained highly dependent on the intersecting influences of these two empowered groups.

As with all public endeavors surrounding the turn of the 20th century, William Rockhill Nelson took a central role among boosters in promoting the adoption of a robust parks and boulevard system. The *Kansas City Star* was writing editorials urging the adoption of such a system as early as 1881—less than a year after opening its doors—and would continue relentless campaigns in favor of allocating public funds toward land acquisition and improvements throughout the subsequent decades.[125] As Nelson's staff-written biography attests:

> *That was the beginning of a campaign that continued for fifteen years before Kansas City, with soul uplifted, sat in joy upon its first park bench. The people of Kansas City who read The Star—and that included virtually the whole population—had parks and boulevards for dinner every night.*[126]

When the battle for parks and recreation funding reached its most contentious period, as the anti-parks Taxpayer's League had managed to lodge a challenge against construction of North Terrace Park and the Parks Board's property acquisition process in front of the Missouri

[125] Kansas City Star Staff, William Rockhill Nelson: The Story of A Man, A Newspaper, and A City, Cambridge: The Riverside Press, 1915. Pg. 35.

[126] Ibid.

Supreme Court. Advocates of park expansion won the day, and the Star promptly congratulated itself for having been "the chief factor in bringing about the great triumph for progress over which this fortunate community is exulting to-day."[127]

As homes for upper and upper-middle class Kansas Citians proliferated throughout the residential subdivisions around which Roanoke Park and Hyde Park were framed and the neighborhoods increased in owner-occupied populations, a crucial factor entered into play regarding the future of parcels delineated as potential neighborhood park spaces. Private initiative served as a primary impetus for the official designation of these interstitial spaces as existing under the governance of the Board of Parks and Recreation. While public and private speculators had taken initial steps toward the acquisition and recognition of these parcels as park properties, it was the residents of the nearby neighborhoods who secured additions of land and recreational infrastructure, all while promoting the uninhabited, 'natural' qualities of the parks as their core, essential characteristics. These protective measures, while enhancing neighborhood aesthetics, were also motivated out of concerns for maintaining property values amidst fear of encroachment from a range of perceived threats.

While members of the Board of Parks and Recreation and landscape architect George Kessler devised top-down plans for the establishment of previous parks development in the area around Downtown Kansas City, like in the case of Penn Valley Park, their role in securing the entrance of Gillham Park and Roanoke Park to the Parks and Boulevards System remained more consultative than directive. As both neighborhoods were located well beyond city limits at the time of the landmark 1893 report, commissioners did not focus their efforts on the acquisition of land for suburban parks, but had instead directed their focus toward planning a grand destination

[127] Wilson, Pg. 83.

park at the foot of Downtown. In an extensive footnote inside his 1916 nationwide study *City Planning*, journalist and urban theorist Charles Mulford Robinson noted the admiration that suburban residents held for the expansive resource allocations dedicated toward securing Penn Valley Park as a recreation destination and showpiece for the Parks and Boulevards System. He went on to describe how a "neighbourhood movement was voluntarily started in the south-western part of the city to safeguard a similarly rugged piece of land, the result of which was that "most of the ground was given outright."[128] The establishment of Roanoke Park, Robinson argued, allowed for a "broken tract in the midst of one of the most prominent residence sections of the city" to be transformed into a space that has not merely enhanced the attractiveness of the residence section around it, but that promises to give permanence to it."[129]

Ultimately, advocacy for the establishment of neighborhood parks like Roanoke Park and Gillham Park as publicly protected and reinforced entities was a process driven by residents of the newly-built neighborhoods surrounding these spaces. Roanoke Park, for example, came into the possession of the Parks and Boulevards System beginning in a "series of seven gifts totaling 11 tracts of land."[130] Initiated by the two largest land allocations from the South Highland Land and Improvement Company in 1901 and 1905, respectively, individual landowners and neighbors would continue to augment to park's territorial bounds with subsequent donations continuing up until 1923.[131] While Gillham Park entered the Parks and Boulevards System by way of the more conventional, top-down acquisition method of condemnation, spanning from 1901 to 1906, its story features many comparable examples of citizen initiative toward the

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[128] Charles Mulford. Robinson. *City Planning: With Special Reference to the Planning of Streets and Lots*. New York: Putnam, 1916. Pg. 186.

[129] Ibid.

[130] Janice Lee, et al. *A Legacy of Design: An Historical Survey of the Kansas City, Missouri, Parks and Boulevards System, 1893-1940*. Pgs. 83-84.

[131] Ibid.

designation of the tracts as park lands.[132] The name "Hyde Park" already denoted the existence of a privately-owned recreational reserve, used since the 1890s as a sort of "informal country club" by affluent residents, and adjoining land along Gillham Road had been utilized by neighborhood men as a golf course.[133] Hyde Park and Roanoke-area residents were acutely aware of the potential for neighborhood parks to increase their home values, and their collective action to secure the tracts of nearby land as recreation-oriented or publicly protected stemmed, in part, from this personal benefit. Kessler and the commissioners, for their part, frankly recognized the enhancement of property values as a central objective of their efforts, particularly that park-adjacent land might be made "especially sought after for residence purposes."[134]

However, situating excessive focus on these actors, as Wilson exhibits when he claims that the "narrow, two-block-long patch of ground, with its steep slopes, limestone outcroppings, and thick tangle of undergrowth" of the Hyde Park ravine "frightened the real estate investors," only to be saved by Kessler's unique abilities to "[see] natural beauty in the hollow's bleak face."[135] Wilson's romantic recalling of these events, often centering on an almost knighted Kessler accomplishing the heroic reconciliation of the 'urban' and the 'natural' on behalf of all Kansas Citians, does not fully capture the complexity of events surrounding the genesis of these neighborhood parks and their adjoining neighborhoods. In fact, some pieces of evidence, like elements of "both praise and criticism from the American Institute of Architects when, after praising Kansas City's prolific designation of public park spaces, noted that its lack of

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[132] Patrick Alley and Dona Boley. *Kansas City's Historic Hyde Park*. Pg 36.

[133] Janice Lee, et al. *A Legacy of Design: An Historical Survey of the Kansas City, Missouri, Parks and Boulevards System, 1893-1940*. Pg. 37.

[134] Kansas City (Mo.) Board of park commissioners. *Report of the Board of park and boulevard commissioners of Kansas City, Mo. embracing recommendations for the establishment of a park and boulevard system for Kansas City: Resolution of October 12, 1893.* Pg. 32.

[135] William H. Wilson, *The City Beautiful Movement In Kansas City*. Pg. 43.

comprehensive planning practices hampered the city in identifying more practical locations for trafficways."[136] The critique of somewhat haphazard procedures in the designation of boulevard and parks infrastructure rings true when one considers the limited connectivity of Roanoke Park to neighborhoods beyond those immediately bordering it, for example, or its limited capacity to stimulate subsequent creation of new luxury housing, as the commissioners had earlier identified as an objective.

Indeed, the siting Penn Valley Park and Roanoke Park as centered around gully spaces—as well as Roanoke Park's relationship with surrounding homes, most of which were oriented away from the park space rather than toward it, suggest that local residents' primary motivator in supporting the park's delineation was ultimately less for the benefits associated with the conservation of 'natural' space and more due to the fear of alternative uses. Opposition of the area's more affluent residents to informal communities along the ridgelines of Penn Valley's ravine and West Terrace Park's rocky slopes helped to sustain the most extensive citizen involvement in the parks planning process of the 1890s. An improvement association formed out of a group "of property owners living around the Penn Street ravine" who sought redevelopment of the "rugged, blighted area" and proved to be a political asset to parks advocates upon the occasion of signing ceremonies certifying the beginning of the condemnation process.[137]

Wilson notes that the deterrence of 'squatters' or the establishment of shanty villages served as an important factor compelling the embrace among Roanoke and Hyde Park-area homeowners of the designation of adjacent 'surplus' lands as neighborhood park infrastructure. "The owners of Hyde Park did not hire Kessler because they loved pretty parks," the author argues, "so much as they feared that cheap shacks would crawl over the hollow and pull down

[136] Ibid. Pg. 128.
[137] William H. Wilson, *The City Beautiful Movement In Kansas City*. Pg. 66.

the values of their properties on the higher ground."[138] Mallea implicitly recalls the fate of Penn Valley Park's Vinegar Gulch when she notes that "[p]arks were often located on land less desirable for housing development; therefore, people in dire situations were often the ones evicted when parks were built."[139] She goes on to note that, in highlighting the 'progress' instigated by the establishment of an urban park, Kansas City's booster class often utilized "before-and-after photographs," illustrating the contrast between the unsightly presence of "weeds, privies, and maybe a shack" as compared to the "genteel park landscape" that facilitated both ambulatory and automobile-based recreation.[140] These efforts combined to render residents of these informal communities as invisible within the process of parks planning and formulation.

A small Irish and mixed-race community arrayed along the ravine within the planned extent of the park's boundaries, known alternatingly as "Vinegar Gulch" or "Vinegar Hill," prompted the commissioners to recommend removal of these "cheap and unsightly structures."[141] Notably, the neighborhood's removal was justified not only for the clearing of park lands, but for the stimulation of residential construction outside of the parks boundaries, now with an 'enhanced' view.[142] The cost for the condemnation of these properties, rendered nearly $871,000 by a judge's 1897 verdict, helped to spawn opposition to the Commission's expansion plans, but it also illustrated the imperative attached by promoters of the prospective plans for Penn Valley Park that they eliminate any association of the area with 'blighted' structures like the ramshackle homes of Vinegar Gulch's residents (Figure 24).[143] A 1905 Parks Department flyer highlighting

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[138] Ibid. Pg. 43.
[139] Mallea, Amahia. *A River in the City of Fountains: An Environmental History of Kansas City and the Missouri River*. Pg. 151.
[140] Ibid. Pg. 151.
[141] Ibid. Pg. 29.
[142] Ibid. Pg. 29.
[143] Wolfensbarger, Deon. *Historic Resources Survey of the 1893 Parks & Boulevard System*. [online] Kansas City, Missouri: Prairie Gateway Chapter, American Society of Landscape Architects. n.d. Pg. 81.

the efforts expended to remove the neighborhood implied inherent danger springing from the area's topography, as the navigability of boardwalks that "dipped and rose following the contour where possible" were, in some places, "hung on wobbly stilts."[144] "A goat," the pamphlet concludes, would have had a hard time trying to pick his way along the side of the old Penn Street ravine." Through its invocation of this humorous image, the Parks Department not only dismissed the suitability of the ravine as constituting a livable space, but the necessity of substantial adjustments to landscape features in order to cultivate the desired 'naturalistic' appearance.

The Commission's willingness to commit eye-opening outlays of tax-payer money to the displacement of lower-class residents underlined their commitment to the delineation of these supposed 'natural' spaces as unpeopled; this 'wide-open' aesthetic and pattern of use, indeed, became character-defining aspects of the city's parks landscapes. Speaking of the wait time associated with the legal case brought on by the Taxpayer's League, Wilson sheds light on the distress faced by the soon-to-be uprooted residents of the shanty community:

> *No one was more discouraged than the residents of the Penn Street ravine. While the titans of community battled over the fate of their land, their condemned houses slowly fell into disrepair. Porches, fences, and neighborhood morale sagged because the people did not want to repair houses that might soon be razed, but because they could find no one who would buy them, they had to go on living in them. They waited, and watched the blight of decaying houses spread across the ravine.*[145]

[144] Pat O'Neill, *From the Bottom Up: The Story of the Irish in Kansas City.* Pg. 114.
[145] William H. Wilson, *The City Beautiful Movement In Kansas City*. Pg. 82.

The community totaled some 300 houses, all without sewer connection or any other city services; all residents congregated toward Doc Winford's natural spring around modern-day 30th and Broadway to secure water supplies, and cattle and goats roamed freely about the ravine.[146] A *Star* article described the full diversity of characters attracted by the spring as including "men, women and children, white and black, bookkeepers, lawyers, blacksmiths, grocers, packinghouse workmen, teachers and a few politicians."[147] In an instance of enterprising behavior from certain the Vinegar Gulch residents, a number of houses are said to have been bought at auction for a discount by their former owners; the dwellings were then moved several blocks to the south and erected upon new foundations just to the west of Summit and 33rd Streets.

While finding records to document the living habits and accomplishments of displaced residents from marginal communities like Vinegar Gulch can be particularly difficult, even minor details provide a valuable window into the agency of Vinegar Gulch residents like Patrick Sullivan to affect the landscapes that surrounded them. Sullivan, a resident of Vinegar Gulch in at least the period surrounding an 1890 photograph of his house (Figure 24), was a father children and a quarry worker for much of his career. The native-born Irishman continued to receive letters from his mother in Lispole, Ireland requesting updates on his career status—whether or not he remained employed in local quarries—and inquiring as to whether his children (his son being just 13, though two daughters were several years older) were able to find work.[148]

By 1920, the now-widowed Sullivan is recorded as possessing outright ownership of a newly-built home at 3314 Jefferson Street—at the center of the aforementioned 'Kerry Patch' to which some homes had been relocated.[149] He listed himself as employed in the capacity of

[146] Pat O'Neill, *From the Bottom Up: The Story of the Irish in Kansas City*. Pgs. 113-114.
[147] Ibid. Pg. 113.
[148] Ibid. Pg. 117.
[149] Patrick Sullivan, 1920 Census record, 1920. United States Federal Census (online database). Accessed through

"Quarry Man" in a "Stone Quarry." Now, however, at the ripe age of 60, Sullivan saw fit to list himself as an "Employer"—indicative of a career position that was at least self-directed, if not overseeing others.[150] Sullivan would later mark himself as a "Stone mason" and "Contractor" in 1930, though by 1940 (at the age of 78) he had secured a salaried government position.[151] O'Neil claims, in an ironic turn of events, that Sullivan was at one point employed by the Parks Department itself; whether they might have employed the 78-year-old grandfather, however, is unclear. Patrick Sullivan is clearly emblematic, however, of quarrying's status as a cultural phenomenon rather than a mere occupation. Indeed, according to family oral histories, Patrick and his son Michael are said to have jointly "carved stone blocks from a quarry at 36th and Roanoke," [152] perhaps at one of the working quarries that became subsumed within Roanoke Park's boundaries. One image shows Patrick hauling a wagon of stone along what appears to be a macadam-paved park road, evidence that his work continued as park and boulevard infrastructure developed around him (Figure 25). Identifying an image of the Sullivans' house is no easy task, as Sanborn maps show his address of 3314 Jefferson St. as nonexistent. A narrow, two-story structure on the parcel labeled 3312 Jefferson on the 1909 Sanborn map (Figure 26), however, seems to present a likely candidate. The humble framed structure is shown in a 1940 tax assessment photograph as fronted with a porch with two limestone pillars and a stone foundation (Figure 27).

Ancestry.com

[150] Ibid.

[151] Patrick Sullivan, 1930 Census record, 1930. United States Federal Census (online database). Accessed through Ancestry.com

Patrick Sullivan, 1940 Census record, 1940. United States Federal Census (online database). Accessed through Ancestry.com

[152] Pat O'Neill, *From the Bottom Up: The Story of the Irish in Kansas City*. Pg. 117.

Chapter 4 | Aftermaths: Negotiating with Legacies of Extraction

This fourth and final chapter follows the aftermath of resource extraction in the landscape of Kansas City, comprehending the ways in which excavation and material relocation affected the natural environment, and, in turn, how its decay takes place within the existing built environment. As has been enumerated in earlier sections, the relationships between interventions in the urban landscape—both subterranean and above-ground—can rarely be measured through a direct cause-and-effect pattern. Rather, the impact of civic projects of material extraction are complex, long-lasting, and reciprocal, often precipitating future endeavors of civic 'improvement.' While these large-scale phenomena of excavation may seem disparate in nature, they are united by their material connections to the region's indispensable resource of limestone, and they share common sources as the products of booster agitation and labor of the common worker. As Kansas City's development progressed further into the mid-to-late 20th and 21st centuries, losing the rapid population growth that had once distinguished the community, its citizens—booster and worker alike—have grappled with the legacies of their bluff-clearing, limestone-excavating, forebears.

Warning signs of these shifting dynamics of growth appeared as early as the 1920s and 1930s, and the built landscape of the period manifests the effects of population movement away from the urban core and spreading outward into the sprawling suburbs. The 1930s, in particular, witnessed a centralization of power and influx of government resources that powered yet another cycle of grandiose projects of civic improvement. Though the most visible achievements of this era took the form of grand edifices faced with imported Indiana limestone, concrete had become the foremost ingredient in public building schemes across the metropolitan region. Just as the development of Kansas City's resource hinterlands proceeded from localized exchanges to

regional networks, and as its conventions of building in stone transitioned from construction of neighborhood landmarks to grand edifices, its quarrying activities grew in scale, if not in number, during the latter portion of the 20th century. These subterranean limestone quarry sites, which hollowed out much of the strongest stone layers below a collection of area neighborhoods, have also given birth to a network of office, industrial, and storage uses for the benefit of urban dwellers above. These spaces of excavation, devoid of their original means of commodification, have experienced adaption in order to continue serving as economic drivers. A similar theme applied to ensuring the viability of above-ground architecture. As the century progressed, preservation grew to assume the role of a new civic imperative.

Patterns of use have evolved greatly with reference to Kansas City's parks and boulevards infrastructure, in part due to other civic projects attempted during the most recent half-century of the city's development. Decades of depopulation and disinvestment caused many of the original Kessler-designed parks and their associated structures to fall into decay or disrepair, even if some neighborhood parks found success in attracting limited funds for improvements. In addition to changes on a level of individual park sites, like installation of recreational equipment, sport courts, and community centers, the Kansas City Parks an Boulevards system is actively undergoing transition toward ecological sensitivity and water retention as its key strategies for redevelopment. These adjustments—involving substantial excavation efforts—take place, just as before, as a result of sustained efforts at a city-wide scale. This new generation of civic projects, and the highly engineered interventions that accompany them, hold the promise of naturalization of common threats through processes of excavation and, of course, the deployment of limestone.

Not unlike other American cities that experienced sluggish growth and disinvestment following the urban flight of the mid-20th century, Kansas City must always consider whether the means of tackling problems employed in its distant past remain applicable in the present day. In the contemporary conditions of slower growing, spatially dispersed, and fragmented communities that compose the city's urban fabric, do the great booster projects of land-moving and extraction still hold the key to facilitating social and economic progress? In the face of deterioration of existing infrastructure, must the civic imperative instead lay with the preservation and improvement of infrastructure from the city-building of previous generations? Is it possible to pursue both objectives? Addressing such requestions requires revisiting the full breadth of the city's historical investments pursued by means of drastic interventions in the local landscape.

Subsidizing Growth

Kansas City had embraced the identity of a young upstart during its initial cycles of explosive growth and reflexive re-shaping of urban landscapes in the late 19th and early 20th centuries. With the arrival of the Interwar period, however, came an increasingly self-confident and outward-looking posture. The mature city enjoyed a heightened influence over regional and national affairs that transcended any single commercial sector, extending into the realm of politics and public affairs. These intervening years saw a bifurcation Kansas City's energies, as business-owners and Republicans applied themselves to the development of a network of suburban communities and retail developments, while the politically dominant Democratic machine exerted control over the city center and pursued its own agenda. Like most machine operations, this political program sought to balance constituent service and institutional self-

preservation, and its civic projects were designed to maximize patronage-based employment and financial self-enrichment.

Each side of this political divide was encapsulated in the personalities of their respective leaders, both of whom capitalized on Kansas City's emerging power on a national scale. Jessie Clyde Nichols, a protégé of William Rockhill Nelson, and his company founded new subdivisions on the city's southern and southwestern peripheries. While his large-scale, cohesively designed, and racially exclusive communities, like the County Club District became exemplars for aspiring developers across the county, Nichols played a key role in coordinating real estate and planning policy as a founder of the Urban Land Institute and leader in the National Association of Real Estate Boards. Meanwhile, "Boss" Tom Pendergast consolidated power over urban politics as a result of doling out public service jobs to unemployed urban-dwellers. He simultaneously amassed a personal business empire of saloons and holdings in Ready-Mixed Concrete Company, in addition to income streams from business operations paying him tribute, "often as much as 5 or 10 percent of gross revenue," in order to do business without harassment.[153] From his perch atop the Jackson Party Democratic Club—the formal political incorporation of the Pendergast machine—"Boss" Tom exerted on statewide appointments and held the single most meaningful endorsement in statewide Democratic primaries. The ascendancy of Pendergast loyalists to positions with far-reaching authority—codified by Harry Truman's 1934 election to the US Senate and Roosevelt's appointment of Matthew S. Murray to oversee the state's Works Progress Administration—precipitated substantial impacts for the course of infrastructural development in Kansas City.

[153] Jason Roe, "Thomas Joseph Pendergast," pendergastkc.org, Kansas City Public Library.

The built landscape of Downtown Kansas City was profoundly shaped by the dominance of machine politics over the public discourse. May of 1931 brought the passage of a $50 million joint city-county project, dubbed the "Ten-Year-Plan," which promised new facilities for the Jackson County Courthouse, Municipal Auditorium, City Hall, and a Police Headquarters.[154] All but the auditorium inhabited a newly established civic center built on an axial plan to the east of Downtown's business center. Each monumental edifice was fitted with an exterior facing of Indiana limestone, lightly ornamented with the addition of carved friezes and geometric patterns. The Jackson County Courthouse alone consumed 90,000 cubic feet of this imported material, though the bulk of its construction, as with its peers, was accomplished with reinforced concrete.[155] Concrete was also a primary material component of many broader improvements—"streets, sewers, water works, parks facilities, signs, and sidewalks" —included as part of the Ten-Year-Plan.

These projects provided a ready source of public works employment opportunities that could be distributed by machine-backed administrators, softening the impact of worsening economic conditions of the Great Depression on the city's working populations. Ehrlich is careful to credit the perceived need for economic stimulus, not just the machine's influence, for the 1931 passage of the Ten-Year-Plan, only three years removed from its failure in a similar public vote.[156] The construction boom undoubtedly benefitted "Boss" Pendergast; as Vice President of Ready-Mixed Concrete Company, his concrete business and other subsidiaries were well-positioned to become beneficiaries from many of these contracts (Figure 1). Pressure to award road paving contracts to companies connected to Pendergast was the great dilemma faced

[154] Ibid.
[155] Susan Jezak Ford, "The Jackson County Courthouse," pendergastkc.org.
[156] George Ehrlich, *Kansas City, Missouri : an Architectural History, 1826-1990*. Rev. and enl. ed.. Columbia: University of Missouri Press, 1992. Pg. 99.

by the morally conscious Harry Truman as Jackson County's presiding judge (a quasi-executive position). Eventually accepting some level of graft with the position that road expansion served a public good, Truman continued to ascend the political ladder in part because of his championing of road construction; he courted the political support of those beyond Pendergast's urban foothold with the promise, issued as early as 1927, that he would position every farmer in Jackson County to be "within two miles of a hard-surfaced road."[157] The Ten-Year-Plan's program of road construction and improvement (Figure 2) had the effect not just of increasing ease of transportation across the city, but of expanding the footprint of urban and suburban development.

Despite the exceptional political scenario of the 1920s and 1930s, Kansas City's new generation of boosters maintained some level of continuity with their forebears in promoting outward expansion of the city. The commercial pioneer for Kansas City's most affluent and exclusive suburbs, JC Nichols, paralleled these government-initiated sewer and road projects by implementing his own programs of planning, excavation, and surfacing. Nichols' subdivisions extended south and southwest of Nelson's Hyde Park neighborhood, and his careful attention to aesthetics and longtime partnership with landscape architect Sid Hare ensured that the land he subdivided for housing construction attracted new residents and held its value. By subsidizing establishment of critical infrastructural components for his developments, like the excavation of sewer trenches (Figures 3, 4), Nichols secured the opportunity not only to facilitate interconnection of southern land to the rest of the city, but to exert his control over its resulting landscape. Like Nelson and Kessler before them, Nichols and Hare favored automobile thoroughfares, "curving streets that follow the topography" that evoked a 'natural' aesthetic even

[157] Jon Taylor, "Harry Truman and the Pendergast Machine," University of Central Missouri, pendergastkc.org.

when substantial excavation was required to produce them.[158] In a manner consistent with the Roanoke and Hyde Park experiences, as well as Nelson's subdivision and public amenity construction in the Rockhill area, this low-scale excavation forged a material palette in many of these neighborhoods that, either in low-lying walls or in the facades of the homes themselves, prominently featured rough-hewn limestone (Figure 5).

Nichols and Hare diverged from the previous generation in their development of park spaces, however. In the absence of natural drainage spaces—hollows or ravines—they adopted a system "small, postage-stamp sized parks" or "islands surrounded by roads" ornamented by "statuary fountains" or "objets d'art."[159] These miniature parks had the effect of maximizing available land for residential sales while creating a lasting impression of race and class exclusivity, but they solidified reliance of the fast-expanding southern districts of Kansas City—and evening extending into Kansas—on the combined sewer and runoff system established during previous generations. Some adjustments were made to Brush Creek beginning in the 1930s in response from the increased runoff of the wider and ever-more impermeable streetscapes of the expanding residential subdivisions. Most notably, this included the pavement of much of its surface in an egregious example of a kickback to the Ready-Mixed Concrete Company (Figure 6).[160] This paved surface replaced the shallow, silty course of the creek that had previously predominated, and decades of excavation on the surrounding hills created a level plain for broad boulevards flanking the engineered water course (Figures 7, 8). More generally, these events reaffirmed the recurring pattern of expanding above-ground development

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[158] Sara Stevens, "J. C. Nichols and Neighborhood Infrastructure: The Foundations of American Suburbia." In *Wide Open Town: Kansas City in the Pendergast Era*, edited by Diane Mutti Burke, Jason Roe, and John Herron, 57–75. University Press of Kansas, 2018. Pg. 67.

[159] Ibid. Pg. 63.

[160] Commerce Trust Company, "Memorandum About Ready-Mixed Concrete Co.," State Historical Society of Missouri-Kansas City, undated archival document, pendergastkc.org.

necessitating additional schemes of large-scale excavation. This reciprocal relationship of suburban street pavement and urban subterranean infrastructure, as illuminated below, precipitated not just another boom of the quarrying industry, but a re-thinking of how the entire city handles its waste.

Urban Underbellies

A dilemma sets into motion when considering the procurement process for the raw materials required by systematic endeavors of city-building. Just as the Ten-Year-Plan called for infrastructural development throughout Kansas City, including areas that were already densely settled, suburban developments like the County Club District sprawled across an area largely devoid of the dramatic limestone outcroppings of the city center. Quarries would have been met with the disapproval of the exacting aesthetic standards and strict land use codes of any of Nichols' neighborhoods, and not even one of the largest quarrying operations within the city center could have supplied enough material for the concrete and aggregate of the civic center buildings. These materials, therefore, had to originate somewhere else. Perhaps some of the quarries that had operated long enough to see the depletion of their accessible stone resources; it is also the case that, amid the residential building boom of the 1920s, many quarries might simply have run out of adequate space to continue processes of extraction. For these reasons, quarry operators began mining limestone underground on a large scale in the first half of the 20th century. This select group of large-scale subterranean operations would serve as principle material sources for companies processing cement, concrete, and lime, as well as so-called 'crusher' businesses turning stone into bite-sized gravel bits. Very little information exists detailing how these operations began, but their impacts on the world above become clear in myriad ways, particularly upon their retirement.

In geographical terms, most of these mines were located outside of the city center—at least a dozen either north of the Missouri River, east of the Blue River, or west of the state line. All of them excavated within the Bethany Falls layer of limestone deposits, a 6.1 to 7.7 meter thick layer of the area's hardest stone.[161] Mining techniques varied, and most prior to the 1950s, "portals, pillars, and rooms were completed in an arbitrarily unengineered manner, creating arched ceilings and using guesswork to determine lengths between the broad columns of intact stone.[162] Some, like the mine located just south of 31st Street and north of the Roanoke neighborhood, likely began as natural caves before facing excavation, according to the current owners, as part of a tunneling effort that dates back to the late-19th century.[163] Notably, companies formed under the ownership of Pendergast and Nichols both went on to invest in limestone mines; Centropolis Crusher Company, one of Pendergast's adjacent operations to his concrete business, excavated an extensive underground network near the Blue River and underneath today's I-435.[164]

It took only a short few years, however, before local boosters and investors realized the value of the mined space for purposes of reuse exceeded that of the extracted limestone. As early as 1928, local booster and (largely unsuccessful) advocate for an east-west growth pattern, Willard E. Winner, envisioned an underground street and parking system occupying the land below Downtown Kansas City.[165] The Second World War brought a new level of interest in subterranean spaces, as the ageing JC Nichols sought to incorporate the potential for

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[161] Syed Hasan et al., "Geology of Greater Kansas City, Missouri and Kansas, United States of America," *Bulletin of the Association of Engineering Geologists*, Vol. XXV No. 3, 1988, Pg. 332.

[162] Ibid. Pg. 334.

[163] Rob Roberts, "Dean Realty 'continues on with Dad's wonderful vision,'" *Kansas City Business Journal*, July 9, 2010, Updated March 20, 2013.

[164] John W. Whitfield, *Underground Space Resources in Missouri*. Missouri Department of Natural Resources, Division of Geology and Land Survey, Report of Investigations Number 65, 1981. Pg. 56.

[165] The Center for Land Use Interpretation, "Dean's Downtown Underground," clui.org, undated.

"bombproof" manufacturing facilities as one of the assets Kansas City had to offer in its bid to attract wartime industries to the city.[166] A 1959 feature from the *Star* spoke to the military necessity of adapting these former quarries. "Should nuclear bombs devastate the area," the author suggests, "strategic centers harbored underground could direct retaliatory forces of destruction," while providing "protection against blast and radiation."[167] It was not until 1960, when A.N. Brunson, a manufacturer of precision measurement instruments, relocated his business to a new space near the Centropolis Crusher Company's mine, that a business had actually established itself underground (Figure 9).[168] Brunson, who began his own excavation rather than adapt an existing space, sought to escape the vibrations of city streets that had imperiled his manufacturing processes at his previous location. A company-issued pamphlet from soon after illustrates the floorplan for the 140,000 square foot laboratory and factory (Figure 10), while attempting to dispel any concern over worker morale. It attests that "there has been little employee resistance to working underground," with many of the workers commenting that the conditions were "better than they had experienced elsewhere."[169]

That does not mean that underground work came without some level of concern. Psychological studies from the decades succeeding Brunson's move underground confirm that reactions from workers vary far more than employers would likely admit. Even after installation of ventilation and humidity controls, as well as vehicle, elevator, and emergency access to the exterior surface, certain unchangeable physical characteristics—lack of natural light, lack of exterior views, and alienation from the surface—have been known to cause negative reactions

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[166] Jack Simonds, "Underground Cave Storage is Valuable By-Product of Quarry Operations," *Kansas City Star* (Kansas City, Missouri), September 26, 1959: 22. *NewsBank: America's News – Historical and Current*.
[167] Ibid.
[168] The Center for Land Use Interpretation, "Brunson Instrument Company Headquarters," clui.org, undated.
[169] Missouri Geological Survey, "Brunson Mine," Map Image, undated.

among survey participants.[170] Radon contamination must be continually monitored, and most subterranean establishments have adopted warnings to drivers to avoid idling their vehicles while underground. In their own words, however, investors and businesspeople depending on the success of underground have maintained greater concern over the perceptions of others, namely financiers, regarding the safety and security of former limestone mines. In a 1984 interview, Donald Woodard, Kansas City business executive and former President of the American Underground Space Association highlighted the industry's worries surrounding the "psychological impact" of subterranean conditions on "regulators, city code inspectors, building inspectors, and other outsiders who had absolutely no knowledge of operations in the underground," but are moved by their "unfounded fear" to refuse a loan, vote against acquisition of underground space, or create over-burdensome regulations.[171] Advocates of adaptive reuse for these former mines undoubtedly faced serious difficulties. Positive relationships with local government alone, for example, required overcoming the absence of substantial precedent for commercial, manufacturing, or other industrial use of underground spaces to debut new procedures for how property owners might be allowed to establish firm title of underground space and assigned property tax assessments.

In part to alleviate the business community's hesitancy to embrace Kansas City's underground space as a legitimate real estate asset—but also, of course, out of a desire to attract interested tenants—local industry boosters set out on a decades-long promotional campaign (Figure 11). They advertised the predictable characteristics of former mine spaces: wide-open,

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[170] John C. Carmody and Raymond, L. Sterling, "Design. Strategies to Alleviate Negative Psychological and Psysiological Effects in Underground Space," *Tunneling and Underground Space Technology*, Volume 2, No. 1, 1987, Pg. 59.

[171] Shirley T. De'hult, "The Kansas City Underground: A Future Rooted in the Past," Great Midwest Corporation, *Underground Space*, Volume 8., 1984. Pg. 332.

flexible space that that could be arranged "to fit your needs," energy savings due to the mine's insulated position, and the stability of standard room temperature (though refrigerated units were often incorporated with little need for substantial alterations). In the early period of the underground space industry's establishment, outfitting former quarries with modern conveniences required a high level of ingenuity, perseverance, and marketing expertise from individual mine owners. Lester Dean Sr., the founder of the 31st Street "Downtown Underground," for example, had first explored his abandoned, flooded mine by lowering himself down a rope and into a rowboat.[172] To secure adequate transportation infrastructure alongside another underground industrial development, he hired a lobby firm to petition the Department of Transportation for over a decade. While by no means a leader among the city's booster classes, Dean successfully persuaded more established Kansas City institutions to support him in his subterranean business endeavor. By the time Dean officially opened the complex in 1966, "with a Fred and Wilma Flintstone-themed caveman party," he had already attracted Hallmark—one of Kansas City's largest employers—as a long-term tenant.[173] Today, Downtown Underground's dozens of tenants include proud institutions like the Nelson-Atkins Museum of Art, and Dean Realty's recent merger has brought the site under control of Copaken Brooks, the most elite of Kansas City's commercial real estate firms.[174]

Another limestone mine, having been converted later in the 20th century, came dwarf the operation of the city-center Downtown Underground both in size and in the scale of attention from local and national media. Hunt Midwest's Subtropolis, Kansas City's—and indeed, the world's—largest underground business complex, is centered just north of the Missouri River and

[172] Rob Roberts, "Dean Realty 'continues on with Dad's wonderful vision,'" *Kansas City Business Journal*.
[173] The Center for Land Use Interpretation, "Dean's Downtown Underground," clui.org, undated.
[174] Ellen Cagle, "Copaken Brooks, Dean Realty partner on downtown project," *Kansas City Business Journal*, May 13, 2019.

composed of some 55 million square feet of usable space. The 140 football fields worth of space is occupied by tenants in need of space for storage, industrial, or even packaging operations. In the fall of 2022, the Environmental Protection Agency contracted with Hunt Midwest for 85,000 square feet of space to establish their "National Digitization Center."[175] A 2010 *Atlantic* article on Subtropolis, describes the comparative experience of the over 1000 employees who descend into the complex for most every workday:

> *Employees don't get to see the sky, but what they do see, after driving through a hole in the side of a hill to reach their offices, is an endless expanse of limestone—walls, ceiling, pillars, and floor—all painted white. (Most of the "streets" are named after geologic layers of limestone and shale.) A facilities manager compared working underground to being in a mall, but the cavernous expanse more closely resembles an oversize parking garage, with some 10,000 limestone support pillars laid out in a grid, 40 feet apart. Office humor has it that, instead of getting a corner office by way of promotion, you get a pillar.*[176]

The Atlantic is not alone for taking interest in the sheer otherworldliness of Subtropolis' work environment. The site has been the subject of curious observers from Bloomberg News, the New York Times, the Associated Press, and WBUR. Local news outlets trade off issuing at least annual expressions of awe at the extraordinary cache of active industrial space under Kansas City's streetscape, if not simply a humorous feature of the local landscape.

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[175] Thomas Friestad, "SubTropolis lands $27.6M lease for EPA facility focused on paper record digitization," *Kansas City Business Journal*, October 12, 2022.

[176] Steve Nadis, "SubTropolis, U.S.A.," The Atlantic, May, 2010.

For skeptics of the business-driven conversions of these converted mine spaces, however, safety concerns over converted and abandoned mine spaces are no laughing matter. A 1990 Star article entitled "Abandoned mines: Tragedies waiting to happen" notes several instances of cave-ins and collapses in the preceding decade, placing blame with the lack of regulation over former quarry spaces for producing a modern-day safety hazard.[177] An article from a decade later similarly decries the danger of sinkholes and surface collapses in the case of seismic events, a problem made increasingly fraught for those former quarry spaces that tunneled under existing or future housing developments.[178] The sites truly threatening collapse are not city-center former quarry spaces, however, even if fortification is deemed necessary for conversion of properties like Kansas-side Cambridge Crest (soon-to-be reactivated by the Dean Realty-Copaken Brooks partnership) or the Briarcliff master-planned community just north of the Missouri River, nearing completion after three decades of remediation and construction an inactive limestone mining site.[179] Rather, it is the abandoned quarries spread along interstitial spaces throughout the Metropolitan Area that present the greatest unknown variable and, for the thrill-seekers who dare to enter such spaces, the greatest danger. Many of the earliest quarries, excavated in a manner that did not secure a ceiling within the Bedford Falls limestone, suffer from cave-ins and collapses, and there are several which not even surveyors dared to enter for fear of instability.[180] Compared with those inactive quarries classified as "unstable" or noted for experiencing

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[177] Regina Akers, "Abandoned mines: Tragedies waiting to happen," *Kansas City Star* (Kansas City, Missouri), June 7, 1990: 79. *NewsBank: America's News – Historical and Current*.

[178] Steve Nicely, "Underground mines add to vulnerability," *Kansas City Star,* May 14, 1999. Missouri Valley Special Collections, Kansas City Public Library, Underground Mines Vertical File.

[179] Thomas Friestad, "Copaken Brooks' Cambridge Crest site could support 41-acre mixed-use overlooking Downtown," *Kansas City Business Journal*, February 7, 2023.

[180] John W. Whitfield, *Underground Space Resources in Missouri*, Missouri Department of Natural Resources, Division of Geology and Land Survey, Report of Investigations Number 65, 1981. Pgs. 55-62.

collapses, those commercially operated spaces have very few worries regarding their structural integrity. The greatest risk for former mine spaces like Downtown Underground, says local geologist Syed and others, is the occurrence of so-called "floor heave" (Figure 12) wherein accumulation of directional stress causes shale floors to rise up through the paved asphalt, typically leading to only minor disruptions.[181]

Preserving Landscapes of Limestone

What has become, throughout the century-and-a-half elapsed between the earliest quarrying activities of early urban-dwellers like Fr. Donnelly and the present, of the former sites and structures emblematic of excavation across the Kansas City area? How have the people of Kansas City lived among and alongside these visible reminders of material extraction, and how, if at all, have they conceived of these physical markers as worthy of consideration for deliberate efforts of historic preservation? The answers to these questions are as varied as the sites and structures that represent generations of successive interventions in the local landscape. Whether comprising 'scars,' topographical irregularities, or spatial discontinuities resulting from processes of earth-moving; limestone structures that amount to neighborhood-scale landmarks; or infrastructural, public amenities shaped by the use of quarried materials, these symbols of the culture of excavation live on in many cases. Largely ignored by a historic preservation community that has fixated itself mostly on 'grand' targets and habitable structures of commercial value, cultural landscapes of extraction remain endangered by human and non-human activity alike. Most of all, their utility as markers for a community's historical self-understanding depends on a greater level of interest and care for the stories they communicate.

[181] Syed Hasan et al., "Geology of Greater Kansas City, Missouri and Kansas, United States of America." Pg. 335.

Evidence signaling the presence of Downtown's bluffs remains comprehensible in the present landscape of Downtown Kansas City as a result of several spatial incongruities within its eastern half—the area that, marks the city center's least developed area. Since initiating the construction of the civic center as part of the machine-backed government's Ten-Year-Plan, followed by the imposition of the Downtown Loop—complete encirclement of the district with Interstate highways, the residential neighborhoods that once populated east and northeastern sector have gradually disappeared. In their place are, today, a patchwork of parking lots and grassy parcels awaiting redevelopment. Situated amidst the downward slope of the civic center along 12th Street to Kansas City's earliest neighborhoods along the riverfront, these rectilinear lots maintain flat surfaces from the use of stone retaining walls. These walls, varying in height, are sprinkled throughout the area. Some, like those to the south of Old St. Patrick's Church (Figure 13), were put in place to serve as frontage for structures that no longer exist. Others, like the wall on Superior Street between Admiral Boulevard and 6th Street (Figure 14), are more ambiguous in their age. This wall is among few rapid drop-offs in elevation that recall the like of Cyprien Chouteau's home perched high above an excavated streetscape.

A block to the southwest, however, retains a unique resource for comprehending processes of excavation and street-grading that took place in late-19th-century Kansas City. Fronting along Grand Boulevard, and bound by 8th Street on the south and a neighboring restaurant on the north, an intact formation of Argentine limestone (Figures 15-17) sits roughly intact as compared with its appearance of a century ago. Unlike the stone retaining walls of Downtown Kansas City, this stone ledge represents a literal—not just visual—extension of the spatial discontinuities of Kansas City's initial efforts of bluff-clearing and street grading. Why this formation alone was allowed to retain its natural, sedimentary character—albeit, within the

bounds of the lot—remains unclear. The same question, recently posed to the Kansas City Library and investigated as part of its "What's your KC Q" program, indicates continued interest among Kansas City's population to understand this outlier of an escarpment and what, exactly, its existence communicates about the early expansion of Kansas City. This curiosity it likely heightened by the placement of two popular businesses—Buffalo Mane Barbershop and Anthony's Restaurant & Lounge—located immediately to the north of the escarpment.

Sanborn maps from 1909 (Figure 18) and 1939 (Figure 19), respectively, show the ledge's dimensions changed little within a decades-long period of active construction throughout Downtown; only the northwestern portion of stone was removed for the lot of the adjacent service station and construction of a small White Castle location. Given that neither Sanborn map shows the outlined formation as being topped with structures, and an 1896 Sanborn map (Figure 20) shows only empty lots fronting the east side of Grand Avenue, no evidence exists to indicate the small bluff ever held aloft anything beyond the pile of loess and billboard indicated in the 1926 photo of Grand Avenue (the hotels and apartments on the east side of the block excluded, as they seem to have sat at street-level). In early 2023, nearly the entire block (excluding Anthony's) was listed for sale, trumpeting the land's increased value for its proximity to the likely choice for a future Downtown baseball stadium, and it offered a rendering for a high-rise office building that would involve demolition of the limestone formation (Figure 21). While it may seem unreasonable to suggest the parcels' utility in its current state supersedes the public benefits of any replacement skyscraper, it is imperative that whatever might be built on said parcels avoids eliminating the outcropping's immense potential as a didactic tool. It would be impossible to envision historic preservation advocates in Kansas City, a group that closely adheres to a traditional approach based on structures and style, and mindful of positive impacts

of economic development, support historic register protections for an outcropping of sedimentary stone. The exposed escarpment remains, however, just as man-made as the structures around it, and its loss will correspond with a absence of preserved examples representing the cultural landscapes of excavation in 19th-century Downtown.

Historic preservation groups in Kansas City, namely nonprofit organization Historic KC and the city-chartered Historic Preservation Commission, have focused their advocacy overwhelmingly toward the rehabilitation and protection of so-called 'high-style' structures or buildings associated with architects of note. While securing major victories through the passage of a bi-state sales tax for the renovation of Union Station and a restoration of the Liberty Memorial that coincided with its designation as a national monument, these same advocates exhibited a tendency to ignore many neighborhood landmarks. Preservation advocates lent their voices to these more prominent causes in part because they enjoyed greater levels of engagement among Kansas City's booster class of the late 20th century. Richard P. Coleman, a sociologist and historian of Kansas City's elite, moneyed classes estimates that 57% of committee members, as well as the general chairman for the Union Station overhaul's planning committee hailed from the "Establishment" class—an exclusive cohort possessing a combination of wealth and multi-generational elite lineage.[182]

As observed in the previous chapters of this text, however, it is the neighborhood-level landmarks—less grandiose structures for public gathering and public services, like the Norman School and the Kansas City Workhouse, that most readily demonstrate direct relation to their respective contexts of material sourcing and extraction. After sitting vacant for over a decade following conveyance from Kansas City Public Schools to a private developer, the school's

[182] Coleman, Richard Patrick. *The Kansas City Establishment: Leadership through Two Centuries in a Midwestern Metropolis*. Manhattan, Kansas: KS Publishing, Inc., 2006. Pg. 180.

redevelopment came to fruition thanks to a 10-year, 100 percent property tax abatement from a local development agency.[183] Tenants inside the 61-unit apartment complex can now treasure their across-the-street views of Roanoke Park, a source of building stone that may well have been the source of the school's rusticated stone shell.

Similarly transformational renovations have begun taking place at the former Kansas City Workhouse, known colloquially as the 'Vine Street Castle,' and the two public works buildings across the street Figures. Situated just south of the early 20th-century African American cultural center, the 18th and Vine District, the three structures and their neighborhood experienced decades of disinvestment and depopulation of surrounding neighborhoods amidst the era of urban renewal and interstate highway construction. Facing abandonment since the 1970s, all three structures were reduced to their limestone skeletons as successive bids for rehabilitation proved to be false starts (Figures 22-25), even as the nearby African American-oriented entertainment district enjoyed healthy infusions of government and nonprofit investment.[184] Once a promising prospect for occupying the Workhouse in the 1980s, the Black Archives of Mid-America instead moved into the adjacent Fire Station No. 11—a later addition to the complex, built to serve an African American unit of firefighters—before relocating to the Former Parade Park Maintenance Building. In doing so, the Black Archives of America helped to preserve two nearby limestone structures, material for which was likely quarried out of the same adjacent city-owned lots as that of the Workhouse.[185]

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[183] Rob Roberts, "Developer wins incentives for historic school's residential conversion," *Kansas City Business Journal,* March 23, 2016.

[184] Kevin Collison, "Boutique Hotel Proposed for Historic City Workhouse Castle on Vine," *Flatland* and cityscenekc.com, February 1st, 2022.

[185] Hunter Albright, "Vine Street Workhouse," African American Heritage Trail of Kansas City, Missouri. Kansas City Planning and Development Department, Office of Historic Preservation.

Plans for rehabilitation of all three structures were met with city approval in 2022; occupying the former "Water Department" building now houses corporate offices for the investors, as well as a trio of creative businesses as tenants, while the adjacent "Street Department" building is envisioned as hosting the region's first black-owned brewery, as well as a nonprofit "Urban Eatery" and food education organization.[186] The Workhouse, meanwhile, is expected to serve as the event space for a boutique hotel project—the "Jazzonian" (Figure)—around which nonprofit developers intent to construct a neighborhood of 23 eco-friendly homes.[187] Securing the rehabilitation of these three structures and reintegrating their activity alongside the Fire Station No. 11—now an art gallery space—and within the 18th and Vine neighborhood would undoubtedly amount to a resounding victory for preservation advocates in Kansas City. The inclusion of the Workhouse building and adjacent Fire Station No. 11 on the local historic register should assure that, once the sites return to a fully activated state, no permanent changes can be applied to visible facades without receiving Historic Preservation Commission approval. Without clear development plans, these same protections had proven useless for defending against onslaughts of graffiti tagging, necessitating potentially harmful removal processes on a semi-regular basis. Given the Workhouse's endurance for several decades without a components like a roof or floor as compared with the Norman School, which dealt only with a roof leak, the Workhouse clearly presented the more difficult case study for re-imagining the use pattern for a reactivated space. The extended period of dormancy, however, provided the Workhouse with ample opportunity to prove the durability of its fundamental craftsmanship.

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[186] Matthew Gwin, "Passion Project: 2000 Vine Street's 'Cultural Inheritance,'" *Flatland* and *Startland News*, July 22nd, 2022.

[187] Kevin Collison, "Boutique Hotel Proposed for Historic City Workhouse Castle on Vine."

The dense concentration of quarried stone churches throughout today's Midtown area has also seen misfortune befall some of its representative structures. Material decline and demolition of a select few churches is a process best understood as having taken place over a period of multiple decades. For Annunciation and Holy Name Parishes, decline began first in numbers of congregants, as white Catholic families relocated to the suburbs, with the remaining population of African Americans identifying with Catholicism at much lower rates. Unsustainable congregation size led to a spree of parish consolidations; Annunciation and Holy Name joined St. Vincent Parish to become Church of the Risen Christ, which adopted Annunciation's 31st and Benton site as its home church.[188] The combined parish was later closed, and all three churches sold off by the Diocese. By 2011, private owners of Holy Name Church initiated a process of "hand demolishing" the church, with the idea they could market its Carthage stone blocks to other religious congregations in need of repairs.[189] St. Peter's and Our Lady of Good Counsel are two Midtown Catholic congregations documented as having received some of this stone.

Organized efforts from the preservation community to stem the tide of deteriorating churches dates back to the early 1990s, when the Historic Kansas City Gazette began including articles discussing the need for an additional nonprofit organization devoted solely to the preservation of church structures. Friends of Sacred Spaces, as this organization came to be known, was for a time quite active in raising money through church tours. While the organization continues to maintain a website up until the present, it seems have gone otherwise inactive.[190] As recently as 2019, Historic Kansas City saw fit to include a list of historic churches in its annual "Most Endangered List," recognizing that "[o]ne of the most emotionally charged

[188] Marty Denzer, "St. Peter and Holy Name: Shared Stones, One Future," *Catholic Key*, September 8, 2011.
[189] Ibid.
[190] Friends of Sacred Structures, fosskc.org.

challenges facing preservation is the preservation of churches, synagogues, and other religious structures," and highlighting the "particular abundance" of at-risk structures in the area of Midtown Kansas City.[191] Included by name, alongside two other churches, was the "Hope Center," the name of the nonprofit that came to inhabit the former Annunciation Parish church. "It is hoped," the statement goes on to say, "that this listing will bring new awareness to their challenge ahead towards funding a full reuse and rehabilitation plan."[192] Why the organization chose not to name the direct threat of structural deterioration is unclear, but its inclusion did serve to raise awareness of the plight of former Catholic churches in Midtown. None have yet faced as abrupt or fiery an end as Westminster Congregational Church, however, which burst into flames on a December night in 2011, likely due to the presence of squatters on the property (Figures 26, 27).[193] Known for having been Walt Disney's congregation of choice during his residence in Kansas City, this stone-clad church was soon reduced to a pile of rubble, and the property owner sold stone to any interested bidder by the truckload. Today, the site is an empty lot.

One surprising absence from the preservation-oriented conversations recorded in Historic KC's monthly Gazette publication—during the period it was published—and the *Kansas City Star* is any expression of concern over the material longevity of limestone itself. Why, one might ask, would one raise alarms about the integrity of such a ubiquitous material, given so much of the public and private infrastructure rendered in its medium continue to function just as intended? Limestone might betray far more vulnerabilities than harder stones like granite, say, but does that necessitate worry that all the homes, churches, walls, and even intact outcroppings

[191] Historic KC, "2020-21 Most Endangered Places List," historickansascity.org.
[192] Ibid.
[193] Sarah J. Clark, "Westport Presbyterian Church Goes Up in Flames," *Fox4 News Kansas City*, December 30, 2011.

are at risk of crumbling within a human timescale? While such a doomsday prediction seems highly unlikely to take place during the lives of today's Kansas Citians, there are warning signs of deterioration that ought not to be ignored. Some of the city's oldest limestone foundations and retaining walls—those of St. Patrick's Church (Figure 13)—exemplify crumbling that could spell concern for other limestone edifices if, indeed, they might exhibit similar wear-and-tear upon exceeding 150 years of life. A decade ago, the parish replaced a crumbling retaining wall fronting the lot that had contained the rectory. These individual stone blocks, it should be noted, shared a wavy, sedimentary texture with those of the church's foundation, perhaps because of their mutual origins in Fr. Donnelly's quarry—a source of stone that probably drew from the lower-quality Argentine layer.

In truth, any close scrutiny of conditions among Kansas City's vast quantity of limestone structures inevitably reflects a diversity of building conditions. For example, 310 Delaware, the limestone-fronted storefront mentioned at the beginning of the second chapter survives as the oldest structure of Kansas City's Old Town Historic District with no obvious signs of wear.[194] Meanwhile, a home constructed nearly three decades later in the Roanoke neighborhood—known today the Thomas Hart Benton Home and Studio State Historic Site (Figures 28, 29)—maintains an obvious distinction between different degrees of deterioration among its constituent parts. The home, a Late Victorian, castellated structure, signals no signs of material decay, whereas its carriage house and exterior courtyard wall, respectively, have increasingly exhibited crumbling throughout the half-century period of State Parks management at the site. The obvious hypothesis resulting from these observations is that lesser 'grades' of limestone were utilized for the outbuilding and adjacent walls. As a site of historical interpretation, however, the

[194] Sherry Piland, "Old Town Historic District," National Register of Historic Places nomination form, May 11, 1977, Item Number 7, Page 3.

deterioration—particularly of the exterior stone wall—worries the historic site's staff and elicits concern from visitors. For this reason, the site has applied for funds from Missouri State Parks to conduct a historic buildings survey to identify and prioritize maintenance needs.

Re-Thinking 'Naturalization' In Today's Parks Landscapes

Throughout recent decades, the dominant approach to preservation of resources within the Parks and Boulevards System has increasingly focused around goals of increasing self-sustainability of various parks landscapes, minimizing the extent to which Parks and Recreation Department or contractors are engaged in upkeep of existing parks infrastructure. Though generally durable, the many aesthetic and physical assets to parks landscapes constructed in quarried limestone in the late 19th and early 20th centuries have suffered deterioration in some cases. Where previous studies of the historic integrity of Kansas City park properties have scrutinized the condition of park installations, they have often ignored the extent to which these landscapes continue to reflect influences preceding attempts of 'naturalization'—the ways in which lingering effects of resource extraction remain observable. In recent years, however, influxes of direct investment have returned to the Parks and Recreation System as a result of consistent overburdening of the city's sewer system. These ongoing projects, which rely heavily on processes of excavation, seek to incorporate park spaces into closer integration with public infrastructure as a means of mitigating problems arising from previous endeavors of subterranean and surface-level development.

Change in the appearance of built structures and other quarried stone features is an inevitable consequence of the passage of time, though some prominent examples of parks landscapes' loss of historic integrity arrived as the result of more dramatic interventions—intentional or otherwise. In Roanoke Park, the deterioration of a central portion of a monumental

stone wall lining the intersections of Karnes Boulevard, West Roanoke Parkway, and Wyoming Street seems to correlate directly with the grading of a parking lot above (Figure 30). It remains unclear whether the wall's collapse was the effect of a single event or decades of runoff from the impermeable surface. As documentation does not exist even for the construction of this crenellated wall, however, it is unlikely that a source beyond private photos or personal remembrances can explain the evolution of this potential quarry ledge after the 1920s. In an unfortunate event of the late 20th century, the parks maintenance and stable buildings—by then a storage complex—was destroyed by a fire in 1990. Most of the exterior stone walls survived, however, were stabilized, and today surround an indoor theater complex (Figure 31).[195]

The most dramatic of interventions in park landscapes, consistent with those occurring elsewhere in the city during the mid-to-late 20th century, were construction projects for the highways ringing the Downtown area. The expansion of Interstate 35, for example, did away with Kersey Coates Drive, the street onto which the grand West Terrace staircase let out, and the lower sections of the staircase have been either buried or destroyed. Fascinatingly, highway engineers employed a similar material palette—sheer walls of quarried stone—to line the walls rising several stories above the highway (Figure 32). Whereas the West Terrace staircase played a fundamentally interconnective role, helping to overcome the elevation discontinuities at the intersection of the Downtown bluffs and bottoms, and it integrated stone masonry walls alongside the surfaces of existing rock outcroppings, the highway engineers' wall reinforces these divides. In recent years, volunteer groups have initiated clean-up events for trash removal and clearing lower steps from layers of soil and detritus. The Parks and Recreation Department,

[195] Janice Lee, et al. *A Legacy of Design: An Historical Survey of the Kansas City, Missouri, Parks and Boulevards System, 1893-1940*. Kansas City Center for Design Education and Research, in Cooperation with the Western Historical Manuscript Collection-Kansas City, 1995. Pg. 78.

while cheering on these efforts, expends little energy directing its own resources toward beautification of this unused corner of an unpopular park. For Department staff, the staircase represents just one of many park installations for which inclusion on regular maintenance schedules would prove entirely unsustainable. One additional case of the Interstate System's intrusion into park space can be observed in the East Side's Spring Valley Park and Nelson C. Crews Square, both of which are bounded on the west side by US Highway 71 (which becomes I-49). While the sprawling highway covers some former quarry lands north of 27th Street, the appearance of Spring Valley's gentle, sloping surface remains consistent with the pattern of 'naturalization' meant to obscure earlier ravines or quarry spaces.[196]

Direct visual evidence of former quarrying activity in parks is most easily found in the continued presence of rock outcroppings, but there are other means of comprehending the effects of extraction on these landscapes beyond the mere exposure of stone surfaces. Spring Valley Park, though thoroughly affected by Kessler's attempt to transform the "difficult" site into a "natural" country park," remains dotted with rock outcroppings surrounding former quarry spaces like the sunken baseball field along 27th Street, some of which have been covered with dry-stack or mortared limestone walls.[197] As recently as the writing of Wolfensbarger's report on historical integrity of Kansas City Parks in 1968, Spring Valley's main drive still retained its original limestone curbing.[198] Roanoke Park's most dramatic faces of hewn limestone separates its tennis courts, by way of a sheer wall of stone, from a city street one or two stories above. Its recently installed system of dirt paths—consistent with the Parks Department's desire to establish infrastructure with diminished long-term care needs—allow visitors to mingle with

[196] Ibid. Pg. 94.
[197] Ibid. Pg. 94.
[198] Ibid. Pg. 94.

these limestone escarpments, many of which now provide a home to hardy ferns (Figure 33). An attempt from the Roanoke Park Conservancy a decade ago to highlight the most prominent of outcroppings with up-lighting—an idea perhaps consistent with Kessler's methodology insofar as it was automobile-centric—failed in the face of vandals' dismantling the ground-level spotlights.

A particularly effective means of understanding the park's lasting influences from decades of extraction of its limestone subsurface can be attained not by marveling at visible stone outcroppings, but at the trees above. The results of a 2012 Tree Inventory Project of Roanoke Park (Figure 34) help to visualize the relative frequency and distribution of plant species throughout its bounds. Hackberry trees led the numerical count among species by far, registering 691 trees, which counts for about 33% of all trees (with diameters over 3") recorded in the inventory. Most hackberries were distributed surrounding the peninsula-like formation extending north from Gordon Parks Elementary school, ringed by West Roanoke Ave. and East Roanoke Drive—a space formerly occupied by a quarry.[199] Similar concentrations apply to chinkapin oaks, another tree species known for its hardiness and tolerance for limestone-heavy soils, demonstrating the lasting effects of commercial efforts of extraction on the resulting 'naturalized' landscape.

Treatment of water features in area parks has also been tailored in recent decades toward the promotion of low-maintenance or self-sustaining landscapes. Both North Terrace and West Terrace Parks saw their spring-fed water fountains disabled, with the scallop-shaped basin on Cliff Drive replaced in the late 1980s with the Carl J. Dicapo Memorial Fountain (Figure 35).[200] This fountain, which utilizes quarried stone and the exposed surface of the existing cliff-face as

[199] "Roanoke Park Tree Inventory," Roanoke Park Conservancy. Spreadsheet.
[200] Kansas City Parks and Recreation Department, "Carl J. Dicapo Fountain," kcparks.org.

its backing, maintains remarkable visual continuity with both its predecessor and the landscape of extraction that gave birth to the scenic boulevard. Like nearly every fountain on Kansas City parks properties, however, it is machine-powered, and is not as closely integrated with the same natural spring. The Roanoke Park Conservancy gained approval and funding nearly a decade ago to construct a pond at the foot of the Coleman Highlands spring, rather than continue to let the runoff from the northern hillside run into the street; it has since become a destination for waterfowl and a successful mechanism of preventing runoff (Figure 36). Following the construction of lakes in Penn Valley and Spring Valley Parks in the late 19th and early 20th centuries, respectively, lakes became an infrequent presence in newly-developed parks, as fewer resources were expended in efforts to re-grade and 'naturalize' parcels that entered under the Parks Board's supervision in the growing suburban districts, in part because the topography of these areas was simply flatter than that of Midtown and Downtown.

Contemporary investment in 'natural' spaces, however, focuses almost entirely on management of water runoff into 'green' spaces, however, affecting a paradigm shift on the function of park spaces within the surrounding cityscape. Extending back to the beginning of the present century, local government officials sought means to limit the extraordinary stresses placed on the city's combined sewer-runoff system by flooding events. Mayor Kay Barnes, a prolific booster politician credited with the resurrection of Downtown Kansas City, spearheaded a public relations project, the "10,000 Rain Garden Initiative," with the hope that citizens who had been educated on the civic goods of capturing runoff might re-work their private landscapes to serve as rain gardens.[201] There was also some measure of corporate support for the initiative,

[201] Maxwell Adler, "What happened to Kansas City's plan to build 10,000 rain gardens to prevent flooding?," Kansas City Public Library and *Kansas City Star*, July 16, 2021.

eliciting publicization of new landscape projects at the Hallmark and Black and Veatch headquarters.[202] In quantifiable terms, however, the project was a failure, with only 303 rain gardens registered with the city at the time of Barnes' departure from the Mayor's office, after which the initiative was largely forgotten.

In just a short few years, however, the City of Kansas City reached the first of several settlements with the Environmental Protection Agency promising substantial investments in 'green' urban infrastructure in order to alleviate the all-too-common occurrence of sewage overflows into the Missouri River Watershed as a result of Kansas City's water treatment system's inability to handle capacities of stormwater produced by major weather events. Now on its third amended version, the consent decree negotiated between city government, the Justice Department, and the EPA necessitates the application of $2.5 billion of improvements to sewer and water infrastructure prior to 2035 in order to "eliminate unauthorized overflows of untreated raw sewage and to reduce pollution levels in urban stormwater," as well as the one-time payment of $600,000 in fines for previous violations.[203] As of 2020, the Water Department, which has precipitously raised rates for dues-paying citizens, earning the ire of the local population, claimed that "[m]ore than $750 million has been invested over the last 10 years" in mitigation projects. Branded by the Department as an effort to achieve a "Smart Sewer" system, they explain their principal approach as attempting to "use nature itself to help reduce the amount of stormwater that enters the combined sewer system."[204] "KC Water's approach," it continues, "is

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[202] "Black & Veatch Breaks Ground With First Corporate Rain Garden Of '10,000 Rain Gardens,'" *Water Online*, April 21, 2006;
Nancy Riggs, "Kansas City's 10,000 Rain Gardens," *Turf*, January 1, 2008.

[203] Environmental Protection Agency, "Kansas City, Missouri Clean Water Act Settlement," epa.gov, May 18th, 2010.

[204] Kansas City Water Department, "Smart Sewer: A Decade of Improvement," Newsletter, November-December, 2020.

to repair infrastructure when we can, replace it where we must, and build new infrastructure only when necessary."[205]

One of the Departments recent major projects, essentially a massively scaled-up rain garden, was recently implemented in the Marlborough neighborhood of southeastern Kansas City. The resulting lake—or, to be precise, 'water detention facility'—is meant to form the core of a new park along East 81st Street (Figure 37). This flexible body of water is given space to fill well beyond the size of its standard reservoir, and it is surrounded by a drainage basin meant both to assist in steering runoff, as well as holding standing water in the case of an overflow event. Another project completed in the early 2020s—this time in the West Bottoms, a flat area immediately adjacent to the Missouri River (Figure 38)—proudly utilized "bioretention basins, stormwater tree planters, gravel infiltration, permeable pavers, rainwater harvesting cisterns, and a dry-well infiltration system to collect, filter, absorb, and reuse stormwater runoff."[206] What is perhaps most notable about these projects, at least from a privileged standpoint of retrospection, is that each of these projects adapts age-old approaches of excavation to solve problems implicating 'nature' and inhibiting the city-building process. Indeed, one can draw direct relations between patterns of development of centuries-past, like the rapid, lightly supervised expansion of impermeable road surfaces and interconnection of southern Kansas City into the combined sewer system of the 'old' city spearheaded by JC Nichols and the thrust of the Marlborough neighborhood initiative. This is just one of many connections that can be drawn between this endeavor of the present moment and those schemes of development via excavation championed by prior generations. Kansas City's consent decree with the EPA—albeit, a peculiar

[205] Ibid. Pg. 1.
[206] Ibid. Pg. 2.

replacement for the likes of William Rockhill Nelson and friends—may well serve as an impetus for another prolific phase of re-making of Kansas City's urban landscape.

Conclusion

The Kansas City of today is a dramatically changed landscape from that of a century and a half ago, just as its footprint has grown to encompass surrounding areas once utilized only as hinterlands for agricultural practice, animal husbandry, or resource extraction. The contemporary community, like many Midwestern cities, no longer boasts the prodigious population growth of, say, the 1880s or 1920s, nor does it enjoy the prowess on the national scene that was once accorded to the heartland boomtown. Kansas City's present environs, defined by suburban living, urban disinvestment, and sluggish growth, have different infrastructural needs than those associated with the grand projects of excavation of its past.

Yet, as outlined in the preceding chapters, the patterns of sequential 'problem-solving' projects of excavation have continued into the present day, as have the mutually reinforcing relationship of 'digging' with the spirit of civic boosterism, aesthetic preferences for concealment of former spaces of extraction, and, of course, the deployment of limestone in all manner of built structures. These various schemes of soil, stone, and subterranean space have shaped every facet of the surroundings in which the people of Kansas City live today. Their implementation, in turn, was incumbent on the needs and desires of these very same individuals. When writing on the subject of material life-cycles within the context of human landscapes, one must be careful to avoid imbuing too great a sense of agency into the materials themselves. Limestone, alongside brick, soil, and concrete, are undoubtedly essential components of the city's material palette throughout the last century and a half. Limestone, in particular, stands out for its omnipresence not just in built structures across demarcations of class, neighborhood, and typology, but also within formations in adjacent landscapes—in the 'natural' outcroppings,

functional constructions and ornamental follies of local parks, the walls, pillars, and ceilings of the subterranean networks, or the remnant spatial disjunctures of the city center.

All of these physical reminders are, however, products of manipulated landscapes—the result of hard work from the hands and minds of men and women across time. They serve to demonstrate the limits of geographic determinism insofar as they contribute to the sequential re-making of the urban landscape. They are simultaneously symptomatic and causal with reference to larger processes of city-building. Just as these stone buildings and landscapes of extraction reflect the hard work contributed by countless individuals of the past, they also necessitate new systems of construction, transit, and resource management in the present. While the deployment of the most basic units of this infrastructure—limestone blocks, for example—is subject to change based on the needs of the community, the capacity of material products and sites of extraction to shape the growth of the city around them cements a role as more than basic commodities. These products cannot think for themselves, of course, but it would be difficult to conceive of the appearance of the cityscape without them.

This thesis is far from the first scholarly attempt to understand effects of material extraction, transmission, and deployment on the growth of urban landscapes of the Midwest. It enters a conversation alongside many scholars engaged in or adjacent to the field of environmental history, some of whom have arrived at different conclusions. William Cronon's seminal work of urban environmental history, *Nature's Metropolis: Chicago and the Great West*, a 1991 study of Chicago's industrial and social development as the center of commodity exchange networks, provided an important source of inspiration for the undertaking of this project.[207] Despite the difficult task presented by Cronon's bridging the fields of urban and

[207] William Cronon, *Nature's Metropolis: Chicago and the Great West*. New York: W. W. Norton, 1991.

commercial history, he aims to engage in a larger, historiographic dialogue by rebutting traditional notions of the American 'frontier' development. Keeping in mind this larger goal, Cronon's tendency to obscure the agency of human actors and narrow focus on the commodification of 'natural' resources becomes understandable. Cronon's investigations of various material lifecycles are subordinated to the expression of this larger point—that development of the American West stemmed less from the agency of individuals or the geographic conditions of various Midwestern hinterlands than from market demands emanating from the city of Chicago.

The preceding chapters diverge from the approach of *Nature's Metropolis* in a few meaningful ways. Cronon focuses on the acts of commodification and transmission of resources, drawn from a succession of urban hinterlands and distributed on a continental scale. This thesis' investigative process differed not just by examining a more limited geographic scale, but by focusing on the extreme ends of systems of resource exchange—studying processes of extraction and deployment. While largely unintentional, this contrast produced a narrative focused on changes in the urban landscape occurring as an outcome of these processes, environmental effects which Cronon alludes to in detail only in his chapter on the Wisconsin lumber industry.[208] The embrace of these 'extremes' left this study of Kansas City without adequate consideration of many of those same processes scrutinized by Cronon. Additional chapters on topics like the marketplace for commodities like limestone or the regional industry that contributed to Kansas City's limestone imports would have greatly enhanced the text.

Finally, this thesis sought to illuminate human actors driving and executing these processes in a way that communicated the community members' reciprocal relationships with the

[208] William Cronon, "The Wealth of Nature: Lumber," from *Nature's Metropolis: Chicago and the Great West*.

material landscape surrounding them. This approach mirrored that of other contemporary scholars pursuing environmental investigations of Kansas City's history, like John Herron and Amahia Mallea, in recognizing the importance of individuals in influencing the cityscape that grew around them. Beyond these two more recent historians, much of Kansas City's historiography undoubtedly centers around a more limited cadre of prominent 'boosters' as the primary drivers of endeavors of civic planning and expansion. The centrality of a culture of boosterism is, in turn, highlighted in the preceding chapters—because it looms large in previous published materials and because it remains a key topic of interest to the author. The role of boosters in sustaining systems of resource extraction and deployment, however, can be viewed as overemphasized alongside the omission of so many other human actors—particularly the quarry operators—whose experiences are under-represented in the text.

This thesis came into being as the answer to a question: What is the singular defining feature of Kansas City's architectural history? Was any particular factor present throughout the city's stages of development that can best account for the nature of the city's growth? The answer is not found in the plans of visionary architects—a constituency for whom Kansas City is rarely reviewed, in retrospect, as fertile ground. Nor is it found in the city's abundance of road infrastructure; though today defined by suburban cityscapes and an unusually high ratio of paved roads to residents, this this trend of 'horizontal' development lacks continuity with earlier periods of the city's development. Previous historians of the metropolitan region were right to highlight grand schemes of development, marked by the intercession of economic and population 'booms,' as having shaped the outward growth of the city's footprint. What they neglected to record, however, was the processes that tied all these endeavors of city-building together.

Excavation deserves recognition as the consistent guiding force of Kansas City's development over time. Impacts on the local landscape—dislocating and displacing earlier topographies and communities, utilizing parks infrastructure as means of concealment, and applying quarried materials and subterranean spaces to create a distinctive built environment—underline the centrality of these processes production of today's cityscape. While operations of resource extraction were not without detrimental effects, occasionally producing unforeseen problems of their own, they occurred as a crucial ingredient alongside every era of civic development. Whether necessitated by the construction of new structures or parks landscapes, or called upon as solutions to topographical problems, the act of 'digging' has always played a central role in shaping the city-building process. Perhaps, someday, Kansas Citians might embrace the appellation most apt for describing their surroundings; they should have no doubt that they inhabit the "Excavated City."

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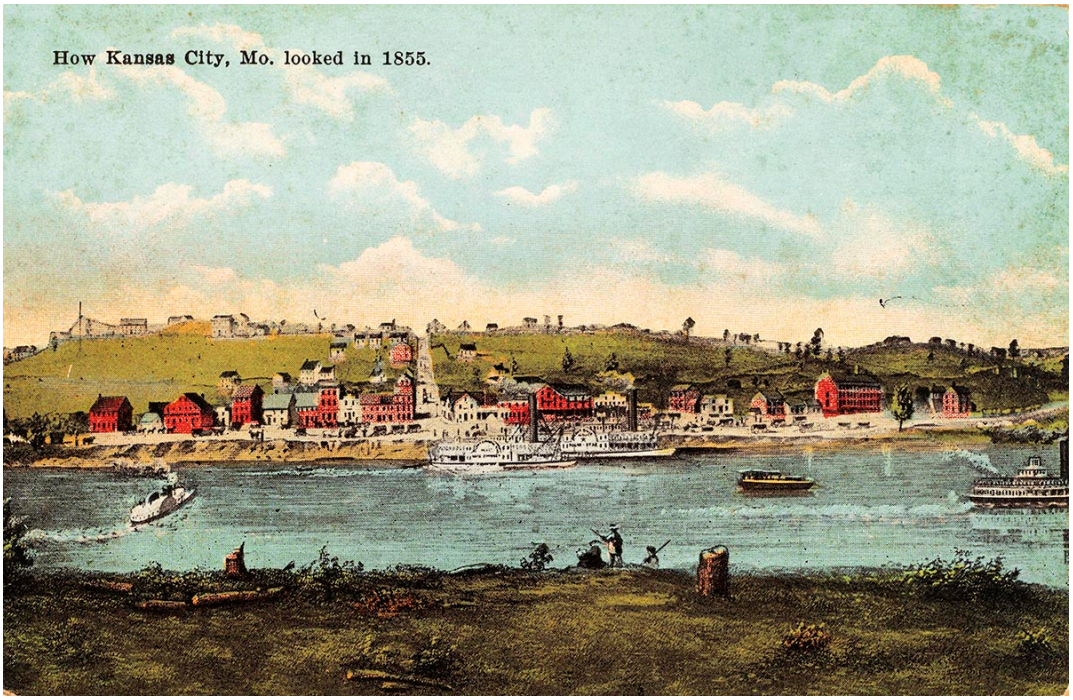

Figure 1. Postcard, “How Kansas City, Mo. Looked in 1855.” Collection of author.

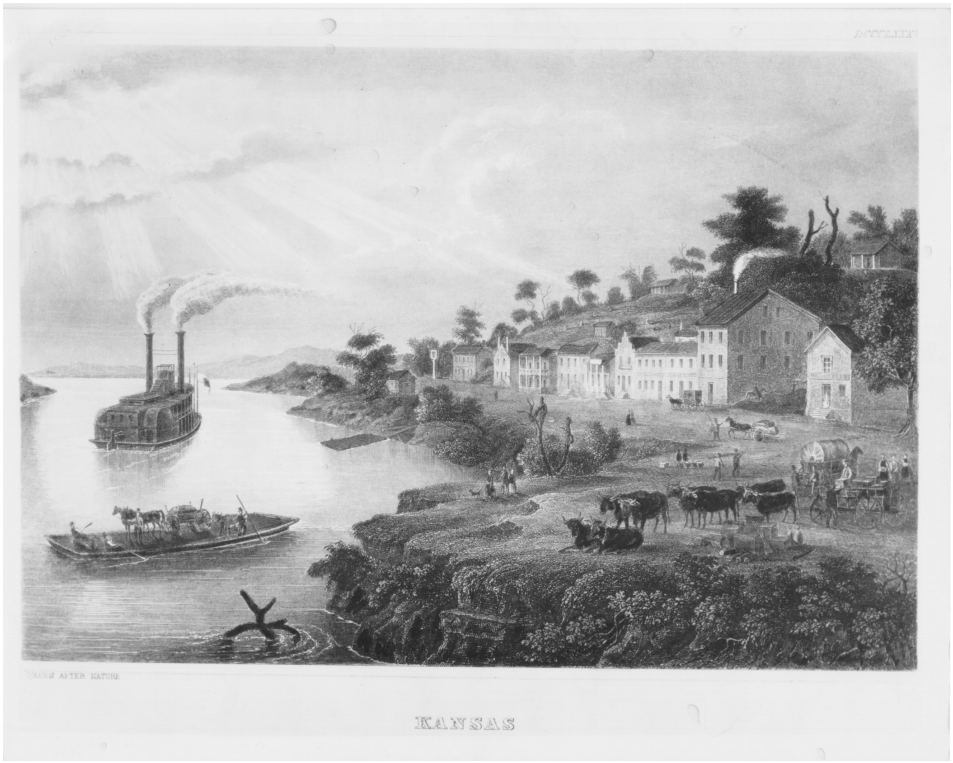

Figure 2. “Early Kansas City Riverfront,” Drawing of a view looking east along south side of Missouri River at Westport Landing. Missouri Valley Special Collection, Kansas City Public Library. 1853.

Figure 3. *Old Kansas City* or *Trading at Westport Landing*, Thomas Hart Benton. Egg tempera, oil. 1956. Courtesy of the Thomas Hart Benton State Historic Site.

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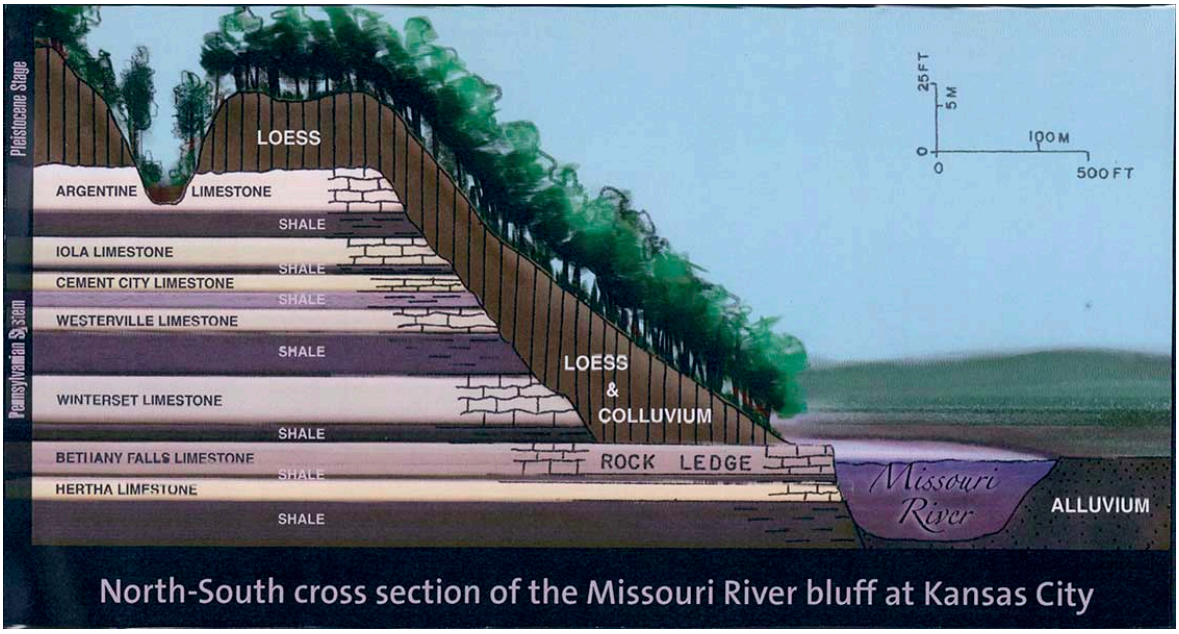


Figure 1. "North-South cross section of the Missouri River bluff at Kansas City." From Richard J. Gentile, "The rock ledge along the Missouri River that gave birth to Kansas City," Lecture, Big Muddy Speaker Series, Kansas City, August 2013.

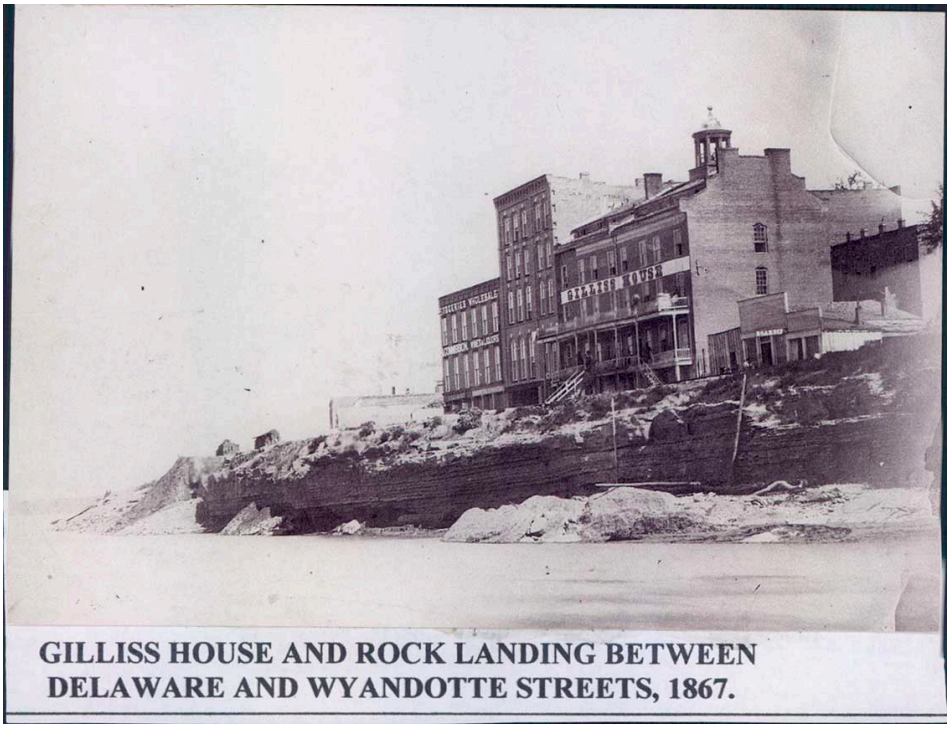


Figure 2. "Gillis House and rock landing between Delaware and Wyandotte Streets, 1867." From Richard J. Gentile, "The rock ledge along the Missouri River that gave birth to Kansas City," Lecture, Big Muddy Speaker Series, Kansas City, August 2013.

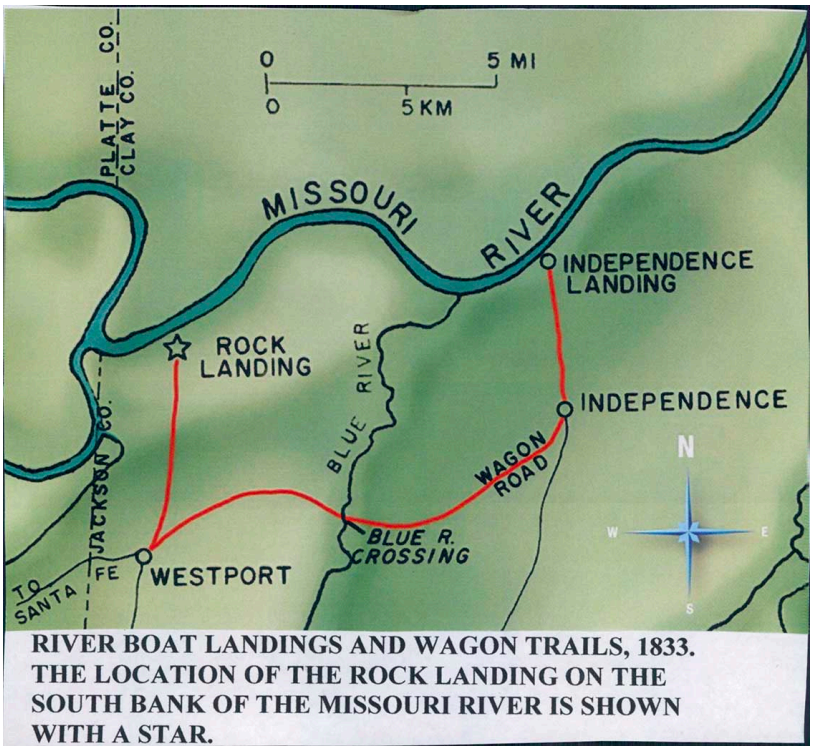


Figure 3. "North-South cross section of the Missouri River bluff at Kansas City." From Richard J. Gentile, "The rock ledge along the Missouri River that gave birth to Kansas City," Lecture, Big Muddy Speaker Series, Kansas City, August 2013.

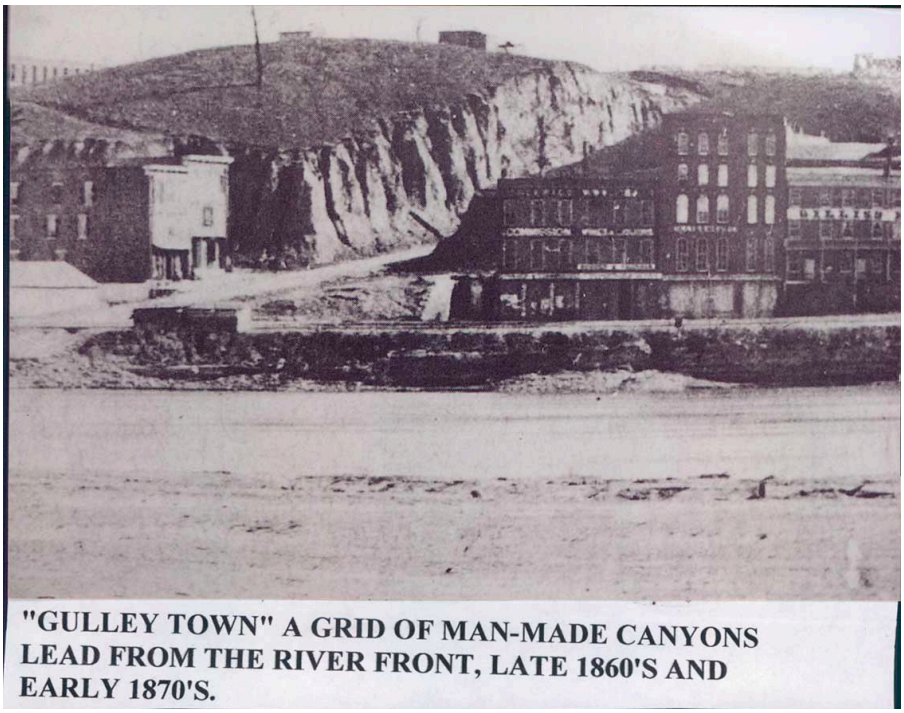


Figure 4. "Gulley Town" a grid of man-made canyons lead from the river front, late 1860's and early 1870's." From Richard J. Gentile, "The rock ledge along the Missouri River that gave birth to Kansas City," Lecture, Big Muddy Speaker Series, Kansas City, August 2013.

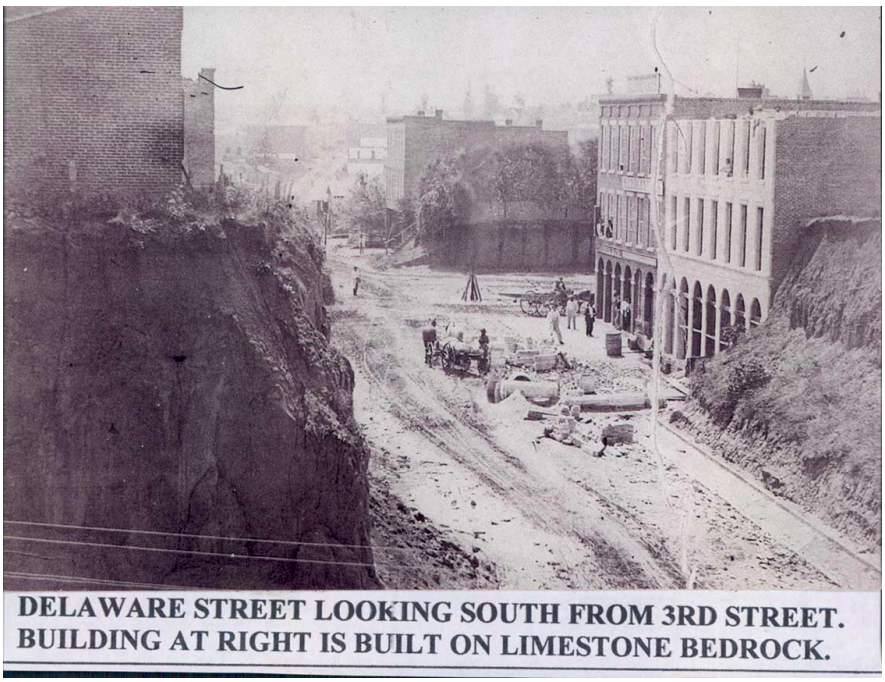


Figure 5."Delaware Street looking south from 3rd Street. Building at right is built on limestone bedrock." From Richard J. Gentile, "The rock ledge along the Missouri River that gave birth to Kansas City," Lecture, Big Muddy Speaker Series, Kansas City, August 2013.

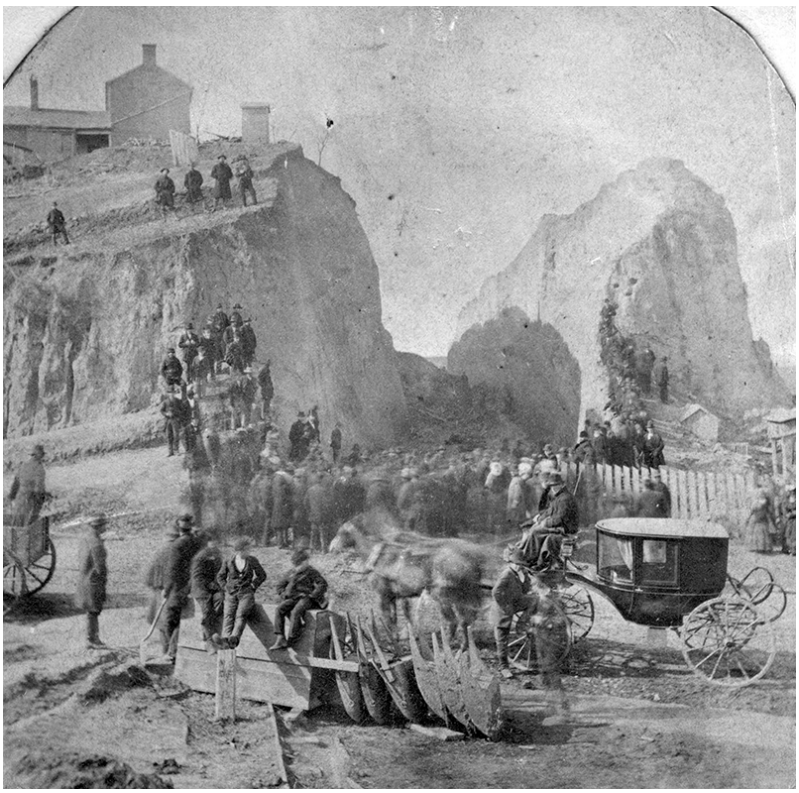


Figure 6. "Early view looking west at 4th and Grand; shows workmen grading the bluffs," 1886. Courtesy of Missouri Valley Special Collection, Kansas City Public Library.

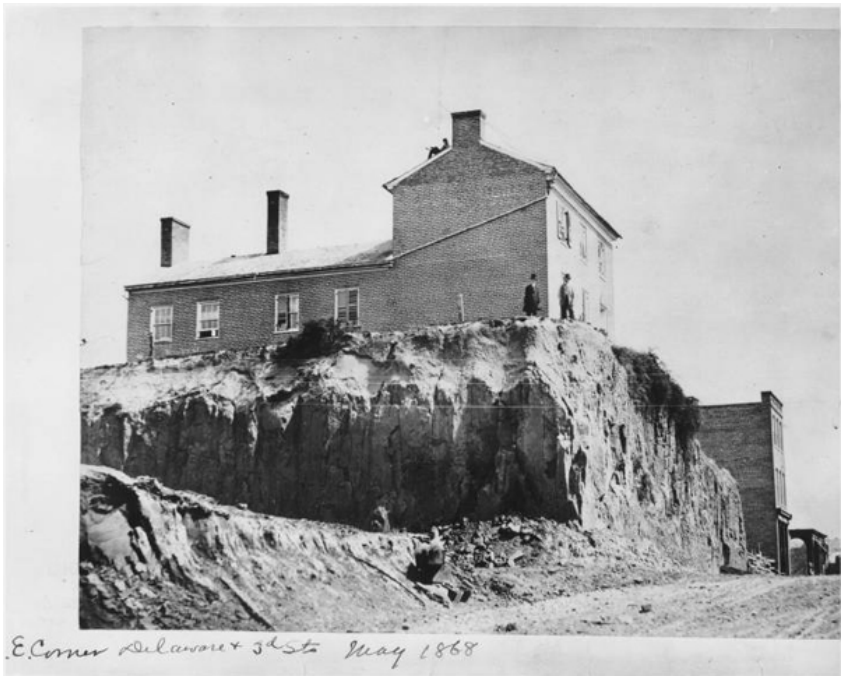


Figure 7. "Early view showing Delaware and 3rd Streets with a house perched on top," 1868. Courtesy of Missouri Valley Special Collection, Kansas City Public Library.

Figure 8. "Cyprien Chouteau House 412 Charlotte Street. Built about 1845; demolished 1946." From Dory Deangelo, Jane F. Flynn, Rosanne Wickham, ed. *Kansas City style : a social and cultural history of Kansas City as seen through its lost architecture*. Kansas City: Fifield Pub. Co., 1992.

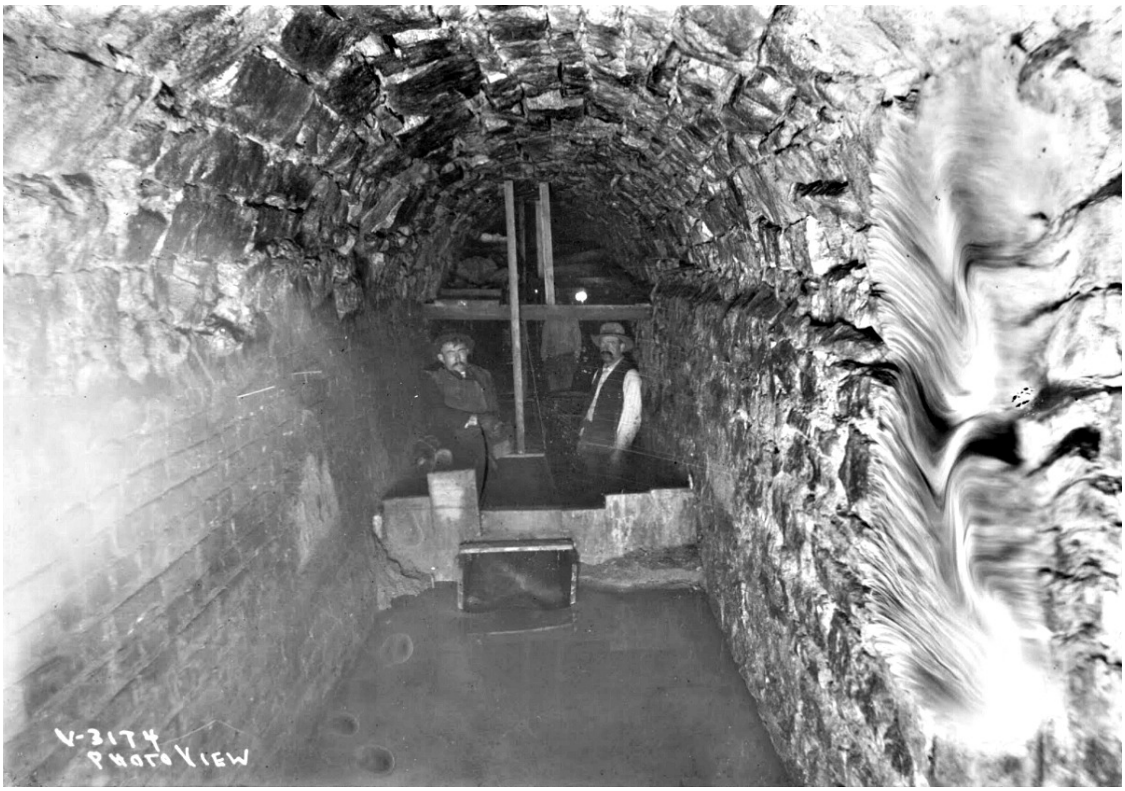


Figure 9. Underground construction of sewer at OK Creek and Main Street around 1910. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 10. "Bridge over Brush Creek," Postcard of a stone bridge over Brush Creek near Rockhill Road, Circa 1912. Mrs. Sam Ray Postcard Collection, Kansas City Public Library.

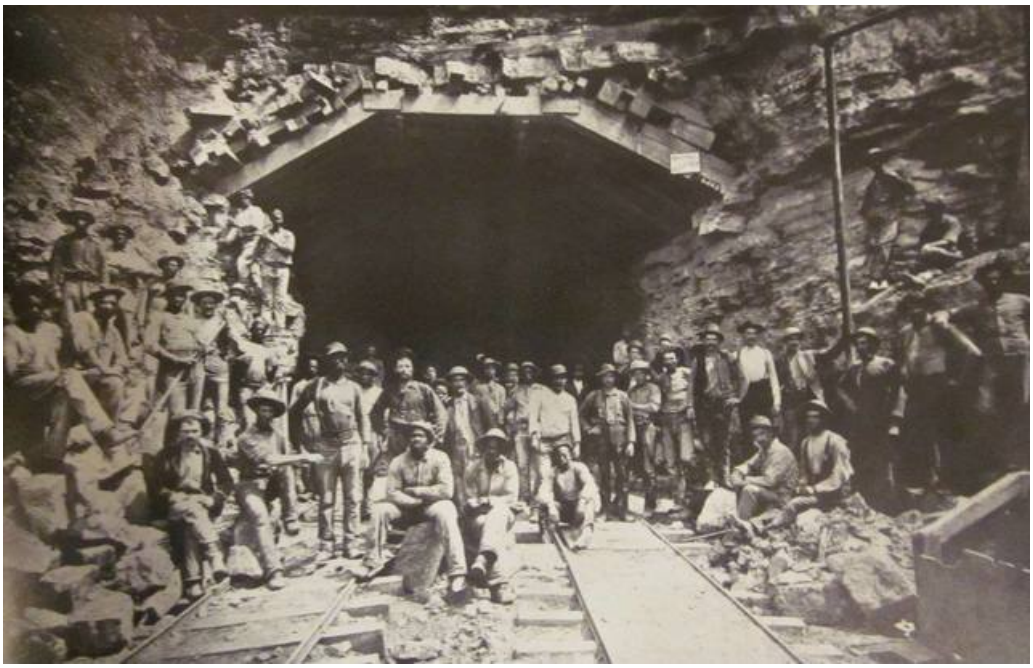


Figure 11. Irish and African American laborers in front of the entrance to the 8th Street Tunnel. Courtesy of the Wilborn Collection, Jackson County Historical Society.

Figure 12. Quarry sites around Kansas City. From *The Quarrying Industry of Missouri,* by E. R. Buckley, Director and State Geologist, and H. A. Buehler, Missouri Bureau of Geology and Mines Vol. II, 2nd Series, 1904.

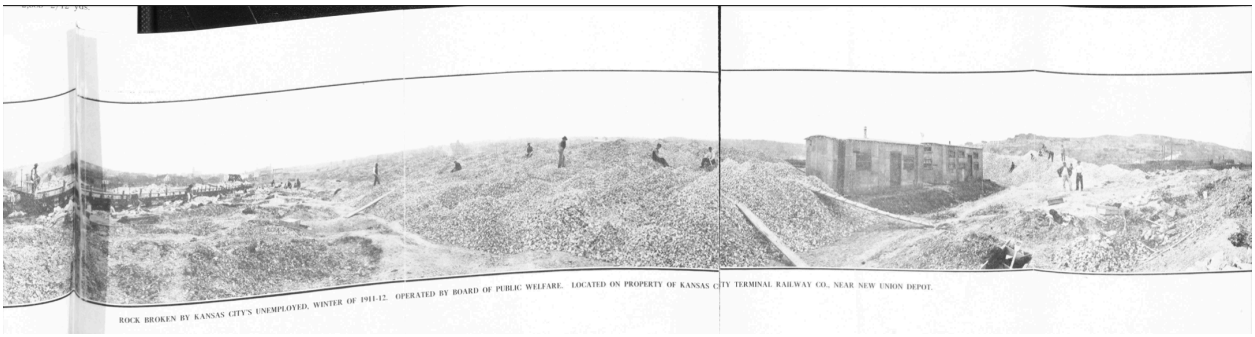


Figure 13. “Rock broken by Kansas City’s unemployed,” Kansas City Terminal Railway Co., near Union Depot. From Board of Public Welfare Report, 1911-1912.

Figures from Chapter 2:

Figure 1. 310 Delaware, edited to remove color from surrounding buildings. Courtesy of Brad Austin, PBS Flatland.

Figure 2. “Vaughan’s Diamond Building, The Junction.” Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 3. St. Patrick Church. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 4. Second Annunciation Parish Church. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 5. Third Annunciation Parish Church. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 6. Third Annunciation Parish Church, "Actual" vs. "Planned." From Rev. Michael Coleman, *This Far by Faith: A Popular History of the Catholic People of West and Northwest Missouri*.

Kansas City, MO: Diocese of Kansas City-St. Joseph, 1992. *Volume II: The Story*. Pg. 112.

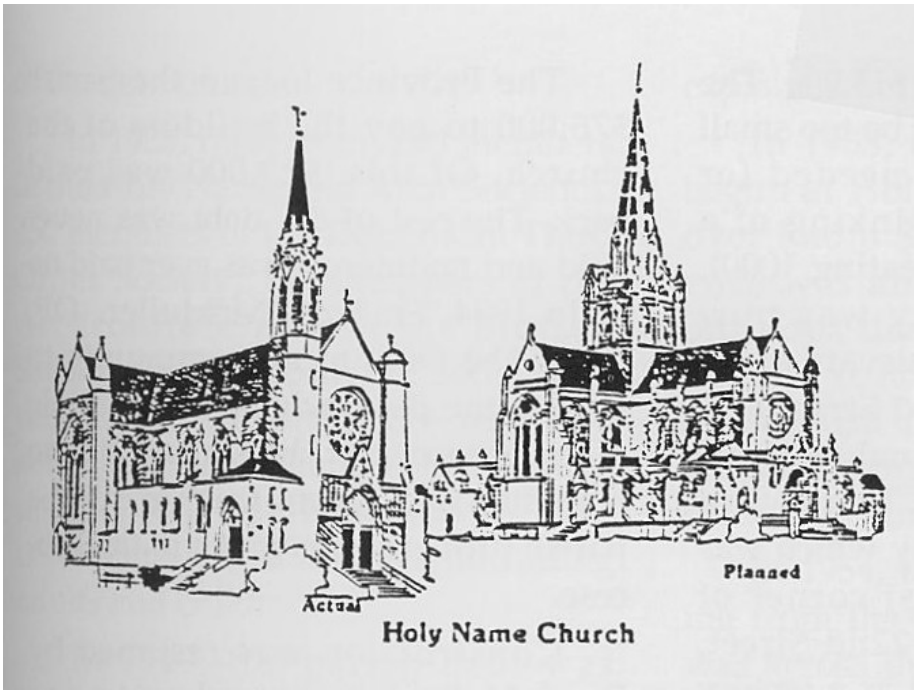


Figure 7. Holy Name Church, "Actual" vs. "Planned." From Rev. Michael Coleman, *This Far by Faith: A Popular History of the Catholic People of West and Northwest Missouri*. Kansas City, MO: Diocese of Kansas City-St. Joseph, 1992. *Volume II: The Story*. Pg. 149.

Figure 8. Holy Name Church, under demolition. Google Maps street view, circa 2011.

Figure 9. Holy Name Church, under demolition. From Eric Bowers Photography.

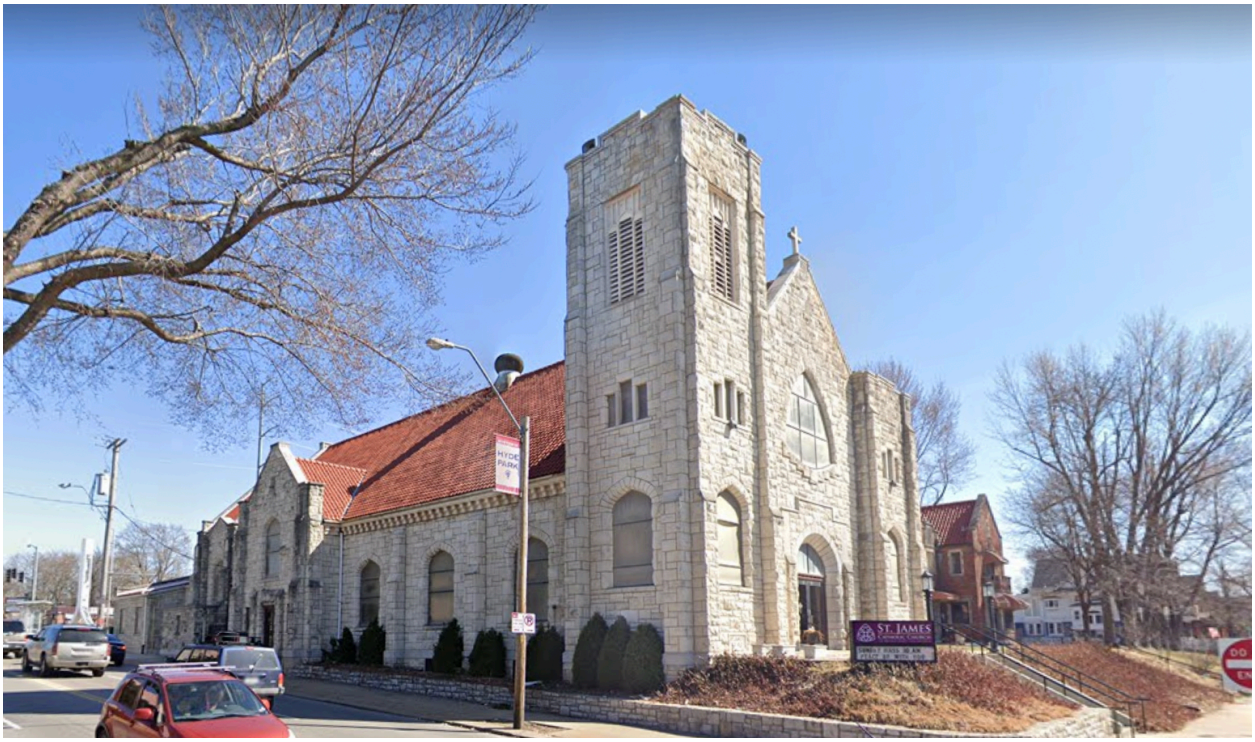


Figure 10. St. James Catholic Church. Google Maps street view, circa 2018.

Figure 11. Sacred Heart Parish. From Elaine B. Ryder, “Sacred Heart Church, School, and Rectory,” National Register of Historic Places Nomination Form, February 1978.

Figure 12. The Kansas City Public Library’s Westport Branch in 1995. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 13. Norman School, 3514 Jefferson St. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 14. Tiffany Flavel Residence, 100 Garfield Ave. Google Maps street view, circa 2020.

Figure 15. “William Rockhill Nelson Residence (Oak Hall),” Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 16. Mineral Hall (R.E. Bruner Residence), Google Maps street view, circa 2020.

Figure 17. Bernard Corrigan Residence, Courtesy of KC Modern.

Figure 18. Calvert Hunt Residence, 3616 Gladstone Boulevard, 1989. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 19. Vanity Fair Apartments. Google Maps street view, circa 2020.

Figure 20. Mary Rockwell Hook home at 4940 Summit Street. Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figure 21. House And Garden Of Julia M. Rockwell, 1932. Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figures from Chapter 3:

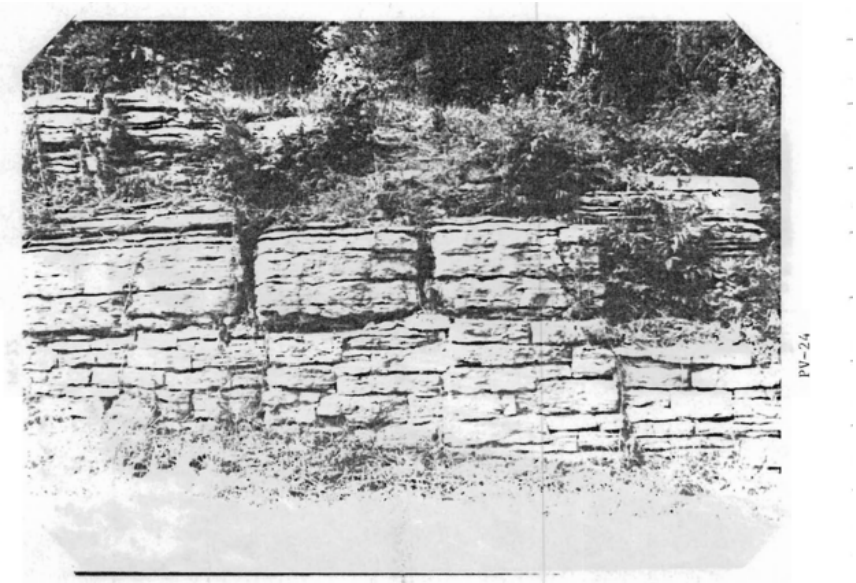


Figure 1. Dry stone retaining walls supporting rock outcroppings in Penn Valley Park. From Wolfensbarger, Deon. *Historic Resources Survey of the 1893 Parks & Boulevard System*. [online] Kansas City, Missouri: Prairie Gateway Chapter, American Society of Landscape Architects. PV-24.

Figure 2. The Colonnade at North Terrace Park, 1989. Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figure 3. A view of the grand staircase in West Terrace Park from Kersey Coates Drive, 1938. Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figure 4. Budd Park shelter. Courtesy of Kansas City Parks and Recreation.

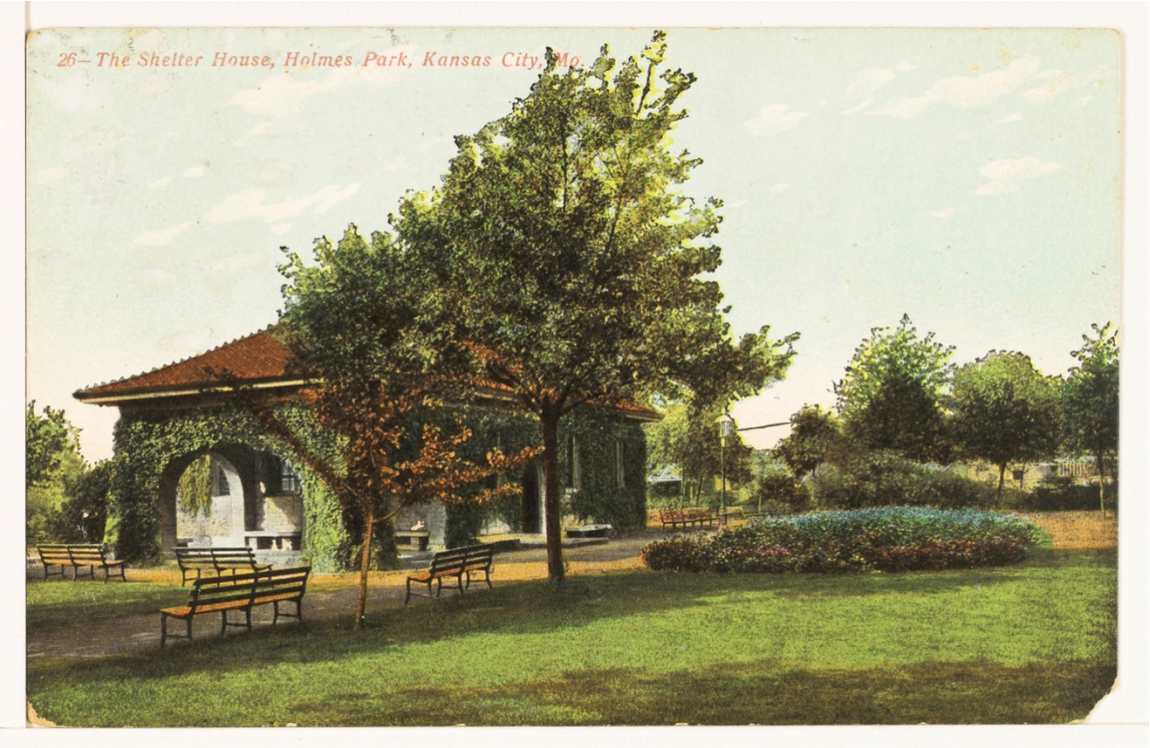
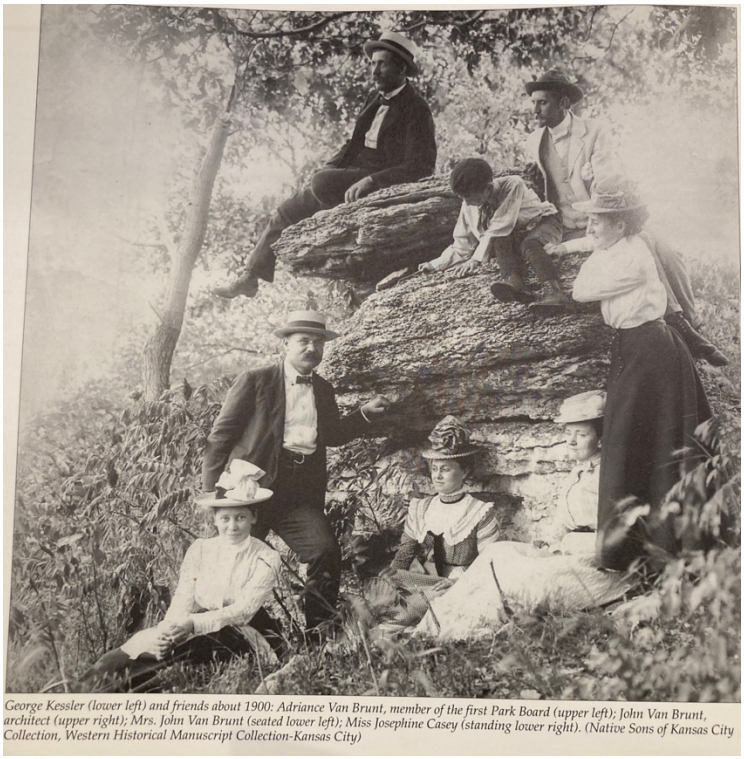


Figure 5. Postcard of the shelter house at Holmes Park, 1906. Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figure 6. Parade Park Maintenance Building, Courtesy of Black Archives of Mid-America.

Figure 7. Park maintenance building and stables, 3915 Gillham Rd. Google Maps street view.



George Kessler (lower left) and friends about 1900: Adriance Van Brunt, member of the first Park Board (upper left); John Van Brunt, architect (upper right); Mrs. John Van Brunt (seated lower left); Miss Josephine Casey (standing lower right). (Native Sons of Kansas City Collection, Western Historical Manuscript Collection-Kansas City)

Figure 8. George Kessler and friends posing around a limestone outcropping. From Janice Lee, et al. *A Legacy of Design: An Historical Survey of the Kansas City, Missouri, Parks and Boulevards System, 1893-1940*. Kansas City Center for Design Education and Research, in Cooperation with the Western Historical Manuscript Collection-Kansas City, 1995. Pg. 1.

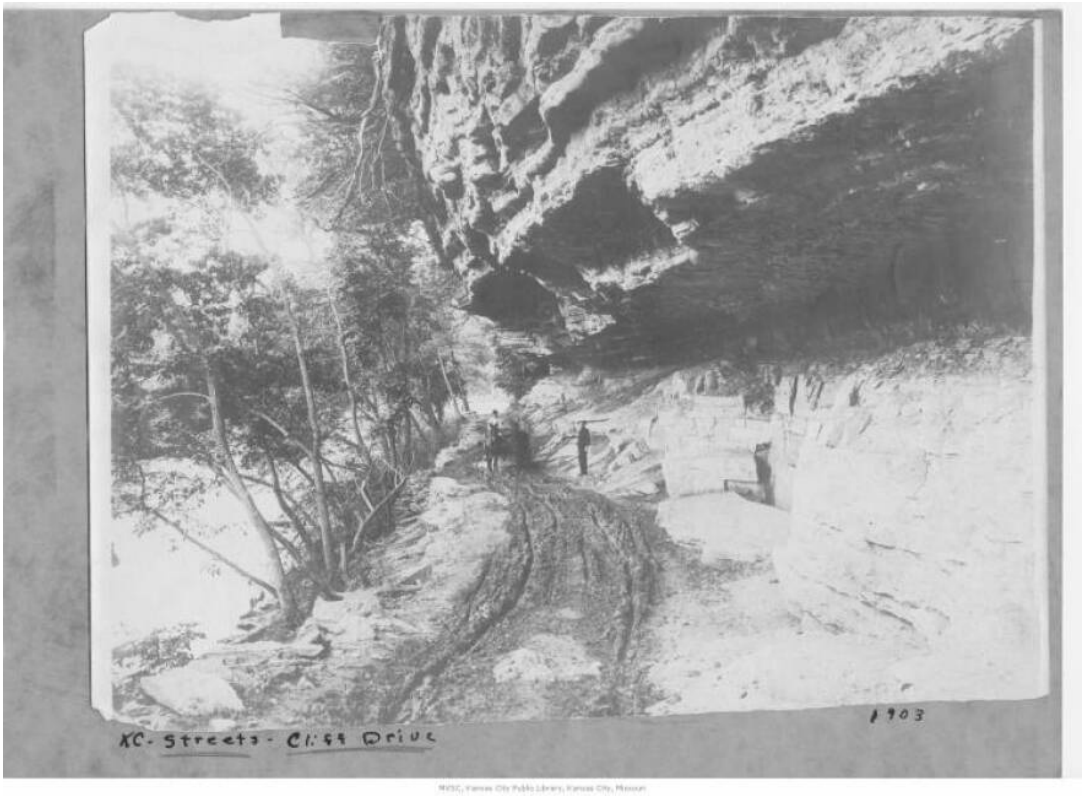


Figure 9. Limestone bluffs above Cliff Drive under construction, 1903. Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figure 10. Limestone outcroppings in Roanoke Park, south of Karnes Boulevard and west of Roanoke Rd, 2022. Image taken by author.

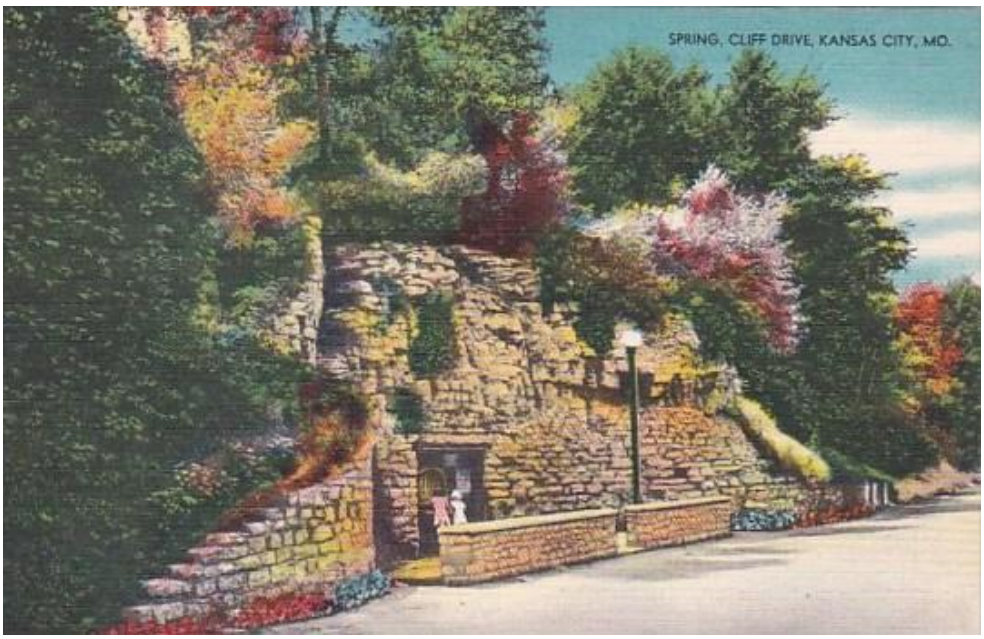


Figure 11. Postcard of Cliff Drive Spring and grotto. From collection of author.

Figure 12. “Photograph with full frontal view of the Spring, located on Cliff Drive.” Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figure 13. Small, arched stone bridges atop the creek beds of Penn Valley Park. From Wolfensbarger, Deon. *Historic Resources Survey of the 1893 Parks & Boulevard System*. [online] Kansas City, Missouri: Prairie Gateway Chapter, American Society of Landscape Architects. PV-19.

Figure 14. A stone-faced bridge/overflow structure on the north side of the Penn Valley Park lake. From Wolfensbarger, Deon. *Historic Resources Survey of the 1893 Parks & Boulevard System*. [online] Kansas City, Missouri: Prairie Gateway Chapter, American Society of Landscape Architects. PV-23.

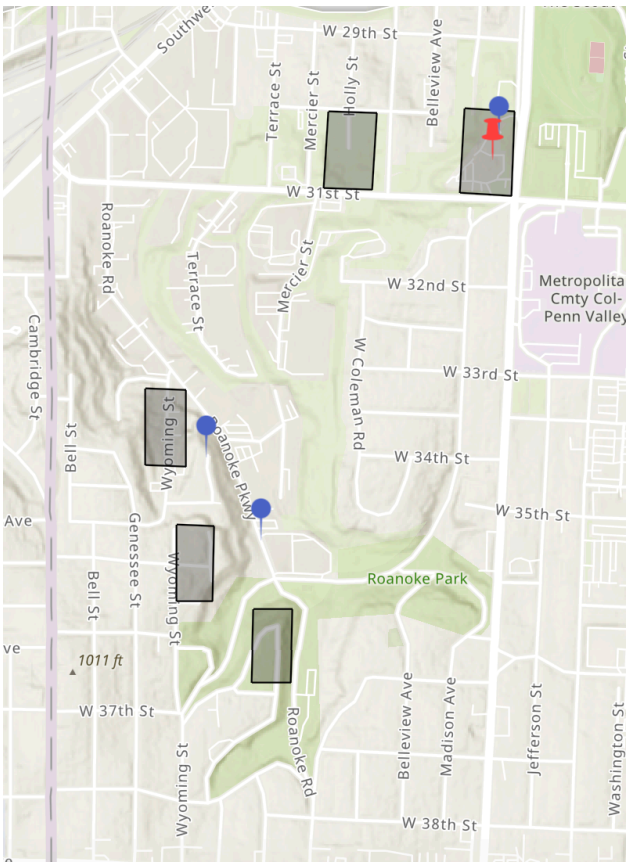


Figure 15. Screenshot of collated GIS map of Roanoke Park-area quarry sites referenced in Buckley and Buehler's 1904 report. Created by author.

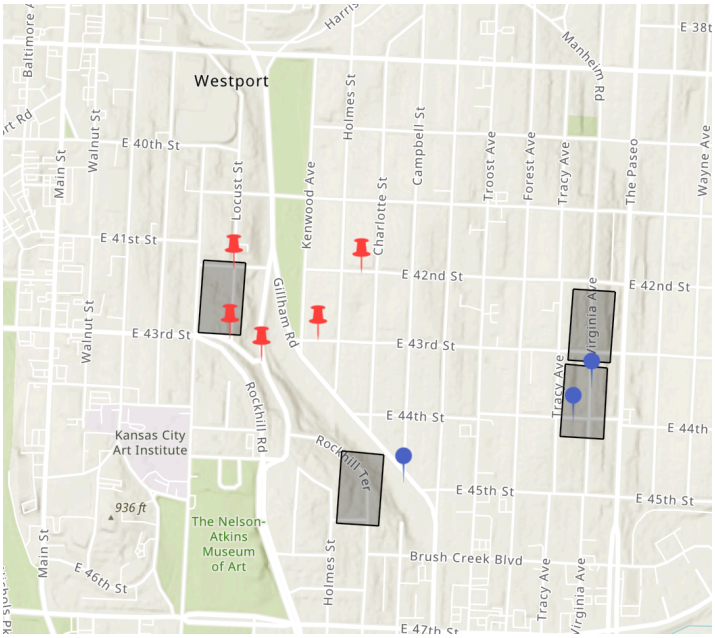


Figure 16. Screenshot of collated GIS map of Hyde Park-area quarry sites referenced in Buckley and Buehler's 1904 report. Created by author.

Figure 17. “Looking Northeast near 37th and Wyoming, 1906. Road surfacing in progress.” Courtesy of Kansas City Parks and Recreation Archives, P-R3-001. Accessed through Roanoke Park website’s “Historical Photo Gallery” webpage.

Figure 18. “Looking Northeast near 37th and Wyoming, 1906. Road surfacing in progress.” Courtesy of Kansas City Parks and Recreation Archives, P-R3-001. Accessed through Roanoke Park website’s “Historical Photo Gallery” webpage.

Figure 19. “Roanoke Road (now Karnes Blvd) Looking west near 36th & Belleview. Road surfacing in progress. Nearly the same view as the Ladies on Karnes.” Courtesy of Kansas City Parks and Recreation Archives, P-R3-001. Accessed through Roanoke Park website’s “Historical Photo Gallery” webpage.

Figure 20. “Ladies on Karnes.” Courtesy of Kansas City Parks and Recreation Archives, B-K1-001. Accessed through Roanoke Park website’s “Historical Photo Gallery” webpage.

Figure 21. “Roanoke, Kansas City, Mo.,” circa 1911 Postcard based on older photograph. Courtesy of Kansas City Parks and Recreation Archives. Accessed through Roanoke Park website’s “Historical Photo Gallery” webpage.

Figure 22. Haydite Concrete Company Plant, circa 1925. Courtesy of the Missouri Valley Special Collections, Kansas City Public Library.

Figure 23. 1922 aerial map of Roanoke Park and Coleman Highlands, capturing the Haydite Concrete Plant and remnants of quarrying activities. Courtesy of Kansas City Office of Historic Preservation, Department of Planning and Development.

Figure 24. The home of Patrick Sullivan in Vinegar Gulch, circa 1890. From Pat O'Neill, *From the Bottom Up: The Story of the Irish in Kansas City*, Kansas City, Mo. : Seat O' The Pants Pub., 2000. Pg. 113.

Figure 25. Patrick Sullivan atop his wagon, ferrying stone from a Roanoke-area quarry. From Pat O'Neill, *From the Bottom Up: The Story of the Irish in Kansas City*, Kansas City, Mo. : Seat O' The Pants Pub., 2000. Pg. 117.

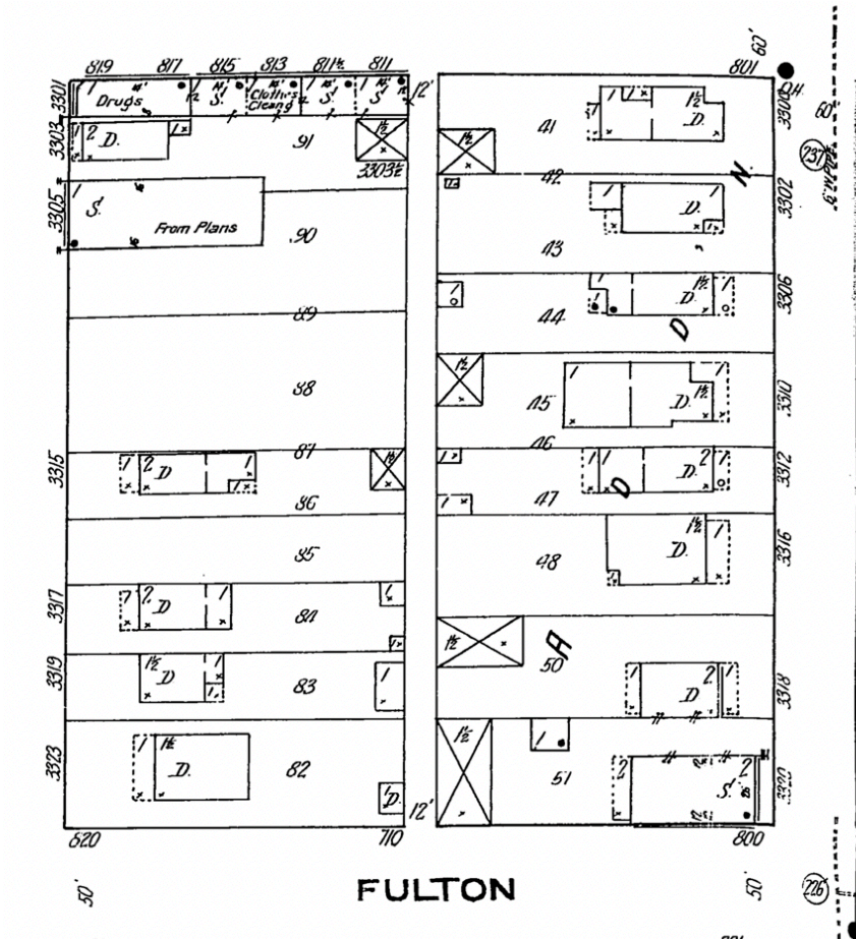


Figure 26. 1909 Sanborn map from the Valentine neighborhood, capturing possible dwelling places of Patrick Sullivan (said to be 3314 Jefferson). Courtesy of the Kansas City Public Library.

Figure 27. Images from the 1940 tax assessment survey documenting 3310-3316 Jefferson St., with Sullivan's likely dwelling place pictured in the middle. Courtesy of Kansas City Public Library.

Figures from Chapter 4:

Figure 1. "Red-D-Mix Joy Ride," a clipping from the Kansas City Star on April 23, 1931 showing three men (presumably Tom Pendergast, Cas Welch, and Joe Shannon) taking a joy ride while a young boy holds a sign stating, "We have no money for playground supervision." Courtesy of the Jackson County Historical Society.

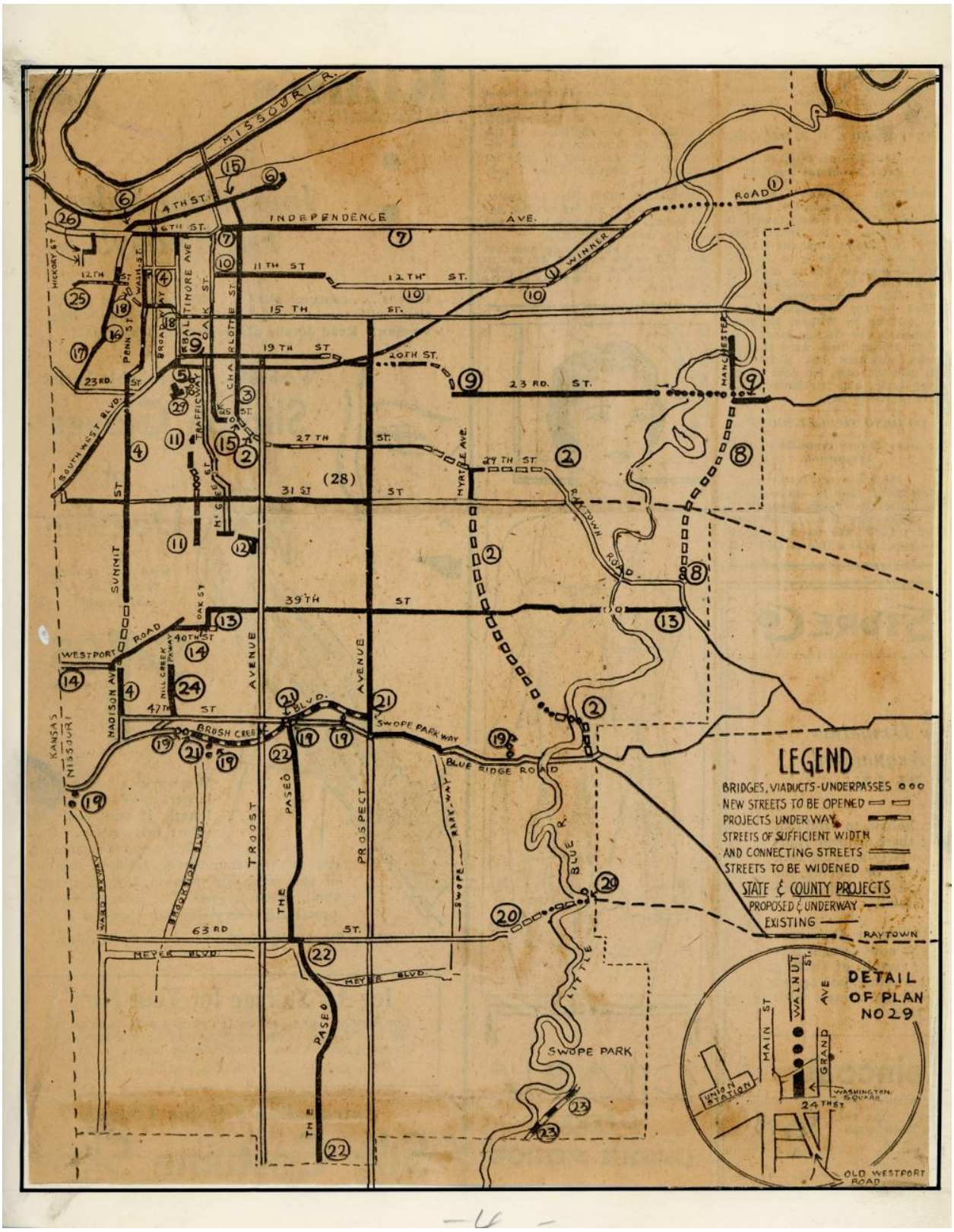


Figure 2. “Map Of Expenditures For Major Traffic Arteries,” Courtesy of State Historical Society of Missouri-Kansas City.

Figure 3. Early 20th-century sewer excavation for suburban subdivision. Courtesy of the State Historical Society of Missouri.

Figure 4. Early 20th-century sewer excavation for suburban subdivision. Courtesy of the State Historical Society of Missouri.

Figure 5. Country Club District advertising sign referencing restrictions. Courtesy of the State Historical Society of Missouri.

Figure 6. "Brush Creek," View looking east down Brush Creek, including apartment buildings and Wornall Road Bridge. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 7. “Brush Creek before paving,” 1933. Courtesy of the State Historical Society of Missouri-Kansas City.

Figure 8. Excavation adjacent to brush creek, including sites of former brickyard and quarry. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

Figure 9. Brunson Instrument Company headquarters. Courtesy of the Center for Land Use Interpretation.

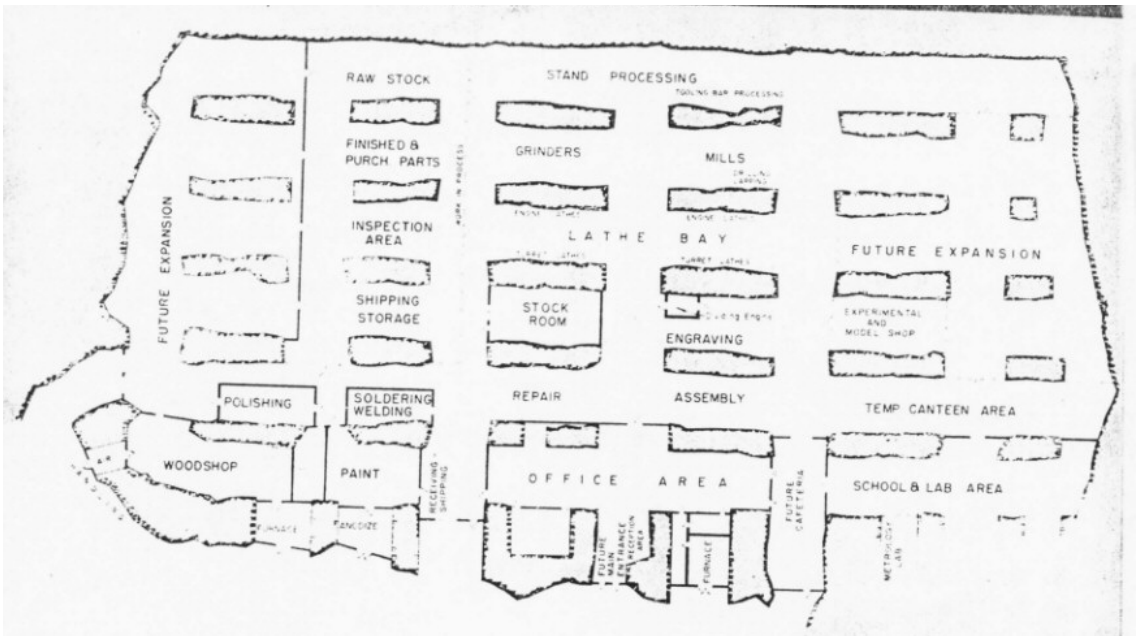


Figure 10. Site map of Brunson Instrument Company headquarters. Courtesy of Missouri Geological Survey.

Figure 11. Advertisement for Dean's Downtown Underground. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

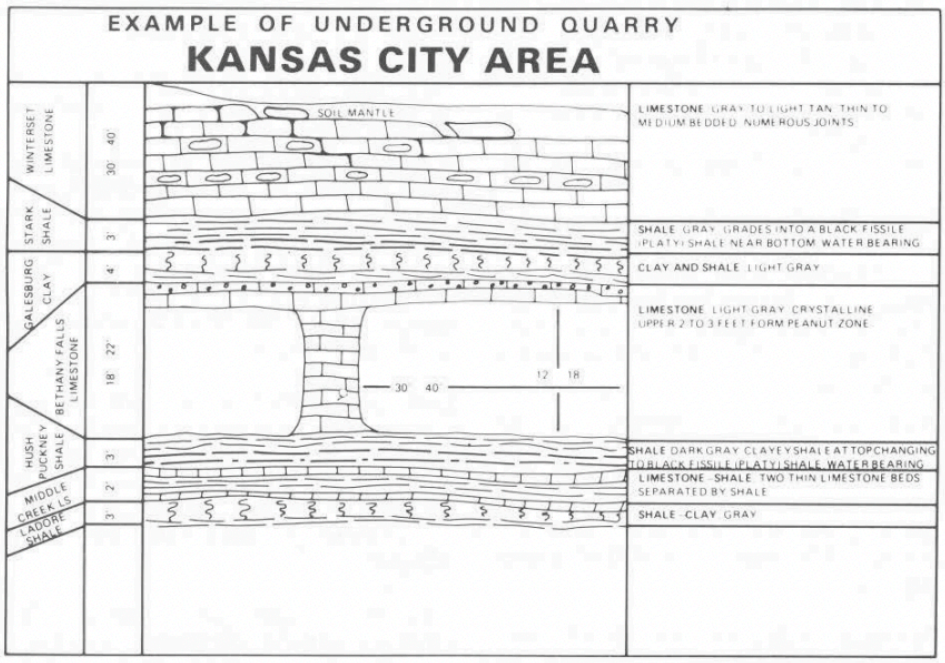


Figure 12. Illustration of the layers of the average Kansas City former subterranean quarry. From Syed Hasan et al., "Geology of Greater Kansas City, Missouri and Kansas, United States of America." Pg. 335.

Figure 13. Crumbling stone walls (since replaced) in front of Old St. Patrick's Oratory, circa 2011. Google Maps street view.

Figure 14. Stone wall along Superior Street between Admiral Boulevard and 6th Street, 2023. Photo taken by author.

Figure 15. Intact limestone formation, fronted by masonry stone walls, adjoining a restaurant parking lot, 2023. Photo taken by author.

Figure 16. Intact limestone formation, adjoining former White Castle location (now barber shop) and pictures from across Grand Boulevard, 2023. Photo taken by author.

Figure 17. Grand Boulevard, pictures from the north in 1926. Courtesy of Missouri Valley Special Collections, Kansas City Public Library.

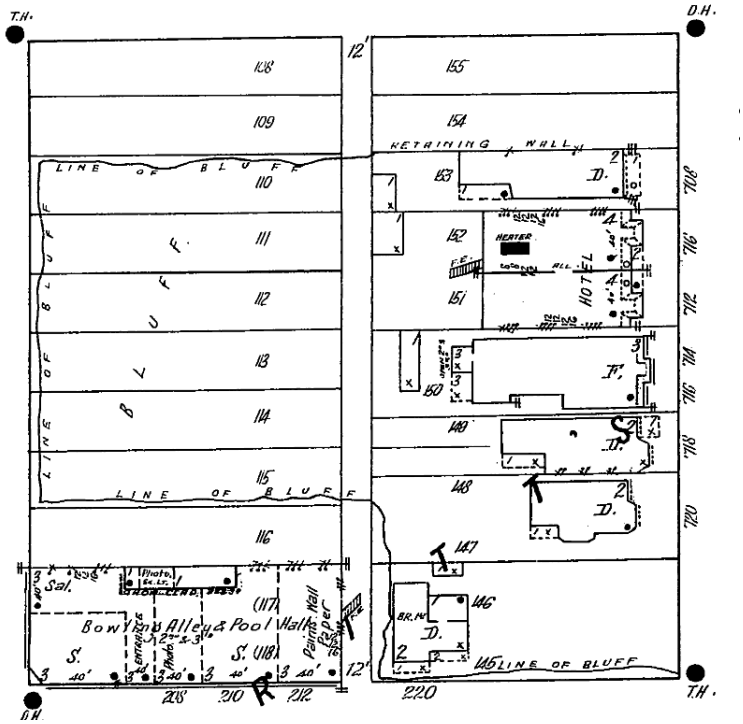


Figure 18. 1909 Sanborn map depicting the limestone bluff along Grand Boulevard, which encompassed much of the block. Courtesy of the Kansas City Public Library.

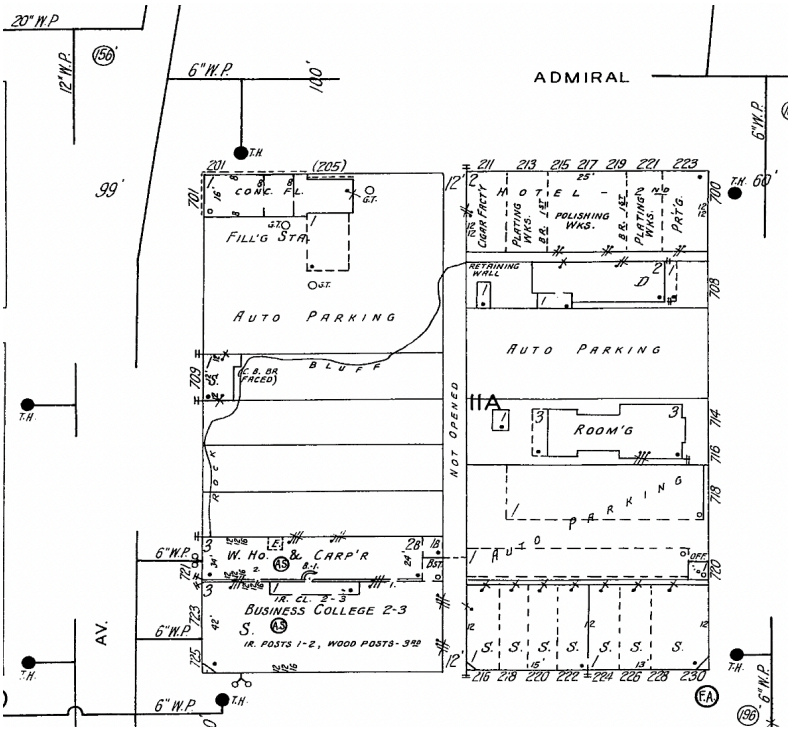


Figure 19. 1939 Sanborn map depicting the limestone bluff along Grand Boulevard, showing only slight alterations to the dimensions of the outcropping. Courtesy of the Kansas City Public Library.

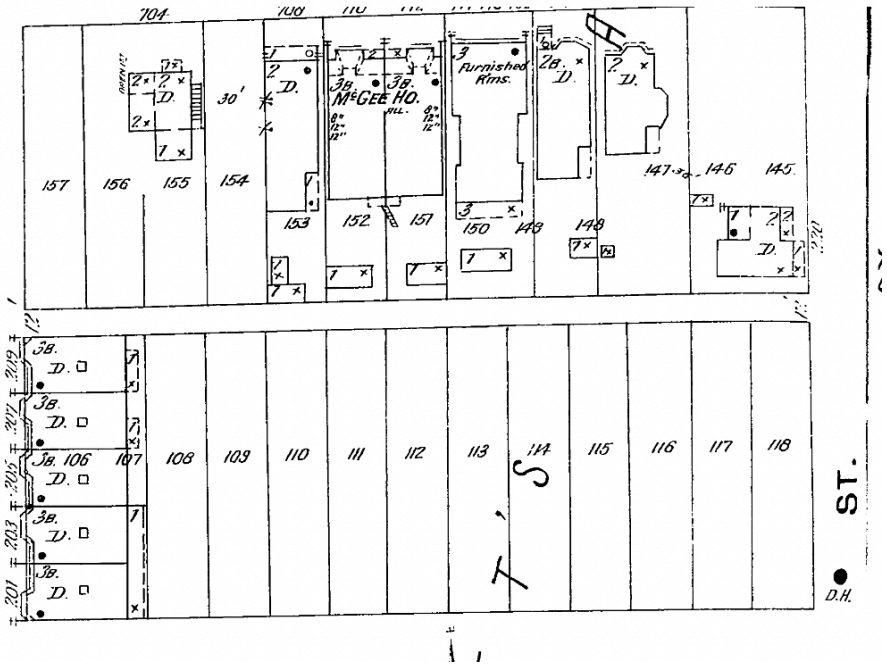


Figure 20. 1896 Sanborn map showing a lack of construction atop the western portion of the bluff. Courtesy of the Kansas City Public Library.

Figure 21. A rendering included in marketing materials for the property along Grand Boulevard, currently listed for sale, which shows a model of a residential tower on the site. Courtesy of NAI Heartland Real Estate.

Figure 22. Vine Street Workhouse, 2023. Photo taken by author.

Figure 23. Vine Street Workhouse, 2023. Photo taken by author.

Figure 24. Vine Street Workhouse, 2023. Photo taken by author.

Figure 25. Troost Ave. complex including Vine Street Workhouse, former Water Department building, and the former Fire Station No. 11., 2023. Photo taken by author.

Figure 26. Westminster Congregational Church, circa 2011. Google Maps street view.

Figure 27. Westminster Congregational Church demolition following a devastating fire. Sarah J. Clark, "Westport Presbyterian Church Goes Up in Flames," *Fox4 News Kansas City*, December 30, 2011.

Figure 28. Thomas Hart Benton Home and Studio State Historic Site. Google Maps street view.

Figure 29. Thomas Hart Benton on porch swing in southern yard of personal home, with carriage house and stone wall visible in the background. Courtesy of Thomas Hart Benton Home and Studio State Historic Site.

Figure 30. Stone wall along West Roanoke Parkway and Karnes Boulevard. Google Maps street view.

Figure 31. Former parks maintenance building, today in ruins surrounding the "Just Off Broadway Theater." Courtesy of Kansas City Parks and Recreation.

Figure 32. Intersection of early 20th-century walls of West Terrace Park and modern walls alongside I-670, which now show signs of crumbling.

Figure 33. Hardy species of purple cliffbrake fern (Pellaea atropurpurea) and smooth cliffbrake fern (Pellaea glabella) inhabit a rock outcropping alongside a cave entrance in Roanoke Park. Courtesy of Roanoke Park Conservancy.

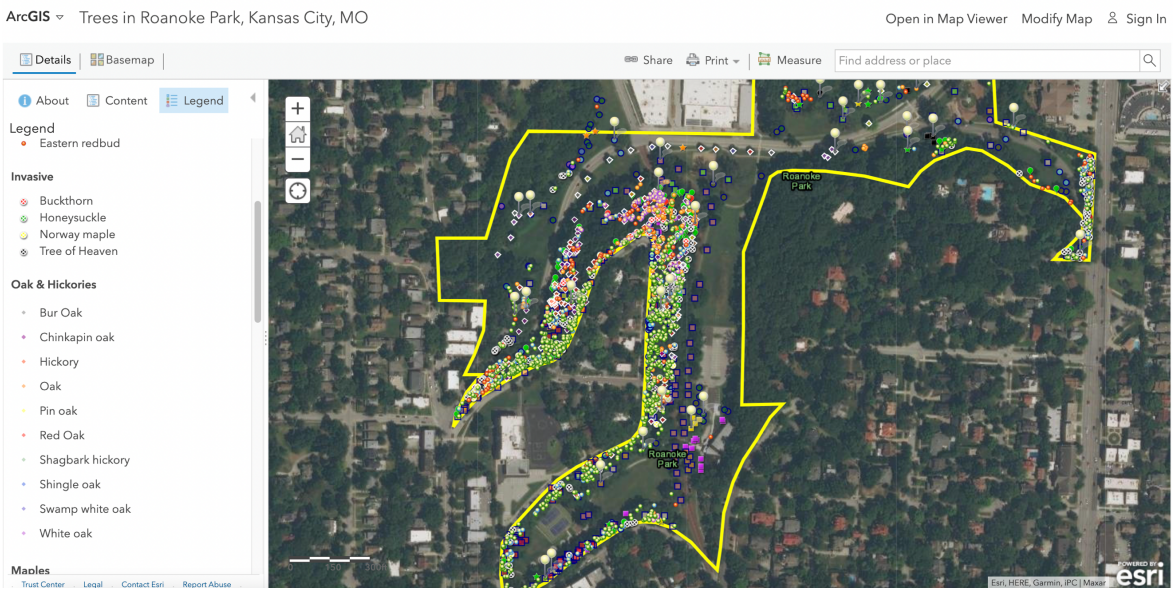


Figure 34. An image of the Roanoke Park Tree Inventory (completed circa 2012), showing a colored dot for each tree surveyed. The 691 green dots are indicative of hackberry trees; this hardy, limestone-loving species makes up 33% of the surveyed trees in the park.

Figure 35. The Carl J. Dicapo Memorial Fountain, replacing the spring-fed fountain and grotto along Cliff Drive. Courtesy of Kansas City Parks and Recreation.

Figure 36. The Coleman Highlands Spring overflowing its small pond along Karnes Boulevard, 2016. Courtesy of Roanoke Park Conservancy.

Figure 37. An aerial view of the Marlborough neighborhood water detention facility, situated alongside newly constructed sidewalk and playground infrastructure. Courtesy of Kansas City Water Department.

Permeable pavers near I-670 and Liberty Street allow rainwater to soak into the ground and also create a public event space.

A green space in the West Bottoms that allows rainwater to soak into the ground also includes a boardwalk and a public trail.

Figure 38. Images of the "West Bottoms Green Infrastructure Project," including permeable surfaces for public gathering spaces and rain gardens alongside raised pedestrian platforms. Courtesy of Kansas City Water Department.