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Shaping an Urban Practice

AECOM and the Rise of Multinational Architecture Conglomerates

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The history of the multinational architecture and engineering firm AECOM provides a powerful account of the transformations taking place within architectural practice during the end of the twentieth century. The firm grew from a small profit-sapping partnership named Daniel, Mann, Johnson, and Mendenhall during the mid-1940s, into the largest architecture, engineering, and urban planning conglomerate in the world. This paper describes how conglomeration—the acquisition of diverse and existing firms—was predicated on fundamental shifts in the definition and value of architectural labor that broadened the domain of architectural work and enabled architectural practice to take on the shape of entire urban economies.

Introduction

In his 1977 *The Visible Hand*, American business historian Alfred D. Chandler, Jr., argued that the rise of large, increasingly diversified, multinational organizations typified twentieth-century forms of work and drove the US economy.¹ One particular outgrowth of these modern enterprises, he argued, was the conglomerate—a type of industrial organization that proliferated during the 1960s and 1970s and that grew by acquiring and merging with existing firms in unrelated industries, markets, or geographies.² For architecture, urban sociologist Robert Gutman cautioned that, while large firms accelerated

the transformation of architectural practice into an industrial form of organization, “the issue that inevitably arises in any revelation of the dominance of architectural practice by the large firm is how far it will go, and will it swallow the offices made up of two or three partners and a professional staff of a couple of other architects working full- or part-time.”³ However, such practices were taking place during the 1970s directly beneath Gutman’s own observant eyes, and many large firms began to acquire a diverse array of smaller firms to keep up with the demands of turbulent, speculative urban economies. At its core, this article is a description of how these

transformations in architectural practice reveal underlying changes in the nature of capitalist accumulation. In particular, conglomerate architecture firms formed in response to economic shifts during the latter half of the twentieth century, and they produced and reinforced neoliberal ideals that came to typify twenty-first-century architectural practice. To make conglomeration and expanded views of architectural practice possible, architects were tasked to view themselves as social and economic equals, rather than superiors, to a broader range of urban practitioners—from planners to economists and technologists—that, in turn, lodged them deeper into capitalist markets. In this article, I reveal how these transformations were predicated on a fundamental redefinition of architectural labor, an insatiable desire to amass geopolitical power, and an interest in earning profits. As a result, architecture firms began to take on the very shape of the urban economies in which they were embedded.

In this article, I use the history of the Los Angeles-based architecture and engineering firm AECOM as a case study—including its transformation from a small, 1940s partnership named Daniel, Mann, Johnson, and Mendenhall (DMJM) into a multinational conglomerate. Since 2015, AECOM’s corporate logo has been displayed in downtown Los Angeles—from the top of the two-hundred-foot-tall One California Plaza—in apparent confirmation that the practice of architecture is no longer distinguishable within an otherwise homogeneous constellation of profit-seeking signifiers:



Figure 1. Aerial view of AECOM's downtown Los Angeles headquarters, 2017. Photographer unknown. (Illustrated in AECOM, *Annual Report* (2017), 9.)

AECOM, Union Bank, US Bank, CTBC Bank, Citi Bank, Ernst and Young, First Republic, Aon, City National Bank, Manufacturers Bank, Open Bank, Wells Fargo, and Paul Hastings (Figure 1). Marked by its ninety thousand employees, \$18 billion in annual revenue, and an annual CEO salary of \$16 million, the firm has become the largest revenue-generator of any publicly traded company in Los Angeles, and it is rivaled only by those in neighboring cities, such as the behemoth entertainment conglomerate Walt Disney Co., based in Burbank, and the biotechnology company Amgen, Inc., in Thousand Oaks.⁴ Yet AECOM's history parallels the history of many commercially motivated architecture firms, including that of Albert Kahn, founded in Detroit in 1895, or Chicago's Perkins & Will, founded in 1935. For Kahn, an attunement to the evolving dynamics of capital accumulation was evidenced by his desire to repeatedly reconsider the structure and composition of his firm: it grew from a small Detroit architectural partnership (Nettleton, Kahn, and Trowbridge in 1896) to

Albert Kahn, Architect, with forty people by 1910, then Albert Kahn Associates, with four hundred people by 1929, and then Albert Kahn Associates, Incorporated, with six hundred people by World War II.⁵ As a continuously active practice, the firm was redefined after the 1990s as a "family" of seven firms, "multi-disciplined areas of expertise that make up the Albert Kahn Family of Companies," from architecture to management.⁶ Similarly, Perkins & Will has described itself since 1986 as part of a "family of partner companies," named the Dar Group, with services ranging from retail to transportation planning, healthcare technology, and hospitality design. The Dar Group was formed by the Lebanese conglomerate Dar Al-Handasah in 1986, when it acquired Perkins & Will to "build a global portfolio of premium engineering and design brands."⁷ While these firms collectively signal a shift from Fordism to post-Fordism, more broadly from capitalism to late capitalism, AECOM's early multi-firm structure and its expanded scope of practice is uniquely formative, since its financial

prominence has rendered it an unprecedented marker of strength for urban economies.

Shattering Professional Tradition

In a 1971 article for *Fortune*, editor Gurney Breckenfeld presented a bleak view of architecture as a profession pushed to the sidelines of discourse about urban growth and on the brink of "obsolescence," arguing that architecture could only be revived by entrepreneurial architects willing to shatter "professional tradition."⁸ For Breckenfeld, transcending "tradition" meant abandoning sole proprietorships or partnerships to instead embrace new forms of practice that would allow architects to expand their roles and increase the value of their work by confronting the challenges associated with urbanization. Breckenfeld pointed to architects who were not only embracing corporate structures of practice but also collaborating through joint firms, combining their services and crossing geographies through corporate mergers and acquisitions (M&As) during the late 1960s and early 1970s. While firms such as Rogers, Taliaferro, Kostriksky & Lamb (RTKL, Inc.) in Baltimore or Charles Luckman Associates in Los Angeles were absorbed by or affiliated with other firms, some architecture firms were incorporating to acquire others.⁹ Motivated by "growth, profit, and performance," Caudill Rowlett Scott (CRS) in Houston, Texas, incorporated in 1958 and acquired nearly thirty firms between 1970 and 1990, and DMJM in Los Angeles—the predecessor of AECOM—slowly began acquiring companies as early as the 1960s and was described as a "conglomerate" of firms beginning in the 1970s. By the end of the twentieth century, DMJM grew to include nearly twenty subsidiary firms that ranged in services: from architecture to real estate and data processing.¹⁰

Not all architects warmly welcomed these new structures of business. At CRS, profit-motivated

acquisitions and the firm's public listing on the stock market in 1971 clashed with the cultural ideals of postwar architects fighting to maintain an exclusive boundary around their design department, which splintered the firm into several commodifiable parts during the early 1990s.¹¹ The firm's architecture group was sold to Missouri-based Hellmuth, Obata + Kassabaum in 1994; its engineering and construction groups were sold to California-based Jacobs Engineering; and its cogeneration group, CRSS Capital, was sold to the engineering firm Tractebel. In Massachusetts, the obstinate architects-only corporation known for its postwar collaborative and "team"-based approach to practice, The Architects Collaborative, was not able to pay its expenses by the end of the 1980s and was bankrupt by 1995. At the core of these fractures was a clash of cultural ideals: between the expansionary path of capital accumulation embodied by the corporate form, predicated on changes to the structure and scope of practice, and a contradictory desire by architects to maintain a spirited control over production by guarding against the changing economic conditions of their context.

Post-Fordism and Architecture Conglomerates

DMJM emerged as an enduring model of multi-firm practice that could withstand the turbulence of economic recessions during the early to mid-1970s and again during the 1980s. The term "conglomeration" surfaced within discourse at DMJM during the 1970s as a way to describe the firm's composition, its breadth of services, and its culture of socioeconomic egalitarianism. In the 1976 edition of DMJM's self-published journal, *DMJM Review*, the vice president and manager of the architecture and engineering division at DMJM asserted, "This professional conglomerate [DMJM] is called a 'multidisciplinary team'—and DMJM was one of the

very first firms in the post-World War II era to assemble such an organization. That it has proven itself effective is evidenced by the fact that now many organizations are emulating the 'multidisciplinary' approach to building design."¹² In the office, the term "conglomerate" was inconsistently used and debated among those working, while the U.S. Federal Trade Commission defined conglomerate mergers in the broadest of terms during the 1950s. These terms included three nearly all-encompassing categories: (1) market extensions, in which firms acquired similar companies but in different geographies; (2) product extensions, in which firms acquired others that were similar in work but did not directly compete; and (3) "pure" conglomerates, in which firms acquired others that were completely disparate in their function, service, product, or distribution.¹³ Beyond the new form of diversified, multi-firm organization and its purported economic advantages, the emergence of the conglomerate marked a profound shift in the *culture* of architectural practice. Etymologically, the term "conglomerate" dates to the sixteenth century, when it implied to "ball together." More tellingly, its frequently debated Latin roots, *glem* and *glom*, are understood historically to have first implied "to embrace or latch onto" and "to ball," respectively.¹⁴ Thus, the term conglomerate described not only a structure of business but also a particular culture and genealogy of practice in which practitioners readily embraced roles that transcended the historically constructed boundaries of work that defined them. At DMJM, architects accepted the various manifestations of architectural work in terms of value added to the firm—not by imposing a definition of what was or was not considered a practice of architecture but rather by considering what was and what *could be* considered as such.

The mere possibility of conglomeration for architecture,

and the interest of architects in developing and acquiring subsidiary firms that ranged in services—from real estate to data processing—was predicated on shifts within the nature of capitalism, which encouraged new means of organizing architectural work and new forms of labor. In particular, the rise of a post-Fordist economy—a defining tenet of neoliberalism—encouraged a new working relationship between capital and labor. Under Fordism, work was described by its adherence to economies of manual production (i.e., manual labor inputs were directly correlated to profit outputs), and work that was highly regulated, well organized, and internally focused generally yielded better pay and job security. Fordist labor was also defined by the organization of work itself. Henry Ford's standardized assembly-line processes reduced work to repetitive, specialized tasks to ensure efficiency, speed, and volume; these processes then moved from factories into large-scale organizations. By the 1970s, however, Fordist economies and processes of work began to break down in favor of more flexible, fragmented, and varied means of production. In 1972, management consultant Peter Drucker published a revised edition of his 1946 *The Concept of the Corporation*, in which he argued that the concepts he initially laid out in his study of General Motors had become outmoded by a "post-Fordist" organization.¹⁵ Under post-Fordism, the direct correlation between labor input and capital output was unhinged, workers could begin to yield profits without expending manual labor, and work was entirely set free from the demands of consumers. Drucker argued, "The essence of this [post-Ford] large-scale organization of the late twentieth century is that within it people of very diverse skills and knowledges work together. Today we do it—or at least try—with very large numbers—thousands of people with different knowledges, coming together in a business, a

government agency, or an armed service—under a management with specific knowledge of building and directing the large-scale organization.”¹⁶

In architecture, large American firms, such as Albert Kahn Associates and Skidmore, Owings & Merrill (SOM), embraced Fordism both in practice and in design philosophy during the industrial resurgence of the 1930s. These firms emphasized the volumes rather than the types of production, such as the Ford factories produced by Kahn’s office or the office buildings produced by SOM’s office, and the firms were thought to produce American consumers. Kahn’s firm was organized into “technical” and “executive” divisions, with departments (“designing,” “architectural,” “structural,” and “mechanical”) that were further defined by building type. Speed and efficiency were valued above all else, and architects turned to standardized systems wherever possible to simplify coordination across departments and to support rapid construction.¹⁷ Similarly, at SOM, co-founding architect Nathaniel Owings, reflecting on the firm’s formative beginnings, notably declared that “to work, we must have volume.... Volume meant power. We could try to change men’s minds.”¹⁸ The work in both firms moved across well-coordinated assembly lines; drawings were passed from design to drawing production, then to engineering, and then to construction administration.¹⁹

While historical accounts of SOM reveal how the firm’s organization grew increasingly rigid in structure as it increased in size, with architecture remaining as the firm’s primary focus, Fordism was deemed too rigid as a mode of capital accumulation for some architecture firms. At firms such as DMJM, work was organized in multiple divisions, beginning in the 1960s, rather than across multiple project-based functions, and engineers and architects were responsible

for procuring their own projects. This semi-autonomy encouraged a new marketing dimension to the firm and a new level of administration focused on expanding the firm’s offered services and thus the possibilities of architectural work—especially through M&As. Therefore, novelty in practice—including the firm’s diversified range of offered services—became an end itself, and for post-Fordist firms such as DMJM, geopolitical power was no longer predicated on the volumes or efficiencies of production, nor was it predicated on the firm’s brute labor force. Instead, firms were defined by a marketable range of embodied “knowledge,” “ideas,” “creativity,” and “experience.” However, even as a new level of firm administration began to market the firm’s expanded services in order to accrue new kinds of economic capital through subsidiaries (e.g., from real estate), it is important to note that much of the work in which architects were engaged at DMJM resembled traditional, labor-heavy practices from designing to drafting and coordinating.

Recently, scholars such as geographer David Harvey have examined the emphasis on the periphery of practice and on the unknowable rate and direction of future acquisitions; Harvey has described post-Fordism as a defining characteristic of late capitalist “flexible accumulation.”²⁰ For him, work that was historically well compensated was replaced by work that was less permanent; workers were viewed as dispensable, and advancements in work no longer occurred within the existing silos of production but instead in the development of new kinds of work at the “periphery.” This shift in focus to the “periphery” of work, according to Harvey, enabled—and indeed encouraged—the merging and acquiring of firms, as well as extreme diversification, self-employment, joint ventures, and outsourcing.²¹ These conditions would precisely typify conglomerate practices, as

political geographer Edward Soja has similarly argued, since production processes were fragmented in ways that sharply contrasted those that were well integrated and unified under a Fordist economy. For Soja, conglomerates first began as subcontracts between firms that then became engaged in joint ventures before forming holding companies that helped to expand work outward and beyond the bounds of traditional firms and ownership structures.²²

The Origins of AECOM: DMJM as a Firm of Equals

Before the term “conglomeration” emerged at DMJM in the 1970s, the firm had refined a culture of social and economic equivalency between its practitioners over the course of the 1950s and 1960s, allowing its founding partners to embrace an expanded view of practice. The firm began in 1946 as a three-architect partnership—Daniel, Mann, and Johnson, Architects (DM&J)—in the oil-laden city of Santa Maria, California, nearly 160 miles north of Los Angeles. Like practitioners at many burgeoning architecture offices in the mid-1940s, three young architects, Phillip Daniel, S. Kenneth Johnson, and Arthur Mann, were optimistic about working within a postwar construction boom, especially since the first group of baby boomers prompted a shortage of school buildings in California, upon which the trio hoped to capitalize. After serving in the war, the trio began working in a small, single-room office on the second floor of the Motta Building in Santa Maria, and they initially divided work by “skill,” as was common in early architecture partnerships: Daniel was the marketer, Mann was the designer, and Johnson was the “technical expert.”²³ Their trusted engineer, Irvan Mendenhall, was provided desk space in the office for his own engineering consulting practice, and he worked for DM&J in addition to four other firms. By the end of 1946, a second office in Los Angeles was formed, where



Figure 2. Franklin Harper, The Granada Buildings (Granada Shoppes and Studios), La Fayette Park Place, Los Angeles, CA, 1927. DM&J's first Los Angeles office was located here from 1947 to 1952. Photographer unknown. (Security Pacific National Bank Collection, Los Angeles Public Library.)

they worked in a 1,600-square-foot space in the Granada Buildings at La Fayette Park Place near Wilshire Boulevard—a 1927 white stucco complex of residential and work spaces designed by journalist-cum-developer/architect Franklin Harper (Figure 2). However, the first three years of work were financially turbulent, and the plan to specialize in school buildings—with the supplement of only a few small commercial buildings—proved to be economically problematic.²⁴

By the end of 1949, the firm had increased to forty employees, though the inability of the partners to make a living—let alone a profit—challenged the viability of an informally organized, architects-only office. While the architects claimed to be decent “salesmen,” Daniel argued that “what we knew about running a business you could stick in your ear.”²⁵ As a result, Daniel and Johnson took turns in the hospital due to stress-induced ulcers, and the firm had a net-worth of only \$18,000, with a borrowing limit of \$5,000.²⁶ In turn, they hired a business management firm, Booz, Allen & Hamilton (BAH), which had previously worked for Perkins & Will in Chicago. After hiring BAH,

Perkins & Will enjoyed “wholesome profits” that enabled its partners to spend, in the eyes of the DM&J partners, “more time on the golf course than in the office.”²⁷

For DM&J, the leading BAH consultant, Douglas Russell, found unbilled work, stacks of unpaid bills, and no business plan in sight; after an initial six-week survey, Russell drafted a new structure for DM&J based on the partnership structure of BAH itself.²⁸ Each partner was to be paid the same salary of seventy-five dollars, and they were only permitted to bring half home. The remaining half was partially held for taxes, while the rest was kept at DM&J for “plowing back into the business.”²⁹ Indeed, this very surplus allowed the firm to develop and to acquire additional firms in subsequent decades. Russell concluded by arguing that postwar architecture firms most likely to thrive would be the following: those that (1) integrated architecture and engineering services, (2) viewed each contributing professional as equals in terms of socioeconomic value, and (3) diversified their project types (e.g., academic, military, commercial, and industrial projects) since specialization subjected the

firm to the peaks and valleys of the economy.

Following Russell's recommendations, DM&J immediately acquired Mendenhall's engineering firm, and Mendenhall became a full partner since DM&J was already outsourcing nearly 50 percent of its engineering work to his office. In 1950, Mendenhall's addition resulted in a new firm name, Daniel, Mann, Johnson, and Mendenhall, Architects and Engineers (DMJM), and in 1952, the firm moved to its second Los Angeles location, from the Granada Buildings to an office building on Sunset Boulevard, where the firm remained for the next four years. Although integrating architecture and engineering represented a particular characteristic of modern architecture and engineering firms, it was more complete at DMJM. When engineer John Merrill first joined SOM in 1939, for instance, he was only a limited partner, despite his name's equal representation in the firm's title. Architects, engineers, and business managers routinely described DMJM in sharp contrast to SOM, as an economy of means rather than of scale—with a fully integrated, multi-divisional structure, rather than a Fordist multi-functional structure in which work moved laterally. As one business leader at DMJM explained, “The single most important difference about DMJM was that architecture and engineering was under one roof. There was no other firm—SOM or others—that incorporated engineering as an equal part of the firm.... DMJM represented the concept of a multidisciplinary firm in which all of the disciplines were equal, whether it was the economist, urban planner, architect, mechanical engineer, structural engineer, financial people, or marketing.”³⁰ With architecture and engineering services both completed in-house, the architects and engineers maintained independent responsibility for their own streams of revenue. As a testament to the multidivisional and multidisciplinary approach, the engineers



Figure 3. DMJM office, 3325 Wilshire Boulevard, Los Angeles, CA, ca. 1967. Photographer unknown. (Illustrated in DMJM, *Company General Brochure* (1967). Stanley A. Moe papers, Huntington Library and Archives, San Marino, CA.)



Figure 4. DMJM office, 3325 Wilshire Boulevard, Los Angeles, CA, 1963. Photo by Julius Shulman. (© J. Paul Getty Trust, Getty Research Institute, Los Angeles.)

generated as much revenue as the architects well into the 1970s, and drawings were often produced over the same desks (with architects and engineers filtering in and out as needed), rather than moving the drawings from one table to the next.³¹

By the end of the 1950s, new military commissions provided DMJM with an international presence, and the firm had offices in England, India, Japan, France, and Panama. In 1958, DMJM was ranked by *Architectural Forum* as the second “biggest” architectural firm in the US, measured by the dollar value of production. By then, DMJM employed 480 people and had surpassed Perkins & Will, Albert Kahn Associates, and SOM in revenue, though still not all competitors in size. Perkins & Will, Albert Kahn Associates, and SOM employed 180, 200, and 1,060 people, respectively, though they began to fall in revenue-based rankings between 1957 and 1958.³² Therefore, DMJM earned more revenue with fewer employees, which suggested that the Fordist correlations between labor input and capital output was becoming unhinged.

To build upon their already strong economic performance, the DMJM partners cautiously incorporated the firm in 1960, though they chose not to publicly list the company on the stock market.³³ DMJM’s business leaders hoped the firm could become an employee-owned company unpressured by public finance capital, as would be the case with firms such as CRS, which went public in 1971. Incorporation was the first step to supporting multiple economic functions because corporations were relatively anonymous enterprises structured for maximum efficiency and expansion, boasting strong managerial capacities and empowering architects to pursue work across multiple geographic areas.³⁴ In addition to reducing personal liability, corporations provided greater tax benefits than partnerships or sole proprietorships provided, and corporations provided new means for architects to transfer their firm’s ownership beyond the founders.³⁵ While the majority of architecture firms resisted incorporation during the first half of the twentieth century—as they did partnerships during the nineteenth century—to

remain as sole proprietorships, this began to change during the 1960s.³⁶ By 1977, the corporate structure of practice quantitatively surpassed the partnership, though not all corporations were engaged in M&As, and by the 1980s, corporations surpassed even the number of sole proprietorships. Nearly 60 percent of architecture firms adopted corporate structures by 1982, a trend that continued into the twenty-first century, with 80 percent of firms adopting such structures by 2012.³⁷

With incorporation at DMJM, Mendenhall assumed the position of president, which rested beneath a corporate board of directors, and the firm offered six services: master planning, architectural planning and design, engineering planning and design, systems engineering, construction management and supervision, and process engineering. The employees included not only architects and structural engineers but also nuclear engineers, physicists, mathematicians, microwave engineers, surveyors, and statisticians.³⁸ Consequently, by the time of incorporation, DMJM had moved offices again: from the Sunset Boulevard office to a third and larger Los Angeles office, at 3325 Wilshire Boulevard in 1956, where DMJM remained until 1971 (Figure 3). In striking contrast to the messiness of paperwork and clustered desks

that typified the firm prior to the mid-1950s, drafting tables were now rigidly organized in long rows, unobstructed by walls or columns, at which (mostly) men with white buttoned-down shirts and black ties worked, while female secretaries were the face of the office—a structure that BAH recommended and practiced. Thus, incorporation ushered in a kind of clean, white, orderly image of practice for DMJM, which was captured by Los Angeles-based photographer Julius Shulman (Figure 4).

Subsidiaries and Affiliates: Firms Within Firms

While the shift from a partnership to a corporation provided DMJM with legal benefits primarily related to liability and taxes, it also reconfigured the firm itself as a basic unit of capitalist consumption and development. Accumulated surplus capital was used to align with or acquire companies beyond DMJM, since the corporation as a legal entity functioned much like an individual. DMJM's articles of incorporation rid it of any remnant of individuality except in its name, defining the company as a human-like body able to "acquire, by purchase or otherwise, the goodwill, business, property rights, franchises and assets of every kind ... of any person, firm, association or corporation."³⁹ Whenever new expertise was needed, DMJM would acquire entire companies and their assets rather than hire individual laborers, a strategy for expanding into new markets and geographies and for mitigating competition. An early example was in 1965, when DMJM acquired the engineering division of a small architecture and engineering office, Alexander & Dorman Architect/Engineer, of Hanford, California, so that its founder, architect and engineer Albert Dorman, formerly the civil engineer of record for Disneyland in California, could work for DMJM as engineering project director. Dorman was elevated to oversee all

corporate development by 1970, and he was named president and then chief executive officer of the firm in 1977.

Architectural work in the US surged during the 1960s, and architectural and engineering work was subjected to new measures of evaluation; a 1961 *Engineering News-Record (ENR)* described firms as either "winners" or "losers" based principally on their ability to be "money-makers."⁴⁰ More importantly, the editors of *ENR* noted that many firms "beat the market with profitable sidelines" by forming "capital-heavy" supplemental practices that could support those that were more traditionally "labor-heavy."⁴¹ In 1964, *ENR* published what would continue as its annual rankings of the "Top 500" design firms based entirely on firm revenues, which provided an alternative metric of merit to design awards. According to the *ENR* report, if a firm did not make the revenue-based list of top firms, it was considered a "loser." By the 1966 *ENR* listing, DMJM was ranked second largest architecture and engineering firm in terms of revenue—second only to the engineering firm Giffels & Rosetti of Detroit, and DMJM hovered near the top throughout the rest of the twentieth century.⁴²

Following the post-Fordist logic of disengaging capital outputs from manual labor inputs, the partners agreed that, by the end of the 1960s, the revenue accumulated by the direct labor of architects and engineers within the firm would not be enough to maintain a position of stable economic power. As a result, subsidiary companies were laterally formed or invested in as renewable sources of capital, and DMJM began to take on the shape of a firm with many firms within it. Consequently, the firm's boundary became more porous. Indeed, a 1972 organizational chart reveals a patent regard for the "periphery" of architecture, including affiliated and subsidiary organizations that confirmed the

onset of post-Fordism in full form (Figure 5).

In DMJM's organizational chart, work was organized in "groups," with divisions organized beneath them; furthermore, six independent organizations appeared on the chart, including a real estate company and a data processing company, which were listed as "DMJM Affiliate Organizations." These organizations were entirely autonomous entities spaced apart from the DMJM office—no longer attached to the firm by lines that were physically diagrammed; thus, they problematized the very structure of an organizational chart as the means to understand an architectural firm. Lines that traditionally connected each function no longer applied because the relationship between the affiliated companies and DMJM was primarily economic. As an even further demonstration of the post-Fordist reconfiguration of labor in relationship to capital, the labor of architectural drawing work—traditionally associated with architecture and engineering—was described as *internally* focused and "labor *intensive*," while the firm's accumulated subsidiaries and affiliated companies—the so-called profit centers—were described as *externally* focused and "capital *intensive*."⁴³ Nonetheless, despite this professed disconnect between the manual labor of architectural drawing and the firm's profits, an incessant culture of equivalence persisted between each of the domains of practice because the economic rewards of an architect's drawing labor were often not immediate or directly evident.

By the 1970s, the company surged to seven hundred employees, the number of the firm's services increased from six in the 1960s to twenty-two the next decade, and DMJM began to define itself as a Planning, Architecture, Engineering, Systems, and Economics firm. Despite drastic reductions in the profits of many architectural and engineering practices as a result

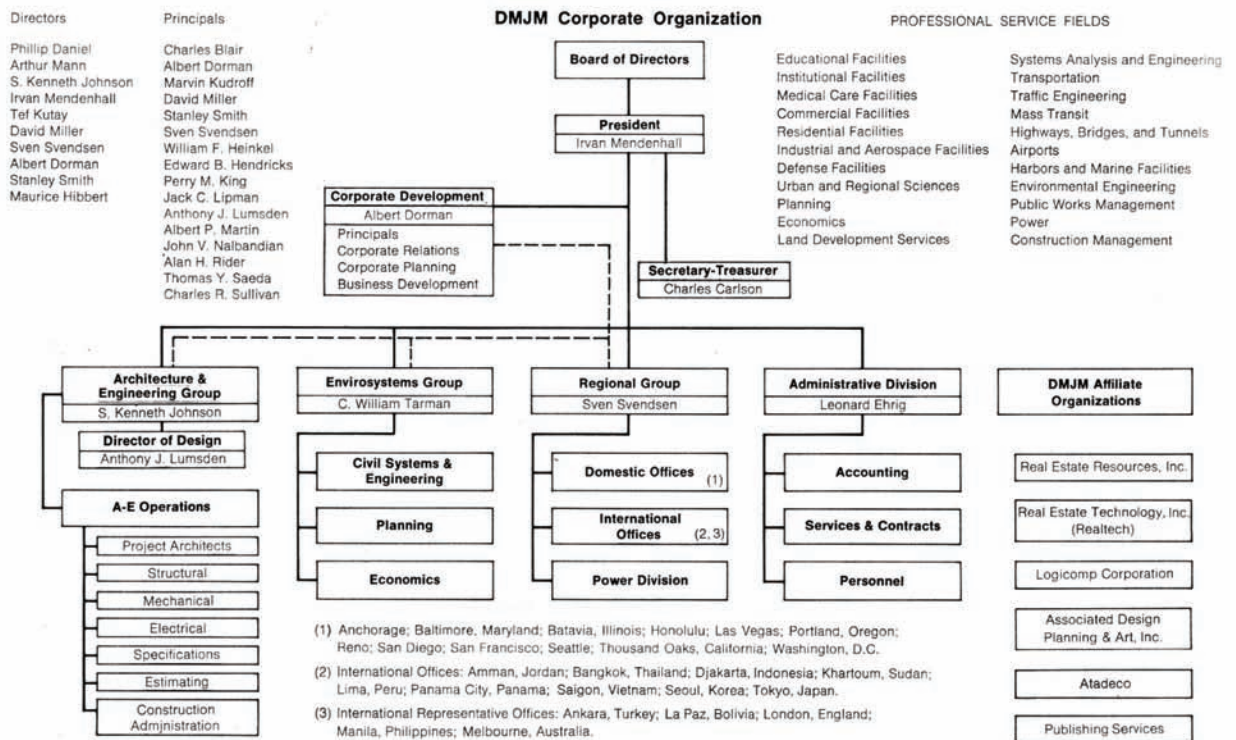


Figure 5. DMJM Corporate Organization Chart, 1972. (Illustrated in *Progressive Architecture* 6 (June 1972): 78.)

of a slowing economy during the recession of 1973, DMJM recorded gross revenue and profit at an all-time high.

In 1977, DMJM hired engineer-cum-businessman Richard Newman to help intensify the firm's M&A activity, as made apparent in DMJM's (and later AECOM's) chronology of acquired firms (Figure 6). Prior to DMJM, Newman served as president of the engineering and architecture firm Genge, one of the earliest architecture and engineering companies publicly listed on the stock market, which grew by acquiring other companies. At Genge, Newman had become known for his aggressive focus on merging with and acquiring engineering firms to establish a national network of subsidiaries, which *ENR* described in 1973 as a "stable of firms"; Newman was featured on the magazine cover.⁴⁴ At DMJM, Newman worked as

deputy CEO under Dorman, where he provided complementary business insights to Dorman's esteemed managerial approaches and ideas about corporate egalitarianism.

DMJM's subsidiary organizations were international offices that were imagined as strategic geographic partners, or they were local organizations owned or invested in by a DMJM partner. The M&A strategy was based on an interest in getting "beneath" other firms and geographics: "While this was much later, there were a couple acquisitions we did that really spoke to our strategy early on. There was a niche Chicago company that did foundation design for large state-of-the-art building towers like the Sears Tower. They were working with all of the big firms, like KPF and SOM and Foster.... The idea was that all of them [the architecture firms] would have to use our services.... It seemed to me that we were always trying to get beneath everyone else in one way or another with our M&As."⁴⁵ Acquired companies

were, therefore, both geographically and functionally important to the firm, and they ranged from Hilton Engineers of Portland, Oregon, to architecture and engineering firm Curtis and Davis of New Orleans. In addition, Real Estate Technology, Inc. (Realtech), was a subsidiary of the company Real Estate Resources that DMJM vice president Tef Kutay co-owned, which provided DMJM with an effective Realtech ownership of 32 percent.⁴⁶ Realtech spun into one of the largest real estate development companies in Los Angeles, and during the 1970s, it served as a crucial vehicle for DMJM commercial investments because it could take greater financial risks in land acquisitions for quick turnovers into equity. A built illustration of their working relationship was a DMJM and Realtech collaboration in 1971, when Realtech acquired the land to develop a new corporate headquarter building for DMJM in Los Angeles, which represented the fourth move by DMJM in the city. However, with this relocation, the office building

1950	I. F. Mendenhall, Civil Engineer	2001	Warren Group, Ltd.
1965	Albert A Dorman, Civil Engineer	2001	Harding Consulting, Inc.
1968	Philip Abrams, Consulting Engineers, Inc.	2002	Meritec Group Ltd.
1972	Phillips-Carter-Reister & Associates, Inc.	2002	Samuel L. Moore & Associates, Inc.
1972	Logicomp	2004	Planning and Dev. Collaborative International, Inc.
1972	Real Estate Resources, Inc.	2004	UMA Group Ltd.
1972	Associated Design Planning & Art, Inc.	2004	W.E. Bassett
1972	Realtech, Inc.	2004	JWD Group
1972	Atadeco	2005	ENSR International
1972	Publishing Services	2005	Eckbo, Dean, Austin and Williams, Inc. (EDAW)
1974	Hilton Engineers & Planners	2005	The Austin Company
1976	Forsen Engineers, Inc., Alaska	2005	Bullen Consultants Ltd.
1976	Curtis & Davis Engineering/Architect, New Orleans	2005	Nanchang Environmental Design Institute (51%)
1978	Technical Management Services, Inc. (TMSI)	2005	Entranco Inc.
1978	TMSI, Arabia	2007	Korve Engineering
1978	TMSI Contractors, Inc.	2007	Hayes, Seay, Mattern & Mattern
1980	American Science & Engineering, Co.	2007	The RETEC Group
1980	Arctic Slope Technical Services, Inc.	2007	HLA-Envirosciences
1980	Development and Technology Consultants, Inc.,	2007	KMK Consulting, Ltd.
1980	Wilhamp, Inc.	2007	STS Consultants, Ltd.
1981	Coon, King, Knowlton, Engineers	2008	Gartner Lee Ltd.
1981	Hummel, Giles	2008	Earth Tech.
1981	Adam, Hamlyn, Anderson Civil Engineering	2008	Economics Research Associates
1985	Ashland Technology Corporation Formed [ATC]	2008	CityMark
[1984]	Homes & Narver, Inc. [by ATC]	2008	The Services Group
[1984]	Williams Brothers Engineering [by ATC]	2008	Totten Sims Hubicki Associates
1987	Frederic R. Harris [by ATC]	2008	Tecsuit, Inc.
1987	Consoer Townsend Engineers [by ATC]	2008	Boyle Engineering
1987	Planning Research Corporation [by ATC]	2009	LAN Engineering
1987	Engineering Consultants, Inc. [by ATC]	2009	Savant International
1987	P & D Technologies [by ATC]	2010	SSI Services
1986	GSAS Architects and Planners, Arizona [by DMJM]	2010	Ellerbe Becket
1989	Randall Vosbeck, Architecture [by DMJM]	2010	Tishman Construction Corp.
1990	AECOM Technology Corporation Formed	2010	Davis Langdon
1993	Envirodyne Engineers, Inc.	2010	RSW Inc.
1994	Keating, Mann, Jernigan, Rottet	2010	INOCSA Ingenieria
1996	McCluer Corporation	2010	McNeil Technologies
1996	Turner, Collic & Braden, Inc.	2011	Spectral Services Consultants
1999	W. F. Castella & Associates, Inc.	2012	Capital Engineering Corp
1999	Spillis Candela & Partners, Inc.	2014	Hunt Construction Group
1999	Day & Zimmerman Infrastructure	2014	URS Corporation
2000	Guy A. Maunsell Ltd.	2014	ACE International Consultants
2000	Metcalf & Eddy	2017	Shimmick Construction
2000	KPMG Consulting		
2001	Oscar Faber PLC.		

Figure 6. Firms acquired by DMJM (1946–1984); Ashland Technology (1985–1989); and AECOM (1990–).

conformed directly to the culture of the practice. The twenty-two-story building was constructed on Wilshire Boulevard, was named One Park Plaza, and was jointly owned by DMJM and Real Estate Resources (Figure 7). Designed by DMJM architect Anthony Lumsden, the office spaces designated for DMJM were intended to conform to the firm’s current organizational structure and to support the firm’s continued growth. The floor plan was entirely open, prioritizing horizontality over verticality, and co-dependent groups were located on the fourth floor, referred to as the main “production” area (Figure 8). The design area was centered within a sea of departments, with engineering and production radiating outward.⁴⁷ As with the organizational charts, however, the design area was differentiated from the architecture

area where most drawing production and drafting was done. The corporate, accounting, personnel, contracts, communications, and administrative offices were on the lofted fifth floor; thus, while the firm described a culture of equivalency and centripetal organization, the office still revealed a latent top-down hierarchy.

Another important subsidiary company was Logicomp, founded in 1971 by architect Phillip Daniel. Logicomp was an affiliated data processing and computer services firm introduced initially for the U.S. Army Corps of Engineers research laboratory.⁴⁸ The company provided and maintained all computer and communication equipment and services for DMJM and other independent companies.⁴⁹ Logicomp installed and maintained a Univac 9300 Data Communication System for data computation at DMJM, including a Univac 1108S that provided the “pulse” of the computation process

(Figure 9). The Univac computer system was primarily operated by women as part of their secretarial work, which was still independent of drawing or business work—beyond secretarial work, more women were hired as architects by DMJM throughout the 1970s, though very few made their way to the ranks of administration. In addition to Logicomp, other subsidiaries during the 1970s included a space planning and interior design affiliate company, Associated Design, Planning, and Art (ADPA), as well as a loosely defined company, Atadeco, initially established as a shell within which architects and planners first worked on top-secret aerial surveillance projects for the government with DMJM’s own company airplane. Later, Atadeco was used for construction contract management. Finally, DMJM’s economics department operated independently, conducting financial analyses for a range of development projects, including office buildings, condominiums, apartments, and marinas. By the end of the 1970s, DMJM had become a bona fide corporate conglomerate, including a package of geographically diverse firms and multidisciplinary services, with fourteen *ENR*-listed subsidiaries, which ranged from real estate to management, construction supervision, cosmic X-rays, and computer data processing.⁵⁰

An Urban Shape of Practice

While the term “subsidiary” was used to describe the firms beneath DMJM’s corporate umbrella, the term was also used in the office to describe the power dynamics between individuals and their corresponding professions. For instance, as one business leader articulated his own climb up the corporate ladder of DMJM, he used the term “subsidiary” to describe the structures of successive power linked to each position. Explaining why he was a good fit for DMJM in the 1960s and 1970s, he stated the following:

I had the benefit of something no one at DMJM ever had. I had done architecture, engineering, marketing, financing, planning, and built a firm, and I had not been categorized on the architectural side nor the engineering side.... I started as a structural engineer, and was subsidiary to the architect, so I thought I better become an architect. Then I thought architects were subsidiary to owners [of properties and buildings], so, I became an owner. Then, I realized that owners were subsidiary to financial institutions, and the only way to get something built was if someone was willing to finance it. So I started a savings and loan [company]. My history is one of always expanding. Mechanical, civil, structural, architecture, ownership, finance, and then community shaping policy.⁵¹

However, within this engineer-cum-architect-cum-business executive's description of his successive roles was a latent hierarchy of work based on scales of practice that could be understood in relationship to an urban economy: material expertise and engineering were at the bottom, while urban policy-making was at the top. Indeed, while the small, architect-only partnership of DM&J of 1946 was hardly recognizable by the 1980s, DMJM CEO Dorman argued that the emphasis after the 1970s would not be on the narrowly focused designing of buildings or on the identification of specific building types but rather on "the total social and environmental context of the project." The individual building, he argued, "will be viewed from this perspective. Since social and environmental issues are very complex, it will take complex interdisciplinary teams to approach them. Therefore, the firms of the future will be very large (by today's standards) to include the variety of disciplines required."⁵² By emphasizing the context of a building rather than the building itself, Dorman shifted the agency



Figure 7. DMJM office building, One Park Plaza, Los Angeles, CA, 1971. Photo by Wayne Thom. (Illustrated in *Progressive Architecture* 6 (June 1972): 82.)

of the architect and engineer from the drawings they produced to the firm itself. As one business leader described it, the aim of DMJM was not wed strictly to a particular building type or to a region: "We were not going to be a school firm like Perkins and Will. We were not going to be a high-rise firm like SOM. *We were going to be everywhere.* Because my own observation was that things went up and down due to funding. The Northeast [US] might be dead, and the Southwest might be booming; schools [i.e., school buildings] might be the biggest thing in the world, and then highways might be booming. It would cost us money. When a discipline or a region went down, we would pay a price for it. But overall, we would be steady."⁵³ Furthermore, the synchronicity between the shape and composition of DMJM's practice and the scale of urban economies was made clear in a diagram for

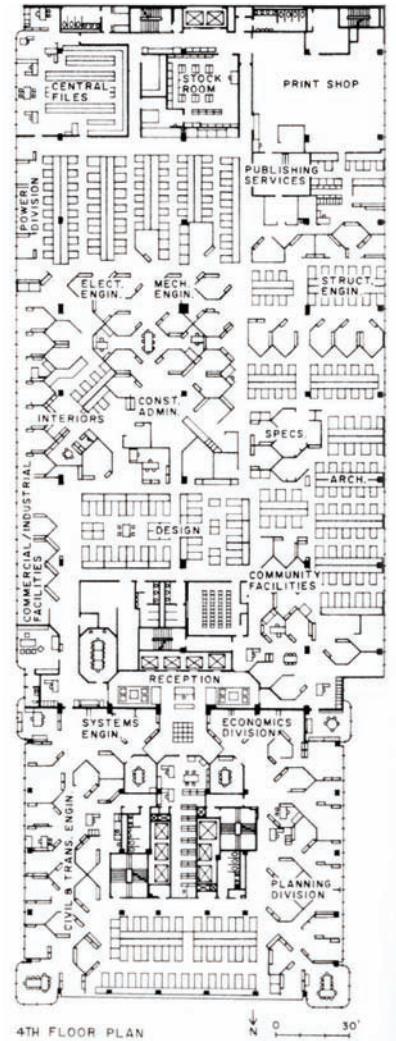


Figure 8. Fourth floor plan of the DMJM office, One Park Plaza, Los Angeles, CA, 1971. Artist unknown. (Illustrated in *Progressive Architecture* 6 (June 1972): 82.)

an experimental city developed by DMJM planners and architects. Drawn as a circular "urban system" that almost directly echoed the spirit of DMJM, the hypothetical city comprised twelve "subsystems," each of which was outlined as a bounded component that neither touched nor overlapped others (Figure 10). Like the services offered by DMJM, the "urban system" comprised social, economic, political, and physical subsystems. Architecture was designated as only part of the city's "physical" attributes—not at all touching the political or economic components—and as

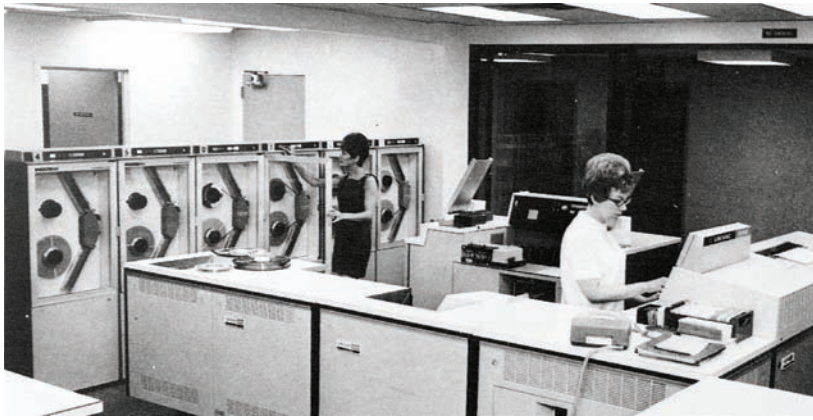


Figure 9. Women operated DMJM's Univac 9200 Data Communication System as part of secretarial labor. Photographer unknown. (Illustrated in DMJM, "Systems" brochure, undated. CSU Dominguez Hills Special Collections, Dominguez Hills, CA.)

a direct opposite to non-material social and cultural subsystems. However, when considering the wider range of *practices* and the scope of work in which architects were actively engaged, through subsidiaries and affiliated companies, the field of architecture was much wider. Beyond merely the "City Form and Building" subsystem, DMJM's practices—from real estate to computer services and economic consulting—exemplified the economic, sociocultural, and political dimensions of their imagined urban economy.

Therefore, the slow process of designing a responsive architectural practice through corporate conglomeration resulted in a precise attunement to the process of urbanization. Harvey has recently described this relationship—between late capital accumulation and the architects' imposition of order onto entire urban economies—as a result of post-Fordism and the accumulation of profit.⁵⁴ While the history of capitalism has largely followed the history of urban development, from the rise of the mercantilist city to the industrial city and then the Keynesian city, Harvey has suggested that postwar urbanization presented a spatiotemporal solution to the crisis of overaccumulation or surplus. However, the presence of surplus, according to Harvey, also risked overaccumulation, which posed a potential contradiction to capitalist accumulation since it

could result in excess commodities, falling profit rates, or idle money capital. To avert and to delay such a crisis, he argued, one could invest in the process of urbanization itself: "It is through urbanization that the surpluses are mobilized, produced, absorbed, and appropriated."⁵⁵ Therefore, while DMJM itself was not directly investing in the built environment, the allocation of their profits into the development and acquisition of new firms in tune with the shifting demands of urbanization enabled architectural practice not only to take the very shape of the urban economy in which the firm was embedded but also to allow a single, wide-ranging, multinational conglomerate firm, such as DMJM, to produce, re-produce, and maintain such economics.

The Formation of AECOM

While conglomerate activity during the 1960s and 1970s was the primary domain of industrial manufacturing and high-technology enterprises, conglomeration expanded to oil companies by the 1980s. Oil companies diversified in response to unstable oil markets in the Middle East and to evade anti-monopoly efforts from the U.S. Department of Justice. With its experience managing a wide spectrum of architectural and engineering services, DMJM was acquired in 1984 by a Kentucky-based oil company, Ashland Oil, Inc., a large, diversified corporation with operations ranging from petroleum to insurance; it

was also the parent of Valvoline Oil. Ashland's chief operating officer, John Hall, announced a desire to shift away from oil refineries and gasoline production alone, toward "high-technology" products and services, noting that "back in the 1960s, our chief strategy was to push more oil through the refineries, make more gasoline, sell more gasoline.... It doesn't work like that anymore. The world has changed. You've got to have a different *twist*."⁵⁶ Unlike oil giants, such as Exxon or Gulf, Ashland was required to think more broadly to maintain economic stability. Ashland acquired DMJM so that its corporate leadership could manage previously acquired architecture and engineering companies, and they formed Ashland Technology Corporation in 1985, a subsidiary wholly owned by Ashland Oil, Inc., and Dorman was hired to take the reins of the new Ashland holding company comprising three architecture and engineering firms and their respective subsidiaries: DMJM; Holmes & Narver, Inc.; and Williams Brothers Engineering.⁵⁷

Ashland quickly dipped into and out of the engineering and construction industry after its finances strengthened by 1989, though it implanted a thirst for more subsidiaries and greater geographic breadth at DMJM. By 1990, Ashland withdrew from the engineering business, selling a majority interest in Ashland Technology, and Newman initiated a three-million-dollar employee stock ownership plan (an employee-led buyback) in April 1990, which resulted in the formation of an employee-owned multinational architectural and engineering firm, named AECOM Technology Corporation, which consisted of five "legacy" companies that were acquired during the five years of Ashland's holding: DMJM; Consoer, Townsend & Associates, Inc.;

THE URBAN SYSTEM AND SUBSYSTEMS

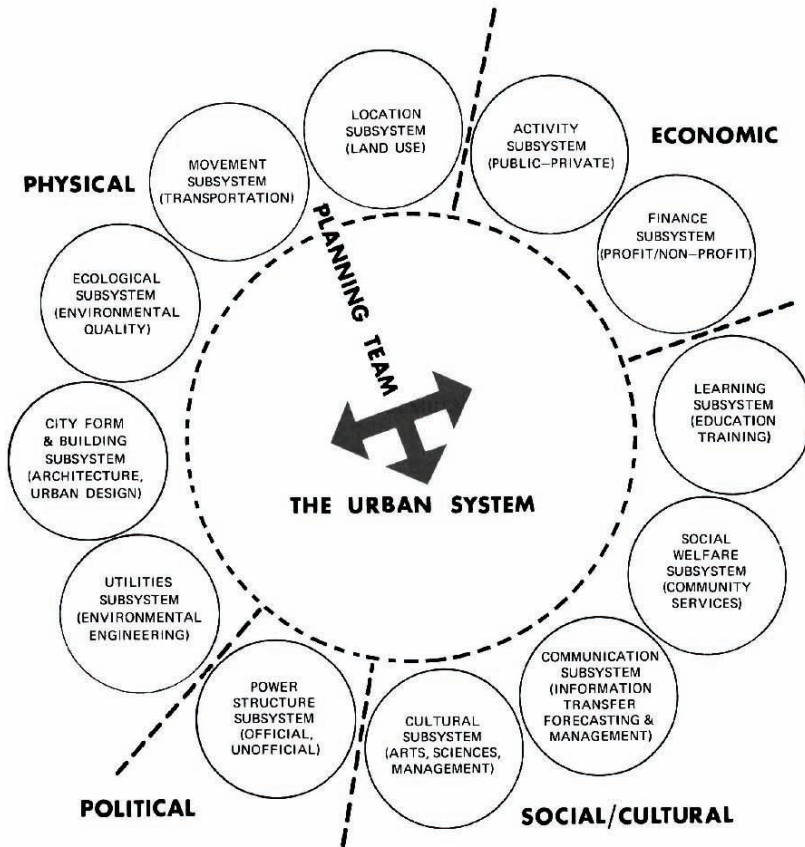


Figure 10. “The Urban System and Subsystems.” (Illustrated in DMJM, *Proposal for an Experimental City in Minnesota*, 1968. CSU Dominguez Hills Special Collections, Dominguez Hills, CA.)

histories of architecture practice but also to build, finance, and operate those buildings after they were constructed. The seemingly limitless scope of services offered by AECOM has enabled the firm to produce entire urban systems in ways that the founding architects at DMJM could have only imagined. As the senior vice president of AECOM asserted in 2010: “We are AECOM, we can do anything.”⁶⁰ The implications of this expanded scope of work were rendered visible by AECOM’s location in Los Angeles, as the firm moved its design offices in 2001 from DMJM’s One Park Plaza on Wilshire Boulevard to the central business district downtown, embedding itself in a homogenous sea of banks and financial institutions—a fitting juxtaposition for a firm that, too, offered financial services.⁶¹ However, unlike financial institutions, which hold no inherent allegiance to the built environment, AECOM had become a direct conduit through which finance capital could be channeled into the built environment. Perhaps more widely entangled in the making of cities than strict financial institutions, the company’s prominence was viewed as a testament to the strength of Los Angeles’s urban economy and the city’s marketability. Los Angeles mayor Eric Garcetti argued in 2014 that AECOM represented “a strong signal of confidence in LA’s economy and in our brand as a place to do business.”⁶² Despite these economic merits of triumph, the firm’s executives initiated a series of substantial internal investments to answer a profoundly paradoxical question: what is the role and value of the architect within such a firm? Though it may appear as an AECOM-specific conundrum, the question reflects longstanding historical debates in architecture about the value of an

Frederic R. Harris, Inc.; Holmes & Narver, Inc.; and P&D Technologies, Inc.

While DMJM represented only one part of this new conglomerate of firms, its culture of practice was maintained and reinforced in the formation and oversight of AECOM because Dorman was named AECOM’s first chairman of the board and CEO; Newman was named its president.⁵⁸ The firm’s new name, A-E-C-O-M, was reduced to its anonymized services, no longer attached to the names of founding partners. However, the name also provided for future flexibilities and open-ended possibilities. “A” and “E” were clear: architecture and engineering, yet the “COM” was specifically left open-ended, a testament to flexible and open-ended possibilities of

late capitalist economics. It could be used to suggest Construction, Operations, and Management or Contracts, Operations, and Maintenance or Construction Management.⁵⁹

Conclusion

Under a new generation of business management, AECOM was listed on the stock exchange in 2007, and the firm absorbed the individual names of its subsidiary companies, including DMJM—erasing the image of a firm that was fundamentally varied. Beyond architecture and design, AECOM’s services included those as far-ranging as IT and cybersecurity, cost management, and equity investment by 2017, which enabled its practitioners not only to design buildings for their clients in ways familiar to

architect—not only about how an architect economically contributes to a large firm but also how one influences economies more broadly.

AECOM's history begins to provide insight. While one could argue that, in pursuit of profits, the architects at DMJM helped to expunge the architect's historical role, I suggest that the rise and prominence of DMJM was predicated on the ability of its architects to elevate their own economic and political value, continuously realigning their practice according to anticipated shifts in the economy. By positioning themselves as equals—rather than superiors—to other urban practitioners, they demonstrated how architectural work could be lucrative within a post-Fordist economy. In addition to contributing economically to the firm by developing and acquiring diverse companies, the architects took on urban projects—from city infrastructures to military bases—that were not historically considered “architecture.” In so doing, architects expanded the field of practice upon which they could operate.

However, the subsumption of the architect into capitalist trends does not come without caution or challenges. Like many large, postwar architecture firms, DMJM's history peddles a predominantly white, male-dominated view of corporate capitalism, and the firm did not radically re-evaluate the manual labor traditionally associated with architectural production. Moreover, the infinite possibility of unrestrained neoliberal accumulation—fueled more recently by public finance capital and the ease of global circulation—poses an inherent ethical dilemma for practitioners: what are the limitations, if any, to an architect's geopolitical power? As AECOM lays the foundation—from material infrastructure to legal rights—for entire urban areas, including those in developing regions around the

world, the trajectory of corporate architectural practice may begin to evoke a wider range of architectural histories about discipline and governmentality.⁶³

Nonetheless, while a corporate firm such as DMJM is an unexpected site upon which to launch a study about the values of architectural work, the firm's attunement to the inner workings of late capitalism is illuminating for a profession—especially in the US—that has historically understood the pursuit of economic capital as antithetical to architectural design. If, at their core, histories of multinational conglomerates offer views of architecture in which firms themselves, rather than merely their resulting buildings, are objects of design that reconcile capitalist possibilities, urban imperatives, and architecture's disciplinarity, then such histories may also provide architects with models for expanding—or grounds for critiquing—the value of the architect in the profession and the public.

Author Biography

Aaron Cayer is an ethnographer, historian, and educator of architecture. He is currently an assistant professor of architecture history at the University of New Mexico. Prior to New Mexico, he taught architecture history and theory at Cal Poly Pomona, and he was a senior research associate at cityLAB, an urban research center within UCLA's Department of Architecture and Urban Design (2012–17). In Los Angeles, he also cofounded that city's chapter of The Architecture Lobby in 2016. He received his PhD in architecture from the University of California, Los Angeles, as well as undergraduate and graduate degrees in architecture from Norwich University in Vermont. His current research focuses on the histories and theories of postwar corporate architectural practices as they overlap with those of labor, capitalism, and urban political economies.

Notes

- 1 Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA: Belknap, 2002), 480–82. See also Neil Fligstein, “The Spread of the Multi-Divisional Form Among Large Firms, 1919–1979,” *American Sociological Review* 50 (June 1985): 377–91.
- 2 Trailblazing industrial organizations, such as DuPont and General Electric, set a precedent for diversified conglomerates as early as the 1920s. However, it was not until the 1960s that a “merger mania” of conglomerates grew to enormous proportion. See the Editors of Fortune Magazine, *The Conglomerate Commotion* (New York: Viking, 1970); Neil Fligstein, “The Structural Transformation of American Industry: An Institutional Account of the Causes of Diversification in the Largest Firms, 1919–1979,” in *The New Institutionalism in Organizational Analysis*, ed. Walter W. Powell and Paul DiMaggio (Chicago: University of Chicago Press, 1991), 311–36; and Naomi R. Lamoreaux, Daniel M. G. Raff, and Peter Temin, “Beyond Markets and Hierarchies: Toward a New Synthesis of American Business History,” *American Historical Review* 109, no. 2 (2003): 404–33.
- 3 Robert Gutman, “Architecture: The Entrepreneurial Profession,” *Progressive Architecture* (May 1977): 39–40.
- 4 For revenue data, see AECOM, *Imagine It. Delivered. 2017 Annual Report* (Los Angeles: AECOM, 2018); and Stuart Pfeifer and Chris Kirkham, “Merger of AECOM and URS to Create Giant LA Construction Firm,” *Los Angeles Times*, July 13, 2014. For salary data, see Security Exchange Commission, AECOM, “Form DEF 14A,” 2018, <https://www.sec.gov/> (accessed March 3, 2018).
- 5 Among others, see Henry-Russell Hitchcock, “The Architecture of Bureaucracy and the Architecture of Genius,” *Architectural Review*, no. 101 (1947): 3–6; and Claire Zimmerman, “The Labor of Albert Kahn,” *Aggregate 2* (December 2014), <http://www.wc-aggregate.org/piece/the-labor-of-albert-kahn>.
- 6 “Albert Kahn Associates,” <http://www.albertkahn.com/what.php> (accessed March 14, 2018). For excellent business histories that explain the shifts from twenty- to twenty-first-century firm structures, see Thomas P. Hughes, “From Firm to Networked Systems,” *Business History Review* 7, no. 3 (2005): 587–93; and Walter W. Powell, “The Capitalist Firm in the 21st Century,” in *The Twenty-First Century Firm*, ed. Paul DiMaggio (New York: Princeton University Press, 2001), 33–68.
- 7 “Perkins+Will Firm Profile,” <https://perkinswill.com/firm-profile> (accessed December 12, 2017). See also Ronald Litke, “Perkins & Will: The First 50 Years,” *Inland Architect* (October 1985): 11–15.
- 8 Gurney Breckenfeld, “The Architects Want a Voice in Redesigning America,” *Fortune* 84, no. 5 (1971): 144–47, 198–99, 203–4, 206.
- 9 RTKL, Inc., merged with the engineering, research, and computer software firm URS Systems of San Mateo, California, in 1971,

- while New York-based conglomerate Ogden Corporation—a company with interests ranging from shipbuilding to restaurants and savings and loans—acquired architecture firm Charles Luckman Associates in Los Angeles in 1968.
- 10 Paolo Tombesi, “Capital Gains and Architectural Losses: The Transformative Journey of Caudill Rowlett Scott (1948–1994),” *Journal of Architectural Education* 11, no. 2 (2006): 157. For an overview of CRS as a business, see Jonathan King and Philip Langdon, eds., *The CRS Team and the Business of Architecture* (College Station, TX: Texas A&M University Press, 2002).
- 11 At the time of the split, CRS had acquired the engineering firm J. E. Sirrine and was named Caudill Rowlett Scott Sirrine (CRSS). Tombesi, “Capital Gains,” 145–68.
- 12 W. B. Smith, “DMJM in Architecture,” *DMJM Review* (September 1976): n.p.
- 13 This definition appeared in amendments made to the 1890 Sherman Antitrust Act, the landmark statute that prohibited monopolies. The first amendment passed by the Clayton Antitrust Act of 1914 specifically prohibited price discrimination and M&As (under Section 7) if they were to lead to decreased competition. The second was the Celler-Kefauver Act in 1950, which is often referred to as the “Anti-Merger Act,” which included provisions against acquisitions, even by acquiring assets, and it prohibited vertical and conglomerate mergers if they were to result in reduced competition. In draft reports by the Federal Trade Commission in 1948, conglomerates were initially defined very specifically as “those in which there is little or no discernible relation between the business of the purchasing and the acquired firm,” before concluding with a much broader application in the final 1950 amendment. *Federal Trade Commission on the Merger Movement: A Summary Report* (Washington, DC: Federal Trade Commission, 1948), 59. See “Celler Kefauver Act,” Public Law Ch. 1183–84, December 29, 1950, 1125–28, <http://legisworks.org/congress/81/publaw-899.pdf> (accessed November 12, 2017).
- 14 Michiel de Vaan, ed., *Etymological Dictionary of Latin* (Leiden: Brill, 2008).
- 15 Peter Drucker, *The Concept of the Corporation* (New York: John Day, 1972), xvi.
- 16 Ibid.
- 17 See “Producer of Production Lines,” *Architectural Record* (June 1942): 39–42; and “Industrial Buildings: Albert Kahn Inc.” *Architectural Forum* (August 1938): 87–96.
- 18 Nathaniel Owings, *The Spaces in Between: An Architect's Journey* (Wilmington, MA: Houghton Mifflin, 1973), 66. Despite resisting incorporation to remain a partnership, SOM remained a top-ranked firm in terms of revenue and size, though DMJM surpassed SOM in 1990. See “The Top 500 Design Firms,” *Engineering News-Record* (April 1991): 33–66.
- 19 On SOM, see Sigfried Giedion, “The Experiment of S.O.M.,” *Bauen und Wohnen* 11, no. 4 (1957): 109–14. On Kahn, see Hitchcock, “Architecture of Bureaucracy,” 3–6;
- “Producer of Production Lines,” 39–42; and Zimmerman, “Labor of Albert Kahn.”
- 20 David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Oxford: Blackwell, 1989), 141–72.
- 21 Ibid., 147–52.
- 22 Edward W. Soja, *Postmodern Geographies: The Reassertion of Space in Critical Social Theory* (London: Verso, 1989), 185.
- 23 The Motta Building was located at 306 South Broadway in Santa Maria. It was originally known as the Rubel Building and was demolished in 1976. DMJM, 1946–1955 *Daniel, Mann, Johnson, & Mendenhall* (Los Angeles: AECOM company archives, n.d.), 6.
- 24 Ibid.
- 25 Seymour Freedgood, “Dimjim: Architects for the Space Age,” *Fortune* (August 1960): 124.
- 26 “Profile of a New Kind of Manager: How to Pack Pleasure and Profit into a Partnership,” *Management Methods* (September 1957): 27.
- 27 BAH was a burgeoning consulting firm that practiced statistical analytics, beginning in 1914, and emerged as an important management consulting firm after World War II, offering consulting services for companies that ranged from the Radio Corporation of America (RCA) to Johnson Wax, the U.S. Air Force and Navy, and the National Security Agency. DM&J hired BAH to help identify inefficiencies in the business and to develop long-term economic procedures and objectives. “Profile of a New Kind of Manager: How to Pack Pleasure and Profit into a Partnership,” 28. Ironically, Ed Burnell, the consultant from Booz Allen Hamilton who worked closest with Perkins and Will, died while on a golf course. Lawrence Bradford Perkins, “Oral History of Lawrence Bradford Perkins, F.A.I.A.,” interview by Betty J. Blum, 2000, Department of Architecture, the Art Institute of Chicago, 79.
- 28 “Profile of a New Kind of Manager,” 27–28. After an initial six-week survey, Russell signed a twelve-month contract as a business manager, with a stipulation that he would have complete control of finances and organization, and he demanded partner salary in addition to 40 percent of the firm’s total profits. Since this deal still promised more than the firm had made in the past, he was hired.
- 29 “Six Partners with Six Personalities,” *Business Week*, January 19, 1957.
- 30 Former business executive in discussion with the author, February 8, 2016.
- 31 Ibid.
- 32 Detroit architecture and engineering firm Giffels & Rossetti was ranked as the “biggest.” Between 1957 and 1958, Perkins & Will dropped from the ninth spot to the thirty-fourth, SOM dropped from second to eleventh, and Albert Kahn dropped from seventh to twelfth. SOM, however, did not report data in 1958, so the numbers for SOM in 1958 were based on 1957 revenue data. Editors of Architectural Forum, *The 1959 FORUM Directory of the 100 Biggest Architects, Contractors, Clients* (New York: Time, 1959);
- Editors of Architectural Forum, *The 1958 FORUM Directory of the 100 Biggest Architectural Firms, Building Customers, Building Contractors* (New York: Time, 1958).
- 33 While DMJM incorporated in California in 1960, DMJM initially incorporated its international practices as DMJM International in 1954. “Organization for Efficient Practice: Daniel, Mann, Johnson, & Mendenhall, Architects & Engineers,” *Architectural Record* (June 1960): 192.
- 34 See especially Adolf A. Berle, *The Modern Corporation and Private Property* (1932; repr., New Brunswick, NJ: Transaction, 1991); Drucker, *Concept of the Corporation*; and Chandler, *Visible Hand*.
- 35 “The Architect’s Office,” in *Architect’s Handbook of Professional Practice*, ed. Joseph A. Demkin (Washington, DC: American Institute of Architects, 1971), 3–6.
- 36 Robert Brueggemann, *The Architects and the City: Holabird & Roche of Chicago, 1880–1918* (Chicago: University of Chicago Press, 1997), 116. On the status of the profession by 1950, see Turpin C. Bannister, *The Architect at Mid-Century*, vol. 1 (New York: Reinhold, 1954).
- 37 In 1972, 1,203 incorporated architecture firms, 3,361 sole proprietorships, and 2,252 partnerships existed in the US. By 1977, 2,276 corporations, 4,409 sole proprietorships, and 1,908 partnerships existed. A decade later, in 1987, 10,571 corporations, 5,001 individual proprietorships, and 1,652 partnerships existed. U.S. Department of Commerce, Bureau of the Census, *Census of Selected Services*, 1972, Subject Statistics, vol. 1, Table 4; and U.S. Department of Commerce, Bureau of the Census, *Census of Service Industries, 1987*, Industry Series: Miscellaneous Subjects, Table 7.
- 38 “Organization for Efficient Practice,” 192.
- 39 DMJM, “Articles of Incorporation of Daniel, Mann, Johnson, & Mendenhall,” February 1, 1960. Filed by Frank M Jordan, Secretary of State, California.
- 40 Cover, *Engineering News-Record* (May 1961).
- 41 Robert J. Stinson, “The Money-Makers (and Some Losers): What the Reports Show,” *Engineering News-Record* (May 1961): 212–13.
- 42 “The Top 500 Design Firms,” *Engineering News-Record* (July 1966). By 1968, DMJM was the highest ranked firm in which architecture was included, and SOM was ranked sixth. The top firms by revenue were predominantly engineering firms, with Howard, Needles, Tammen & Bergendoff ranked first, DeLeuw, Cather & Co. ranked second, and Sargent & Lundy Engineers ranked third. “The Top 500 Design Firms,” *Engineering News-Record* (May 1968).
- 43 “Profile: Daniel, Mann, Johnson and Mendenhall: A Summation of Parts,” *Progressive Architecture* (June 1972): 74.
- 44 “Genge Unites 20 Subsidiaries into a National Design Network,” *Engineering News-Record* (December 1973): 23–24.
- 45 Former architect in discussion with the author, Feb 17, 2016.
- 46 “Profile: Daniel, Mann, Johnson and Mendenhall,” 74.

47 DMJM, "One Park Plaza," *DMJM Review* (Spring 1973): 1.

48 "Data Processing Firm Acquired," *Los Angeles Times*, September 21, 1975.

49 Paul Konkol, "Getting in Step with CAEDS," *DMJM Review* (1978): 3. CSU Dominguez Hills Special Collection, Dominguez Hills, CA.

50 DMJM's listed subsidiaries in 1980 included American Science & Engineering, Co.; Arctic Slope Technical Services, Inc.; Associated Design Planning & Art, Inc.; DMJM International; DMJM/Thomson, Ltd.; Development and Technology Consultants, Inc., Philippines; Logicomp, Corp; Real Estate Resources; Technical Management Services, Inc.; TMSI Arabia, Ltd., Saudi Arabia; TMSI Contractors, Inc.; and Wilhamp, Inc. "The Top 500 Design Firms," *Engineering News-Record* (May 1982): 95.

51 Former business executive in discussion with the author, February 8, 2016.

52 "Profile: Daniel, Mann, Johnson and Mendenhall," 78.

53 Former business executive in discussion with the author, February 8, 2016; emphasis added.

54 David Harvey, *The Urban Experience* (Baltimore: Johns Hopkins University Press, 1989), 22. See also Harvey, "From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism," *Geografiska Annaler B: Human Geography* 71, no. 1 (1989): 3–17; and Harvey, *The Urbanization of Capital: Studies in the History and Theory of Capitalist Urbanization* (Baltimore: John Hopkins University Press, 1985).

55 Harvey, *Urban Experience*, 54.

56 "Company News: Ashland's Future May Not Be in Oil: Competitive Edge Sought in Diversity," *New York Times*, December 1, 1980; emphasis added.

57 Ashland Oil Company, *Annual Report* (Ashland, KY: Ashland Oil Company, 1986), 29–30.

58 DMJM maintained semi-autonomy as a subsidiary within AECOM until 2007, when AECOM was publicly listed on the New York Stock Exchange, though it merged with others and was reconfigured numerous times. In 2000, for example, the firms Frederic R. Harris and DMJM merged to create "DMJM Harris," focusing on "infrastructure and transportation business segments"; furthermore, Holmes & Narver, Inc., merged with DMJM to form "DMJM H&N," focusing on "facilities business segments." In 2003, DMJM H&N was reorganized again into DMJM Design, DMJM Management, and DMJM Technology. Jeffrey L. Rodengen, Elizabeth Fernandez, and Heather Lewin, eds., *AECOM: 20 Years and Counting* (Fort Lauderdale: Write Stuff, 2010), 38–40.

59 Former business executive in discussion with the author, February 8, 2016.

60 Aaron Seward, "Making It Big," *Architects Newspaper*, June 16, 2010. <https://archpaper.com/2010/06/making-it-big/> (accessed April 3, 2018).

61 By the 2000s, the firm's global headquarters was separated and located in the SunAmerica Center on the Avenue of the Stars, designed

by Johnson Fain and built in 1990, while the former DMJM office, which included the design, engineering, and planning services, moved from DMJM's former One Park Plaza offices to the City National Plaza, downtown, in 2001, and again in 2015 to One California Plaza, downtown. See Brad Berton, "Architect Firm DMJM to Move Its Headquarters Downtown," *Los Angeles Times*, June 26, 2001; and Hannah Miet, "AECOM to Lease at One California Plaza," *Los Angeles Business Journal*, May 14, 2018.

62 Pfeifer and Kirkham, "Merger of AECOM and URS."

63 See, for example, an overview of AECOM's urban projects. Dana Cuff, "Architecture's Undisciplined Urban Desire," *Architectural Theory Review* 19, no.1 (2014): 94.