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Aesthetics of Indeterminacy: The Architecture of Conglomerates

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By the early 1970s, concern about the rise and prominence of large conglomerate corporations had fully saturated economic discourse in the United States. As products of a brief yet powerful merger mania during the 1960s, large industrial organizations began to restructure the economy by aggressively merging with and acquiring firms in disparate industries and geographies in order to obtain what business executives referred to as 'geopolitical' power. With hundreds of diverse subsidiaries, many of these military-sponsored conglomerates — from Union Carbide to Litton Industries to Teledyne — demanded new laboratories and office buildings that seemed to defy modernist tendencies of material standardization, reproducibility, and homogeneity, since the rates and directions of their future growth were indeterminable. The buildings produced for conglomerates between the 1960s and 1980s have been described by urban geographers and historians as the aesthetic and material epitomes of postmodernism, since they were often designed with highly reflective, hermetic surfaces that protruded, curved, and folded — simultaneously revealing and concealing the late capitalist logics that undergirded them. This article considers how conglomeration was viewed as a geopolitical act that challenges existing histories and theories of postmodernism, which reduce the aesthetic conditions of these buildings to abstract representations of late capitalist economics. Instead, the article draws on the laboratories designed by architects César Pelli and Anthony Lumsden for conglomerates during the late 1960s in order to reveal how these aesthetic conditions were responses to the particular geopolitical practices and structures of conglomerate business, including the imperialist acts of 'acquiring' people, land, and other businesses.

Keywords: Conglomerate; indeterminacy; postmodernism; business; practice; capitalism

Introduction

In 1970, the editors of *Fortune* magazine published *The Conglomerate Commotion* in which they describe a mania of large industrial organizations acquiring firms in unrelated industries and geographies to obtain what business executives referred to as 'geopolitical' power: power by accumulating land and resources (Fortune 1970). From the petrochemical company Union Carbide to the microelectronics company Teledyne, each organization demanded new laboratories and headquarters that seemed to defy modernist planning and reproducibility, since the rate and direction of their future growth was unknowable. Beyond expansion for expansion's sake, however, diversifying within conglomerate businesses was a strategy for evading regulatory sanctions. In the US, for instance, the government in the mid-1960s began to break up monopolies, unions, and professions to encourage economic competition. By *not* defining a single industry, direction, or geographic footprint, businesses could avoid sanctions and maximize their capital gains. Indeterminacy, therefore, was an object of design.

More specifically, conglomerate businesses relied on architects to design physical infrastructures and enclosures that could support businesses that grew by merging with and acquiring others. Architects absorbed the lessons of their conglomerate clients and developed theories of conglomerate architecture that came to define one prominent subset of postmodernism. The headquarters and laboratory buildings of conglomerates designed between the 1960s and 1980s boasted highly reflective hermetic surfaces that protruded, curved, jogged, and folded to both reveal and conceal the mania of acquisitions within them. Critics and theorists of this period, including Charles Jencks and Fredric Jameson, as well as more recent historians such as Reinhold Martin, have suggested that these surface conditions made visible abstract shifts in the economy; these examples of postmodern architecture, they argued, both *represented* (according to Jameson and Jencks) and *belonged to* (according to Martin) late capitalism. While these assertions may be true, to focus on the surface was to accept the concealing trap of conglomeration and to skirt the attendant matters of businesses, such as their antagonistic strategies, power relationships, and geopolitics. Rather than retheorize these surface conditions, this article connects the enclosures of conglomerate buildings to the business for which they are built to more directly consider the relationship between theory and practice and the slow and subtle shifts from modernism to postmodernism.

Conglomerate businesses, as business historian Alfred D. Chandler, Jr., described in his *Visible Hand* of 1977 (2002: 480–81), were extreme versions of modern firms;

conglomerates emerged slowly and over an extended period of time, rather than abruptly and all at once. In contrast to architectural historians, business historians have, even to this day, described conglomerates as diversified *modern* firms (Lamoreaux, Raff, and Temin 2002). By conducting an architectural history of conglomerate business, rather than an economic theorization of architecture, one can begin to see how these examples of postmodern architecture were not derived from abstract socio-economic relationships between capitalism and the built environment: they could not be reduced to their surface conditions. Instead, conglomerate buildings were explicitly designed by architects who were attuned to the geographical and political practices of profit- and power-seeking business. For example, at the heart of a conglomerate were 'geopolitical' acquisitions — of land, bodies, buildings, and firms — that, within histories of imperialism, characterize jumps from individual to imperial pursuit and the most advanced acts possible within capitalism (Arendt 1973; Lenin 1963).

This article traces the work and theories of architects César Pelli and Anthony Lumsden, who worked together as, respectively, design director and assistant at the Los Angeles-based architecture conglomerate Daniel, Mann, Johnson, and Mendenhall architects (DMJM; presently named AECOM — the largest architecture and engineering conglomerate in the world). During the Cold War, DMJM served as an important defense contractor that designed military bases and urban infrastructure for the US military, CIA, World Bank, World Health Organization, and US Agency for International Development. The firm subsequently offered design work for their like-minded defense contractor clients: large-scale, corporate conglomerates. By the 1970s, the term 'conglomerate' transcended business and had fully saturated discourse about form and aesthetics: it was exported to loosely describe the material and spatial ordering of postmodern buildings. Pelli used the term 'conglomerate' to describe projects with competing and seemingly divergent geometries, while Jencks used the word 'conglomerate' to announce the arrival of postmodern architecture.[1]

The Need for Designers at DMJM

DMJM formed in Santa Maria, California in 1946, and the company moved to Los Angeles soon after. The firm absorbed the lessons of expansion, acquisition, and management from the US military — lessons that resonated with and were reproduced by projects for conglomerate clients. By the 1970s, DMJM was itself defined as a 'conglomerate'. The firm had grown by merging with and acquiring other companies in seemingly unrelated industries and disciplines. Its subsidiary firms ranged in service from architecture to real estate to graphic design, data processing, cosmic X-rays, and aerial surveillance

— each broadening what the business leaders at the firm described as its 'geopolitical markets' (Turpin 1974; Newman 2016).

For DMJM, the term 'geo' referred to the geographic breadth of the firm, such as new offices in cities from Washington, DC, to London to Tokyo, while the explicit diversity of services constituted the 'political' dimension of the firm. The use of the term 'geopolitical' by an architectural conglomerate was not so different from the term's historical use by nation-states, though it represented a shift in the site of imperial power from governments to private capital. This broad definition of geopolitics was established by the government's interpretation of conglomerate business. In the 1950s, conglomerate mergers were defined in the broadest of terms by the US Federal Trade Commission, which 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 utterly disparate in their function, service, product, or distribution (Cayer 2019: 180).[2]

In 1964, DMJM hired the young architects Pelli as design director and Lumsden as assistant, both of whom had worked as associates at Eero Saarinen and Associates and its successor office Kevin Roche and John Dinkeloo and Associates. While Saarinen and Pelli worked together on projects that included the TWA Terminal at the Kennedy Airport in New York, Lumsden and Dinkeloo collaborated on corporate headquarters and laboratories for companies such as IBM and Bell Telephone. Lumsden was the manager of design for the Bell Telephone Laboratories in Holmdel, New Jersey, under Roche between 1957 and 1962. They designed an often-cited expansive reflective glass curtain wall that was publicized as 'The Biggest Mirror Ever' in *Architectural Forum* in 1967 ('The Biggest' 1967). While Lumsden proposed an inverted structural mullion to provide a continuously smooth surface to conceal the inner workings of the business, Roche rejected the proposal. In his view, a protruded vertical mullion was necessary for emphasizing modernist standardization (Paul 2004). It was precisely this expanse of visible, repetitious mullions and mirror glass, as well as the distorted images of the environment captured on its surface, that Martin describes as the aesthetic epitome of a mid-century corporate 'organizational complex' (2003). However, when Pelli and Lumsden arrived at DMJM, their clients supported glass experiments, and they slowly broke free from the constraints of standardization. They embraced flexible, omnidirectional aesthetic possibilities that were later described by critics and theorists as 'postmodern'.

Pelli and Lumsden won design awards that elevated the perception of large architecture corporations in Los Angeles. In 1966, for instance, the Sunset

International Petroleum Corporation commissioned DMJM to design a mountaintop housing community in Santa Monica, named Sunset Mountain Park, which was never built, though it received the First Design Award from *Progressive Architecture* and was featured in several international architecture journals. In addition, Pelli and Lumsden designed office buildings with smooth mirror glass facades throughout Los Angeles that challenged the uniformity of otherwise standardized, rectilinear, and low-cost corporate architecture. Esther McCoy, an architecture critic in California, argued that Pelli and Lumsden's projects pushed beyond the standard 'kit of parts' that was typical of 'the big offices'. 'The big office', she suggests,

> with its relentless flow of large-scale building, is often an agent through which change comes, even though the design comes out of the drawer. When the big offices pause to produce 'art' it is too often an essay into temple making, and the solution in the drawer might have been better for the city. (McCoy 1968: 106)

With the 'tough mind' of Pelli in charge and Lumsden by his side, McCoy argues that DMJM was more sensitive to the tensions of the city, the city's economy, and its businesses. Together, they were compelled to 'rethink design in terms of post-drawer needs. Commonsense architecture is lifted above dullness and it becomes the means through which the city is refreshed' (1968: 108). Therefore, not only did Lumsden and Pelli's projects help to bolster DMJM's reputation as a preeminent design firm, but they also helped to establish a discourse about architecture in Los Angeles that was shaped by the needs of big business. Lumsden and Pelli were members of two prominent, though short-lived, design groups, including the 'Silvers', a group of Los Angeles architects known for the smooth, silver-like mirror glass facades of their buildings, and the 'LA Twelve'—a group of twelve Los Angeles architects practicing for twelve years who displayed twelve projects at the Pacific Design Center in 1976. Therefore, even though the practices of Pelli and Lumsden were underwritten by a firm that grew through mergers and acquisitions, they were listed among the ranks of noted Southern California architects, including Craig Ellwood, Ray Kappe, John Lautner, and Frank Gehry.[3]

Designing for Growth

Pelli and Lumsden's theories of design were supported by corporate conglomeration — not only because DMJM had developed into a conglomerate beneath their feet, but also because many of their clients were conglomerate enterprises acquiring and merging with subsidiary companies in unrelated industries. One of Pelli and Lumsden's earliest and most revealing projects at DMJM was a laboratory designed in 1966 for

the microelectronics and semiconductor conglomerate, Teledyne. Teledyne was a prominent defense contractor during the Cold War, and its mushrooming growth in the 1960s characterized the proliferation of conglomerates in the US more broadly. These included International Telephone and Telegraph (ITT), Litton Industries, and Textron — each of which followed the leads of early industrial conglomerates, such as DuPont and General Electric as early as the 1920s, though they had become focused on the tools of machines, rather than on machines themselves (Holland 1989; Lamoreaux, Raff, and Temin 2002).

Teledyne was established in 1960 by former Litton Industries executives Henry Singleton and George Kozmetsky, who acquired the stock of three existing microelectronics and control systems companies and their 200 employees (Roberts and McVicker 2007: 18). Fueled by the military and aerospace markets into which they lodged their systems technologies, Teledyne acquired seven companies in its first two years. By 1966, it was a Fortune 500 company with over 5,000 employees. By the end of the decade, the offerings of Teledyne's subsidiaries ranged from microelectronics to dental appliances and insurance, and Singleton described Teledyne as a 'living plant': the individual subsidiaries within Teledyne represented different 'branches', each sprouting their own tertiary branches such that 'no one business [was] too significant' (Singleton in Roberts and McVicker 2007: 22).

Singleton was an avid architectural philanthropist who commissioned Richard Neutra to design his own modernist glass house in Bel-Air in 1959 and Wallace Neff to design a second sprawling estate in Holmby Hills in 1973 — between which he commissioned DMJM to design Teledyne Labs. Sited in a pastoral 36-acre orange grove in Northridge, California, the manufacturing and research lab was completed in 1968, and it included spaces for administration, engineering, and electronics assembly (**Figure 1**). The building made a clear departure from Fordist means of production, in which labor was directly connected to capital outputs, since it did not include linear industrial assembly lines; instead, it included decentralized microelectronic assembly laboratory spaces. The biggest challenge in designing a conglomerate was determining the relationships between the laboratory spaces and considering the company's future acquisitions. Pelli argued that, like the 'living plant' Singleton envisaged, the labs 'could not be designed as a structure with a static future', since the building would need to account for both flexibility and growth that could not yet be determined. In his descriptions of the project, Pelli asserted that 'flexibility in architecture relates to the possibilities of change within a given area. Growth has to do with the addition of new areas and functions to existing ones' (1969: 6). As a result, the building was described as a dynamic 'complex' comprising 'several structures housing different functions', and it was subject to expansion during any phase of its life.[4]

Figure 1: Front façade of Teledyne Laboratories, Northridge, CA, built in 1968. © Julius Shulman. J. Paul Getty Trust. Getty Research Institute, Los Angeles.

In the site plan for Teledyne, dashed lines extend beyond the building's proposed walls to outline a speculative footprint of an expanded lab, labeled as 'future' (**Figure 2**). These dashed lines were not unlike the dashed lines used in DMJM's own organizational charts, which indicated new sources of capital from immaterial labor, including marketing or real estate, that did not directly relate to the design labor within the firm. Similarly, in the Teledyne plan, the dashed spaces marked as 'future' accounted for a new source of capital — speculation — that had an indirect and ambiguous relationship to the manual labor of microelectronics assembly. Even further, the administration offices are pulled outward from the center of the otherwise linear line of circulation to present a sense of horizontal hierarchy, and the building's form quite literally takes on the form of an organizational chart transposed onto the ground itself — exposing the hierarchies that were so carefully concealed by the modern corporate towers of the preceding decades. Through its site plan, the conglomerate business is translated into spatial and geographic terms. Pelli described the 'complex' as perpetually incomplete and heterogeneous:

> One of the characteristics of growth or planning for growth is that it is different from what we thought it would be five years ago. To assume that you can add increments of the same thing five years later is unrealistic ... [Architects] prefer to think of something 'finished'. When they think of changes it is the changes inside a building ... By and large, architects are still designing temples. This is a static view of life, but today we recognize and welcome that life is change. Teledyne is not a building but a complex. Complexes are not homogenous; they are structures faced with problems

> of growth ... It is seldom possible to predetermine growth, and the problem is how to plan for undetermined growth without throwing the architecture away. (Pelli in McCoy, 1968: 103, 105)

According to Sigfried Giedion, the material interest in 'growth' indicated a shift away from the determinisms associated with standardization and mechanization. This followed the field of genetics and the possibility of crossbreeding organisms and plants to produce new ones, rather than merely to mass reproduce existing ones. Giedion noted that, while the 18th century was responsible for mechanizing the process of genetic hybridization, genetic alteration after the 1930s occurred at an unprecedented rate and at a scale of 'gigantic' (1948: 247–248). Architects and business executives re-appropriated the language of genetics during the 1960s to naturalize the combining and re-combining of firms to create new ones.

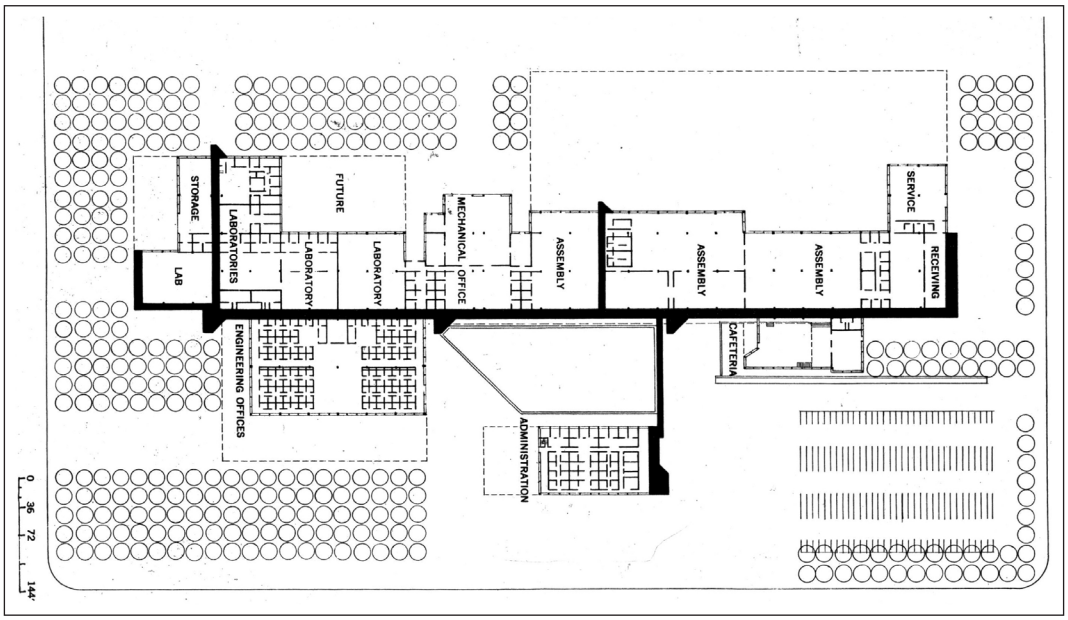

Figure 2: Site plan of Teledyne Laboratories. From McCoy (1968: 105).

The Teledyne complex was organized around an 800-foot-long linear circulation core, which Pelli described as a 'spine' (**Figure 3**). It was intended to support future expansion and included a mezzanine level for visitors, which he likened to pedestrian-focused city streets (Paul 2004: 26). As one critic described it in *Industry Week*, 'the complex with a common spine is a system which accommodates widely dissimilar functions ... These considerations lead to a design in which a static kind of formal order is replaced by a dynamic order of forms in process' ('Plant Design' 1974: 91). Designed as an initial 165,000 square feet of space with the ability to expand to 400,000 square feet as Teledyne grew, only the circulation spine, mechanical spaces, cafeteria, and

main lobby were fixed (Pelli 1969: 1). Three acute jogs protruded outward from the glass curtain wall, which Lumsden described as 'fingers' functioning on behalf of the corporate organism as joints for expansion (**Figure 4**). In plan, the fingers provided the sprawling complex with a sense of directionality and forward thrust — ready to crawl forward as its fingers waited, ready to latch onto new companies.

Figure 3: Interior of the 'spine' of Teledyne Laboratories. © Julius Shulman. J. Paul Getty Trust. Getty Research Institute, Los Angeles.

Figure 4: Reflective 'fingers' of Teledyne Laboratories. © *Julius Shulman.* J. Paul Getty Trust. Getty Research Institute, Los Angeles.

The concept of a spine was further detailed in later projects by Pelli and Lumsden, such as a laboratory for the government-sponsored Communications Satellite Corporation (COMSAT) in Clarksburg, Maryland, built in 1968–69, where satellites were developed, tested, and manufactured (**Figure 5**). COMSAT was formed in 1962 in response to the federal government's inability to develop communications systems without relying heavily on private companies, such as Bell Laboratories. COMSAT's governing board comprised fifteen representatives from private companies as well as the federal government. Furthermore, COMSAT's shares were owned by a cross-section of companies that included American Telephone & Telegraph (AT&T), the Radio Corporation of America (RCA), Western Union International, and the International Telephone and Telegraph Company (ITT) (Kepos and Derdak 1995).

Figure 5: Exterior of COMSAT Laboratories, Clarksburg, MD, built in 1969. © Preservation Maryland.

The circulation and service core of COMSAT, like that of Teledyne, was designed to expand in a clear and anticipated order, supporting future expansions. In an article in *Progressive Architecture*, the building is described as 'Technological Imagery: Turnpike Version' ('Technological' 1970: 70–75) (**Figure 6**). During the design process for COMSAT, Pelli refined his theories of indeterminacy, and he defined and diagramed 'growth' in two ways — determinable and indeterminable. The mechanical and service distribution spaces, he argued, could be physically extended by means of linear or standardized reproduction along a primary and a secondary spine, which constituted 'predetermined growth'. However, due to the less predictable number and rate of future company acquisitions, additional spaces were described as 'undetermined growth', and the entire structure was described — much like DMJM — as 'unfinished' and 'open ended' (**Figure 7**).

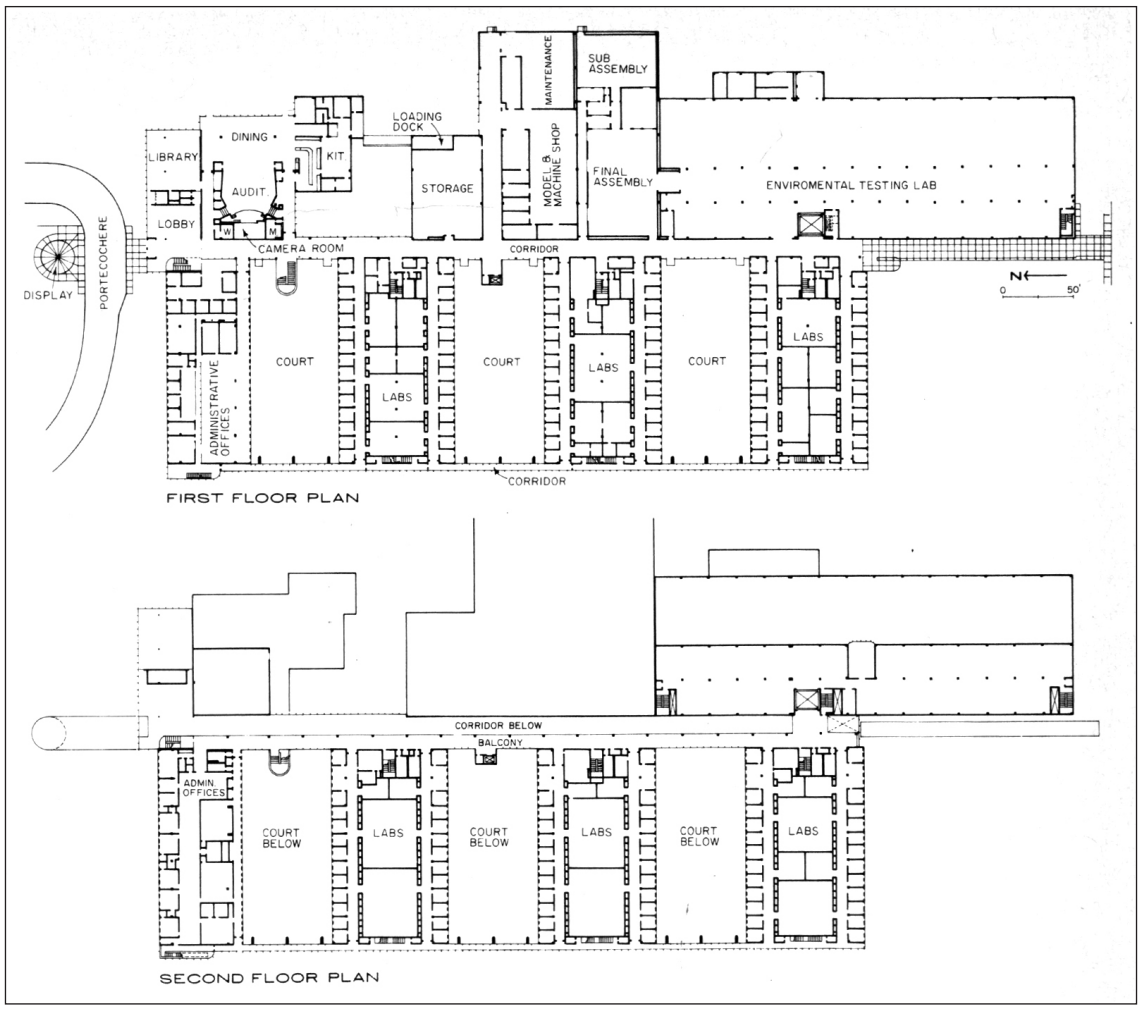

Figure 6: First and second floor plan of COMSAT Laboratories. From 'Technological Imagery' (1970: 71).

The concept of openness or indeterminacy was described by other architectural historians at the time, such as Umberto Eco, as part of a broader categorical production of 'information' rather than 'meaning' and 'informality' rather than modernist formality. 'In the dialectics between work and openness', Eco argued in *The Open Work* of 1962, 'the very persistence of the work is itself a guarantee of both communication and aesthetic pleasure … [and] "openness" … is the guarantee of a particularly rich kind of pleasure that our civilization pursues as one of its most precious values' (1989: 104). Yet in Pelli and Lumsden's design work, it is clear that openness and indeterminacy were deliberate sources for geographical and economic power, not merely pleasure.

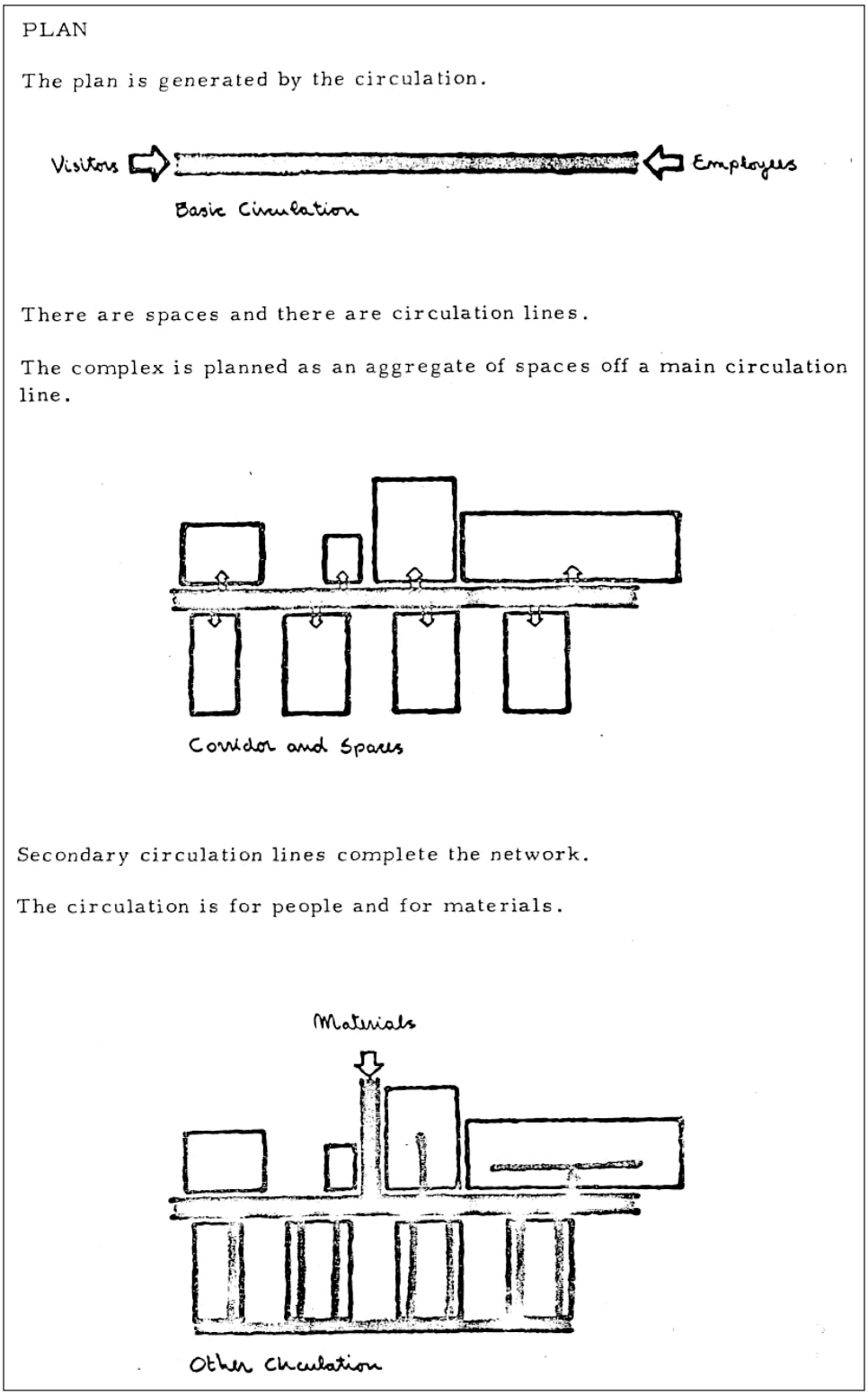

Figure 7: Diagrammatic plans of COMSAT Laboratories. © Pelli Clarke Pelli Collection, Yale University Library.

Membranes: A Veil of Post-Modernism

Although Lumsden and Pelli developed a penchant for glass while working with Saarinen and Roche and Dinkeloo, it was not until they arrived at DMJM that they designed building envelopes that were increasingly smooth, continuous, and undulating. Like conglomerates, which departed from well-integrated modernist firms, their facades departed from the reproducible, transparent, and socio-technological determinisms of modernism. By inverting the mullions, they argued, glass could 'wrap' around buildings and emphasize their divergent parts. Instead of flattening, abstracting, and homogenizing, as was the case for mid-century corporate headquarters, the façade now had to reveal the potentially divergent volumes of heterogeneous business within while simultaneously concealing them. Lumsden referred to this new possibility of glass enclosure as a 'membrane' akin to skin. To him, a membrane was a material response to conglomeration and the often-disjointed operational units within them, which he defined as 'non-directional':

> a surface that modifies the transition from inside to outside ... Membrane means light weight non-gravitational enclosure. The functional, constructional and visual implication of this light weight enclosure indicates a radical departure for architecture. The analogy is to skin ... This notion is the opposite to the idea of a building as being 'all one thing'. (Lumsden in Inaba and Zellner 2005: 29)

In other words, membranes expressed the divergent programs or subsidiaries within a conglomerate, while still uniting and concealing them materially (Ross 1975: 111). While COMSAT was clad in an aluminum shell that rounded the sharp edges of the complex, the front of the Teledyne complex was enclosed by a low-cost glass curtain wall of reflective, brown-tinted glass panels set within an aluminum mullion system, referred to as a 'continuous mullion' to emphasize horizontality over verticality. The mullion system was stained black-brown to blend with the glass, and it established a unifying system of aesthetic order through which future acquisitions could be reconciled. In later projects, such as Lumsden and Pelli's Century City Medical Plaza tower and adjacent hospital, designed in 1967 and completed in 1969, the entire surface of the rectilinear building, from top to bottom, was enclosed by a smooth, dark gray monochromatic glass facade with similarly reversed mullions, which protruded outward only 3/8 inch (9 mm), rather than the 6 or 8 inches typical of modernist curtain walls (Paul 2004: 34).

However, Lumsden argued that *any* material with an ability to simultaneously conceal and reveal the organizational structures beneath them could function as 'membranes'. 'Our fundamental interest', he suggested,

> is not in glass walls nor their lightweight equivalent, although the notion of the skin is very significant in relation to the logic of production … We are interested in developing a system that responds to reality, a design system that is not esoteric with respect to necessary data and sub-systems of the building. (Lumsden in Morton 1976: 66)

Indeed, for Lumsden, a building's 'membrane' was not motivated by a material ability to produce images nor was it only applicable to a particular material such as glass. In theory, it could apply to glass (as in the case of Teledyne), aluminum (as in the case of COMSAT), or even water (as he explored in subsequent projects).

Yet it was the *representational* power of the facades designed by Pelli and Lumsden, as well as the images reflecting in their mirrors, that most captured the attention of critics, theorists, and historians of postmodernism. The mirror glass at Teledyne was described as a screen of images, with critics highlighting the shimmering environment reflecting in its surfaces, such as the hues of the blue daytime sky transitioning to the greens of the orange groves and lawns to the gold-pinks of the California sunset. The building's protruding 'fingers' reflected the building back onto itself in an endless self-reflecting feedback loop — a testament to the indeterminacies demanded by conglomeration (Pastier 1980: 76–79). Reyner Banham argued that the Teledyne Labs appeared to revive the ostensible flash of a modernist California Case Study 'style', suggesting that the mirror glass curtain was appropriate to the needs of the business they enclosed, especially since the increasingly thin and inverted structural membranes boasted a 'self-image' of high technology that characterized the microelectronics assembled within (2009: 214–15).

Jencks struggled to make sense of Lumsden's projects and to classify them as either 'late' or 'post' modern. Focusing only on the facades, he described the buildings as 'difficult cases' to classify, since their 'slick' and 'smooth' surfaces seemed to provoke symbolic meaning that was not clearly stated. While Lumsden's works were not detailed in Jencks's *The Language of Post-Modern Architecture,* he included an image of the undulating mirror glass facade of Norman Foster's Willis Faber building of 1975 and John Portman's Westin Bonaventure Hotel of 1976. In later publications, Jencks searched for symbolic meaning in Lumsden's projects, asking, '[W]as the "slick-tech" aesthetic of the smooth glass facade intentional or a kind of inspired malapropism?' (Jencks 1988: 67). Was the undulating mirror glass of Lumsden's Beverly Hills Hotel a testament to a 'silver aesthetic' of Beverly Hills' capital power (even though the city did not have enough money to construct it)? Or was his use of mirror glass in a proposal for a 1976 bank branch tower, Bumi Daya, in Jakarta, a reference to the 'silver standard' of banking investment, its 'oil-slick' surface 'suggesting a series of meanings without

naming them, like symbolic poetry of the nineteenth-century?' (Jencks 1980: 72). Yet, as has been discussed, Lumsden's projects were not intended to *represent* postmodernism in their engagement with language let alone the abstract forces of capital. Jencks brushed these deeper engagements aside: 'One could argue that the architect should deflect these meanings, that business might be made to look more adventurous and domestic than it is; yet the basic classification is suitable' (1977: 82).

Similarly focused on representation, Jameson (1990), and, by extension, David Harvey (1989), argued that the smooth, mirror-glass surfaces came to represent the speculative nature of late capitalism and the high-technologies of the post-1960s period. Yet the architecture appeared to trap its observers in a fetishizing gaze. In *Utopia's Ghost*, Martin argues that the proliferation of mirror glass during the 1960s and 1970s and its material ability to produce feedback loops of self-reflection and re-reflection not only represented late capitalism but belonged to it. Martin suggests that most observers of the smooth, slick, and reflective buildings appeared to be lured into and trapped by the reflections of the mirrored glass surfaces — expecting to see a 'global network' of capital laying behind the glass but finding instead only distorted illusory images of the environment and their own bodies projected onto the surfaces. He argues that it was only by looking *at* the mirror — the membrane — that one could peer 'into the possible futures and possible pasts that may yet escape the entropy of reflection and re-reflection that is approached by postmodernity's self-reflexive feedback loops' (Martin 2010: 114). But, as we have seen, looking 'into' or even 'at' the façade does not go far enough, since both risk falling into an apolitical materialist trap that was, by design, detached from the power-seeking acts that gave it rise.

Even in the analyses of postmodern architecture by Jameson, one can see how a material history of the surface alone dead-ends in an apolitical reading. He argued that it was through the particular relationship between architecture and businesses that postmodernism was made visible:

> Architecture is, however, of all the arts that closest constitutively to the economic, with which, in the form of commissions and land values, it has a virtually unmediated relationship: it will therefore not be surprising to find the extraordinary flowering of the new postmodern architecture grounded in the patronage of multinational business, whose expansion and development is strictly contemporaneous with it. (Jameson 1984: 56)

Jameson argues that the ability of architecture to mediate between finance and aesthetics was not through 'self-reference', such as the kind imposed by Banham on Teledyne Labs or by Jencks's confusion around Lumsden's projects. He writes, 'Jencks

first allows us to see the way not to do this: that of thematic self-reference, as when Lumsden's Branch Bank project in Bumi Daya "alludes to the silver standard and an area of investment where the bank's money is possibly headed"' (1990: 44).[5] Instead, Jameson argues, one should look to the smooth, increasingly thin glass skins, not for meaning but to understand the relationship between multinational business and material culture. The skin, he argues, citing another of Jencks's own descriptions of Lumsden's projects, 'decreases the mass and weight while enhancing the volume and contour — the difference between a brick and a balloon' (1988: 44). In other words, Jameson traps himself: do not look to the work of Lumsden, he argues, but instead look to the work of Lumsden.

Martin suggests that Jameson, like Jencks, appeared to be looking at the *images* projected on the surfaces rather than at the *surface* itself, since he describes the mirror glass of the Bonaventure Hotel in Los Angeles as presenting 'distorted images of everything that surrounds it' (Jencks 1980: 66). For Martin, the manifestations of finance capital were most obvious in the acute angles and façade protrusions of corporate headquarters, such as those designed by Phillip Johnson and John Burgee for the Investors Diversified Services Center (1974) in Minneapolis, their Pennzoil Place (1975) in Houston, or their Pittsburgh Plate Glass Place (1984) in Pittsburgh. The proliferation of mirror glass allowed for a slick oil-like mirror surface to produce an especially appropriate aesthetic, still linked to representation, for Houston-based oil companies, such as Pennzoil, by concealing the underlying meanings of capital and privileging illusion that helped to produce the phantasm 'oil' — itself a composite of objects, mechanisms, and embodied labor (Martin 2010: 99). Martin argues that the mirror glass surfaces did not *represent* oil, just as the membrane of Teledyne did not *represent* microelectronics; instead, the glass surfaces produced each as a commodity, as objects with special powers, by simultaneously revealing — through extrusions, 'fingers', angled edges, or protrusions — and concealing — through smooth reflective surfaces — the economic processes that lay beneath it (Martin 2010: 97). Yet the history of conglomeration challenges one to push Martin's point further, since the membranes of conglomerate buildings, as intended and theorized by Lumsden and Pelli, clarified conglomerate business as an end itself, not merely the objects that they offered. Therefore, it was the power and profit of conglomerate business, not the ever-changing products or services each company offered, that hooked business executives and trapped its critics.

A case in point is the business structures of the companies Martin references. The Investors Diversified Services, Inc., was reconfigured after it was acquired by Alleghany Corporation (renamed American Express in 1984) and again after it acquired additional insurance companies during the 1980s. The Pittsburgh Plate Glass Company changed

its name in 1968 to PPG Industries, Inc., to reveal its unrelated offerings and corporate acquisitions — from house paints to fiber glass to window screening — and the tenants of Pennzoil Place included not only Pennzoil, which itself was a conglomerate, but Zapata Petroleum as well as the Pennzoil-owned United Gas Pipeline Company (Martin 2010: 98).

Conclusion: A Full History

As business executives responded to the uncertainties of a postwar economy, the threat of Cold War catastrophe, and the pro-competition sanctions of the government, they began to guard themselves by acquiring other firms, rather than by expanding from within. Business historians define these conglomerate mergers and acquisitions as extreme acts of explicitly modern, diversified business (Chandler 2002). However, architects, cultural theorists, and historians describe conglomerate headquarters and laboratories not as modern but as 'postmodern' — a term defined largely by formal and material descriptions — by skirting the underlying processes, politics, and motivations that gave them rise. Despite their attentiveness to the visible changes taking place within discourse and practice, these theorizations provide only a partial history of architecture and diminish the political and economic value of architectural work.

Even though Pelli departed DMJM in 1968, he described future building projects as 'conglomerates'. For a Ley Student Center expansion at Rice University in Houston in 1986, which he designed as a series of interlocking geometries organized along a long circulation core, he argued that 'all the shapes are, in a way, archetypal ... cubes, prisms, pyramids — joined together in a dynamic conglomerate' ('Cesar Pelli' 1991: 179). Jencks similarly used the term 'conglomerate' to mark the arrival of postmodern architecture. In the center of the cover of his widely cited *The Language of Post-Modern Architecture* of 1977, Jencks placed a photograph of Minoru Takeyama's Ni-Ban-Kahn ('Building Number Two') of 1970 in the Shinjuku ward of Tokyo, which he would later refer to as a 'conglomerate' (Jencks 2011) (**Figure 8**). According to him, the building's interlocking geometries rejected modernist homogeneity and celebrated 'functional differences'. Takeyama described the building's 'membrane' the in same way that Lumsden and Pelli described Teledyne and COMSAT — as a thin layer of 'plastic paint' of supergraphics, such as a red and white bullseye that suggested industrial code and caught Jencks's attention (Takeyama 1970a: 70). However, left off Jencks's pages was the fact that the volumes of Ni-Ban-Kahn were also the results of functional indeterminacy and economic necessity. Designed in only one month and under immense construction pressure, the Ni-Ban-Kahn was designed to support eternal flux in tune with the demands of the rapidly changing Tokyo economy. Inside were 14 individual bars combined with divergent leisure businesses, to compete with the nearly 20,000 bars and 50,000 coffee shops and restaurants in

the surrounding neighborhood. The building included a series of third-floor bars designed by Takeyama; a fourth-floor restaurant designed by the Kiso Design Office with a gambling den by Takeyama; fifth and sixth-floor clubs designed by The Uchida Design Office; and finally, a seventh-floor sauna designed by Takeyama (Takeyama 1970b: 65).

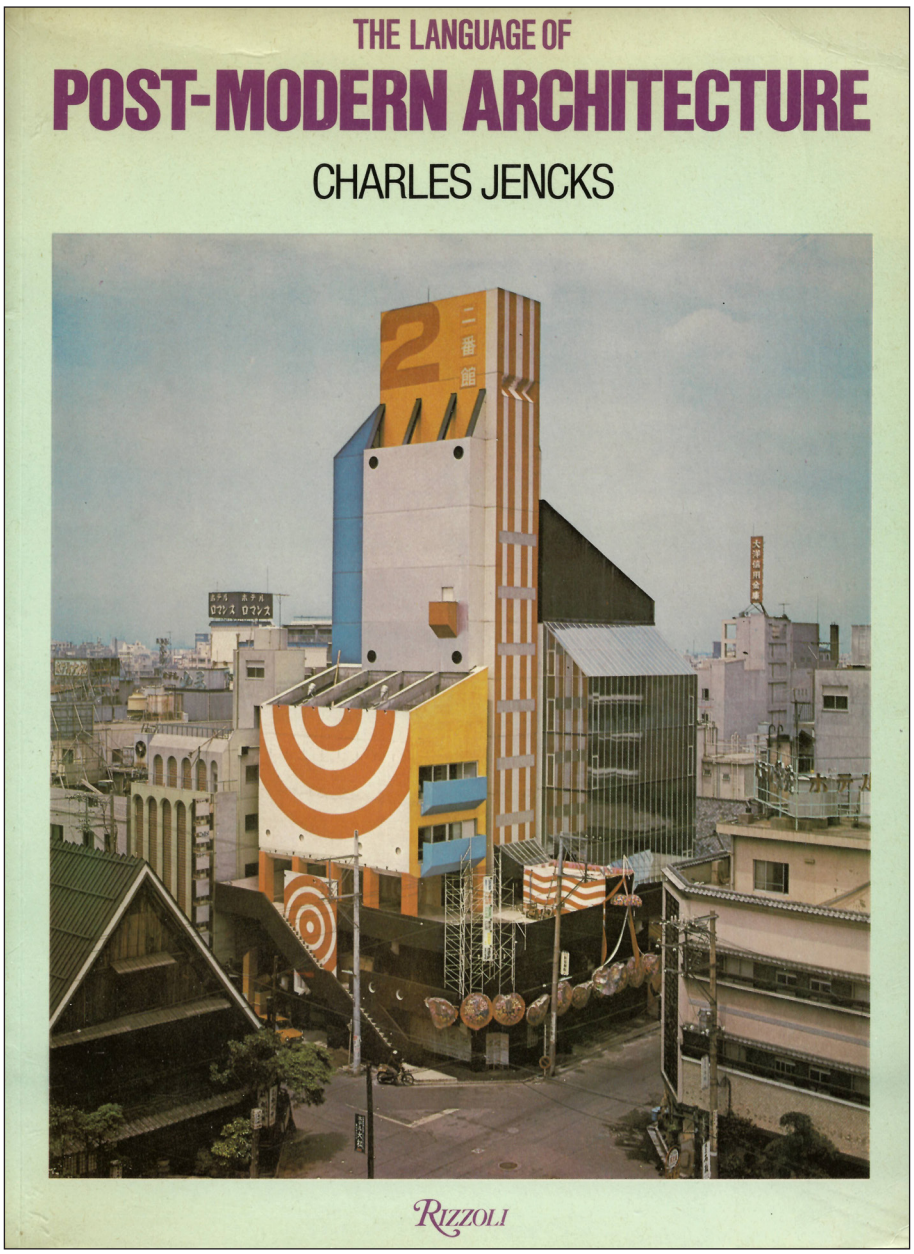

Figure 8: Ni-Ban-Kahn, Tokyo, Japan, 1970, featured on the cover of Charles Jencks, *The Language of Postmodernism* (1977).

As architects and cultural critics borrowed the term ‘conglomerate’ to introduce ‘postmodern architecture’, they stripped buildings from their geography and politics to uphold a definition of architecture practice reducible to enclosure, image, and aesthetics. Put another way, to focus on a conglomerate building’s enclosure without caution was to ignore the capitalist rationale of and for architecture more broadly. As this history suggests, the acquiring of additional firms and land represented the most advanced form of expansion possible within a conservative, deregulated, capitalist economy. Searching for abstract meanings of surface aesthetics and borrowing terms such as ‘conglomerate’ by detaching them from their origins freed architects and historians alike from political and economic consequence. Tracing a fuller history of postmodernism, building on a political-economic line of thought initiated by scholars such as Mary McLeod (1989), without falling into the traps set by capitalism’s ebb and flow, requires a simultaneous examination of bottom-up and top-down economic forces in tune with their material affects.

Notes

[1] The terms 'indeterminacy' and 'conglomerate' have parallel uses in architecture discourse in both American and British architecture circles. Alison and Peter Smithson developed a theory of 'conglomerate order', which they frequently explained through La Grancia di Cuna in Siena, Italy. In their observation of conglomerate order, they position the farmer as a capitalist (Smithson and Smithson 1993; Spellman and Unglaub 2005). Beyond the Smithsons important interrelated discussions emerged during the 1960s related to 'flexibility' and 'indeterminacy' in design (Hughes 2013).

[2] This definition appears in amendments made to the 1890 Sherman Antitrust Act, the landmark statute that prohibited monopolies (*Federal Trade Commission* 1948: 59; see also 'Celler Kefauver Act', Public Law Ch. 1183–1184, December 29, 1950, 1125–1128, http://legisworks.org/congress/81/publaw-899.pdf, accessed November 12, 2017).

[3] The Los Angeles group the 'Silvers' emerged as a response to the debate between the neo-modernist 'Whites' and the postmodernist 'Grays'; they were named for the slick silver aesthetic of many of their projects, as highlighted in two conferences at UCLA in 1974 and 1976, respectively titled 'Four Days in May', and 'Four Days in April'. The Silvers included DMJM architects Lumsden, Pelli, Frank Dimster of William Pereira's office, Paul Kennon of CRS, Tim Vreeland of AC Martin and former assistant to Louis Kahn, Eugene Kupper, and Craig Hodgetts. The 'Los Angeles 12' was an exhibition in 1976 at the Pelli-designed Pacific Design Center, which formed out of a 1974 project by Charles Slert (later an architect at DMJM) and his professor Bernard Zimmerman at Cal Poly Pomona in 1974. The group consisted of Roland Cote, Daniel Dworsky, Craig Ellwood, Frank Gehry, Ray Kappe, John Lautner, Jerrold Lomax, Anthony Lumsden, Leroy Milly, Cesar Pelli, James Pulliam, and Bernard Zimmerman.

[4] Concerns about growth and flexibility paralleled other critically influential discussions within architecture, from Yona Friedman's superstructures to Archigram's designs to Habraken's 'scaffolding'. However, for the purposes of this article, I focus on the close relationship between business practice and architecture. The morphologies epitomized by Teledyne were similarly referenced and folded into new modes of spatial and architectural organization, such as the early work of Christopher Alexander, and the Japanese Metabolists' interest in 'growth'.

[5] For Jencks's original description, see Jencks (1990: 85).

Competing Interests

The author has no competing interests to declare.

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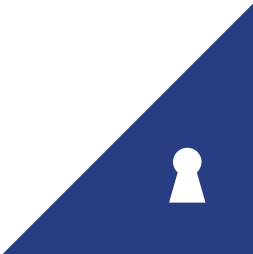

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