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Invisible City: Telecommunication.

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INVISIBLE CITY: TELECOMMUNICATIONS

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The patch of asphalt at the east end of Wilshire Boulevard, where it dead-ends into Grand Street, is covered in what appears, at first glance, to be random graffiti. A closer look, however, reveals it to be a secret code.
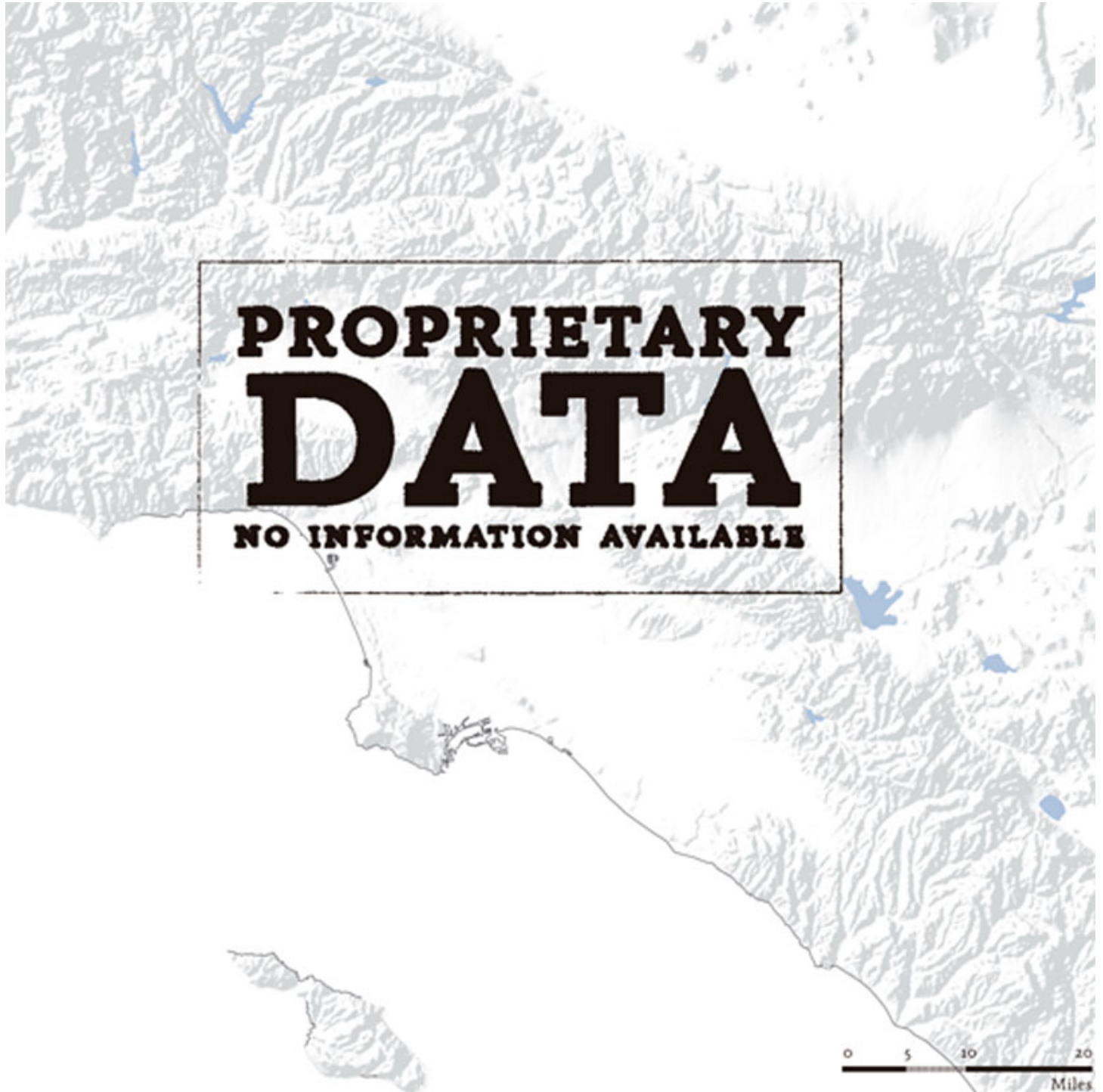
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PROPRIETARY
DATA
NO INFORMATION AVAILABLE

Fiber optic networks, Los Angeles © Kazys Varnelis

Known as "Underground Service Alerts" to technicians, engineers, excavators, drillers, trenchers, and pavement saw operators, these colored arrows, abbreviations, and marks delineate the presence of utilities hidden under the pavement. A party intending to dig issues an Underground Service Alert or "USA," marking its proposed route on the pavement in white and sending a notice to a "call before you dig" or utility location service. In turn, the agency notifies any utilities that might have buried lines in the area, the utilities check their records, and, if necessary, send out workmen to delineate the extent of their stakes using special spray cans of fluorescent paint that can operate upside-down.

Utility location services are key to the smooth operation of the city, ensuring that unwitting backhoe operators don't break through gas mains and launch themselves into the stratosphere or that hapless landscapers don't sever fiber optic cables connecting Los Angeles and Tokyo. The American Public Works Association has standardized the hidden code of the streets: red denotes electric power; orange signifies communication; yellow refers to natural gas, oil, steam, petroleum, or other gaseous or flammable matter; green marks sewers and drains; blue represents drinking water; violet identifies reclaimed water or irrigation lines; pink indicates unknown or unidentified facilities and is used for temporary survey markings; and white outlines the proposed excavation.

Since the nineteenth century, boosters have claimed title to the busiest corners on earth for their cities: State and Madison in Chicago (perhaps in the nineteenth century but very unlikely today), the intersection outside of Shibuya station in Tokyo (if nothing else, the busiest corner for pedestrians texting each other while in motion), and Wilshire and Westwood in West Los Angeles (for vehicular traffic) to name a few. If, however, that title could be awarded on the basis of underground communications or the density of florescent paint markings, then this patch of pavement at the intersection of Grand Street and Wilshire Boulevard would win. The markings on the world's most spray-painted asphalt are predominantly orange, referring to the wealth of fiber optic lines running in and out of One Wilshire.

Located off-axis at the end of Wilshire Boulevard, this nondescript thirty-nine-story skyscraper functions as the prime communications hub between Asia and the Western world (there is no good overland telecommunications route between Europe and Asia yet) and hosts installations for over 260 telecom-related companies. Here pavement is ripped up with such regularity that the rules of USAs are modified; instead of adding paint when a service alert is issued, companies preemptively mark asphalt as soon as an excavation is patched over.

Subsurface diagrams of the area, filed with the Los Angeles City Building Department, reveal the tangle below. This frenzy of spray-paint and the subterranean labyrinth of fiber under the streets are a key part of Los Angeles's role in the global economy. After what seemed like an inexorable decline after the city's loss of its aerospace industry following the end of the Cold War, it reemerged at the end of the 1990s as a key gateway in Pacific Rim trade and finance. To facilitate cross-border trade and financial transactions and to support its other critical role in the global economy—serving as the world's center of media production—the city has a highly developed fiber optic telecommunications network, both a large Metropolitan Area Network to serve intracity communications (in particular, the high-bandwidth needs of Hollywood) as well as long-distance and submarine connections to the United States and the rest of the world. All this comes together here, in the city's telecom district, centered around One Wilshire.

Beyond the Bonaventure The convergence of an unmappable hyperspace at a single structure in downtown Los Angeles echoes the seminal observations Fredric Jameson made about the Bonaventure Hotel, the city, and the state of society in postmodern culture in his essay "Postmodernism, or the Logic of Late Capitalism," first published in 1983. Here, Jameson focuses on a single structure, John Portman's 1977 Bonaventure Hotel, a building constructed as part of that era's attempt to revitalize Los Angeles's decaying downtown. Jameson describes the city through negation, as a reflection in the mirrored curtain wall of the hotel's towers. Los Angeles, in his view, becomes nothing more than the end-product of multinational capital, void of any political capacity, Utopian aspiration, or reality, glimpsed only as a distorted glimmer on the surface of one-way mirror glass.
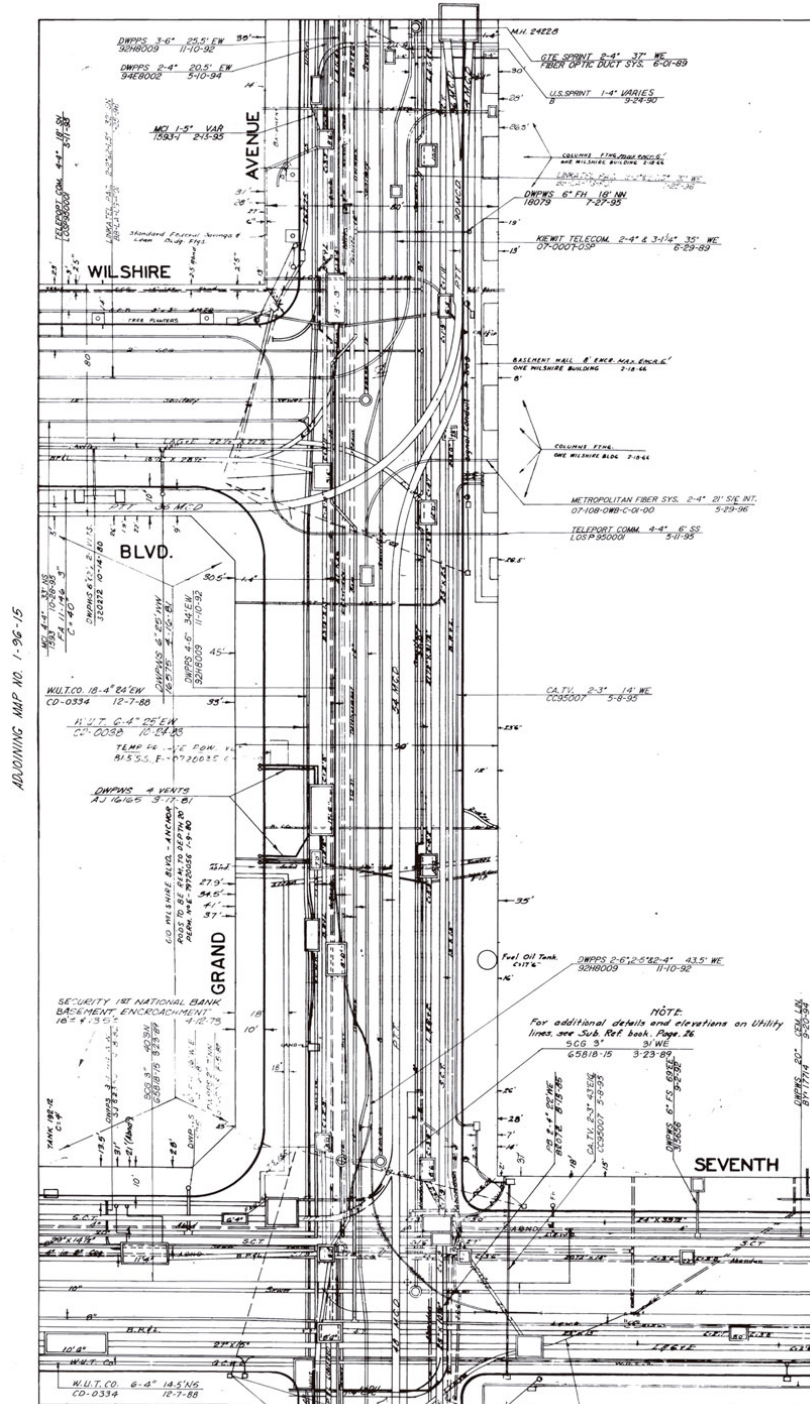
Subsurface infrastructure map, Grand Street and Wilshire Boulevard

Unlike Mies van der Rohe's Friedrichstrasse skyscraper or Le Corbusier's Unité d'Habitation, which shatter the existing city with their modernist promises of a new order, Portman's Bonaventure lacks aspirations to a better world, reflecting the city, as given, back upon itself. Jameson writes, "The Bonaventure … is content to 'let the fallen city fabric continue to be in its being' (to parody Heidegger); no further effects, no larger protopolitical Utopian transformation, is either expected or desired."

Disjunct from its surroundings, its street-level pedestrian entrance invisible, the Bonaventure Hotel hooks up to the networks of multinational capital through ramps to neighboring skyscrapers and via adjacent boulevards and freeways. A world onto itself, the hotel is inwardly focused, allowing visitors to avoid ever going into the city outside it.
Giving no sense of the city beyond its walls, the hotel's notoriously confusing layout defies the visitor's capacity to map it. Instead, the Bonaventure, Jameson writes, "stands as something like an imperative to grow new organs, to expand our sensorium and our body to some new, as yet unimaginable, perhaps ultimately impossible dimensions." But this is not a question of bad planning; perversely, the floor plan of the hotel is deceptively clear, a late modern take on Beaux-Arts bilateral symmetry. Instead, for Jameson the hotel's complexity is an analogue for our inability to understand our position in the multinational, decentered network of finance and communications that comprises late capitalism.

The Bonaventure, in Jameson's reading, represents culture under late capitalism. In this phase of economic development, capital has colonized all spheres of human activity including those, such as culture, that had remained autonomous from—and resistant to—its hegemonizing forces. Unable to find a place outside the capitalist system, the postmodern subject loses any possibility of fulfilling the Enlightenment ambition of drawing a map that could claim to mirror reality. Master narratives such as Marx's Capital or the plans kept by Haussmann for his incisions into the body of Paris are impossible today.

In response, Jameson proposes "an aesthetic of cognitive mapping," a term he borrows from urban theorist Kevin Lynch "to endow the individual subject with some new heightened sense of its place in the global system." Rather than calling for complete understanding, cognitive mapping is incomplete, beginning from a position of inadequacy and acknowledging any map's built-in futility. Thus, we might understand postmodern Los Angeles through filmic allegories such as the incestuous, all-pervasive networks of Roman Polanski's Chinatown, the doomed journey of D-Fens

in Falling Down, or the allegorical total vision of the city in Ridley Scott's Blade Runner. Jameson's reading of the Bonaventure itself acts as a cognitive map suggesting that through this one structure the entire state of the city outside and indeed, of contemporary society, can be discerned. To this end, Jameson leads the reader in circles around the concept of the postmodern, replicating for us the experience of meandering through the Bonaventure's internal hyperspace or trying to navigate the global flows of capital.

Bonaventure Hotel, mall interior © John Portman

But the Bonaventure is over twenty-five years old now, and during the late 1990s the damaged body of Los Angeles was capable of a remarkable turnaround. The City of Quartz has been replaced by a downtown that more closely resembles the city core, in which the Bonaventure was just one of countless failed attempts, so that the neighborhood, has finally recovered, at least in part.

Disney Concert Hall © Frank Gehry

Frank Gehry's Disney Concert Hall, a block away from the Bonaventure would seem its likely successor. A manifestation of the "Bilbao-Effect," the concert hall is a product of the further penetration of culture by capital, embodying the contemporary city's role as a site of culture through visual display. The structure's unprecedented formal gestures embody the placeless, hyperkinetic international flows of late capital, affirming that the joyous equation of culture, high technology, and capital produces an irresistible destination point.

But in its relentless need to appear, the Concert Hall is a red herring. The visible is no longer a prime determinant of the urban. Instead, our networked society is increasingly dominated by what Lewis Mumford called the "invisible city," the unseen world of cables, wires, connections, codes,

agreements, and capital. Today more than ever, the role of this invisible city in determining the structure of urban areas is vast. Visible form is merely an irruption of other forces, a graphic user interface for a more powerful command line below.

Invisible City Instead of Disney Concert Hall, it is One Wilshire, together with the patch of marked-up pavement in front of it, that is the more appropriate successor to the Bonaventure. A banal skyscraper completed by Skidmore, Owings and Merrill in 1966, this structure is not just devoid of the qualities that make the Disney Concert Hall, it is its inverse—retrofitted rather than new, anonymous rather than distinctive. Yet, it supplants the Bonaventure by being not just an index but a key switching point in the networked economy.

Telecommunications equipment inside One Wilshire.

One Wilshire is a byproduct of the officially sanctioned monopoly on telecommunications in the United States once held by AT&T. In the nineteenth century, telephone service was a local product. A central office, inevitably located in the downtown business district, would handle interconnections between calls. When long-distance was introduced, it terminated there. In Los Angeles, the central office is the "Madison Complex," one of the largest such facilities in the country, located at 400 South Grand, roughly between the Bonaventure and One Wilshire. Long-distance calls would connect here to be distributed to local exchanges, at first with coaxial cable and later via microwaves beamed from nearby hills to the microwave tower, designed by Parkinson Field Associates and completed in 1961, an addition that made the Madison Complex the tallest building in the city for

many years.

With deregulation in the 1980s, competing carriers were allowed to make connections to this crucial local interface. Pacific Telesis (acquired in 1998 by SBC and now renamed AT&T), the regional telephone company spun off from AT&T to handle local calls in California and Nevada, refused to let carriers mount antennas on top of the Madison Complex, allowing them to install only the minimum equipment required by law. This was strategic: the company knew that one day it would be allowed to compete in the long-distance market in exchange for letting other carriers use its wiring from the central office to the handset.
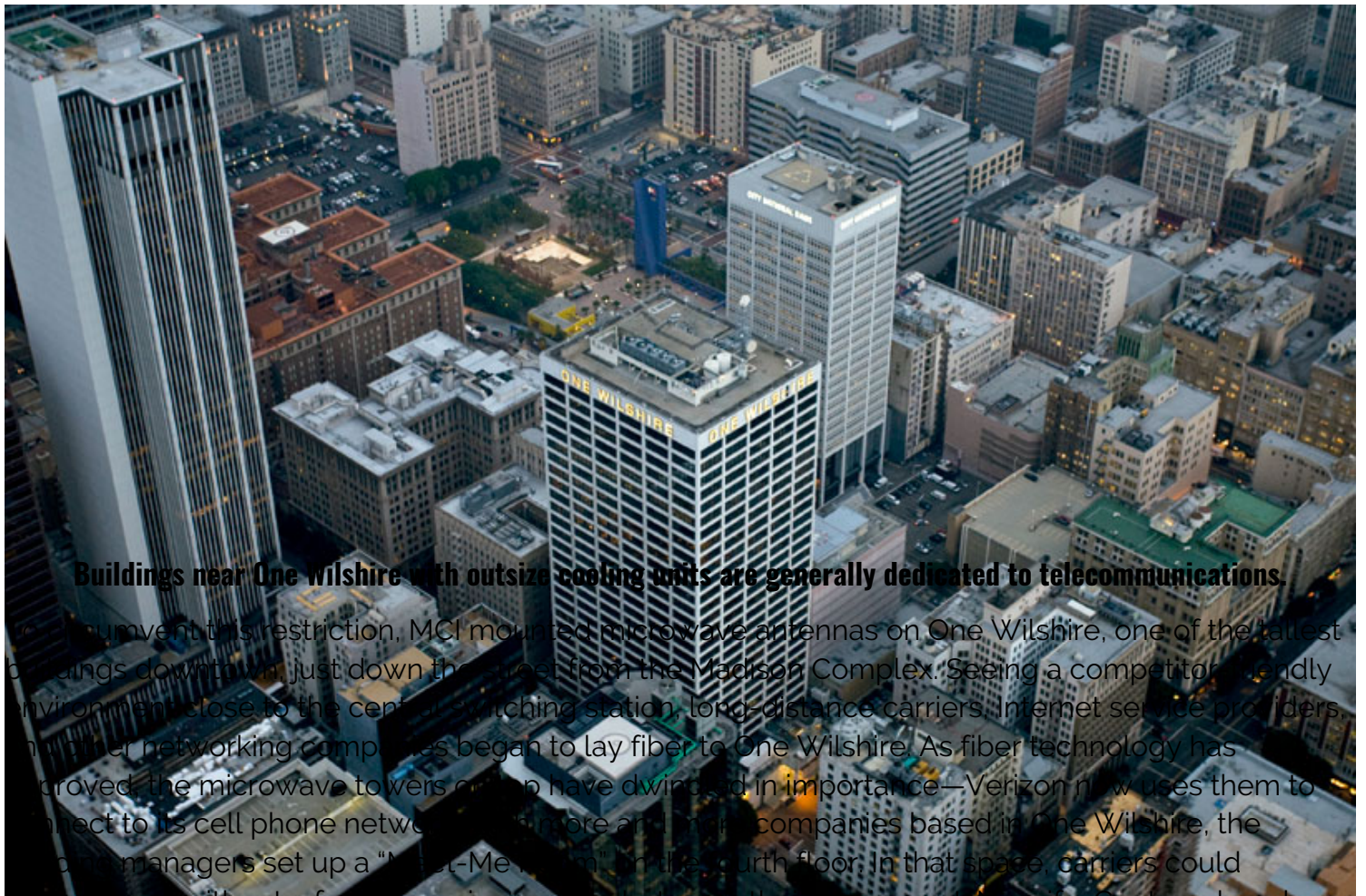
Buildings near One Wilshire with outsize cooling units are generally dedicated to telecommunications.

To circumvent this restriction, MCI mounted microwave antennas on One Wilshire, one of the tallest buildings downtown just down the street from the Madison Complex. Seeing a competitor-friendly environment close to the central switching station, long-distance carriers, Internet service providers, and other networking companies began to lay fiber to One Wilshire. As fiber technology has improved, the microwave towers on top have dwindled in importance—Verizon now uses them to connect to its cell phone network. As more and more companies based in One Wilshire, the building managers set up a "Meet-Me Room" on the fourth floor. In that space, carriers could interconnect without a fee by running a cable between their equipment. Now if a Guatemalan phone card company needs to connect to Sprint, they can simply run a fiber optic interconnect between

their routers. Likewise, data networks use the Meet-Me Room to make peer-to-peer interconnections without costly fees. One Wilshire's function as a major hub in the global network makes it the most expensive real estate in the country: in 2003, it rented out at $250 per square foot per month.

If the Bonaventure remained disjunct from its surroundings, barring the ramps connecting it to the nearby skyscrapers, One Wilshire has reshaped its surroundings. As corporations eager to take advantage of high data bandwidth move into or near the tower, over a dozen nearby buildings have been converted to house telecom installations, reviving the real estate market in southwest downtown. This centralization of information defies earlier predictions that the Internet and new technologies will undo cities. Instead, the reliance of contemporary communications on fiber creates a new concentration at command points in the organization of the world economy.

If the Concert Hall represents late capitalism's obsession with the visual, One Wilshire represents the rise of invisible networks and unmappable forces in our lives. The invisible city that grows from telecommunications is, by and large, a privatized infrastructure, its possession by private forces making it impossible to map. Although the postmodern hyperspace of the Bonaventure is unmappable by the body, a legible floor plan can still be found. No such plan exists for networked capital. Diagrams of the Internet and of fiber optic lines are hard to find: the data is proprietary, a matter too important for corporations to allow free access. Moreover, the complexity emerging along with the massive proliferation of connections increasingly makes it hard for even corporations owning the networks to understand their dimensions. A floor plan of One Wilshire tells you little about what happens there.

Conduit for carrying fiber optic cable is ready to be deployed on Highland Avenue.

Even for the corporate hive mind, the map is exceeded by a hypercomplex reality. The space of global technological flows does not desire to become visual or apparent: perhaps only some spray-paint or a flag in the ground marks the presence of fiber below, and sometimes even that is elusive.

Late capitalism has entered a new phase—data and capital are now inextricably intertwined, creating a new spatial regime. The shimmering, ghostly computer-generated shapes of recent architecture only detract us from the invisible city, the less visible, but more real, work of programming and organizational processes. One Wilshire's form doesn't matter: what matters is how it's been re-programmed. Ultimately this can be said of the Guggenheim- Bilbao or the Disney Concert Hall as well: it is not the architecture that is crucial here but rather the union of governmental, institutional, and capitalist forces producing it. What was allegorical in the Bonaventure has become real at One Wilshire. In our own era, the task of cognitive mapping lies at the point in which media and cities, network and economy, substructure and superstructure become

inextricable. The real operating system, not the graphic user interface are our concern. Only by engaging the code below can we remain relevant to future cities.