The Parking Garage as the Arrival and Departure Experience in the American City

SHANNON SANDERS MCDONALD
Montana State University

Arrivals and departures are the transition and connection points of the city expressed through architecture. The arrival sets the stage for the city providing a vision of what the city is about and how to behave within it, while the departure helps to anticipate your return providing a transition back into a more private world. There is an inside and outside relationship to the city expressed within one form. The role of arrival and departure and its connections to architecture is most important in understanding the art of the city as you connect into the city through its architectural message. It anticipates and creates the notion of city helping us to interact with the social structure of life. The inspiring train halls that expressed these civic ideals by creating vast urban interior spaces and civic exterior structures have been replaced with the functional arrival inside an individual driving machine through a speed space, creating a new building type, that is anonymous and most wish would disappear. Within the context of the city as a work of art, the parking garage has become the point of arrival and departure in the city, a civic space without human interaction. Arrival and departure in these informative and transformative roles are places that our society is most revealed and the opportunity for societies' transformation most effective, as Lewis Mumford stated ''Infrastructure is Culture''.

In its early years architects, engineers, planners, and entrepreneurs designed parking garages attempting to solve the very important technological and construction issues for a new movement technology, the automobile. While solving the myriad of functional issues related to this new building typology, there was an assumed responsibility for a common civic exterior expression within the excitement of new ideas and visions for the future. In its first appearance as a building type in New York, 1897, a garage for electric cabs was designed within an existing ice skating rink on 1684 Broadway. (footnote1) The early years of its architectural design addressed many new technologies such as the electric cab for the Electric Vehicle Company and brought the idea of storage for a modern transportation vehicle into the ''heart'' of the city. In reality, this new movement technology, the automobile, was improving the art of the city by creating a healthy environment for all city dwellers by replacing the horse as the primary method of transportation in the crowded urban environment and allowing the growing population to expand to new boundaries. This noble goal, to improve and create a better place for all, is one that we as architects still aspire to today in our additions to the city as a work of art. This goal was addressed late in the nineteenth century in the United States through the separation of home and work in urban structure creating the downtown experience. The parking garage in its early designs addressed this goal and its civic nature. The first built garages within the city were designed within the structure of the existing civic and urban fabric. An early garage in Baltimore, MD, 1905, open to the general public expresses that sensibility. Automobile users entered the city through the waiting rooms of these new urban garages ''freshening'' up before experiencing and attending to their business within the city, the lobby or waiting room now replacing the great train halls, and the car at first treated as just a new machine, while the architecture of the automobile entered into the heart of the city.

The cities' exterior architectural aesthetic value, as a work of art, was reinforced by many early parking structures. One example is the Chicago Automobile Club built in 1905. As seen in this photo, the aesthetics of the structure were a part of the civic nature of the city while the interior provided a new and exciting experience. The façade ''fit'' within the existing architectural façade rhythms of the city with the architectural language of

current society. Exterior detailing reflecting the Beaux-Arts style that was part of the current urban fabric of Chicago. There were no obvious scale changes on the façade reflecting the nature of the automobile versus the person other than the larger entry garage door. This architectural expression was accomplished by keeping the interior floor-to-floor heights consistent with the heights of a typical building of that time created for human occupation even though this resulted in ''wasted space'' for the automobile storage area. Ramps were not being considered to move the automobile between floors as elevators performed this task allowing for the building that housed automobiles to also house humans and remain aesthetically within the civic language of the city. The automobile was seen as just another new ''modern'' machine and so using another new machine, the elevator, to move it was a conscious design decision. This initial construction typology allowed the building to be ''reused'' over time with many other programs, with the architecture maintaining a vital aesthetic and functional link within the city.

The Chicago Automobile Club served the civic function of clubhouse, hotel, repair shop, and chauffeurs quarters, although for club members only. While this structure was understood as a civic building and part of the social structure of the city, it was a mixed-use structure allowing the automobile driver to exit his car and directly enter his destination without experiencing the city eliminating a common entry experience. Town houses now incorporating the garage within their architectural design continued the exterior aesthetic of the city fabric but also created this direct connection between automobile driver and their destination. Aesthetically, the proportion of opening required for car entry relative to the width of a typical New York City townhouse creates a far more obvious scale issue in the residential façade design; every effort was made to have this new scale on the townhouse relate to its surroundings. A townhouse occupied by Andrew Carnegie and designed by Whitefield and King Architects in 1906, continued the Beaux Arts architectural tradition while gracefully admitting the car into its lower level with the owner living on the piano noble and floors above. Other early residential garages within the city positioned themselves on the back alley but still reflected the art of the city through scale, material, and ornament while also changing the pedestrian movement relationship from front to back in the entry of our homes. One alley garage by Perrot Architects in Philadelphia, 1911, was experimenting with concrete as a structural system but did not minimize this utilitarian structure to its functional parts. Sensitivity of scale was shown in the use of ornament that related to human

Fig. 1. Chicago Automobile Club, Chicago, IL; Roadside America.

pleasure found in experiencing small details as part of the process of transition, entry into our homes.

Early parking garages contained many programmatic spaces relating to far more than the storage of the automobile. Garages were a part of the city as a work of art by addressing the civic function of the street and sidewalk, providing store-fronts along this street edge and visually minimizing the openings for the entry of the car. Often these storefronts served the needs of the emerging automobile trade by selling clothing, gas, and automobile parts but also contained other retail uses. Waiting rooms beautifully attired for the owners of the garage as they waited to be picked up by their chauffeur, cab-driver, or to have their car delivered by the car jockey were also found on this exterior civic edge. The owner did not enter the typical parking garage storage areas and therefore continued to participate in the civic nature of the city by walking to their

final destination within the city from this common space street-front edge. One of the earliest examples where a person leaving their car went immediately into an attached building for mercantile purposes was the Jewelers Building in Chicago, built in 1928. The shopper who arrived by automobile would drive directly from the new lakeshore highway into the building, minimally changing speeds in the process. While the aesthetics of the architecture were of a civic nature and part of the city beautiful plan as envisioned by Burnham and Bennett, the driver could pull into the lower level elevator garage and directly enter into the building, never experiencing the city as a civic entity. The entry point to the city was changing from the glorious interactive civic gathering spaces of the railroad station to the isolated and purely functional spaces of a garage, forever changing our understanding of the nature of civic space.

Fig. 2. Jewelers Building, Chicago, IL; Roadside America.

A contest was held by Brickbuilders magazine in 1913 for design of an automobile showroom that was to include a garage, service area, and chauffeurs quarters typical of early garages. Scale changes were appearing on the façade with large plate glass windows and door openings to expose the car and advertise its benefits to the passerby. The buildings for this contest were to be designed using terra cotta as a building material while integrating modern technologies. The second runner up of the competition, Valerie DeMari of Chicago designed a building with a large neon sign one of the first scale changes noted on a civic garage building. However, the design also incorporated the use of ornament and detail common to the mid 1910's architecture mediating this early shift in scale and was an early fantasy filled commercialization of the building type and the city. Other solutions also provided ornament reflective of and celebrating the joy of driving a car. This is when parking garage design as part of a mixed use of sales and storage enlivened and expanded the horizons of the city. Whole blocks in large cities are still identified as auto row where many architectural fantasies were explored and are still intact today due to the longevity of their artistic and joyful designs. Los Angeles, San Francisco, and other large cities have many examples of this type, with even the smallest emerging city having one or two of these beautiful showrooms. The Star Motor Car Co. in Hollywood, California and the Cadillac Showroom in New York through their architectural detailing expressed the transformation of speed and thrill of movement. These parking garage/showrooms also served as entry arrival and departure points bringing the world beyond visually into the American city. As they provided the aesthetic visual excitement of the modern understanding of other countries and the thrill of owning an automobile, this emerging retail fantasy aesthetic was at least providing a civic function of the imagination replacing the beautifully appointed train stations of the time as automobile showrooms were beginning to change the art of the city.

In the late teens and early 1920's, the concept of continuous movement as experienced by the participants in the new motor age was part of the American mass experience. It transformed the parking structure with the ramp, associated with notions of speed and personal movement, as the explored method of moving the car vertically within, overtaking the elevator in the built form. The ramp recreated the architectural expression of the most basic and historical movement system. The inclined surface, the ramp, allowed the driver to remain in control of the car while it moved vertically within a parking garage, maintaining the sense of freedom of driving across the landscape, and in control at all times while providing the oldest form of vertical movement, a topological construct. The automobile allowed us that complete freedom of movement seemingly without any of nature's restrictions, and we could now experience it within a built form. As we traveled across the country at new rates of speed experiencing our own landscape as never before, the inner desires of Americans had found their expression. At the same time, the practical nature of the technology expressed the other, more grounded, side of our nature, an

Fig. 3. Star Motor Car Company, Sales Building and Garage, Hollywood, CA; Architectural Forum, March 1927.

inheritance from our early settler experience: it fit the American psychology of man and machine, present and future, work and dreams. The psychological impact of the automobile on the hearts and minds of Americans is overwhelming. This new machine fit the nature of America in its deepest sense. We are a nation of pioneers always moving forward to find the better life and a belief in a utopian future. Drivers came to see the car as an appendage of themselves; to have new feelings of entitlement to these landscapes and visions, urban or rural, that had been beyond their reach but now were within their speeding framed views. They understood the car not only as a vehicle for physically moving around, bringing them greater freedom, but also as a vehicle of the expression of their inner desires. The relationships between architecture and people, between elements of the built environment, and subsequently between people themselves were altered in our modern environments due to the impact of the automobile and its demands, more speed and stimulation and its requirement for storage.

Another famous early garage, still in use, was designed as a transportation connection, a new arrival and departure experience providing access to these new rites of passage and was also part of an expanded mixed-use structure. The Fisher Building, 1928, in Detroit was one of the earliest buildings to link an eleven story parking structure to a 28-story tower, an office building, theater, shopping, underground connection to a future subway and an underground link to the building across the street. This was the beginning of connecting buildings, the automobile, and other movement systems while helping the city to expand providing multiple arrival and departure experiences. The parking garage as an integral part of the urban infrastructure was understood as another piece of the art of the city. While the interior storage space of the garage could now be entered by the driver of the vehicle, it was not designed in a manner to evoke civic pride, although it was a heated and cooled space for the benefit of the automobile making new connections to a modern emerging city.

Simultaneously, the parking garage as a complete machine itself was realized in the United States, although an early version existed with the August Perrot Garage in Paris in 1904. These automatic mechanical structures still addressed the aesthetic nature of the city on their facades as seen in the 1928 Kent Automatic Parking Machine by Jardine, Hill & Murdock, Architects and the Hill Garage by Kenneth McDonald & Company, 1928, in Los Angeles while hiding the machines within. These machines for parking were not entered by the driver or the chauffeur as the automobile ''parked itself'' or was parked by a specialized car jockey and was the ultimate expression of the machine age. The Westinghouse parking machine could be coin operated and even hidden and embedded within a ''typical'' building allowing the civic nature of the city to take precedence over the automobile. By managing the parking garage as a machine itself the number of cars parked can be maximized on a small site helping to solve the parking issue within the city and also allowing the art of the city to be the important issue and parking a car just a practicality. These mechanical structures were built again in the 1950's, with the Bowser and the Pigeon Hole as the most prevalent machinery while the ramped self-park garage became the norm. The integration of the machine into the city was an issue as yet to find its complete civic artistic expression as a reflection of the complexity of the American cities' arrival and departure point. Currently the practical pressure to provide parking spaces become so great in American cities that the combined cost of automated structures and the land is affordable in some American cities such as Hoboken, N.J. and Washington, D.C., integrating the machine behind architecturally civic urban form.

In the 1930's a precursor of what was to come in parking garage design was constructed in Boston and Philadelphia because of technological changes to the

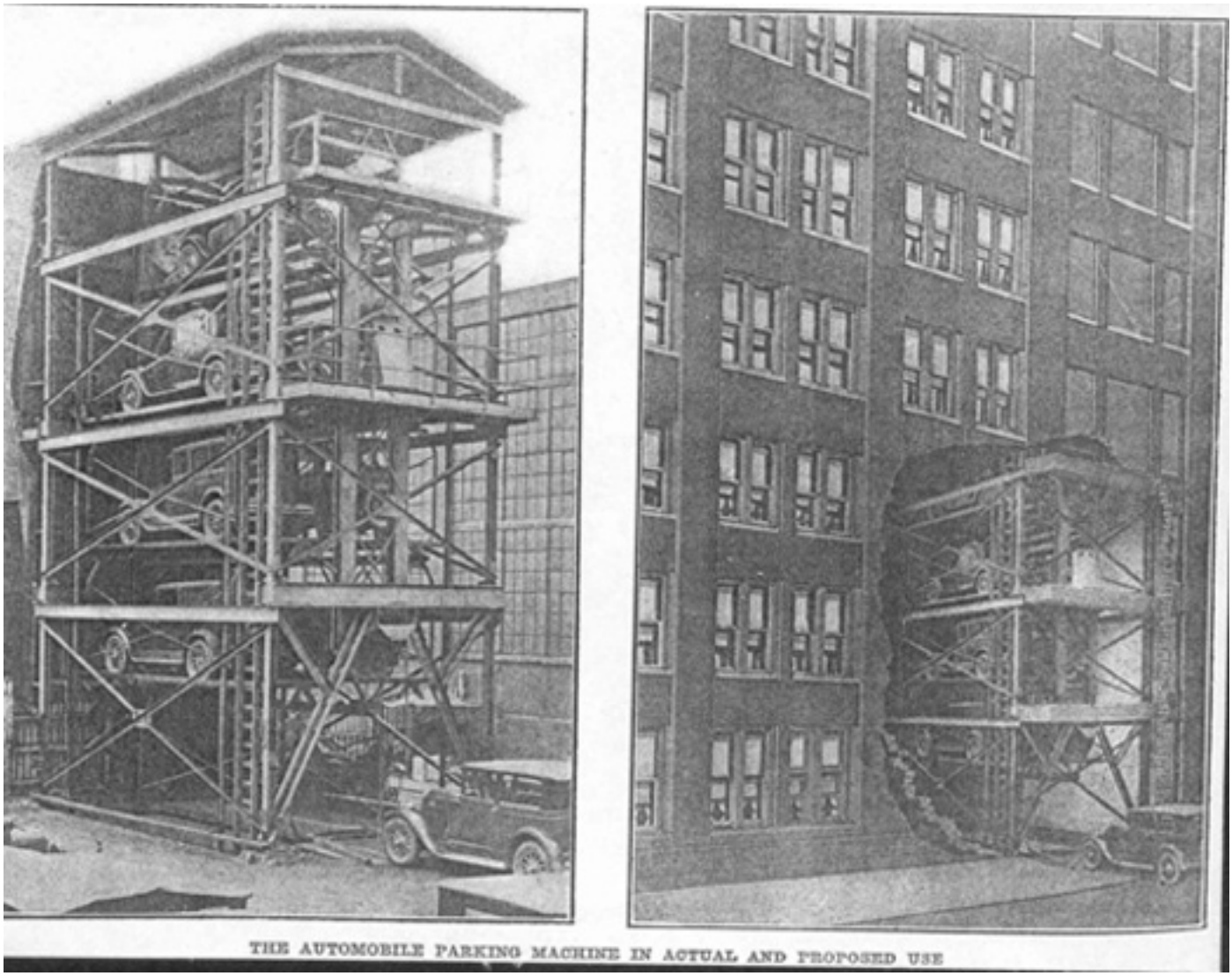

Fig. 4. Westinghouse Mechanical System, 1929, Chicago, IL; American City Magazine, courtesy George Westinghouse Museum.

automobile. The automobile could now be left exposed to the weather due to hard top roofs and new paint technology so the parking garage was functionally stripped to its most minimal architectural requirements. As expression of architectural honesty was becoming part of the discussion and new technology required architecture that reflected its use, these early garages in Boston, the Cage Garage, 1933, and Philadelphia, Kauffman's Department Store, 1935, were eventually to become the norm. The early aesthetics of the ramp garages based purely on functionality and cost were inferior compared to past garages as they completely turned their back on the traditions and the art of the city with no hint of the importance of arrival and departure and providing only reference to functionality, engineering, and speed. These 1930's pioneers in garage design were eventually to be modified in the 1950's and only recently transcended in American parking garage design. But before the modern garage as we experience it became the prevalent typology, there was a breakthrough in another technology, mechanized air transfer, allowing cars to be parked underground. Underground garages became the savior of the cities just as the art of the city was disappearing due to the suburban lifestyle and the proliferation of spaceless parking lots and easy access to cars. Within the dense environment of San Francisco an underground garage, the Union Square Garage, was created, maintaining and improving the park above allowing that vital city area to accommodate the automobile while remaining an important civic gathering place to this day. Many other cities across the country repeated this specific garage typology with great success. These underground garages, although participating in the art of the city by providing a park above, are isolated and often disorienting spaces within furthering the disintegration of the arrival and departure experience. So the entry experience was solidified as one that starts with a feeling of isolation that most people wish to hurry through, only performing their functional goal as a place to park the car.

Fig. 5. Cage Garage, Boston, MA; Architectural Forum, February 1953.

The Art of the City as a multi-dimensional social, spatial, and aesthetic experience was disappearing, except in a few places in the United States, as the automobile was proliferating and pressuring its' demise. Attempting to address those issues, architect Louis Kahn proposed a movement structure for Philadelphia that addressed the automobile while allowing the art of the city to still exist. ''A modern city must reconfigure itself, based on a new concept of the order of movement to defend itself against the destruction by the automobile''. He designed parking garages that surrounded the city so that one entered the city by parking the car and then walked or traveled in a common way to fully experienced city life. His parking garages were also mixed-use structures integrating parking and other uses. Concurrently, many historic buildings were being torn down in older urban centers in order to build parking lots, garages, and modern highways to facilitate the movement patterns of automobile use into the city in an attempt to maintain its existence as our society was accepting the demise of downtown as part of the progressively modern evolving American culture. In New Haven Paul Rudolph was building a garage that would act as a bridge connecting the new wide high-speed highway to the historical inner square of New Haven, in an attempt to maintain the civic experience.

The loss of the art of the city as a common shared experience seemed not to be a concern to many as the suburban lifestyle was providing so much prosperity to so many in our new country returning from the defining act of WWII. New garages that were built in the city rarely addressed the pedestrian, aesthetic, or civic nature of the city but rather reflected the current sense of the modern emphasizing self-park. A few garages tried to meld the civic with a modern idea of a garage and movement issues such as the Rampark garages in Omaha and Lincoln, Nebraska. They provided retail establishments on the sidewalk edge addressing a civic

and urban scale while overhead the wrapping ramp system expressed the modern notion of travel and protected the pedestrians below, but these modern aesthetic and civic combinations were few and far between. The suburban structure of an expanse of open parking lots around the strip or self-contained building masses had overtaken the notion of the city within American life. The parking garage had become a building type of specialization with functionality as a major concern and speed and isolation as its reality.

Fig. 6. The Downtown Center Garage, Architect and Engineer Magazine, April 1955; courtesy of Applegarth Collection, Bancroft Library, University of California — Berkeley.

As the 1980's evolved, new approaches in parking garage design attempted to address the city as a work of art and the modern parking garages role within that fabric. The Lake Street Garage designed by Stanley Tigerman in Chicago imbedded the parking structure within the urban fabric while creating a façade that confronted the idea of the automobile within the city. The modern architectural image of the front of the car with hood ornament in a scale overwhelming to the city was a social commentary on the problem. The parking garage was now the standard arrival and departure point for the city and its individual nature had overtaken the collective of the city. In a tongue and cheek way this parking garage mocked the earlier Beaux Arts solution of ornament and accommodation to the urban fabric without providing the modern solution or looking forward to a new vision within the art of the city. Other garages were attempting to address this issue in not such an obvious way by starting to pay attention to scale and details, attempting again to have the parking garage addresses the city as a work of art. By the mid 1980's, the office of Gordon Chong in San Francisco built several garages that began this conversation. While, the historic fabric was being stitched together by garage designers such as Carl Walker who designed a garage in Savannah, GA., that mimicked the surrounding historic architectural fabric maintaining the ramped self-park garage within.

As more and more Americans experienced speed issues as time issues, frustrated with traffic in their daily commute to the city, and automobile pollution had taken hold, a general realization concerning the American lifestyle was coming full circle with the car. Arrivals into transitional anonymous garage spaces meant walking through a sea of cars, down functional stairs or elevators and rarely released out into the city, while the exterior architectural expression was a bland ribbon of concrete. Transit Villages and Smart Growth solutions centered around transportation and the pedestrian started to address the complex set of issues that had brought us to this point. However, ignoring the issue of the car and the parking garage as a required but inadequate social arrival and departure point still existed within these new urban arrangements as the freedom the car provided was part of the American experience and is not to be denied. Parking garage designers are again rising to the occasion to think of the pedestrian by designing separate walkways and landscaped environments within the garage such as we see by Nick Watry and making linkages to transportation and human daily needs such as day care and dry-cleaning in the Center Street Garage by Herbert Lewis Kruse Blunck in Des Moines, Iowa.

Currently addressing infrastructure as culture and honestly focusing attention on the parking garage as performing this role of arrival and departure within the modern city will open up many new ideas to meet the needs of the art of architecture and in creating new civic spaces. Future civic responsibilities and the role of social aesthetic change as driven by engineering and technological advances can provide the new art that we all are desperately seeking. As solutions continue to develop to define a new social interaction within the art of the existing city and requirements for movement, it all starts with dreams such as the garage in the California Disney complex that links monorail transportation with a pedestrian walkway, and escalators moving people through the architecture. In 1974, Ulrich Franzen and Paul Rudolph created the evolving city, where transportation and architecture overlapped in a visionary image of interconnectedness and natural complexity as previously envisioned in the turn of the century drawings of Hugh Ferris and others. New technologies such as fuel cell cars and movement issues related to a multi-dimensional elevator will change the idea of mixed use and again redefine arrival, departure, machine, and human interaction within the art of the

city, exposing the possibility for positive human interaction and creation of enduring memories once again within the arrival and departure experience of architecture, the parking space.

NOTES

[1] Our Electric Cab Station. *The Horseless Age*, Vol 3, No. 6, September, 1898, p.8.

PARTIAL BIBLIOGRAPHY

Books and Pamphlets

Armitage, John, ed. *Paul Virilio: From Modernism to Hypermodernism and Beyond.* London, UK: SAGE Publications Ltd, 2000.

Automated & Mechanical Parking Association and the Parking Consultants Council of the National Parking Association. *Guide to the Design & Operation of Automated Parking Facilities,* 2003.

Bailey, James, ed. *New Towns in America The Design and Development Process*. New York: John Wiley & Sons, AIA, 1970.

Bacon, Edmund. *Design of Cities*. New York: Penguin Books, 1982.

Baker, Geoffrey and Bruno Funaro. *Parking*. New York: Reinhold Publishing Corporation, 1958.

Berke, D. and S. Harris. *Architecture of the Everyday*. New York: Princeton Architectural Press — Yale Publications on Architecture, 1997.

Bernick, Michael, and Robert Cervero. *Transit Villages in the 21st Century*. New York: McGraw Hill, 1997.

Bredekamp, H. *The Lure of Antiquity and the Cult of the Machine: The Kunsthammer and the Evolution of Nature, Art, and Technology*. Princeton: M. Wiener Publishers, 1995.

Brownlee, David, and David Delong. *Louis I. Kahn*. New York: Rizzoli International, 1991.

Childs, Mark. *Parking Spaces.* New York: McGraw Hill, 1999.

Chrest, Anthony, Mary Smith, and Sam Bhuyan. *Parking Structures*. New York: Van Nostrand Reinhold, 1989 and 1996.

Coffey, Frank and Joseph Layden. *America On Wheels*. Los Angeles: General Publishing Group, Inc., 1996.

Davis, Mike. *City of Quartz, 1990*. New York: First Vintage Books Edition, 1992.

Fig. 7. Rampark Garage, Lincoln, NE.

Fig. 8. Lake Street Garage, Stanley Tigerman, Chicago, IL; courtesy of Tigerman McCurry Architects.

De Portzamparc, Christian. *Genealogy of Forms.* Paris, France: Dis Voir, 1996.

Der Derian, James, ed. *The Virilio Reader.* Oxford, UK: Blackwell Publishers Ltd, 1998.

Druckrey, Timothy, ed. *Electronic Culture: Technology and Visual Representation.* New York: Aperture Foundation, Inc., 1996.
Ars Electronica: Facing the Future. Cambridge, MA: The MIT Press, 1999.

Duany, Andres, Elizabeth Plater-Zyberk, and Jeff Speck. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream.* New York: North Point Press, 2000.

Fishman, Robert. *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier.* Cambridge, MA: The MIT Press, 1982.

Fogelson, Robert M. *Downtown: Its Rise and Fall, 1880-1950*. New Haven: Yale University Press, 2001.

Frampton, Kenneth, ed. *Technology Place & Architecture: The Jerusalem Seminar in Architecture*. New York: Rizzoli International Publications, 1998.

Franck, K. A. and L. H. Schneekloth. *Ordering Space: Types in Architecture and Design.* New York: Van Nostrand Reinhold, 1994.

Garvin, Alexander. *The American City: What Works, What Doesn't.* New York: McGraw-Hill, 2002.

Giedion, S. *Mechanization Takes Command, a Contribution to Anonymous History.* New York: Oxford University Press, 1948.

Hall, P. G. *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century.* Oxford, UK: Blackwell, 1988.

International City/County Management Association.*Getting to Smart Growth: 100 Policies for Implementation,* 2002.

Jacobs, Jane. *The Death and Life of Great American Cities, 1961*. New York: Random House Modern Library Edition, 1993.

Jackson, John B. *Discovering the Vernacular Landscape*. Conneticut: Yale University. 1984.
American Space. New York: W.W. Norton & Company, Inc., 1972.
*Southern Landscape Tradition (Anne Burnett Tandy lectures in American Civilization, No.*1). Texas: Amon Carter Museum of Western Art, 1980.
Meinig,Donald and John Jackson, ed. *The Interpretation of Ordinary Landscapes* New York: Oxford University Press, Inc., 1979.

Jackson, Kenneth T. *Crabgrass Frontier The Suburbanization of the United States.* New York: Oxford University Press, 1985.

Jennings, Jan, ed. *Roadside America: The Automobile in Design and Culture*. Iowa: Iowa State University Press, 1990.

Johnston, Pamela, ed. *The Function of the Oblique: The architecture of Claude Parent and Paul Virilio, 1963-1969.* London, UK: The Pale Green Press Ltd, 1996.

Kaplan, Robert D. *An Empire Wilderness: Travels Into America's Future.* New York: Random House, 1998.

Katz, Peter. *The New Urbanism Toward an Architecture of Community*. New York: McGraw Hill, 1994.

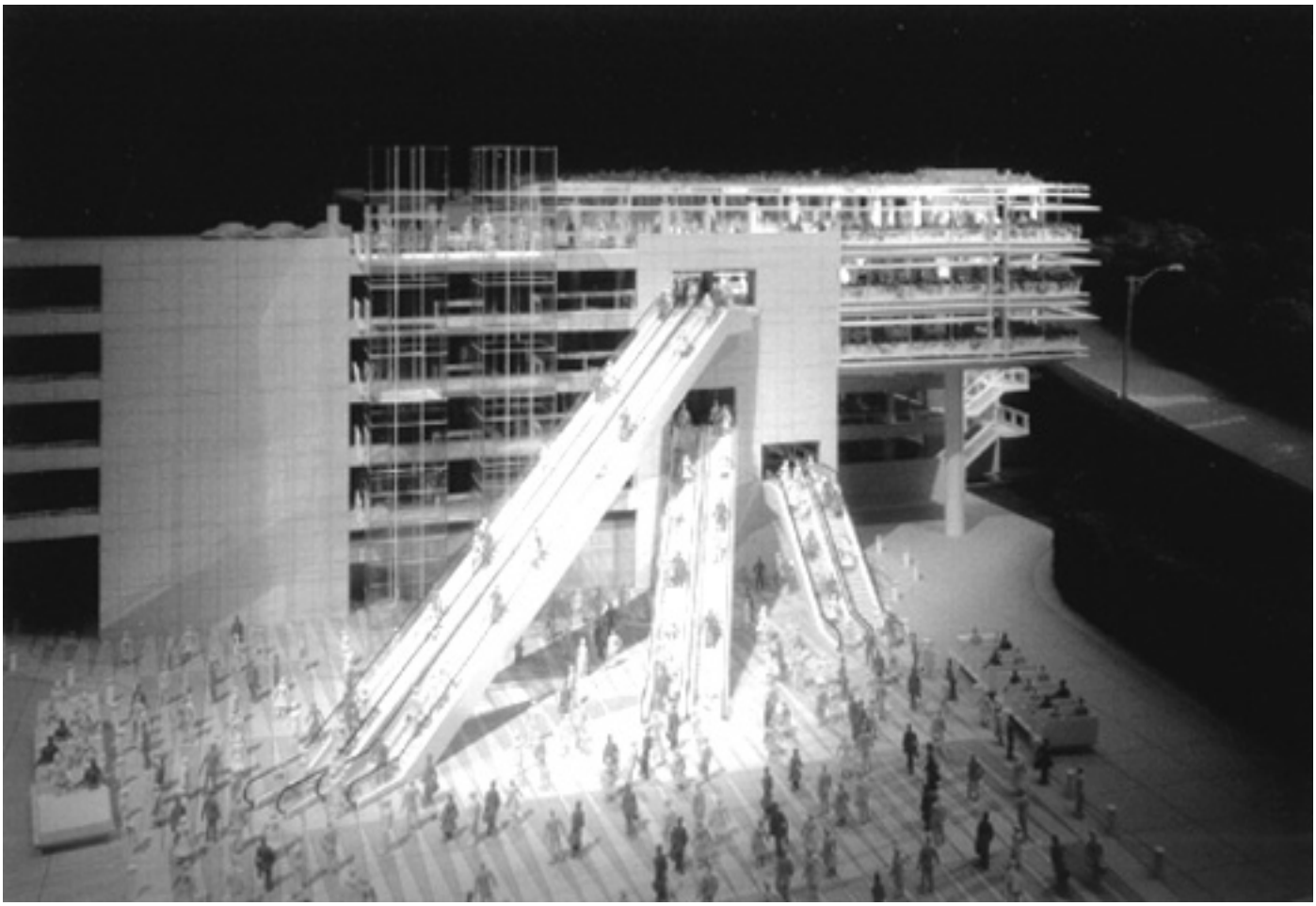

Fig. 9. Disney Resort, Guest Parking Structure, Walt Disney Imagineering, Wolf Architecture, Walker Parking Consultants at Disney, photographed by Standard Studio.

Kay, Jane Holtz, *Asphalt Nation*. New York: Crown Publishers, 1997.

Klose, Dietrich. *Metropolitan Parking Structures.* New York: Frederick A. Praeger, 1965.

Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan.* New York: The Monacelli Press, 1994.

Kunstler, J. H. *The Geography of Nowhere: The Rise and Decline of America's Man-Made Landscape.* New York: Simon & Schuster, 1993. *Home from Nowhere: Remaking Our Everyday World for the Twenty-First Century.* New York: Simon & Schuster, 1996.

Le Corbusier. *The City of Tomorrow and Its Planning.* New York: Dover Publications, 1987.(translated from the 8th French Edition of Urbanisme,1929.)

Lord, Chip. *Automerica*. New York: E. P. Dutton & Co., Inc., 1976.

Lowe, Jeanne. *Cities In A Race With Time*. New York: Vintage Books, 1967.

Miller, Catherine. *Carscape A Parking Handbook*. Indiana: Irwin-Miller Foundation, 1988.

Mirzoeff, Nicholas, ed. *The Visual Culture Reader.* London, UK: Routledge, 1998.

Motavalli, Jim. *Breaking Gridlock: Moving Toward Transportation That Works.* San Francisco: Sierra Club Books, 2001.

Nesbitt, Kate, ed. *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory, 1965-1995.* New York: Princeton Architectural Press, 1996.

Osman, Michael, Adam Ruedig, Matthew Seidel, and Lisa Tilney, eds. *Perspecta 33: Mining Autonomy.* New Haven: Yale School of Architecture, 2002.

P2, *Architecture*, February, 2001.

Richards, Brian. *Future Transport in Cities.* London, UK: Spon Press, 2001.

Safdie, Moshe w/Wendy Kohn. *The City After the Automobile: An Architect's Vision*. Westview Press, 1997.

Scully, Vincent, Jr. *Modern Architecture.* New York: George Braziller, 1986.

Sears, Stephen W. *THE AUTOMOBILE IN AMERICA.* New York: American Heritage Publishing Company, 1936.

Senechal, Marjorie and George Fleck, eds. *Shaping Space: A Polyhedral Approach*. Boston: Birkhauser, 1988.

Smith, Thomas. *The Aesthetics of Parking: An Illustrated Guide.* Chicago: The American Planning Association, 1988.

Stein, Clarence S. *Toward New Towns for America*. Massachusetts: M.I.T. Press, 1957.

Underhill, Sarah. *Stanley Tigerman*. New York: Rizzoli, 1989.

United States Environmental Protection Agency. *Parking Alternatives: Making Way for Urban Infill and Brownfield Redevelopment*, 1999.

Urban Land Institute and The National Parking Association. *The Dimensions of Parking*, 1993.

Vance Bibliographies. *Automobile garages: a bibliographic overview / Coppa & Avery Consultants*. Illinois: Vance Bibliographies, 1980, 1983.& 1985.

Virilio, Paul. *Open Sky.* London, UK: Verso, 1997.

Wilson, William. *The City Beautiful Movement*. Baltimore: The Johns Hopkins University Press, 1989.

Wolf, Peter. *The Future of the City: New Directions in Urban Planning.* New York: Watson-Guptill Publications, 1974.

ARTICLES, AND INTERNET

Blanchard, Harold. ''Ramp Design in Public Garages'', *The Architectural Forum*, November, 1921, p. 169.
''Comparison of Ramp and Elevator Type Garages'', *Bus Transportation*, June, 1922, pp. 331-335.

Cramer, Ned. ''Car Culture'', *Architecture*, July, 1997, p. 37.

Jakle, John. ''Landscapes Redesigned for the Automobile'', *The Making of the American Landscape*, ed. Michael Cozen. (Boston: Unwin Hyman, 1990), p. 308.

Kamin, Blair. ''A subterranean parking garage reveals a museum's beauty and excitement''. *Chicago Tribune,* July 16, 1998.

Lin, T.Y. ''Revolution in Concrete'', *Architectural Forum*, May and June , 1961, pp.121-7 and pp. 116-22.

Summer, Gary. Fax to Author, 14 October, 1997. (Promotional Package for Fisher Bldg. Garage)

Taub, Eric. ''Elevator Technology: Inspiring Many Everyday Leaps of Faith'', *New York*
''Baltimore, Public Garage'', *The Brickbuilder*, October 1906, p. 214.
''Eight cars Housed on Ground Space Formerly Required by Two'', *Electric Journal*, October, 1929, p. 479.
''Fisher Building Garage'', *The American Architect*, February 20, 1929, p.266.
''Garage of Andrew Carnegie'', *American Architect and Building News*, May 26, 1906, p. 1587.
''Garages'', *The Architectural Record*, February, 1929, pp. 177-.
''Garages Grow Up'', *Architectural Forum*, February, 1953, pp. 120-141.
''Historic Garage'', *Parking*, April, 1980, p. 33.
''Kent Automatic Parking Garage'', *The American Architect*, February 20, 1929, p. 266.
''Largest Parking Garage Completed'', *Engineering News-Record,* July 10, 1954, pp. 34- 36.
''New Haven Parking Garage'', *Architectural Record*, February, 1963, p. 146.
''Parking Jam'', *Architectural Forum*, February, 1951, p. 107.
''Parking Solutions for A Shrinking Planet'', Sky Park Compact Parking System: info@skyparkusa.com.
''Parking: the Crisis is Downtown'', *Architectural Forum*, February, 1963,p. 105.
''The Brickbuilder Competition'', *The Brickbuilder*, March 1913(Supplement), p. 1.
''The Problem of Traffic Congestion, and a Solution'', *The Architectural Forum*, March, 1927, pp. 200-.