technology. Rather than fixing an image of territory, one encounters aspects of its form. This is often contingent and dynamic and ungraspable. It is what I am referring to as the logistical, and it negotiates between competing aspects of the territorial: between politics on one side and land on the other. It uses a range of instruments that can safely be adjusted to adapt to risks and to absorb uncertainties while buffering important operational protocols so that they can be enacted smoothly and without interruption.

2 BUILDINGS

A Moving System in Motion

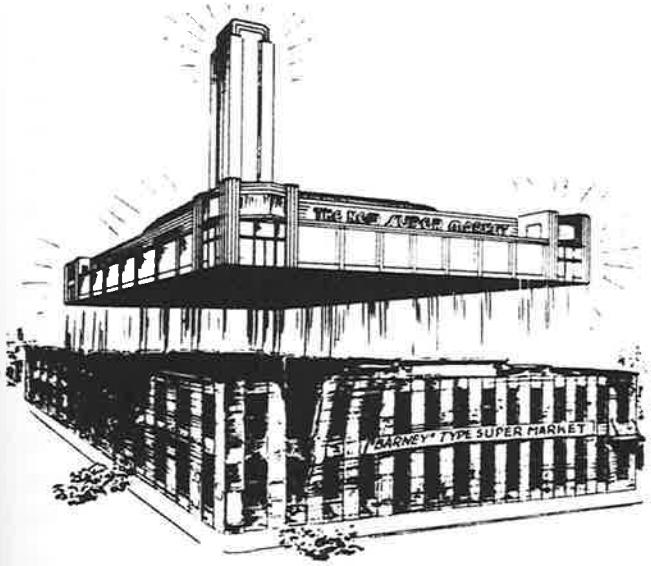
JUNE 26 IS OFFICIALLY UPC BAR CODE DAY in the city of Troy, Ohio. On that day in 1974, a cashier at the local Marsh supermarket sold the world's first bar-coded product: a ten-pack of Wrigley's Juicy Fruit chewing gum.[1] In 2004, the town celebrated the event's thirtieth anniversary at the original site of the transaction by eating bar code–decorated cake in the presence of both the original cashier and the historic ten-pack (usually on display at the Smithsonian Institution). In the thirty years between the two events, the bar code found its way onto almost every single packaged product in the world, making it one of the most ubiquitous features of information and inventory management. Enabled by the increased speed and affordability of computing, the bar code transformed how objects were imagined because it not only encoded them with information but also allowed them to be treated like information. And while the bar code was indeed revolutionary, its debut in 1974 masked another revolution in shopping that was already normalized enough not to merit comment: self-service. While it is common today for a shopper to select items individually and bring them all at once to a single sales terminal near the store's exit, this form of shopping was not introduced until the beginning of the twentieth century and took decades to become a standard practice.

Self-service introduced a radical shift in the way shoppers interacted with merchandise because they acquired labor roles previously assigned to clerks, and, at the same time, they became sources of consumer data. Not only did self-service produce a new kind of shopping

environment, but it also presented a host of inventory management challenges, including pricing, inventory, and distribution. In other words, self-service environments both generated and required the management of such large amounts of information that manual methods could not keep pace. The advent of the bar code solved these problems, but, because of the increases in speed and scale that it enabled, a new set of challenges ensued that had transformative effects on the nature of the retail spaces themselves. If self-service changed the relationships among customers, clerks, inventory, and the space of display (the shopping environment), the bar code changed the nature of the inventory by allowing physical material to be imagined and managed as data. This triggered a transformation in the buildings designed to support such systems. No longer isolated warehouses storing static and stable inventories of objects, the buildings of large-scale discount retail began to constitute an architecture of networked inventory and data *management*—an architecture of logistics.

Self-Service Turns Customers into Clerks

When Sam Walton opened his first store in Bentonville in 1950, it was, according to him, only the third self-service variety store in the country.[2] This was not a Walmart proper but a franchise of Ben Franklin stores that he called Walton's 5–10. Franchising was part of a larger shift in retail as general stores and specialty stores were superseded by mass merchandisers who took advantage of more efficient systems to reduce costs and eliminate price increases that could accumulate along their merchandise's path from production to consumption.[3] As a franchisee of the Ben Franklin chain, Walton had the support of a large company but also the freedom to experiment, hence his interest in self-service. The self-service model is intellectual property patented in 1917 by Clarence Saunders, founder of the Piggly Wiggly chain of grocery stores. Saunders opened his first location in 1916 in Memphis, Tennessee, and referred to its organization as "self-service" because customers could move freely through the shop once they passed through the controlled entrance turnstile. Customers would take a shopping basket, compare transparently priced merchandise, select



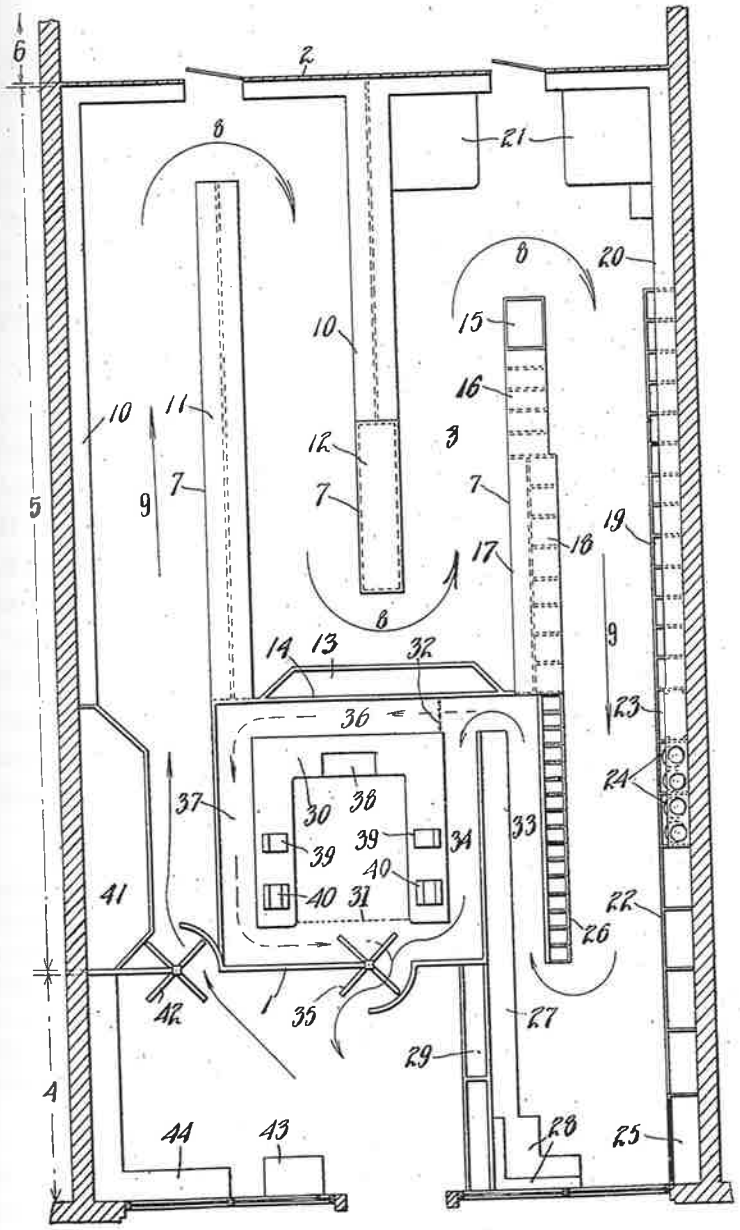
The supermarket emerged, in pa
new consumer demands after W
Source: Max Zimmerman, *The Su*
A Revolution in Distribution (New
McGraw-Hill, 1995), 121.

Celebrating the bar code's thirty-
anniversary in Troy, Ohio, June 26
the left, the original cashier holds
of Juicy Fruit chewing gum, the fi
bar-coded product to be scanned
chased. Photograph by Wes Jone
of Troy Historical Society.

the desired items themselves, and pay for them all at once at a single point before exiting the store. The prevailing arrangement up to that time had store clerks choosing items for the customers or assisting them at multiple counters with cash registers. Saunders's new format gave shoppers more freedom to choose, and, even though the merchant was still responsible for selecting the products that would be displayed for sale, customers could assert their needs based on what they purchased.[4] In turn, the responsibility for marketing shifted to the manufacturers themselves, for they were now in direct competition with their rivals, whose products sat adjacent to theirs on the self-service stores' shelves. This new format intensified the need for manufacturers to brand products in legible and aggressive ways. Since the price was also marked on every item, customers could easily compare costs. Saunders was motivated by a desire to lower costs and increase profit; with self-service, under the guise of increased freedom and control, customers actually did the work of what would be paid clerks at his competitors' stores. With its overhead reduced, Piggly Wiggly could lower its prices in general based on the wager that customers would prefer to shop for themselves if they could save money. While early department stores were primarily urban and depended on a steady stream of pedestrian traffic, the more compact self-service stores lent themselves well to areas with smaller populations and proved to be especially compatible with rural, and later suburban, locations.[5]

In an effort to expand reach and revenue, Saunders also patented a system that would allow others to transform their existing stores into "self-serving" stores through his own franchise model. Through the use of a series of deployable components and standardized modules, the interior of a conventional retail space could quickly be updated to operate as a self-service store. In his 1917 patent application, Saunders described the system as well as the tenets of his self-service format:

> Furniture in the form of portable units adapted to be readily arranged for use or collapsed for shipping or closing purposes, the same being designed for use in a store room, or other place, and to be arranged in such a manner that the customers will be able to serve themselves and, in doing so, will be required to review the entire assortment of goods carried in stock, conveniently and attractively displayed, and after selecting



The floor plan of Clarence Saunders's patented layout for self-service shoppin included some of the inventor's innovat including turnstiles to control entry and a prescribed path, and a single point of Source: C. Saunders, "Self-Serving Stor U.S. Patent 1,357,521, 1920, 1.

the goods desired, will be required to pass a checking and paying station at which the goods selected may be billed, wrapped and settled for before leaving the premises. . . .

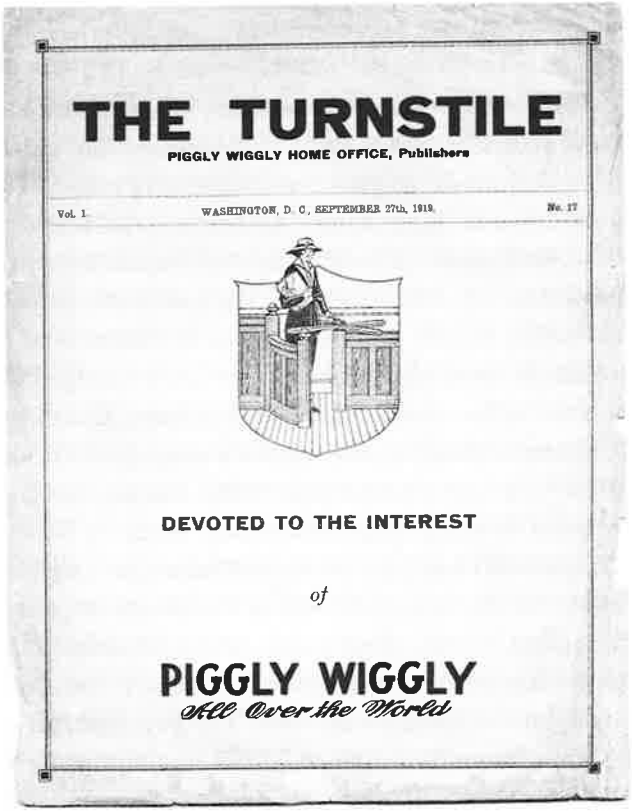
The store furniture disclosed in the present application is characterized in that the same is made up of standardized units, whereby stores adopting the system may be equipped with portable units readily set up for business and disassembled or collapsed as occasion requires, and wherein the units themselves may be constructed at a central point and all after the same pattern in construction and appearance, insuring a uniformity of stores employing my invention.[6]

The architectural aspects in this description characterize much of the ensuing discount retail architecture, including standardized systems of production, access, and display and the implicit temporariness of such installations. The standardization allows the interiors themselves to become effective copies of each other and to remain familiar to customers. Saunders was adamant about enforcing this equivalence. Beyond commonly describing Piggly Wiggly as a "system" and referring to the "Saunders apparatus," he produced *Whats and What Nots of Piggly Wiggly System*, which was distributed to managers of Piggly Wiggly branches. In this publication, part operating manual and part motivational tract, Saunders expounded at length about the importance of adhering to the system:

> Each thing to do and each thing not to do is of equal importance one with the other. Failing to do anything that should be done in the conduction and operations of the stores is just as hurtful for the whole plan of merchandising as doing any particular thing that should not be done and vice versa. Therefore, the general good of these rules and regulations to each agency concerned is for him to know positively and without a doubt that each other Piggly Wiggly unit is doing and not doing the very same things that he is doing and not doing.[7]

For Saunders, and for many of the merchandisers and retailers who followed, store locations operated in concert and were conceptualized not so much as buildings but as components of a large and carefully coordinated system designed to enable the circulation of goods.[8]

The self-service model made inventory into display and systematized browsing to ensure that customers would pass by every item that was available. It required customers to absorb new labor roles


THE TURNSTILE

PIGGLY WIGGLY HOME OFFICE, Publishers

Vol. 1. WASHINGTON, D. C., SEPTEMBER 27th, 1919. No. 17

DEVOTED TO THE INTEREST

of

PIGGLY WIGGLY

All Over the World

Clarence Saunders insisted on coordinating all Piggly Wiggly operations and used the in-house publication *The Turnstile* to keep store managers and employees up-to-date on changes in policies and procedures. Courtesy of University of Memphis Library, Mississippi Valley Collection.

while also using their buying choices to generate information about preferences and habits. The space of self-service itself was not linked to a new building type but rather to a new organizational system, a means for formatting and structuring a set of experiences and processes designed in turn to generate both revenue and information that would make it easier to effectively generate still more revenue in the future. However, self-service's reduction in labor and simultaneous increase in merchandise produced new inventory management challenges. For example, at Piggly Wiggly, aside from regular and standardized inventory processes, there was also the requirement, stipulated in Saunders's Rule 26, that "each checker and stock-keeper of store must be furnished weekly by the operator in charge with a revised price schedule of those articles that have been changed in price."[9] With modest stores and limited merchandise, doing this manually was initially sufficient. However, self-service's ascendance in the United States was coupled with postwar prosperity, and increased consumer choice generated so many different kinds of products that managing them in a coordinated way (and thus a profitable one) became increasingly difficult. Furthermore, the format's capacity to generate consumer information at centralized points of sale produced new categories of information about shopping behavior, but without any simple way to consolidate or compare the data. The development of the bar code was a response to this bottleneck, and its adoption by and eventual ubiquity throughout the world of retail allowed inventory management to occur at dramatically new scales.

The Bar Code Turns Objects into Information

The bar code's most familiar form is the Universal Product Code, the implementation of which was set in motion at a meeting of retailers and engineers in 1970. They convened to develop a standard system of inventory management and, after examining various attempts, eventually helped to establish the UPC symbol. Within two years of the UPC symbol's 1974 inauguration, more than 75 percent of items in a typical supermarket bore the mark.[10] Of interest for purposes of this discussion is less the history of the technology than its significance for the built environment. The bar code's capacity to standardize data and enable the efficient management of information provided a foundational layer for today's logistical systems and their architecture.

The UPC is a means of encapsulating a product's pertinent information in an array of parallel bars that contain a one-dimensional data string. Each black bar is attached to its adjacent void to form a sequence of binary digits that can be read easily by a laser scanner. The combination of these digits is unique for each product, and the bar code is scanned at significant nodes along a product's journey. To visualize the structure of the bar code, one can separate it into smaller bundles of information, each containing one number and eight bits. Each number is composed of a sequence of ones and zeroes, represented as solid or as void. With practice, one might easily recognize the more solid "01111101" of the three or the lighter "10001000" of the eight. When the bar code is reduced to the size of a postage stamp, however, the difference between one number and the next is nearly impossible for the human eye to parse. The bar code is one of the first communication systems designed to be both written and read exclusively by computers and thus illegible to those human managers and operators who depend on it.

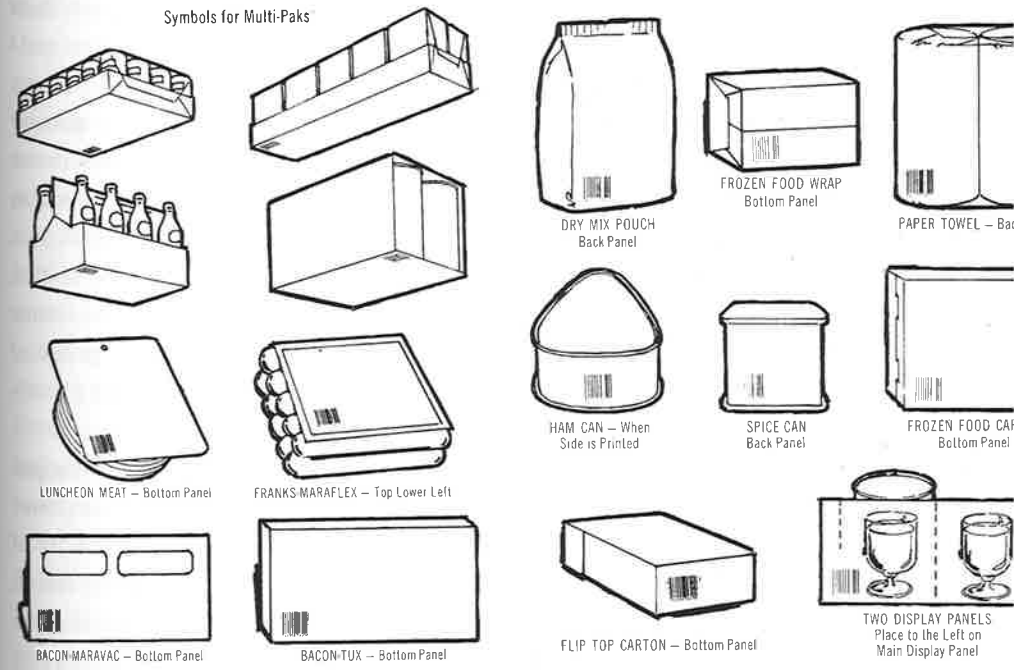
The machine literacy of the bar code provides an efficient, accurate, precise, and reliable way of managing information. With the semiautomatic process of scanning a code, opportunities for human error are reduced, formats are standardized, and inventory can be monitored with a significantly high degree of control and precision. Through this mechanization of inventory control, suppliers and shippers become more accountable for the manner in which they manage their goods. Likewise, various retail outlets can control and calibrate inventory levels to reduce the risks of overstocking or selling out of merchandise. Every item for sale is scanned when it is placed on display and then subsequently scanned to tabulate its price, its purchase, and its ultimate removal from the store. This information feeds into overall supply protocols and alerts the warehouses and distribution centers that more stock will be needed soon.[11]

The rise of the UPC demanded more extensive and responsive distribution networks. Once merchandisers had the ability to monitor their

material stocks at a higher resolution, it became easier for them to calibrate their distribution requirements. The UPC's capacity to contain information allowed the material in question to be understood, and subsequently imagined, in abstract terms. In the early days of self-service, for example, inventory was logged manually, and its materiality was managed through physical manipulation. With contemporary inventory control needs and increasingly large areas of operation, it is both necessary and easier to conceptualize inventory as data. As corporate logisticians struggle to maintain the right balance of merchandise, the items' qualitative identities have become less important than their quantities. Although goods maintain their materiality and still need to be moved physically, they also acquire an additional informational register for this handling. In this sense, the bar code creates two versions of every item moving through a given distribution network, one borne physically by transporters and the other carried over the communications networks.

While the bar code is designed to be scanned easily and to reduce errors, its efficacy depends on its placement relative to the shape of the product it represents. This design consideration became acute when the symbol's rapid implementation required that placement of the bar code be folded into the front-end manufacturing processes of all manner of goods. To resolve this issue, the Universal Code Council (now GS1 US) established a set of guidelines to help producers figure out the best places on their products for the codes. A telling set of diagrams from a 1975 document about the UPC suggests ideal locations for bar codes on, for example, a six-pack of beer, an eight-pack of hot dogs, and a ten-pack of luncheon meat. In these diagrams, all the imagery relating to brand differentiation, the stuff that wins the hearts and minds of customers and that became necessary with self-service as the dominant retail model, is conspicuously absent. The only mark on the products is the bar code. In the eyes of those responsible for circulating these objects, this is the only mark that matters. It contains all the necessary information, including the manufacturer, the name of the product, its price, and—once the code is scanned—its location in time and space. While the bar code cannot communicate a product's specific location at any given moment, it narrows the options

Compositing a bar code for photography. Each digit is represented as an eight-bit sequence of black or white "bars." Source Uniform Grocery Product Code Council, *Symbol Specification* (Washington, D.C., 1973). Courtesy of Bill Selmeier.



Specifications for locating the bar coc product packaging. Source: Lawrence *The Universal Product Code* (New York com, 1975). Courtesy of Amacom.

down to either a certain general location or between two of them. In this view, the physical aspects of these products, numerous as they are, start to matter less than their schedules and locations. Distribution, once concerned only with the physical handling of material, has increasingly become an exercise in information management as the objects themselves are reduced to and encapsulated by the bar codes on their surfaces. However, this spatiotemporal geography of objects is fleeting, because by the time any one thing is scanned, it is already on its way elsewhere.[12]

The bar code's introduction, like many of the logistical transformations to follow, was intended to increase the speed of transactions while reducing the likelihood of mistakes.[13] The bar code also has the added benefit of enabling the coordination of information and inventory. In addition to freeing the clerk of the task of manually inputting price information, it relieved stock keepers of having to inspect their inventory physically. They needed only look at the compiled data generated by the day's bar code scans. So while the bar code sped things up, it also further transferred labor to customers, a process already started by the shift to self-service. Simply by retrieving the items they desired and handing them to cashiers to be scanned and paid for, shoppers became a store's ersatz stockists and market analysts. Not only did they help manage and record inventory, but they also helped the store better understand what people were buying. Consumer desire, and the will to capitalize and manipulate that desire, is one of the primary forces behind the huge technospatial complex that constitutes retail logistics systems.

Consumer behavior is, of course, notoriously fickle, and the bar code helps to manage risk associated with unpredictable customer desire. On one hand, the bar code helps to generate large amounts of information about buying habits in fast and inexpensive ways, which in turn allows merchants to be more responsive.[14] The bar code also allows for multiple systems to interact with low entry barriers in what Karl Weick has termed a "loosely coupled" system (as discussed below). John Dunlop and Jan Rivkin, in an introduction to a history of the bar code, point to its "non-specific" character as one of its key features.[15] Both attributes of the bar code allow for further increases in

responsive capacities to market risks. In the case of Walmart, a similar logic extends to the buildings themselves. Born from the combination of new organizational systems like self-service and new forms of information technology, Walmart's supercenters, data centers, and distribution centers operate collectively through a kind of architecture that, like the bar code, can absorb risk through its lack of specificity and its loose coupling between form and content.

Walmart Formats Formats and Prototypes Prototypes

A preoccupation of architectural discourse since the Industrial Revolution has been the relationship between the activities that a building supports (or contains) and the form that the building takes (i.e., function and expression, or form and content). Logistical architecture challenges the primacy of that preoccupation by further decoupling the two, by inverting their relationship, or by collapsing them onto each other. These relationships suggest a more contingent approach to architectural expression that allows certain aspects of a design to remain open-ended until forced to adapt to a local situation, an approach that is evident in Walmart's collection of buildings. Beyond that register, logistical architecture emphasizes horizontal organization over vertical expression, thereby associating these built elements with infrastructural systems (rather than reinforcing a given building's status as a discrete architectural object). While this renders the question of symbolism or expression more marginal, it also illuminates the ways in which architecture can act in concert and perhaps identifies a lacuna in current language for thinking through such configurations.

In Walmart's corporate lexicon, buildings are not referred to as *buildings* but as *formats* and as *prototypes*. Formats are the larger category and designate the kind of store, while prototypes are different configurations of given formats. The prototype designation is a reflection of the fact that Walmart's architecture division develops its plans without particular sites in mind but with certain performance constraints. New stores are designed for generic conditions but with highly specific interior organizations. The features of each new

location, combined with Walmart's research about demographics and real estate, help determine what prototype is chosen. However, while the interior is highly specified, aspects such as the building's exterior, site orientation, and access to infrastructure all need to be modified in the field by a local architect or contractor. As a result, the task of design involves mainly developing an interface with an unknown condition and playing out scenarios of transformations for a given situation and its many contingencies.[16]

The term *format* itself is both a noun used to describe a generic condition and a verb for the process of creating that condition. The word originated in the preparation and production of books, in which *format* refers to both the size and the shape of a publication. Traditional book formats (e.g., folio, quarto, octavo, duodecimo) were differentiated by the number of times a single sheet of paper would need to be folded to form the individual leaves of the publication. Other forms of media have subsequently used the term to describe ways to store data beyond ink on paper. Examples include audio recording and, more recently, digital storage. In the latter category, the verb and noun often intersect as one is prompted to "format" a data storage device and thereby erase all previous data to make way for new input. A format is also "a defined structure for processing, storage, or display of data."[17] In the context of Walmart's use of the word to describe its buildings, this definition is revealing because it lays out three of the key roles the company expects its architecture to perform: processing, storage, and display. Significantly, a format's relationship to its form is somewhat slippery. In most cases, the form is in fact secondary to the performance of the artifact in question. Walmart emphasizes its buildings' *display* of information and symbols (primarily in the form of its applied facades), but such an emphasis hides the complex architectural machinations related to *processing* and *storage*.

The architectural prototype as deployed by Walmart is an incomplete condition, at times both overdetermined and underspecified. It is worth noting that the term *prototype* is not used here in the conventional sense, that is, to indicate an initial version of something that will later be copied repeatedly. Rather, the Walmart prototype is more of a contingent and relational condition sharing some of the features identified by Karl Weick in his study of loosely coupled systems. Weick examines the development of resilient forms of social and corporate organization and attempts to find potential in unpredictability, which he translates into the phrase "loose coupling." While his emphasis is organizational, given the overlap between form and organization that logistics buildings occupy, it is possible to claim some shared characteristics between the two. Primarily, the prototype for Walmart is capable of adapting to local conditions without modifying its core organization (Plate 5).[18] Similar to Weick's loosely coupled systems, this approach to building can "preserve more diversity in responding [to local conditions] than do tightly coupled systems, and therefore can adapt to a considerably wider range of changes in the environment."[19] In Weick's estimation, loosely coupled systems are also less vulnerable to minor environmental changes and can yield a greater number of "mutations or novel solutions."[20] In Walmart's case, there is a slack built into the design of the prototype that provides the architecture a role in mediating between the specific interior and the unknown exterior. As a result, the friction between the generic and the specific can produce surprising hybrids with specific, strange, and locally inflected expressions, as, for example, in Walmart's efforts to open stores in the New Urbanist town of Hercules, California. The architecture of retail logistics, constrained as it is by organizational protocols, tends to overdetermine cultural experience while simultaneously deploying techniques of underspecification. By allowing these loose and supple approaches to the built products that it deploys, Walmart can adapt to a wide range of unexpected circumstances and thereby use the buildings themselves to mitigate market risk.

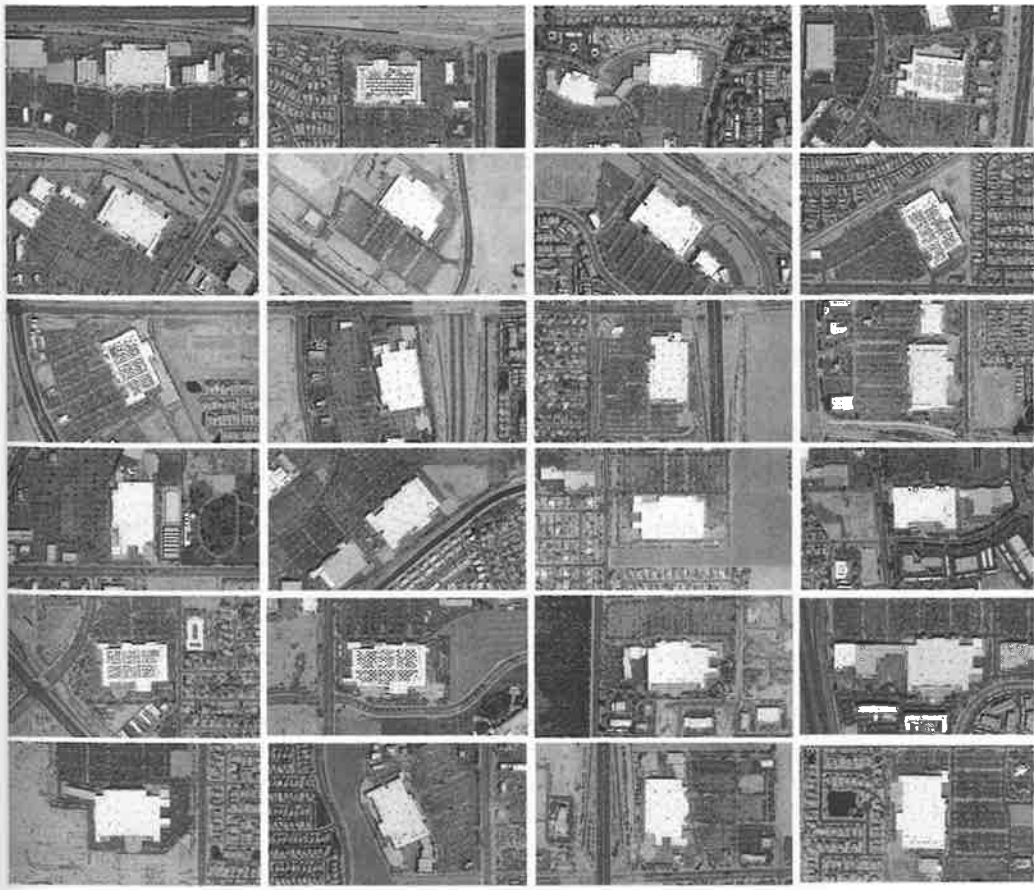
Supercenters: Content but No Form

Walmart's most common building type, the supercenter, is a combination of a general merchandise discount store and a large discount food store. These buildings, the primary territorial instruments that Walmart uses as it expands its real estate holdings, are a collective manifestation of the retailer's vast infrastructural system of transmission. This system, formed in conjunction with Walmart's data centers

and distribution centers, is a constantly transforming network of calibrated and interconnected interiors. However, while each type forms part of this system, it also exhibits specific architectural traits related to function and expression, or content and form.

The design of Walmart supercenter prototypes reflects the company's pursuit of expediency and cost reduction. By having only a small number of prototypes, Walmart can complete the processes of site selection and construction more quickly than if it were to design a store for each new location. This has been part of the company's approach even from its early days. According to Sam Walton, "We just started repeating what worked, stamping out stores cookie-cutter style. The only decision we had to make was what size format to put in what market. . . . I think our main real estate effort should be directed at getting out in front of expansion and letting the population build out to us."[21] Walton's emphasis on the stores' locations rather than their individual designs is not surprising, given his preoccupation with performance and quantities. For Walton, building a new store amounted simply to selecting the appropriate format and adapting to the location as quickly as possible. For this process, the Walmart real estate division and architects partner with local companies to transform prototype drawings through a process called "site adapt." They take the generic prototype drawings and modify them to ensure their compliance with local building codes and work through the specific interfaces between the new building and its context, including access roads, sidewalks, drainage, and fire safety.

The design of a Walmart building is secondary to its specific placement within a territory. However, it is on grounds of the former that local groups often challenge Walmart's crew of architects, real estate planners, and public relations specialists. For example, in Walmart's bid to enter Hercules, California, a small, affluent community north of Berkeley, community resistance obliged the retailer to modify the facade of its proposed building substantially to conform to the tenets established in the plan for the city. According to one account, Walmart prototypes come in eight styles—Main Street, Alpine, Industrial, Coastal, Ranch, Colonial, Mission, and Mediterranean—each designed to gesture toward visual appropriateness as determined by a given



Aerial photographs of typical Walmart supercenters and land-use patterns in the Phoenix, Arizona, metropolitan area. Top ro left to right: Store 3360, Chandler; Store 5369, Goodyear; Store 1512, Chandler; Sto 2766, Scottsdale. Second row: Store 5428, Mesa; Store 4430, Maricopa; Store 4451, Queen Creek; Store 4336, El Mirage. Third row: Store 3896, Peoria; Store 5186, Gilbert Store 2112, Scottsdale; Store 2671, Chandl Fourth row: Store 2768, Mesa; Store 2482, Mesa; Store 1218, Casa Grande; Store 1532 Glendale. Fifth row: Store 1533, Peoria; Sto 2512, Phoenix; Store 2767, Mesa; Store 519 Phoenix. Sixth row: Store 5331, Phoenix; Store 3861, Gilbert; Store 3465, Glendale; Store 3771, Phoenix. Source: Google Earth.

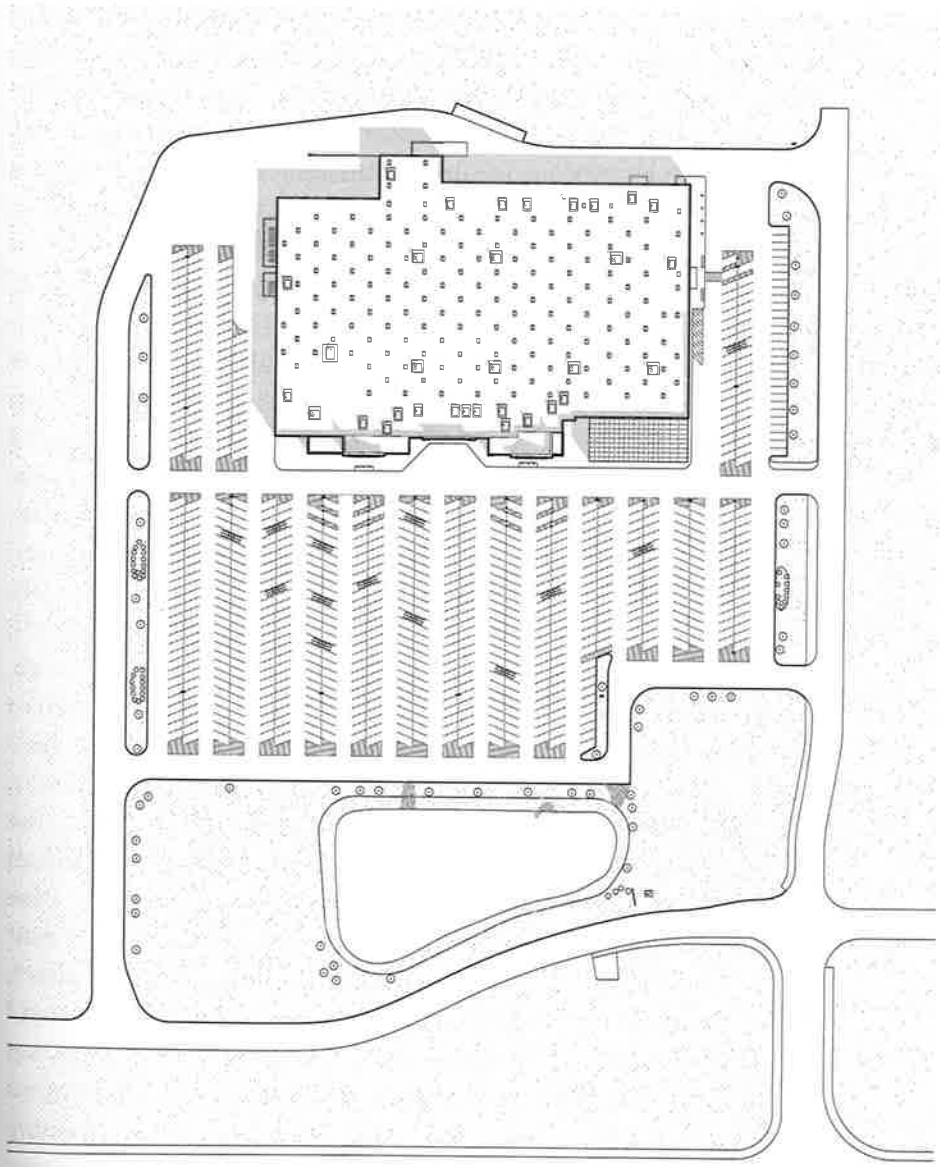
community.[22] The architecture of Walmart stores sits between the logistical demands that determine the organization of the shopping floor and varying degrees of populist demands, and this position suggests a version of architecture concerned primarily with surface and enclosure. Walmart's critics argue that "appeasing people's aesthetic sense will render them less likely to object to the real issue: the social, economic, and psychological impact of Walmart."[23] That is, by promoting the role of architecture as communicative surface, Walmart obscures design's utility as a territorial instrument. While this is perhaps not intentional on the part of Walmart, it is nonetheless a significant result of the company's approach. In an interview, William Correll, head of Walmart's architecture division at the time, reinforced this attitude:

> From a social and cultural standpoint, we deal with the buildings' exteriors all the time. That's literally a daily issue. Once folks know that a Walmart store is coming to their location, they ask, "Well, how's it going to look? How's it going to look when I drive up to it? I'll be driving back and forth from this place for years and years to come and my children will grow up walking in and out of its doors. Is there a way to make it feel like it fits in?" We have architects, engineers, and real estate people who are out looking at the surroundings and are working with local jurisdictions to build a consensus of what the exterior design should be.[24]

Although Correll did not say so, the exterior design is emphasized because the interior layouts of the prototypes are very rigid. These configurations are determined in part by the architects but mostly by the company's inventory and logistics experts, and they remain relatively inflexible. As a result, the architects are indeed left with little space for design. In response to this challenge, Correll went on to say:

> Productivity and efficiency are at the very center of what we're trying to accomplish in order to keep the prices low for customers. It all comes right back to that. However, when you are looking with an open mind, you start to see things that have been established over time that may not be so applicable anymore. . . . Some things must absolutely stay the way they are—and there are very serious reasons why they are the way they are—but other things have a little flexibility to them.[25]

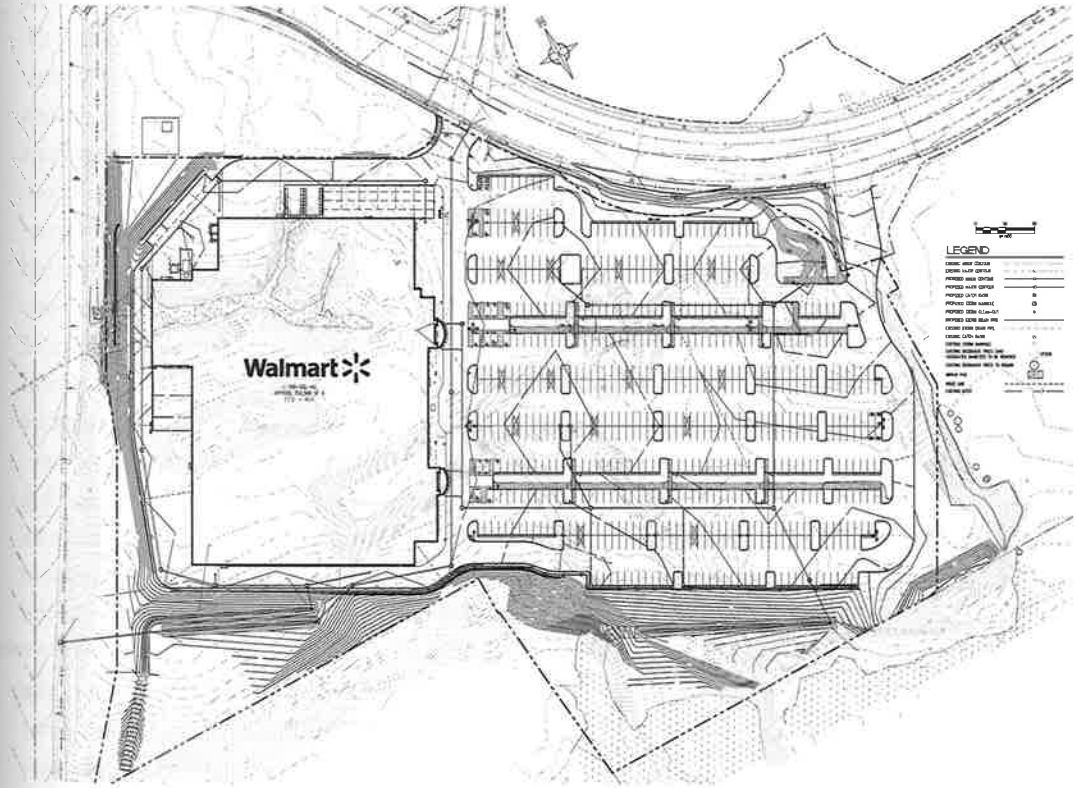
In an effort to make buildings that "fit in," Walmart adapts its buildings to individual sites. From the company's point of view, this often



Typical site plan for Prototype 143. Redrawn by the author. Not to scale.

amounts to modulating a building's surfaces to reflect some kind of abstracted or generalized architectural semantic of the region. The construction technology itself reinforces this bias toward surface because the buildings are often built of concrete masonry units and then clad with an exterior insulation finishing system. Such systems are superficial by definition and afford the kind of surface modifications that Walmart uses to mollify resistant publics.[26]

This kind of attention to local surroundings, however superficial, is costly and time-consuming for the company. In response, the architecture division has developed a new set of guidelines in an effort to streamline architectural production while raising the overall quality of Walmart's buildings.[27] Rather than offering the standard building and then only modifying that design when necessary to appease public concern, the plan aims to raise the standard of the common denominator so that customizing local outlets will no longer be necessary. In place of the diverse architectural responses produced by Walmart's previous design approach (referred to as "Store of the Community"), the new initiative, designed in part by New York–based Lippincott, is more standardized and sophisticated.[28] Lisa Spinks, then senior architecture manager at Walmart, summarized the company's goals in 2010: "We had to find a way to take what we stood for culturally, and what our customers wanted, and roll them into a consistent set of brand filters, so we don't track off into any extreme or any element that can bring you away from your brand message and your value proposition."[29] This design imperative aims at increasing the definition of each store through the elements of its new "brand filter": "Caring (compassionate, not cold)," "Real (approachable, not phony)," "Innovative (smart, not complacent)," "Straightforward (simple, not complicated)," "Positive (motivating, not pessimistic)."[30] This removal of ambiguity and increased resolution is reinforced by the program's acronym: CRISP. As evidence, consider Walmart's proposal for a new supercenter in Warrenton, Oregon. During the design review process, government officials and members of the community expressed frustration at Walmart's one-size-fits-all design approach. The company acknowledged these concerns and revised its proposal to be more sensitive to the local context through modifications to the site plan,

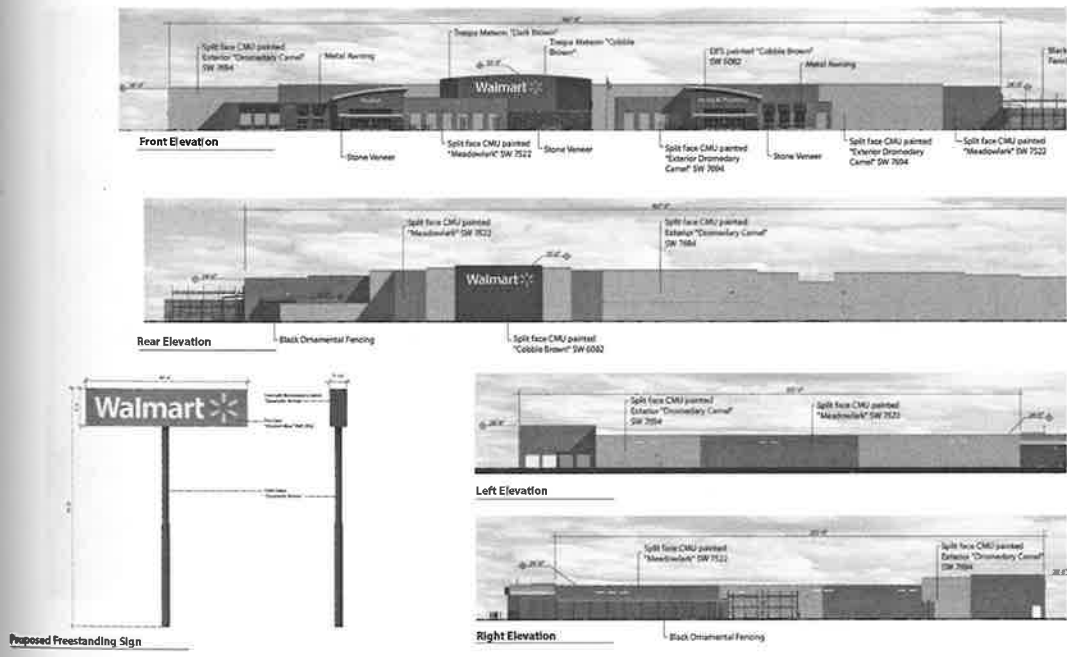


Preliminary grading and drainage plan, Walmart 5861, Warrenton, Oregon, 2012. As is often the case, this site needs to be regraded to be compatible with the prototype. Public document courtesy of the City of Warrenton, Oregon.

reduced visibility, the addition of stone veneer at entries, and new awnings over windows and "window-like" features. These revisions, reflected in a resubmitted design proposal to the city, were approved, and, at the time of writing, the proposal is moving forward.

While these guidelines are general, an examination of the construction documents of a specific design, Supercenter Prototype 143, reveals the company's focus on the surface treatment of its buildings (Plate 6). This emphasis on surface also supports certain prevailing discursive trajectories linked to architecture, especially those promoted by the work of Robert Venturi and Denise Scott Brown concerning the development of the "decorated shed." According to Venturi and Scott Brown's formulation, a decorated shed occurs when "systems of space and structure are directly at the service of program, and ornament is applied independently of them."[31] In many respects, Walmart's buildings conform to this definition. However, the emphasis placed on the design of enclosure by the company, the architects, and an attendant theoretical apparatus has obscured another set of characteristics demonstrated by these buildings—namely, the characteristics of an infrastructural network deployed to secure territory. Describing these buildings as "big boxes" further perpetuates an understanding of their architecture as one concerned with surface instead of interface, and with form instead of performance, thereby locating architectural agency primarily in the communicative possibilities of ornamentation.[32]

Within the corporate description of Walmart's architecture, the emphasis is clearly placed on surfaces—more specifically, on the *front vertical* surface. The other three vertical surfaces often perform service roles, as they receive delivery trucks and cars to be repaired and are punctuated with numerous fire exits. However, focusing on only the four vertical surfaces of a typical Walmart supercenter (as the company itself does in its own guidelines) fails to account for the other two surfaces crucial to the building's operation: the roof and the floor. These surfaces are significant because they have no symbolic obligations. As they are effectively invisible, there is no opportunity for them to communicate through architectural symbols (e.g., pediment, dormer, pilaster, materials). However, these surfaces are communicative in a literal sense because Walmart receives much of its essential



Proposed building elevations, Walmart 58
Warrenton, Oregon, 2012. Public documer
courtesy of the City of Warrenton, Oregon.

Exterior view of Walmart 5861, Warrenton, Oregon, original proposal. Rejected by City of Warrenton Planning Commission for failure to comply with the city's Development Code. Source: PacLand, "North Coast Retail Center, Walmart Store #5861-01; Warrenton, Oregon; Revised Site Design Review Submittal, November 1, 2012." Public document courtesy of the City of Warrenton, Oregon.

Exterior view of Walmart 5861, Warr
Oregon, revised proposal, including
in siting, visual screening, parking c
ration, and facade enhancements. A
by Design Review Board. Source: Pa
"North Coast Retail Center, Walmar
#5861-01; Warrenton, Oregon; Revis
Design Review Submittal, Novembe
Public document courtesy of the Ci
Warrenton, Oregon.

material through them. A closer inspection of the roof plan, for example, indicates that the surface's duties include more than letting light in, exhausting air, and keeping water out. The roof also plays host to the communications infrastructure, including several banks of security cameras and the store's satellite dish. The dish is the primary link to Walmart's satellite network and connects the store with the company's headquarters. On the ground, the floor slab is one of the key steps to formatting a site for a new store and a significant interface between the store and larger infrastructural systems such as electrical, plumbing, and drainage. While the vertical surfaces act as membranes for people passing in and out of the building, the horizontal surfaces enable the store's infrastructural connectivity and perform as membranes through which water, power, light, heat, and—most important—information pass.

Buildings like this accommodate significant material flows, including a constant stream of inventory. Products are delivered by trucks from the local distribution center, brought to the shelves, and then transported out of the stores by customers. The plan of a representative supercenter prototype, Prototype 143 (Plate 6), reveals a layout designed to minimize merchandise lag and optimize "throughput." Compared to warehouse-based models, Prototype 143 has only a very small amount of space for storage, but it has a maximized area available for merchandise display. The Walmart distribution system is responsive enough that a significant inventory supply is not required. As a result of its information management system's command and control of inventory, Walmart is able to replenish its shelves quickly with a minimum of storage space at each location. The floor plan of Prototype 143 indicates a large receiving area but only two relatively small stockrooms. Including all the areas off the sales floor, they account for roughly 25 percent of the total area of the store. By comparison, a prototypical supermarket layout from the 1955 manual *The Super Market* has 45 percent of its total area allocated to "non-sales" space and 55 percent for the sales floor.[33] In the past, retail outlets were designed to receive goods for sale in excess of what they could sell each day. These outlets served as both stores and warehouses, with stock replenished by distributors or suppliers on a regular, if infrequent, basis. By contrast, Walmart's supercenter is designed to evacuate its goods as quickly as possible.

In this light, referring to the supercenters as stores—that is, as places where items are "stored"—is in fact misleading, because they are designed to do the opposite. However, the etymology of the term *store* is telling: it originates in the Old French *estorer* and in turn from the Latin *instaurare*—"to renew." These buildings are designed not to accumulate material but to amass and dispense it cyclically. To manage this material, the typical supercenter's sales area has a highly specific and constrained layout. In this sense, Walmart supercenters operate in an infrastructural register as conduits and valves, capable of renewing and modulating the "flow" of material.

As both conduits and containers, these installations are simultaneously enclosures and passageways in which an exterior is both reinforced and undermined. The prototype approach demands that certain performance configurations remain tautly preserved while other elements, the exterior "crust" of the building, for example, have greater flexibility. Thus the layout of the racks and aisles is sacrosanct while this thick perimeter zone is more malleable and establishes an intermediate layer of slack program that mediates between the fixed layout of the interior and the exigencies of the local site conditions. The outermost layer of this crust, an architectural mantle, while only a small part of Walmart's building program, is the feature that is often the subject of public and architectural engagement. In light of this, it is possible to say that the content of the store is set but it has a loose relationship to the eventual form. Moreover, that form is highly contingent across multiple iterations, even if each one carries the exact same interior content (Plate 5). This approach to design, exemplified by Walmart, undermines the singular characteristics of architecture in order to foreground each instance's role in a larger hybrid system. It is an infrastructural version of architecture in which prototypes are deployed and updated, and it offers designers a model for preserving the core of a project while adapting to unforeseen local circumstances. It presents a number of opportunities to think through design in terms of what a context might be, what an inside might be (e.g., when there are two facades, an exterior and an interior), and what form might be.

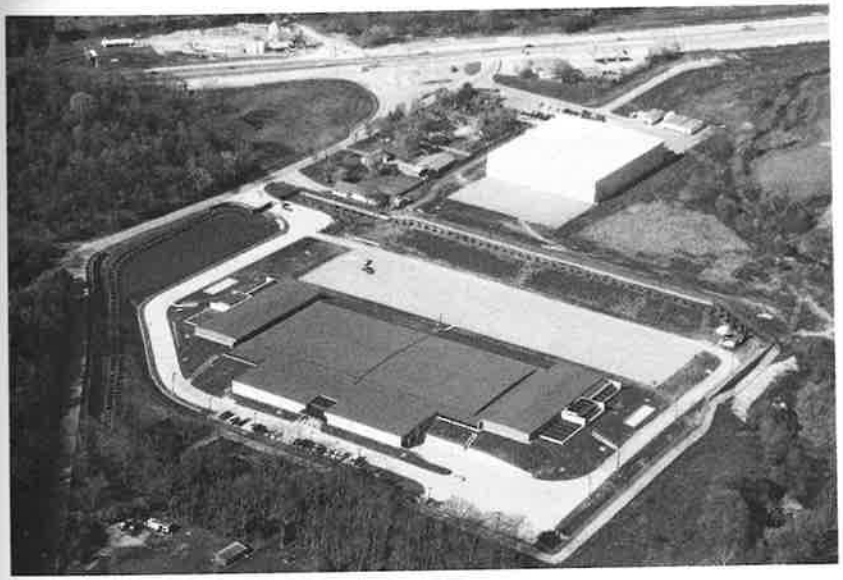
As anonymous and bureaucratic buildings are increasingly the mode of choice for builders (and often responsible for shaping urban and civic spaces), designers are presented with an opportunity to engage such projects not as sheds to decorate but as the complex formal and spatial configurations they are.

Data Centers: Form but No Content

In order to manage its inventory and identify new locations, Walmart relies on an expansive network of data management systems that provide the "intelligence" for the company's logistical operations. The centralization of the corporate headquarters in Bentonville, Arkansas, has demanded that the retailer find ways to ensure the constant openness of transmission channels. Walmart has also developed proprietary software to record and process consumer and supplier information. With the bar code's ability to generate inventory statistics effectively, and with the company's vast network of stores, Walmart records huge amounts of data that it keeps in and relays through its own collection of data centers, one of which is just over the Missouri border from the Bentonville headquarters (Plate 7).[34] This data center is connected to the company's infrastructure network, but it has been built to disappear. Buried in the ground and hidden from view, the highly secured building is more legible as a node in a network of transmission than as a physical building. Its location, form, program, and use all present a version of architecture characterized and determined by its crucial role in the logistical system. As an automated structure that serves primarily as a relay station, it makes few provisions for its human occupants. Instead, its design is aimed at optimization and the seamless merging of building, infrastructure, and information.

Roughly the size of a standard supercenter, the anonymous data center is located in McDonald County, Missouri, and serves as part of the region's strategic plan for making more high-speed communications infrastructure available. From Walmart's point of view, the location is advantageous because property taxes in McDonald County are almost 85 percent lower than those in the retailer's neighboring home county, Benton County, Arkansas.[35] The installation is surrounded by

Aerial view of Walmart data center, McDonal County, Missouri. The building site is sealed by two layers of security fencing. Photograp by Max McCoy. Courtesy of the *Joplin Globe*.

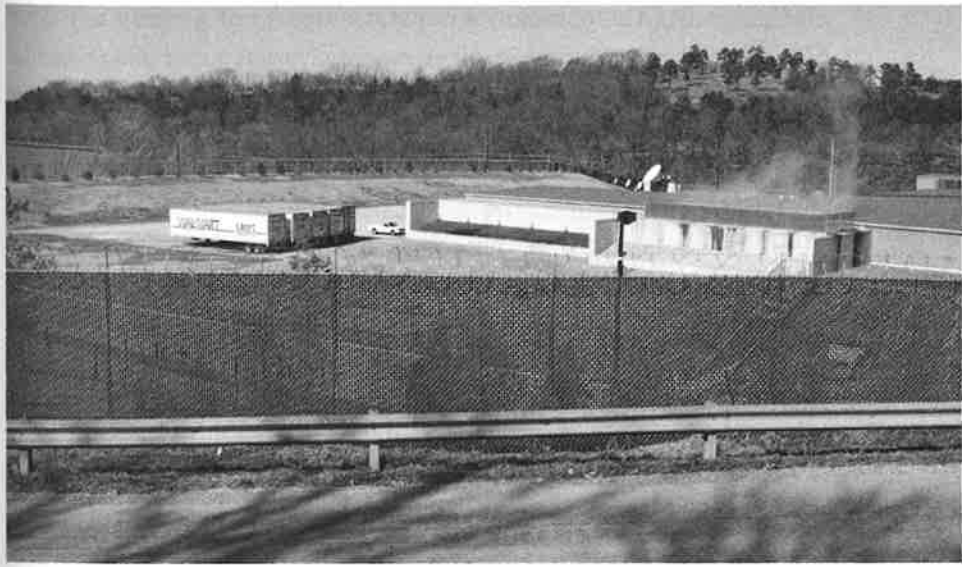


Aerial view of Walmart data center, McDon County, Missouri. The depth of the earth embankment that surrounds the building i most evident at the loading dock in the low right portion of the image. Photograph by Max McCoy. Courtesy of the *Joplin Globe*.

the rolling hills of the Ozarks, but the pastoral image is at odds with the center's heavy security and fortification. Four security cameras cover its manned entry gate, two layers of chain-link fence capped with razor wire encircle the entire complex, and the grounds are patrolled by the McDonald County Sheriff's Department.[36] The building is fortified by earthen berms (which also help to offset the immense heat load of the data center) and bookended by two large HVAC arrays that are level with the low, flat roof. Viewed from outside the fence, the building has no discernible entrance; humans enter somewhere out of sight from the road. Data enter the building through a series of subterranean conduits connected to the large satellite enclosure in one corner of the site.

Compared to another large data center, the one belonging to Google, Inc., outside Portland, Oregon, Walmart's version is considerably more discreet. Because of the peculiar geographies of information storage and retrieval, the relatively remote Google data center has little impact on most of its users. It reflects the company's desire for cheap and reliable power as well as access to major telecom infrastructure.[37] Unlike Walmart's version of a data center, the design of the Google center emphasizes the assembly of metal-clad cooling components atop a mute container of servers. While the two corporations' versions of the data center conform to similar requirements, the differences between them illuminate certain features of Walmart's spatial operations. The Google complex is rendered discrete and autonomous, legible as a building in a very conventional sense. It is even possible to say that its mechanical features are decoratively positioned as celebrated features of the building. Conversely, the Walmart data center has been designed to disappear through camouflage and fortification, to become absorbed into the network to which it is connected. It is difficult to understand the Walmart data center using visual criteria. In fact, Walmart's data center, though a "big box," is designed outside of a visual regime.

The Walmart data center is an automatic building whose physical limits are ambiguous because of its integration with a larger infrastructural system. The building acts as information pathway because, even though it houses Walmart's collection of servers, it also stores

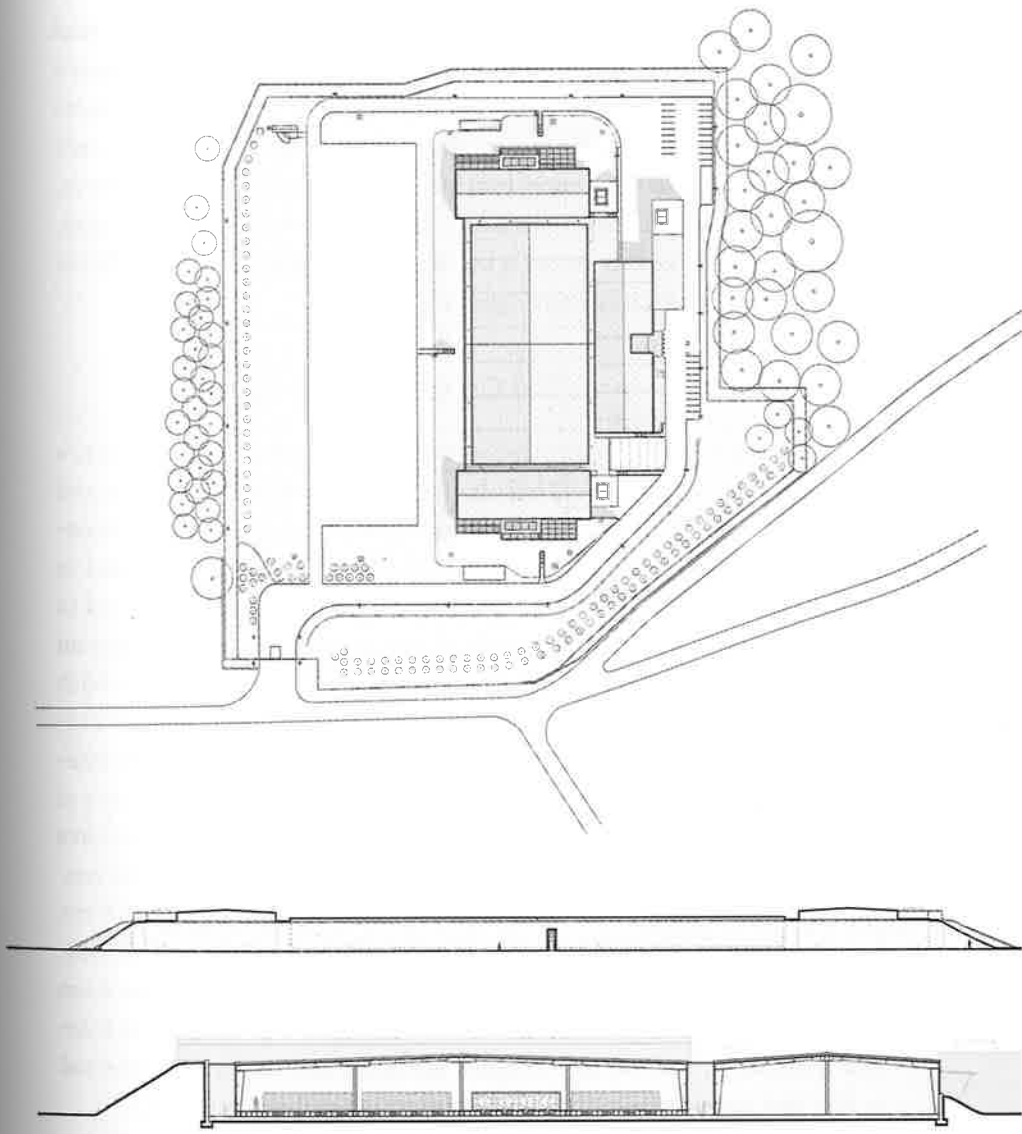


Walmart data center, McDonald County, Missouri. Layers of security and protective berms help to obscu the building. Photograph by the aut

Google's data center complex outs The Dalles, Oregon. Photograph by the author.

and transmits the company's constant stream of proprietary data. Since any Walmart building, whether data center, supercenter, or distribution center, is also a local manifestation of the company's vast organizational network, this architecture is not only an information receptacle but also an information conduit. Information is applied *to* the building, but information also moves *through* the building in the form of material and data. This is especially evident in a building like the data center because the former category—that is, the symbolic function of the building—is eliminated completely.[38]

Like the supercenter, the data center is an interface in Walmart's network, and its various surfaces engage a range of transmission channels: the floor connects the building to a satellite while the vertical surfaces mediate human and vehicular access. Data centers are increasingly visible aspects of contemporary life, and their architecture varies. In the case of Walmart's data center, as the contents belong solely to Walmart, there is no requirement, from the company's point of view, to entice users through its architecture. The building is largely the result of a series of decisions aimed at yielding the most expedient result. In Walmart's overall logistics operations, the data center is the most spatially peripheral while still indispensable to the operations as a whole. This relationship hints at transforming intra-architectural relationships in the sense that the "interior" of the data center is relevant only for the data it contains. However, this building could be described in terms similar to those used by Luiz André Barroso and Urs Hölzle, two engineers at Google, who refer to that company's new Finnish data center as "one massive computer whose chassis happens to look like a warehouse—architecture as computer case."[39] Walmart's computer building on the Missouri border is connected to the retailer's other buildings but remains physically discrete. In this sense, data centers can span a seemingly insurmountable divide through their capacity to receive, store, and retransmit packets of information. Compared to the thick crust of the supercenter, in which restricted access forms a band along the outer envelope, the data center is a series of nested volumes that increase in both pristineness and security clearance as one moves toward the center. However, in the case of the supercenter, the contents of each location are known in



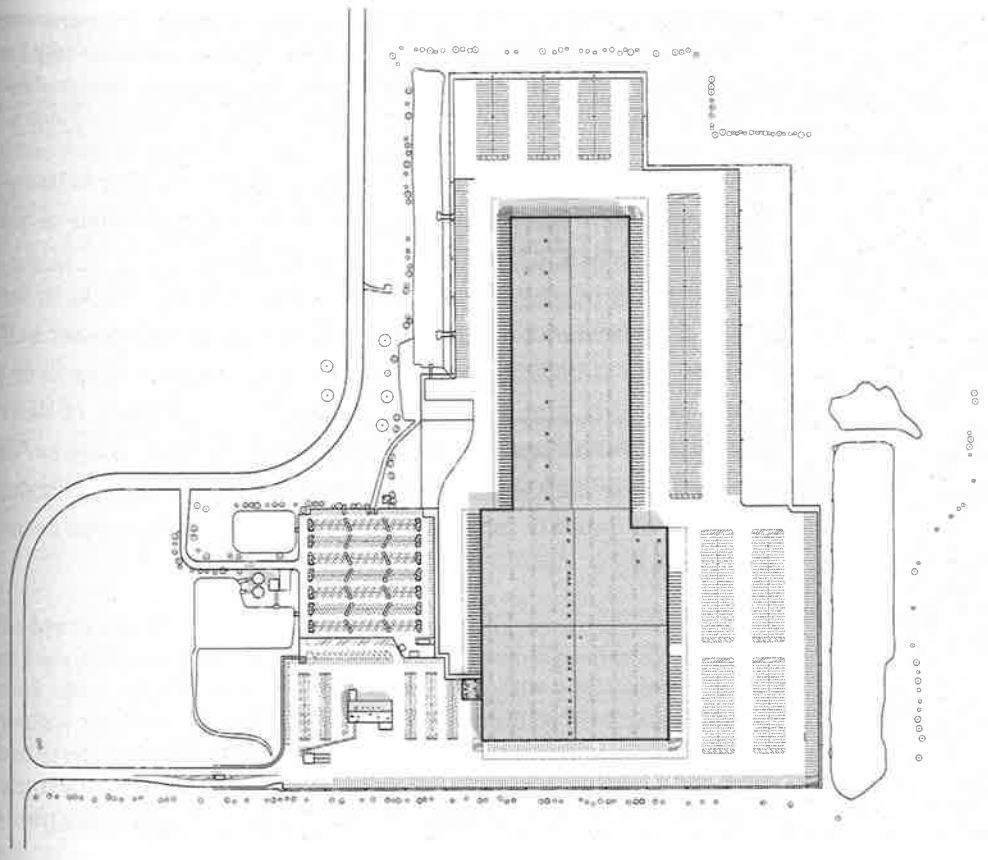
Site plan, elevation, and section of W
data center, McDonald County, Miss
Drawing by the author with informa
extrapolated from aerial photograph
visits, and descriptions of data cent
Barroso and Urs Hölzle, *The Datacen
Computer: An Introduction to the De
Warehouse-Scale Machines* (San Ra
lif.: Morgan & Claypool, 2009). Not

advance and drive the outer form. With the data center, the physical contents are not known or installed until the building is completed because data management technology changes so rapidly that if more precise specifications were put in place at an earlier stage, they would be incorrect by the time construction was finished.[40] In other words, in this case, the building has a form, but its content is ever changing. Indeed, the data center is not a building full of computers but rather a computer with architectural qualities.

Distribution Centers: The Content Is the Form

Walmart's distribution centers are the linchpins of the company's logistics regime (Plate 8). These buildings are automatic sorting and storage facilities that route suppliers' merchandise to the supercenters in their regions. Not only are these large processors crucial to the company's physical distribution needs, but they are also used to establish new market centers and are key to the company's expansion efforts. While the supercenters are the most legible of Walmart's built artifacts, the distribution centers are the most important. As buildings, their relationships between form and content and between interior and exterior are more tightly coupled. DCs lack the constraints of function and image that characterize the supercenter (and thus have greater formal and organizational freedom). And while, like data centers, they prioritize their technical components, DCs have different functional needs and are more flexible as a result. In fact, conceptually, the edge of the DC building, that which distinguishes interior from exterior, only obscures the more active process of connecting one interior to another. The DC is a complex machine, and its form is reflected in the taut skin surrounding the conveyance mechanisms inside.[41]

DC 6094, for example, has an area of more than 1.2 million square feet and turns over more than 90 percent of its contents every day. The building, situated outside Bentonville, was built to serve the region, and the company uses it as a demonstration of its expertise in logistics and distribution technology. Its rural location (although it is gradually being surrounded by new housing developments) places no constraints on the building's size. Trucks, the fundamental links



Site plan of a generic distribution center. Drawing by the author, extrapolated from aerial photography, site visits, and information from Dematic.com. Not to scale.

between DCs and individual stores, have a dedicated entrance and exit controlled by staffed checkpoints. In this sense, DCs act as regional hubs for the retailer's network of discount stores. As veteran Walmart executive Don Soderquist notes:

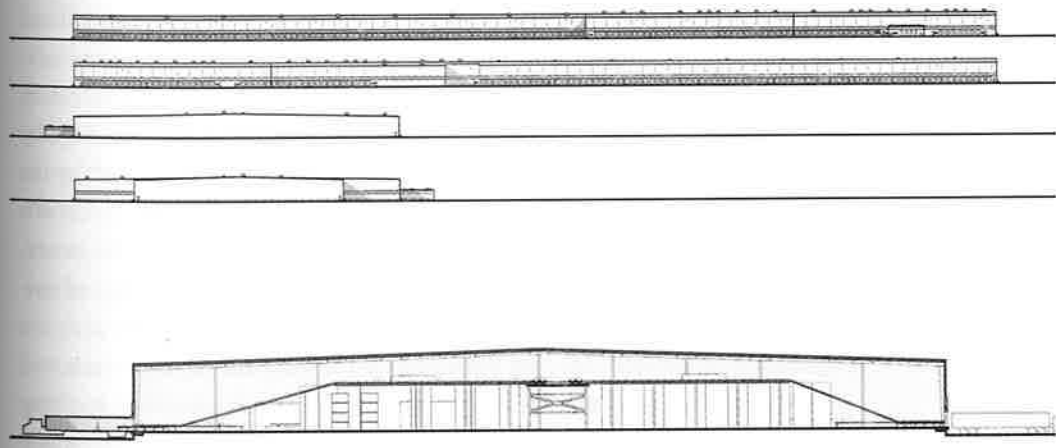
> The development of a warehouse system to receive, store, and ship merchandise to our stores was basically a necessity. Our stores were in small, rural markets, and the store managers could order only limited quantities of thousands of items of merchandise. . . . It was almost impossible to maintain a continuous flow of merchandise to our stores.[42]

As the company matured, this warehouse system developed into a distribution system whose primary purpose was to move goods as quickly as possible to where the company needed them.

The site of DC 6094 was chosen as much for the trucks as for the building's warehousing and distributing functions. Almost half the center's area is dedicated to trucks and trailers unloading their contents, receiving new shipments, or waiting for pickup or delivery. One of Walmart's logistics innovations is a practice know as "backhauling," in which trucks that have dropped off shipments are reloaded with new shipments for their return journeys. Soderquist describes this process:

> Computers are a vital link in dispatching trucks to the stores and add to our efficiency in moving freight. Onboard computers are used for communications with all drivers while they are on the road. Since we already have so many outbound trucks driving down the highway and delivering merchandise to our stores, it didn't make sense to haul empty trailers back to the distribution centers on the return trip. Since we drive right by many of our suppliers' manufacturing plants, we decided to have our truckers stop and pick up that merchandise and bring it back with them, which saved significant costs on inbound freight. The onboard computers made this possible. . . . Today, our own trucks deliver over 50 percent of our inbound merchandise to our distribution centers.[43]

The successful implementation of this seemingly commonsense practice relies on Walmart's extensive communication systems. Since a significant portion of the company's merchandise is held in the trailers of its own trucking fleet at any given time, the vehicles themselves



Elevations and section of a generic distribution center. Drawing by the author, extrapolated from aerial photography, site visits, and information from Dematic.com. Not to scale.

become part of the buildings. Furthermore, these trucks operate on predictable and stable circuits, making the same trip back and forth over and over again, a practice Walmart refers to as "Door per Store." Like a network of nimble freight elevators, the trucks play a crucial role in Walmart's spatial enterprise and are as much a part of its "architecture" as the supercenters.

The layout of DC 6094 is highly specific and tailored to Walmart's precise materials handling needs. Trucks bearing containers unload their contents onto conveyors that sort the merchandise onto short-term, high-density storage shelves to await "picking"—the selection of items for any given order and location. This process, enabled by the bar code's capacity to be read automatically, is regulated by the specific requirements of a given store and requires the assembly of a range of merchandise into one order. Depending on the requirements, these orders can comprise cases of merchandise or mixtures of single units. After an order has been assembled, it reengages with the system's automatic sorting equipment—belts, rollers, actuators, and scanners—and is routed to the appropriate docking bay and awaiting trailer that correspond to the correct Walmart store. This is also where Walmart's "cross-docking" operations take place. Soderquist recalls the development of this process:

> We tested the concept by building a long, narrow, extended arm on one of our new distribution centers and putting multiple doors on either side of the extension. A driver backed his truck into one of the doors on one side. As the merchandise was unloaded from that truck, some of it was moved to another truck on the opposite side bound for another distribution center. The merchandise was moved directly between trucks without any additional handling. . . . Cross-docking became the pattern for all new distribution centers.[44]

The malleability of the company's built products stands out in this description. While the process of optimization described above is seen more as a problem-solving venture, it nonetheless has architectural and territorial consequences. It also reinforces how the company sees its architecture: not as built enclosures but as interconnected systems of movement that can be managed and calibrated in pursuit of continuous movement:

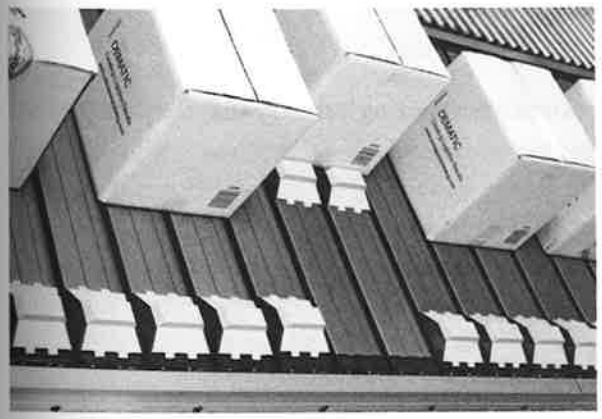
> Throughout the day, all distribution center managers monitor the production process on their computer screens to see how the work is flowing and where any bottlenecks may be developing. They can move associates from one area of the distribution center to another at a moment's notice in order to keep the merchandise flowing. This is incredibly important, as the staggering volume of merchandise that each center receives and ships each day makes maintaining the highest level of efficiency a crucial priority. This type of process flow analysis is quite common in manufacturing, but it has been revolutionary for distribution centers.[45]

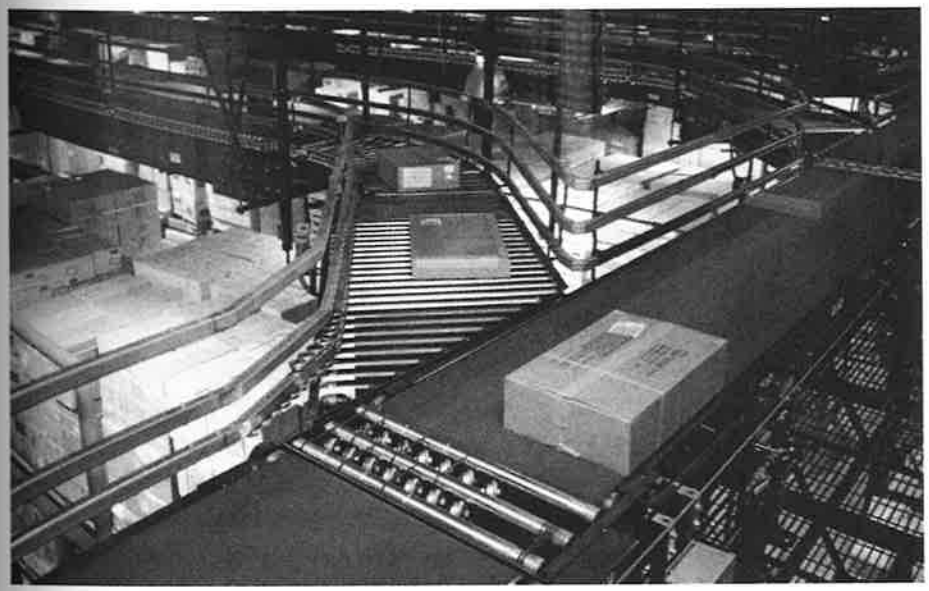
The conflation of the workers with the merchandise they are handling is apparent here. In Soderquist's account, managers can "move" people to areas that need more attention in the same way that they move merchandise from one truck to another. His acknowledgment of Walmart's appropriation of management techniques from manufacturing is also telling for its understanding of Walmart's role within regimes of production and circulation. However, these buildings are not just providing the armature for the automation of information and material management, they are automatic entities themselves, neither producing nor containing but, as described by Soderquist, *circulating*. According to Walmart's former vice president of logistics, Rollin Ford, "This is a fluid process, it's just constant, it never stops."[46] If this constantly circulating merchandise is conceptualized as data as much as physical material, Walmart's buildings are likewise not isolated objects but local manifestations of a dispersed communications network. The space they enclose is part of a continuous set of interiors connected, as it were, by the dynamic network of distribution.

In the distribution centers of Walmart and its materials handling subcontractor Dematic, this tendency to dissolve the envelope is rendered more plainly. In a series of images published in the company's promotional material, Dematic presents diagrams of various projects. While a physical envelope ostensibly surrounds each of these materials handling systems, it is consistently ignored or removed in the renderings. Although there is a pragmatic explanation for these visualizations—one has to remove the roof and walls to see the interior—they are also indicative of a larger attitude toward the buildings themselves. For example, in one illustration, the building's conventional edge is removed while the trailers are left in place. This is significant because,

although the immediate enclosure is removed, the vessels that connect one interior with the next are included, making the physical limit of the building difficult to discern. Thus, Ford's statement that the Walmart distribution system "never stops" casts the operations of the company in a different light. Beyond the fact that the contents of the system never stop moving, more significantly, the system *itself* is constantly transforming at different scales of time. Following just a single object along its path, one misses the larger picture of millions of objects moving simultaneously within a dynamic and expanding organization. The single bar code is monitored at an instantaneous time scale, the containers carried by the trucking fleet change their position in a daily period, and new destinations in the form of new supercenters are added to the system weekly (requiring more trucks and in turn more distribution centers, which then allow for more stores to be built). Distribution begets distribution as the interconnected interiors continue to propagate.

If the supercenter is a building with content but no fixed form and the data center is a form with no content, the distribution center is where form and content merge. In the case of materials handling installations like those of Walmart, the belts and racks and other various conveyance mechanisms produce specific spatial and mechanical configurations that are connected directly to the trailers that transmit the items through the installations. While it so happens that there is a thin and conventional building enclosure that defines a condition of difference, its interiority is made redundant by the trailers shuttling between supercenter and distribution center. Indeed, as these buildings are completely sealed from external stimulus, the interior world of the trailer is continuous as far as the distribution center operators are concerned. Part of the wall rolls up to reveal an empty interior space. That space is filled with boxes of merchandise, and the wall rolls back down. It remains like that temporarily and then opens again to reveal a new and empty interior. In this sense, each trailer constitutes a room of the distribution center that is constantly on the move. These interiors, or semi-interior moments within a larger environment, are not nomadic but highly ritualized, making the same circuit day after day as they shuttle goods between centers.





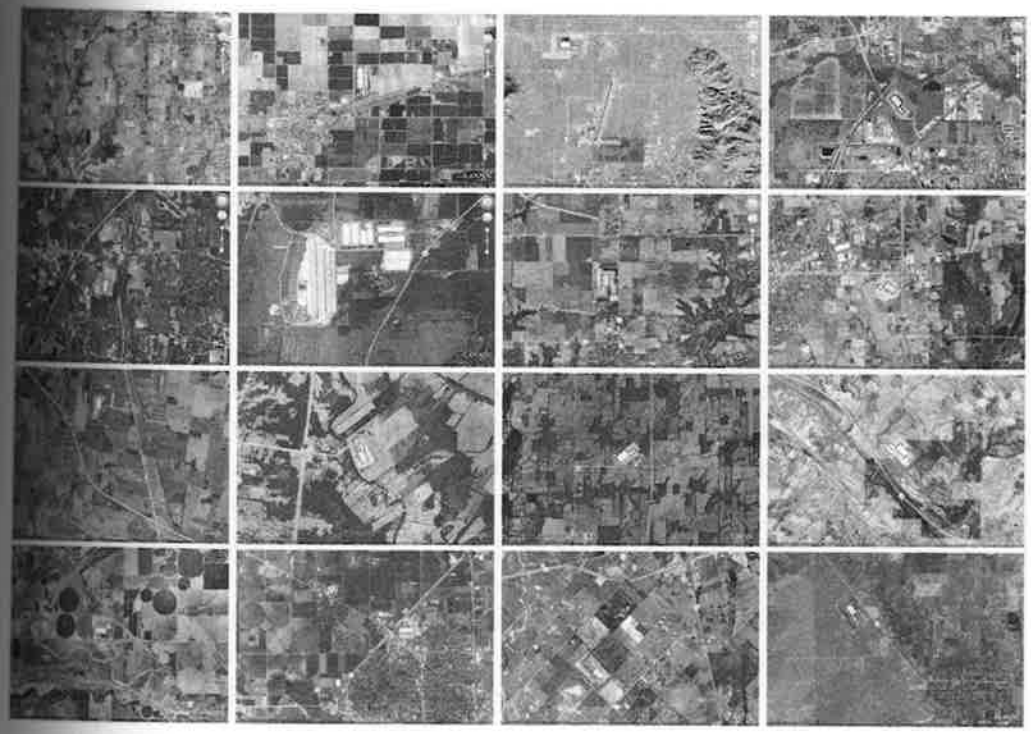
TOP LEFT: Flex-Sort Sliding Shoe Sorter, Dematic. Small automated "shoes" guide parcels to the appropriate conveyor, often t an awaiting trailer. Courtesy of Dematic, Inc

TOP RIGHT: Conveyors merging in a Dematic distribution center. Courtesy of Dematic, In

BOTTOM: Interior of a Walmart distribution center, 1989. Source: *Wal-Mart 1989 Annual Report*, 11.

Logistical Architecture Is Fugitive

Logistics is a temporal and interiorizing industry that shapes the things it encounters. In the case of Walmart's collection of buildings, gone are ideas of architecture as something stable and expressive of collective values. Instead, Walmart's architecture, here standing in for a more pervasive architecture of logistics, is contingent and fugitive. Its buildings form a hybrid network of low-definition configurations that are completed through their modification and instantiation, allowing a nimble response to unpredictable conditions. Because Walmart's architecture is imagined more as an operating expense than as a capital investment, the buildings are deployed as a means to an end.[47] The company's operations privilege reduction, removal, and abstraction. Technologies increasingly demand fast and remote decision making and condition the company's dynamic network of built elements. It is difficult to distinguish one of these installations from another. That is, while their internal properties, behaviors, and organizations might all be different, together they form an intertwined and constantly transforming set of shared interiors. In light of the logics shared by military and managerial logistics, one can best visualize Walmart's network of buildings by imagining it from a distance with its growth accelerated. It is at this point that one might witness the emergence of a new building type: a kind of ever-expanding form of logistically driven architecture that privileges performance and goes when and where it needs to. If one were to zoom in on the accelerated movements and the rapidly reconfiguring merchandise patterns of the automated distribution center's floor, one would find that these patterns and movements are legible only to the machines designed to read them. Larger shifts in territorial perception as a result of logistical vision enable the use of these elements. As places—the objects of this vision—become rendered as statistics, the spaces they inhabit are increasingly abstracted.



Selection of aerial photographs of typical Walmart distribution centers. Top row, left to right: DC 6095, Bentonville, Arkansas; DC 6299, Buckeye, Arizona; DC 7033, Apple Valley, California; DC 7083, Fort Pierce, Florida. Second row: DC 6054, La Grange, Georgia; DC operated jointly with Schneider Logistics, Elmwood, Illinois; DC 6092, Spring Valley, Illinois; DC 6017, Seymour, Indiana. Third row: DC 6066, Hopkinsville, Kentucky; DC 6048, Opelousas, Louisiana; DC 6043, Coldwater, Michigan; DC 6038, Marcy, New York. Fourth row: DC 6037, Hermiston, Oregon; DC 6012, Plainview, Texas; DC 7036, Sealy, Texas; DC 7026, Grantsville, Utah. Source: Google Earth.