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THE DEVIL IS IN THE DETAILS

WHY TRAFFIC IS CONGESTED; WHEN NEARBY IS STILL FAR AWAY;
THE CONVENIENCE STORE VERSUS THE CORNER STORE;
THE SHOPPING CENTER AND THE OFFICE PARK VERSUS MAIN
STREET; USELESS AND USEFUL OPEN SPACE; WHY CURVING ROADS
AND CUL-DE-SACS DO NOT MAKE MEMORABLE PLACES

People say they do not want to live near where they work, but that they would like to work near where they live.

—ZEV COHEN, LECTURE (1995)

Let us take a closer look at sprawl to see how it compares to the traditional neighborhood at the level of the pavement. In doing so, it will be difficult not to conclude that many of the vexations of life in the new suburbs are the outcome of their physical design. This chapter and the next will inspect the components of sprawl, comparing them to the traditional elements that they replaced.

WHY TRAFFIC IS CONGESTED

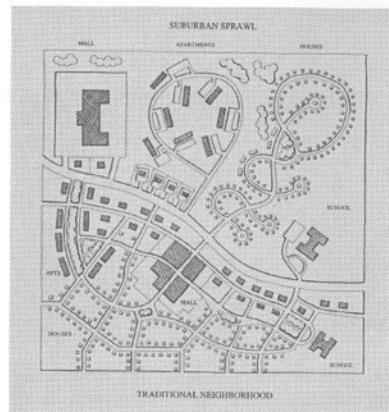
The first complaint one always hears about suburbia is the traffic congestion. More than any other factor, the perception of excessive traffic is what causes citizens to take up arms against growth in suburban communities. This perception is generally justified: in most American cities, the worst traffic is to be found not downtown but in the surrounding suburbs, where an “edge city” chokes highways that were originally built for lighter loads. In newer cities such as Phoenix and Atlanta, where there is not much of a downtown to speak of, traffic congestion is consistently cited as the single most frustrating aspect of daily life.

Why have suburban areas, with their height limits and low density of population, proved to be such a traffic nightmare? The first reason, and the obvious one, is that everyone is forced to drive. In modern suburbia, where pedestrians, bicycles, and public transportation are rarely an option, the average household currently generates thirteen car trips per day. Even if each trip is fairly short—and few are—that’s a lot of time spent on the road, contributing to congestion, especially when compared to life in traditional neighborhoods. Traffic engineer Rick Chellman, in his landmark study of Portsmouth, New Hampshire, applied standard suburban trip-generation rates to that town’s historic core, and found that they predicted twice as much traffic as actually existed there. Owing to its pedestrian-friendly plan—and in spite of its pedestrian-unfriendly weather—Portsmouth generates half the automobile trips of a modern-day suburb.*

* Rick Chellman, *Portsmouth Traffic/Trip Generation Study*, overview. Actually, half the trips here means less than half the traffic, as urban trips are generally considerably shorter than suburban trips. Interestingly, during the morning and evening rush hours, the number of trips was 60 to 70 percent lower than predicted.

But even if the suburbs were to generate no more trips than the city, they would still suffer from traffic to a much greater extent because of the way they are organized. The diagram shown here illustrates how a suburban road system, what engineers call a *sparse hierarchy*, differs from a traditional street network. The components of the suburban model are easy to spot in the top half of the diagram: the shopping mall in its sea of parking, the fast-food joints, the apartment complex, the looping cul-de-sacs of the housing subdivision.[•] Buffered from the others, each of these components has its own individual connection to a larger external road called the *collector*. Every single trip from one component to another, no matter how short, must enter the collector. Thus, the traffic of an entire community may rely on a single road, which, as a result, is generally congested during much of the day. If there is a major accident on the collector, the entire system is rendered useless until it is cleared.

A typical neighborhood is shown in the bottom half of the diagram. It accommodates all the same components as the suburban model, but they are organized as a web, a densely interconnected system that reduces demand on the collector road. Unlike suburbia, the neighborhood presents the opportunity to walk or bicycle. But even if few do so, its gridded network is superior at handling



Sprawl (above) versus the traditional neighborhood (below): in contrast to the traditional network of many walkable streets, the sprawl model not only eliminates pedestrian connections but focuses all traffic onto a single road

The suburban model presents us with a whole series of vicious circles. Traffic congestion results in the construction of additional roadways, which encourage people to drive more, generating more traffic. Engineering standards that respond to automobile dependence create environments in which walking is even less viable. Parking lots built to contain all the cars necessitated by an automotive environment cause buildings to be located increasingly farther apart, again making walking less likely. In every case, techniques developed in response to suburban land-use patterns end up perpetuating those very patterns.

[•] These single-use suburban pods are the real-estate equivalent of what biologists call a *monoculture*, characterized by its genetic poverty (Jonathan Rose, "Violence, Materialism, and Ritual," 144). Environments this simple and homogeneous are not considered fertile ground for continued evolution.

automobile traffic, providing multiple routes between destinations.[•] Because the entire system is available for local travel, trips are dispersed, and traffic on most streets remains light. If there is an accident, drivers simply choose an alternate path. The efficiency of the traditional grid explains why Charleston, South Carolina, at 2,500 acres, handles an annual tourist load of 5.5 million people with little congestion, while Hilton Head Island, ten times larger, experiences severe backups at 1.5 million visitors. Hilton Head, for years the suburban planners' exemplar, focuses all its traffic on a single collector road.

The suburban model does offer one advantage over the neighborhood model: it is much easier to analyze statistically. Because every single trip follows a predetermined path, traffic can be measured and predicted accurately. When the same measurement techniques are applied to an open network, the statistical chart goes flat; prediction becomes impossible and, indeed, unnecessary. But the suburban model still holds sway, and traffic engineers enjoy a position of unprecedented influence, often determining single-handedly what gets built and what doesn't. That traffic can occupy such a dominant position in the public discourse is indication enough that planning needs to be rethought from top to bottom.

WHEN NEARBY IS STILL FAR AWAY

Another paradox of suburban planning is the distinction that it creates between adjacency and accessibility. While many of the desti-

[•] Interestingly, the suburban system, with its overly wide streets, requires no less pavement than the traditional network; often, it requires more. But it typically seems the opposite, since most roads are dead ends serving no connective function.

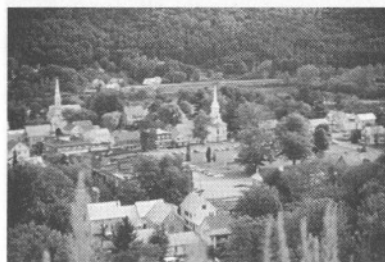
nations of daily life are often next to each other, only rarely are they easy to reach directly.

For example, even though the houses pictured here are adjacent to the shopping center, in experience they are considerably more distant. Local ordinances have forced the developers to build a wall between the two properties, discouraging even the most intrepid citizen from walking to the store. The resident of a house just fifty yards away must still get into the car, drive half a mile to exit the subdivision, drive another half mile on the collector road back to the shopping center, and then walk from car to store. What could have been a pleasant two-minute walk down a residential street becomes instead an expedition requiring the use of gasoline, roadway capacity, and space for parking.

Supporters of this separatist single-use zoning argue that people do not want to live near shopping. This is only partially true. Some don't, and some do. But suburbia does not provide that choice, because even adjacent uses are contrived to be distant. The planning model that does provide citizens with a choice can be seen in the New England town pictured here. One can live above the store, next to the store, five minutes from the store, or nowhere near the store, and it is easy to imagine the different age groups and personalities that would prefer each alternative. In this way and others, the traditional neighborhood provides for an array of lifestyles. In suburbia, there is only one available lifestyle: to own a car and to need it for everything.



Adjacency versus accessibility: thanks to the code requirements for walls, ditches, and other buffers, even nearby shopping is not reachable on foot



The traditional town: its organization allows citizens to choose how close they wish to live to shopping and other mixed uses

THE CONVENIENCE STORE VERSUS THE CORNER STORE



The suburban debasement of the corner store: plastic signs and parking lots



The 7-Eleven as designed by Norman Rockwell: a retail building that is compatible with its residential neighbors

The suburbanites' aversion to living close to shopping is strong. For a number of years, Miami-Dade County, Florida, has permitted developers to place up to five acres of shopping in their otherwise exclusively residential subdivisions, but that option has never been exercised. County planners point to this as evidence of the undesirability of retail. Actually, this tendency arises not out of an aversion to retail per se but from a loathing of the form that retail takes in suburbia: the drive-in Quick Mart. Many planners can tell horror stories about attempting to place a store in an existing residential development, only to have the terrified neighbors threaten civil action. While these designers may be proposing a traditional corner store, what the neighbors are picturing instead is a Quick Mart: an aluminum and glass flat-topped building bathed in fluorescent light, surrounded by asphalt, and topped by a glowing plastic sign. It's not that these people don't need convenient access to orange juice and cat food like everyone else; they just know that the presence of a Quick Mart nearby will make their environment uglier and their property values lower.

But what if the Quick Mart were really to take the form of a traditional corner store? Judging by popular reaction to the two models, one might never suspect that they both sell the same things. They are both small places to pick up small amounts of convenience goods. Yet one is a welcome neighbor, a social center, and a contributor to property values, while the other is considered a blight. The critical difference between the two is the volume of the building and its relationship to the street, two factors that can be combined

under the heading of *building typology*. The building type of this corner store is essentially the same as the town houses next to it: two stories high, three windows wide, built of brick, and situated directly against the sidewalk, which its entrance faces. One could imagine it may even have been a town house once, so well does it blend in among its neighbors.

In contrast, the Quick Mart—one story tall and facing a parking lot[•]—has little in common with its residential neighbors and is therefore unwelcome. Compatibility has less to do with use than with building type. When typology is compatible, a variety of activities can coexist side by side.

THE SHOPPING CENTER VERSUS MAIN STREET

Big-box suburban retail presents the same problems writ large. Many people, when they come across a scene like the one pictured at the top of the next page, assume that the developer has somehow gotten away with something. Sadly, this shopping center and others like it are examples of the developers following the rules, building such retail the only way it is allowed. Almost every aspect of what is

[•] The presence of the parking lot in front of the building, in addition to damaging the pedestrian quality of the street, gives the signal that the store is oriented less toward its local neighbors than toward strangers driving by. This impression is further fueled by the likelihood that the store is owned by a national chain—an absentee landlord—with no local ties. While one would hope that the national chains might eventually replace their anti-neighborhood building types with more compatible designs, an even happier solution would involve the replacement of the chain stores by local businesses. In most places, however, it is naïve to hope for such an outcome. Given the realities of modern business—people's apparent preference for chain stores—it is far more productive to promote good design to the national retailers than to try to put them out of business.



Suburban retail, by the book: what developers build if they follow the rules



Mizner Park in Boca Raton, Florida: the shopping mall rearranged as Main Street, with offices and apartments above

pictured here has been taken straight out of the code books: the size of the sign, the number of spaces in the parking lot, the placement of the lighting fixtures, the thickness of the asphalt, even the precise hue of the yellow stripes between the parking spaces. A considerable amount of time, energy, and care goes into creating an environment that most find unpleasant and tawdry.

Mizner Park in Boca Raton, Florida, represents a different way to organize a large-scale retail center. This new main street far outperforms the suburban competition; it has even become a tourist destination. Mizner Park offers a superior physical environment that attracts people whether or not they need to shop. Its desirability stems from the carefully shaped public space it provides, as well as its traditional mix of uses: shops downstairs, offices and apartments above. Parking is neatly tucked away in garages to the rear. When well designed and well managed, this sort of mixed-use main-street retail is more profitable to own than the strip center or the shopping mall. •

Another success story is Mashpee Commons, in Massachusetts. It may be hard to believe, but the pleasant downtown (opposite page) was once the defunct strip center shown above it. This retrofit demonstrates not only the superiority of main street over the strip but also the ease with which some parts of suburbia can be reclaimed.

Its allure has not escaped the attention of the leading retailers. National merchants such as The Gap and Banana Republic, once focused exclusively on malls, have reoriented themselves toward

• “Well designed” means characterized by a harmonious architecture and streetscape. “Well managed” means clean and safe, with a truly useful mix of stores. In any case, it must be acknowledged that highway-oriented commercial properties will always constitute some small part of the American landscape. A traditional town center is capable of incorporating one or two big-box retailers, but aggregations of auto dealers, homebuilding suppliers, and discount warehouses will probably always seek locations on the outskirts of town, as is appropriate. What is odd about the present situation is that, with few exceptions, all scales of retail are currently relegated to highway locations.

traditional main streets. And some of the country's largest real estate developers, such as Federal Realty, are now routinely investing in downtowns such as Bethesda's and Santa Barbara's in order to develop main-street shopping districts. While the days of the shopping mall are not over, main streets are experiencing a resurgence. When they are smart enough to appropriate management experience from the malls, traditionally designed downtowns can be quite competitive as retail locations.

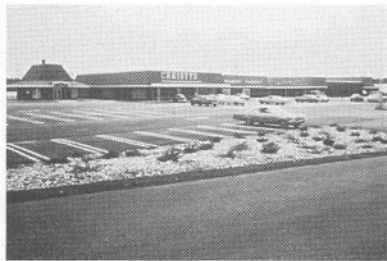
THE OFFICE PARK VERSUS MAIN STREET

Today, Mizner Park represents the latest in urban design innovation. Seventy-five years ago, these techniques were nothing more than common sense. The close proximity of living, working, and shopping was the most economic and convenient way to build. An exemplary version of this previous generation of mixed-use downtowns is Palmer Square in Princeton, New Jersey. This apparently historic collection of colonial buildings was actually constructed in the thirties as a real estate venture by a single developer. Like Mizner Park, it derives its popularity in part from its lively combination of shops, offices, apartments, and even a substantial hotel.

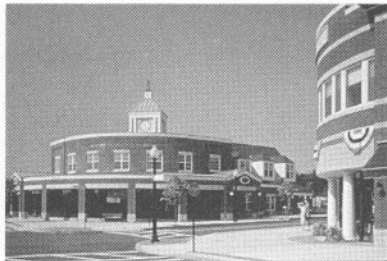
Palmer Square is an unusually satisfying place because it contains, in close proximity, all the destinations of daily life. The

• An extreme example would be in Winter Park, Florida, where an aging suburban-era mall was "killed" by a resurgence in the city's downtown shops. Credit for many main-street revivals is due to the National Trust for Historic Preservation's Main Street Program, which provides funding and advice to communities across the country.

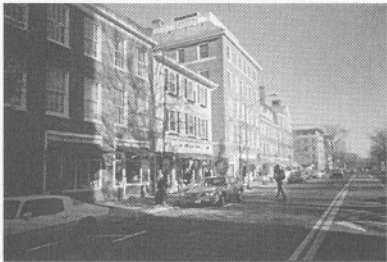
■ The fact that most visitors mistake this ensemble for something much older, and enjoy it for that reason, throws into question the current professional distaste for historical replication. Even architects and preservationists have been fooled.



Mashpee Commons, before: the strip center, unloved and short-lived



Mashpee Commons, after: reclaimed by the forces of urbanity



Palmer Square, Princeton: shops and restaurants below offices and apartments



The standard suburban office park: offices and parking, but nothing to do at lunchtime

workplace is an especially vital component here because it contributes to the viability of the shops by providing a daytime customer base for cafés, restaurants, and convenience shopping. It also offers employees the option of living in the same neighborhood where they work, a benefit that is not lost on New Jersey's weary commuters.

Offices above shops constitute one of the traditional urban workplace building types. In suburbia, the workplace is typically located in the office park. The accompanying illustration of a proposed office park, not so far from most workers' reality, stands in startling contrast to Palmer Square. This artist's rendering was presumably commissioned in order to make the project as attractive as possible. Unfortunately, the image is immediately suspect, for the artist has included something that is only a theoretical possibility: a pedestrian, flanked on one side by a vast parking lot and on the other by a barreling semi. Can one imagine that this person would actually choose to be there?

Pedestrian activity in such an environment is a fantasy. It feels unsafe, because there is no layer of parked cars or landscape to protect the pedestrian, physically and psychologically, from the onrush of traffic. Also, it is an incredibly boring place to walk, as the only distraction is provided by the grilles of the cars in the parking lot. Most important, it is a good bet that the pedestrian is not within easy walking distance of any destination worth walking to.

Whether or not one accepts the presence of a pedestrian in this scene, it is worth considering the quality of life of a typical employee in this office park. She can get to work only by car. Her valuable lunch hour provides precisely two choices: she can either eat in the company cafeteria or do what most people do: spend twenty-five

minutes out of sixty fighting traffic in order to rush through a meal at a chain restaurant. In Palmer Square, workers are able to walk out onto the street and choose from a dozen local restaurants and cafés, enjoy a proper meal, and then use the extra time to run errands or just sit in the sun on the square. It may not be crepes on the Rive Gauche, but the Palmer Square experience makes the office-park lunch hour seem bleak indeed.

USELESS AND USEFUL OPEN SPACE

What do the suburbs offer that might compensate for what appears to be a compromised quality of life? Many people would say that the suburb's main advantage over the city is its generous provision of open space. Identified as a way to ensure a healthy environment, open space is mandated in copious quantities by suburban codes, and there is a long history behind this requirement. Nineteenth-century city planning wisely promoted landscape as a solution to a widespread urban health crisis. By the mid-twentieth century, this approach had generated an image of the ideal city as fully integrated with the natural environment, made up of vast conservation areas, continuous waterways, agricultural greenbelts, recreational trails, frequent parks, and yards surrounding every building. But, like many modern planning ideals, this one, too, has come to life in a dramatically compromised form. In today's conventional suburbs, man's relationship to nature is represented by engineered drainage pits surrounded by chain-link fences, exaggerated building setbacks at road frontages, useless buffers of green between compatible land uses, and a tree requirement for parking lots.



Suburban open space: residual and unused

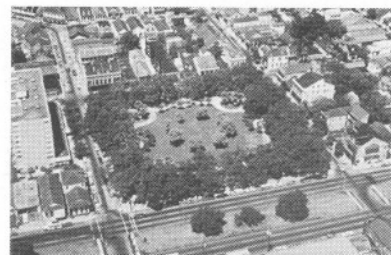
The degeneration of the suburban landscape can be blamed on the fact that the current requirements for public open space, although derived from a rich and varied tradition of qualitative prescriptions, have been reduced to a set of regulations that are primarily statistical. These requirements say little about the configuration and quality of open space; usually, the main specification is a percentage of the site area. Because there is no stipulation about its design, developers often distribute this required acreage along the houses' backyards, in order to provide residents with a longer view. The resulting swath of green is rarely used, precisely because it feels like a backyard; to occupy it violates the privacy of the houses.

The assumption that the residue left over after the roads and buildings are laid out can be satisfactory open space neglects the fact that people use open space in specific ways. Preserves, greenways, parks, plazas, squares, and promenades represent a regional to local hierarchy of open-space types that serve a variety of uses: nature conservation and continuity, active recreation, playgrounds for the youngest, strolling ground for the oldest, and so on. It is only by providing this full range of specific open spaces that planning authorities can ensure citizens the quality of life that their codes were originally intended to provide.

To truly improve quality of life, the planning codes must define open space with the same degree of precision and concern that they now apply to the design of parking lots. As an example, let us

• An exception to this rule is the municipal park for active recreation, typically the only type of park that suburban municipalities provide. Like the new schools already described, these sports fields are often designed for ease of maintenance rather than for accessibility. As a result, they tend to be consolidated into excessively large parcels well beyond pedestrian range.

consider the square, as pictured here. What makes a square? It is the size of a small city block. It is surrounded by public streets lined by buildings with entries and windows, for maximum activity and visual supervision. It has trees at its edge to define the space and to provide shade on hot days, and it is sunny and open at its center for cooler days. It has paved areas for strolling and grassy areas for sports. If any of these elements were missing, then this open space could not be called a square.



Traditional open space: carefully derived from proven models

Equally precise standards could be established for the full range of traditional open spaces so notably absent in conventional suburbia. Rules regarding the design of these social places should be administered by the same authority that now controls the design of parking lots, and with equal vigor. Only specific standards will produce the specific places that support specific activities. Without them, the term *open space* will only describe the dribble of green that is left over after the developer has finished laying out the houses.

WHY CURVING ROADS AND CUL-DE-SACS DO NOT MAKE MEMORABLE PLACES

Another detail of sprawl that merits reconsideration is its predisposition toward exclusively curvilinear streets. How did curves come to be considered the hallmark of good street design, when most of the world's great places have streets that are primarily straight? The conventional belief that straight streets are rigid and boring holds little water when one considers Savannah, San Francisco, and any number of other places.



Chicken scratch: the typically disorienting suburban street pattern that winds back on itself

The origin of the curved street can be found in those pathways across the landscape that respond to steep topography by following the undulating patterns of the land. Similarly, cul-de-sacs, those lollipop-shaped dead-end roads found throughout suburbia, derive from terrain in which steep and frequent valleys do not allow streets to connect across them. Historically, both techniques were used only where required by topography, as they limit connectivity and make smaller lots awkward to build on. Placing excessive curves and cul-de-sacs on flat land makes about as much sense as driving off-road vehicles around the city. Yet the curve and cul-de-sac subdivision is as common on flat land as it is on hills, one of the great clichés of our time.

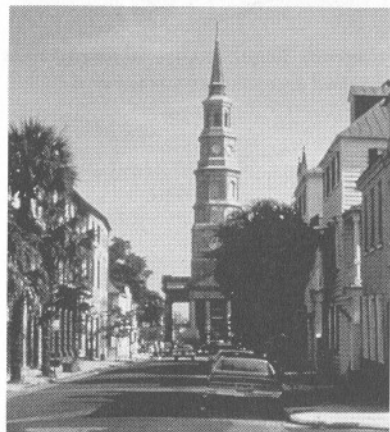
Indeed, it is difficult to recall a residential area less than fifty years old that has straight streets, which is one reason suburban subdivisions all seem the same. But there is a more serious problem: unrelenting curves create an environment that is utterly disorienting. It is no wonder that so many people associate visiting suburbia with getting lost. Experience would suggest that the real purpose of the ubiquitous suburban gatehouse is not to keep out burglars but to give directions. Even Rand McNally appears overwhelmed by the onslaught of sprawling curlicues; its maps, normally direct and confident, often seem to devolve into hopeless chicken scratch at the suburban fringes.[•]

[•] It bears mentioning that this disorientation is by no means unintentional. Designers of the first curvilinear subdivisions, before the days of gated communities, promoted confusingly curvy streets as a means to discourage unwelcome cruising by strangers. Similarly, cul-de-sacs first became popular as a means to eliminate cut-through traffic from residential neighborhoods, and there are still instances where they may be appropriate to establish territoriality in high-crime areas. But none of this explains why the curve and the cul-de-sac have become so ubiquitous.

That said, curved streets can serve a valuable aesthetic purpose: they provide a constantly changing view as one moves through space, rather than the boring and endless vista that can result from a long straight road. This problem, usually the outcome of a gridiron street pattern, is easily avoided by modifying the grid so that continuous streets are slightly bent while maintaining their general cardinal directions. Curves, per se, are not the problem; the problem is driving along on a street that heads north and finding oneself heading east, then south, then west.

In fact, the use of a controlled curve to terminate a vista is a sophisticated design technique, and should not be avoided. It dependably provides the sense of intimacy that generates feelings of identity, belonging, and ownership. But there are other ways to terminate a vista, such as the careful placement of a public building, a hallmark of traditional town planning. The scene pictured here, St. Philip's Episcopal Church in Charleston, did not happen by accident. As already mentioned, the builders of historic towns customarily reserved their most noble sites for civic buildings. The top of a hill, the end of a street, the side of a plaza—these would be set aside for the church, the town hall, the library, and other public structures worthy of honor.

In suburbia, there are no honorable sites for honorable institutions. Civic buildings are sited like any other land use: behind a parking lot off the collector road. Compare that location with the placement of St. Philip's, which terminates vistas in two directions. This is a view that gives a unique identity to its neighborhood and its city, a view that tourism officials put on posters to inspire people to spend their vacations in Charleston. Unfortunately, this sort of siting is now typically impossible, thanks to the traffic engineers who



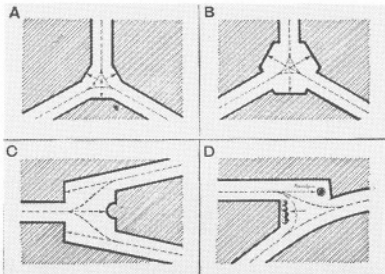
A terminated vista: traditional street networks provide orientation through the celebration of significant buildings

maintain that if you place a building at the termination of a vista, someone will surely run into it. Never mind that no one has driven into St. Philip's in a hundred years.

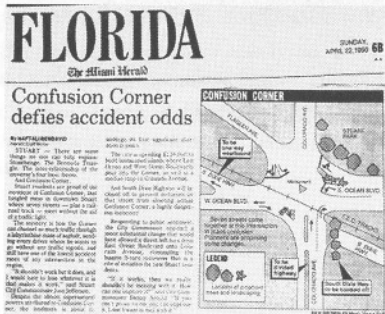
The honorable placement of civic buildings benefits from the use of traditional intersections designed for just that purpose. A catalogue of these intersections was published in 1909 by the town planner Raymond Unwin. *Town Planning in Practice* is still the best planning manual available. It provides page after page of intersection geometries that designers still study with admiration. Making use of them, however, is another matter altogether, as the local official, planning for the "drunk driver at midnight," rejects them on sight. Even in old towns that are full of them, these intersections are typically illegal. Meanwhile, those that do still exist are usually safer statistically than the latest Department of Transportation model, precisely because they don't feel safe at high speeds. The geometries tell drivers that extra care is required, and drivers respond by slowing down.

An extreme example of the safe "unsafe" intersection is Confusion Corner in Stuart, Florida, where seven streets and an at-grade railroad track all meet at odd angles. The state D.O.T. was prepared to spend hundreds of thousands of dollars to reconfigure the entire area because their manuals suggested that it must be dangerous. Local citizens, however, defended their notorious intersection, the community's prime postcard-worthy location. Despite the intersection's reputation, studies revealed that it was among the region's safest major intersections, with only one accident in its multidecade history. The deadliest local intersections were all the standard D.O.T. models.

Those readers who are skeptical that unusual intersections are



Currently illegal: traditional intersections designed to create memorable places



The safety of perceived danger: older, difficult intersections are actually safer than their carefully engineered counterparts because they cause drivers to slow down

actually safer will be surprised to learn that traffic accidents in Sweden dropped by 17 percent when the country switched from driving on the left side of the street to the right. As motorists slowly became accustomed to the new rule, accidents returned to their earlier rate.[•]

The practice of using roadway geometry to improve safety has come to be known as *traffic calming*, which is developing into a fairly elaborate discipline with many tools at its disposal. Speed bumps, rumble strips, hammerheads, flare-outs, doglegs, and other combinations of geometry, landscape, and street furniture can be effective in lowering drivers' speed on local streets. Following successes in Europe, American communities have begun to install these devices, with good results. While this development is encouraging, it is important to note that traffic calming is often necessary only because streets have been built the wrong way to begin with, unnecessarily wide and with too much distance between intersections. Rather than continuing to build local roads like highways and subsequently hobbling them with speed bumps, municipalities could instead control their traffic by once again allowing narrow roads and artful intersections. This would be an important first step toward creating public spaces worthy of habitation.

[•] Malcolm Gladwell, "Blowup," 36. In another study, taxi operators in Munich, Germany, were given anti-lock brakes and secretly observed over a three-year period. Initially safer drivers, they were found to drive more and more recklessly until they regained their prior accident rate. This type of phenomenon has been termed *risk homeostasis*. People naturally adjust their behavior to the level of risk that they are comfortable with.

Narrow streets and difficult intersections are useful in communicating to drivers that they do not, in fact, own the road. Under ideal circumstances, drivers passing through a well-designed residential neighborhood are made to feel that they are *borrowing* the street space from the people who live there.

A tak spolu na tom
předměstí žili, spali,
jedli a souložili;
až dokud je
Interstate o 10-ti
pruzích
nerozdělilo.

