

## Designing buildings that you don't get lost in (and why architects don't do this)

Posted by Cory Doctorow on Tuesday, Nov 23rd at 10:54pm

"Getting Lost in Buildings," a [paper](#) in *Current Directions in Psychological Science*, looks at the intersection of cognitive science and architecture, and suggests directions in designing buildings that are easier to navigate. I'm one of those zero-spatial-sense people who can stay in a hotel for a week and still turn down the wrong corridor every time I get out of the elevator, so this is fascinating stuff for me:

Some buildings, on the other hand, make it difficult. Carlson and her coauthors, Christoph HÅllischer of the University of Freiburg, Thomas F. Shipley of Temple University, and Ruth Conroy Dalton of University College, London, use the Seattle Central Library as an example. The bold building, designed by Dutch architect Rem Koolhaas, opened in 2004 and won awards for its design. But visitors complain that it's difficult to navigate. People expect floors to have similar layouts, but the first five levels of the library are all different; even the outside walls don't necessarily line up. Normally, lines of sight help people get around, but the library has long escalators that skip over levels, making it hard to see where they go.



For building users who may find navigating in new environments challenging, there are strategies that are helpful. "I used to worry when I explore a new city by myself that I would not find my way back to the hotel," Carlson says. "However, this simple trick is effective. At each intersection where I need to turn, I spin around to see what the intersection will look like from my return perspective. That way, I will be able to recognize it from the other direction, and I can store that view also in my cognitive map." This strategy also tends to work well for indoor navigation.

Architects, on the other hand, may be among the class of people with very strong spatial skills, because their craft requires numerous spatial transformations, such as needing to envision 3D space from 2D depictions. One unanticipated consequence of such abilities is that they may not be very good at taking the perspective of a user with poorer spatial skills, and therefore may not be able to fully anticipate where users may have navigational difficulties within their buildings.

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[Subscribe by email](#)[Subscribe by RSS](#)**AlmostLucy** 11/23/2010 03:21 PM

That's pretty interesting! When my family stays in a particularly confusing hotel, we call it "Hotel Babylon" out of DWJ's Deep Secret.

Like

**rebdav** 11/23/2010 03:31 PM

I was a paramedic for a few years, hospitals are the worst. They are all designed the same on every floor so that nurses and doctors can be dropped in as temps and know pretty much where everything is. If you have to navigate the places without a photographic memory for minutia or a navigation notebook you are lost.

Like

**sapere\_aude** 11/23/2010 03:45 PM

Buildings you can't get lost in are no fun at all. In my younger years I long before our society became so paranoid about security that this would have gotten me arrested I used to love to explore buildings, walking the corridors, peeking into every room and secluded alcove, getting lost and having to figure out where I was, sneaking into areas that were supposed to be off limits. It was fun. Once, when I was on a high school field trip, my friends and I snuck off and explored the tunnels underneath a convention center. When I first went off to college, I made a habit of exploring every building on campus. The really fun buildings were the ones with unusual and complex floor plans the ones you could get lost in. Buildings with a simple floor plan that allows for easy navigation are just boring.

Like

**Anonymous** 11/23/2010 04:28 PM

Isn't a library a good place to get lost in?

Like

**etho** 11/23/2010 04:46 PM

I'm currently a student studying architecture, and I greatly prefer buildings you can get lost in. They are the only buildings that can surprise you.

Like

**Teapunk** 11/23/2010 04:52 PM

It all depends. Libraries, old houses, castles are good places to get lost in. Every place you can explore and really find something interesting, with just a hint of adventure. Office buildings, hospitals and new hotels are bad places to get lost in, for me, usually panic sets in when I'm afraid I'll never find my new desk again, or the patient I was visiting or the hotel room I rented. Plus, office buildings and hospitals are often bland and boring and have no memorable details, there is no pleasant experience to have when wandering the floors, other than "Where the hell am I?", which already might be the answer, in part.

Like

**redrobot25** 11/23/2010 05:44 PM

I am in total disagreement with the article- Ease of egress is NOT the most important thing for designers of buildings to consider. Efficiency and instant understandability are the hallmarks of suburbs, bad movies, and dare I say it- Fascism. The first time you are in a place, you SHOULD feel lost! You should only know where you are when you've been there awhile.

Like

**Anonymous** 11/23/2010 05:44 PM

I always felt that airports in particular needed to be designed by an engineer with knowledge of fluid mechanics.

Like

**morganj** 11/23/2010 06:02 PM

Game designers on the other hand spend a lot of time landmarking areas so that players can more easily find their way around. Even people with strong spatial senses get easily lost in virtual environments that lack good markers - fortunately, we get great tools to provide information on where people get stuck or confused (for example heat maps of where people spend lots of time rather than moving forwards).

Not that every game is great architecture, but certainly there's a focus on guiding players through the experience.

Like

**penguinchris** 11/23/2010 06:32 PM in reply to redrobot25

A nice thought, and I do largely agree, but there are many cases where this shouldn't apply - those places you may only go to once. Your first time is then your only time - so it should be designed so that you're not lost unless you've spent a lot of time there to figure it out.

These are places like airports, hospitals, public buildings, etc. There can be lots of complexity, shortcuts, and so on in these types of places, but there should be a simple way for someone who's never been there to figure out where they need to go, without asking every person they come across since the last person didn't give good directions.

Anything else is fair game. I like being lost and having to figure out where everything is - that's part of the fun of going someplace like Disneyland more than once, for example.

Like

**Kibo** 11/23/2010 07:11 PM

Sagepub wanted me to pay for an account to view the "free" article. However, Googling the first sentence of the abstract turned up a copy that was hosted elsewhere:

<http://spatiallearning.org/res...>

It's quite thought-provoking for such a short paper (and [spatiallearning.org](http://spatiallearning.org) is a great resource for further reading, too.)

Like

**Michael Smith** 11/23/2010 07:30 PM in reply to etho

*I'm currently a student studying architecture, and I greatly prefer buildings you can get lost in. They are the only buildings that can surprise you.*

I am a software engineer. I assume that its okay with you for me to design user interfaces which are almost impossible to use, because otherwise they wouldn't surprise the users?

Like

**genjii931** 11/23/2010 08:05 PM

I live in Seattle, and went to the new library the week it opened. I'm also an architecture fan. I was less than impressed.

The place was obviously designed as an architectural 'statement' rather than as a working library. It's not a place to go to read books, or even find books.

The staff had to place hand drawn paper signs everywhere to help people get around that first week. I haven't been back since to see if they've replaced them with permanent ones. The up/down lights on the elevator are so faint you can't see which one is lit. The method of paying for parking was so non-intuitive, they had to put up more hand-drawn signs. The furniture in the place is designed to be as uncomfortable as possible - one assumes to

keep the homeless from camping out - that you don't want to sit there and read.

As a library, it's a joke. But it sure is pretty, for its style. I'm offended from the perspectives of both a library patron AND a fan of architecture. It certainly fails as both.

Like

**Rajio** 11/23/2010 09:03 PM

Uuuuuuh, no Architects don't do this simply because there is no money in it. I'd know having worked in the business and a couple of degrees in the field.

Like

**Anonymous** 11/23/2010 10:44 PM

Don't neglect to account for purposefully confusing and enveloping architecture.

Look at casinos, shopping malls, and other high density financial transaction areas. They are designed to keep people in, under the logic that the longer someone is in the area, the greater the chance of them giving up their money for something.

Personally? I have strong spatial sense and enjoy unusual building designs. That said, I get somewhat confused by highly similar or identical corridors. Hotels are a prime example, as are hospitals, as are industrial facilities. Lack of differentiation does more to hamper my navigation than complex, yet unique, designs ever would.

That said, I have a very strong spatial sense. Perhaps that accounts for something.

~D. Walker

Like

**Anonymous** 11/23/2010 10:49 PM

'One unanticipated consequence of such abilities is that they may not be very good at taking the perspective of a user with poorer spatial skills, and therefore may not be able to fully anticipate where users may have navigational difficulties within their buildings.'

Or they're just shitty architects. Nothing like a building you can't find your way out of when there's a fire!

Like

**Anonymous** 11/23/2010 10:49 PM

At the University of Iowa there are two dorms facing each other across Grand Ave. They are plain, easy, straight-line buildings, pretty much impossible to get lost in. But: the one on the north is the mirror image of the one on the south, right down to the location of the drinking fountain, so if you live on one but visit the other you're constantly turning the wrong way.

Like

**Anonymous** 11/23/2010 11:10 PM

I'm lucky to have great spatial skills (CAD, city directions, hiking, etc). But I hate hospital designs.

My trick for getting around is by figuring out the "rules" for the location. "Form follows function", the mountain is on the left, numbered streets are east-west, room numbers relate to which floor are the easy ones. Part shape, paint color, architectural style, geology, smells, left-right rules at corridor intersections are ones I pick up on too.

But hospitals still suck. Most grow and evolve over time creating a weird layout that is both repetitive and haphazard. I don't get lost, but they irritate me for the constantly changing "rules".

Building designed just for looks are annoying for being inefficient and having awkward

"rules". Efficient places are just boring (Naval Academy dorm - 5 miles of corridors- all identical). Trees are efficient, beautiful, and have some of the most efficient rules. The best buildings strike the same balance.

Supermarkets are another matter. Schizophrenic. A base layout that is hyper efficient, but with product placed to make it a pain to get in and get out quick (i.e. milk in the back and crap in the aisles).

Like

**Anonymous** 11/23/2010 11:41 PM

I've always wondered if videogame players tend to be better at navigating 3D spaces than people who don't. In my IT department, the people who have the worst sense of direction are the same ones that don't play videogames.

Like

**Anonymous** 11/24/2010 12:19 AM

One aspect of architectural design that is used in commercial buildings, like stores is to purposely channel customers through the store in the longest path possible. This is to keep the customer in the store as long as possible and to expose him to as many goods as possible. Ikea is a prime example. A person enters the store and is guided through a maze of aisles, rooms and corridors. At no time can that person backtrack or take a shortcut to the exit. I tried to backtrack once and got completely lost. I had to continue forward to the exit and start all over again from the beginning to get to where I wanted to be.

Like

**DwellArch** 11/24/2010 12:37 AM

Typical clients don't want to invest the time or money into easily navigable spaces. Hospitals and Hotels want as inexpensive construction as possible, thus the repetition. We have one hospital client that uses the same floor plan fore every new hospital. Office buildings are often designed one tenant space at a time. So unless someone wants the whole building, there will be no one concerned with having an easily navigable building.

Like

**Brad S.** 11/24/2010 12:49 AM

I have to respectfully disagree with tyger11. There's no debating that the Seattle Library is a wildly different space, but once you take a moment to become acquainted with the layout, finding what you are looking for isn't too much of a challenge. There are the occasional times that one ends up on the wrong floor or finds that there is no straight path to where one would like to go. But I find it's completely worth it for the unique quiet spaces that are tucked away in every section.

I'm the kind of person who not only likes peace and quiet but also a bit of privacy. It's easy to find your own little space there, and as an added bonus you might even end up with a view.

Still, the tilted walkways and floor racks are so utilitarian that you might mistake the reference section for an IKEA showroom. Given the choice of the Main Library and a 150-year-old woodclad masterpiece, I'll still take the wood everyday. There's a soul in that building, but I'm not sure if it's from our planet.

Like

**codeman38** 11/24/2010 02:05 AM

What throws me off quite frequently is when buildings have a lot of halls that look exactly the same, without any identifying landmarks to distinguish them. My own navigation, I've found, is very landmark-oriented-- "if you see thing X, then these things are in so-and-so direction."

I've been in more than a few university buildings where I got lost because I mistook one

part of the building for another similar-looking part.

Like

**jenjen** 11/24/2010 03:40 AM

Hospitals and airports should absolutely be designed for easy navigability. People in those buildings are already stressed out, figuring out where they are vs where they need to be should be made as simple as possible. But they are both big complicated structures and I've seen painfully complicated wayfinding systems in both. Colored lines on the floor, inscrutable symbols, etc. The easiest building I ever had to find my way around in is the McIntyre Medical Sciences Building at McGill U. It's round. You would have to work really hard to get lost in there. If you go in the wrong direction for a particular room, you will eventually get there. One consequence of the shape is that there are rooms without right angles which means furnishing can be more expensive if you want to maximize space usage.

Like

**zapan** 11/24/2010 04:03 AM

You want insanely designed public facilities ?

I actually spent two years in a school where every goddamn room was hexagonal ! The architect probably sold the project arguing that hexagons are "space efficient" being the shape with the largest surface possible for the shortest perimeter. But let me tell you something, humans are not bees ! We are not designed to navigate in dark, windowless and twisted corridors turning 120 ° each ten meters.

Plus all the plumbing and electricity had to be hanged on display on the ceilings because it could not accomodate all the turns.

Same thing for the furniture, who were either custom made (and therefore not modular) or worse pushed in angles it could not fill.

Every student vowed the death of that moronic builder everytime he was detained for being late, since of course snotty teachers would not accept the "crappy building" excuse.

Like

**catgrin** 11/24/2010 05:01 AM

What bothers me is when a particularly utilitarian building is designed to be anything but. The parking structure at Universal Studios is a great example of this. The structure isn't an architect's statement piece - it's not aesthetically pleasing at all. It's just the various entrances and the desire of the company to charge several levels of parking fee that requires the bizarre, convoluted building.

While it may be fun on occasion to get "lost" in a library, it's never fun to find your car at the end of the night, follow permanently hung exit signs, and still find yourself five minutes later no closer to an exit. This was happening to all the people who'd parked by us in "preferred parking". We all drove in loops trying to find the trick that would let us escape the maze-like structure. It was only by heading in entirely the wrong direction - following a sign that said "park" and heading deeper into the structure - I managed to get out of the building.

Like

**catgrin** 11/24/2010 05:08 AM

P.S. I've gotten into the habit of using my cell phone to take a photo or two when traveling around a new large complex or parking my car in a structure I don't know the reminder key for. It's only at places like universities, hospitals, or amusement parks that I use this trick. When you're at these places your brain is usually preoccupied with other information, and it's one less thing to worry about.

Like

**Purplecat** 11/24/2010 05:56 AM in reply to redrobot25

Ease of egress is massively important in an unfamiliar building. If the fire alarm goes off,

I'm not going to be in a position to appreciate the complexity of the interior space.

Like

**Anonymous** 11/24/2010 06:00 AM in reply to redrobot25

I lived through a grammar school fire in 1958 in which 93 children died because they couldn't get out.

Like

**Anonymous** 11/24/2010 06:13 AM in reply to morganj

Indeed we do. I'm a computer game level designer by profession, and we focus very keenly on ensuring that even if you only ever play a level once, you don't feel lost (unless the tone of the mission requires you to feel lost).

Ideally, we build the level so you just 'happen' to find the way you wanted to go, without being obviously led by the nose. We are also keen to add little secret areas off to the side (and behind waterfalls - any game with a waterfall minus a cave, earns my scorn) to reward the curious; the explorers and the completists.

Our enemies - symmetry, symmetrical lighting, short sight lines, lack of distinctive (and easily described) landmarks, etc. Here's a presentation I did on it a while ago - <https://docs.google.com/presen...> (view speaker notes for info).

Like

**holtt** 11/24/2010 06:44 AM in reply to Kibo

Thanks for the link Kibo

Like

**holtt** 11/24/2010 06:49 AM in reply to Anonymous

Nice presentation. And also nice to see level design comments coming in to comment

Like

**Simper** 11/24/2010 07:25 AM

I have almost no spacial ability what so ever. I still get lost in the city I have lived in for 26 years. My new job is in a series of 3 high rise buildings that are connected at their base. I have absolutely no idea how I ever manage to get to work. There is no direct route anywhere and the parking is so convoluted with reserved lots that you will never get to park anywhere near where you need to be. All of the hallways look exactly the same with no differentiation or landmarks. Thankfully at some point someone else had an issue with this and they installed the equivalent to street signs at some of the main intersections of the building. So I end up wandering around until I hit a sign and go from there. Unfortunately getting to the office is only half the battle because I still have to figure out how to get back to my car.

I'm not going to work to be amused and amazed at the great architecture. No one is going into this building just to stroll around and look at the completely uniform institutionally drab building. If anything it's the perfect environment for a nightmare about getting lost. I have no idea why they designed the building like they did, but it was not for ease of use or efficient travel time.

Like

**dogugotw** 11/24/2010 09:28 AM

I found the advice to turn around at intersections and look back quite interesting. This is the same advice given when bushwhacking through unfamiliar woods. Even with modern GPS, it's easy to get lost in the woods. By looking back where you've been, the trip back tends to be easier.

Like

**Amelia\_G** 11/24/2010 04:50 PM

#1: Nice!

SPL's central library hasn't stymied me, perhaps because it's not set up like a repetitive cheap Cold War crucifix? (Finland's KGB-collaborating passport police in 1990 had concrete halls like "Brazil.") In fact, the new SPL moved me to tears for nearly a year because it is beautiful, in a weird new way. I had no idea. Enjoyed Joshua Prince's lecture explaining the design process, hated on a Rem Koolhaas documentary shown in Capitol Hill, but neither experience is particularly reliable.

Portland's Powell's Bookstore does lose me--more organically grown?--and I enjoy it. Like a warren, medieval.

Like

**rhamantus** 11/30/2010 07:41 AM in reply to Anonymous

I don't think that casinos are designed to get people lost. (Having grown up in Nevada, and spent a great deal of time in them for non-gaming purposes, I've seen a lot of them.) To be sure, they are sprawling and inefficient: if you're in a casino to see a movie, show, or eat, you're going to have to go through a lot of gaming floor space to get there. They don't want you to not do these things, so it's not hard to find them, just difficult to get there. I think they're hoping that along the way, you'll get distracted by a shiny machine or an interesting table game and stop to play. Might work for some people, but it's never worked for me.

Like

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