The De-Evolution of the Workplace
Cleveland, OH

EBERHARD ARCHITECTS LLC
2077 East 4th Street, Second Floor
Cleveland, OH 44115
216.452.2592

www.eberhardarchitects.com

The De-Evolution of the Office

Steve Jobs famously said, "Design is not just what it looks like and feels like. Design is how it works." The current state of office design is not working well.

For more than three decades, the unquenchable thirst for profit by American companies has witnessed a downsizing in workplace real estate. That downsizing has come at a cost that now greatly exceeds its benefits.

For most organizations, the highest cost of an office workplace has been personnel at 45%-60% of total costs, followed by real estate at 3% - 8%.

At first, office and workstation sizes were reduced slightly. But as telecommuting increased and technology became smaller and more mobile, the 'workstation' has been reduced again and again to the point where it is most often now just a desk surface - and a small one at that.

The images of offices pre-WWII offices are now reappearing regularly, and they are bringing up old issues and yet unaddressed needs. But this time, the needs are not those of entry-level people doing typing or data entry. These are experienced college graduates who are costly to recruit and retain. And the design and management communities are failing to address the physical space needs of these constituents in a responsible manner.

Gensler, the top workplace planning and design firm in the world, surveys its clients regularly. Gensler concludes in their 2013 survey findings: "While the proven connection between collaboration and innovation remains, our research suggests that the strategies often used to achieve it—open workplaces, low- or no-panel desks—aren't hitting the mark. As a result, focus work has been compromised in pursuit of collaboration. Currently neither is working well."

An overwhelming abundance of recent research has established that open plan environments have significant shortcomings that cost employers in major ways. On average, office workers lose 28% of productive time due to interruption and distractions (Spira and Feintuch, 2005) because open plan settings lack visual and acoustical privacy.

Focus work is the least effectively supported activity within our office environments (Andreou at. al., 2012). Recent research indicates that the costs to individual employee performance in open plan workplaces outweighs any benefit of collaborative group work (Kim and de Dear, 2013). Because effective collaboration requires a balance of group work and focused individual efforts (Heerwagen et. al., 2004), collaboration fails to achieve benefits when focus work is compromised (Gensler, 2013).

Vinesh Oommen of Queensland University of Technology in Austrailia found that open plan offices cause conflict, high blood pressure and increased staff turnover (Oommen, 2013).

Previous research has established that spaces for focus work should have a high degree of enclosure - preferably a private office (Heerwagen et. al., 2004), with adequate distance from disruptive noise, and a

high level of acoustical treatments (GSA, 2012).

Open Plan Backlash:

Once considered a signpost of innovation and collaboration, these open office layouts - with rows of cubicles – or just rows of desks - have come under fire in blog posts, think pieces, productivity research and chat conversations. It's a backlash with a swelling number of concerned citizens.

"The open-office movement is like some gigantic experiment in willful delusion," Jason Feifer of *Fast Company* wrote recently. "Maybe we can spend less on space, the logic seems to go, and convince employees that it's helping them."

In a *New Yorker* piece called "The Open-Office Trap," Maria Konnikova reports on data point after data point, detailing how far the open office has fallen out of favor with employees. The sound of fellow employees doesn't foster a can-do spirit, but a get-me-out-of-here reaction.

In a study conducted by Cornell University psychologists, "clerical workers who were exposed to open-office noise for three hours had increased levels of epinephrine—a hormone that we often call adrenaline, associated with the so-called flight-or-flight response," Konnikova wrote. "What's more … people in noisy environments made fewer ergonomic adjustments than they would in private, causing increased physical strain."

Along with being bad for your back, "those who worked in fully open offices were out (sick) an average of 62 percent more," Konnikova wrote. Research from the University of Sydney found that "the loss of productivity due to noise distraction … was doubled in open-plan offices compared to private offices, and the tasks requiring complex verbal process were more likely to be disturbed than relatively simple or routine tasks," the *Harvard Business Review* reported.

"Currently, only one in four U.S. workers are in optimal workplace environments," states the 2013 Gensler Workplace Survey. "The rest are struggling to work effectively, resulting in lost productivity, innovation and worker engagement."

With 70 percent of American employees now working in an open-office environment, that's a lot of stressed out workers with reduced effectiveness.

In her *Washington Post* article, "Google (above left) got it wrong. The open-office-trend is destroying the workplace," Lindsey Kaufman observes that 70% of US offices have low or no interior partitions according to IFMA.

Facebook CEO Mark Zuckerberg had Frank Gehry design the largest open plan environment in the world for 3000 of his employees. Michael Bloomberg drank the Kool-Aid, saying it promoted transparency and fairness. If there is a primary benefit to open plan environments, it is that it minimizes cost to construct and reduces occupancy costs by requiring less space to house the organization. Kaufman notes that bosses love being able to keep a closer eye on employees, "ensuring clandestine porn-watching, constant

social media browsing and unlimited personal cellphone use isn't occupying significant billable hours."

But employees are getting a false sense of improved productivity. A 2013 study (de Dear, Kim) found that many workers in open offices are frustrated by distractions that led to poorer work performance. Nearly half of the surveyed workers in open offices said the lack of sound privacy was a significant problem for them and more than 30 percent complained about the lack of visual privacy.

A study in the December 2013 issue of the *Journal of Environmental Psychology* reported that employees who work in open-plan office layouts are least happy with their office environment. The researchers surveyed 42,000 U.S. office workers in 303 office buildings on their satisfaction level with their office environment on seven different attributes, including room temperature, privacy, ease of interaction and overall sentiments. Two-thirds of those surveyed worked in offices with open-plan layouts, while one-quarter worked in private offices and a small fraction shared a single room with co-workers.

The study found that workers in open-plan offices—even those with partitions to help create some feelings of privacy—were very dissatisfied with the sound privacy in their office. Overall, the researchers found that people who worked in private offices were most satisfied with their workspace.

"The most powerful individual factor, in terms of its association with workers' overall satisfaction levels, was 'amount of space,'" the British Psychological Society notes. "Other factors varied in their association with overall satisfaction depending on the different office layouts. Noise was more strongly associated with overall satisfaction for open-plan office workers whereas light and ease of interaction were more strongly associated with overall satisfaction for workers in private offices."

The study's authors note that their research results build on a growing body of research
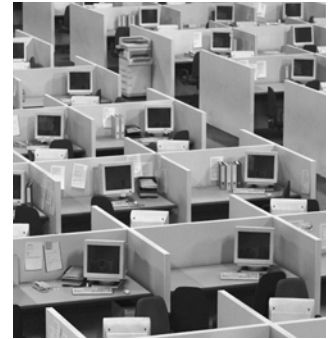
that shows that open-plan office layouts aren't nearly as beneficial as originally believed. In fact, research has shown that open layouts actually deter employees from communicating due to the lack of privacy.

"The open-plan proponents' argument that open-plan improves morale and productivity appears to have no basis in the research literature," the authors write.

The Evolution of Office Design:

Since the dawn of the white-collar age, office designs have cycled through competing demands of openness versus privacy, interaction versus autonomy. How you work depends in large part on the spaces in which you work. Nikil Saval in "*Cubed: A Secret History of the Workplace*," (2014) points out that from the Civil War on, there was no white-collar class in the modern sense before the late 19th century.

Most offices were small, employing at most a few dozen clerks to service managers and partners; even big factories could be run lean. Offices themselves tended to be intimate and informal spaces, with clerks and partners sitting near to, if not next to, one another. Everyone dealt with everything; spoken exchanges rather than paper memos got the work done.

Saval's book is about what happened when this office got bigger and more organized. As the office became a bureaucracy ruled by the internal division of labor, the American dream faded, though it was still trotted out ceremonially.

National railroads and the coal and steel industries led the way in this transformation, requiring hundreds of specialized service workers rather than a handful of all-purpose clerks. The advent of the telephone and the typewriter aided this transformation, changing the office from a spoken to a written culture: The telephone forced people to keep records of far-flung, impersonal communications; the typewriter enabled them to do so.

The time-and-motion engineer Frederick Taylor

was the first villain in this organizational effort. He sought to transform office work so that it was as efficient as manual labor in a factory. This translated into regimented work spaces: rows and rows of identical desks in open areas for the lower-level bureaucrats; cubicles nearly identical in form for middle-level functionaries; offices with some personal character for the few at the top.

But it was clear by the end of World War II that regimented space could prove self-defeating; by then, the industrial analyst Elton Mayo and others had shown that the neat, filing-cabinet office was literally counterproductive, depressing and demotivating people, and slowing them down.

Saval evocatively describes designs by a very few visionary architects who sought to humanize the workplace. Frank Lloyd Wright's Larkin Administration Building of 1906, with a light-filled atrium space in Buffalo was an early effort to do so. Mies van der Rohe's 1958 Seagram Building in New York is about as beautiful an office environment as High Modernism could imagine. Frank Lloyd Wright's Johnson Wax HQ in 1936 was another open plan exercise, where Wright separated workers in an open plan space with soft diffused daylight and custom-designed desks.

The question is perhaps more complicated now than a half-century ago, because the work of white-collar organizations has been transformed in the last two generations. The corporate ladder on which a person climbs up or down, or at least stands, is gone; in its place is a more flexible organization, which means more short-term, episodic work.

In 1965, white-collar workers changed employers four or five times on average. Today they are likely to work for more than a dozen firms in the course of a lifetime. Even if they stay within one company for a long time, they are likely going to move erratically as organizations are born, mature, merge or die. It's often said that fixed corporate identity is dead; if so, this means that workers' sense of self-identity through 'work' is, at the very least, disrupted.

That design might remedy this condition rather than make it worse, confuses Saval — and rightly so. It's an open question about the transforming power of architecture.
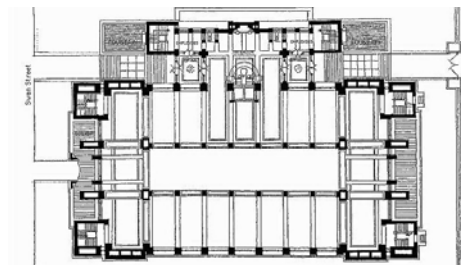
The planners of office campuses like Silicon Valley's Googleplex have created the modern company town, mixing labor and leisure, providing gyms and upscale restaurants as well as doctors and day care. The problem with such solutions is that the functional amenities bind people to offices for ever-longer periods of the day. From a critical viewpoint, these constitute an architecture of submission.

The Evolution of Office Design:

A synopsis of the evolution of office design reflects:

Era 1: Taylorism; 1904-1960:

American mechanical engineer Frederick Taylor was obsessed with efficiency and oversight and is credited as one of the first people to actually design an office space. Taylor crowded workers together in a completely open environment while bosses looked on from private offices, much like on a factory floor. Frank Lloyd Wright's

Larkin Building at least made a valiant effort to place everyone close to daylight.

Era 2: Bürolandschaft; 1960 – 1980:

The German "office landscape" (top, left) developed by Eberhard and Wolfgang Schnelle brought the socialist values of 1950's Europe to the workplace: Management was no longer closeted in executive suites. Local arrangements might vary by function— side-by-side workstations for clerks or pinwheel arrangements for designers, to make chatting easier— but the layout stayed undivided - and open. Speech privacy was addressed by introducing freestanding movable acoustical panels.

Era 3: Action Office; 1968-1980:

Bürolandschaft inspired Harvey Probst at Herman Miller to create a product based on the new European workplace philosophy. Action Office was the first modular business furniture system, with low dividers and flexible work surfaces. It's still in production today and widely used.

Essays on Architecture:
The De-Evolution of the Workplace
Cleveland, OH

Above Left: Original Herman Miller Action Office; 1971
Above Right: Action Office II, 1978
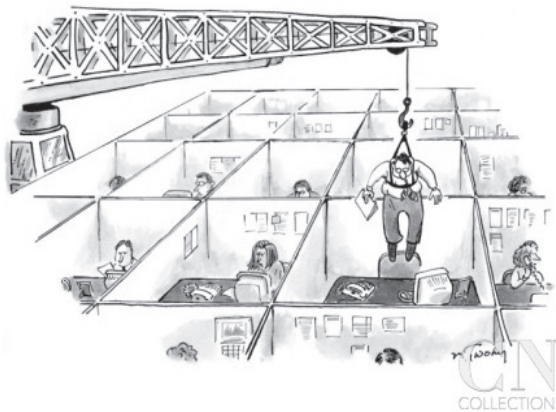
As AO evolved, the need to deliver power and telephone to staff saw the introduction of the electrified panel where a raceway at the base brought power and phone along a spline, which resulted in a need to feed power and telephone wires to the panels, which became much more linear and repetitive than Probst's original AO concept. The rigidity of the cubicle grid proved less adaptive to actual work tasks (Perkins & Eastman, 2017), and cubicle partitions compromised light and air distribution.

Era 4: Cube Farm: 1980 -

The cubicle concept was taken to the extreme. As the ranks of middle managers swelled, a new class of employee was created: too important for a mere desk but too junior for an enclosed window seat. Facility managers accommodated them in the cheapest way possible - with modular panel-based work stations. The sea of cubicles was born.

Organizations loved the ability to reduce area per employee and reduce the number of enclosed private offices, which made initial build-out and reconfiguration quicker and less costly. An unanticipated and unfortunate consequence was that space allocation began to mirror the organizational chart with work station size a product of status, rather than work tasks being performed or employee needs.

Top: Google Office gimmicks
Middle: Chiat/Day Offices; Los Angeles; Frank Gehry, Santa Monica
Bottom: Typical hoteling office

Era 5: Virtual Office: 1994 -

A reaction to the Cubicle Farm admitted that space allocation based on status was flawed. And with the laptop computer, people were no longer technologically bound to their work station. With management consultants and accounting firms with travelling staffs, real estate costs could be slashed if companies required staff to share space.

Ad agency TBWA\Chiat\Day's LA headquarters was a Frank Gehry masterpiece - on the outside. But the interior, dreamed up by the company's CEO, was a fiasco. The virtual office had no personal desks; you grabbed a laptop in the morning and scrambled to claim a seat. Productivity nose-dived, and the firm quickly became a laughingstock and the space was subsequently gutted and redesigned.

But Silicone Valley start-ups seeking to woo millennials embraced the non-traditional look of the virtual office and experiments with telecommuting, job-sharing and free range working which kept the Virtual Office evolving.

This era also began to reveal experimentation with hoteling - which was rarely done properly - and activity-based planning, both of which represented a certain push-back against the open plan and cubicle-based workplace design paradigm.

Most hoteling experiments reflected the failure of management and the AD community to address the critical issue: what people need to do their jobs. With hoteling, in most instances instead, the space design was an artificial formula of smaller private offices and a certain number of open plan work stations - cubicles - that was a random percentage - 25%-33% of the headcount, that would likely be in attendance on a given day.

In many instances, staff work areas were suddenly reduced to small study carrels like a temporary library space. Staff anxiety about having a place to work was partially relieved by having a 'concierge' function who people could call or email to reserve a space and support staff would wheel the employee's files from their storage

locker to the reserved space so they would have their files when they arrived.

One of our clients engaged a nationally prominent AD firm to implement new space standards and a hoteling initiative in its Chicago office to lower occupancy costs. The AD firm reduced Partner offices from 160 sf to 120 sf and placed glass storefronts on them all. All staff, regardless of their function or work needs had to reserve a 5' x 8' open plan workstation with a 48" high barrier height that was not acoustic. When those work stations were claimed, staff had to sit at a touch-down shelf area where they could plug in their laptops - barely. The handsome space won design awards - and was a functional and cultural disaster.

Partners who needed to do staff reviews in their offices found that negative reviews behind glass doors were demoralizing for everyone, and they began to rent space off-site for employee reviews. Suddenly, any employee review came with extreme negative connotations. Consultants doing heads-down concentration or collaborative work could not function in the open plan spaces provided and there were not enough stations available for the firm's peak occupancy.

Our design for their Cleveland office started with the identification of the full range of work tasks being performed, staff travel dynamics, office population fluctuations and real estate objectives. Our design increased Partner offices to 160 sf with partial glass fronts. We included 96 sf offices with glass fronts on the interior of the space for staff managers and consultants to reserve.

We provided a variety of open plan work stations for collaboration or private work and we provided touch-down areas at the corners of the building with their full-height windows where those who did not need a large work surface area or visual/ acoustical privacy could check e-mails, write memos and have a more social and collaborative work day.

The key to success was getting the proportion of the different work stations right and the provision of 29 Personal Harbor work stations
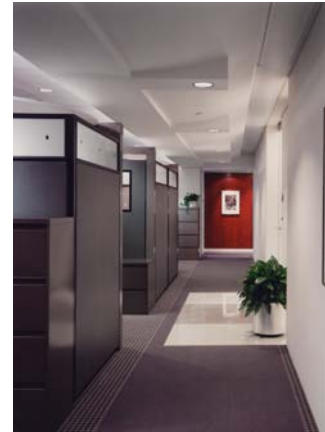
Above Left, Clockwise: Deloitte Consulting/ Cleveland; Eberhard Architects LLC

by Steelcase. These 6' x 8' enclosed environments can be reserved by staff for heads-down work and are the most requested and most highly utilized space standard of the six provided. And we exceeded the space and occupancy cost reduction targets from headquarters.

Era 6: Networking: 2006 -

During the past decade, architects and interior designers have tried to part the sea of cubicles and encourage collaboration and sociability—without going nuts. Knoll, for example, created systems with movable, semi-enclosed pods and connected desks whose shape separates work areas in lieu of dividers. Most recently, Vitra unveiled furniture in which privacy

Above Left, Clockwise:
1. AD Firm Office; Columbus, OH
2. AD Firm Office; Columbus, OH
3. AD Firm Office; Columbus, OH
4. AD Firm Office; Columbus, OH

is suggested if not realized. And these networking spaces look identical to the Taylorism rows of desks. But now, designers are taking away carpet and acoustical ceilings, making noise a far more flagrant problem than it was in 1904 when everyone did not have a telephone and a computer with speakers.

Notable projects like offices for Google, Facebook and others champion the open plan desking environments with exposed construction and concrete floors that subject people to serious disruptions and a lack of acoustical and visual privacy that erodes productivity, work quality and employee satisfaction. Google and Facebook are legendary for trying to make up for a lack of quality assigned work space with zany amenity areas, gourmet coffee, beer and gourmet food.

The Nature of Work and the Open Plan Dilemma:

Privacy-challenged office workers may find it hard to believe, but open-plan offices and cubicles were invented by architects and designers who were trying to make the world a better place—who thought that to break down the social walls that divide people, you had to break down the real walls, too.

In the early 20th century, modernist architects saw walls and rooms as downright fascist. The spaciousness and flexibility of an open plan, we thought, would liberate homeowners and office dwellers from the confines of boxes. But companies took up their idea less out of a democratic ideology than a desire to pack in as many workers as they could. The typical open-plan office of the first half of the 20th century contained long rows of desks occupied by clerks in a white-collar assembly line.

As corporations began to shift all their employees into open-plan offices, Herman Miller designer Robert Probst disavowed in the 1960's what he had spawned, calling it "monolithic insanity." Today, many companies are even reverting to the pre-cubicle rows of desks, now called "pods" or just "desking" to make them sound vaguely futuristic or at least different.

Although open plans do have advantages in fostering ambient awareness and teamwork, a meta-analysis published in 2016 found that they cause conflict, high blood pressure and increased staff turnover.

Technology has changed the means and nature of office work for most from the time when open office environments were first developed. Scanners and software have eliminated the routine processing and data entry tasks of the 1960's and 1970's. So people work today generally involves cognitive and analytical and/or creative thinking – reviewing, processing, absorbing and synthesizing and formatting information for understanding and interpretation by others.

And while the popular press has been overrun with articles pointing out the inadequacies of the open plan workplace, the design community has been doubling down on an open plan workplace model that is even worse than that being put in place in the 1960's with no visual or acoustical barriers. At least those environments had

acoustical ceilings and carpeted floors to help absorb sound energy.

The supposed justification for this return to "desking" as a workplace setting is that it fosters collaboration. In reality, what it fosters is interruption and distraction. In the 1980's and 1990's, the great debate was how to house software developers since there was so much coding going on.

Tom DeMarco and Tim Lister wrote the most comprehensive book on the subject *(Peopleware-Productive Projects and Teams*, 1987), which explored the social and economic impacts of failing to provide settings that met the essential needs of people in the workplace. They used real life examples to identify "flow" and the time it takes to get back into it once you are disrupted out of it.

Figures from DeMarco and Lister's coding war games showed a high correlation between productivity and the amount of privacy and space given to programmers. DeMarco and Lister identified the importance of the psychological state of "flow" which increases creativity and personal satisfaction. Prolonged periods without interruption are desirable because it takes at least fifteen minutes to return to flow after an interruption. According to researchers, flow is almost impossible to achieve in an open plan environment.

Peopleware offers a strong argument against open plan offices. DeMarco and Lister note that proponents of the open plan model have never produced *any* evidence that open plan offices are more productive.

The Best Intentions

Around half a century in the making, open offices weren't always so hated.

The original idea from Hamburg, Germany, in the 1950s, was an attempt "to facilitate communication and idea flow." But the steno pool gave way to the windowless "cubicle farms" that were parodied in the 1990s movie Office Space and comic strip "Dilbert." Offices

reflected an organization's hierarchy, with top brass cloistered in offices with doors and privacy and everyone else toiling away in cramped, fabric-covered boxes. And the 1950's concept began to catch on again as technology advanced and America's economy became more knowledge-based.

In 1997, a large oil and gas company in western Canada asked psychologists at the University of Calgary to monitor workers as they transitioned from a traditional office arrangement to an open one. The psychologists assessed the employees' satisfaction with their surroundings, their stress level, job performance, and interpersonal relationships before the transition, four weeks after the transition, and, finally, six months afterward. The employees suffered according to every measure: the new space was disruptive, stressful, and cumbersome, and, instead of feeling closer, coworkers felt distant, dissatisfied, and resentful. Productivity fell.

In 2011, the organizational psychologist Matthew Davis reviewed more than a hundred studies about office environments. He found that, though open offices often fostered a symbolic sense of organizational mission, making employees feel like part of a more laid-back, innovative enterprise, they were damaging to the workers' attention spans, productivity, creative thinking, and satisfaction.

Compared with standard offices, employees experienced more uncontrolled interactions, higher levels of stress, and lower levels of concentration and motivation. When David Craig surveyed 38,000 workers, he found that interruptions by colleagues were detrimental to productivity, and that the more senior the employee, the worse they fared.

Noise and Speech Privacy:

Architects, Interior Designers and manufacturers of open plan contract furniture products have for decades failed to effectively address noise in the open plan office and speech privacy. We convinced ourselves that medium density fiberglass behind fabric-covered panels that absorbed 80% of the sound energy that hit the surface was good enough. But density, orientation and panel height are all key factors in absorbing sound. Taller panels absorb more sound and push what is not absorbed up to a ceiling that is usually highly absorptive.

The fundamental concept of speech privacy is if you can hear someone speaking near you, but cannot discern what is being said, your productivity will not be disrupted. Exposure to noise in an office also takes a toll on the health of employees. In a study by Cornell University psychologists Gary Evans and Dana Johnson, workers who were exposed to open-office noise for three hours had increased levels of epinephrine—a hormone associated with the so-called fight-or-flight response.

Demographics and Noise:

Open offices may seem better suited to younger workers, many of whom have been multitasking for the majority of their short careers. When Heidi Rasila and Peggie Rothe (2012) looked at how employees of a Finnish telecommunications company born after 1982 reacted to the negative effects of open-office plans, they noted that young employees found conversations and laughter just as distracting as their older counterparts did.

According to the Stanford University cognitive neuroscientist Anthony Wagner, heavy multitaskers are not only "more susceptible to interference from irrelevant environmental stimuli" but also worse at switching between unrelated tasks. Regardless of

age, when we're exposed to too many inputs at once - a computer screen, music, a colleague's conversation, the ping of an instant message - our senses become overloaded, and it requires more work to achieve the intended result.

Gen X, Gen Y and Gen Z have grown up with the news ticker at the bottom of the screen, MTV and YouTube. They are used to multiple simultaneous inputs and stimuli. That does not however correlate to necessarily being able to manage them more effectively and produce quality outcomes.

Melinda Zetlin, co-author of *The Geek Gap*, notes that research indicates that constant multitasking is damaging Millennial brains. Neuroscientists, psychologists, and efficiency experts have been telling the world for years that multitasking makes us less productive since the brain can't actually pay attention to more than one thing at a time. What we experience as multitasking is really rapid and repeated switching of our attention from one thing to another and the back again.

Researchers at Bryan College have detailed the high costs of millennial multitasking. The average Millennial switches his or her attention among media platforms 27 times per hour. This is bad because studies have shown that multitasking can lower your IQ by 15 points. It trashes your emotional intelligence as well, which isn't surprising--if you're switching your gaze from your laptop to your smartphone to a TV screen and back again, you stand to miss a lot of subtle nonverbal signals from the person you're simultaneously talking or the media with which you are interacting.

And it gets worse. Prolonged multitasking will actually damage your brain. Regular multitaskers have less brain density in areas controlling cognitive and emotional functions. The Bryan study concluded that the lack of productivity due to multitasking represents a loss of $30.5B in the US and $450B globally.

You wouldn't think smart employers would want the young people working for them to be emotionally unintelligent, 40 percent less efficient, more stupid, less attentive, or ultimately brain-
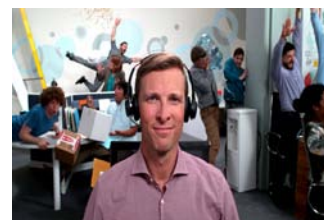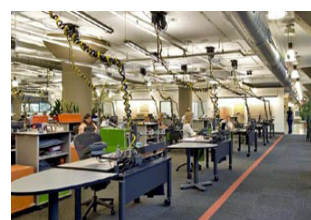
ARE WE DOOMED?

No. There are things that can be done to address this impulsivity.

HOW TO ADDRESS MULTITASKING:

EMPLOYEES
Create work schedules that establish periods of focused work with small breaks to battle in the sea of digital temptation.

Try out a few of the many apps designed to limit certain digital sinkholes and keep you focused.

EMPLOYERS
Offer yoga and meditation classes to help people develop their mindfulness muscle and focus better throughout the day.

Shorten the workweek to something like 25 to 32 hours. Constricting time encourages quality time, especially when people need to get the same work done.

Apps to Help You Stay on Task

freedom
FOCUS
focus booster

whoa.

How did it get that bad?

IMPULSIVITY

and marshmallows.

FIFTY YEARS AGO...
researchers at Stanford conducted the now-famous Marshmallow Experiments. They gave kids single marshmallows and told them they could eat the treat right away (and get nothing more), or wait until the researcher returned later, at which point they'd get a second marshmallow.

HOW TO ADDRESS JOB HOPPING:

EMPLOYERS
Commit to an initial, finite term of employment with an employee. This encourages investment by both parties, without the burden of indefinite commitment. It also supports Millennial values of self-determination and entrepreneurship.

Provide work that can be framed as making an impact, which can give employees a sense of purpose. Both are highly appealing values to Millennials.

There's a general belief among Millennials that if you stay with one company too long, it means there's something wrong with your skills or ambition. Create opportunities for Millennials to develop and exercise many skill sets and encourage them to do so ambitiously. Offer tons of advancement and training opportunities, and a variety of assignments.

WHAT ARE MILLENNIALS?
18 ——————— 34-year-olds.

Also known as job

hoppers and cyberslackers.

Is that the whole story?

No. Impulsivity doesn't just manifest in the moment, it manifests on **bigger scales, involving jobs and careers.**

21%
of Millennials report changing jobs within the last year.

91%
of Millennials expect to stay in a job for less than 3 years.

87%
of companies claimed a cost of $15,000 to 25,000 per Millennial employee lost in 2013.

Median job tenure by age:
Millennials — 3 YEARS
Everyone* — 5.5 YEARS

*The 5.5-year median is for ages 25 and up, including Millennials.

$30.5 BILLION ANNUALLY.

damaged. And yet, most employers seem eager to hire multitasking employees.

And put them in an open office environment that guarantees distractions and requires constant attempts at multitasking. "The ability to multitask is a skill you will see posted on countless job openings across the globe. Many business leaders view this as a highly desirable skill in a job candidate," according to a Bryan College representative.

Acoustic Privacy = The Number One Complaint:

A lack of acoustic privacy is understood as a real concern in hospitals, banks, law offices governmental and military facilities. But the state of office design today in many instances ignores user needs for acoustical privacy, particularly impacts on 'the involuntary listener.'

Inadvertent conversation naturally makes people self-conscious about privacy, creating a sense of being ill at ease, and impacting one's ability to freely communicate. A decade long study of 65,000 people by the Center for the Built Environment at the University of California Berkley found that the lack of speech privacy is the number one complaint in offices (Moeller, 2016).

Overhearing in-person and telephone conversations causes "irritation." That conscious irritation disrupts concentration and negatively impacts work quality and productivity. Employees waste an average of 21 minutes each day due to unwanted sound distractions (Betz, 2016).

Acousticians state that in open plan environments where speech privacy is desirable, absorptive barriers between workstations should be no lower than seated head height, or 60" – 65" (Moeller, 2016). Today's desking systems have barriers to 45" or none altogether. It is also recommended that the direction a person faces affects their voice's volume in the neighboring spaces, so people should be seated facing away from one another whenever possible.

Sound masking systems are naturally very useful and should be included in any open plan environment,

preferably with the ability to tune frequency and volume/ amplitude of the ambient sound energy being introduced.

No More Room to Take Out:

When economic instability and profit pressures reached executives when they were looking for reduced costs and more flexibility with their occupancy costs, and human resource professionals were starting to observe that prospective employees seemed more interested in the work environment provided, design professionals were only too willing to try a paradigm shift.

"Office architecture, long taken for granted, is badly in need of radical redesign," a 1993 report read. "The object of the new office is to attract and retain brilliant staff, to stimulate their creativity, and to multiply organizational productivity. In order to do this ... life must be breathed into how we approach office design." "Management gurus," as a past Business Week article referred to these office space innovators, called for more interaction, more collaboration and more shared spaces.

The open-office revolution came swiftly—walls were razed, cubicles collapsed and light streamed in, first in dotcom offices and then in places trying to capitalize on that air of innovation. Huge desktops in single offices gave way to light laptops on long tables.

And it wasn't just for the sake of increasing collaboration—a business owner can't ignore the cost-benefit of these open spaces. A *Bloomberg Business Week* article reported that at NEAD App Development instead of leasing a cramped office for $30 per square foot per year, the CEO got hip industrial space at $8.28 square foot per year.

The non-traditional spaces supposedly make businesses more appealing to younger employees and company's end up with a fresh brand identity. And the flexibility to reconfigure when business needs evolve without costly reconstruction and its accompanying disruption makes everyone's life easier – or so it seems.

But as the open-office option became more popular with business owners, employers began to feel the squeeze. "I think over time, the densification that we've seen happen in the open-office environment had just gotten out of control," says Sonya Dufner, principal and
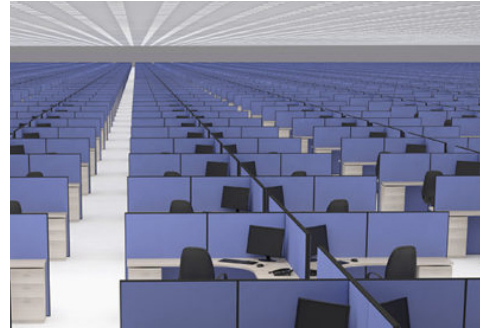
director of workplace strategy for Gensler's New York office. "People densified until they can't densify any more."

And the bar keeps getting lower: "From 2010 to 2012, the average square foot per person dropped from 225 to 176," the Gensler workplace survey states. "This number is below 100 square foot per person by 2017 in some sectors." In 2000, the average square foot per person was 296.

"A Delicate Balance"

Edward Albee's Pulitzer-prize winning 1966 uneasy play about upper middle-class suburbanites draws its title from the tension with a permanent house guest, Claire, and the sudden appearance of old family friends Harry and Edna who ask to stay, which is compounded further when Agnes and Tobias's bitter daughter Julia returns home after her failed fourth marriage.

Design firms today have an obligation that is too often unmet to work with clients to determine the work tasks, work flows and cultural dynamics to create that appropriate 'delicate balance' each client needs for heads-down concentration work and collaborative tasks. But design firms today are often content to ignore the essential qualitative and quantitative space needs of the clients workers and instead, just accept desking open plan standards pushed by the corporate real estate folks and splash a bit of style in the community areas.

In fact, it is now rare that a photo spread of a new workplace project in design magazines even show the areas where people are supposed to do work. It is a media denial of the challenge and the failure of the design professions to perform comprehensive programming and design with clients to determine the true nature and styles of work being performed.

A prominent AD firm elected to move its Ohio office from the suburbs back downtown when its lease expired. To fit on one floor, the firm embraced a barrier-free desking space standard for all personnel, so there is no visual privacy for anyone at their assigned space. A minimal number of huddle spaces are provided for heads-down work. The floor is concrete and the steel structure is exposed so there is no acoustical privacy either.

There are a few communal tables for team work but no significant privacy places, so the office design is not an activity-based design. The firm's website claim = "Workplaces are changing. Private offices and cubicle farms are giving way to open, informal, collaborative space. Younger employees expect more flexible hours and work environments. And there's growing recognition that well-designed offices create healthier, happier, more productive employees." However, a workplace without space properly designed for focus work is **not** a well-designed office.

The Physiology of Work:

Sitting at your desk all day is not good for you. A new study by Jungsoo Kim and Richard de Dear of the University of Sydney Faculty of Architecture found that people who sit for eight to 11 hours daily increase their chances of death by 15 percent in four years. These complications get worse with age and people older than 45 who sit for at least 11 hours a day will increase their death chances by 40 percent.

So the current rage is to employ height-adjustable work surfaces, which the contract furniture industry loves to sell because they cost four times what a fixed work surface costs. Yoga ball chairs, kneeling chairs or even treadmill desks can also be healthy alternatives.

These non-standard options help increase energy levels, too, eliminating the "3 o'clock slump." And according to The Centers for Disease Control and Prevention, healthy employees are not only more productive, but they also exhibit more long-term loyalty to the business.

Extensive international research from Ipsos and the Workspace Futures Team of Steelcase shows that 85% of people are dissatisfied with their working environment and can't concentrate. Of those surveyed 95% said working privately was important to them, but only 41% said they could do so, and 31% had to leave the office to get work completed.
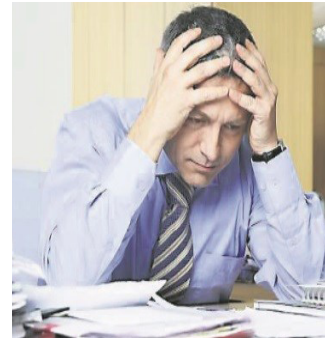
More than 10,000 workers across 14 countries were surveyed, and key findings also showed that:

• Office workers are losing 86 minutes a day due to distractions
• Many employees are unmotivated, unproductive and overly stressed
• They have little capacity to think and work creatively and constructively

The Ipsos survey follows a separate one earlier this year from Canada Life Group Insurance suggesting that open-plan offices may be detrimental to an employee's health, wellbeing and productivity. Only 6.1% surveyed thought it was healthy to be in an open-plan environment and just 6.5% thought it was productive.

The health issues are real. In the Canada Life survey, those employees surveyed who worked in open-plan offices took over 70% more sick days than those who worked from home. And a recent study from the University of Arizona found that when someone comes into work sick, about half of the commonly touched surfaces such as telephones, desktops, tabletops, doorknobs, photocopier, lift buttons and the office fridge will become infected with the virus by lunchtime.

The statistics follow a clear move over the years

towards a more collaborative working environment, rather than one that offers private space to concentrate on work and for effective wellbeing. In many instances, employees are working in extremely close proximity of each other where conversations and noise from computer speakers and phones are invading their space.

The Kim and deDear study found that open plan offices have detrimental effects on workplace productivity despite previous claims that such configurations promote communication and boost morale. Based on a survey of more than 42,000 United States office workers, the researchers found that workers who had private offices were far more satisfied than those in an open-plan office.

The main problems for open-plan workers were the small amount of space as well as "sound privacy," Management-Issues.com points out. Employers saving money by putting workers together may have argued that ease of communication made up for the size of the working space. This was not the case, however, according to the survey.

"Our results categorically contradict the industry-accepted wisdom that open-plan layout enhances communication between colleagues and improves occupants' overall work environmental satisfaction," the researchers wrote. "The open-plan proponents' argument that open-plan improves morale and productivity appears to have no basis in the research literature."

This isn't the first study to argue against open-plan office spaces, however. A 2009 review article found that 90 percent of studies looking at open-plan offices linked them to health problems such as high stress and high blood pressure, according to the BBC. Meanwhile, a 1982 study cited by the *British Psychological Society Research Digest* found that open-plan offices have also been found to discourage communication among employees due to lack of privacy.

These insights and observations hopefully serve as a starting point for management, designers and architects to begin evaluating more closely the nature of work and the physical resources employed to tackle it. The effective use of these insights is highly dependent on context. Therefore, the derived value of these facts and observations can only be realized when they are successfully integrated into a specific knowledge-intensive operating environment.

While the potential benefits suggest this is a worthwhile pursuit, even here we recommend caution. Efforts to restructure workplace and work using the guidance presented here should take place in the context of a well-structured process, be

appropriately prioritized, and involve focused personnel subjected to regular, yet planned check-ins with higher-level managers. Therein lies the path to efficient execution of the organization's work effort and the alignment of work and physical space to optimize performance.

Getting It Right:

Now that Corporate America has had a taste of absurdly small space standards and lowered occupancy costs, rare will be the company that recognizes the full extent of the adverse impacts of desking and failing to provide spaces appropriate to the focus tasks of employees.

And while examples are far more rare than they should be, some owners and designers are recognizing that the social benefits of open plan and desking environments can be retained providing a range and quantity of alternative spaces are presented to enable focus work to happen.

The activity-based office concept attempts to facilitate productivity through the accommodation of interaction, communication and focus work while retaining employee satisfaction and containing occupancy costs. Although some research has gone into understanding the added value, there is still a need for sound data on the relationship between office design, its intentions and the actual use after implementation (Appel-Meulenbroek, Groenen, Janssen, 2011).

A recent evaluative study in the Netherlands on the effectiveness of activity based office concepts was carried out to gain more insight in their use. The study included relevant literature on workplace design, combined with an observation and a survey of 182 end users from four different service organizations.

The findings from these case studies underline some known benefits and disadvantages of activity-based office concepts, and provide insight in the importance of several physical, social and mental aspects of the office environment in employee choice behavior. This study shows that the office concept is not always used as intended what can result in a loss in productivity, illness and dissatisfaction. People's personal preferences seem to have a bigger effect on the use of certain types of workplaces than some workstation facilities, although ergonomics and IT equipment and systems are expected to be satisfactory everywhere. Misusage of the concept is often the consequence of critical design process failures.

Proponents of Activity-Based Design typically focus efforts on specific design configurations to support group work. And while these issues are relevant, the most critical success factor for employee performance is providing suitable alternatives for focus work where heads-down concentration is possible. Too many designers sell their clients on the current cliche of monumental steps between floors as elements that can support group meetings and fun social activities as well as spaces where individuals can go to 'escape.' But these settings are invariably central
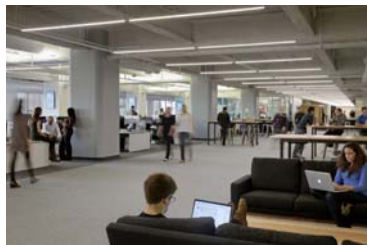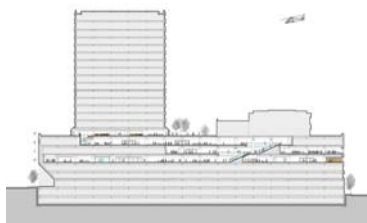
Top to Middle: Nestle Regional HQ; Solon, OH; Westlake Reed Leskosky/ DLR Group

Below: Square Inc. HQ; San Francisco; Bohlin Cywinski Jackson

to an office and are naturally used extensively for circulation, and focus work is not supported effectively in this manner.

And locating 'alternative spaces' immediately adjacent to desking clusters is foolish for it fails to provide separation, visual privacy or acoustical privacy.

Often, a small quantity of 'huddle' spaces are provided. A recent award-winning project by a

Another example of getting it right is the award-winning workplace project for Square Inc.'s headquarters in San Francisco by Bohlin Cywinski Jackson. Square Inc. produces software and hardware for business.

BCJ's design transforms a former Bank of America data center—which was undistinguished, windowless, and never designed for office use—into a first class workspace. Constructed in two phases, the project encompasses nearly 300,000-square-feet of space distributed over four floors.

The large 100,000-square-foot floor plates, which allow many employees close proximity to one another, also posed a challenge to organizing space in a comprehensible way. This challenge was addressed by designing a workplace that relies on principles of urban design; by taking cues from cities such as Dubrovnik and Savannah, the design establishes clear circulation routes with visual landmarks that break down the scale of these vast floor plates

A central boulevard serves as the organizational spine for the office floors. Lined with tables and cabanas, and punctuated by "civic" landmarks—including

a library, gallery, and cafe—the boulevard functions as a primary hub for team collaboration and social interaction. Anchoring the boulevard, a monumental amphitheater stair unifies the office floors and provides a flexible venue for a host of activities, from individual focus to large presentations.

On the eighth floor, a more intimately scaled 'Square Stair' connects the office floor to the main dining level. By connecting all four floors along this central boulevard, the design encourages chance encounters and generates vitality comparable to the urban marketplace the company serves.

The key to the project's success is BCJ's use of huddle rooms, conference spaces, meeting rooms, the library, refreshment centers and even storage elements to separate open pan desking areas from alternative spaces where staff can find refuge for focus work when needed.

Even the ubiquitous monumental stair here does function as a refuge and assembly space.

The project's clean lines and predominantly white interiors are a reflection of Square's visual identity. In open areas, the exposed steel structure is painted white to reflect as much daylight as possible into the deep floor plates. Natural wood elements, detailed with locally salvaged eucalyptus and bamboo plywood, provide visual interest in the common spaces.

Color is applied selectively to demarcate key landmarks and evoke the Bay Area locale; international orange and pacific blue are used as the two primary accent hues. The resulting palette is a timeless expression of modern design that resonates with Square's brand identity.

Top Left counterclockwise: Square Inc. HQ; San Francisco; Bohlin Cywinski Jackson
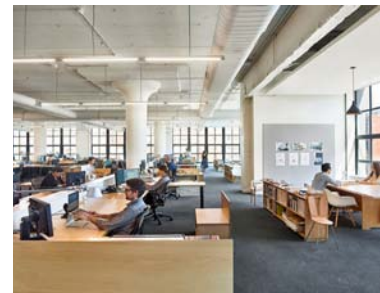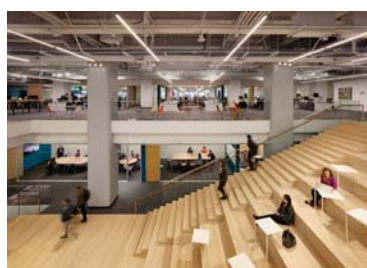
Top: Samantha J. Kraft
Bottom: William T. Eberhard AIA, IIDA

Samantha Kraft and Bill Eberhard have worked together since 2005. Prior to forming Eberhard Architects LLC, Eberhard joined Oliver Design Group in 1983 where he was Principal-in-Charge with offices in Pittsburgh, Cleveland, Detroit and Tampa. Both Kraft and Eberhard are graduates of the University of Cincinnati.

Samantha's award-winning projects include offices for LRMR Marketing (LeBron James & friends), the renovation of the Galleria at Erieview for Dollar Bank, and the renovation of the Higbee Building for the Greater Cleveland Partnership.

Eberhard's design for the 88,000 sf headquarters of Capitol Insurance Company received a national design award in the inaugural Corporate Outreach Design Awards Program established by the Institute for Business Designers/IIDA and Cahners Publishing, featuring projects which significantly increase user productivity.

Eberhard, both a registered architect and licensed interior designer, has been honored with over 40 local, state and national design awards.

EBERHARD ARCHTECTS LLC
2077 East 4th Street, Second Floor
Cleveland, OH 44114
216.452.4592
wte@EberhardArchitects.com