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make space
How to Set the Stage for Creative Collaboration
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With a Foreword by David Kelley

Space is the "body language" of an organization.*

Intentional or not, the form, functionality, and finish of a space reflect the culture, behaviors, and priorities of the people within it. This suggests that a space designer is simultaneously a cultural translator and a builder. That said, space design has its own grammar that can be tweaked to bolster desirable habits.

Design Template_Introduction

This Design Template breaks down this spatial grammar into manageable bits. Use it as a guide to decipher the needs and opportunities presented by an existing space, or to design a completely new one. It should be as useful for working with an architect to conceive of a new building, as it is to figure how to repurpose a spare storage closet. Once you start to recognize and manipulate these pieces, you'll be amazed at what you can accomplish, even within modest means.

To focus and make it easier to start, the Design Template uses four specific categories: Places and Properties address the divisions in a space and the features within them; Actions and Attitudes address who is in the space and what they do.

places

Places are broad spatial types that share an overall purpose.
(e.g., all spaces include Thresholds, such as doorways or openings, and Transitions, such as hallways.)

properties

Properties are the specific aspects of people or space that can be enhanced or altered to impact behavior.
(e.g., personal posture can be drastically altered with seating modifications. Ambience attributes, such as lighting, can be used to elevate mood.)

actions

Actions are behaviors and tasks.
(e.g., designers tend to visually saturate work spaces with project inspiration and artifacts.)

attitudes

Attitudes are cultural values and habits.
(e.g., "Bias toward Action" is a core value at the d.school.)

With these four categories you can build dexterity into the process of creating new spaces and cultivating collaboration within your community. To further demonstrate these principles, we will share our personal experiences, offering them as examples for you to consider in your own work. †

*"Space is the 'body language' of an organization," comes to us from our colleague Chris Flink, of the d.school and IDEO. He claims it comes from elsewhere, but we have yet to find another valid source.

† The Design Template emerged from our collaboration with Adam Royalty and Dave Baggeroer at the d.school.

places

Places are "zoning" for your space. Planning in broad zones rather overly detailed and specific rooms is an important first step in laying out a space designed to evolve. The trick is to define an area of use, then use minimal but meaningful semipermanent strokes (flooring choice, wall treatment, etc.) to define and support it. Consider behavior first and implementation second.

Thinking of places as zones that support behavior helps isolate underlying needs from conventional solutions, which often leads to novel and relevant innovations. This broader strategy also helps you consider the proportions of the particular spaces you'll need and helps you define adjacencies—which spaces are connected (and which are not).

We use four major "buckets" for identifying places that support behavior. There are overlaps in all categories—is a kitchen Support Structure or a Gathering Space? You will have to make the call as to how best to frame them within your culture. The key is to make sure you are covering all the bases.

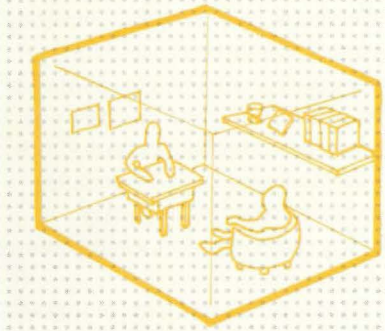
home base
This is the principal place for individual or group creative work. Desks, offices, and project rooms are all Home Bases. Features include a designated place to create, display, and store work in progress.

gathering spaces
These are places people meet. A Gathering Space can be as obvious as a conference room, a lounge, a theater, or a classroom, or as subtle as a hallway outside of a lecture hall. Areas immediately adjacent to common tools often become Gathering Spaces—the spot next to a copy machine, or the proverbial watercooler.

thresholds/transitions
Thresholds are entry and exit points. Transitions are passages—like hallways. Both constitute the connective tissue that helps bind or separate activities and segue from one space to the next—outside to inside, in the case of a foyer. Thresholds and Transitions mark changes in mood, tempo, and subject matter as people move from space to space.

support structure
Support Structure is anything that supports and propels creative work, but has a "service" role. This includes storage rooms, resource rooms, kitchens, and so on. Planning with these places in mind helps ensure that support is well distributed throughout your space.

home base



The Home Base is a physical or digital space where individuals or teams anchor their work and identity. From an emotional perspective, it is the creative center of gravity from which people advance and retreat. Whether you are a musician who calls the open road your home or a cold-calling salesperson perched at a desk for nine hours, the concept of a Home Base is still applicable. The manifestation of the details can be quite different, but the needs remain the same.

Most broadly, a Home Base has at least four attributes:

A place to access unique resources and tools

A place for things: persistent and accessible storage for work in progress

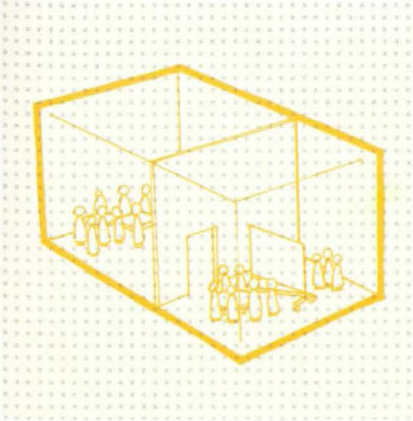
A place to showcase contributions: to display and share insights, work,

and practice

A place for a community to flourish: to share ideas, aspirations, and emotions, and to make connections

These attributes are starting points for challenging conventional work solutions such as offices, cubicles, and desks in order to identify how needs are actually met. Eliminating walls and doors to create a more visually linked community can be an exciting step in establishing a collaborative workplace. This does not however, remove the need for the sense of security and ownership that walls and doors provide. You will have to respond to these needs. For example, the d.school flanks its open office with several huddle rooms and personal hiding places to provide instant privacy when needed.

gathering spaces



At the most fundamental evel, Gathering Spaces are where people meet. In a "normal" workplace Gathering Spaces might range from a kitchen to a conference room. Though activities within these spaces vary widely, the more responsible a person or group is for maintaining a space, the more flexible that space can be in responding to their needs. The predictability of a nonadjustable space makes it easy to drop in and out with little effort or expertise, while greater adjustability provides more options to an experienced user.

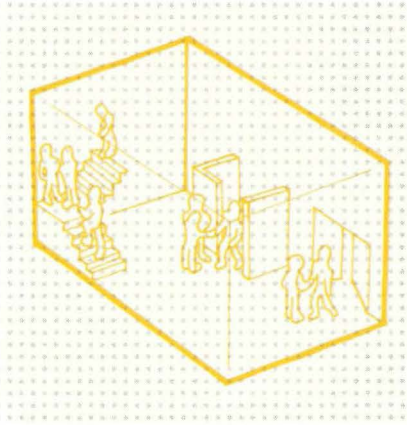
Consider the following categories of responsibility and adjustability when designing a Gathering Space. Note that, despite the focus on adjustability, all three have well-defined limits.

Drop-in
(e.g., laptop bar at a coffee shop)
These spaces can be effortlessly engaged and should virtually reset themselves. Bias toward fixed and predictable. Nothing should move except chairs.

Curated
(e.g., welcome area or lobby)
There might be some room for variation to liven things up, but these places are not usually reconfigured daily. These areas are prepped by the facility, not the person using the space.

Self-Service
(e.g., huddle room or event space)
These areas can be very flexible in order to be customized by users or support staff. Still, there should be a limited assortment of assets that are easy to use, with clear places to store them when done.

thresholds/transitions



Thresholds and Transitions are in-between spaces. These often serve as boundaries between intended places and events. Because Thresholds and Transitions are ubiquitous, they play a surprisingly significant role in the overall experience of an environment.

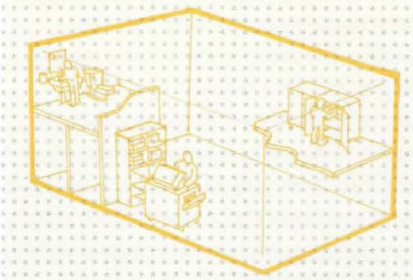
Transitions are about movement & the moment. In any given activity, the first and last thing a participant experiences is a Transition. We move right through them, but Transitions paradoxically call attention to the moment. Hot

towels on an airplane and previews at a movie theater are both examples of deliberate Transitional elements that signal a changing event. Physical space can be used in the same way.

Hallways, on-ramps, and lunch breaks are all different forms of Transitions. They are so common that they often do not stand out as details that need to be designed. It is a mistake to ignore the design of Transitions in a dynamic culture. Collaboration that shifts from one activity to the next and from one place to the next requires clear and direct support. Signage and way-finding cues are great starting points for designing Transitions.

Thresholds signify change, and they are easy opportunities for leveraging intuitive behaviors. People frequently expect to act differently when exiting one space and entering another. Children use playground voices outside; visitors (sometimes) remove their shoes before sitting down to dinner at friends' homes. Cultural behaviors around Thresholds are valuable assets to incorporate into spaces and activities. Don't shy away from calling attention to thresholds with bold visual strokes like changes in flooring or wall color.

support structure



Support Structure includes a wide variety of spaces. As the somewhat generic name suggests, the only real requirement is that it support the actions and attitudes converging in adjacent spaces. A copy room supports the activities in a classroom, just as a prototyping room supports the attitude of biasing toward action. Typical examples of Support Structures are zones for utility areas—such as bathrooms and kitchens, closets, and service equipment.

Support Structures should always be considered in terms of location and quantity. To service the space well, you'll want them to be immediately at hand. When placing these spaces, consider both their position relative to other zones and the flow required to access them. Walk through some possible scenarios to determine whether you've got it in the right place. Imagine moving supplies to and from a storage area to different parts of the space: what would it be like to walk to an upstairs kitchen carrying a case of wine?

We always need more space than we have, and Support Structures never really count as space for people or activities. Thus, they often end up underrepresented in the final floor plans. From storage to kitchens and bathrooms, more is almost always better. Resist the temptation to underserve the Support Structures—you'll just end up with a lot of junk out in the open where a closed storage area should be.

Think volume, not footprint. Like everything else, Support Structures don't need to be fixed. Storage in particular—via cabinets on wheels, like the Storage Towers (page 220)—can be moved throughout the space at will. Overhead rigging is another simple way to increase the usable volume for Support Structures.

properties

Properties are spatial characteristics that can be used to transform behavior and mood. Each of these characteristics is adjustable and can be calibrated—on a scale, as in from "open" to "closed"—to radically alter the mood in a situation. These are simple and effective tweaks, and even a small change to a single property can fundamentally alter the nature of an interaction.

We use six different categories to help decipher actual behavior in an environment, as well as to help encourage (or discourage) which behaviors and moods might arise. Note that properties include features of the space itself as well as positions of the people within it.

posture
The physical positioning of the human body and the types of behaviors that position elicits.

orientation
The positioning of people and assets relative to each other.

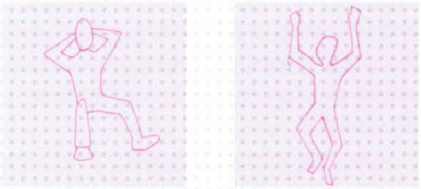
surface
The orientation of work surfaces and planes within a space.

ambience
The atmospheric quality of an environment and its effect on the mood of an audience.

density
The size of a space relative to the activities and assets within it.

storage
The status of inactive objects.

posture



reflective ⟷ excited

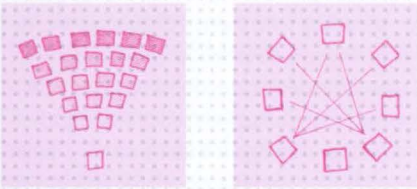
Posture describes the position of a person's body in the midst of an activity. It signals and reinforces a spectrum of personal engagement ranging from reflective to active. Though there are plenty of counterexamples, it's fair to say that a reclined or seated posture suggests a reflective and relaxed engagement with an activity, whereas an upright or standing posture signals active engagement and participation. The study of work posture has often been concerned with minute changes in positioning to enhance the ergonomics of sitting at a desk for long periods. Instead, explore the richness of a wide range of postures—from standing to reclining—and you'll be rewarded with equally rich and purposeful shifts in collaboration patterns.

A reflective sitting posture, while comfortable, often disguises and diminishes the potential of body language and movement. It's static. We've noticed that the more comfortable people are in their seats, the less comfortable they seem to be with generating ideas,

exchanging leadership roles, or moving on to the next activity. As a result, reflective posture is great for critique and reflection, but bad for generating ideas. For the same reasons, however, it works well for team debriefs and deep discussions.

An active, standing posture encourages people to jump in and alter the dynamics of a room. This posture also leaves room for fidgeting and stretching to release tension. Like it or not, our body language communicates intent & emotion, and we negotiate comfort level & status relationships through our proximity to each other. Use active posture to tap into these deep communication channels by making it easy for everyone to get up, move, and sit down again.

orientation



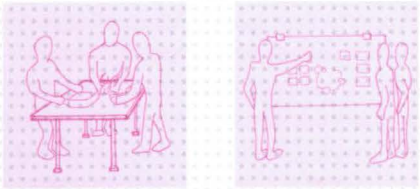
singular ⟷ multifaceted

"Orientation" is the relative positioning of people and assets. "Singular" directs all attention on a single person (e.g., a teacher) or object (e.g., a prototype). "Multifaceted" highlights all things equally: imagine a group sitting in a circle—no single person is the focus.

Orientation is often the principal vehicle for directing visual attention and tuning human connection within an experience. It is also one of the easiest properties to manipulate because in many cases it requires only adjusting the direction in which people are standing or sitting. In other situations, orientation may be less variable, though no less important, due to preexisting boundaries or furniture.

Orientation illuminates one of the fundamental differences between a fixed-furniture and an adjustable environment. During highly focused activities such as a class or a classical music performance, the orientation of the audience is often singularly focused on the source of the sight and sound. The arrangement of furniture reflects the desired engagement between source and audience: rows of fixed seats facing forward. In a contrary situation where the intent is to have participants see, hear, and engage each other, an open, multifaceted orientation is preferable. In these latter cases, furniture that allows movement and adjustability is key.

surface



create ⟷ display

Surface describes the planes that teams and individuals work on—are people using desks, tables, walls, or floors to create or display their work?

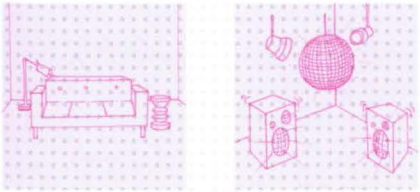
Simple changes in surface orientation can have profound impact: horizontals generally support individual authoring, while verticals put work on display for groups. Many people are accustomed to creating work on small, individual-sized panels like desks, laptop computers, or notebooks. More often than not, these surfaces are horizontal, creating a fairly private or hidden environment. Transitioning from a horizontal work surface to a vertical one enhances collective visibility, but it is often contrary to the norms people associate with "doing work."

"Create" surfaces can be horizontally or vertically mounted (or somewhere in between) and should take on many shapes and characters, depending on circumstances. Surfaces for building wood prototypes using power tools and adhesives will be fundamentally different from surfaces for performing

surgery or for painting a canvas. In general, bias toward as large as possible for any building spaces in order to leave work unbounded and easily accessible.

Display surfaces are often vertical, but they can be horizontal, too. The context informs the configuration. Teammates, working together and sharing information with others, often display their work on vertical surfaces to make information immediately visible to anyone within the line of sight. Display surfaces should also be large, but often must be portable and reusable, suggesting lightweight and durable panels such as foamboard.

ambience

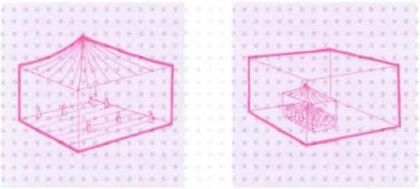


relaxed ⟷ energetic

Ambience describes the more ethereal features of an environment: lighting, textures, sounds, smells, and color. Think of it as an expression of emotional tone. Adjustments can be tailored to elicit different emotional responses from those occupying the space.

Ambience is a magical tool in that people experience it fully but don't always notice it explicitly. Creating the right ambience is a highly nuanced art form, but a couple of rules of thumb can get you started. For relaxed spaces, go with plush seating, multiple points of light, quiet music, and warm or dark colors. For active spaces, try raw materials, bright light, bouncy music, saturated colors, and open windows.

density



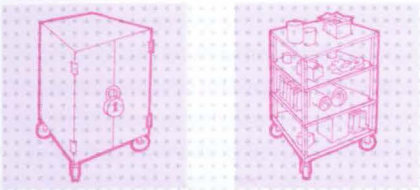
sparse ⟷ concentrated

Density characterizes how a volume of space feels in relation to an activity. Tweaking density allows you to influence these impressions and control the energy level and creative potential of an experience. A sparse environment provides ample interpersonal distance in which people feel free to move about and might feel more self-reflective. A concentrated environment engages participants closely within a "cozier" space.

The paradox of density is that both sparse and concentrated spaces can achieve similar results: an empty space such as a large, vacant studio can create the perfect platform for creativity, and a concentrated environment packed with contact points and stimuli can be equally effective. Some people head to the desert for inspiration; others prefer New York City. You can resolve this paradox by homing in on the specific activity of the person or team. If the activity is about realizing or making things, perhaps a sparse studio with plenty of open space will provide physical and mental room for building. If the activity involves absorbing inspiration from many stimuli or maintaining a collective energy, a concentrated environment saturated with images, sounds, and other people will do.

Separate the quality of Density from the size of a space—its physical dimensions—in order to focus on the intent of an experience. The key is to tune the feeling of energy in a space by packing it full or leaving it sparse, no matter its size. Strategic positioning of furniture & room dividers can make a large space feel concentrated even with a small number of people. Purging a room or removing a dropped ceiling can make a smaller space feel sparse.

storage



protected ⟷ available

Storage is about accessibility of both artifacts and information. It spans the range from protected—accessible only to those who know its secrets—to available, out in the open, and shared. Accessibility of storage is an important issue for digital and physical resources. The same considerations given to placement of a file cabinet or bookshelf apply to servers, memory cards, and cloud accounts.

Security is important, but it must be balanced with the visibility necessary in a collaborative context. Bias toward keeping materials and work easily accessible in a creative space unless they absolutely must be protected. This strategy will find you accessing storage far more frequently and purposefully, to the point where storage itself becomes an active work space.

The ability to store things in a space also links to how that space is experienced. Storage and security are directly related to the concept of a Home Base (page 40) or a place that people feel they can control. Giving someone storage resources can be a meaningful gesture of community connectedness. Likewise, a policy of "no storage" sends a different strong message.

Whether protected or available, storage is often underestimated in the design and support of creative spaces. This is true in most spaces, actually, as evidenced by the nearly sexual appeal of an apartment with large closets. Creating a collaborative environment in which materials are available and encouraged for use requires actually storing those materials. It also potentially requires maintaining a buffer or back-stock of materials. In general, it's important to allocate plentiful and prominent space for storage, or else objects will find a way to be stored in unlikely and undesirable places.

actions

Arranging an environment to incite and support specific behaviors is precisely the intent of space design. Simply identifying the activity you are in or about to begin can help design a space suited to that purpose.

Actions are the different steps of "doing" at any given moment. The six different activities identified here are basic descriptions of what someone might be doing during a snapshot in time. They arise from the d.school's particular brand of creative process, but they are broad enough to be transferrable to other working styles. Borrow them entirely, pick and choose parts of them, or lead with actions of your own.

saturate
This is the unloading and sharing of information and ideas. Implicit in saturation is revealing and displaying information—often through stories, photos, illustrations, and graphs.

synthesize
This process involves creating clarity from complexity. Synthesis often requires taking a lot of available information and combining, omitting, and rearranging elements to generate a new way of framing a problem.

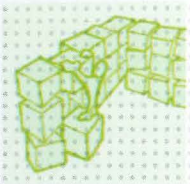
focus
Narrowing on a single topic or task for a sustained period requires the personal discipline to ignore other activities and topics. Focusing is an important part of working toward an insight or implementing an idea.

flare
Going big with ideas by generating tons of new concepts and options. Flaring often requires ignoring constraints and suspending disbelief in favor of creating something new. Brainstorming, or ideating, is a common way to flare. Daydreaming potential solutions is another.

realize
Turning an idea or concept into something tangible. Building prototypes is an example of realization: the activity moves beyond simply talking about an idea to creating something that can actually be evaluated or shipped.

reflect
Reconsideration of what just happened. The intents of reflection are to learn, illuminate, capture, and evaluate aspects of past events and how they can impact what is yet to come. In many cases, reflection is an activity that signals a next step, not necessarily an endpoint.

saturate



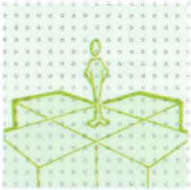
Saturation is a process for inspiration. A saturated space is mindfully curated to display and broadcast information, express emotion, and immerse a team in the environment of a problem. People instinctively decorate spaces with artifacts and attributes from other places or experiences—family photos on a work desk, a car's rearview mirror strung with a graduation tassel, etc. The trick is to transform a neutral space—such as an office, classroom, or conference room—into one that displays the attributes of another space or experience that is critical to your design.

Photographs, quotes, and artifacts are excellent materials for saturating a space. Imagine that a research team conducts a series of customer interviews to investigate how a product is actually being used. Following those interviews, the research team retreats into a work space to "unpack" all of the information. Saturating could include displaying photographs of the interviewees, sketches of ideas that came up during the interviews, juicy quotes, and a physical example or two of the product being discussed. Being surrounded by all this material helps a team recall pertinent details that may be keys to a new, authentic idea.

Employ quick methods for display to make saturation easy. Post-its and Sharpies are effective tools for capturing and displaying quotes on walls, windows, and dry-erase surfaces. Painter's tape is extremely handy for posting pictures and sheet material on vertical surfaces without destroying the finish. Digital cameras and portable printers provide the kind of instant visualization that space saturation requires. Digital projectors are useful for creating immediate slideshows to pan through images of an event.

Think ahead. Part of the magic of re-creating an experience is mindfully capturing these inspirational photos, quotes, video, and audio on the fly.

synthesize



Patterns, trends, themes, and hidden mysteries . . . this is the stuff of synthesis. Synthesis is about grabbing data from a pile of assorted facts and details, and rearranging data in various ways to create meaning or a strong direction.

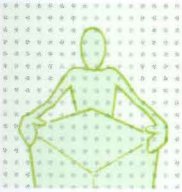
Before synthesis, people will walk into a room with a bunch of facts and concepts they "know." Following synthesis, these same people will walk out of a room understanding what their knowledge actually means. In between is a messy task involving unpacking data and ideas and recombining them into new insights. This is a big shift, and a difficult task, but it is the often unacknowledged foundation of innovation!

The environment supporting synthesis should be as flexible as the minds at work! Synthesis often challenges people to start with a blank mind, build up a complex perspective, tear that down, and begin again. The ability to visualize, sort, and re-sort data and insights is important. Large, blank vertical surfaces coupled with tools for display and rearrangement can help create a fertile synthesis zone. As with saturation, reconfigurable tools such as Post-its and dry-erase surfaces are very helpful. This approach toward visualizing thoughts, or thinking spatially, can have a profound effect on the discovery of hidden patterns and details "between thoughts."

Mindmapping and storyboarding are two excellent tools for synthesis. In his book Experiences in Visual Thinking (Brooks/Cole, 1973), Stanford Professor Emeritus Bob McKim suggests visually arranging thoughts, topics, and sequences for both individual work and teamwork. Grouping elements can identify themes and illuminate transitions. Filmmakers have long

used storyboards to highlight action and plan transitions from one scene to the next. Pixar Studios is notable for having huge storyboards prominently on display during the development of their animated films. This helps synchronize and synthesize their work.

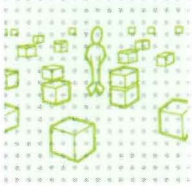
focus



Focus is narrowing on a single topic or task. It is the art of letting go: what you decide not to do is as important as what you are doing. In some instances letting go means abandoning something completely, and in other cases it means setting it aside temporarily. In either case, focusing is a critical step in distilling information rather than diluting it.

Focus requires intentionality. A helpful question to ask is: "Are we seeking new ideas and new information at this point or are we homing in on an answer?" For example, after a really productive brainstorming session, a team might be confronted with the task of evaluating hundreds of ideas. In this case, the next step in work is to evaluate a few ideas by testing them. In many ways, evaluating an idea is precisely the opposite of generating new ideas. Acknowledging the shift from idea generation to idea evaluation helps things move more smoothly. There is always more work that can be done, but focusing on a specific aspect or phase of the work benefits overall progress.

flare

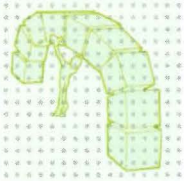


Flaring is a phase for exploring possibilities and generating options. At the beginning of a project cycle, flaring might include a wide and divergent effort to understand what is going on in the world around the project space. Late in a project, it might include generating multiple options to explore potential solutions.

Flaring often includes brainstorming and other techniques for idea generation. Just as with the intent of brainstorming, flaring explicitly includes generating and receiving new information around a particular topic in order to move beyond the known and obvious, toward the new and novel.

Suspend disbelief for the sake of getting somewhere new and unexplored. Stay on topic, but save judgment for later. The goal in flaring is to generate options so you have some material to work with when you get to a decision point. If thoughts and concepts outside of your topic space arise, it's important to accept them and move on. Brilliant ideas can be saved and addressed at a later time. Although it may seem like a paradox, staying on topic can be a helpful method for breaking new ground.

realize



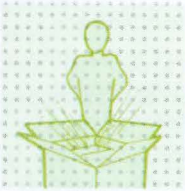
Realization is the process of making the ethereal tangible. It's the difference between saying that you like to paint and finishing a painting. Realization can involve many different actions: programming code, drafting business plans, and making mock-ups or models. Regardless of medium or method, most important is the simple step of actually doing something.

Iterate: build, then discuss. Then build on top of that. Let your realization become a touchstone for discussion, rather than the other way around. Build first, think later.

How you realize has a huge impact on the kind of space you will need, but some things remain constant. Building an interface for a database requires a much different space than building an

irrigation system for a farm. That said, realization always requires storage for work in progress, room to expand and experiment, space to show and share, and a place to focus. The nature and quantity of these things can change depending on what and how you are realizing. (Storage for digital work may be housed on a server, while physical prototypes require shelving.) But make no mistake: space to gather and work physically is important for even the most ethereal digital project, even digital game designers use physical prototypes to work out ideas.

reflect



Reflection is often seen as a conclusion, but really it is a highly dynamic, transitional activity. Reflection is best approached with an open mind and a learner's bias. Insights culled from mistakes—there are always mistakes—are helpful in preparing for the future, but dissecting what went "right" is every bit as helpful and informative.

Getting in touch with your team is as valuable as digging into your work. Reflect in real time. During a team activity or over the course of a sustained project, explicitly build in check-in points where team members can voice initial reactions to the work or the activity. At times this might feel forced or slightly awkward, but with increased practice at quick and honest reflection, you'll find the sessions increasingly fruitful.

attitudes

Shaping attitudes and the behaviors they inspire is the "holy grail" of space design.

Our attitudes steer our decisions and build momentum in everything we do. A space is at its most sublime when it reinforces and encourages desired values. Instilling attitudes also happens to be the trickiest part of designing a space, as attitudes are hard to predict, even harder to force and enforce, and harder still to measure. Nevertheless, a space that shapes attitudes is worth seeking—and you'll know when it's working.

The first step in designing a space to support particular attitudes is to define those attitudes. Because this step is a bit abstract, don't get too hung up on it. Different organizations have various ways to express core values and decision-making rubrics. As an example, the d.school uses the following six attitudes, called mindsets, in defining the basis of its culture. These attitudes strike a balance between being comprehensive yet still actionable. They are also robust enough to be defended, but not so precious that they can't be reevaluated. Don't shy away from altering these or your own values. Commit to them, but as with the space, leave room for them to evolve as you continue to learn.

collaborate across boundaries
Mix people with varied backgrounds and perspectives to launch your work into new and unexpected territories.

show, don't tell
Embody your work as quickly as you can so that others can interact with it. Don't spend your time "hand-waving"—you can create something just as quickly.

bias toward action
Do something first. Talk and think about it later.

focus on human values
Let people and the insights you develop from your interactions with them inspire your work. Design work benefits from providing for others, not inflating your ego.

be mindful of process
Recognize what you are trying to accomplish at any given moment and hold off on other activities until the time is right, but ultimately make sure to cover all your bases.

prototype toward a solution
Progress quickly and incrementally on the way to an end goal. Make your ideas tangible and frequently test them with others. Work at a low resolution to avoid heavy expenses early on.

collaborate across boundaries

Collaboration among individuals from different disciplines can make the difference between innovative and conventional solutions. Often, innovative ideas can be found in the cracks between current domain definitions. Bringing together people with wildly different backgrounds increases the likelihood of stumbling on these useful intersections.

Keep in mind that as people work together on common problems, their approaches may vary greatly. Multidisciplinary teams—groups of people with different core talents and capabilities—can fail if misunderstanding trumps collective effort. Communication is essential in buoying the remarkable power of multiple perspectives.

Teams need support. Collaboration may not be an instinctive approach within your culture. As you shift toward this type of working style, make it okay for people to address interpersonal issues that arise around their work. Asking participants to share their states of mind as a group is a great first step

in demonstrating that teamwork is important and valued.

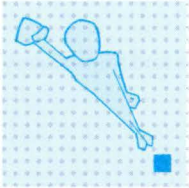
Collaboration is not a prescription for "design by committee." Bring in multiple perspectives to fitness-test concepts, but leave decision making to a small team.

show, don't tell

A "show, don't tell" attitude means creating compelling visuals and tangible artifacts to enable participants to experience the context of the challenge. Got an idea about what it would it be like to have a classroom without desks? Don't discuss it; demonstrate it, by removing all the desks and holding an actual class. Creating an experience will reveal details that may not be obvious in conversation and illuminate details that could not have been foreseen.

As a design becomes more resolved, the "show, don't tell" attitude applies in a different context—story telling. Perhaps you have had the unfortunate experience of listening to a friend or colleague aimlessly recount the details of a mundane event. When the end of the story came, how did you feel? Do you even remember the point? Effective storytelling with a "show, don't tell" attitude means conveying ideas through details rather than conjecture, being as concise as possible in communicating a meaningful transformation, and using authentic emotional tension to build empathy in your audience.

bias toward action



"Just do it," Nike's classic ad campaign, is consistent with the attitude of biasing toward action. Taking action and trying something new are not at odds with careful consideration of intent and outcome. The trick is not to let intent and outcome get in the way of exploring the unknown. There's always a reason not to do—people can and will rationalize a way out of doing anything. Biasing toward action depends on not necessarily knowing what will come next but being willing to try something to precisely determine what works and what does not.

Action does not overshadow thinking. Trying something simply for the sake of trying it can be exciting, but in the context of designing toward solutions and expanding the potential for innovation, you have to pay attention. You must pay attention. In the thrill of the unknown are lots and lots of little details that, if noticed, will validate any effort to try something new. Pay attention afterward as well; reflection on what you did is key to a deeper understanding of the problem.

focus on human values

Focusing on human values requires you to challenge your own beliefs in an effort to engage and understand others. This often means squelching the natural tendencies of the ego. One of the most difficult things to do in focusing on human values is to just shut up and listen. As ridiculous as that sounds, it is actually hard to do. Taking design cues from a user rather than having to blindly project a solution is surprisingly liberating—each user is like an added team member helping to inform the design. Neat trick!

Human values–focused design is not user-led, but it is insight-driven. Individual interactions with users can provide valuable inspiration and insights, but they are not prescriptions to be followed at face value. They still need to be synthesized with other factors into

a final design, by the designers.

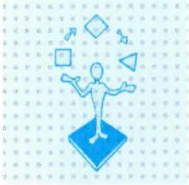
There is tension in deriving a solution based on an existing need versus creating a need for a particular product. There are many examples of great products and innovations that fall into both categories, but in the context of an infinitely large pool of challenges, a systematic approach focusing on human values, tendencies, and behaviors often better supports a designer's own intuition. The alternative—that an individual designer intrinsically has the perfect solution for any given person, at any given moment—is far less likely.

be mindful of process

It is important to view your current actions and environment in the scope of larger contexts. Much of design is an immediate and reactive experience that requires myopic intensity at given moments. Being mindful of process means paying close attention to how you work, then making alterations to your work plan as needed. Even one change can affect many systems, so it's important to be aware of the implications: How is your team responding to an event? What will it mean to try something again? Can you afford not to try something again?

Being mindful of process does not equate to playing it safe. In fact, it might be the most counterintuitive attitude there is, leading directly, and knowingly, into failure! Failure, in the contexts of business, budgets, and timelines often translates to danger. However, in being truly mindful of process you can achieve a balance between knowing that you are going to fail and the fact that the anticipated failure will make the next step more productive and lead to better results. This is often true in the case of prototyping, where the goal is not necessarily the success of the prototype itself but the depth of the learning it provides.

prototype toward a solution



Prototyping toward a solution requires fundamental behaviors: taking creative leaps; creating experiences and artifacts expressly to be tested; leveraging the lowest-resolution resources necessary to explore a concept; accepting feedback as delivered, then making sense of it in the context of additional feedback; and cycling through multiple iterations of a concept early and often.

Prototypes are not precious, but the lessons you glean from them are. Prototyping is the act of making in service of learning: the goal is to learn the most with the least. The resolution of the things you make should match the resolution of your ideas about the problem you are solving. Early on, ideas and concepts are often at their fuzziest—meaning that the aspects needing validation are still highly abstract. Rather than spend tremendous amounts of money, time, and opportunity, use quick, low-resolution tests before homing in on more refined concepts. Similarly, begin with a large pool of prototypes to explore options and narrow down as your solution becomes resolved over time & testing.

The Google office in Zurich, Switzerland. Design by Camendzin Evolution Ltd.

Special Touches Create a Sense of Belonging.

"Owned" space signals that an individual has standing in the community. In a shared, open, and collaborative environment, you need to find novel ways to provide people with feelings of ownership.

Once folks get settled in, you might be the target of a bit of angst.
You're experiencing nothing less than the deep-seated fear of mortality. Really. When we work with less and give up the spatial signifiers of our existence (offices, signage, etc.), we start to feel a little more vulnerable. This feeling begins at around age two, when we're forced to share our toys, and it never goes away. This vulnerability can manifest itself as a lost sense of belonging.

When a space feels extra-special, it has a cascading impact.
Beyond the fact that it's simply an enjoyable place to be, people like to show it off and share it with family and friends. They get positive feedback from this, and that vibe fuels a feeling of pride; with pride comes a feeling of ownership; with ownership comes a sense of belonging. Voila!

photos: Chris Silver Smith / flickr_SiTsery

What constitutes a special touch?
Think in terms of materials, ambience, and surprises.

Unique & remarkable materials:
As an example, the d.school has a mesquite end-grain parquet floor in the full-time staff suite. It's unique, the color is lovely and natural, the style is timeless, it contrasts with the adjacent concrete floor, and it wears well (a must for the way we beat up our spaces).

Analog ambience:
Custom carpets. Windows that open to the outside. Incandescent lights. Music. All these things make a space more livable.

Surprises:
Anything that violates a norm in a playful way. Peter McGraw, of the Humor Research Lab (HURL) at the University of Colorado at Boulder, describes humor as a "benign violation."* Where can you insert a benign violation? The d.school has turned bathrooms into faux forests and dance halls. Google has installed the occasional slide in place of a staircase. The Pixar staff uses its atrium space as a dodgeball court . . . okay, sometimes it isn't so benign.

*Peter McGraw and Caleb Warren, "Benign violations: Making immoral behavior funny," Psychological Science, 2010.

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Insights_The Open Office Floor Plan Has a Shadow

Corners Provide a Sense of Place.

The slightest hint of a corner has a profound effect on the sense of ownership in an open space.
Two perpendicular walls provide a suggestion of an edge that outlines a space. These perceived boundaries are easy to absorb, navigate, populate, and protect.

It doesn't take much. In one of the early d.school space prototypes, student teams with access to corner spots spent far more time in the space working on their projects than teams whose spaces were on an open wall. In a second prototype space, featuring side-by-side team spaces with partial corners, we interviewed students and found that a corner with a side wall projecting as little as 1' sufficed to provide a feeling of comfort in the space.*

* Research conducted by Adam Royalty, Lead Research Investigator at the Stanford d.school.

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Insights_Use Soft Boundaries to Partition Open Spaces

Keep Supplies & Tools Visible for Inspiration & Instruction.

People get inspired by what's around them. Surround them with inspiration.
Take cues from toy designers: they engulf themselves with piles of inspirational junk, from simple balls to programmable microcontrollers.* These bits and pieces pilfered from the guts of other toys are ready to be crammed into new configurations.

"Out of sight, out of mind."
There is truth to the old cliché. Enhancing access to supplies & tools is absolutely crucial, as people tend to engage with only those items that are near at hand. Showcasing materials and supplies accelerates the potential for those magical moments of creative inspiration.

Ample work space and radically accessible tools.
Providing space to use tools and materials is as important as those objects themselves. Ample work surfaces and opportunities to make and display physical embodiments—whether robots, paper prototypes, or digital experiences—encourage people to create. Tools do, too: keep hand tools, soldering stuff, and electronics equipment around in equal measure with fasteners and fixtures such as clamps and vises, so that people actually can build rather than just thinking about what they wish they had.

*Björn Hartmann, Scott Doorley, Scott Klemmer, "Hacking, Mashing, Gluing: Understanding Opportunistic Design," Pervasive Computing, July–September 2008.

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Tools_Full-Scale Space Prototyping Toolkit

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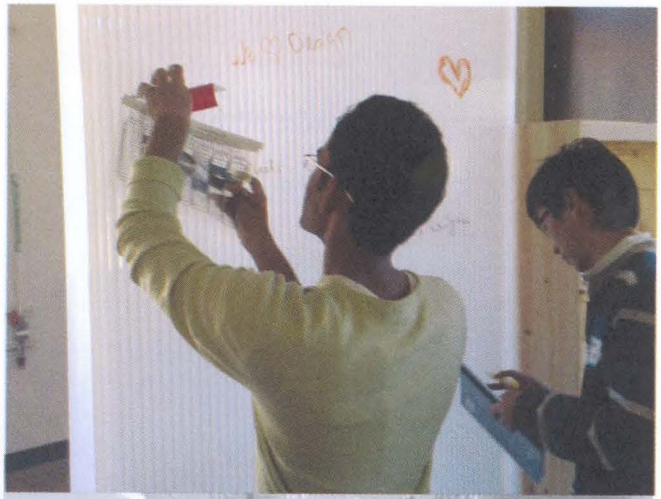
Tools_Prototyping Cart

photo: William Mercer McLeod

Dry-erase surfaces support instantaneous innovation.

writable surfaces everywhere



Corrugated polycarbonate is a lightweight option for large panels—try 5/8" thickness for large panels & 1/4" for small panels.

Showerboard can be cut into almost any shape for a custom fit or fun application.

Install dry-erase surfaces all over the place to create opportunities for capturing serendipitous sketches and outbreaking brainstorms.

Get creative about what you use for a dry-erase surface.
Corporate-style dry-erase surfaces are often conventional and costly. Try using alternative materials in various shapes & configurations to inspire your audience.

Most smooth, nonporous materials work well as dry-erase surfaces. Pick a material to match the look and feel of your space.
Readily available options such as acrylic, polycarbonate, showerboard, painted steel, and glass can constitute exciting alternatives to boring board-room boards.

Acrylic and polycarbonate come in transparent and translucent forms. These are great options when glass is too heavy or expensive. Both acrylic and polycarbonate can be cut to fit into interesting nooks & crannies or just cut into interesting shapes. Predrill holes into your sheet materials and mount them to walls with attractive screws & hardware. Run them floor to ceiling or for the full length of a wall without framing the edges to provide a sense of unlimited space for scribing.

Don't limit yourself to the walls!
Showerboard is easily cut and shaped with basic woodworking tools. Transform a tabletop or a counter by gluing or screwing down some showerboard. Completely cover a standing-height bar table for a unique place to work & doodle.

tip

- When you transform a table, go the extra step and use a router to round over all the edges so that everything is comfortable to touch.

sourcing

Acrylic and polycarbonate materials are available in many varieties (dimensions, colors, configurations).

polycarbonate/acrylic
Port Plastics (550 East Trimble Road, San Jose, CA 95131; 408 571-2231; www.portplastics.com) ships regionally.
TAP Plastics (154 South Van Ness, San Francisco, CA 94103; 800 246-5055; www.tapplastics.com) has many western U.S. locations.

showerboard
Showerboard is available at most home centers and local lumber suppliers.
Pine Cone Lumber (895 East Evelyn Avenue, Sunnyvale, CA 94086; 408 736-5491; www.pineconelumber.com). Reference "solid white tileboard" or "showerboard."

start

Buy a few 4' x 8' sheets of showerboard at a home center and mount them on any wall. Done! Huge, instant writing surfaces at a fraction of the cost of conventional office-style boards.

We borrowed this next idea from our friends at the Stanford Center for Design Research. Have a sealed window? Use the glass as a writing surface. Alternate option: Install a sheet of acrylic over the window casing to create a large, see-through surface.

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Provide Quick Perches in Active Spaces.

A "perch" is a well-known term in design and furniture industry lingo. Steelcase R&D guru Frank Graziano aptly describes it as a place to pause or lean for a brief encounter. A stool next to a bar can be a perch, but so can the back of a chair or the arm of a couch.

Create deliberate perches to promote an active culture. Stepping away from a stool requires a lot less energy than climbing out from the low, soft seat of a couch. In dynamic spaces, deliberate perches are a welcome feature—they provide a moment of rest in a way that allows people to easily flow in and out of the action. Deliberately small tables complement the situation: like cocktail tables, they provide enough space to prop up little items but not enough to spread out a four-course meal.

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