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*and ...* **PASSION-BASED  
CO-CREATION**

# BRIDGING PHYSICAL AND SOCIAL SPACE

**Tiina Tuulos**  
**Matti Hämäläinen**

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# BRIDGING PHYSICAL AND SOCIAL SPACE

Practices and behavior in co-creation platforms

**Tiina Tuulos**  
**Matti Hämäläinen**

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## Key points

- Physical spaces affect our behavior and can support interaction
  - Innovation-supportive environments are built on new types of practices and active reinforcement experiments
  - Brave individuals who set an example and have the courage to act differently are needed in order to build new ways of working
  - Rules pervade spaces and they can be used to guide us towards positive change
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Our surrounding environment—consisting of physical, social, and mental space—has an influence on our ways of working. The environment affects behavior and it can have a great impact on what people assume to be an acceptable form of conduct, hence it inevitably affects our established practices and our everyday ways of working. A deliberately built environment can be a powerful tool for restraining behavior, but it can just as well act as a supportive platform that nurtures creativity, facilitates experience-based learning, and encourages all forms of interaction and informal knowledge sharing.

With spatial design guidelines and principles, we can encourage certain types of behavior and activities in preference over others. However, the affordances of an environment are not only tied to the construction of the physical elements, they are also a mix of the surrounding culture and ways of working. Physical elements do more than just keep us warm and safe. The physical space is full of mental cues that implicitly tell us how to use that space and even how to act and behave. Considering this, it is culture and practices that finally guide our ways of working. Some environments support certain activities better than others, and therefore it can be inferred that there is a strong connection between an environment and the type of organizational culture that prevails within it.

This chapter looks into what kind of environments we need in order to support interaction and modern knowledge work, and how new practices, interaction, and collaboration can be facilitated. We describe some of the principles of interaction and community building from our own experience that has taken place at Aalto Design Factory (ADF). Even though we use learning spaces as an example, since the field we operate in is higher education, we assume and

know from experience that the essential features that support experiential learning within learning spaces are applicable to other types of organizations as well. After all, sharing knowledge and information is the most important thing and it should happen both in lecture rooms and in corporate headquarters.

## Environments for experimentation and learning

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In the field of education the need for redesigning learning spaces is based on the growing interest to develop experiential and non-theory-based learning<sup>1,2</sup>. This sets new challenges to the classrooms where learning traditionally takes place. The term experiential learning refers to the type of learning that is not theory-focused, teacher-centered, or an individual's sole endeavor but rather all the opposites of these. It challenges traditional views not only in perceptions of teaching and learning but also in interactions taking place, hierarchy, attitudes, and physical spaces<sup>1,3</sup>. The substance is no less important than before, but the focus is on how we are learning it.

Universities have started to pay much more attention to the spaces where teaching and learning take place and where people interact. This is partly since the excellence of a university is not just based on the people and quality of research but also “on the quality of the physical environment,” which influences accidental encounters, interdisciplinary interaction, the learning culture, and ways of working<sup>2</sup>. We learn best when we are interacting with each other but it is often the case that traditional classroom settings



discourage students from engaging in a genuine conversation instead of encouraging them to challenge themselves. The same applies to meeting rooms—people gather around a huge conference table and the manager sits at one end, not creating a proper atmosphere or structure for open discussion and opinion exchange. The challenge with the layout of traditional classrooms has led to a situation where the most valuable and significant conversations are held spontaneously, after the classes<sup>3</sup>. It is often after a class or a meeting that we get to share thoughts with our peers and are confident to ask the right questions, state our opinion, and clarify any misconceptions. Largely due to this mismatch of physical spaces and the desired interaction, ADF—among other similar platforms—was established in 2008. It is designed to be an informal, student-centric, flexible, open and interdisciplinary learning platform that facilitates collaboration and experiential learning.

### Social learning spaces

The shift away from classrooms and towards virtual platforms increases the role of physical space as the host and facilitator of informal learning<sup>4</sup>. For that reason, physical learning environments are encouraged to include purpose-built informal social learning spaces<sup>4</sup>. These informal social learning spaces enhance the student experience and student engagement by fostering active learning, social interaction, and the feeling of belonging<sup>5</sup> and they also act as co-working places.

*Physical learning environments should include purpose-built informal social learning spaces*

Social or informal learning happens beyond the formal settings of teaching and information sharing. It occurs when people share experiences in direct experiences and interactions with others, and when they participate in activities based around real-life problems. In such situations mentors help novices to become experts and learning is reproduced by the more experienced for the newcomers<sup>3,6-8</sup>. In order to get the most out of places of social learning, the perception of work needs to be broadened. Working does not only include individual tasks and activities that are carried out in meeting rooms or offices, it also includes discussions and knowledge sharing that happen in corridors and cafeterias<sup>4</sup>. Physical spaces are important for the social environment to develop as they act as the medium that enables informal gatherings and encounters to happen<sup>8</sup> because such spaces afford a place to be, a place to meet, and a place to learn from others<sup>3,7</sup>.

### The affordances of a space

Whenever you arrive at a place that is new to you, you will most probably look around and quickly analyze the environment, evaluate the assumed norms related to it, and adjust your behavior accordingly. This process takes place subconsciously and in most cases does not call for any further thought, even though the adjustment has a big impact upon you until you go somewhere else. For example, a quiet and calm environment like a library might make you slow your pace and lower your voice when you talk, while a busy market place might encourage you to speed up your decision-making cycle and respond to enquiries in an exaggeratedly outward and lively manner<sup>9</sup>. These affordances that we interpret from spaces are essential in guiding our behavior and ways of working<sup>10,11</sup>.

The environment we work in can have a distinct impact on how we behave. Walls and doors are necessary for managing noise levels and sustaining an optimal climate within a space, but they are also used as tools to control people's behavior. Walls separate people and reduce interaction between them, and corridors guide us towards certain places, while keeping us away from others. For example, open or closed doors send strong signals about willingness to interact with others. Well-designed offices, where these effects have been taken into account while being designed, afford serendipity<sup>12</sup>. There are many things a spatial designer can do, or that we all can do in our working environment, to support serendipity or “planned coincidences”.

The theory of affordances can be used as inspiration to design better working and learning spaces that have a balance between privacy and proximity<sup>11</sup>. Walls, doors, and curtains are essential in creating the feeling of privacy in any space as they allow people to share their ideas and talk openly with others about topics that should not be heard by all. However, they can also reduce the chances for interaction as people do not accidentally meet or bump into each other. Privacy is not the only important thing when designing great spaces for working and interacting. With glass walls and see-through doors we can enable propinquity, the feeling of closeness, while enhancing nonverbal communication and visibility. Opportunities for eye contact and nonverbal communication have been shown to have an influence on the communication patterns, cooperation, and social interactions in a space<sup>13</sup>. We all know how seeing a colleague at the parking lot when coming to work or in the corridor might remind us of an important task or spark up new opportunities.

Generally, water coolers, copy machines, and cafeterias are good examples of magnet spaces and social areas enabling propinquity and proximity. These are places that are used by all and bring people together, resulting in casual interaction and serendipitous encounters that can lead to collaboration<sup>11</sup>. The smaller the physical distance between people, the more likely they are to interact<sup>11,12</sup> and especially tacit knowledge is best shared when people are physically in the same space<sup>14</sup>. Such casual interactions build trust, cooperation, and innovation<sup>15</sup> and also increase creativity and the feeling of togetherness<sup>16</sup>, not to mention strengthen the community and feed positively into organizational culture<sup>17</sup>.

A “social workplace” is a central space for sharing information and knowledge. It is a place where social, physical, and virtual spaces are in balance<sup>18</sup>. It is built through shared rituals and practices, which increase the feeling of togetherness and belonging to a community<sup>19</sup>. Such rituals are, for example, a weekly breakfast or an informal gathering on a Friday afternoon, where people can exchange thoughts and ideas, and discuss non-work-related topics in an allowing atmosphere<sup>19,20</sup>. Hence, space that enhances interaction is not only physical but also strongly a social construction that should be also taken into account<sup>11</sup>. Physical structures can hinder or support informal interactions in a space, and similarly social designation can encourage people to participate in informal knowledge sharing or to stop that happening altogether. Social designation of the organization directs our communication patterns towards a preferred direction.



## The rules of a space

As said, the way a space is constructed has an effect on the way we behave in that specific environment. This applies just as well to working environments and homes as it does to schools.

*How to behave in certain environments?*

*What are the prevailing rules?*

Already from preschool and primary school onwards, we are taught how to act and behave in a classroom. Social norms and cultural expectations exist everywhere around us and we obey and know these rules even without written guidelines and instructions. This results from us having learned them over the course of time and through others' examples<sup>9</sup>. We have a mental model that we use for deciding how to act in specific situations and environments, thus there is usually no conflict in interpreting the right kind of behavior in places such as a classroom setting since most classrooms are very similar and all afford the similar things<sup>21</sup>. Place and normative behavior are connected, guiding us and helping us evaluate what kind of behavior is appropriate and what is out-of-place<sup>9</sup>. Being out-of-place means that a person is acting against the code of conduct instead of carrying out the expected behavioral patterns—"not matching the expected relations between place, meanings and practice"<sup>9</sup>. For example, in an environment that has been constructed in an unlikely or new kind of way, like in an experimental classroom, the way to behave might not be obvious to the users from the very beginning<sup>9</sup>. As the users are not familiar with the rules and norms of the space they can become confused, since the space seems to afford new things<sup>11</sup>.

This behavioral adaptation is also known as the

chameleon effect<sup>22,23</sup> and it is based on a series of cues linked to the environment—consisting of both the physical and the social space around us. Places do not inherently have certain natural or obvious meanings<sup>9</sup> but instead the meanings and rules are only created in a social context. It is people who give meanings and rules to spaces. However, rules in a certain environment can also act as catalysts for acting differently or atypically, as the rules are what give the users permission to act in an unconventional or nontraditional way.

The figure on the right depicts how mental, social, and physical spaces are interconnected and how it is the people—the community—who create the culture and practices within an environment, based on the prevailing norms and rules.





## Bridging physical and social space in practice: Case ADF

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While academic research focuses on building theories and analyzing existing practices, and is strongly biased towards deductive reasoning, ADF and many of its affiliate partners have acquired a different approach of starting from the problem and the practice, and building the way through research. This approach is based on the idea of exploring opportunities, having a low threshold to testing and exploring, and creating new, agile ways of working. The primary outcome of an approach like this is first-hand practical experience of what works and what does not. Experimentation and exploration in an environment like ADF revolve around trying something new, while being open and prepared to fail over and over again and learning from those failures. Sometimes the experiments are successful, in which case you might pop a bottle of champagne and continue in the direction that proved to work. But perhaps more often than not, these experiments fail, forcing you to take a step backwards and learn, reframe, and rethink.

Managing an environment's impact on behavior also calls for new types of leadership and organizational practices. Through experimentation ADF has discovered and developed a comprehensive set of policies, practices, and guidelines for operating and managing an inspirational, continually evolving environment. This set is based on a symbiotic relationship between the physical environment and the people who use it—the community. A deliberately

designed physical environment can facilitate the process of cultivating a desired social environment but only when the community is allowed and encouraged to develop its environment further.

*"We know this works in practice. We're not sure if it works in theory, but we certainly know that it works in practice!!"*

*(Prof. Kalevi Ekman, the father and Janitor of ADF)*

### Physical meeting spots designed for serendipitous encounters and "planned coincidences"

In all offices and buildings there are integrative spaces—such as stairways, corridors, escalators, and aisles—that lead and link to other places in the building. Some of these places are routes to important locations, such as coffee machines, toilets, the copy machine, or the office of a key person in the organization. These places encourage movement and are central for enabling "planned coincidences", thus they become the "interactional hotspots" or magnet spaces<sup>24-26</sup>. Obviously such magnet spaces give people reasons to come together in a certain space and interact<sup>24-27</sup>. When making decisions (regarding the physical space) that enable magnet spaces to evolve, we can facilitate interaction and increase encounters. Bringing people together is essential, but it is also important to focus on how it is done and what happens in those encounters, or as we call them, "planned coincidences".

### Kafis: a hub for serendipity

Kafis, the social heart of ADF, is a mixture of a café, an office, a kitchen, and a living room. It is located in the middle of a walkway, a central place in the

building. Hence, several people walk through or come to sit there every day. As ADF has over 3000 m<sup>2</sup> over three different floors, without Kafis it might be that you would not see many of your colleagues and other community members at all during your day. Kafis can seat approximately 30 people when packed. This makes interactions likely and keeps colleagues close.

As we mentioned earlier, rules are not only restrictive, they can also guide and facilitate positive change in action. At ADF there is one special rule: the one coffee machine policy. This means that the only coffee machine in the whole building is located at this open, central place. This gives a functional reason for most of the users of the space to come to Kafis and spend time there. In the mornings there are people queuing for their first cup of coffee and wishing good morning to each other. Throughout the day, you never know whom you might accidentally meet by the coffee machine. It is by the coffee machine that the unplanned meetings occur and strangers become new acquaintances. The coffee machine is the magnet at ADF, the reason for many people to move from their workstations and interact with other people.

There is an urban myth going round at ADF saying that the coffee machine is adjusted to brew your coffee as slowly as possible, just to make sure people have more chance to talk to each other while waiting for their dose of caffeine. We are not quite sure if this is true or not and it does not really matter. You get the idea anyway.

### The core principles of the space

- Accessibility: Kafis is accessible all the time, by anyone, open, situated along the main walkway of the building
- Purposeful: Anyone can have a reason to come to Kafis, increasing the chances of informal knowledge sharing—it is not only seen only as a cafeteria or kitchen, but also as a valid working area and a part of the activity-based spaces at ADF
- Open for use: Everyone has ownership of the space
- The place is shared: It is everyone's space, the social heartbeat of the building

### Guidelines for keeping the show running

- The "No personal servants" policy: Everyone cleans up their own mess
- Get to know strangers: Talk to strangers

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When facilitating interaction, it is good to identify hotspots that are places where many people have a reason to visit or walk by during the day. Magnet spaces afford serendipitous conversations<sup>25</sup> and increase the opportunity for interaction and, as Backhouse and Drew<sup>24</sup> found in their study on interaction patterns at a workplace, many consultations and discussions were neither planned ahead nor conducted with the person with whom they would have assumed to have conducted them. Instead, the consultations were caused by accidental encounters, which were due to the environment.



## The lobby: The open working area replacing a reception

A space does not have to be closed to serve privacy. ADF's lobby is the entrance of the building and it is not just a place through which to enter the space but also an open working area where people work alone or in groups, talk over a cup of coffee, or challenge each other to a game of table soccer. The space hosts several activities and even though it is an open space, many private conversations can take place since individual conversations blend into the background noise. However, in a space like this it is difficult to moderate the level of privacy since everyone is perceived to be open to interruptions and discussions. We have a tendency to think that a person sitting in a shared open space can be disturbed and is available for interaction<sup>24</sup>. Here, the shared ways of working and practices of the organization play a significant role since, when designed well<sup>24,25</sup>, even an open space that might not be very suitable for work that requires concentration<sup>28</sup> can afford and enable rich interactions.

### The core principles of the space

- Accessibility: The lobby is accessible all the time, by anyone, open
- Purposeful: Everyone needs to come into the space since it is the entrance of the building
- Transparency & visibility: Posters, prototypes, products etc.; the space is available for serving information and hosting conversations
- Shared: It is everyone's space—many external stakeholders join the daily buzz on an everyday basis
- Lobby shift: There is no reception or full-time receptionist but instead, there is a rotating shift amongst the active community members who man-

age the daily practicalities of the house (e.g., receive post, help event organizers, loan equipment)

### Guidelines for keeping the show running

- Get to know strangers: Talk to strangers
- Ask and get help from anyone: It is not just the official staff who offer guidance and assistance with tools, materials, or ways of working in the house—any student, researcher, or other community member familiar with the system may also offer assistance.

## Community breakfast brings people together

ADF hosts several projects, courses, and activities, and it is quite impossible to stay on track of everything. Projects that interdisciplinary student teams are tackling in collaboration with industry are at the core of ADF. These projects usually require getting user feedback, testing prototypes, and validating ideas with outsiders. But how do people get to know about ongoing projects and, on the other hand, how do the students get feedback for their early-phase ideas? There is weekly community breakfast in ADF's Kafis called Breakfast at DFfany's. It is organized by student teams or other community members in rotating shifts. Student teams organize the breakfast and every week a new team gets to choose what they serve and how they want to utilize the community to help them with their project. This informal weekly gathering is a reason for people to come together and get to know activities, people, and projects they might not get to know otherwise. The breakfast is not only a gathering for the community of ADF as it is also open to outsiders—anyone who is

interested in getting to know new people can come. The breakfast is simply a great way to start your morning, but it can also be the start of a new company and adventure. This happened to one young innovator who came one morning to pitch his idea to the rest of the community. A professor overheard the pitch and got enthusiastic about the topic and took it up as a challenge on his Product Design course. With the course the young entrepreneur was able to build a team around him and develop a new product.

In addition to having fruitful conversations with other community members when attending breakfast, organizing the breakfast is a great opportunity to gain ownership of the daily activities and get a fast introduction to the ways of working. Soon you are no longer just a user of the shared spaces and activities but also the creator of these activities.

Lately we have also experimented with new ways to increase the interaction by introducing breakfast facilitators. This facilitator can be anyone attending the breakfast. If needed, the person supports and sparks interaction during breakfast by, for example, asking the student team to pitch their project to others.

### The core principles of the activity

- Accessible: The breakfast is open for all
- Keeping things informal: The breakfast has no agenda, no formal form
- Flat hierarchy: One week it might be the students wearing the apron and organizing the breakfast and another week, the professors—everyone participates
- Purposeful: Everyone has a reason and permission to participate in the breakfast—food is vital to us all
- Co-creation with the community: The breakfast is organized with a rotating shift

- Trust and ownership: The breakfast integrates the students and other community members into the everyday life of ADF by giving them full responsibility for organizing the breakfast

### Guidelines for keeping the show running

- Get to know strangers: Enjoy your breakfast while getting to know new people
- Shared responsibility: The breakfast is a communal gathering organized and paid for by the community—the breakfast runs itself in terms of budget

Studies have found that food and drinks bring people together and opportunities for informal gatherings should be enabled<sup>8,25</sup>. If the physical space is designed well, people can also do “real work” while taking a break or enjoying their breakfast<sup>25</sup>. Hence, food can make working more efficient and bring people into important, unplanned conversations.

Several different concepts including food have been tested at ADF and have been more or less successful. The main driver for all of these experiments has been to create purposeful and valuable reasons for community members to come together to exchange thoughts and ideas, and get to know each other. The challenge however is often the sustainability; how to keep a gathering running week after week and month after month in a way that is not too time-consuming for anyone, does not take the lion's share of the available resources, and is perceived as valuable by the participants.

We have experimented with SoupsUp, a standing soup lunch concept in the lobby of ADF, Smoothie Wednesdays, an afternoon super boost from a self-



made smoothie, and with a 100 Pulla afternoon, an event where you changed your development idea into a freshly baked pastry. All of these events worked well for some time, but in the end they were too much dependent on individual champions making them work. The need and desire for gathering people at informal get-togethers has not vanished, but the key is to figure out how to make them sustainable and co-organized activities.

### The license to act differently

One of the inhabitants of ADF for several years now is the research group MIND. MIND focuses on industry-changing innovations and they are very much interested in the practices and norms that surround us. To support positive change they created a tool, a network of agents who have a license to act differently. Every agent gets an “ID card” to remind her or him about this power to choose. The main goal is to encourage people to observe their everyday surroundings and have the courage and permission to make—or be—the change they would like to see. We have implemented some elements like this to ADF, supporting non-traditional behavior in a university setting. To encourage new ways of acting, some other elements supporting non-traditional behavior in a university setting have been introduced; the Hugging Point for example. The Hugging Point is a big carpet in the middle of Kafis with a sign that authorizes one to hug and be hugged when standing on the carpet.

### The core principles of the experiment

- Safe for all: Tools for acting differently; a rule is that new ways of working must be encouraged
- The power of an example: When one person has the courage and ability to be out-of-place and act differently, others are more likely to follow the example

### Guidelines for keeping the show running

- No judgment: Be open to new experiments, to new ways of working
- Shared responsibility





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**Tiina Tuulos** (Aalto Design Factory) has been the project manager of Aalto Design Factory for years. She is involved in the operational management, everyday practicalities and community building at ADF. Tiina is particularly interested in exploring how physical space can enhance interactions and how we can facilitate change through new ways of working, new practices and new environments. Tiina has a MA degree in international business.

**Matti Hämäläinen** spent four years as the Operative Director of Tongji Design Factory in Shanghai, China. During this time he was localizing the Design Factory concept to fit the Chinese context, while also developing its operations and practices. In addition, he has experience from the Aalto Design Factory, having worked as a research manager at Aalto University and Helsinki University of Technology for years. His research focuses on co-creation and knowledge management in product design process. Currently Matti is a Free Agent and consultant operating in Finland.



*All you need is love,  
design, business,  
engineering, and...*

**PASSION-BASED  
CO-CREATION**