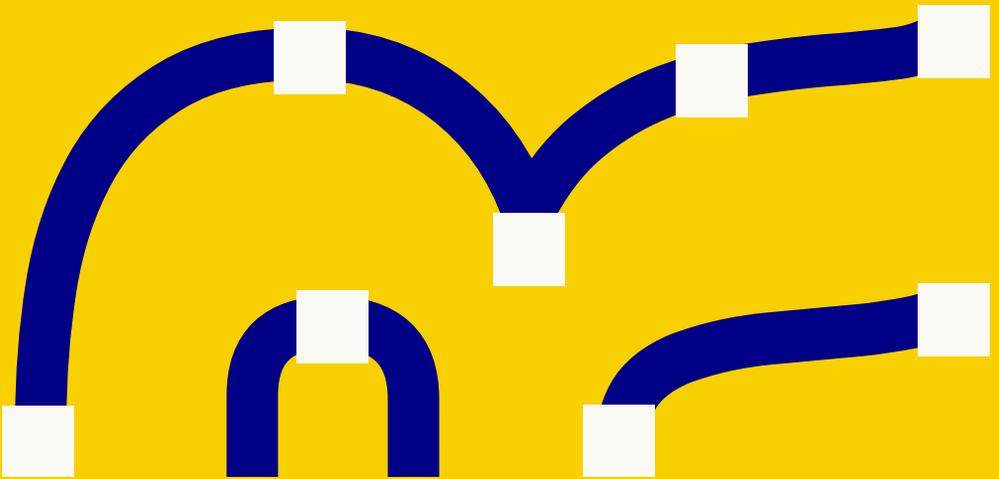# TO GET THERE: DESIGNING TOGETHER

Cumulus Conference Proceedings Paris 2018

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TO GET THERE: DESIGNING TOGETHER

Cumulus Conference Proceedings Paris 2018

Spaces of Play and Language Games

In a conversation with Fulvia Carnevale and John Kelsey published by *Artforum* in 2007, Jacques Rancière suggested that: "The fundamental question (was) to explore the possibility of maintaining spaces of play". This phrase could summarize the whole Cumulus-Paris project "together/to get there". And all the more so since he added that: "The main enemy of artistic creativity as well as of political creativity is consensus". Living, speaking and working together doesn't mean living, speaking or working within given frames and following given rules, but producing language games and accepting the inherent possibility of misunderstandings. Being together is not thinking, speaking and producing everything alike, and consensus is far from an ideal as soon as we want to create! Quite the contrary, being together means recognizing what divides and opposes us, and being able to overcome differences without foreclosing or erasing them. Therefore we have to speak about discrepancies, we have to show them. In fact, we are at a crossroads and we need to question design and its forms and functions. The Paris Cumulus conference would like to address contemporary issues through conversation and critical spirit. It aims to bring together different

design practices and theories, in order to create an open forum for debate between different points of view and practical confrontations. It should set out to recover positive disparities and pluralities within design practices, beyond classical boundaries. It should even stage moments of dissension in order to explore the possibilities of dialogue and perhaps to demonstrate a new type of porosity or permeability, or even new cultural values. It aims to recognize various forms and various degrees of the discipline in order to forge a space of play where making things together is a priority and where we can engage new social subjectivities.Beyond the questions raised by design itself, being together points to the complex interwining of languages we could share. But emphasizing language certainly does not imply emphasizing semantics or meaning in a postmodern way. Here language is to be approached from the political dimension of being together. Let's hope a conference can be an experimental engagement through conversation which allows us to smoothly shift our attention from everyday life. Let's hope it could have a catalyzing effect on the design community by opening up debate. Being together should allow new connections to be made while asking what we have in common, while pointing out similarities among supposedly polarized practices, but also while recognizing differences and stating that they can co-exist.

Claire Brunet
Head of Design Department –
Lecturer at École Normale Supérieure Paris-Saclay
President of the Scientific Committee

Dear Cumulus Members, Colleagues, Students, Friends,

We were back in Paris, the city of Freedom and Revolution, of Love and Poetry. Cumulus is constantly attracted by Paris.

We came here in 2002 thanks to the Cumulus conference hosted by ESAG with an incredible exhibition at the Carousel du Louvre called European Way(s) of Life (EWOL) as visited by over 23,000 people in two weeks. At that time, Cumulus was just European. In addition, one of the students of our member universities that exhibited in EWOL, he is today, in 16 years, the chief designer officer of Pepsi Co. His name is Mauro Porcini. It seems, based on this experience to be in Paris brings luck and broad perspectives! We came back in 2011 hosted by Strate College, after Cumulus conference in Nantes France in 2006; we were already a global association. We came again to take part in this new 2018 Cumulus conference in France organized by the four schools of Art and Design of the city of Paris, the Ecole Boulle, Duperré, Estienne and Ensaama.

The four Cumulus member universities in Paris, also known as Conférence des écoles supérieures d'Arts appliqués de Paris (CÉSAAP), were created in the late 19th Century to educate the best artisans and creators of textile, fashion, metal works, furniture, graphics, etc. adopting a cross-curricular and interdisciplinary approach; combining design with the intelligence of the hands; fostering innovation as well as increasing and updating the values of tradition and handcraft.

In partnership over the past two years within the framework of CÉSAAP, these four Parisian schools decided to welcome Cumulus back to Paris: To share their expertise, to mutualize experiences and display the results through exhibitions and presentations. Quite a brave decision....and what a challenge!

We all know how challenging but always rewarding, too, it can to organize a Cumulus conference as a single institution; we can just imagine the complexity in sharing duties and responsibilities for this demanding task among the four different institutions spread in four different locations in the city of Paris. Thank you to all the heroes and their staff for making it possible: Annie Toulzat, Josiane Giammarinaro, Annie-Claude Ruescas, Laurent Scordino-Mazanec, Etienne Périn, Claire Pinault, Claire Brunet, Laurent Bailly, Anne Barrois, Isabelle Basquin, Caroline Bougourd, Bernard Bréchet, Lucinda Caton, Lyne Cohen-Solal, Gilles Deléris, Jacques-Antoine Drouard, Éric Dubois, Mariette Dupont, Lauriane Duriez, Damien Ehrhardt, Brigitte Flamand, Marie Jonquet, Élisabeth Lafay, Natacha Lallemand, Héloïse Leboucher, Raphaël Lefeuvre, Céline Mallet, Clémence Mergy, Luce Mondor, Yves-Marie Pinel, Rémi Roudeau, Jean-Louis Soubret, Emmanuël Souchier, Apolline Torregrosa, Jean-Christophe Valleran, and all the members of staff of all four schools. This conference was a super positive and a very advanced Cumulus case study.

The title of the conference was summarizing this shared spirit and approach: TOGETHER.

The term Together deeply condenses the fundamental principle of our beloved Cumulus Association to: Do things together; design together; imagine, learn, think, seek, innovate, create, make and build together; To educate and to research together – leaving behind all that divides, opposes and excludes; creating solid and beautiful bridges between different competences, visions and perspectives, cultures and traditions. We met in Paris in April 2018 TOGETHER,

and Cumulus platform being essential to that, to create spaces and times, where and when; to help us all in a collective manner to share perspectives and expertise; to remind us values and meanings.

As in the past conferences, I liked to stress the fact that, I was there on stage alone but not serving the association alone but TOGETHER with wonderful colleagues. Starting from the Cumulus Vice Presidents Elsebeth Gerner Nielsen Denmark and Sam Bucolo Australia that unfortunately couldn't be here with us, and Cumulus Executive Board members José Allard Chile, Mariana Amatullo US, Robin Turner South Africa, Lorenzo Imbesi Italy, Ulrich Schendzielorz Germany, Xiao Yong China, Sara Hyltén-Cavallius Sweden and Rachel Troye Norway: Concluding the list with our essence of Cumulus: General Secretary Eija Salmi and Cumulus coordinator Justyna Molik both from Finland. Thanks to all their support I was able to welcome all conference delegates and contributors to these inspiring days.

TOGETHER finally means to me also to be open to the new, to the ones that are not part of our community yet: New members, new colleagues, new students, new partners.

During these days, we were welcomed new special guests:

The two Cumulus Student Ambassadors nominated by the last 2017 Conference organizer: Ms Saili Palyekar and Mr Nitish Chopra of the Srishti Institute of Art, Design and Technology, Bangalore, India. And the three representatives of Cumulus Plus+ program and coming from Brazil, Macedonia, Tunisia, who brought new horizons for Cumulus by joining this Paris conference: Mrs Polise de Marchi, architect and designer, SENAC University Center, Brazil; Mrs Gordana Verncoska, vice dean of Faculty of Art and Design, European University, Macedonia, Mr Dhafer Ben Khalifa, lecturer at the Higher Institute of Fashion Design Monastir, Tunis, Tunisia.

This conference also opened the door to 25 new Cumulus full and three associate members.

We really invite you to discover these new realities and to start including them deep in our Cumulus Family.

All TOGETHER.

Luisa Collina
Cumulus President

Dear Cumulus Members, Colleagues, Students, Friends,

Call for papers and selection procedure

We are very pleased to present the online Paris To Get There – Paris Cumulus Conference Proceedings 2018. The conference call received a great international response with over 180 submissions from more than 50 countries. 62 papers, 2 films and 1 poster were selected from a total of 188 proposals, and all contributions were double-blind peer-reviewed by the international review panel of 80 members. These papers and films were accepted for our Parallel Sessions including oral presentations.

We offered our contributors the possibility of submitting academic or professional proposals (32 academic papers – 33 professional proposals including films and a poster). We would like to take this opportunity to thank all the presenters for submitting their work and attending the conference at École Boulle, École Duperré, École Estienne and Ensaama in April 2018. The Cumulus Conference 2018 in Paris adopted a cross-curricular interdisciplinary approach which highlighted collective and collaborative interest. Thanks to your contribution and the participation of almost 350 delegates during the 3 days of the Conference, we contributed together to make otherness a positive force, and to ensure that design and this union of talents become an undeniable tool for action on reality.

Thank you!

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Designing with Our Neighbors

Connecting the Community Through Urban Gardening

Paulina Cornejo Moreno Valle

Abstract

The paper seeks to contribute to the knowledge and research on how universities can use their own resources to build bridges through design and social innovation with their surrounding communities. It is based on the case of the Social Design HUB of CENTRO University in Mexico City and its urban garden project CULTIVA, a collective initiative, based on transversal collaboration and the creation of shared value. The paper informs on the development of CULTIVA as a space for learning and social interaction in a neighborhood with a strong decline in public space and community life, and shares findings related to participants profiles, their perceptions and behavior about community life, and the effects of projects and collaborations based on mutual exchange. The research analyses CULTIVA under the frameworks of Ezio Manzini's Map of Participation, and the Social Design Pathways tool, showing different aspects of the project and its evolution, as well as its possible future pathways.

Theme: Alone
Keywords: social innovation, social design, participation, experience-based learning, community building, urban gardening

1. Introduction

CENTRO is a young and dynamic private higher education institution founded in Mexico City in 2004. It is specialized in the creative professionalization in the fields of design, communication, film, architecture and new media. Since its foundation, CENTRO has had an interest in the connection between higher education and social impact. Chairs, faculty members and students have worked together on projects that prioritize social agendas, and its graduates have become committed professionals and citizens, aware of their agency to create positive social change. As a result, undergraduate and graduate students have designed over 100 projects for solving social challenges related to health, education, fare trade, social inclusion, housing, ageing, or sustainability, among other topics.

In 2015 CENTRO was relocated in a new campus designed to accommodate its growing student body and according to the standards of LEED Platinum certification. However, the economic and social complexity of the new neighborhood led to challenges regarding the role of the univer-

sity in the community. In this new context, CENTRO formalized the creation of the Social Design HUB as a transversal coordination to all its majors, postgraduate and master's degrees. Under an experience-based learning approach, the HUB seeks to promote co-creation and collaborative problem solving (PISA, 2015, NESTA, 2016) for the designing of projects with social value that strengthen the community form different perspectives (urban, economic, social, cultural, etc.) while developing skills in students that strengthen their potential and agency regardless their chosen career paths.

One of the most emblematic projects of the Social Design HUB has been CULTIVA, an urban farming project that aims to build an educational and social space to foster capacity development (in students and neighbors), community empowerment and, consequently, the gradual impact on the generation of small ecosystems and microeconomies for the area.

2. The HUB and the Community

Universities could be providing much more brainpower to solve the problems of the communities they live in. (...) Students' wish to be better prepared for work and life. Students are well aware that not much real work involves studying solo to absorb knowledge (...). Understandably they want more real-world experience of problem-solving in teams. (NESTA, 10 Predictions for 2016: Challenge-driven universities to solve global problems)

The Social Design HUB focuses much of its time and efforts in building relationships, collaborations and mutual exchanges with the surrounding community of the campus at the América neighborhood. Along with neighborhoods 16 de Septiembre and Daniel Garza, the America is located in the west of the city, forming part of a complex enclave at the Miguel Hidalgo municipality that is flanked by two important avenues and a high speed highway. Over the past two decades this enclave has suffered the negative effects of urban renewals and the sprawl of the city to the west, letting to isolation, poor air quality, mobility problems, insecurity and the fragmentation of its social fabric. The area has an heterogeneous social composition with mixed uses, combining highly deteriorated dwellings with ground-floor retail activities (groceries, food stalls, phar-

macies, locksmiths, liquor stores, etc.). The inhabitants are mainly adults and young adults (OVIE, 2017), who do not usually participate in public or community activities.

The community has a strong deficiency of recreational spaces and public life. The very few public areas are inadequate, underused and poorly designed. A good example is the unfriendly metal fence that barriers the entrance of the Municipality's library and cultural center Faro del Saber on Sur 128 Street, at the heart of the America. An underused and neglected urban space, that doesn't provide shadow or a place to sit, despite having a privileged location in front of the market and being the largest semi-open public space in the community. Other examples are two poorly designed and installed recreational areas located in the surroundings of Sur 128 on approximately 30 m² and 40 m² of asphalt paving.

In terms of mobility, the urban interventions of the past decade to improve circulation and safety have had a negative impact in the public life. The removal of traffic lights on Constituyentes Avenue to make it a high-speed road and the construction of underpasses for cars, have isolated the community from the Chapultepec Park (the biggest one in the city) and the historical cemetery, contributing to the decline in public space and community life. The disappearance of crosswalks and the installation of pedestrian bridges, considered to be crime hotspots and only accessible through narrow and neglected sidewalks, have posed a barrier to these assets for the community.

In 2016 a collaboration of the HUB with the Postgraduate in Futures Design (Montes de Oca, 2016), organized a community workshop under the name *Journey to the Future of the America*, designed to explore neighbors' ideas about community spaces and its future. Participants agreed

Figure 1. CENTRO Aerial view and surroundings, 2016. Photo: José Jasso

Figure 2. Enclave map. America neighbourhood in red. Google maps.

that its main public space was the market, located on 128 street, which not only lacks of green or recreational areas, but has serious problems related with infrastructure erosion and lack of maintenance. They also remarked the poor presence of the Faro del Saber, the wastage of public space at the entrance and its rather unwelcoming gate. It should be mentioned that the lack of community spaces has let neighbors Bárbara and Pedro (living on 130 Street) to rent their garage space for gatherings and social events.

A more recent collaboration with the postgraduate under the name of *Time Capsule* (December, 2017) included a mix of neighbors, designers and filmmakers. Through a set of cards and a speculative design exercise, participants were invited to collectively imagine the neighborhood 20 years from now, using as a starting point the bad news related to crime and insecurity in the area, as well as accurate information on community assets and demographics. The outcome was the design of front pages of newspapers or magazines featuring possible future realities. One of the deliverables hypothesized about the rich persons form across Constituyentes (on the side of the Chapultepec Park) living over 100 years, better known as "centennials", thanks to the oxygen they would take from the America enclave.

The overall experiences with workshops and the interaction with community members suggest, not only a lack of public gathering spaces, but also poor quality of infrastructure, inconformity with the policy-making, inclusion of pedestrians (elderly populations, children, not to mention bike users), the poor role of authorities, and the high criminality in the area. All these, have contributed to corrode the social fabric, while spreading a pervasive culture of fear and distrust.

3. Conceptual framework

The concept social innovation encompasses a wide range of approaches and its definition varies according to authors and organizations. The Stanford Social Innovation Review defines it as "a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals" (Phills, et al. 2008). Likewise, Ezio Manzini (2015) considers that social innovation occurs when people, knowledge, and material resources come into contact in a new way, creating new and unprecedented meanings and opportunities.

While other definitions share the underling principle of social added value, they also make explicit reference to the empowering of specific groups and the transformation of social relations or collaborations to meet social needs (Murray et al, 2010; TEPSIE, 2014).

As there is no single definition, there is no single outcome. Therefore, social innovation can range from production process, technology, principles, ideas, part of a legislation, social movement, intervention, or a combination (Phills et al.); new products, services and models (Murray et. al); to social entrepreneurship and the activity of social enterprises, the reconfiguration of social relations and power structures, and new models of local economic development, societal transformation and system change, among others (TEPSIE).

Although social innovation is not attached to a specific field, it is triggered by the search of efficient solutions to social needs that seek lasting social change. Thus, much of the social and environmental initiatives of the last decades are social innovation processes that go beyond traditional boundaries and are based in crosscutting collaboration. It is not coincidence that much of the most creative action takes place in the sectorial boundaries of very diverse fields (Murray et. al).

In this scenario, the global city scene of the last decade has shown a growing interest in providing solutions to alleviate some problems associated with urban expansion. Alternatives have emerged in a multiplicity of green projects managed either by public or private institutions, cooperatives, neighborhood groups, collectives, schools, or any organization with economic, environmental or social purposes.

This trend has gradually demonstrated a myriad of benefits. On the one hand, it is shifting the paradigm that only farms and farmers should be in charge of food production. On the other, a growing number of studies are suggesting that green spaces can generate benefits in terms of better mental and physical health, improved social capital, crime prevention, reduction of urban heat, or better air quality, among others (WHO, 2016).

For author John Thakara (2015) the great diversity of green projects is primarily driven by necessity, and characterized by resilience, self-organization and solidarity. He cites cases of urban agriculture and self-sufficiency production, which have historically gained strength in times of crisis. For example, Cuba where the fall of the USSR led to the interruption of food flow, triggering a citizen response for local food production and its subsequent regulation. It is revealing that 12% of the urban area of Havana is dedicated to urban agriculture.

In this regard, another interesting example comes from Yue-man Yeung (1983). During 1980 a successful community garden program took place in the city of Manila at a 1.5-hectare located between two squatter communities at Matalahib neighborhood. The project succeeded with the contribution of different stakeholders (local authorities, university, experts and a community group) and for over a year, the garden produced up to 80 percent of the needs of 400 families and was visited by locals and externals. The experience suggested that urban gardening could serve as a tool for urban revitalization and have a positive effect in the reduction of exclusion, gang fights and malnutrition. Unfortunately the project ended when the government sold the occupied land to developers.

A more recent case was seen in in Spain during the last decade, with the exponential growth in the number of urban gardens. According to Gregorio Ballesteros (2014) these have increased from 2,492 in 2006 to 15,243 in 2014, a phenomenon he attributes to both a global trend and the economic crisis.

Either as the result of economic crisis, increasing awareness or global trend, it is very significant that 25–30 percent of world's urban population is growing food locally (Urban Agriculture in the Developing world, 2013). Worldwide, more and more cities are moving towards greener agendas with the adoption of diverse models and policies. Just to mention a few: in 2015 mayors form more than 100 cities of the world signed the Milan Urban Food Policy Pact, to coordinate efforts around food systems and urban agriculture; Vancouver plans to become the greenest city in the world by 2020 through a plan that includes the production and consumption of local foods; Copenhagen, the European Green Capital of 2014, requires new buildings to include a green roof; Paris recently passed a law to invite citizens to grow food free of toxic pesticides in any place or public space (sidewalks, parks, walls, facades and roofs); San Francisco is promoting the agricultural and commercial activity in residential, commercial or industrial areas; Medellin has a Public Policy on Food Security, Food Sovereignty and Nutrition, which includes agricultural production in the city; Cape Town has a Urban agriculture policy which promotes food security and aims to build social capital by specifically supporting female farmers.

In the local context, Mexico's City government has made numerous efforts to promote the creation of green roofs, orchards and urban gardens. In 2016, the congress passed the Law of urban gardens to encourage food production in the city. According to an urban and periurban

agriculture report (FAO, 2014), Mexico City is one of the ten Latin American cities that stand out for their urban agriculture. Further steps are being taken with the announcement of "Espiga", the largest urban garden in Latin America, and with the plans to install 11 orchards in seven housing units in the city (FAO, 2017).

Urban gardens not only provide benefits as regards of food production, but also can contribute in the sense of wellbeing and in building stronger communities. A recent study (Catell, et al., 2017) noted that sociability and face-to-face interaction in spaces could give relief from daily routines, sense of community, opportunities for bonding ties or making bridges, and influence tolerance. Likewise, other studies have pointed out that green spaces are linked to the creation and strengthening of social networks, the exchange of information, and the increase in social connectivity and collective pride that can inspire community for other improvements (Wolf & Rozance, 2013).

In this context, Blewit (2015) points out that poor quality built environments can affect the physical and mental health and trigger anxious and aggressive behaviors in contexts commonly associated with crime, disorder, noise, traffic, and pollution, while relaxing and peaceful urban green areas can restore the sense of well being of the inhabitants. According to Cattel et al. (2017) the quality of a public space is commonly perceived as a measure of the quality of urban life.

Regarding security issues, a study of the University of Pennsylvania (2012) suggested that neighbors living near greened vacant lots felt safer, while incidents of police-reported crimes seemed to decrease (Garvin et al, 2012). Previously, a nine-year period research (2011) observed the impact of the Philadelphia LandCare Program, concluding that the greening of vacant lots could result in the decrease of armed robbery and vandalism and the improvement of quality of life among residents.

Whether from an organization, movement, educational institution, design agency or artist, there are a myriad of social innovation projects happening around the globe focused on urban agriculture and green infrastructure. Universities are no exception on these issues and have given rise to projects such as COLTIVANDO, a collaborative productive garden developed by designers and community as part of an educational and research initiative of the DESIS Lab Polytechnic of Milan; Grow Dat Your Farm in New Orleans, a collaborative farm incubated by Tulane University and the Community Design Center of the School of Architecture, which seeks to motivate young people from different contexts to

create environmental change through a more just and sustainable food system; or the Dronsife Center of Drexel University in Philadelphia, a neighborhood resource which gathers knowledge and expertise of local partners and hosts activities for Drexel communities and neighbors, including a community vegetable garden.

4. CULTIVA: a bridge for collaboration

The HUB shares the theoretical and methodological approaches of Ezio Manzini (2015) regarding design for social innovation, nevertheless it should be noted the existence of a conceptual distance in terms of his understanding of social design, considered as a welfare practice, linked to helping marginalized populations or users that can't afford design services and, therefore, providers must do it motivated by ethical principles and under charitable schemes.

For Ezio Manzini design for social innovation "entails a sociotechnical transformation driven by and oriented towards social change" and occurs through a social conversation or "co-design" between different actors interested in achieving the same result under an innovative approach. According to him, design experts should be able to guide and feed the conversation of the co-design process, through a dialogic capability and supported by their creativity and culture, keeping in mind that they are making things happen as part of a design process which they support but can not control (2015). In this line of thought, Manzini states that more and more people are rediscovering the importance of collaboration and that community gardens are an excellent example of places where, in addition to creating more and better green areas, its possible to make friends and build community.

This said, the CULTIVA urban garden initiative is a complete new project developed under a co-designing approach and oriented towards social change. An initiative primarily aimed to promote networking, exchange of information, knowledge and ideas within the extended community of CENTRO (mainly neighbors, students and university staff). CULTIVA is the result of combining people, ideas and practical design tools and creativity from the design context, in order to align different efforts. Collaborations range from the master gardener of CENTRO, to undergraduate students of Industrial Design, Fashion Design, Marketing, Visual Communication, Digital Media, Interior Design and Film, who have worked together in several aspects of the initiative (naming, visual

identity, DIY orchard modular system, workshop contents, booklets, posters, social networking and even short videos for its promotion), as well as graduates students from the Master in Design Studies.

Objectives:

- Promote experience based learning and collaboration.
- Reach and engage the community through urban gardening workshops.
- Promote the creation of orchards and green areas, which could bring social benefits and support local micro economies.
- Build links, share and exchange knowledge to encourage the development of a more integrated and supportive community.
- Combat disinformation regarding community issues.

4.1 Project Design

CENTRO's campus is a Platinum LEED certified building with specific attributes that must be kept according to its original design. Despite the presence of beautiful roof gardens and green areas, the installation of anurban garden posed a challenge for the HUB, due to the building's design and the lack of available spaces. In 2016, the research for the bachelor's degree thesis in Industrial Design of Cristina Espinosa (Verde Raíz, 2018) proposed a DIY modular orchard system for home use that could help deal with the lack of green areas in the community, the limitations of space in homes, and the high costs associated with urban gardening infrastructure. The system was adopted by the HUB as a first step in the creation of an orchard garden. Espinosa's idea came while coursing seventh semester, where she was strongly inspired by the Social Design mandatory course, where students reflect on the potential effect of their practice, and develop projects for and with the surrounding community under a collaborative approach.

Her research was supported by faculty, students, neighbors and the master gardener of CENTRO, Vicencio García, who not only contributed with knowledge and feedback on different topics (material strength, design, functionality, types of crops) but in the testing of the prototypes in different spaces and conditions over time.

Figures 3 and 4. DIY Module with connector produced through a plastic injection moulding process. Social Design HUB, 2017.

Figures 5, 6, 7. CULTIVA demonstration of crate assembly and D.I.Y system. Social Design HUB, 2017.

DIY Model

The DIY modular orchard sisytem is based on 45 × 30 cm polypropylene plastic high-density crates with 15–30 cm depth (usually reused and bought at very low prices at local markets) depending on the type of crop that will be planted. With the addition of plastic and tape the crates can be sealed inside to avoid the leakage of water and substrates. These low cost crates are highly functional due to their strength and lightweight and because they do not require major modifications for assembly. (See figures 3, 4, 5, 6, 7).

To support the crates in different heights, 7/8" wood sticks (broom sticks) are assembled on its corner-holes. Wooden dowels are also insert-

ed through the sticks, attaching the crates at the desired height (leaving space for ventilation, irrigation, care and growth). Maximum dimensions are 30 x 40 x 120 cm. The overall cost can range from $50 to $85 pesos forcrates and sticks, and around $120 pesos including shade net, plastic, substrate and seeds.

While this is its simplest mode and it has proven to work, Espinosa developed a connector plastic piece aimed to give more stability to the structure, provide support to the base and connect the sticks. First prototypes were produced through a plastic injection molding process and are currently being tested at CULTIVA and at a neighbor's orchard. While this solution might result in higher costs, 3D printing could be an alternative for giving the DIY modules more strength and stability in the long term.

4.2 Workshop Delivery: From Product Design to Community Engagement

After initial tests and adjustments, the prototype for the DIY modular orchard system became the foundation of the pilot project CULTIVA. This initiative of the HUB aimed to offer the community basic knowledge and tools for starting their gardens. To that end, the master gardener along with a group of social service students (Mexico requires all undergraduates to complete 480 hours of social work in order to earn their degree) planned a workshop under a theoretical and practical approach, which required the gathering of samples in the field, and the design of materials such as the pest and disease control instruction booklet for participants (see Fig. 10).

The first pilots of CULTIVA workshops were delivered to neighbors and CENTRO's students and staff in Fall 2016 by the master gardener with support of social service students. Recovery rate was $100 pesos in exchange for the workshop and materials, which included a simple modular orchard kit (plastic crate, substrates, seeds, wooden sticks, labels). Participants were organized in two groups in order to work for three fortnightly Saturdays on four-hour sessions for a total of 16-hours. With the workshops, the HUB established that materials should be purchased at the local market to support neighborhood economies.

CULTIVA workshop syllabus	
Day 1	Self-introduction of participants to the group Types of vegetables, orchard organization, places and plots, distribution, types of seeds, sowing, planning, growing beds, types of soil. Practice: creation of personal mini garden.
Day 2	Germination, types of germination, planting trays, planting season Practice: preparation of seedlings and germinating trays, preparation of seeds
Day 3	Transplants, rooting, composting, seedlings and care. Practice: Transplant a variety of vegetables, medicinal and aromatic. Rooting: stevia, steam, mint, etc.
Day 4	Botanical extracts, natural cure for pests and diseases Practice: identification of pests and diseases on plants and vegetables, preparation of botanical extracts

Table 1. CULTIVA Workshop Syllabus. CENTRO.

Throughout the workshop, participants have a theoretical-practical experience that allows them to learn the techniques and replicate them elsewhere, while observing the process of growth in their own DIY orchards. Each session is open for constant feedback and questions, and includes a 20–30 min coffee break, to mingle and network.

At the end of the 16-hour, participants receive a certificate of achievement and celebrate a gathering (with some fresh herbs harvested from the gardens) that often brings together different groups of CULTIVA.

4.3 Results

The pilot was launched in 2016. The two groups had an attendance of 15 and 17 respectively. During the closure and final gathering (that brought together both groups) qualitative assessment surveys with open-ended questions were applied. The aim was to get feedback, contact details and other demographic information, while gathering opinions related to workshop expectations, previous knowledge on the topic, what they liked most about the experience, as well as any change of perception (good or bad) in relation to CENTRO. Findings were obtained from 24 responses (22 from neighbors and two members of CENTRO) with a large predominance of female population (87%). It is important to mention that 25 percent of participants were missing in this final activity; therefore results might vary slightly.

Figures 8, 9. Configuring crates and sowing seeds. Social Design HUB, 2016.

Figures 10, 11. CULTIVA workshop. Plagues and diseases activities. Social Design HUB, 2017.

Figures 12, 13. Workshop sessions. Social Desing HUB, 2017.

Participants profile

Age		Gender	
Under 15 years	3	Female	21
15–24 years	4	Male	3
25–34 years	0		
35–44 years	5		
45–54 years	7		
55–64 years	2		
65–75 years	3		

Most liked

Representative answers to the question: What did you like most about participating in the workshop?

> We had the opportunity to put in practice the planting; all queries were solved, and all the topics were interesting. Lizbeth Castellanos, 43 years old (CULTIVA Workshop Survey, 2016).

> Sharing with the neighbors and the instructors, in addition to learning. María de los Ángeles Cervantes, 75 years old (CULTIVA Workshop Survey, 2016).

Of the 24 responses, 15 agreed that what they liked most about having being part of the workshop was practical learning, while seven said it was the sharing and / or meeting of new neighbors. In five cases the answers were combined, referring to learning and / or sharing with neighbors as a secondary topic.

Perception about CENTRO

Representative answers to the question: Did attending this workshop change in any way (positive or negative) your perception of CENTRO?

> Yes, CENTRO is interested in our community, in its growth and improvement. Ana María Montes de Oca, 61 years old. (CULTIVA Workshop Survey, 2016.)

> Yes, I like to come to CENTRO more and more. Thank you CENTRO! Irma Patricia Hutrión, 55 years old. (CULTIVA Workshop Survey, 2016).

All of the respondents (24) indicated that their perception of the university changed for good, mentioning topics like the friendliness and disposition of students and staff, or the debunking of false claims regarding the university. For example, when CENTRO opened its campus, people sparked rumors on the high water consumption of the building, causing discomfort due to the water scarcity in the community. In response, CULTIVA workshops included a guided visit of the building, its green roofs and an explanation of the water recovery and recycling systems. Thus, participants were able to verify that the building mostly consumed collected rainwater and had nothing to do with the water scarcity problem of the neighborhood.

It should be noted that 13 respondents (54%), affirmed they have not had previous contact with CENTRO.

Perception about the community and new contacts

Representative responses to the question: Did attending this workshop allow you to meet new neighbors and / or change your perception of the community?

> Yes, I met valuable people and I learned that our community is not only what we see and judge. Meet and know our neighbor's is good. Elizabeth Torres, 44 years old (CULTIVA Workshop Survey, 2016).

> Yes, the neighborhood tends to have bad reputation, with this and other projects you are inviting the community to show that there are people who are not as the other people think. Fernanda Segura, 23 years old (CULTIVA Workshop Survey, 2016).

Hundred percent of the participants in the survey responded that they met new neighbors. Additionally, some mentioned that these activities favored the change of perception about the community and its inhabitants.

On this regard it should be noted that informal conversations, Facebook posts on CENTRO's networks and interviews with students and experts at the university about CULTIVA and other projects of the HUB, suggest a change of perception for good in both directions. When the campus first moved to the America neighborhood, the rumors of insecurity and the unfamiliarity of the place, contributed to show prejudice against the community. Likewise, the building of a private university led to a feeling of rejection in some neighbors, who mistakenly-believed the university would take its water supply and bring along other problems.

During 2017, the CULTIVA workshops divided the survey in an entry and an exit questionnaire. This made it possible to gather contact information in the first part, and anonymous feedback on their experience in the second. Both parts contained open-ended questions, the first one, regarding expectations and how participants learned about the project, while the exit one, asked about changes in perception about CENTRO and the community (for good or bad), if the workshop helped in getting to know new neighbors, or if it met their initial expectations. It is worth mentioning that the average rate of missing participants per group was 15 percent, which might result in a bias. The respondents (57) revealed very similar results to the previous findings: the wide age range of participants (7–76 years); the large proportion of female population; the level of satisfaction with the practical component of the workshop; the meeting of new neighbors (reported affirmative in all responses except in the few cases of external participants).

Additionally, the survey incorporated the open-ended question: Do you usually participate in community activities? Eighty to ninety percent of respondents in four editions of the workshop during 2017 reported they did not. Special attention should be given to the fact that the very few neighbors participating in other community activities are persons attending Senior Activity Centers or the Cultural Community Center Faro del Saber.

By the end of 2017, CULTIVA workshops had reached seven editions and 98 participants between ages 7 and 76 years old. The group sizes varied from 7 to 25 persons including students, university staff and mostly neighbors, who were invited through word of mouth referrals, street outreach, posters, Whattsapp and social networks (HUB, CULTIVA and more recently CENTRO).

CULTIVA has had impacts that are difficult to measure and quantify, but that are very important for the goals of the Social Design HUB. For example, about 25 to 30 percent of the participants continue collaborating in activities and workshops and many of them have become close friends among them. Some other participants are business owners in the area (ice cream shop, hardware store, street vendors, etc.) that have strengthened their relationships with the university and other members of the community, helping them grow their customer base. Another example is the case of neighbor Guadalupe Mejia, a close collaborator for the design and testing of the DIY modular prototype, who has taken part of many workshops and activities and has become a provider for small and medium sized catering services at the university. Guadalupe has also

delivered a couple of workshops for students and neighbors related to food and tradition as part of the Day of the Death activities.

4.3 Improvements

The CULTIVA project was officially launched in Spring 2017 as an experienced-based learning permanent initiative to foster exchanges and community cohesion. Over the year, and with the collaborative efforts of outside experts, students and neighbors, CULTIVA was able to expand in different ways:

Figure 14. Germinating create planted by participants to provide seedlings to the next CULTIVA group, labels and identifiers. Social Design HUB, 2017. **Figures 15, 16.** CULTIVA, succulents and pots, 2018. Social Design HUB.

Figures 17. New CULTIVA settings in an underused space. 2018. Social Design HUB.

Continuing education: due to the demand of external people the workshop was incorporated into the continuing education program, offering a few spaces for outsiders at its real cost (recovery fee is a privilege that must be kept for community members, students and staff, all earnings from other external fees are used to sustain the program).

- Increase in recovery fee to $350 pesos: after the pilot, it became clear that people was willing to make a higher and more realistic exchange for the workshop. This is important, since the aim of the HUB is to avoid charity and encourage mutual exchange.
- Logo and identity design: two undergraduate students from Marketing and Visual Communication undergraduate degrees, respectively, made the proposal for the logo to the group and refined it until reaching the final identity. This was applied to printed materials, tags, social networks, etc.
- Production of succulent plants: the yearly celebration for teachers included a present consistent in a small baby succulent taken from the green roofs and planted on biodegradable pots with the tag of CULTIVA and care instructions. Gradually, other areas of the university started asking for plants and soon the productive capacity was exceeded.
- Expansion to a new site: in 2018 with the help of social service students from Fashion and Textile Design, Interior Design and Industrial Design, CULTIVA will expand towards an underused area of the university in order to have a permanent site for production and teaching.
- Workshops and activities as exchange: CULTIVA delivers free one-day practical sessions where volunteers receive knowledge and plants in exchange of help for transplanting plants in small pots.
- Learning space for regular classes: CULTIVA launched collaborations with faculty members who bring their class to the orchard area in order to learn and experience the project, while reflecting on innovations that could add value to it.
- Toolkit for community gardeners: visual and written tool for printed and electronic distribution that will allow sharing the contents and methods of CULTIVA workshop under a free license. Contents and design are being developed in collaboration with social service students.
- HUB day: every Wednesday the HUB features a special open activity related to a different workshop. Therefore, once a month CULTIVA followers can learn about topics such as medicinal plants, fruit trees, seed banks or have an open conversation on sustainable issues. Faculty, external experts, students and neighbors can be invited to guide the session.

5. Ezio Manzini: Participation Map

As mentioned before, according to Manzini design for social innovation entails the physical and social dimensions of design (the sociotechnical), which is the designing of new products or services that are oriented towards social transformation (2015). In line with this approach, the CULTIVA project considers these coexisting dimensions. First, in the design of a physical product by reusing plastic crates and wood sticks (the modular DIY system) to solve the problem of space for urban agriculture; and second, because its driving force is the potential social and systemic impact in the surrounding community of CENTRO.

To deepen the reflection on the levels of participation and interaction, as well as in the existing flows between participants, the reader will find an analysis of the development stages of CULTIVA, according to the quadrants of Manzini's Participation Map (see Fig. 18).
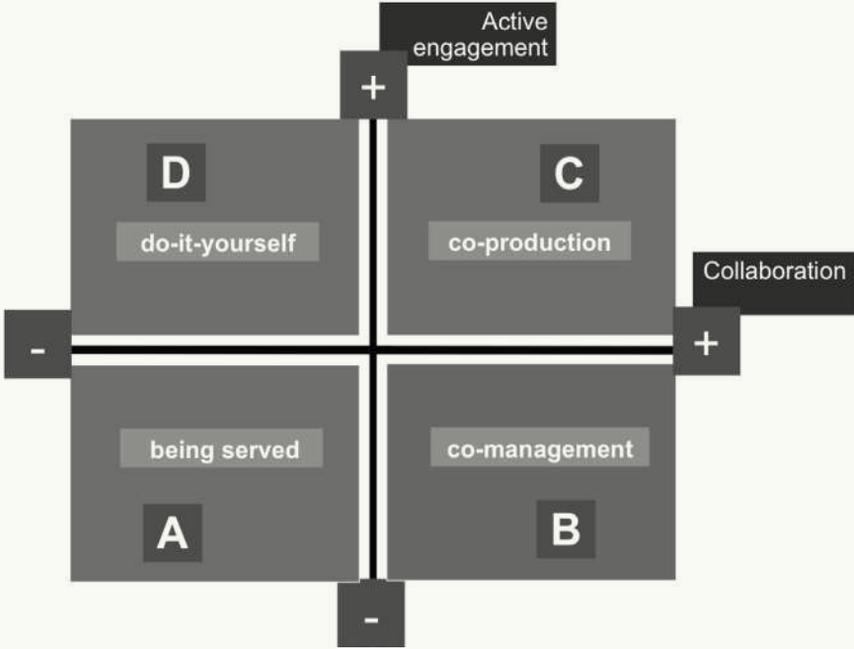

Figure 18. Ezio Manzini Participation Map

CULTIVA development stages:

Quadrant	Feature	Applied to CULTIVA
C Co production	High relational intensity and strong link between the parties	The university and the HUB function as the base organization in charge of coordinating the efforts of the participants (faculty, students, experts, neighbors). Collaborators need to work side by side in order to achieve significant results.
B Delivery	Low participation of users in terms of design and operation	While the attendees (primarily neighbors) are active participants who take their own decisions regarding the design of their crate and crop selection, and share knowledge and experiences of their own plants and soils, their most active role is the planning of the final gathering. High relational intensity and weak links are the common feature, that is, once the four sessions are taken, it does not require much in terms of time and energy, or future commitment by the assistants.
D Replication	Do-it-yourself	The DIY method and the contents learned in the workshop are designed to adapt and be replicated in a personal orchard that can fit multiple needs. The fact that four seniors form the Cooperativa de Vivienda de Palo Alto (a housing cooperative nearby) interested in building a community garden took part in the fourth edition of CULTIVA, opened up the possibility of transferring the knowledge to a different community.
A Not applicable	Being served	

Table 1. CULTIVA stages of development.

It should be noted that evolutionary trajectories have been observed throughout the CULTIVA experience. This is, an average of 30 percent of attendees tend to increase their participation and engagement with the university while enrolled at CULTIVA and afterwards, which in the matrix is equivalent to moving from quadrant B to C. Despite the creation and delivery of new community programs at the HUB, the CULTIVA workshops and activities remain the first point of contact for most neighbors.

RANGE OF EXPERTISE brought to bear on the project

	Individual (designer) A lone person or discipline	Interdisciplinary (team) A team made up of the necessary expertise	Cross-sector (group) Requires cross sector participation for ideation and execution
Cultural (transformaton) Changing the attitudes and behaviours of a community or organization			Create partnerships and transform vacant spaces in the community (including the Faro square) in green and productive areas for neighbors. Promote urban agriculture and exchange.
System (innovation) Altering an existing system, or creating a new one, to deliver a better solution	Replace welcome gifts for new students with plants from CULTIVA, produced in-site with the collaboration of students and neighbors.	Create a network of urban gardeners on plots, balconies, rooftops or any free space, who are trained and oriented according to their needs through CULTIVA.	Offer workshops of speculative design aimed to deliver proposals for public and green spaces. Empower neighbors and submit proposals for the participatory budgeting.
Stand-Alone (Intervention) The introduction of a discrete product or service	Design of a modular DIY orchard system that can be assembled with reused plastic crates and wood sticks.	Comprehensive workshop based on the DIY modular system and a theoretical-practical course, designed and delivered in collaboration with master gardener, industrial designer and social service students.	

SCALE OF (designer's or project's) ENGAGEMENT

Fig. 19. Pathways in Social Design, 2013. Winterhouse Symposium for Education and Social Change. Licensed under Creative Commons Attribution.

6. Design Routes for Social Innovation

The Pathways in Social Design Matrix is a tool proposed in 2013 by a group of experts at the Winterhouse Symposium for Education and Social Change. It seeks to map the terrain, stakeholders' involved and potential impacts of social design projects. As its description states, it can be useful to help guide an initiative, reveal the participants, partners, resources, and required skills for action, scales of engagement, and possible outcomes for a given challenge.

The matrix allows the analyzing of projects in light of their real or potential impact. In the following section, the method is applied to CULTIVA, through the review of past and present stages, and by projecting some future and desirable scenarios in the long term.

Stand-Alone / Individual
The intervention is the prototype designed by student Cristina Espinosa as part of her bachelor degree thesis dissertation in Industrial Design.

This mostly considers the technical aspects of the proposed D.I.Y. module, an idea she was working in before collaborating with the HUB.

Stand – Alone / Interdisciplinary
CULTIVA's main component is a comprehensive workshop based on the DIY modular system and a theoretical-practical 16-hour course that was co-designed and delivered by a variety of participants, who contributed with their experience, knowledge and skills.

System / Individual
The HUB proposed to give plants as a gift from the university slowly replacing welcome gifts by grown in-site plants from CULTIVA. This is possible through the collaboration of social service students, externals and neighbors who, in exchange, receive a brief workshop on transplantation and plants.

System/Interdisciplinary
In the medium-term, it would be desirable to consolidate a network of urban farmers cultivating on plots, balconies, rooftops or any kind of free space. Farmers would be trained by CULTIVA and advised for solutions according to their specific needs. The network would have a social positive impact through the strengthening of community relations, the production of a variety of vegetables and fruit trees, the reduction of urban heat island effect, the air quality, and the overall satisfaction and communication among neighbors.

System // Cross-Sector
In collaboration with the postgraduate in Future Design, the HUB has been collecting information and opinions on critical issues for the community, among which, the lack of green and public spaces rank very high. The intention is to offer a series of workshops on speculative design aimed to deliver proposals for the creation of green and public spaces in the area, and invite neighbors to submit results in the participatory budgeting, which has very low participation rates.

Cultural // Cross-Sector
In the long term, it would be desirable to adopt a collective impact approach and seek the combination of efforts of different stakeholders in the area (universities, public and private schools, private hospitals, etc.)

working towards common goals (Kania and Kramer, 2011). This would include the recovery and transformation of vacant lots and other potential spaces into green and productive gardens, under a low-cost and collaborative design scheme to make it replicable. The initiative would be aligned with recently approved law on urban farming in Mexico City, and could benefit not only the production of local food and the image of the neighborhood, but the social relations, the sense of trust and engagement, and even the perception of security in some areas.

7. Conclusions

This paper analyzed the creation and development of CULTIVA as a social innovation tool, designed for building bridges between CENTRO university and its surrounding community. The results have demonstrated how with very few material resources, and even lacking of a physical green space, it is possible to launch an urban gardening project that can result in a learning experience, and in a space for social interaction and knowledge exchange in a very complex area of the city.

At the close of this paper, the CULTIVA process, including the research phase for the development of the DIY module, was 16 months old. The evidence and feedback obtained through the past seven editions confirm the relevance, interest and viability of the initiative. There are good reasons to believe that the effort of working with the community through CULTIVA can be a mutual advantage for the university and the community.

Some benefits are:

- The possibility of developing solutions to real social problems (experienced-based learning).
- The collaboration and exchange between students and users.
- The gathering of information and feedback regarding community issues and its possible solutions.
- The building of trust among neighbours, students and staff.
- The promotion of community services that can solve needs for the university.
- The support of local economies (most of the materials used in CULTIVA, and other workshops of the HUB are bought in the local market).

A valuable lesson of this experience is the fact of being based in student's research on community needs and how this initial idea was able to escalate into a collective project. This suggests that designers interested in social innovation should always bear in mind the complex layers of collaboration needed to be effective and, of course, always seek expert and community guidance (which in a way are the only experts in their own problems).

As far as the social sphere is concerned, informal evidence and information gathered through the surveys, suggest that although participants do not usually take part in neighborhood group activities (mostly because they are inexistent), they have been receptive and open to collaborate. This is, some persons are willing to break the apathy and the dominant patterns of behavior to be part of this initiative. In this sense, it is not unreasonable to aspire in the medium and long term, to a gradual cultural change in the behavior of more and more people, who will gain trust and empowerment, while working together in the recovery and preservation of their community.

Finally, it must be noted that the use of Participation Map and the Pathways for Social Design, are not only relevant for a better understanding of CULTIVA and its possibilities, but also for the reflection on the usefulness of these type of instruments that tend to remain underused. It is important to emphasize that CULTIVA is an open project, based on the creation of shared value, and built on crosscutting collaboration and co-design. Therefore, ideas, findings and feedback of different people in the coming months will be crucial to define the achievements and future direction of the project.
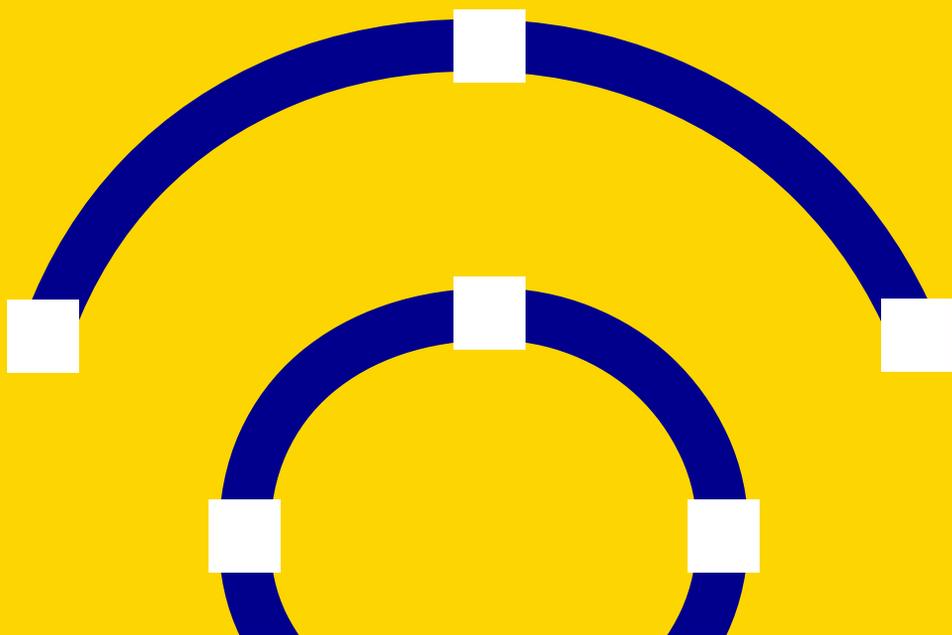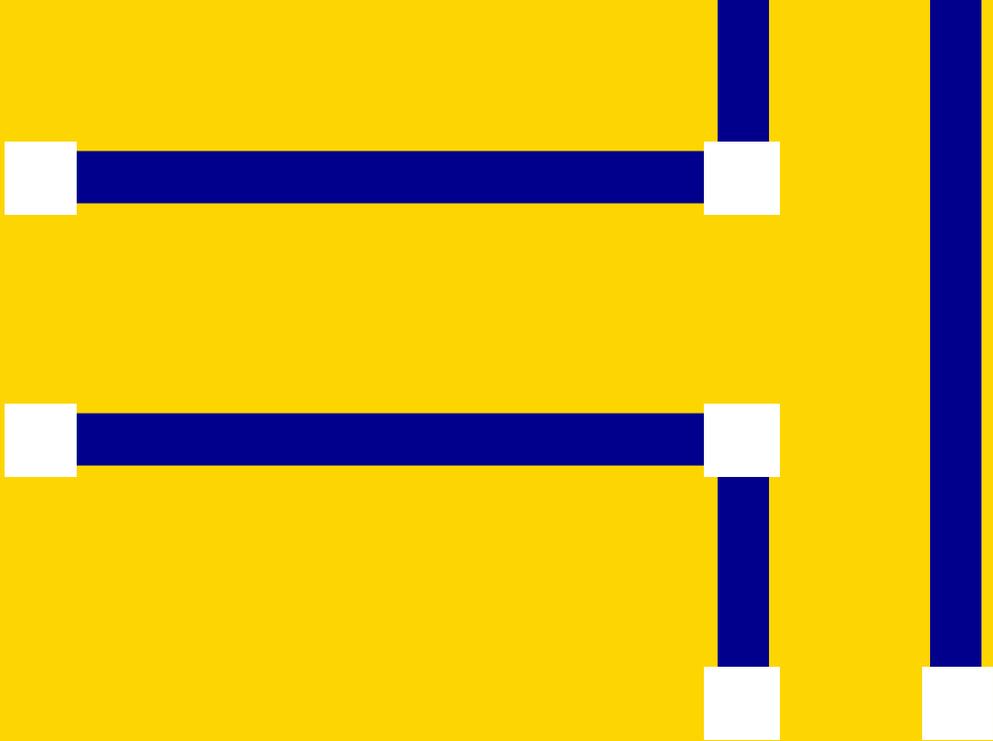
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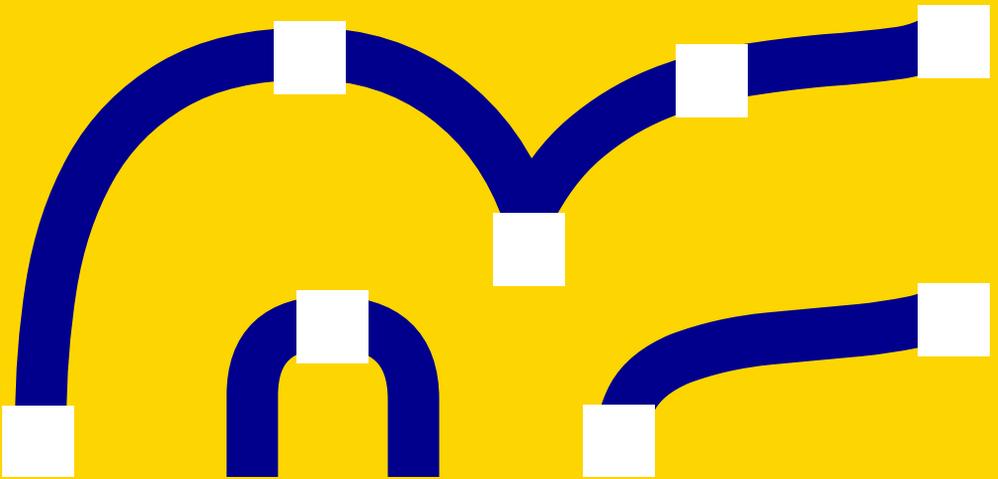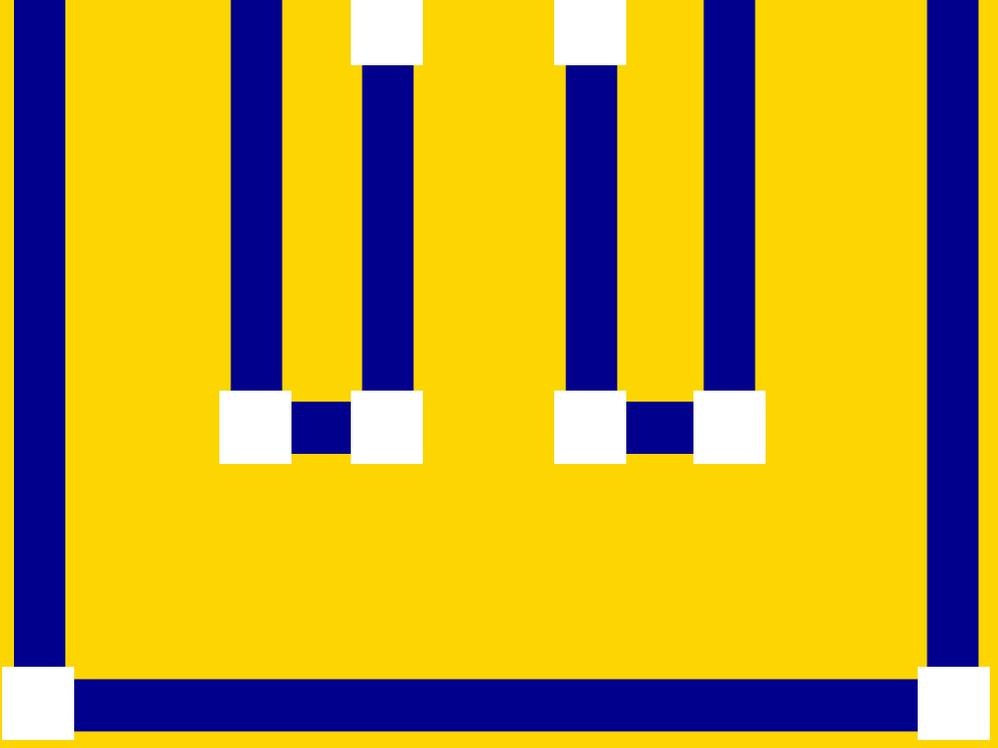pcornejom@centro.edu.mx

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