STRATEGIC DESIGN RESEARCH JOURNAL

# Design amid Emergency

Karine de Mello Freire [a]* | Carlo Franzato [a] | Bruna do Nascimento Remus [a]

[a] Universidade do Vale do Rio dos Sinos, Programa de Pós-Graduação em Design, Porto Alegre, Brasil
* Corresponding author: kmfreire@unisinos.br

## ABSTRACT

This article presents the process for the "Design of services under the COVID19 emergency social protection plan", drawn up by a team of researchers and designers from Porto Alegre in collaboration with the Porto Alegre City Government, and directed at the provision of essential benefits to homeless and other vulnerable people during the pandemic. The process was developed in an unprecedented way for the designers involved: without prior notice, within very short time frames and completely remotely, using only digital platforms. As such, the process was developed to respond to the emergency and amid the emergency. In this regard, the objective of the article is to discuss how to design amid emergency. The experience was guided by the methodological principles of action research and research through design. In addition to presenting the design results: these being solutions aimed at the short, medium and long term, this article highlights the need, even in these circumstances, to aim for the prizing of difference, the suggestion of alternative views, social innovation, the systemic transformation of society and sustainability.

*Keywords:* Cities, COVID19, Emergency, Social Innovation, Strategic Design.

## 1. INTRODUCTION: DESIGN FOR EMERGENCIES AND DESIGN IN EMERGENCIES

Design and emergency are terms that have often been connected to each other by design culture. Usually the relationship carries with it design's contributions to facing emergency situations, such as those related to natural disasters or wars, and the consequent humanitarian crises they generate. The designs in question are drawn up *ex-ante*, in preparation for possible emergencies, such as those submitted for the so-called "Housing for all" ideas, promoted in 2008 by Triennale di Milano, which summoned designers, architects, engineers and other inventors for the challenge of designing an emergency housing module (Irace, 2008). Additionally, there is the possibility for designs drawn up *ad hoc* and *ex-post*, to tackle the effects of a specific calamity, as is being demonstrated currently by the proliferation of designs aimed at facing the COVID19 health crisis and its socio-economic effects. In this regard, see, for example, the "Design Emergency" initiatives, developed by Paola Antonelli and Alice Rawsthorn (2020), or "Design for Emergency", developed by Sara Colombo and Paolo Ciuccarelli (2020). In order to explore the relationship between design and emergency, in addition, there are also interesting cases of speculative design (Franzato, 2011, Dunne, Raby, 2013), which, in a way similar to science fiction, survey for apocalyptic scenarios, or even pandemic or post-pandemic scenarios, as in the case of the "In case of emergency" exhibition (Brunswick et al., 2017).

The aforementioned initiatives focus especially on the results of the design process, as repeatedly occurs when design is exhibited to industry operators and to the general public,

not on the process itself. The resulting artifact, design, prototype or product is shown, with the aim that the perceptions of the presented design processes may reverberate throughout the discourse of design and society as a whole, or even may be continued to be reproduced. The design processes allowing for the achievement of such results are less demonstrated. Such processes are worked on in the context of criticism and the development of design methods. There is wide-ranging literature on emergency design, inquiring into the dynamics of emergencies, describing their contexts and, lastly, suggesting topics deserving of attention in order for existing design methods to be applied to this challenge, such as user-centred design (Frishberg, 2005), co-design (Liegl, 2016), design inspired by biomimetics (Trotta, Valdés, 2016), participatory design (Del Gaudio, Franzato, Oliveira, 2016), universal design (Gjøsæter, Radianti, Chen, 2018), social design (Farrington, 2019), and others.

The distinct situation in which the design community finds itself today in confronting COVID19, however, may allow for another approach to the criticism and development of design methods. Globally, the pandemic has limited most, if not all, human activities, including design, while giving rise to an extreme need for design in order to reshape these same activities and to devise solutions to the new problems we are facing. In other words, we must design amid and for the emergency. This has already occurred in participatory design or social design, especially as part of work necessarily situated within critical contexts (Del Gaudio, Franzato, Oliveira, 2016; Farrington, 2019), but the criticality that we are experiencing is definitely unprecedented for design, as well as for any other area. The purpose of this article is to discuss how to design amid emergencies, amid this emergency.

This article critically discusses a co-design experience that we developed to assist the City Government of Porto Alegre (Brazil) in its actions to combat the health and socioeconomic crisis brought about by COVID19. The “Design of services under the COVID19 emergency social protection plan” project sought to reconfigure the benefits distributed by the city to its population in vulnerable situations, to reinforce and expand their positive impacts through paths connecting up the different support networks and to create short, medium and long-term solutions meeting the needs of these people. The designing was undertaken by the authors, professors at a university with a campus in Porto Alegre, together with a group of students, professional designers and City Government employees. It involved a synchronous and asynchronous co-design process, as part of a network and was necessarily carried out remotely.

Both the design and this article were drawn up amid the emergency. The acceleration of processes and the urgency of implementing relevant solutions have become part of our present time. From the beginning, we were aware that we had never designed with such urgency and that, precisely for that reason, the experience could become the subject of investigation. Despite this, we were forced to leave aside the specification of a formal and structured research and design strategy and we made the decision to rely on organic and distributed reasoning, guided by the methodological principles of action research (Thiollent, 2005) and research through design (Jonas, 2007). At the end of the experience, we planned to reflect upon the design process that emerged. Such approaches were justified by the unprecedented characteristics of design developed without sound planning and within a very short time frame, which was hands on with a focus on social innovation. We knew that only by designing would we learn how to deal with these design circumstances and we hoped that our learning would contribute to the advancement of the design method, when necessary to design amid emergency.

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

We recorded the experience through a field diary and the collection of design results throughout the process. Based on these materials, this article continues with the reporting of the experience, its analysis and discussion.

## 2. THE "DESIGN OF SERVICES UNDER THE COVID19 EMERGENCY SOCIAL PROTECTION PLAN" PROJECT

The time dimension is important for the design approach, so we will underscore it. On 05 May 2020, the University received a request for design assistance from the Porto Alegre City Government's Office of the Innovation Director (http://www2.portoalegre.rs.gov.br/inovapoa/default.php?p_secao=1358) to contribute to the development of an emergency social protection plan. For two months, the city government's team had been working to identify the number of people in need of assistance in the city and the social protection requirements they needed to meet. The team reached a point where it needed a method that would speed up the development of proposals and that would prioritize the views of the people to be assisted, rather than the procedural limitations of the city government. Within design culture, the Innovation Director sought answers to the crisis, alternative and creative visions, and perspectives that would clarify the complexity of the necessary actions. To accept the challenge, we needed to assemble a team of volunteers, willing to contribute to the common good, in the development of a risky design proposal, as there were no agreements formalized between the City Government and the University, nor resources to pay for the work of the designers. We contacted students, teachers and professionals who had already demonstrated themselves to be sensitive to the social problems caused by COVID19 in the city. After 13 days of work, on 18 May 2020, we presented the design results.

In the briefing section, the City Government estimated that more than 135,000 people were at risk and would need access to social protection services and benefits. The challenge posed initially was to identify people and find ways to deliver the benefits to them. It is worth noting that, at that moment, the city was already imposing social distancing, many small businesses were starting to face bankruptcy, if not closure, and unemployment was growing. Another important feature is that the low-income population in the city of Porto Alegre has difficulties accessing the internet as a daily source of information, whether due to technological and financial issues or due to functional illiteracy.

On 11 May 2020, we had a team of 14 people, including professors and design students from different educational backgrounds, at the undergraduate, graduate and master's levels, willing to respond to the call of the city government. Strategic design (Franzato e Costa, 2017; Freire, 2017) was the methodological approach that connected the team, combined with social innovation as its desired effect (Franzato et. al, 2015). The cause was what motivated the volunteer designers to move forward with their work. We devised a design process as part of which those involved participated remotely, with a high level of autonomy so that, in just one week, they could present an initial solution proposal to the city government.

We chose certain platforms to enable the synchronous, asynchronous and remote design process. "Trello" was the platform chosen for the organization of the project, since it made it possible to organize the different tasks performed by the team members, allowing everyone to always access the information, updated in real time. "Google Draw" was the platform

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

chosen for co-creation activities, and “Google Drive” as a repository for the material produced. We held synchronous meetings through videoconferencing platforms, such as “Teams” or “Zoom”. In addition, we created groups on “WhatsApp” to exchange quick messages and brief the group on the challenges encountered throughout the processes. We also used “WhatsApp” to conduct interviews with people in need of assistance, in order to collect data that was essential for the project. In fact, in Brazil the application is used by the population very extensively, because, due to agreements with telephone companies, the use of data for this application is generally free.

As a collaboration strategy, we created pairs and trios, bringing together people with complementary skills to work. They started with an immersion in the context, to understand what was happening in the city. Based on this immersion, we developed a counter-briefing. According to Zurlo (2010), counter-briefing consists of a redefinition of the briefing, adjusting it based on the critical and dialogical vision that designers develop when interacting with the design context and the proposal requested by the organization. Counter-briefing should direct the design team towards devising proposals that meet the needs of everyone involved in the problem situation. In the case of the project under analysis, the counter-briefing activity was evaluated as decisive, since the initial request had only been outlined by the Innovation Director, given the urgency and novelty of the challenges faced. Next, we started identifying pain points, that is, risks and obstacles related to protection services (Osterwalder et. al, 2014) and defining personas (Stickdorn et. al, 2018) who represented the diversity of people facing an emergency situation in the city and their suffering. In a very fluid way, due to their aptitude and degree of familiarity with the techniques used, the team members engaged in assorted tasks, taking on different roles throughout the process.

In addition to the online meetings of the design team, validation meetings with professionals from the Porto Alegre City Government were held, as well as constant conversations and exchanges between the person in charge of the project at the city government and the design team. Certain scheduled deliverables have already been submitted and others are in progress, considering the iterative design process involving quick adjustments, as challenges arise, and action guidelines are defined.

## 2.1. Briefing and Initial Collection of Relevant Information

From a macro perspective, the challenge presented by the City Government of Porto Alegre is very similar to that of most cities faced with a pandemic: finding quick ways to ensure the survival of people in vulnerable situations and preventing more people from becoming vulnerable due to resulting socio-economic impacts. However, we understand that each challenge has its organizational, legal and cultural particularities, which completely change the way of approaching and solving different problems.

The briefing presented by the city government was: “design a path for users to receive social benefits with more efficient and faster delivery", through a video conference held through the “Zoom” platform on 8 May 2020.

Our starting point was to collect with the City Government representative the information available about the services and benefits that are being distributed to the population in need, since they have a lot of secondary data. As such, it was possible to reach an initial understanding about the difficulties of implementing and distributing these solutions, as well

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

as preliminarily determining the number of and characterizing the project's target group. With this in mind, the development of solutions for people in vulnerable situations (for example, unemployed people, the homeless, street vendors, informal workers, recyclers of recyclable waste) was defined as the focus of the project, these people sometimes being unknown to the public administration and, therefore, not registered to receive any type of benefit. With cash inflows that, in most cases, do not even reach 100 dollars a month, these people were already in a very critical situation and, amid the pandemic, their material conditions have worsened considerably. A fundamental point was to understand who these people were, in what situations they lived and how they could be found by the government in order to receive the benefits.

From the preliminary analyses, we defined as counter-briefing the structuring of a collaborative network to expand the possibilities of production and delivery of benefits, development of emergency solutions capable of guaranteeing the survival of these people in the short term and long-term solutions capable of sustaining a better quality of life for this population with a focus on enhancing local businesses and stimulating the regeneration of the social fabric.

In this way, we were able to broaden the vision of the initial briefing in two main aspects: the structuring of a network and the development of solutions from a long-term perspective with attention given to sustainability.

## 2.2. Contextual Immersion: Key Challenges and Pain Points

Based on the premises and counter-briefing, the group established different lines of contextual investigation. We will describe the aspects surveyed and the main results.

We selected certain profiles of the possible target groups mapped and the main players involved locally to conduct in-depth interviews, with the objective of understanding the context and developing personas that would make it possible to understand their points of view and main difficulties. We interviewed:

- Homeless and other vulnerable people.
- Community leaders;
- City government professionals;
- Professionals from FASC (http://www2.portoalegre.rs.gov.br/fasc/), a foundation in the City of Porto Alegre focused on the development of social assistance and citizenship projects, therefore, working directly with people in vulnerable situations;
- Volunteer workers with independent projects in support of these people;
- Entrepreneurs whose companies perform some type of social work.

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

The construction of personas (figure 1) allowed the design team and city government professionals to realize that, behind the number of 135,000 individuals in an at-risk situation worsened by COVID19, there were real people, with specific needs and difficulties. The development of personas and narratives about their day-to-day lives sensitized the designers and other professionals into producing design solutions for the investigated aspects.


**Figure 1:** ***Personas***

The study of secondary data on target groups, interviews and *personas* led us not only to understand the criticality of these peoples' living conditions, but also the great challenges of their battle to access benefits, including:

- Lack of knowledge of available benefits;
- Impossibility of recognizing themselves as a beneficiary, because of their marginal place in society;
- Inaccessible registration processes for benefits due to technological reasons or access to technology;
- Difficulty concerning urban mobility in seeking benefits in physical form (food and hygiene products, for example).

Alongside the in-depth interviews, seeking a systemic view of the social reality locally, we mapped out several non-governmental initiatives, launched by NGOs or citizens' collectives, which existed before the pandemic or were created by them to deal with it. We cross-referenced this information with the existing city government maps, in order to understand where the biggest gaps in the city were. In this way, we produced our first design output that we labelled as the Solidarity Map (figure 2). The map is intended to geo-locate the drives that are making a difference in the city, giving them visibility and making it possible to assess their spread. From this standpoint, it was possible to identify the areas that were not yet served in order to allocate the City Council's limited resources to them.

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

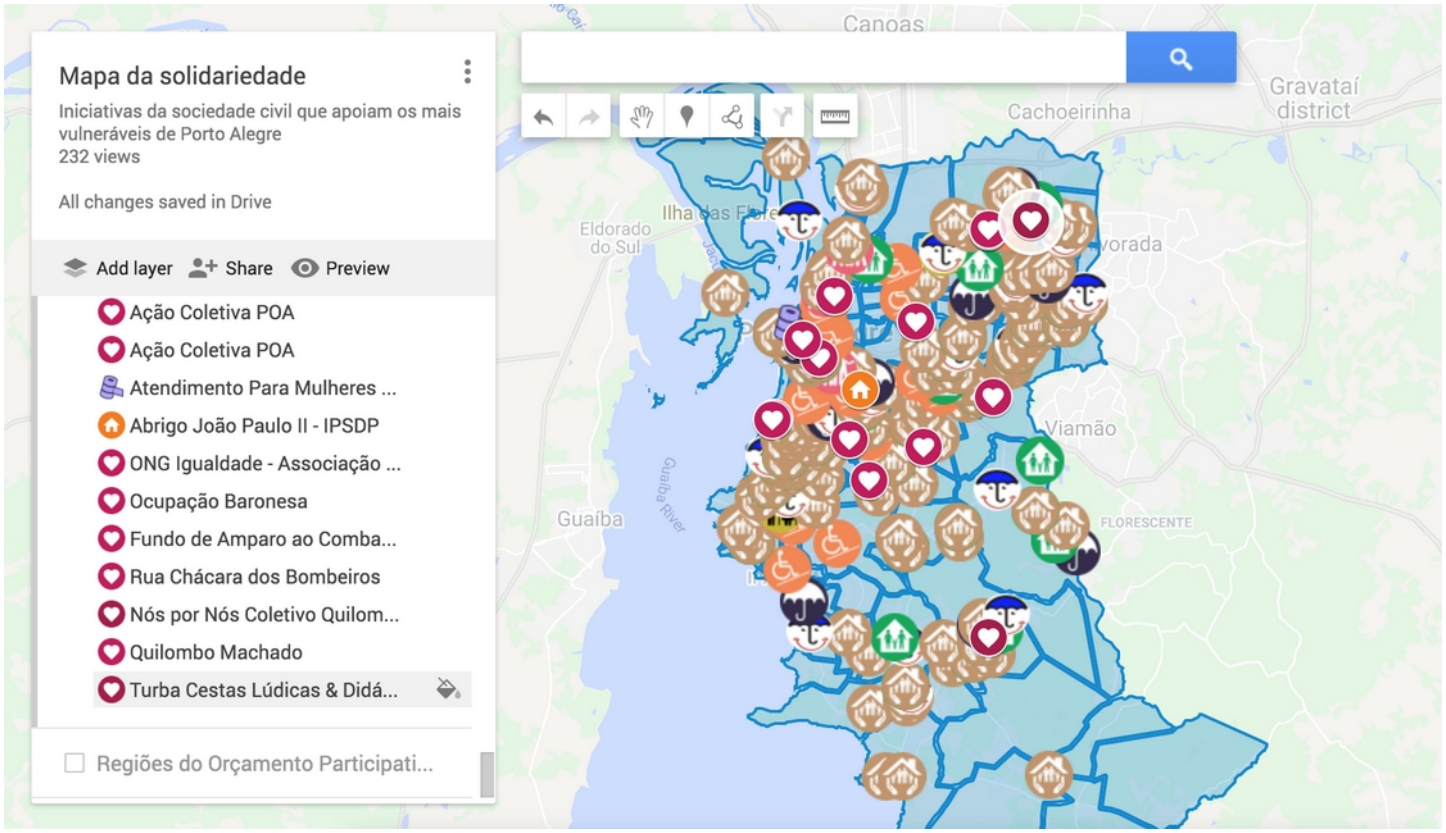



Figure 2: Solidarity Map, which shows the spread of different types of projects in the city map

The syntheses and paths designed thus far have pointed to the important challenge of reducing bureaucracy in the processes of registering people in the city government system and receiving benefits. Still, given the scope and extent of the crisis, it was necessary to think of short, medium and long-term alternatives in order for these people to have access to quality food, clothing and housing in order to stay healthy. Lastly, it became evident that there was a need to increase the reach of benefits to a greater number of people and the ways of accessing these benefits.

## 2.3. Partial Design Solutions

In the transition to the development of solutions, we first defined important values for their development:

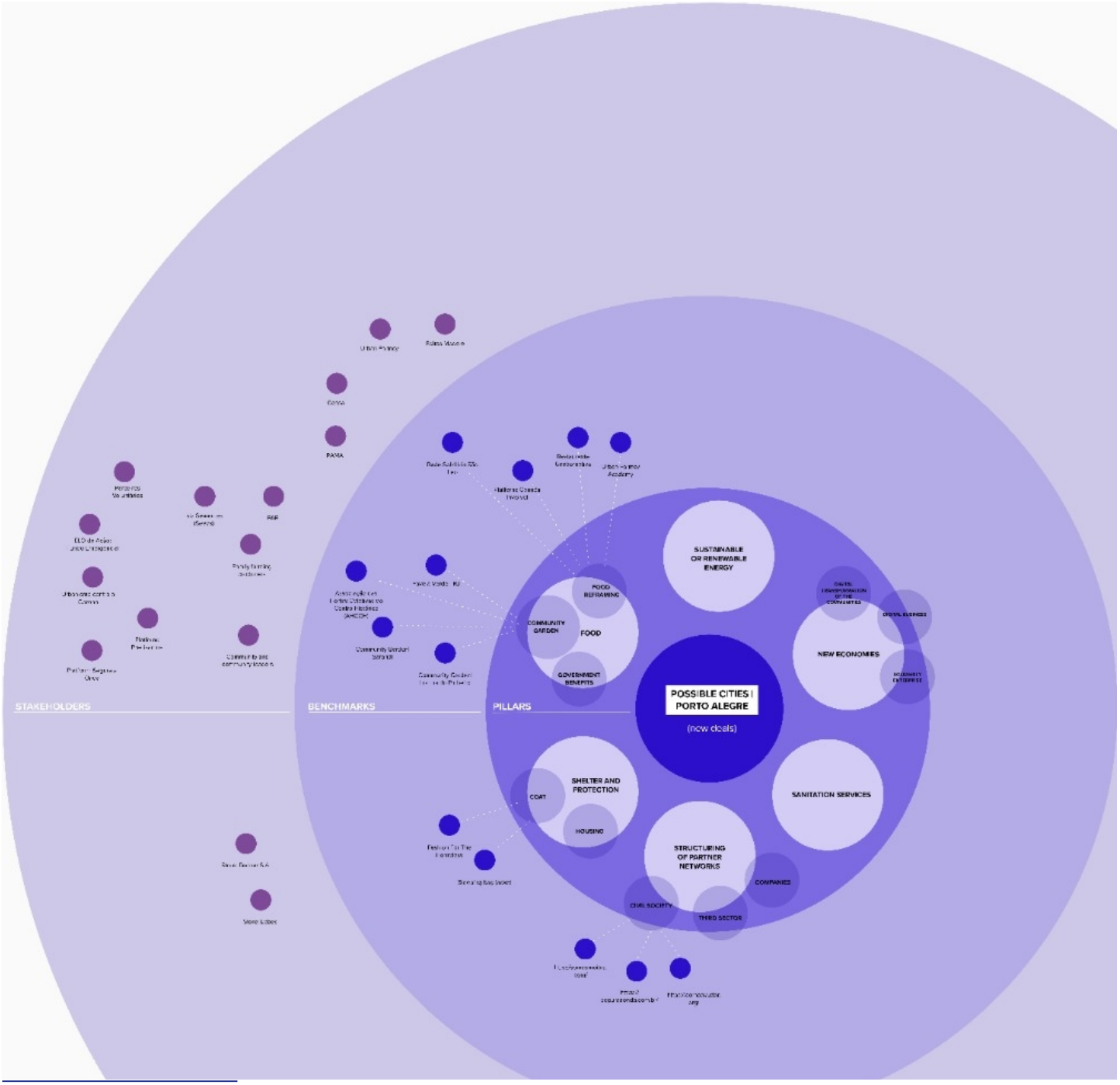
- Resolution of urgent problems, keeping in mind the need to transform the system;
- Redefining of the centre-periphery polarity in the city;
- Valuing of the different forms of knowledge production;
- Recognition of already existing practices and promotion of new practices for social interaction, allowing for population autonomy to be created.

In this direction, we established that solutions should be developed based on design coalitions (Manzini, 2017) bringing together the government, civil society, universities and local businesses. We identified short, medium and long-term solutions, identifying them with three verbs - respectively, feed, nourish and transform -, which will be described below.

To organize the three types of solutions, we designed a first flow, still under construction, which shows the necessary steps and arrangements that we propose in order to implement the distribution of benefits in more comprehensive and powerful ways.

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

In parallel and subject to constant iteration, we built a visual map, synthesizing the design opportunities. In the middle of figure 3, there is the name of the map: Possible Cities | Porto Alegre – New deals. In the second circle, there are the pillars around which opportunities are assembled, based on the emergency drive generated by the pandemic: food, shelter and protection, structuring of partner networks, sustainable or renewable energy, new economies and sanitation services. The first three pillars are the ones chosen for the continuity of the project. In the third circle, there are already existing solutions, linked to the pillars, which can serve as benchmarks. In the fourth circle, there is a mapping of possible actors that can be triggered in order to develop and implement design opportunities.




Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

**Figure 3 – Map of Possible Cities | Porto Alegre**

## 2.4. Feed (short term: emergency and survival)

This type of solution seeks to improve the quality of actions that are already underway. The intention is to streamline so that the modes of production and distribution of clothes and

food can reach people in need of assistance, without them having to travel or form crowds in queues, with the potential for the dissemination of COVID19.

The first solution developed relates to the distribution of ready-made foods, using produce from local producers. The solution involves the initiation of the solidarity map initiatives by the city government itself, for production and distribution. This solution was designed for people who live on the street and are unable to cook their own food. The idea is to create dedicated spaces to intensify distribution, enabling people from civil society to support the project according to their possibilities, through financial support, the donation of produce, the cooking of meals or the distribution of meals.

The second solution developed relates to the setup of mobile points for distributing warm clothes and baskets with food for people who have a home and the ability to cook their own food, so as not to give rise to crowding. The solution envisages the registration of beneficiaries on-site. Implementation of the solution depends on community leaders who have a greater understanding of the needs of their communities and greater reach.

## 2.5. Nourish (medium term: transition to good living)

This type of solution has a more permanent and medium-term characteristic, impacting people's lives in a more sustainable way, promoting their autonomy and providing assistance for responding to crisis and emergency cycles.

The first solution developed is aimed at homeless people who, by choice, choose this way of life, thereby respecting their identity. To protect them during the city's winter, the solution seeks the distribution of what they need, such as sleeping bags too, in alternative to the infrequent and insufficient distribution of warm clothing in the coldest periods of the season, with temperatures that can drop close to zero degrees, or during bad weather. This solution envisages the triggering of communities of seamstresses and players in the textile industry as a source of skills and resources, based on an open design and distributed manufacturing platform.

The second solution developed is aimed at creating urban gardens for the production of quality food, so that fresh and nutritious food can reach the population in a more accessible way. For this, it is necessary to enhance the urban gardens that already exist in the city and value this agriculture and food culture. To this end, the solution provides for the development of partnerships with actors in family farming and other local producers, to form communities capable of producing food close to their homes.

## 2.6. Transform (long term: new forms of city life)

These proposals focus not only on homeless people and other people in vulnerable situations, but also on the low-income population who, during moments of intense crises such as COVID19, fall below the poverty line, becoming unemployed, losing their homes and even losing access to food. Outside of the scope of the work of coping with the emergency situation caused by the pandemic, these were not true solutions and were presented only as suggestions for the City Government.

The first one suggests the setup of solar panels at the homes of low-income communities, thereby making it possible to reduce living costs, since electricity bills are an expensive item for the households that make up such communities.

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

The second one suggests free access to the internet to enable digital inclusion. It is believed that this solution is also important to facilitate civil protection communications, as well as to enable remote training activities.

## 3. POST-COVID19 SCENARIOS: POSSIBLE CITIES, VISIBLE FUTURES

Based on these initial premises, we started to identify fundamental values that motivated the design team to encourage reflections for the transformation of the post-COVID19 reality (figure 4).

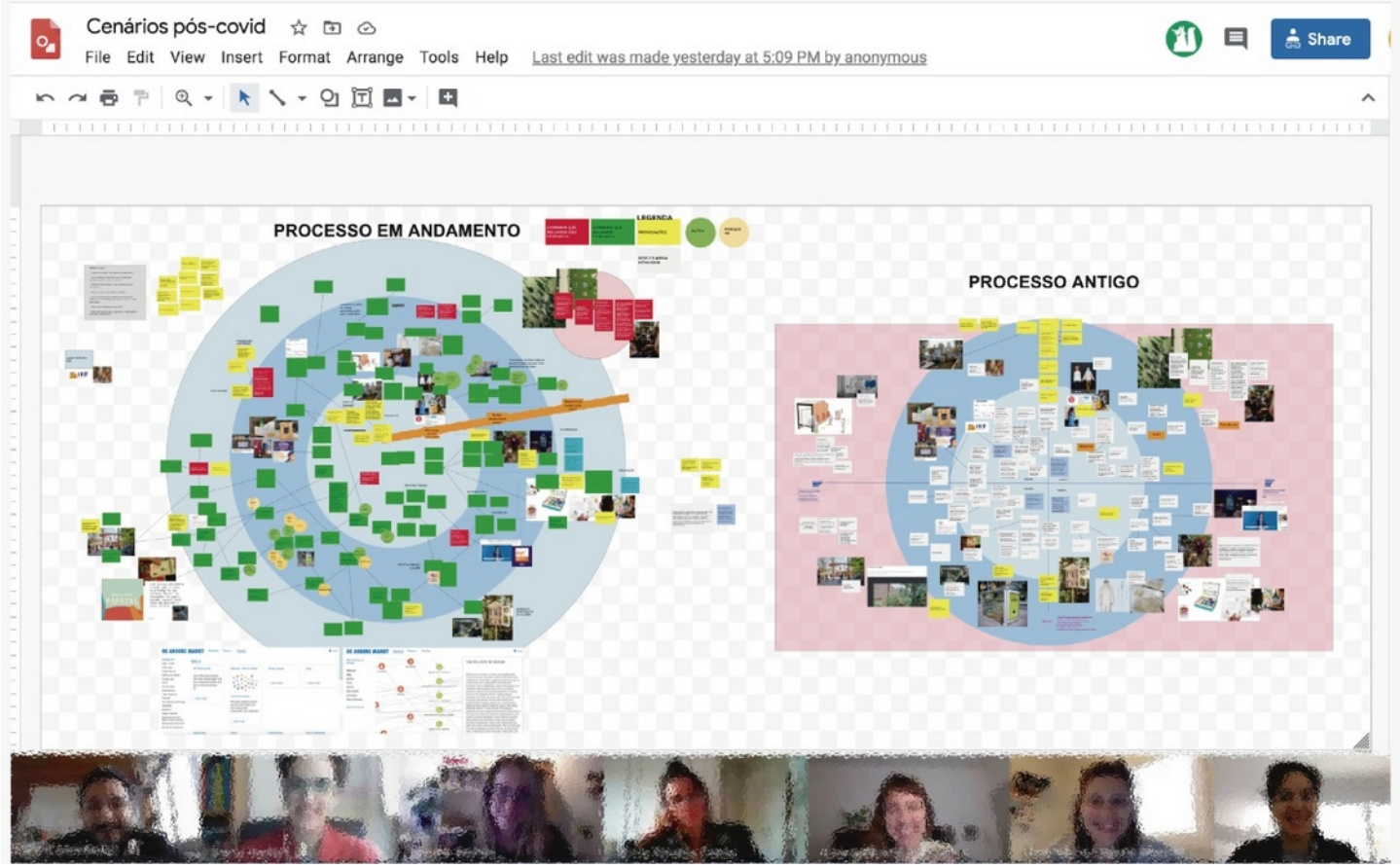



Figure 4: scenario development process

Still in the interview phase, the team of designers was struck by the fact that, in some cases, being "invisible" to the government is a choice by people, who want to escape the social control imposed by institutions. This made the team imagine urban futures based on multiple views for the city and multiple ways of city life, ways that did not abandon the values of dignity, civic consciousness and health. The team identified, as a first step towards this change, the recognition of the existence of other ways of living and other urban practices already in play in the city, which should not be necessarily and desirably placed within the centre-periphery polarity. From this perspective, it is important to value the initiatives already existing locally and, with them, to co-design a transition that allows focusing not on solving urgent problems, but rather on transforming the system. Figure 5 presents a partial result of the scenario development process, proposing the construction of reality through multiple perspectives and creative capacity as a way to resist the effects of COVID19 in the different spheres of social life.

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30


Figure 5: partial result of scenario elaboration.

## 4. WHAT WAS LEARNED: DESIGNING AMID EMERGENCY

The aim of the paper is to discuss how to design amid emergency. We found out that the main characteristics of this design process were: the openness and horizontality of the project management; and a diverse design team, supported by multiple digital resources that allowed for remote work, guided by visual deliverables of design results to speed up communication. The results that were achieved, in such a short time, were only possible due to the plurality of views of the assembled team, which was able to quickly capitalize on its intellectual and cultural knowledge in the proposed horizontal work process. Diversity of cultural experiences and technical expertise were fundamental. The openness to the multiple voices, where each of the participants was able to present proposals and criticize the proposals raised by colleagues in a very free manner, regardless of their title or level of experience was another key point. There weren't hierarchical positions. Everyone had the opportunity to express a voice.

The humanistic values of each participant, indispensable for them to engage in this intensive work on a voluntary basis, were decisive in interpreting the effects of the emergency context. Design understood as a sense-making activity (Manzini, 2015) allowed the design team to perceive the pandemic as a possible key to change, for the transformation of society against social inequalities and for sustainability. The pandemic presented itself as an opportunity to show to government authorities an alternative view of possible cities, desirable cities that one might have after pandemic, beyond the dominant understandings, including beyond the understandings of the designers themselves, who do not live in peripheral areas. In this sense, interviews with people in vulnerable situations and from their perspective to produce design inputs. Upon creating *personas* and storytelling, not only the design team, but also the City Government team had the opportunity to broaden their visions with regard to the

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

context of the lives of people in need of assistance, their rights as citizens and their potential as agents for transformation. The practice of otherness is fundamental in this kind of project.

The design team demonstrated great adaptability in an environment, that of digital media, which was already intensely used, but not as exclusively as this time. Digital platforms were extensively explored, even if, at many times, the possibility of direct immersion in the field was needed. As a result, we understood the importance of designers' presence in situations where they are called upon to act. We realized that it is possible to deliver good design results amid emergency projects, working with people with whom we have not previously worked, in an intensive manner if: (1) we share the same values that are the drivers for change; (2) we agree on certain rules based on which to work and deadlines to meet; (3) we trust in the open design process and collaborate intensively with people with diverse capability to create meaningful results

At the end, the design result was a process to change the way the Government deals with its citizens: from delivering public services to co-creating it with social actors; a process based on systemic view, networks and a decentralized understanding of the city, i.e., a peripherical one. Although evident, the structuring of a support network for the population that considers the government, universities, private institutions and civil society as pillars is not so simple. Before setting up a robust and aligned network, it is important to work on the breakdown of barriers and models of action that prevent this collaboration. As a path, we point out the importance of identifying areas of convergence of interests, the creation of win-win policies and the daily encouragement of a culture of collaboration at the differing levels.

We also emphasize that, even in a sudden crisis, it is an opportunity to endorse and promote a long-term vision, with greater transformative potential, so that cities can become more resilient and better prepared to deal with emergencies. It is believed that only with deeper changes in the social fabric it will be possible to guarantee the dignity and quality of life of the population. In this regard, it is believed that it is necessary to involve the general population in the development of transition projects. This is the reason why we proposed the project as an open question to be explored critically by those who live the city. This demands a new understanding of the designer role in this cocreation process.

## ACKNOWLEDGMENTS

The participation of Carlo Franzato in this study was financed by the Brazilian National Council for Scientific and Technological Development (CNPq).

## REFERENCES

Antonelli, P.; Rawsthorn, A. (2020). *Design Emergency.* Retrieved June 11, 2020, from: www.instagram.com/design.emergency

Brunswick et al., (2017). *In case of emergency.* Trinity College Dublin. Retrieved June 11, 2020, from: https://dublin.sciencegallery.com/icoe/

Colombo, S.; Ciuccarelli, P. (2020). *Design for Emergency.* Retrieved June 11, 2020, from: www.designforemergency.com

Del Gaudio, C. ; Franzato, C. ; Oliveira, A. J. (2016) . Sharing Design Agency with Local Partners in Participatory Design. *International Journal of Design*, *10* (1): 53-64.

Dunne, A.; Raby, F. (2013). *Speculative everything. Design, fiction, and social dreaming*. Cambridge: The MIT Press.

Freire, K. M., Franzato, C. & Remus, B. (2020). Design amid Emergency. Strategic Design Research Journal. Volume 13, number 03, September – December 2020. 685-697. DOI: 10.4013/sdrj.2020.133.30

Farrington, M. (2019) Social and feminist design in emergency contexts: the Women's Social Architecture Project, Cox's Bazar, Bangladesh. *Gender & Development*, *27* (2): 295-315. Doi: 10.1080/13552074.2019.1626593

Franzato, C. (2011) Design as Speculation. *Design Philosophy Papers*, *9*(1): 1–9. Doi: 10.2752/144871311X13968752924392

Franzato, C.; Gaudio C. D.; Bentz, I; Parode, F. P.; Borba, G.; Freire, K. (2015) Inovação cultural e social: design estratégico e ecossistemas criativos. In: Freire, K. de M. (org.). *Design estratégico para a inovação social e cultural*. São Paulo: Kazuá. p. 157-182.

Franzato, C.; Costa, F. Presentation Special Issue: *Strategic Design Research Journal* Tenth Volume **.** *Strategic Design Research Journal*, São Leopoldo, v. 10, n. 2, p. 91-96, 2017. Available at: <http://revistas.unisinos.br/index.php/sdrj/issue/view/638 >. Acessed: 20 ago. 2020.

Freire, K. (2017) From strategic planning to the designing of strategies: a change in favor of strategic design. *Strategic Design Research Journal*, São Leopoldo, v. 10, n. 2, p. 91-96, 2017. Available at: <http://revistas.unisinos.br/index.php/sdrj/article/view/sdrj.2017.102.01 >. Acessed: 20 ago. 2020.

Frishberg, L. (2005). Looking back at plan AHEAD™: exercising user- centered design in emergency management. In: G. v.d.Veer. & C. Gale, C (Eds). Proceedings of CHI EA '05: Extended Abstracts on Human Factors in Computing Systems, (pp. 988–1003).

Gjøsæter T., Radianti J., Chen W. (2018) Universal Design of ICT for Emergency Management. In: Antona M., Stephanidis C. (eds) Universal Access in Human-Computer Interaction. Methods, Technologies, and Users. UAHCI 2018. Lecture Notes in Computer Science, vol 10907. Springer, Cham.

Irace, F. (2008). *Casa per tutti. Abitare la cittá globale* (Home for everyone. Living the global city.). Milano: Triennale/Electa.

Jonas, W. (2007). Design Research and its Meaning to the Methodological Development of the Discipline. In Michel, R. (Eds.), *Design Research Now: Essays and Selected Projects*. (pp. 187–206). Basel: Birkhäuser.

Liegl, M. et al. (2016). Designing for ethical innovation: A case study on ELSI co-design in emergency. *International Journal of Human-Computer Studies*, *95* (1): 80-95. Doi: 10.1016/j.ijhcs.2016.04.003

Osterwlader, A; Pigneur, Y; Bernarda, G; Smith, A; Papadakos, P. *Value proposition Design: como construir propostas de valor inovadoras* [Value proposition Design: how to create products and services customers want]. São Paulo: HSM do Brasil.

Stickdorn, M; Hormess, M; Lawrence, A; Schneider, J. (2018). *This is service Design Doing*. Sebastopol: O'Reilly.

Thiollent, M. (2005) Metodologia da pesquisa-ação [Action research methodology]. São Paulo: Cortez.

Trotta M. G., Valdés, L. A. M. (2016). Extreme and Adaptive Design (EAD). Design Extremo e Adaptativo. *Strategic Design Research Journal*, 9(3): 155-162. – doi: 10.4013/sdrj.2016.93.03

Zurlo, F. (2010) Design strategico. In: XXI Secolo: Gli spazi e le arti. Roma: Enciclopedia Treccani. 2010. v. 4. Retrieved June 11, 2020, from: http://www.treccani.it/enciclopedia/design-strategico_%28XXI-Secolo%29/

Site da Diretoria de Inovação da Prefeitura de Porto Alegre: http://www2.portoalegre.rs.gov.br/inovapoa/default.php?p_secao=1358

Site da Fundação de Assistência Social e Cidadania (FASC): http://www2.portoalegre.rs.gov.br/inovapoa/default.php?p_secao=1358