

Design Manifesto
ARC583

Convívio 2GT02825

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Studio Arrival City

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Research Question

How can the politically and environmentally vulnerable informal settlement of Segundo Torrão be brought together and given voice as a community so that they are empowered to lead the conversation in determining their future?

Convívio 2GT02825 Explained

Convívio:	Coexist
Place do Convívio:	Project Site
2GT02825:	Key User Group
2GT0:	Segundo ‘Ghetto’ (Segundo Torrão)
2825:	Postal code for large portion of Almada (municipality for Segundo Torrão)
Convívio 2GT02825:	Promoting coexistence both within Segundo Torrão and the wider area

A Grounded Approach

“[A]lthough we have professional skills and plenty of enthusiasm, we know little about life on the ground. The real experts are the people who live there, so we’re not coming in to save the day, we’re coming in to learn, from them, about what the solutions might be.”¹

Melissa Kinnear of ASF-UK

‘[C]ultivating an environment for change from within, starts on the ground and often with small beginnings which have “emergent” potential.’²

Nabeel Hamdi

This is not practice as usual. Segundo Torrão is an informal settlement located in the Almada region of the Lisbon metropolitan area of Portugal. Architecture is criticised as a profession for its “failure to be relevant to the world’s poor.”³ However, even if one chooses to practice in this context there are questions of appropriateness concerning role and intervention.

My approach to this project is to be grounded, responding to real and existing situations faced by the people of Segundo Torrão now. This builds upon my interests in the work of Architecture Sans Frontières (ASF) and Nabeel Hamdi whose inspirational work has helped shape my critical viewpoint on working in vulnerable communities as an outsider, as documented in Figure 1 and my undergraduate special study.⁴

Underpinning Methods

I am therefore interested in applying the theory and working methods of ASF and Hamdi in order to develop this grounded project. Specifically, I intend to use ASF methods to diagnose the existing and develop an entry point for the project (Figure 2). From here, Hamdi’s writing on ‘Small Change’ suggests how one might intervene, how a small spatial intervention may emerge and scale up to a larger spatial or strategic objective.⁵

To get started, the research collected during our visits, meetings and walking tours in the company of our local experts (inhabitants, researchers and practitioners) serve as the grounded base from which to develop this project. Continuing communication with our local contacts will be essential to maintaining a grounded connection whilst working from Sheffield.

Whilst such a grounded approach would normally involve the community with participatory processes, I feel this would be inappropriate in the highly vulnerable and precarious context of Segundo Torrão. Therefore, any interactions or participation will be with our local researcher and practitioner contacts rather than inhabitants.

Architectural Approach: Means-Orientated Design

“[S]tart from the means that are available and see what you can do to approach a less strictly defined goal... a means-orientated method would be refreshing in architecture.”⁶

Taeke de Jong

My approach of learning from observations on the ground led me to Superuse (pages 35-38). Superuse calls for a different design methodology, a means-orientated design approach as opposed to conventional goal-orientated design as one must work with what is available.⁷ Letting go of this highly controlled, top-down attitude, that situations will bend to your will, may be seen as more appropriate to the vulnerable and grounded reality of Segundo Torrão. However, the means-orientated method should not be obeyed to the point of restriction. Hamdi reminds us that at the same time as being grounded it is important to ‘Never say can’t’, to dream and to take advantage of our outsider position to offer fresh perspectives.⁸

Inequality and the Climate Emergency

‘[F]ighting inequality on every front and through multiple means must be understood as a central strategy in the battle against climate change.’⁹

Naomi Klein

A not business as usual approach is required in the face of the climate emergency. Having previously addressed the topic from a more technical angle, through the writing of Klein I now realise that inequality and the politics that govern it require urgent attention (Figure 1). Indeed, the poor and most vulnerable are often the first to feel the effects of climate change.¹⁰ Furthermore, work to improve the quality of lives is commensurate with initiatives to tackle climate change. Addressing urban inequality in cities, particularly in the context of migration is a key focus for ASF and the Designing Inclusion initiative which they are working in partnership with.¹¹ As Segundo Torrão is a marginalised community of arrival for mainly African migrants, designing for inclusion, to address inequality, using ASF methods offers an appropriate approach to the climate emergency.

¹ Matthew Barac, ‘Pedagogy: Architecture Sans Frontières, UK’, *Architectural Review*, 233.1396 (2013), 116-17 (p. 116-17).

² Nabeel Hamdi, *Small Change: About the Art of Practice and the Limits of Planning in Cities* (London: Earthscan, 2004), p. xx.

³ Justin McGuirk and others, ‘The Icon 20/20 Architects: Melissa Kinnear’, *Icon Eye*, 2009 <<https://www.iconeye.com/architecture/features/item/10731-the-icon-20-20-architects-%20melissa-kinnear>> [accessed 14 January 2020].

⁴ Jamie Rest, ‘Who’s Benefiting?: Assessing the Value and Impacts of Different Parties’ involvement with community projects in Africa’ (unpublished undergraduate special study, University of Sheffield, 2016).

⁵ Hamdi, *Small Change*, p. 99.

⁶ Ed van Hinte, Césaire Peeren and Jan Jongert, *Superuse: Constructing new architecture by shortcutting material flows* (Rotterdam: 010 Publishers, 2007), p. 78.

⁷ Hinte, *Superuse*, pp. 77-78.

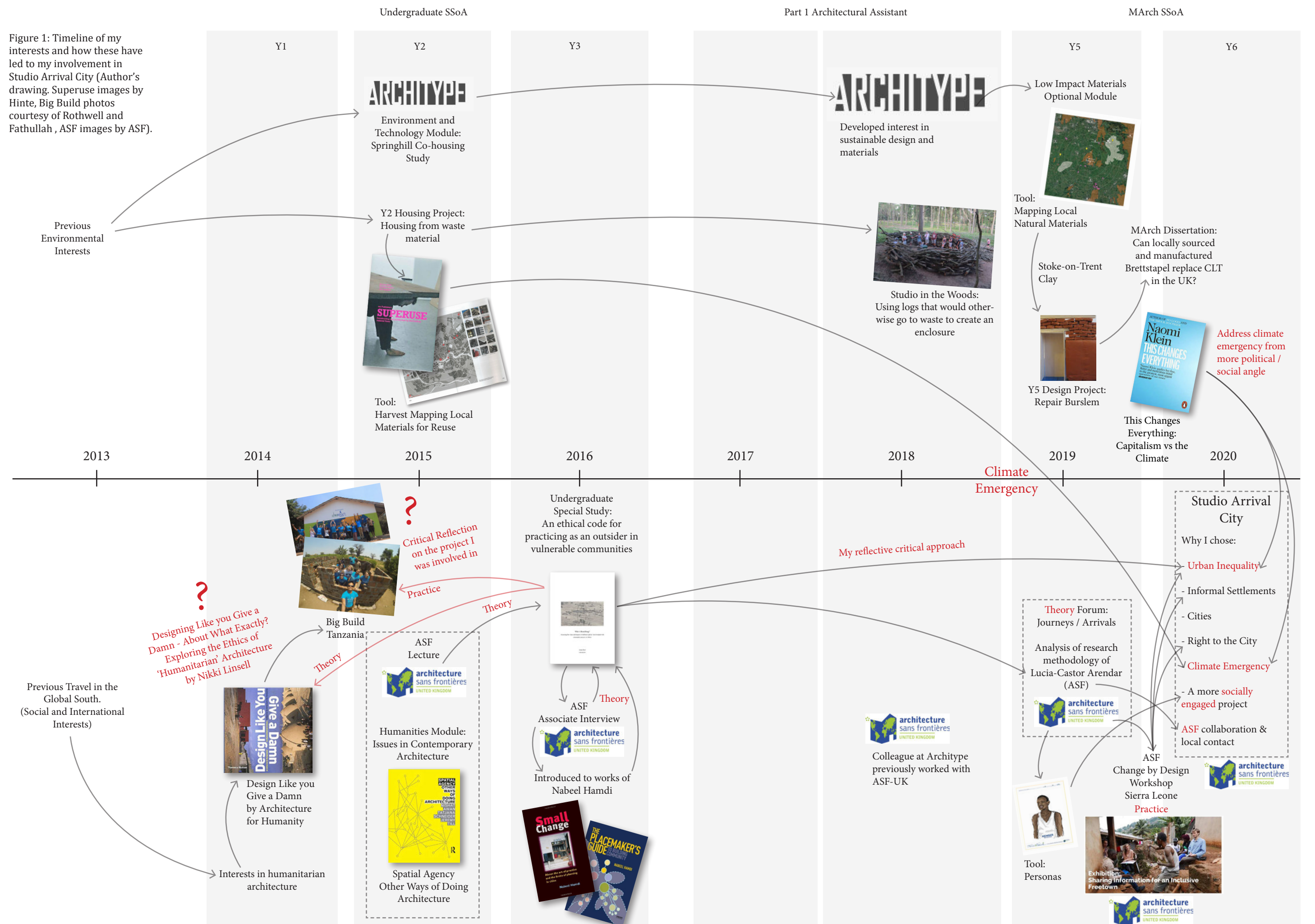
⁸ Hamdi, *Small Change*, pp. 132-34.

⁹ Naomi Klein, *This Changes Everything: Capitalism vs. the Climate* (New York: Simon & Schuster, 2014; UK: Penguin Books, 2015), p. 94.

¹⁰ Klein, *This Changes Everything*, p. 92.

¹¹ Sheffield School of Architecture, *Book of Abstracts: Theory Forum 2018 Journeys / Arrivals*, [n.p.] (SSoA, 2018), p. 27 <https://docs.wixstatic.com/ugd/839713_847a5df25a6a4d01893181ac68ca5e61.pdf> [accessed 20 January 2020].

Figure 1: Timeline of my interests and how these have led to my involvement in Studio Arrival City (Author's drawing. Superuse images by Hinte, Big Build photos courtesy of Rothwell and Fathullah, ASF images by ASF).



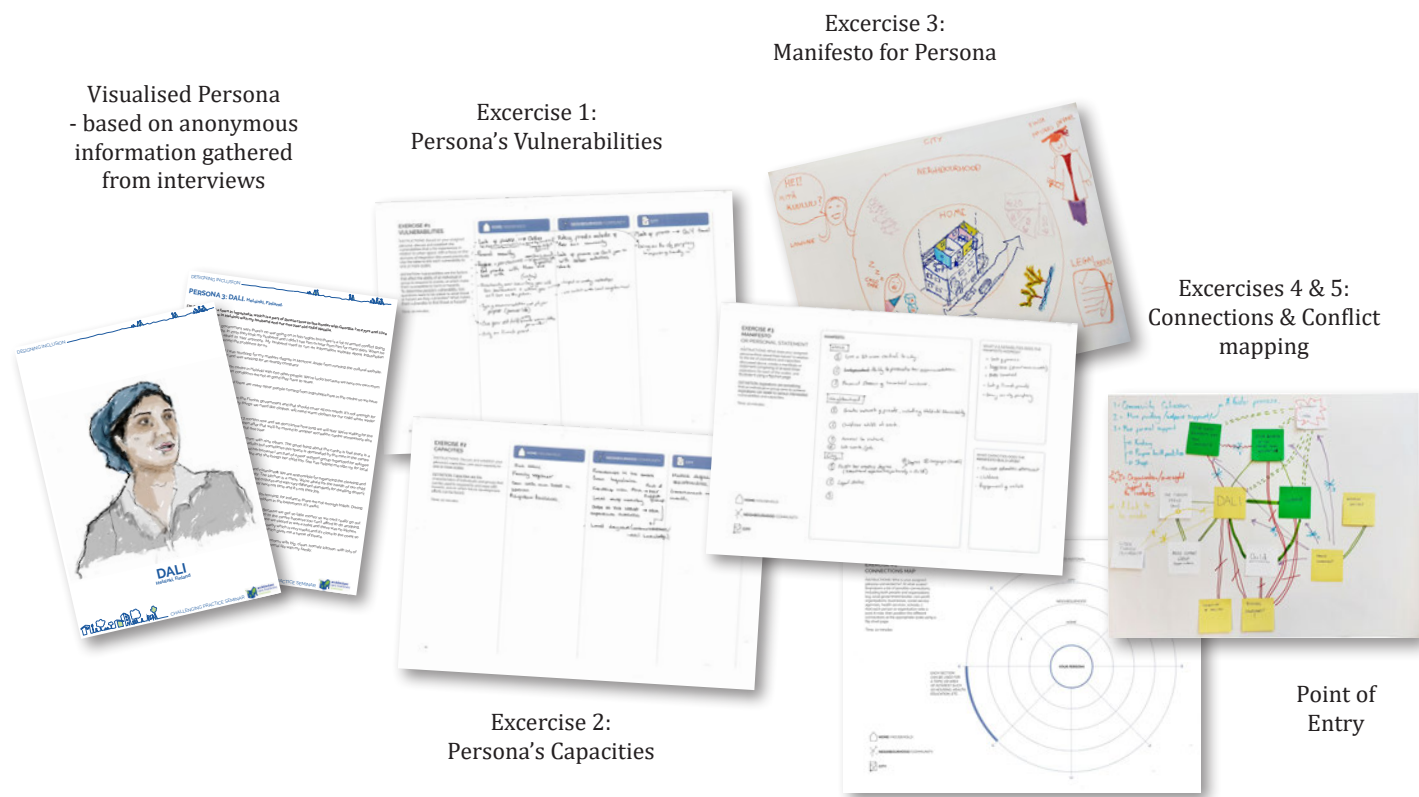


Figure 2: Challenging practice ASF workshop prior to Lisbon study trip. (Persona drawing by ASF-UK. Author's images of worksheets produced during workshop).



Figure 3: Four inhabitants of Segundo Torrão that I have developed as persona's to explore the project through following from the ASF workshop. These are based on information gathered during our visit as well as literature. (Author's drawings).

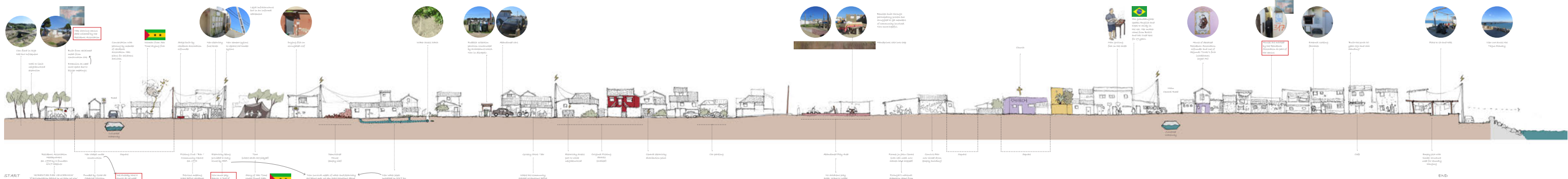


Figure 4: Transect walk map (right) and section drawing (below) documenting information acquired on our walk in Segundo Torrão with our local contacts (Author's drawings based on information gathered during Segundo Torrão walking tour).

Graphical Representation

The ethical sensitivities of working in the informal context of Segundo Torrão made conventional methods of documenting the site during our visit challenging and therefore now demands an appropriate approach. Specifically the issue concerned photography. We were only allowed to take photographs in certain areas and were asked not to take photos of people as some may have illegal status.¹² Taking any photographs at all, even when obeying the rules therefore felt inappropriate. Consequently of what photos were taken, they form a very patchy record of the settlement and convey little life or activity due to the absence of people. This combined with our tight schedule meant that there was little time to record even through sketching. Documentation of the site must therefore be reconstructed and may not be an exactly accurate representation. This lack of formality however, could be seen as appropriate to the informal nature of the subject matter.

Furthermore, the inability and inappropriateness of photography in this context should be seen as an opportunity to devise a specific approach to representation. Indeed, reportage illustrator George Butler advocates drawing over photography as the more powerful tool in understanding and conveying a scene as it requires close observation and enables the illustrator to offer an interpretive lens through which to tell a story.¹³ At a more ethical level, Butler acknowledges the potentially intrusive perception of photography whereas drawing shows a level of sensitivity and respect for the subject.¹⁴

¹² *Walking Tour of Segundo Torrão*, 5 December 2019, Segundo Torrão Residents Association, Segundo Torrão.

¹³ TEDx Talks, *A Dying Art: George Butler at TEDxWarwick 2014*, online video recording, YouTube, 12 April 2014, <https://www.youtube.com/watch?v=_ryXonDPNpE> [accessed 20 December 2019].

¹⁴ Ibid.

How to Act?

Vulnerabilities, Capacities and Entry Points

A Top-Down Future

The Council of Almada want to relocate Segundo Torrão and are using climate change as a political tool to justify this.¹⁵

This position is contentious. Critically, the state have not said how climate change will impact the community or over what timescale. An effort to dispute this from the ground through scientific evidence is being led by the New Science Decision Makers project (Figure 6).¹⁶ This is a participatory research project whereby professional researchers and inhabitants of Segundo Torrão work together to address the future-determining question of “Will the Sea Engulf Segundo Torrão? When and How?”¹⁷

The state’s position is also contradictory. They had new water pipes installed to the whole community in 2017 and works to formalise and improve electricity access are currently being carried out by service provider EDP.¹⁸ The settlement is therefore simultaneously being upgraded whilst also being threatened with relocation by the same council. Further inconsistency is witnessed as the neighbouring settlement of Cova do Vapor is also informal although unlike Segundo Torrão, it is not facing threat of relocation. Lastly, even after vacating the site due to climate change, there is suggestion that the Lebanese landowners want to develop the site into a beach resort.¹⁹

The question of the future of Segundo Torrão had been on-going for over a decade due to conflict between stakeholders with legal claim to the land; Almada City Council, Lisbon Port Authority and the land owners (Figure 5).²⁰ But where was, or is, the community’s voice in these conversations?

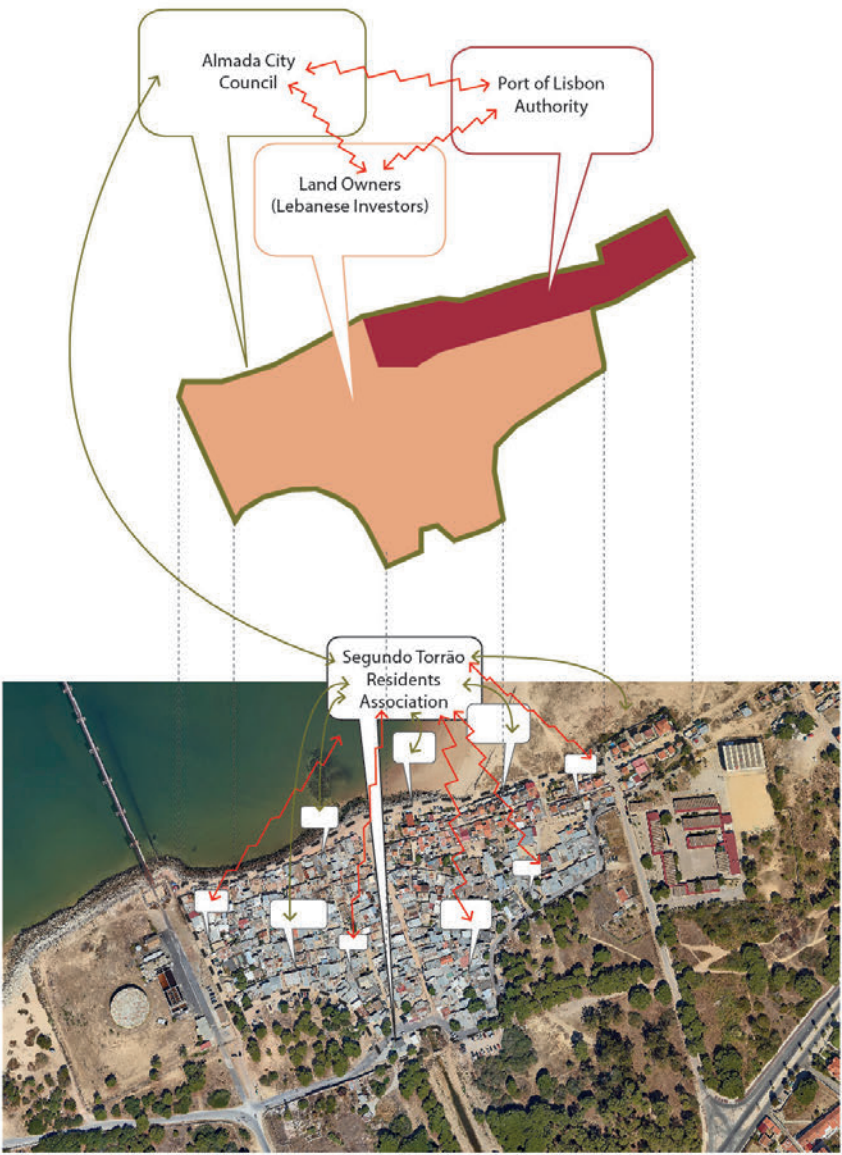


Figure 5: Land owners discuss the future of Segundo Torrão whilst the community is left out. The residents association represents only a portion of the community but has a relationship with the council (Author’s drawing based on information from Arquizán, Ascensão and Cão. Base satellite image from Google Earth).

¹⁵ João Cão, “Today’s Results from Coastal Geologists / Oceanographers”, *Email* [10 January 2020].

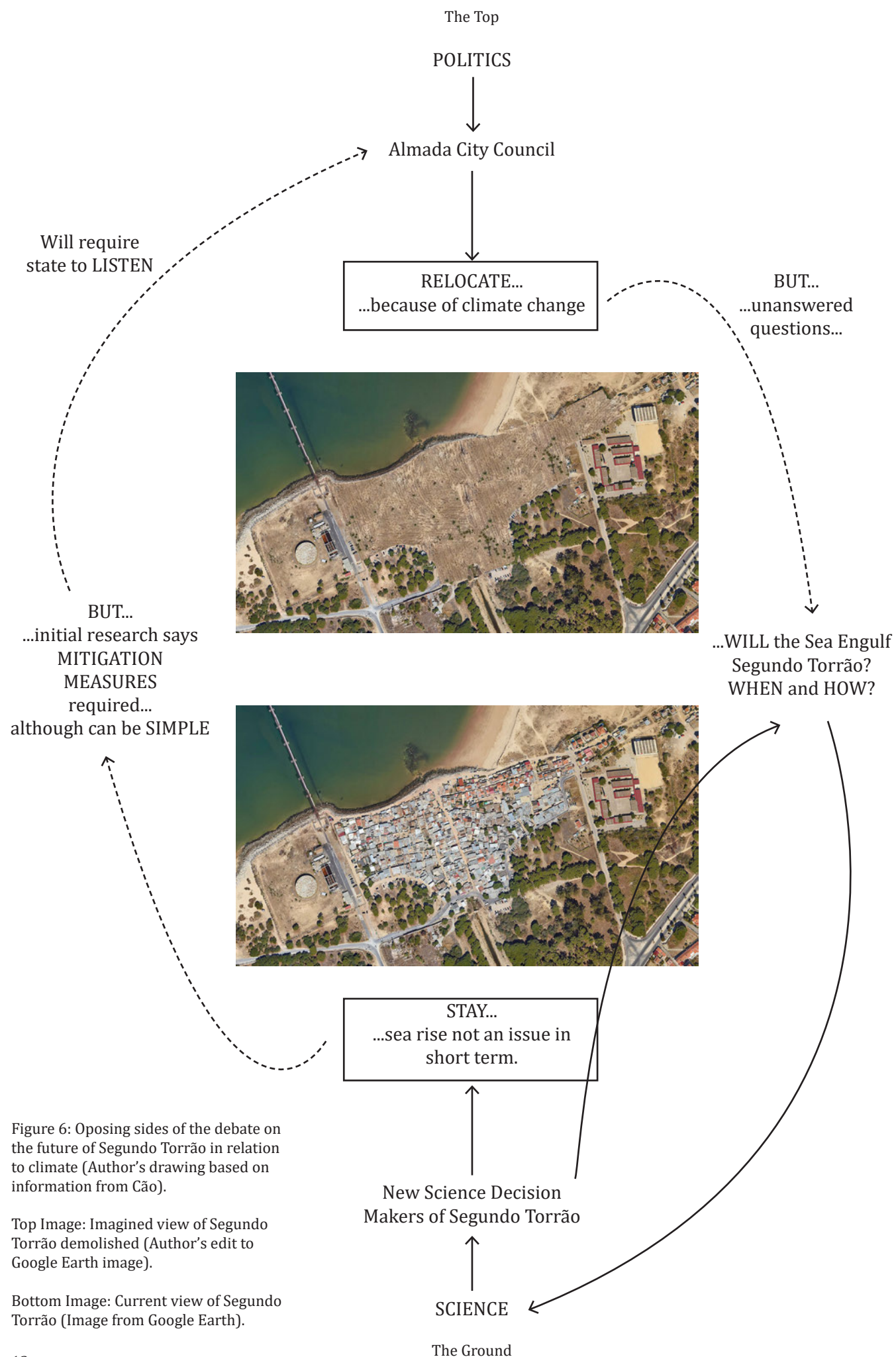
¹⁶ Ibid.

¹⁷ Tatiana Arquizán, *Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrão: Une Démarche de Questionnement Situé: La Mer va-t-elle Engloutir le Segundo Torrão? Quand et Comment?* [Perspective on the Program New Sponsors Sciences at Segundo Torrão: A Questioning Approach Located: Will the Sea Engulf Segundo Torrão? When and How?], trans. by Google Translate [n.p.] (L’Atelier des Jours à Venir, 2017), pp. 1-29 <<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWVpbnxzY29wc2NvcHN8Z3g6NDJlM2U4NGJjNmE4NjJmOQ>> [accessed 6 January 2020].

¹⁸ *Walking Tour of Segundo Torrão*.

¹⁹ Eduardo Ascensão, *Meeting to Discuss his Research*, 9 December 2019, Geographic Institute and Spatial Planning at University of Lisbon, Lisbon.

²⁰ Tatiana Arquizán, *Sommaire Détaillé: Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrão: Une Démarche de Questionnement Situé: La Mer va-t-elle Engloutir le Segundo Torrão? Quand et Comment?* [Detailed Summary: Perspective on the Program New Sponsors Sciences at Segundo Torrão: A Questioning Approach Located: Will the Sea Engulf Segundo Torrão? When and How?], trans. by Google Translate [n.p.] (L’Atelier des Jours à Venir, 2017), p. 2 <<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWVpbnxzY29wc2NvcHN8Z3g6NDJlM2U4NGJjNmE4NjJmOQ>> [accessed 6 January 2020].



Relocate or Stay?

I am conflicted as to the most appropriate solution for Segundo Torrão. My predisposition is to be critical of relocation in preference of retrofit although both approaches have their criticisms.

Portugal has a history of not working with communities and applying top-down state relocations. From 1993, the Special Resettlement Programme (PER) has displaced communities to the city peripheries and split up original communities through different destinations of relocation at the hands of the central government.²¹ Better realisation of the PER is demonstrated by Almada City Council under the communist party who aim to keep communities together and relocate within shorter distances of the original settlement, in one case even as close as 500m meters away.²²

Whilst retrofit enables retention of location, community, labour networks and embodied energy of the built fabric it may not be appropriate in all cases; for instance, if the settlement is poorly located and/or the built fabric is beyond improvement. For example, assessments of how to upgrade the informal settlement of Cova da Moura identified significant issues that led back to idea of relocation that the community aimed to avoid.²³

From 1974-1976 the SAAL programme (Mobile Service for Local Support) demonstrated a ground-up, participatory approach to planning the future of communities through multi-disciplinary design teams offering technical assistance to community inhabitants.²⁴ Whilst short-lived, other SAAL style projects such as that for Prodac have demonstrated the positive effect of participatory designed, self-built neighbourhoods built in close proximity to the original settlement.²⁵

In the spirit of the SAAL, I too would like to follow a ground-up model for determining the future of Segundo Torrão future in accordance with the community's wishes and propose that such a program would be revived to support the community in developing their vision.

During our visit, it was suggested that the majority (approximately 80%) of the community would like to stay.²⁶ Based on my personal bias towards retrofit and the criticism levelled at relocation I would like to support the community's position. However, consideration of context is important to create a critical and informed position and Segundo Torrão's vulnerable coastline position must be considered.

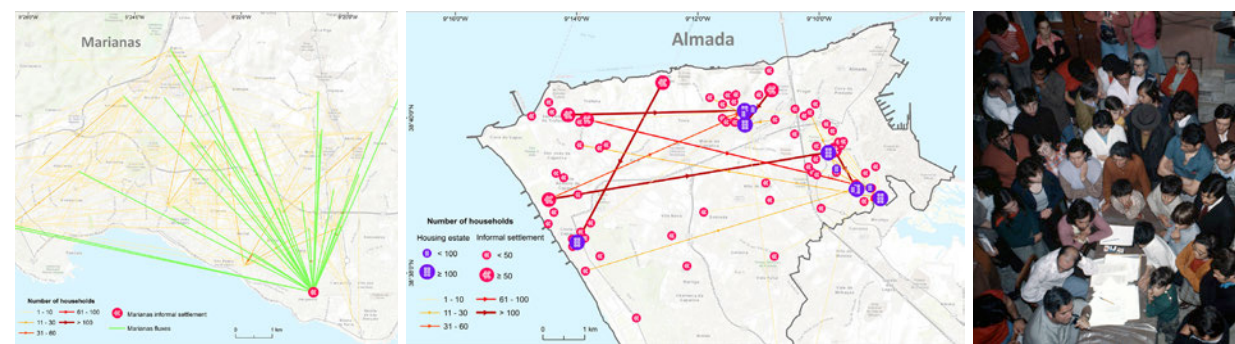


Figure 7 (Left): Relocation in Lisbon (Image courtesy of Ascensão and Leal)

Figure 8 (Middle): Relocation in Almada (Image courtesy of Ascensão and Leal)

Figure 9 (Right): SAAL meeting in 1976 (Image courtesy of Alexandre Alves Costa)

²¹ Eduardo Ascensão and Miguel Leal, 'Spatial Analysis', *Experts Project* <<http://expertsproject.ics.ulisboa.pt/analise.html>> [accessed 2 January 2020].

²² Ibid.

²³ Eduardo Ascensão, 'Lisbon', *Technoscience of Slum Intervention*, [n.d.] <<https://www.technoscienceslumintervention.org/lisbon>> [accessed 2 January 2020].

²⁴ Eduardo Ascensão, 'Interventions II: Participatory Architecture – The SAAL', *Technoscience of Slum Intervention*, [n.d.] <<https://www.technoscienceslumintervention.org/interventions-i-participatory-architecture-the-saal>> [accessed 1 January 2020].

²⁵ *Walking Tour of Lisbon Public, PER and SAAL Style Housing*, 8 December 2019, Margarida, Lisbon.

²⁶ *Walking Tour of Segundo Torrão*.

Will the Sea Engulf Segundo Torrão? When and How?

Sea Level Rise: A case to stay now

It is true that rising sea levels will ultimately submerge Segundo Torrão based on its current state and locked in temperature rise to date of 1°C, never mind whether we achieve our best efforts to cap global temperature rise at 1.5°C (Figure 10).²⁷ However, sea level rise is a long-term factor due to the time taken to respond to global temperature increases.²⁸ Based on this, Segundo Torrão has 50 years (2070) at worst or 80 years (2100) at best before the community feels the effects of sea level rise and becomes half submerged due to the effects of 0.5°C temperature rise (Figure 11).²⁹ Therefore there is an argument that Segundo Torrão can stay in the short-term but the community will need to have a serious think about its long-term future and whether that means relocation, albeit, on their terms.

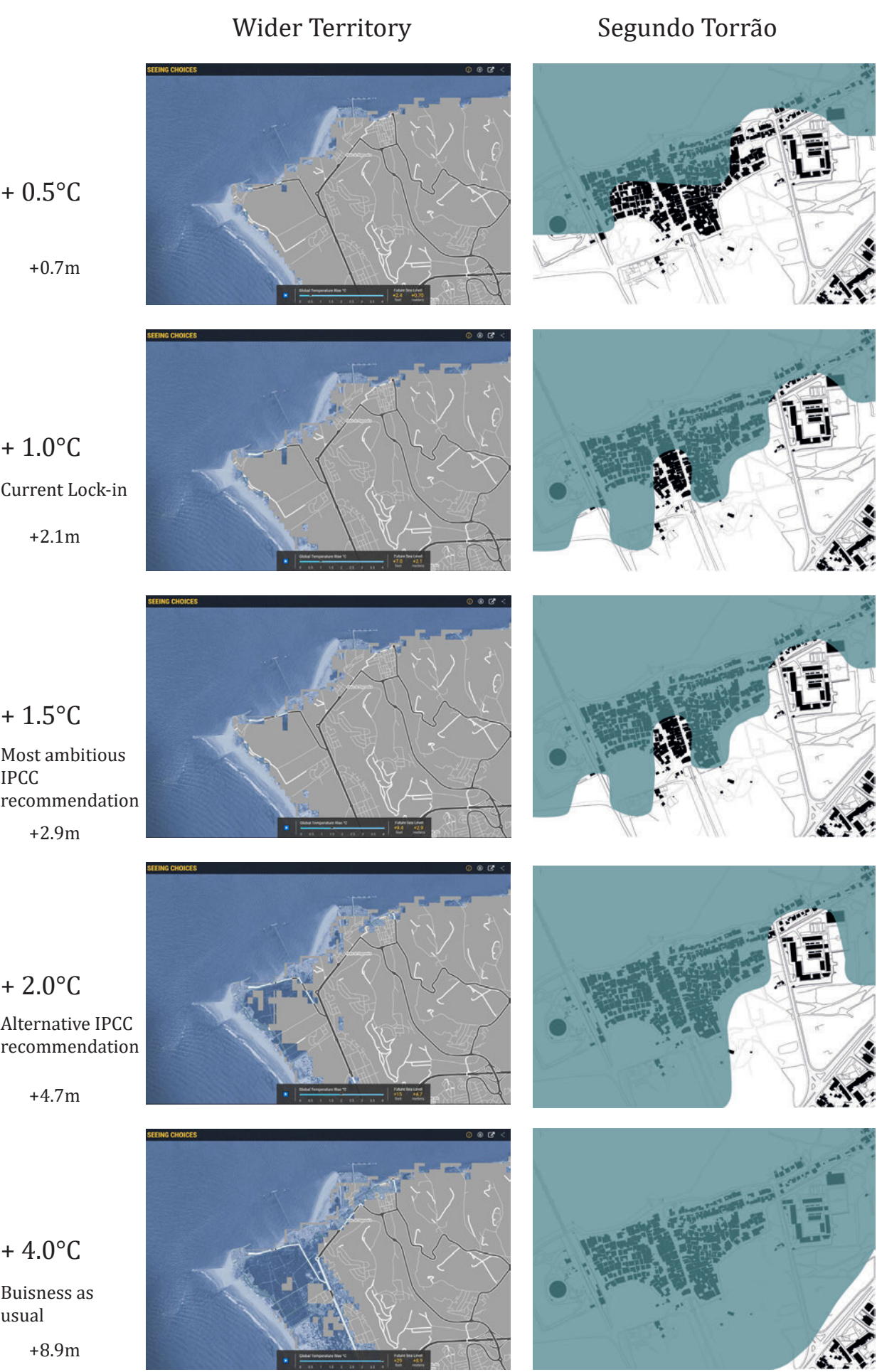
Coastal Erosion & Flooding: Confronting the short-term

However, staying for now is not perfect and means contending with shorter-term and more immediate risks such as coastal erosion and flooding caused by extreme weather events (Figure 11). Both of which will leave the community vulnerable in the absence of intervention. For instance, current rip-rap defences are deemed insufficient to prevent erosion despite upgrades.³⁰

However, research from the New Science Decision Makers project shows that life in the settlement can continue if relatively simple protection structures and an early warning system are put in place, the latter they hope to establish by 2021.³¹ Realisation of these defences may be dependant on the state listening and accepting this alternative proposition for the future of Segundo Torrão. Important to consider in this regard is the “temporary curse” whereby making improvements to a community is made undesirable if the community is to be relocated in the near future meaning that nothing is done and life continues in inadequate conditions.³² However, as Segundo Torrão has 50-80 years until possible relocation and the mitigation measures are considered simple (and therefore perhaps not overtly costly), perhaps the state would offer its support if convinced. Indeed they seem content with simultaneously improving water and electricity access whilst also advocating relocation.

²⁷ Climate Central, ‘Surging Seas: Seeing Choices’, *Climate Central*, [n.d.] <<https://seeing.climatecentral.org/#12/40.7302/-74.0073?show=lockinAnimated&level=0&unit=feet&pois=hide>> [accessed 31 December 2019].
²⁸ Ibid.
²⁹ Climate Central, ‘Surging Seas: Risk Zone Map’, *Climate Central*, [n.d.] <https://ss2.climatecentral.org/#13/38.6869/-9.1397?show=satellite&projections=1-K14_RCP85-SLR&level=10&unit=meters&pois=hide> [accessed 31 December 2019].
³⁰ Arquizán, *Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrão*, pp. 21-22.
³¹ Cão, ‘Today’s Results from Coastal Geologists / Oceanographers’.
³² Ascensão, ‘Lisbon’.

Figure 10: Global temperature rise and corresponding sea level rise in the north Almada coast (left) and Segundo Torrão (right). (Left: Images courtesy of Climate Central. Right: Author’s drawings based on Climate Central).



Extreme Weather Events

Sea Level Rise

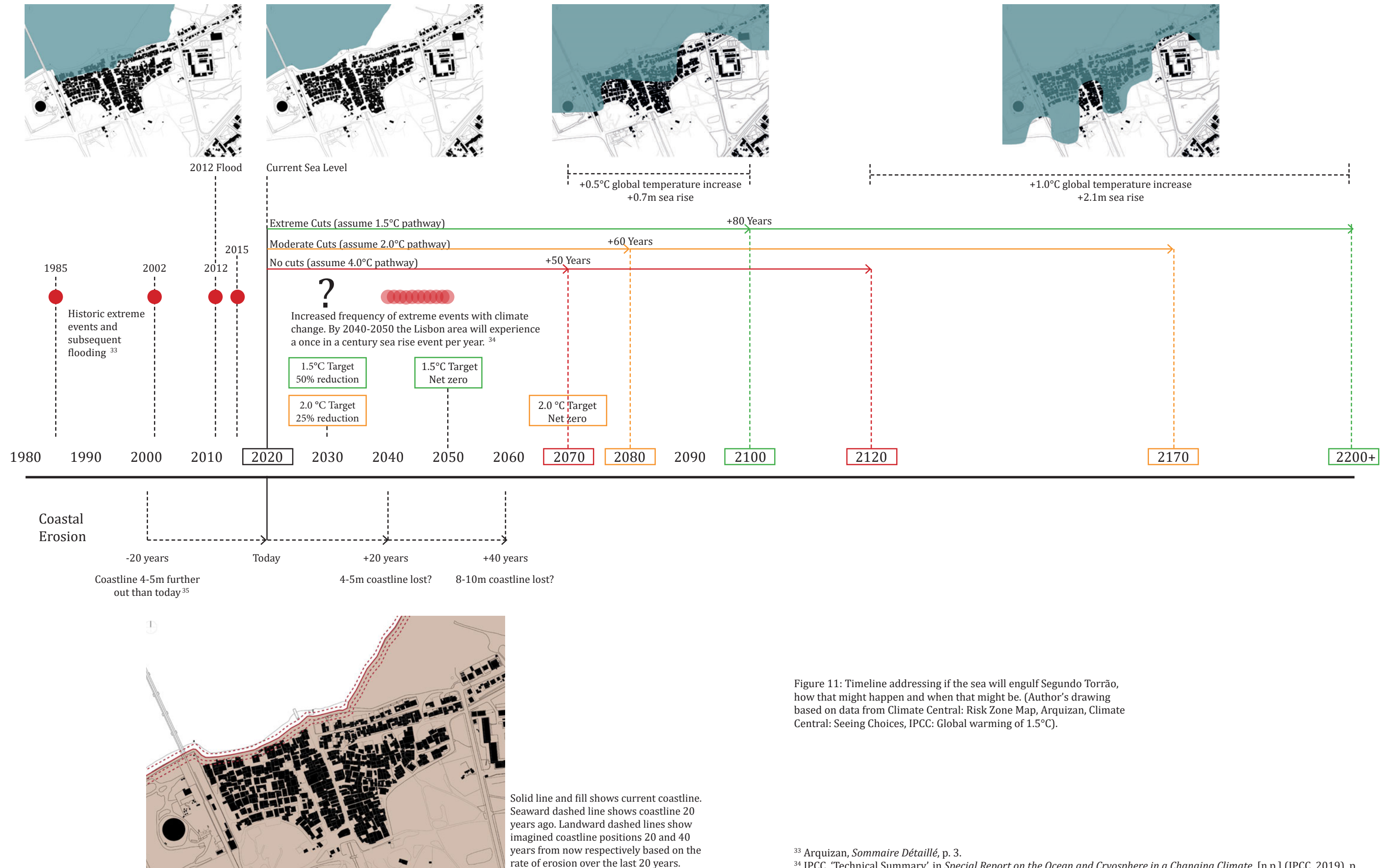


Figure 11: Timeline addressing if the sea will engulf Segundo Torrão, how that might happen and when that might be. (Author's drawing based on data from Climate Central: Risk Zone Map, Arquizan, Climate Central: Seeing Choices, IPCC: Global warming of 1.5°C).

³³ Arquizan, *Sommaire Détaillé*, p. 3.

³⁴ IPCC, 'Technical Summary', in *Special Report on the Ocean and Cryosphere in a Changing Climate*, [n.p.] (IPCC, 2019), p. 56 <https://www.ipcc.ch/site/assets/uploads/sites/3/2019/11/04_SROCC_TS_FINAL.pdf> [accessed 16 January 2020].

³⁵ Arquizan, *Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrão*, pp. 20-21.

A Ground-Up Future...

Two key steps to achieving a ground-up future were presented in conversation with researcher into informal settlements Eduardo Ascensão. Firstly, communities need to prepare a coherent plan for their future in order to present an alternative to the government's top-down approach, as demonstrated by previously mentioned Cova da Moura. Secondly, the whole community needs to be engaged so that they are resilient and therefore not dependant on a few individuals to give voice to this vision. This stemmed from criticism that community leaders, often belonging to the community residents' association and being most educated, are often the most vocal in the community and therefore targeted by the government, removed due to their ability to argue an arrangement for themselves, hence the community is left without a voice and the plan falls apart.³⁶

...Challenges for Segundo Torção

Segundo Torrrão faces some obstacles in achieving the ground-up future as presented above and is therefore currently vulnerable to the state's top-down intentions.

Producing a coherent vision for the future may be challenging as the community is divided on the topic; ‘some want to stay and others want to leave.’³⁷ Albeit the majority want to stay, it was suggested that preparing both what the majority and minority want may be helpful.³⁸ Within the stay argument, there is also potential divide on whether becoming less marginalised is good or bad, referring to the on-going electricity upgrades.³⁹ This may also be seen as a socio-economic divide between those that can afford to pay for the service, and those that specifically moved to Segundo Torrão to avoid paying bills and rent.⁴⁰ The community is also divided on whether positive representation of the community needs to be portrayed to the outside world or whether to be honest about the challenges in order to bring about change.⁴¹

The community is also not particularly engaged, particularly when compared to Cova da Moura, and therefore the residents association is the main voice of the community although there are criticisms that it does not represent the whole community but rather just a portion of it.⁴² The community is divided culturally, between original Portuguese inhabitants who took residence from 1954-1974, and African inhabitants who arrived later between 1986-2009.⁴³ They are also divided socio-economically, between the more affluent holiday homeowners on the seafront and the less affluent permanent inland residents.⁴⁴ This therefore presents a spatial division. Owing to the origins of the community being a small row of fishing huts originally settled by the Portuguese on the land owned by Lisbon Port Authority it is assumed this spatial division equates to largely Portuguese on the seafront and mainly African further inland. Attitudes towards the resident's association is also possibly hostile for illegal residents due to a recent census they conducted in conjunction with Almada City Council which maps legal and illegal residents and can therefore aid eviction.⁴⁵ Although segregated, the different groups get along.⁴⁶

The community divisions are also evident in community meeting spaces as all attract a specific demographic with the exception of the coastline and Place do Convívio which are capable of bringing the whole community together.⁴⁷

³⁶ Ascensão, *Meeting to Discuss his Research*.

³⁷ Arquizán, *Sommaire Détaillé*, p. 2.

³⁸ Ascensão, *Meeting to Discuss his Research*.

³⁹ *Walking Tour from Cova do Vapor to Segundo Torrão and onto Trafaria*, 6 December 2019, EDA Architects, Trafaria.

⁴⁰ Adrien Ganzer, *Segundo Torrao: A Suburban Story* [full en], online video recording, Vimeo, [2015?], <<https://vimeo.com/115938570>> [accessed 16 December 2019].

⁴¹ *Walking Tour of Segundo Torrão*.

⁴² Ascensão, *Meeting to Discuss his Research*.

⁴³ Arquizán, *Sommaire Détaillé*, p. 2.

⁴⁴ Arquizán, *Sommaire Détaillé*, p. 2.

⁴⁵ *Walking Tour of Segundo Torrão*.

⁴⁶ *Walking Tour from Cova do Vapor to Segundo Torrão and onto Trafaria.*

⁴⁷ Arquizán, *Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrao*, pp. 16-18.

- a - Beach
- b - Dunes
- c - Place do Convívio
- d - Waterfront
- e - Courtyard of public passage
- f - Resident's Association
- g - Football Field
- h - West Exit



Figure 12 (Top Right): Community meeting places (Author's drawing based on information from Arquizán).

Figure 13 (Middle): Spatial community divisions and arrival of nationalities by year range (Author's drawing based on information from Arquizán).

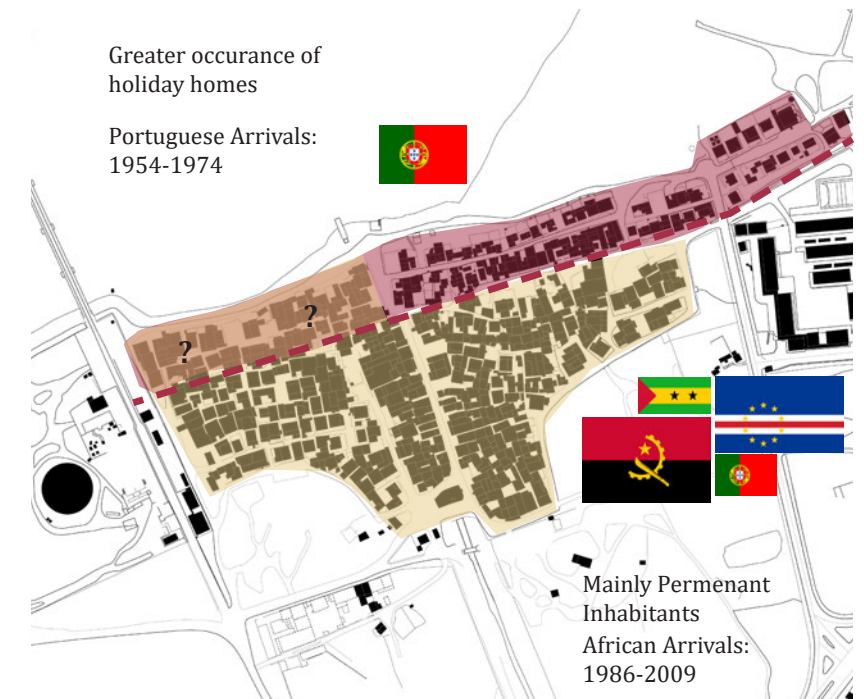
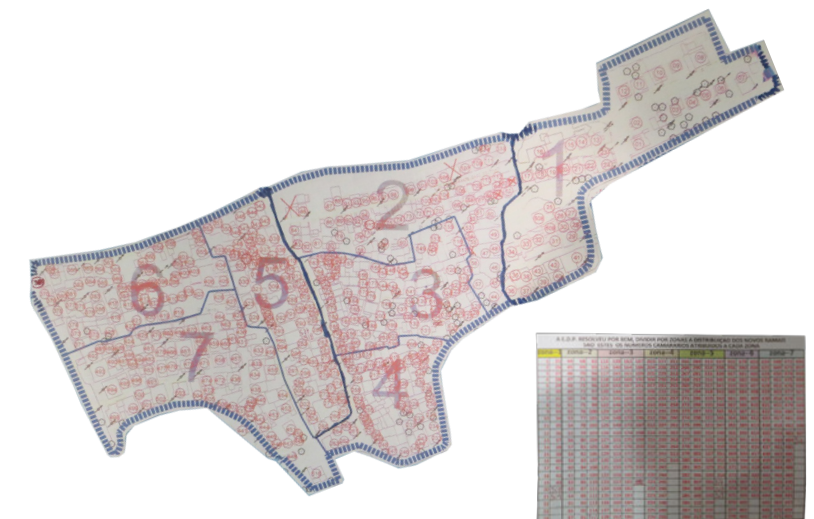
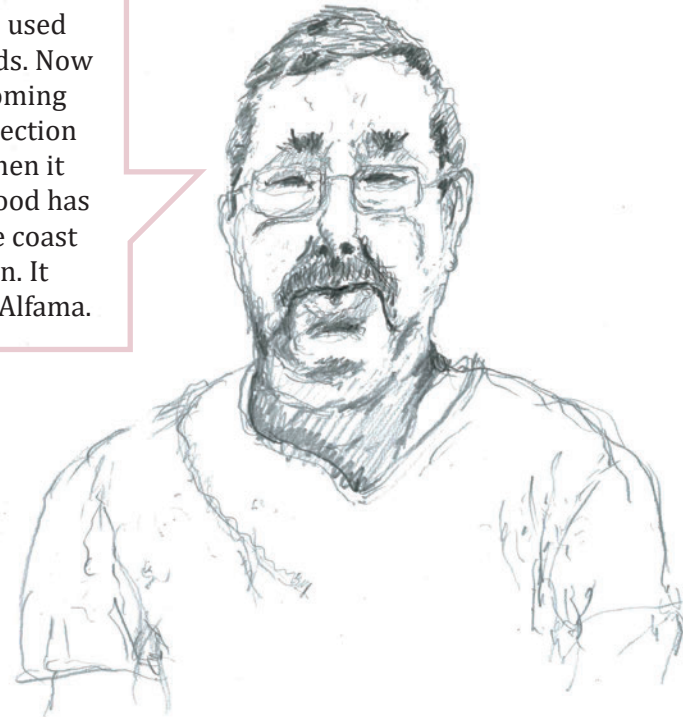


Figure 14 (Bottom): Segundo Torrao census carried out by the residents association with Almada city council. The map is located on the wall of the headquarters. All houses are marked with a number dictated by the census, overriding resident's own original house numbers (Author's photographs).



I remember coming to Segundo Torrão as a young boy from our home in Alfama in Lisbon. My father had one of the original fishing shacks and we used to come down in the summer and at weekends. Now that my father has passed away I still keep coming back to Segundo Torrão. I have a strong connection to this place but I do look back to the days when it was much quieter here, now the neighbourhood has grown so much. The sea is much closer to the coast now and I hear there may be talk of relocation. It would be a shame but at least my home is in Alfama.

Figure 15: Persona of Segundo Torrão resident - Vincente (Author's drawing based on information from Ganzer).



Vincente

I was born in a small farming village in the north of Portugal and moved to Lisbon when I was around 6. I then joined my aunt in Segundo Torrão. We had little money so we lived in a timber shed. Now I am very proud to be one of the directors of the Segundo Torrão Residents' Association and the quality of living is improving. In 2017 the council of Almada installed new water pipes and electricity upgrades are almost finished. We are now in a better place to think about community facilities such as our underused children's play space. As for the relocation announcement, 80% of us want to stay and we will not leave.

Figure 17: Persona of Segundo Torrão resident - Paulo (Author's drawing based on information from Walking Tour of Segundo Torrão).



Paulo

I came to Segundo Torrão from Angola when I was young. There was never really much going on and the access to water and electricity was poor. When I was old enough to be independent I went to live in the Costa da Caparica social housing. Quality of living was better but life was hard financially; I worked as a cleaner and earned €500 a month and the cost of living ranged from €400-500 leaving me with little leftover. I ended up leaving and came back to Segundo Torrão because I was pregnant and I am now raising my baby which comes with expenses. Segundo Torrão is was a free place to live but now the upgrades mean I might have to consider my options.

Figure 16: Persona of Segundo Torrão resident - Serralha (Author's drawing based on information from Ganzer).



Serralha

I am Segundo Torrão born an bred. I go to the Trafaria school nearby and see all the children from other areas. My parents told me not to say I come from Segundo Torrão because it comes with a negative image. But I'm proud of where I come from. Yeah there are some issues, people hanging around getting up to no good, but there are some people that want change. That's when I heard of the group that want to give the ghetto an identity through rap and hip hop and this print making thing called serigraphy. It's a bit cramped running it from our friends house but when the weather's good we bring the activity outside.

Figure 18: Persona of Segundo Torrão resident - Maria (Author's drawing based on information from Ganzer).



Mario

Project Entry Point: 2GTO2825

For Segundo Torrão to have a say in their short and long-term future they need to come together as a community and have a voice so that the state listens to them. Developing this, Ascensão stated that the best way to get the attention of the state and put pressure on them into taking action is through the media.⁴⁸

João Cão, our local contact and active researcher in Segundo Torrão, made us aware of a group he is working with in the neighbourhood called 2GTO2825, a group that displays Hamdi’s notion of “emergent” potential’ in relation to the above aims (Figure 19).⁴⁹ They have capacity to give voice through music and graphic identity and the capacity to unite communities, both at neighbourhood and urban scales due to the scale of their inclusive outlook. Currently operating from one of the member’s houses, it was suggested that the group may move soon.⁵⁰ This project therefore takes 2GTO2825 and the provision of new accommodation for them as its starting point.

I am therefore pursuing a community project as this is the missing link. Indeed, it was acknowledged during our visit that Segundo Torrão is in a better position to think about community facilities now that basic survival needs of water and electricity are being met.⁵¹

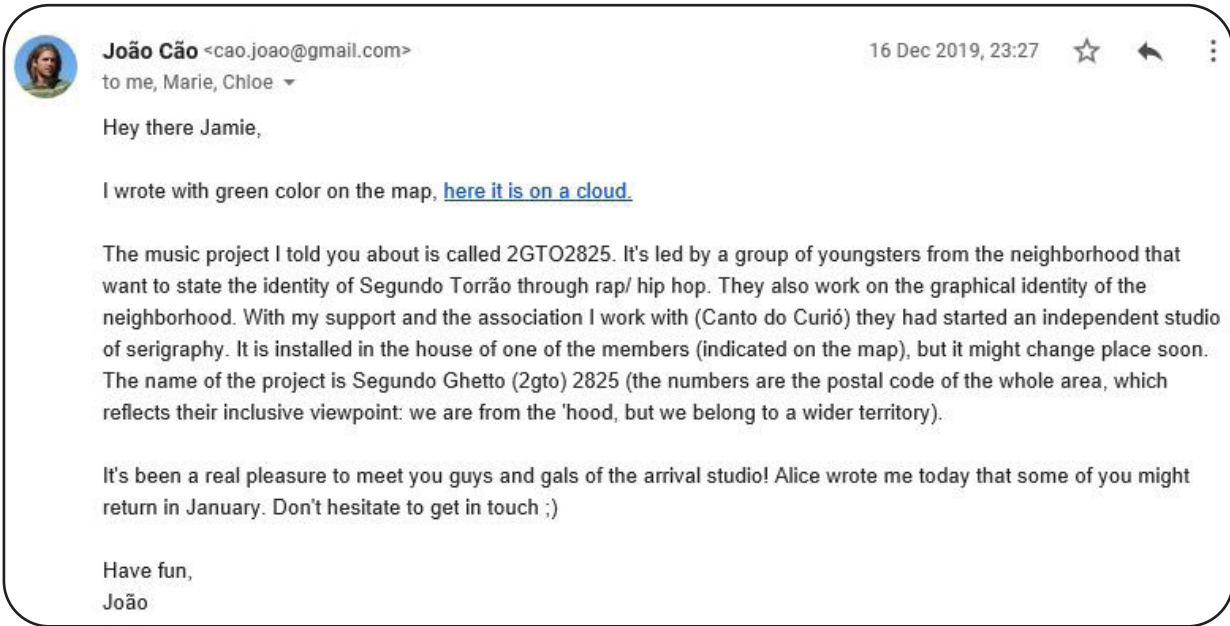


Figure 19: Email with João Cão regarding details of 2GTO2825 (Author’s screenshot of email with Cão).



Figure 20: Temporary location of 2GTO2825’s serigraphy studio in the house of one of the members (Author’s drawing based on information from Cão)

⁴⁸ Ascensão, *Meeting to Discuss his Research*.
⁴⁹ Hamdi, *Small Change*, p. xx.
⁵⁰ João Cão, ‘Segundo Torrão Services Mapping’, *Email* [16 December 2019].
⁵¹ *Walking Tour of Segundo Torrão*.



Figure 21: 2GTO2825 works of serigraphy in Segundo Torrão (Images courtesy of Novos Decisores Ciências do Segundo Torrão).

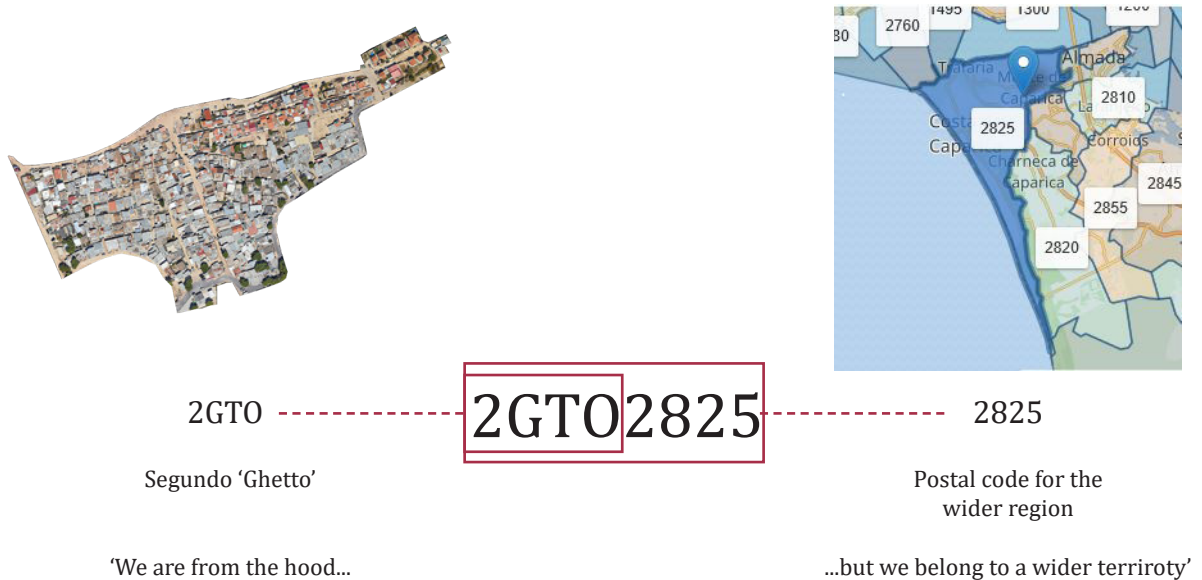


Figure 22: Representation of the meaning behind the name '2GTO2825' (Author’s drawing based on information from Cão. Left: Satellite image from Google Earth. Right: Image from Cybo).

Emergence: Small Beginnings & Scaling Up

Serigraphy: A Graphical Voice

‘[T]ransforming the citizen of any nationality into an art maker as a political act.’⁵²

Atelier SER

Serigraphy is easy to scale up. Once one has a silkscreen setup, the scale and ambition of the work is dependant on the substrate alone (Figures 23-27). Furthermore, once the labour intensive setup of the screen and stencil is complete, the production process is low-skilled and therefore highly participatory and inclusive. As 2GTO2825 has been equipped with its own silkscreen, with help of João and the Canto do Curió, the group is also capable of scaling up to produce larger participatory works such as those by Atelier SER.

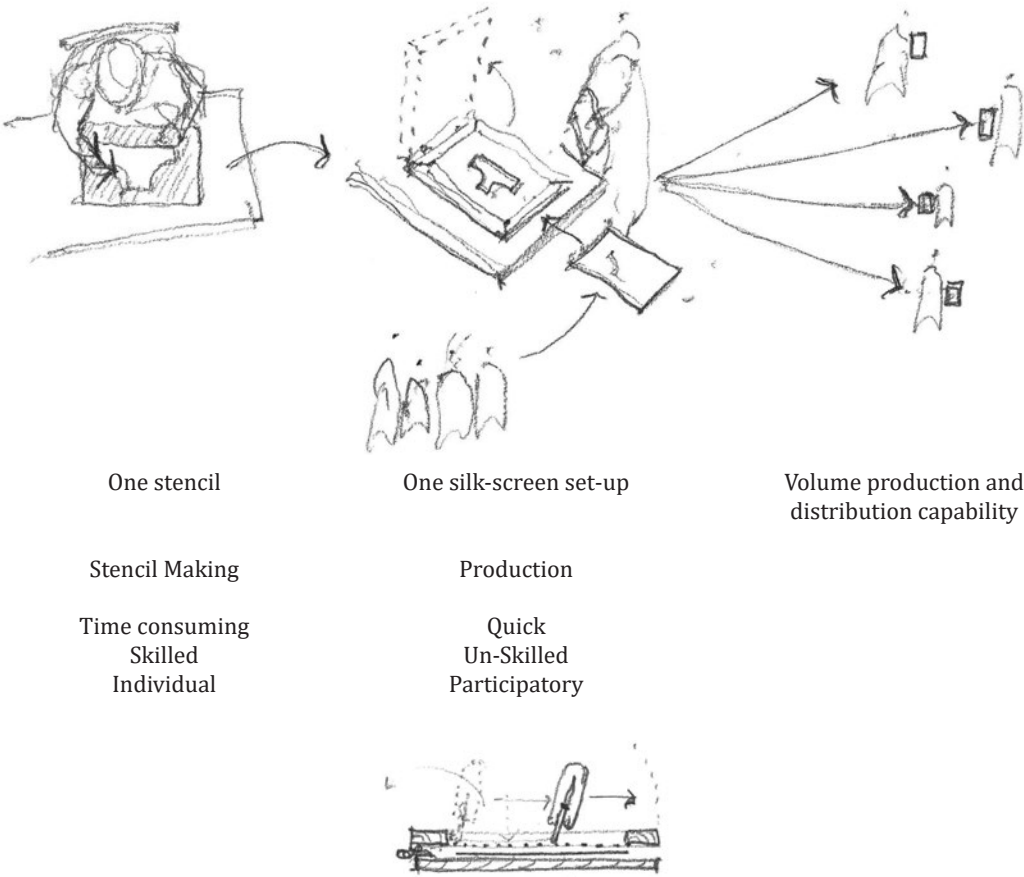


Figure 23: Scaling up serigraphy (Author’s drawings based on information from Just Looking Gallery).



Scaling up serigraphy using examples by Atelier SER

Figure 24: Mobile serigraphy studio on bicycle (Image courtesy of Atelier SER).



Figure 25: Larger participatory serigraphy production (Images courtesy of Atelier SER).

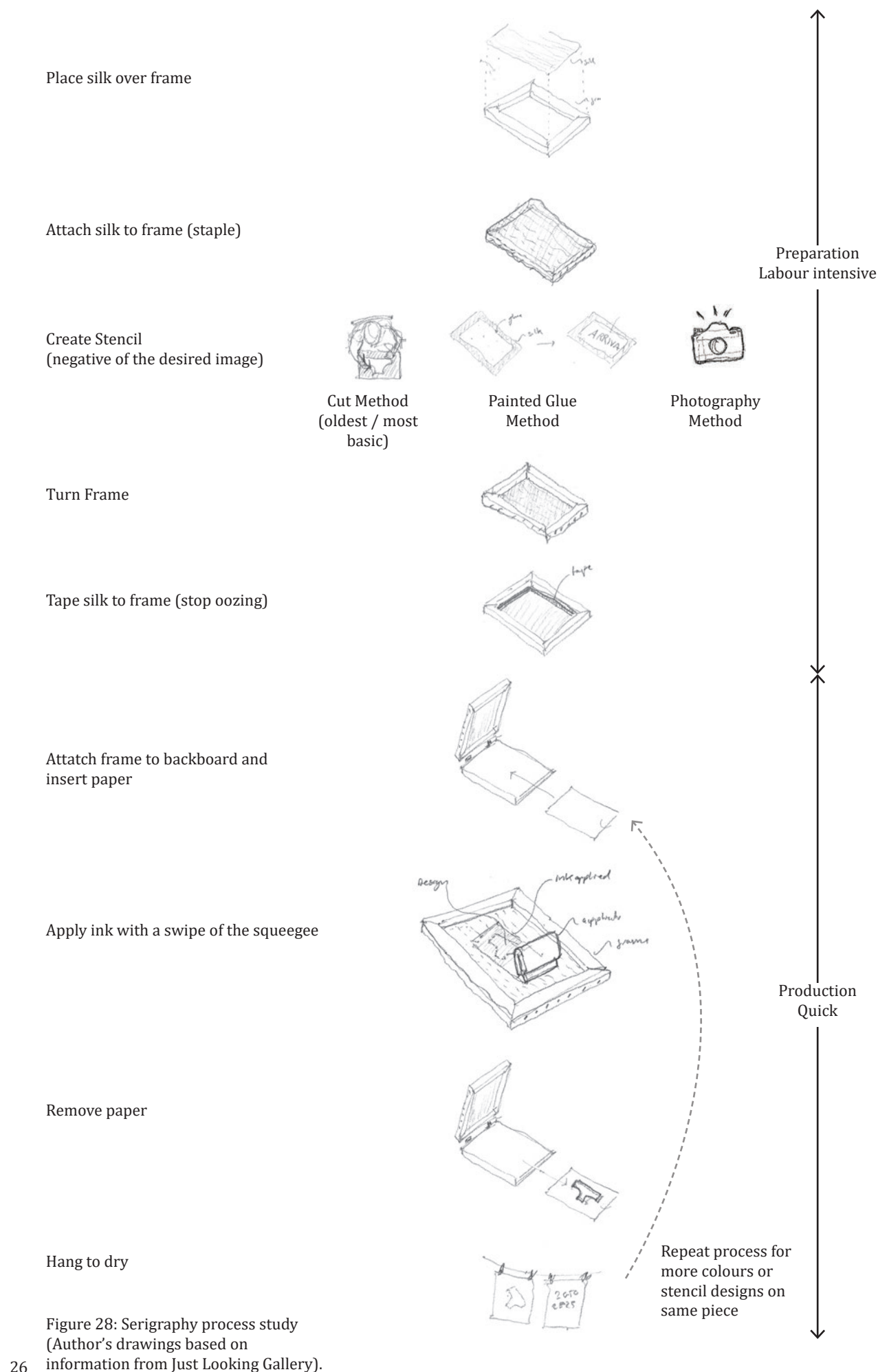


Figure 26: Serigraphy production in a main street (Image courtesy of Atelier SER).



Figure 27: Serigraphy for activism (Image courtesy of Atelier SER).

24 ⁵² Atelier SER, ‘About’, *Atelier SER*, trans. by Google Translate, [n.d.] <<https://atelierser.wordpress.com/about/>> [accessed 6 January 2020].



Music: An Audio Voice

'Our voice. Our dream. Our future.'⁵³

Prince Peter, Chicoco Radio

Building on 2GTO2825's interest in stating the identity of Segundo Torrão through music and the mentioning of the importance of the media in attracting government attention, the Chicoco Radio project may serve as a useful programmatic precedent to develop this further.

Set in the informal coastal settlement of Port Harcourt in Nigeria, this radio project is a form of activism and provides a platform to give voice to the community in order to speak out against the violent demolitions carried out by the repressive regime of the state. It can also be seen as a celebration of identity, with sound bites and stories of multiple individuals posted on their website.⁵⁴

Chicoco's recording studios and desire to expand to music production are no doubt aspirations shared by 2GTO2825 so that they too may record, refine and distribute their work. Additionally, the Chicoco project's emphasis on training is also a key learning point, whereby community members are equipped with the skills necessary to perform roles crucial to the service such as writers, sound engineers, music producers and more.⁵⁵



Figure 29: Chicoco Radio training centre, Port Harcourt, Nigeria (Images courtesy of Chicoco Radio).

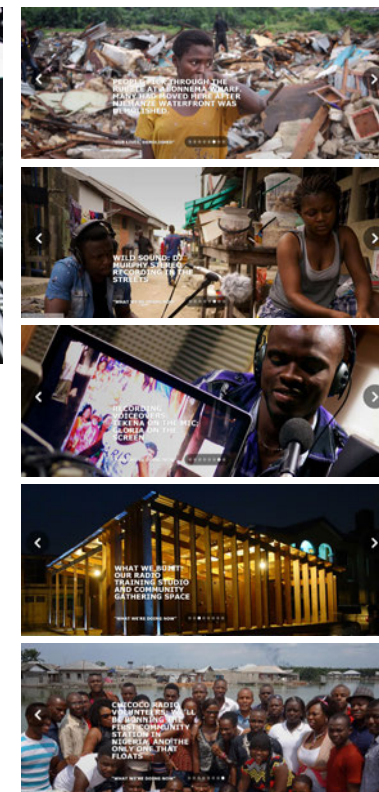


Figure 30: Proposals for future Chicoco Radio building by NLE (Image courtesy of NLE).

⁵³ Chicoco Radio, *Chicoco Radio*, 2013 <<http://www.chicoco.fm>> [accessed 12 December 2019].

⁵⁴ Ibid.

⁵⁵ Ibid.

At a city scale, 2GTO2825 can build on the work of the association called Habita who went around numerous informal settlements including Segundo Torrao, as well as PER schemes, to 'give visibility to housing issues in Portugal, affirming and joining the voice of the populations that have been forgotten, ignored, excluded'.⁵⁶ This point of joining communities sharing similar issues was also noted by Ascensão in the cause of sharing information and strengthening networks.⁵⁷ Whilst Habita still campaign, the caravan project has finished and therefore 2GTO2825 may continue the spirit of this work.

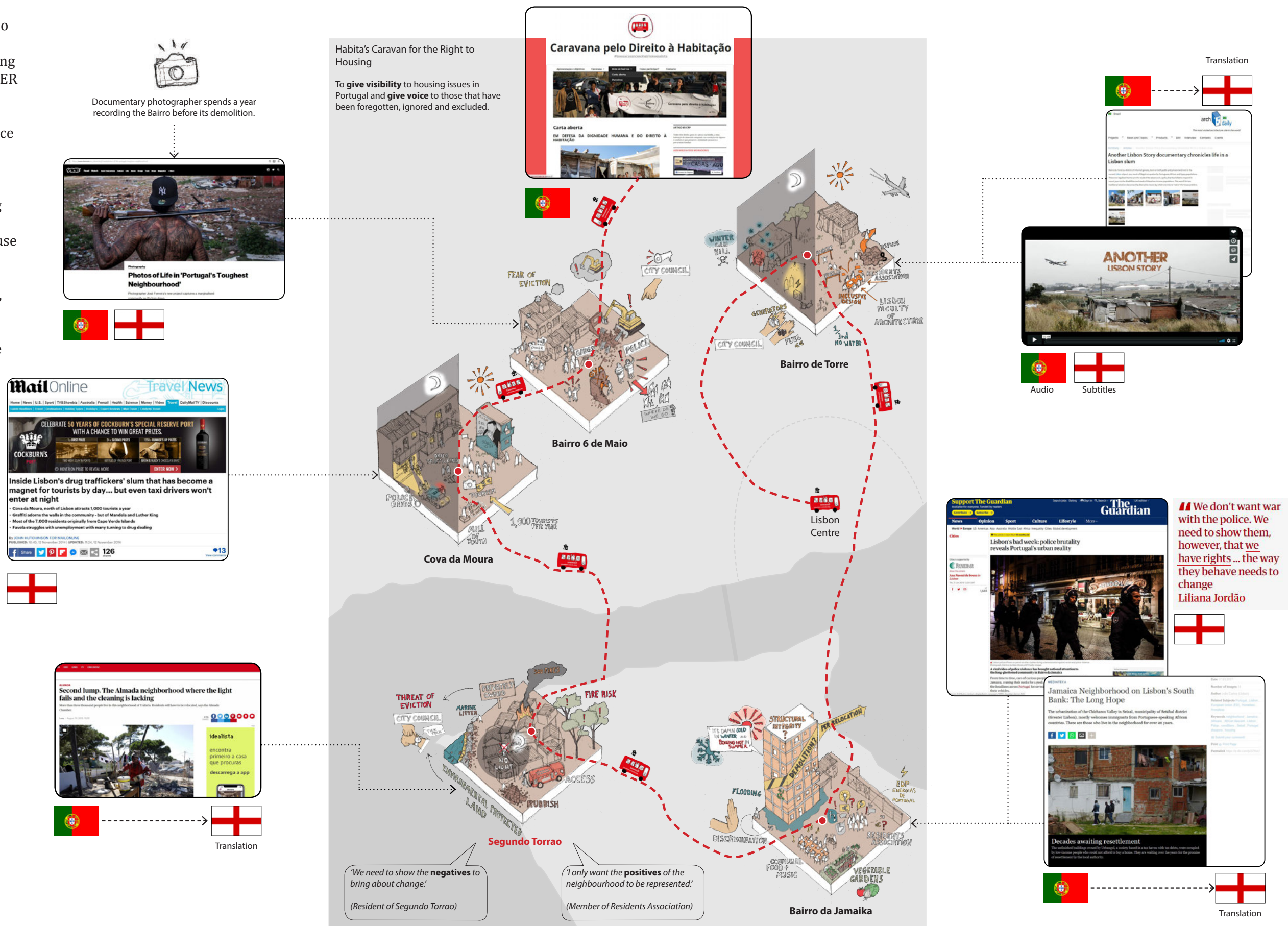


Figure 31: Illustration of Habita's caravan route through five informal settlements and the conditions experienced in these settlements as documented by the media (Author's drawing based on multiple sources of information, see reference list).

⁵⁶ Habita, 'Caravana' [Caravan], *Caravana pelo Direito à Habitação* [Caravan for the Right to Housing], trans. by Google Translate, [n.d.] <<https://caravanapelahabitacao.wordpress.com/caravana-3/>> [accessed 13 November 2019].

⁵⁷ Ascensão, *Meeting to Discuss his Research*.

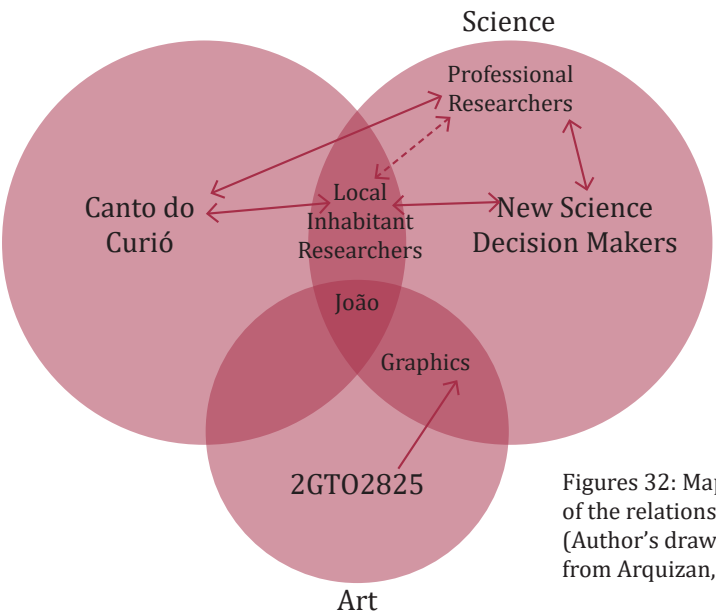
Exploring Stakeholders & Developed Brief

João is seen as the lead contact in this project as he is very involved in Segundo Torrão through his work and research. From him other connections emerge.

João supports 2GTO2825 through the association he works with called Canto do Curió. Interestingly the association took its name from the South American Curio bird which is renowned for its song and therefore harmonises with the giving voice ethos of this project.⁵⁸ Their three areas of action as an organisation of art, science and emancipation are relevant to this project.⁵⁹ 2GTO2825 addresses the art side through music and graphics and emancipation is this project's ultimate aim. In terms of science, Canto do Curió is also involved with the New Science Decision Makers project with João acting as one of the mediators / research participants, and graphics are provided by 2GTO2825 with assistance from Atelier SER.⁶⁰ All are therefore linked.

The scientific programme is highly relevant to the aims of this project as issues facing the coastline are seen by residents as a topic capable of uniting the whole community and wider area.⁶¹ In terms of voice, the program states their research can be used 'as a tool to better think about the future and to dialogue with the responsible entities.'⁶² There is also cause for integrating the scientific programme due to some objectives they identify. This includes the need for regular data collection, more involvement of the local population due to the large workload for a small team, and improvement of the connection between both local community and professional researchers due to dependency on facilitators such as Canto do Curió.⁶³ Incorporation of the scientific coastal monitoring program is also vital as the premise of this project is to stay until the community's relationship with the sea becomes too dangerous.

The developed brief therefore takes Canto do Curió as the project client and seeks to unite Segundo Torrão through both 2GTO2825 and the New Science Decision Makers programme, to provide the art and scientific voices respectively in order to ultimately achieve emancipation and get their ground-up future vision.



Figures 32: Mapping the interconnectedness of the relationship between stakeholders (Author's drawing based on information from Arquizan, Cão and Canto do Curió).

⁵⁸ Canto do Curió, 'About', Facebook, trans. by Google Translate, [2008?] <<https://www.facebook.com/pg/cantocurio/about/>> [accessed 2 January 2020].

⁵⁹ Ibid.

⁶⁰ Novos Decisores Ciências do Segundo Torrão [New Science Decision Makers of Segundo Torrão], '#2GTO #2825 com AtelierSer! [4 Novembro de 2017 @ 2GTO]' (Facebook post, Novos Decisores Ciências do Segundo Torrão, 6 December 2017).

⁶¹ Arquizan, *Sommaire Détaillé*, p. 3.

⁶² Novos Decisores Ciências do Segundo Torrão [New Science Decision Makers of Segundo Torrão], 'About', Facebook, trans. by Google Translate, [2016?] <<https://www.facebook.com/pg/Torrao2825/about/>> [accessed 2 January 2020].

⁶³ Arquizan, *Sommaire Détaillé*, p. 4.

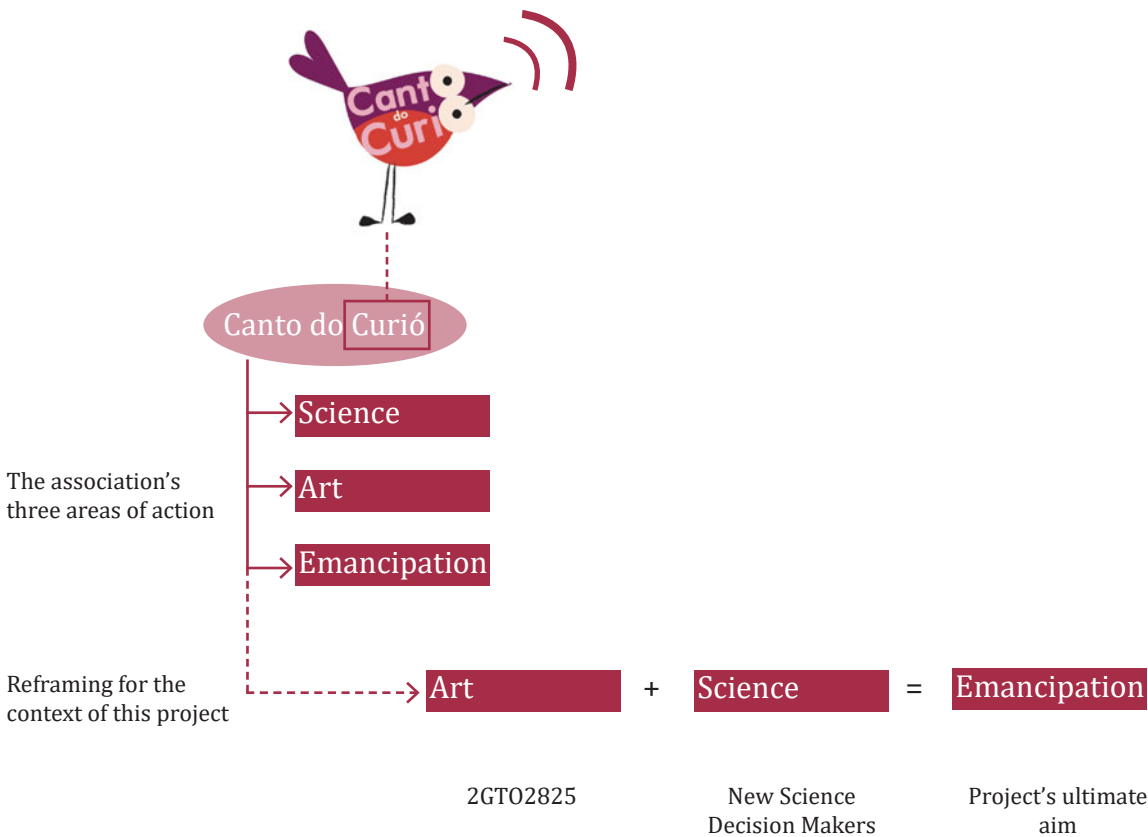


Figure 33: Canto do Curió's three action areas and my reframing of them for this project (Author's drawing based on information from Canto do Curió).

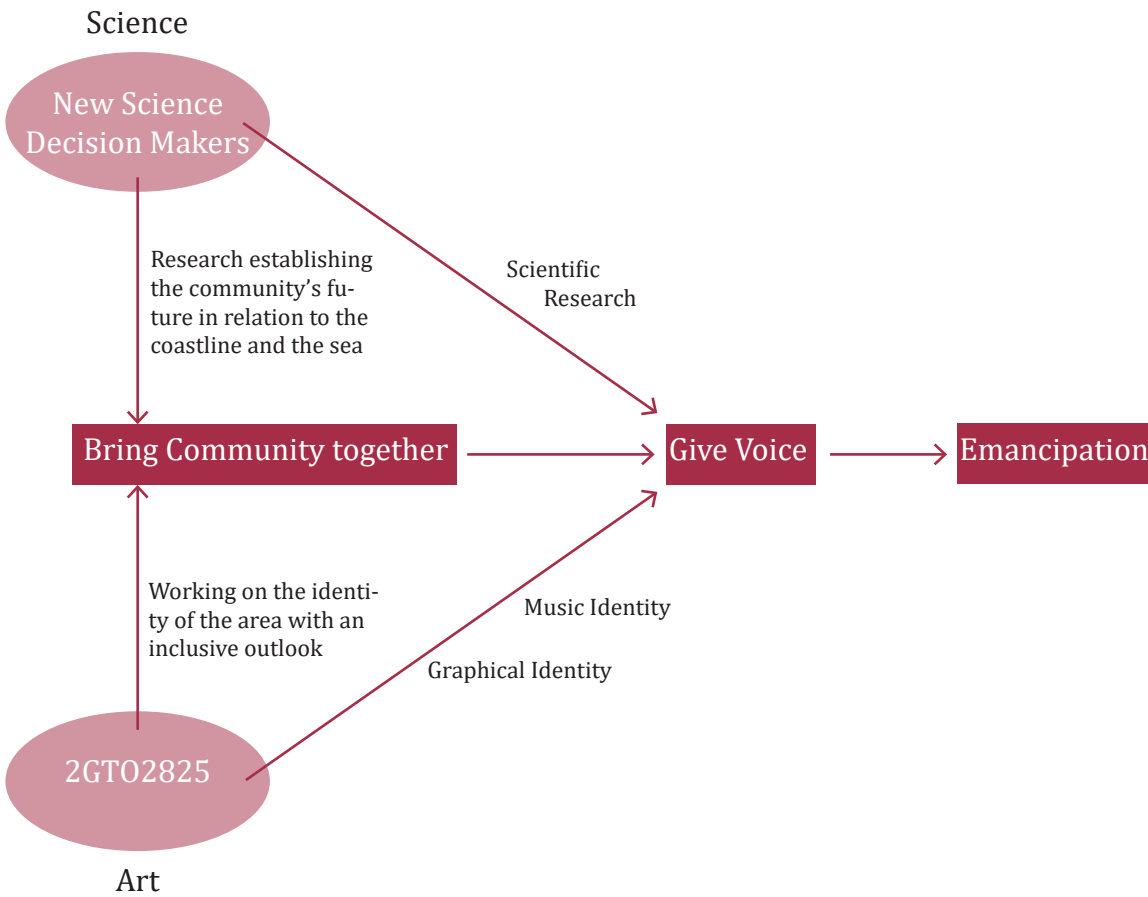


Figure 34: Developed Brief (Author's drawing).

Choosing a Site

A set of criteria were used to determine the most appropriate site for the project. Firstly, being grounded meant that I wanted to work with areas identified by the community and secondly that I wanted to avoid displacement of people and existing activities. To compliment the program I wanted a site capable of bringing the community together and mending some of the tangible and intangible community divisions. I also considered it important to be in an area of density, adjacent to other mixed uses in order to encourage activity, spontaneous engagement, and hence emergence, building on the theory of Sanders on the successful ‘Arrival City’⁶⁴ and Sennett on the ‘Open City’.⁶⁵

Having initially identified the totality of site options, three sites were considered in more detail and ultimately Place do Convívio was selected as the most appropriate.

- Criteria
- 1. Avoid displacement of people & existing activities
 - 2. Density, adjacency, intensity, activity
 - 3. Bring whole community together
 - 4. Builds on existing areas identified by community
 - 5. Connection & proximity to the coast



Figure 35: All site options with highlights to the three that were considered and the one that was ultimately selected (Author’s drawing).

⁶⁴ Doug Saunders, *Arrival City* (London: Windmill Books, 2011), pp. 289-301.
⁶⁵ Harvard GSD, Richard Sennett “The Open City”, online video recording, YouTube, 21 September 2013, <<https://www.youtube.com/watch?v=eEx1apBAS9A>> [accessed 14 January 2020].

Place do Convívio

The site consists of three empty buildings, including the former very popular Convívio cafe⁶⁶ and a once well used Jiu-Jitsu centre, that sit west of an underused external children’s play space known as Convívio square.⁶⁷ This choice of site therefore does not displace existing activities and instead offers the opportunity to revive this part of the community as identified during our visit. The empty existing buildings also enable 2GT02825 to move immediately from their current accommodation.

The name alone, Convívio translates to coexist which harmonises with the aim to bring the community together.⁶⁸ This idea is reinforced spatially as the site sits at the edge of the previously mentioned cultural / socio-economic community division between seafront and inland dwellings. Second only to the coastline, Place do Convívio is the only site that brings together the full spectrum of residents and the presence of children, due to the external play area is attributed to be a supporting factor in this.⁶⁹

Children are therefore likely to be an important user group. Additionally there are concerns of youngsters not having anything to do and potentially straying into bad habits so having activities for them will be a positive move.⁷⁰

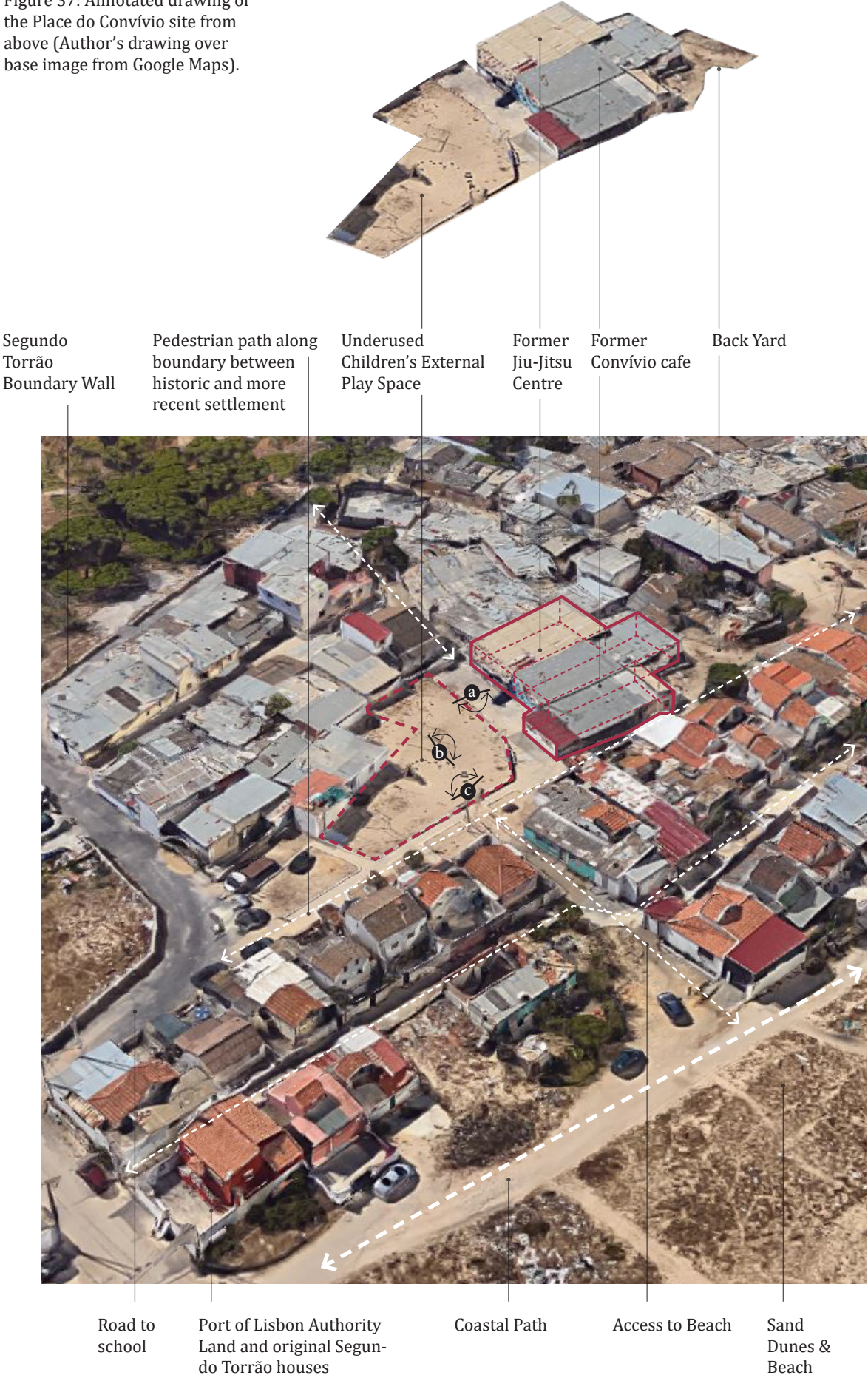
The site has potential great strategic importance. Rather than being peripheral, it is located in the middle of a dense and potentially very active area and may therefore benefit from adjacency. Provided the play area is improved, spontaneity will be encouraged as children and parents of all backgrounds will come to the play area and subsequently be drawn to the activities housed in the adjacent building. Play area, year round asset, not seasonal like coastline, therefore constant traffic.

Figure 36: The Place do Convívio site during our study visit (Images courtesy of John Sampson).



⁶⁶ Arquizan, *Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrão*, p. 6.
⁶⁷ *Walking Tour of Segundo Torrão*.
⁶⁸ Google Translate, *Google Translate*, 2020 <<https://translate.google.co.uk/#view=home&op=translate&sl=pt&tl=en&text=convivio>> [accessed 22 January 2020].
⁶⁹ Arquizan, *Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrão*, pp. 17-18.
⁷⁰ Ganzer, *Segundo Torrao: A Suburban Story* [full en].

Figure 37: Annotated drawing of the Place do Convívio site from above (Author's drawing over base image from Google Maps).



Architectural Language and Approach to Materials

Superuse

Scarcity of funds is a condition experienced across much of Segundo Torrão and consequently encourages resourcefulness. During our visit we saw evidence of using found and sometimes unconventional materials for reuse or repurposed use (Figure 38). For instance if someone wants to make a barbeque in Segundo Torrão, they cut a barrel in half and attach some legs to it and when the residents association needed to extend their headquarters to accommodate larger meetings they used salvaged metal from a local construction site. These observations from the ground display some of the theory of Superuse⁷¹ and at a more ambitious scale resonate with the work of Rural Studio. Working in this way will therefore be highly appropriate in developing an architectural language and material approach for a building in Segundo Torrão. This approach is also highly topical, set in the wider context of the climate emergency, the need for conservative use of resources and to move towards a circular economy by reducing waste through retrofit, reuse and repurposing of buildings, materials and objects.

Figure 39 sets out my critical approach to the application of Superuse. One must decide how obvious they want Superuse to be for an application in order to guide whether it is to be an aesthetic and/or solely environmental choice. This will depend upon the nature of the material and level of processing. I would argue if too obvious, you risk a crude appearance that can be detrimentally perceived as impoverished.⁷² Whereas, if not obvious at all, it may not make a statement but still serves an environmental benefit. The work of Rural Studio on the other hand I feel strikes the perfect balance. Their work displays an economy of means in use of unconventional materials for construction and elevates them to create crafted and impressive results. You notice something is different about the building but it is not immediately obvious what it is made of. For instance the car windshield facade used in the Mason's Bend project.

The 'harvest map' is used as a tool in Superuse in order to map the availability of redundant materials within the vicinity of a project site that can be used for building.⁷³ Inherent within this is the environmental aim to limit transportation distances by sourcing materials locally. In the spirit of grounded, means-orientated design, harvest mapping determines what can be designed from the materials at hand rather than the usual designing of something and then looking for appropriate materials to achieve this strictly defined end goal. The method has therefore been applied to this project (Figure 40).

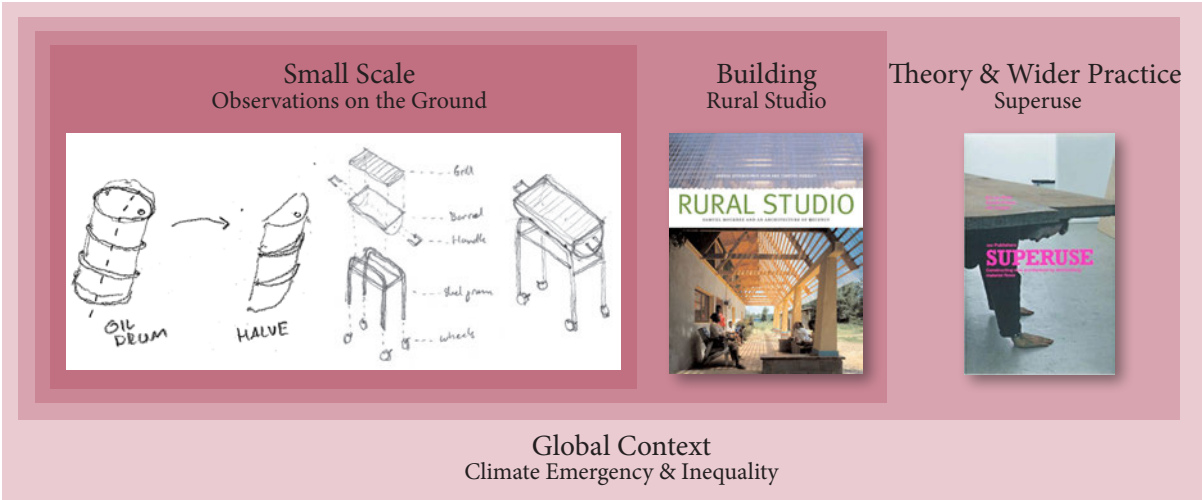
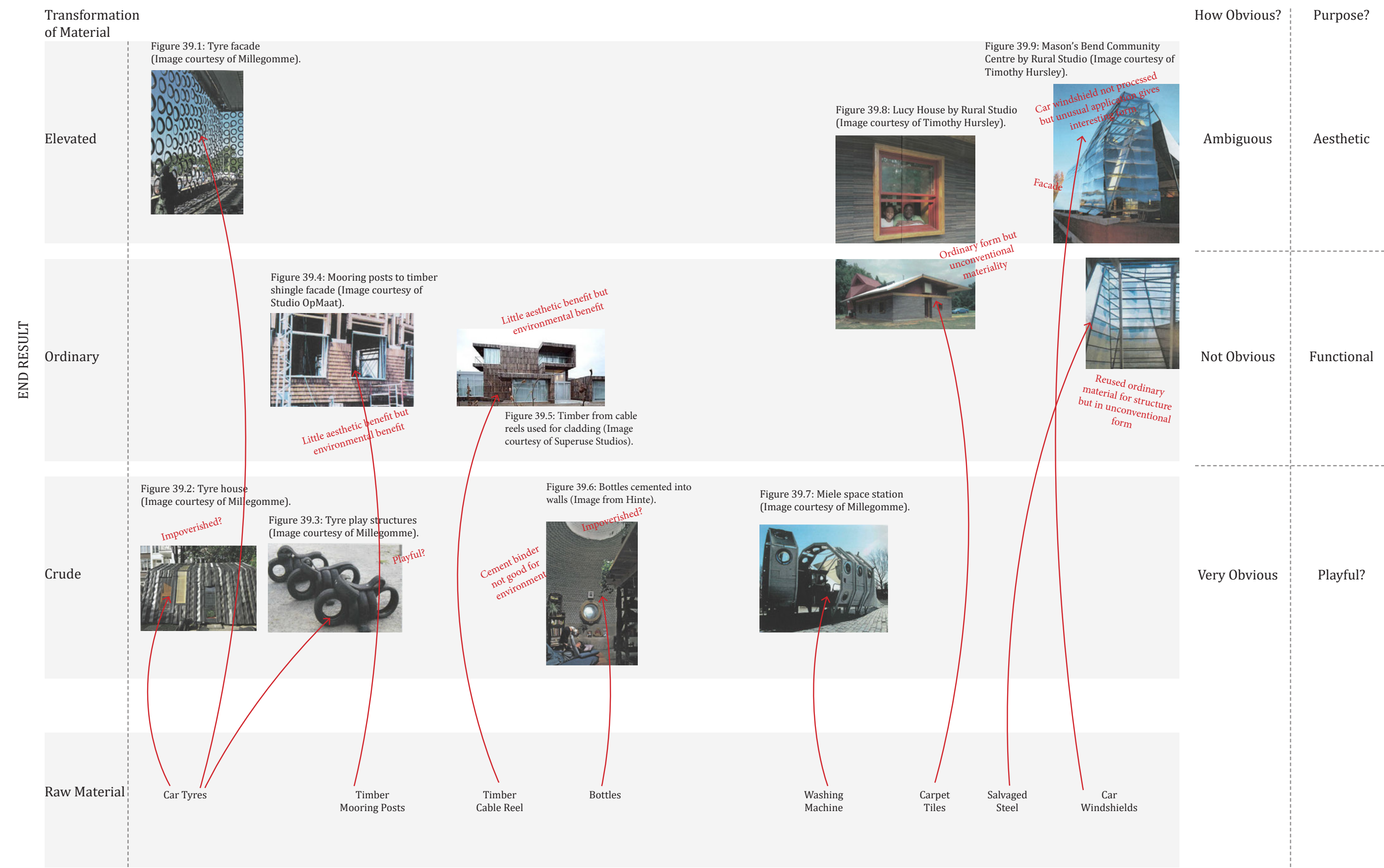


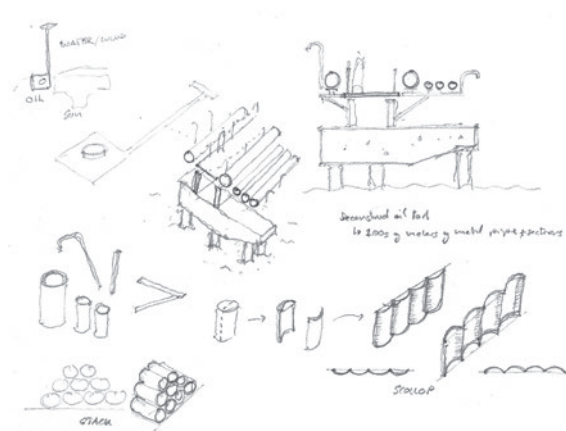
Figure 38: Contextualising and scaling up the examples of superuse from the example of making a barbeque as seen on the ground (Author's drawing based on information from Walking Tour of Segundo Torrão).

⁷¹ Hinte, *Superuse*.
⁷² Hinte, *Superuse*, p. 106.
⁷³ Hinte, *Superuse*, p. 17.

Figure 39: Critical Approach to Superuse



Segundo Torrão Harvest Map



Gain Silos?

The grain silos are likely to have large quantities of salvagable material, for instance packaging. Research into their processes is required to determine feasibility.



Fishing Boats

The three settlements have a long history of fishing, although to a far lesser extent today as visible in the number of abandoned fishing boats. Redundant fishing boats could be a source of timber.



NATO Port Terminal

As we head into a post fossil fuel world it may be possible that the NATO port terminal could be deconstructed and the metal used for a project.



Figure 40: Segundo Torrão Harvest Map (Author's photos keyed into base image from Google Earth).



Trafaria Prison

In addition to other materials, the redundant Trafaria Prison has a significant amount of metal contained in a mezzanine that may be salvagable.

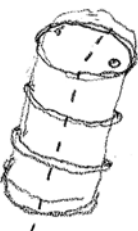


Timber Pylons

Many should be available as electricity provider EDP is currently replacing them for concrete pylons due to electricity upgrades.

Barrels?

Source unknown but must be available as Segundo Torrão residents use these to make barbeques



Construction Site

Refurbishment to a building adjacent to Trafaria Prison was noted during our visit. Waste material from the construction site may be of use.

Temporality

Use of materials in relation to designated temporary land status is demonstrated by the original timber fishing shacks of Cova do Vapor and Segundo Torrão although this is now less evident as many have been upgraded to masonry.⁷⁴ Ideas of materials in terms of temporality and land status may be built upon in the context of Segundo Torrão. Whilst there is historic precedent of the transportation of whole buildings due to the erosive powers of the Atlantic, design for disassembly and reuse may be a more appropriate strategy for this project.

Figure 41: Historic precedent of movement of timber houses from sand spit west of Cova do Vapor moving to it's present location due to erosion in the 1930s (Author's drawing based on information during walking tour).

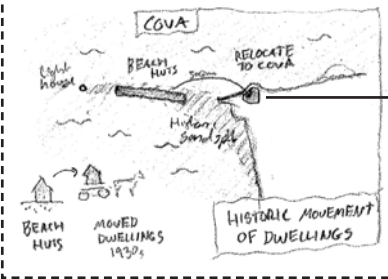


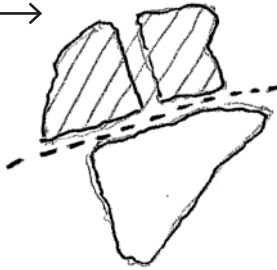
Figure 42: The temporary Casa do Vapor project was deconstructed after use (Images courtesy of Construct Lab).



Figure 43: The material was then reused for a nearby community kitchen project (Images courtesy of Céline Lixon).



Original fishing shacks



Surveyed. Temp Wood. (now largely masonry).

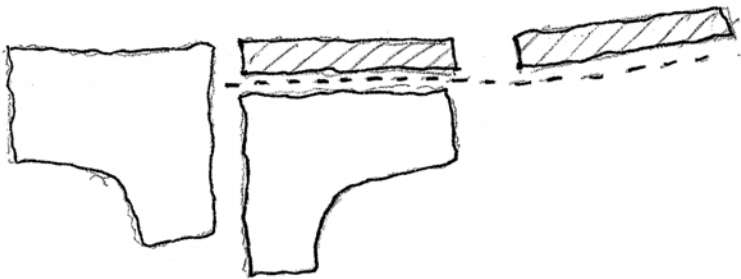
Not surveyed. Not allowed. (Port of Lisbon owns) Masonry.

Cova do Vapor

Figure 44: Land use history of Cova do Vapor defining construction materials (Author's photos and drawing based on information during walking tour).



Original fishing shacks



Segundo Torrão

Figure 45: Land use history of Segundo Torrão defining construction materials (Author's photos and drawing based on information during walking tour).

⁷⁴ Walking Tour from Cova do Vapor to Segundo Torrão and onto Trafaria.

Perception

Different materials or construction types may have associated connotations regarding socio-economics and status. Consequently, there may be stigma concerning timber and an overall aspiration towards masonry construction.

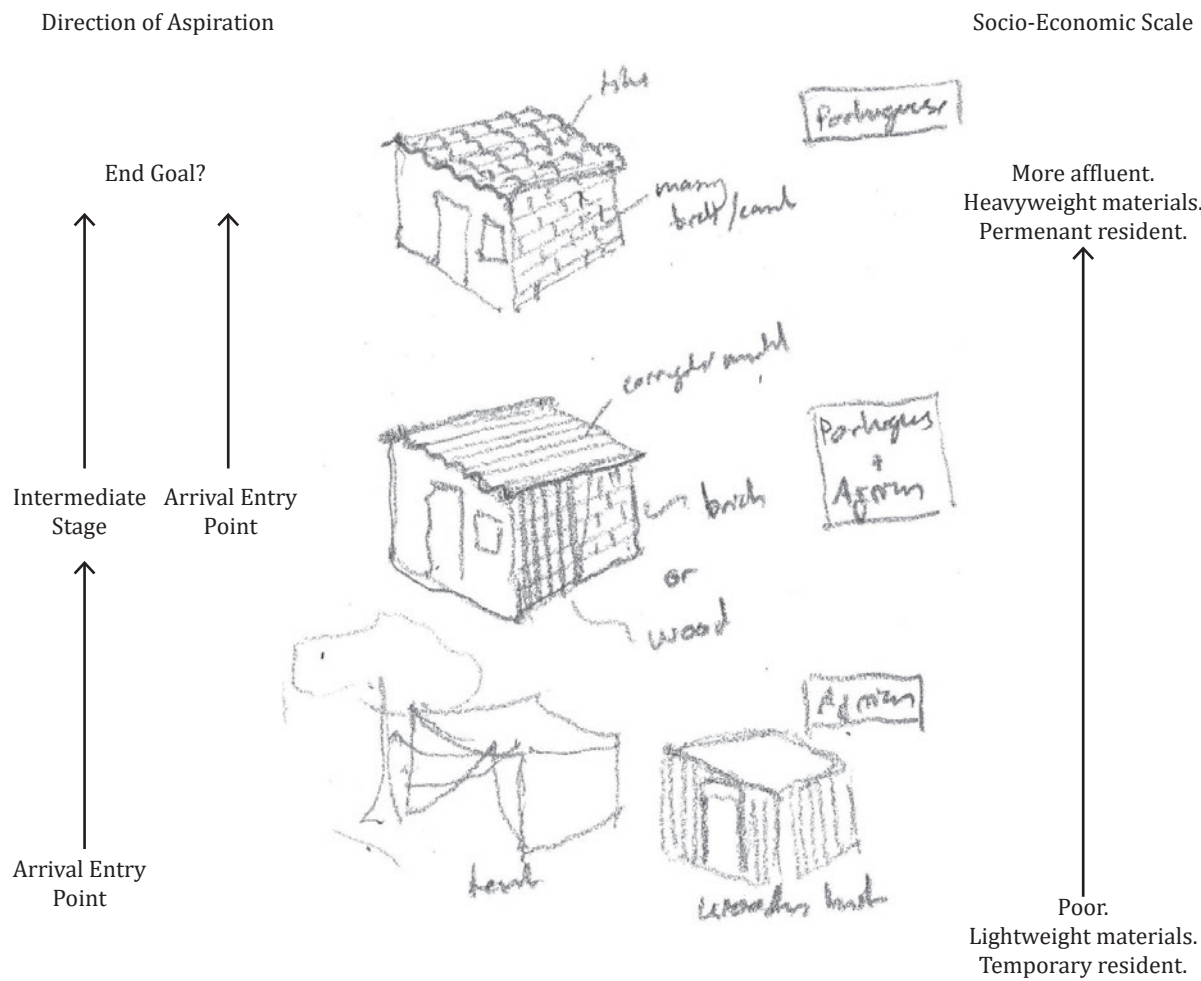


Figure 46: Three types of construction in Segundo Torrão (Author's drawing based on information from Arquizan).

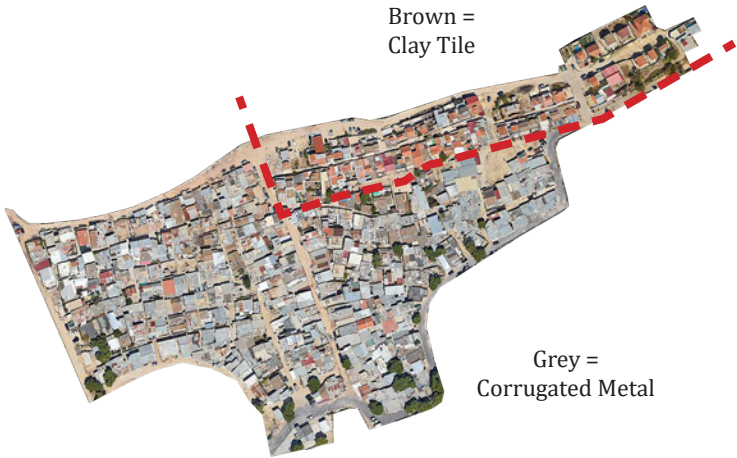


Figure 47: The different roofing materials, and therefore socio-economics of the inhabitants, reveals a spatial division when looking from above (Author's adaptation of base image from Google Earth).

Dreaming

External space & integration of textile into building...

for serigraphy application?



Figure 48: Textile canopy, stageset and background of the Bodark Amphitheatre by Rural Studio (Image courtesy of Timothy Hursley).



Figure 49: Textile canopy onto street in the Hero Knowledge Cafe by Rural Studio (Image courtesy of Timothy Hursley).



Figure 50 (Top Left): Long serigraphy piece in external space (Images courtesy of Atelier SER).



Figure 51 (Top Right): Long serigraphy displayed indoors and adds something to the vertical circulation (Image courtesy of Atelier SER).

Superuse for external play space...

in Place do Convívio?



Figure 52: Waste materials used to create playful structures in the Lions Park Playspace by Rural Studio (Image courtesy of Timothy Hursley).



Figure 53: Underused Place do Convívio external play space (Author's photo).

Initial Response to Research Question

The Segundo Torrão community could be brought together and given voice through a participatory program of art (serigraphy and music) through the group 2GT02825, and science (coastal monitoring research) through the New Science Decision Makers project. Key to facilitating this will be to capitalise upon and enhance the unifying potential of the site, Place do Convívio. Through improving the external play area for children, activity will increase, therefore encouraging spontaneous involvement with the building program and up scaling of its profile and purpose. Ultimately, this will empower the community to contest the state's current position on relocation and to present their own vision for their short and longer-term future.

Moving Forward

This manifesto has significantly helped form an approach to a project and laid some important groundwork. Taking this forward I aim to:

- Continue to develop the project through personas
- Make a serigraphy screen to test the graphic production method
- Develop the harvest map of materials and test their possibilities for architectural intervention
- Make a physical model to get a tactile understanding of the site and begin testing spatial design
- Continue communication with our local contacts

List of Illustrations

Figure 1: Timeline

- Superuse harvest map - Image from: Hinte, Ed van, Césaire Peeren and Jan Jongert, *Superuse: Constructing new architecture by shortcutting material flows* (Rotterdam: 010 Publishers, 2007), pp. 134-35
- Studio in the Woods: Author's photo
- Y5 local materials map: Author's drawing
- Y5 project: Author's photo
- Big Build photos courtesy of: Afif Fathullah and Richard Rothwell
- Persona: Drawing courtesy of ASF
- ASF UK Change by Design Sierra Leone Workshop poster: Courtesy of ASF-UK

Figure 2: Challenging practice ASF Workshop - materials from: *Challenging practice ASF Workshop*, 19 November 2019, Sheffield School of Architecture / Architecture Sans Frontières UK, Sheffield

Figure 3: Segundo Torrão personas - Author's drawing

Figure 4: Segundo Torrão transect walk map and section drawing - Author's drawing based on information gathered from: *Segundo Torrão Walking Tour*, 5 December 2019, Segundo Torrão Residents Association, Segundo Torrão

Figure 5: Land Owners and future conversation - Author's drawing based on information from:

- Arquizan, Tatiana *Sommaire Détaillé: Perspective sur le Programme Nouveaux Commanditaires Sciences au Segundo Torrão: Une Démarche de Questionnement Situeé: La Mer va-t-elle Engloutir le Segundo Torrão? Quand et Comment?* [Detailed Summary: Perspective on the Program New Sponsors Sciences at Segundo Torrão: A Questioning Approach Located: Will the Sea Engulf Segundo Torrão? When and How?], trans. by Google Translate [n.p.] (L'Atelier des Jours á Venir, 2017), p. 2 <<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxzY29wc2NvcH-N8Z3g6NDJlM2U4NGJjNmE4NjJmOQ>> [accessed 6 January 2020]
- Ascensão, Eduardo, *Meeting to Discuss his Research*, 9 December 2019, Geographic Institute and Spatial Planning at University of Lisbon, Lisbon
- Cão, João, 'Today's Results from Coastal Geologists / Oceanographers', *Email* [10 January 2020?]

Satellite image from:

- Google Earth, 2019 <https://www.google.co.uk/intl/en_uk/earth/> [accessed 27 January 2020]

Figure 6: Stay and relocate diagram - Author's drawing based on information from:

- Cão, João, 'Today's Results from Coastal Geologists / Oceanographers', *Email* [10 January 2020?]

Satellite images from (Top image unedited, bottom image authors edit to original image):

- Google Earth, 2019 <https://www.google.co.uk/intl/en_uk/earth/> [accessed 27 January 2020]

Figure 7: Relocation in Lisbon - Image from: Ascensão, Eduardo and Miguel Leal, 'Spatial Analysis', *Experts Project* <<http://expertsproject.ics.ulisboa.pt/analise.html>> [accessed 2 January 2020]

Figure 8: Relocation in Almada - Image from: Ascensão, Eduardo and Miguel Leal, 'Spatial Analysis', *Experts Project* <<http://expertsproject.ics.ulisboa.pt/analise.html>> [accessed 2 January 2020]

Figure 9: SAAL meeting in 1976 - Image courtesy of Alexandre Alves Costa, from: Ascensão, Eduardo, ‘Interventions II: Participatory Architecture – The SAAL’, *Technoscience of Slum Intervention*, [n.d.] <<https://www.technoscienceslumintervention.org/interventions-i-participatory-architecture-the-saal>> [accessed 1 January 2020]

Figure 10: Chart of sea level rise, no dates
Temperature and sea level rise data and wider territory images from: Climate Central, ‘Surging Seas: Seeing Choices’, *Climate Central*, [n.d.] <<https://seeing.climatecentral.org/#12/40.7302/-74.0073?show=lockinAnimated&level=0&unit=feet&pois=hide>> [accessed 31 December 2019]

Segundo Torrão - Author’s drawings based on information from: Ibid.

IPCC recommendations:
IPCC, *Global Warming of 1.5°C: Headline Statements from the Summary for Policymakers* [n.p.] (IPCC, 2018), pp. 1-2 <https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Hheadline-statements.pdf> [accessed 31 December 2019]

Figure 11: Will the sea engulf timeline - Author’s drawing based on information from:

- Sea level rise by projected dates in relation to pollution data - predicted dates of submerge
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- 2012 Flood image - Author’s redrawing of image from:
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Figure 14: Segundo Torrão photos (including map and chart) showing evidence of the census - Author’s photos

Figure 15: Vincente Persona - Author’s drawing based on information from: Ganzer, Adrien, *Segundo Torrao: A Suburban Story [full en]*, online video recording, Vimeo, [2015?], <<https://vimeo.com/115938570>> [accessed 16 December 2019]

Figure 16: Serralha Persona - Author’s drawing based on information from: Ganzer, Adrien, *Segundo Torrao: A Suburban Story [full en]*, online video recording, Vimeo, [2015?], <<https://vimeo.com/115938570>> [accessed 16 December 2019]

Figure 17: Paulo Persona - Author’s drawing based on information from: *Walking Tour of Segundo Torrão*, 5 December 2019, Segundo Torrão Residents Association, Segundo Torrão

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Figure 19: João email - Author’s image of email conversation: Cão, João, ‘Segundo Torrão Services Mapping’, *Email* [16 December 2019]

Figure 20: Location of 2GTO2825 - Author’s drawing based attachment in email information from: Cão, João, ‘Segundo Torrão Services Mapping’, *Email* [16 December 2019]

Figure 21: 2GTO2825 serigraphy - Images from:
- Top
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- Left
Novos Decisores Ciências do Segundo Torrão, ‘#2 GTO #2825 with Atelier SER! [November 4, 2017 @ 2 GTO]’ (Facebook post, 6 December 2017)

- Middle
Novos Decisores Ciências do Segundo Torrão, ‘#2 GTO #2825 with Atelier SER! [November 4, 2017 @ 2 GTO]’ (Facebook post, 7 December 2017)

- Right
Novos Decisores Ciências do Segundo Torrão, ‘#2 GTO #2825 with Atelier SER! [November 4, 2017 @ 2 GTO]’ (Facebook post, 5 December 2017)

Figure 22: Meaning of the name 2GTO2825 - Author’s drawing based on information from: Cão, João, ‘Segundo Torrão Services Mapping’, *Email* [16 December 2019]

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Figure 35: Site options - Author's drawing

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Figure 38: Superuse scales - Author's drawing based on information from: *Walking Tour of Segundo Torrão*, 5 December 2019, Segundo Torrão Residents Association, Segundo Torrão

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Figure 39.7: Miele - Image courtesy of Millegomme, from: Hinte, *Superuse*, p. 127

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Figure 41: Cova do Vapor houses move - Author's drawing based on information from: *Walking Tour from Cova do Vapor to Segundo Torrão and onto Trafaria*, 6 December 2019, EDA Architects, Trafaria

Figure 42: Casa do Vapor and disassembly - Image from: ConstructLab, 'Casa do Vapor', *Construct lab*, 2013 <<https://www.constructlab.net/projects/ca-sa-do-vapor/>> [accessed 27 January 2020]

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Figure 44: Cova do Vapor timber historic land use and buildings - Author's photos. Based on information from: *Walking Tour from Cova do Vapor to Segundo Torrão and onto Trafaria*, 6 December 2019, EDA Architects, Trafaria

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Figure 47: Division by roof material - Author's illustration over image from: Google Earth, 2019 <https://www.google.co.uk/intl/en_uk/earth/> [accessed 27 January 2020]

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