

# OpenDoTT - Smart Cities



ESR 4 - Felipe Schmidt Fonseca  
February 2020



University  
of Dundee

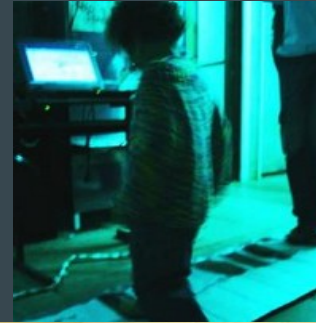
**moz://a**



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# 2002-2019

- *“Activist turned researcher”*
- Dozens of projects related to technology + society
  - Digital culture and digital inclusion
  - Repair / reuse of materials
  - E-waste management and regulation
  - Creative Commons and Open Source
  - Citizen Labs / Socio-environmental innovation
  - Open / Collaborative Science
  - ICT policy making (local and federal levels)
- MA - Scientific and Cultural Diffusion (2014)
  - Networked Experimental Labs
- Residencies: design and repair, waste, recycling
  - Doha, Qatar
  - Nantes, France
  - Lüneburg, Germany



# OpenDoTT

- Mozilla
- PhD
- Open Design
- Trust
- Berlin
- College of Art and Design

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# OpenDoTT: Smart Cities

“Technology is fundamentally changing how cities work, but these smart cities are most often determined in a top-down fashion, with little transparency or accountability in how data influences the workings of the city. Can we create cities that are not just smarter, but kinder, fairer and more citizen-centred?”

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# Summary

1. Career Development Plan
2. Training
3. Smart Cities
4. Literature Review
5. Research questions
6. Design Research Training
7. Networking and Public Appearances
8. Ongoing documentation
9. Research Plan 2020
10. Future



# Career Development Plan

## Personal horizon (long term)

To combine research, education, policy making and advocacy to shape and build better cities (more sustainable, fair, healthy, inclusive, participatory).

## Impact

- Publish and present research outcomes
- Strengthen networks (two way movement)
- Incidence in public policies
- New institutional forms for the public good

## Skills / knowledge to acquire

- Design research methods
- Documentation of participatory processes
- Academic Writing
- Making / Fabrication

# Training

University of Dundee

## OPD

- Thesis Writing
- Giving Effective Presentations
- Unconscious Bias
- Research Integrity
- Academic Publishing
- Public Engagement
- PhD Launchpad

Pop-up workshops and ESR  
exchange

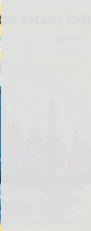
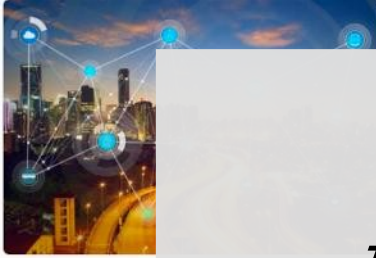
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# Smart Cities

*Technology for a more efficient management of contemporary urban environments.*

- Traffic control and public transport
- Lighting
- Policing / surveillance
- Access / wifi
- Waste management
- Energy management
- Sensors / environment
- Inventory/ assets







Repair, waste, reuse... post-consumption transformation of materials

# Literature Review (ongoing process)

## 1. Critique of the Smart City

- Top down - often about control only (Greenfield)
- Ignores legacy of urbanism
- Increase inequality / asymmetry
- Opaque datafication
- Alternatives:
  - data sovereignty
  - emergent urbanism
- Participatory experiments
  - Amsterdam
  - Barcelona (Bria + Morozov)

## 2. Matter in the city

- Repair, adapt, transform: urban crafts
- Waste as an engineering problem
- Systems view: Circular Economy
- Cradle to Cradle (Braungarten + McDonough)
- Waste=Food
- Le valoriste

## 3. Waste=Wealth

- Commons (Ostrom)
- Collective stewardship / care
- Cooperatives
- Platform cooperativism (Scholz + Schneider)

# Research Questions

- Use IoT to help assess the value of materials and transform them in the urban environment.
- See waste as a sensor to track city health - expose it rather than hide it.
- Privacy and security issues related to waste / reuse.
- Policies, incentives and infrastructure to promote sovereignty over discarded materials.
- Collective / commons-based management of materials. Stewardship / care instead of ownership.
- Beyond-circular economy+culture.



# Design Research Training

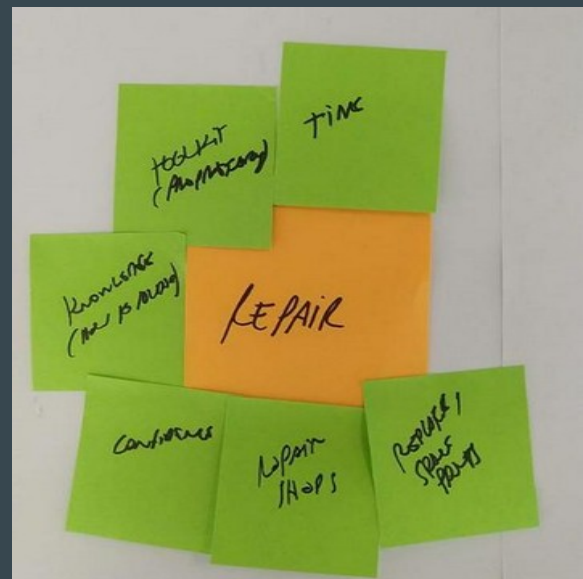
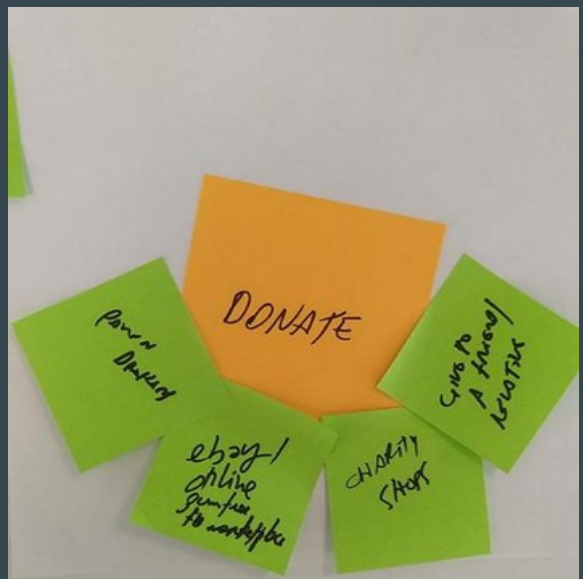
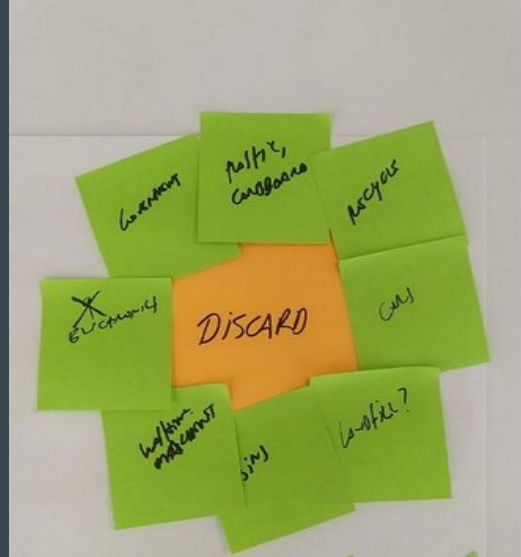
*November 2019*

Design research methods

Plan exercise

Test with students



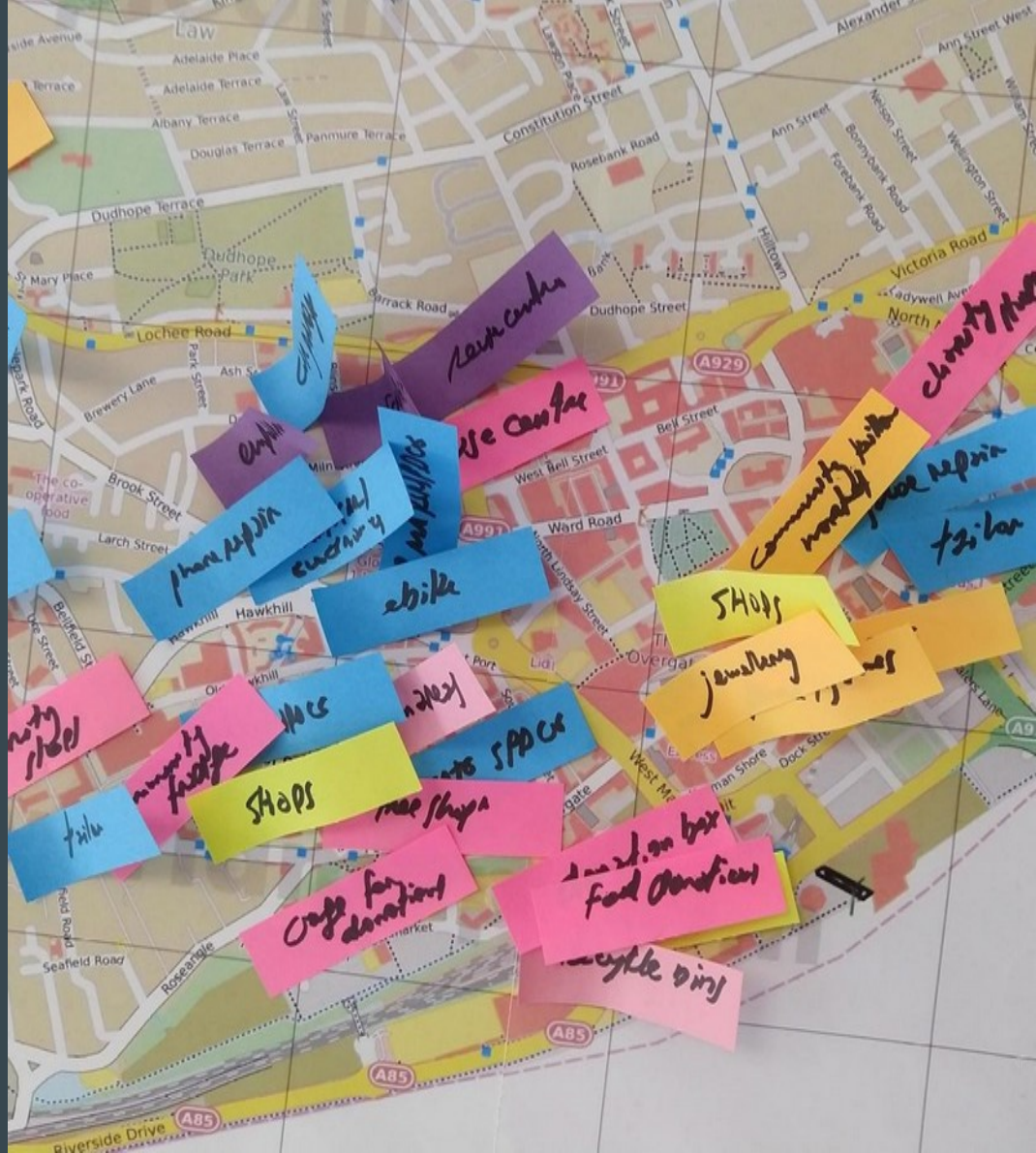


Decision flow - value



# Mapping repair and reuse in Dundee

Systems view  
Inform subsequent research plan



# Networking / Public Appearances

## Events

- Beyond Smart Cities Today 09/2020
- Fixfest Berlin 09/2020
- Mozilla Festival 10/2020
- Transmediale Symposium 01/2020
- Zebras Unite Berlin 01/2020

## Networks / communities

- Runder Tisch Reparatur Berlin
- Restart Project - UK and beyond
- Mozilla Fellows
- Maker movement in Dundee: DD Makerspace, Central Library, Scrapantics, Tayside Reusers.



# Ongoing documentation

Research blog:

<https://is.eefeefe.me/opendott>

23rd Jan 2020

## Remixing Digital Cities - Transmediale 2013

Whilst preparing to travel to Berlin next week and participate in [Transmediale 2020](#), I found by chance my [profile page in their website](#). Curiously, I had totally forgotten of my remote participation in a panel called "Remixing Digital Cities" in the 2013 edition of Transmediale. It had been less...

VIDEO EVENTS BERLIN TRANSMEDIALE SMART CITY  
UBATUBA BRAZIL

9th Jan 2020

## Waste in my life

I'm not sure how much I want to walk back in time to start this text. Let's try this. In my birthplace Porto Alegre there is a park that we call "Redenção". Its official name is "Parque Farroupilha", but only official maps and the occasional press from other regions of Brazil call it that way. Runni...

PORTO ALEGRE SCRAPS RECYCLING

11th Dec 2019

## Things in the City

*This post was originally published in the [OpenDoTT](#)*

14th Jan 2020

## City Mattering

In the context of the [OpenDoTT project](#) which advances the understanding of open design seeking to develop a more trustworthy internet of things (IoT), the specific topic of [my Ph.D. research](#) is that of the so-called Smart Cities. Since I arrived in Dundee last July I was able to get a taste of a wide range of critical takes on the field, reflect upon some common elements between them and how they relate to my own past experience, as well as learn about areas I want to explore further.



My starting point was, in fact, a hiatus of about a decade. Around 2009 and 2010 I have written a bit about smart cities, albeit very superficially and only in Portuguese. My main interest was not technology in itself, for I already felt the deployment of information systems and hardware in cities was arguably nothing new. From public lighting to policing and transportation systems, cities have often been the



# Research Plan 2020/1 - Dundee

## 1. Ecosystem Mapping

- Visits / interviews

## 2. Repair Journey

- Meeting
- Journey + self-documentation

## 3. Co-design workshop

- Explore ideas, discoveries, obstacles, frustrations

	Jan	Feb	Mar	Apr	May	Jun
<b>Exploring Discard in DD</b>						
Ethics committee - Ecosystem Map	X					
Preliminary mapping (Felipe)		M	M			
Ethics committee - Repair Journey		X				
Repair Journey Meeting			14			
Repair Journey			14-27			
Codesign Workshop			28			
Analyse results / write up				M	M	
<b>Deliverables</b>						
Dataset					M	M
Workbook					M	M
<b>Events / network / outreach</b>						
Transmediale	31-	-2				
DIS / ACM provocation deadline		28				
<u>EASST/4S</u> sub deadline		29				
Mozilla Fellows Summit			16-20			



1. Prototype technology for local scale repair / reuse / transformation.

2. Learn more about experiences and local networks for reuse / repair

3. Explore ideas of public infrastructure for material sovereignty

- sorting of materials
- object history tracking
- value assessment
- database (virtual valoriste)

- Amsterdam
- Barcelona
- Berlin
- Dublin
- Nantes

- Makerspaces
- Community Repair
- Local recycling
- Materials databases



**Thank you!**