Urban prototyping with communities

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Mapping Green Dublin

Working together to create a greener city

Background

This guide is intended to support communities who wish to develop their own urban prototyping workshops to develop ideas about how to change the urban environment. It is based on a design thinking workshop developed for the Mapping Green Dublin (MGD) project in August 2020 which was facilitated to support individuals and groups to develop their own local greening projects.

Exercises detailed are borrowed from a range of design and community activist workshops and applied to a commonly used design thinking process that is explained below. A series of sequential exercises are outlined and include a brief description, how they are applied and what materials are needed. The guide concludes with a number of practical tips for setting up and running similar workshops.

Outline of urban prototyping workshop activities

Image Pairing up for discussion during urban prototyping workshop

Spectrum lines

What is it for?

This is a useful energiser or warm-up exercise that helps the facilitator and participants alike to find out information about other participants' experiences and create a participatory mindset for the rest of the workshop. It can also be used to elicit and manage expectations about the workshop by better understanding what motivates participants to be there.

How does it work?

Ask people to stand up in a space that is big enough for them to move from left to right. When you make a statement, such as 'I have lived in Dublin 8 for more than 5 years' or 'I used public transport to get here,' ask participants to think about their personal experience. If the statement applies to them, ask them to move to the left side of the space, if it doesn't, ask them to move towards the right. Try and start with a simple generic statement such as 'I was born in Dublin 8' to make sure everyone understands the exercise before you move on to other questions. People born in the Dublin 8 neighbourhood should stand to the left of the space. The larger the distance from the neighbourhood that participants were born, the further to the right they should stand, thereby creating a spectrum.

You may wish to ask participants on different parts of the spectrum specific follow-up questions about their experience. For example, 'you were born in Dublin 8, have you lived here all your life?' or 'you appear to have moved here within the last five years, why did you choose this neighbourhood?'

To better understand people's motivations and expectations you can use statements such as 'I already have a clear idea of what I want to develop for this project' or 'I have heard about design thinking and am here to find out how it works'.

Materials and preparation

- You will need to prepare a list of ten or so statements in advance of the session
- For the exercise you need a space large enough and free from obstacles to enable people to move from side to side.

Image Socially distanced spectrum lines during MGD urban prototyping workshop

Introduction to design thinking

What is it for?

The term ‘design’ can have an array of different meanings that range from final outcomes (e.g. everyday household products) to technical plans (e.g. architectural drawings). Here, we are concerned with the design process as a way of creatively responding to everyday problems experienced by ordinary people in the neighbourhood where they live. The design process, when used outside traditional disciplines such as product design or architecture, is often called ‘design thinking.’

How does it work?

The design process or design thinking can be divided into a series of two repeating phases, commonly referred to as ‘divergent’ and ‘convergent’ thinking (Fig 1).

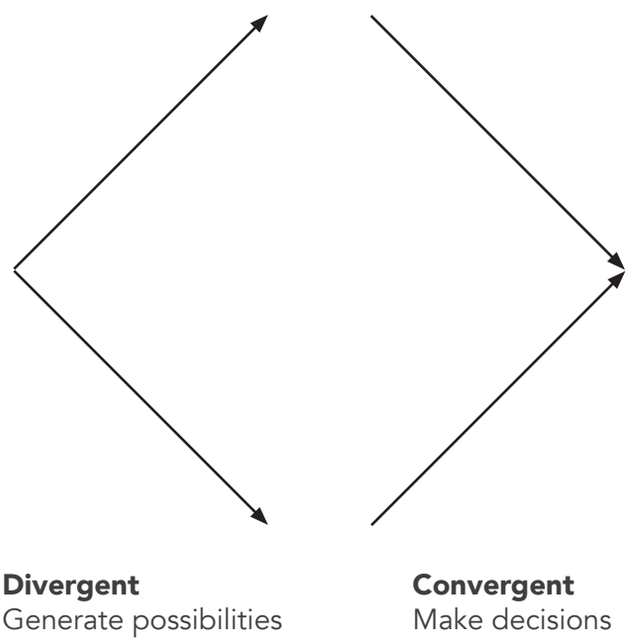

Fig 1 Divergent and convergent thinking[1]

Divergent thinking is all about generating new possibilities. In contrast, convergent thinking is concerned with making decisions and narrowing things down, for example identifying priorities or which ideas to take forward (Fig 2).

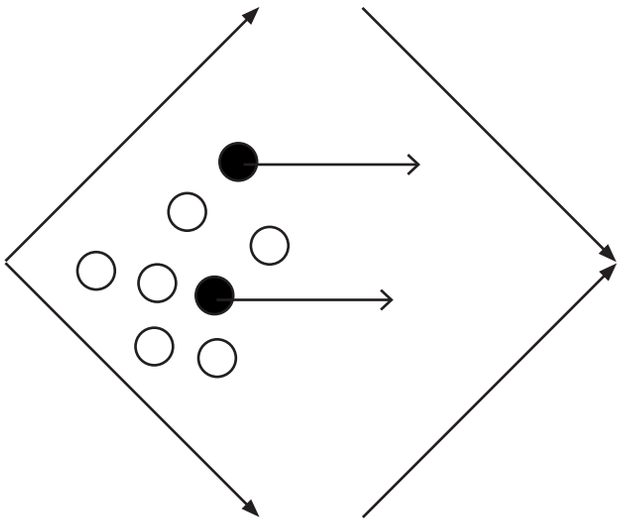

Fig 2 From generating possibilities to making decisions

The design process is commonly described in four such interdependent phases described as Discover, Define, Develop and Deliver.[2]

Discover (divergent thinking)

In human-centred design this phase is concerned with gaining ‘actionable human insight’ or empathy. Understanding people’s everyday behaviours, their challenges, attitudes and aspirations is the foundation for a good design project. In a neighbourhood, this can be achieved through a number of ways:

- talking to local people about their challenges
- observing everyday practices such as people crossing roads, going to the shops,
- mapping commonly taking routes different types of spaces in the neighbourhood and how they are used

Using a combination of these methods will likely generate a better understanding of everyday challenges, their causes and opportunities for positive interventions.

Define (convergent thinking)

The actionable human insight generated in the discover phase should inform the focus of the design challenge. Where projects already have a specific focus such as improving transport access, the particular aim of the project is likely redefined at this stage.

1 Adapted from Brown, T. (2009) *Change by Design: how design thinking transforms organizations and inspires innovation*. New York: Harper Business. pp.66-67.

2 See UK Design Council for the ‘double diamond’ process and its evolution www.designcouncil.org.uk

Develop (divergent thinking)
Having defined what the project is trying to achieve, the next stage should begin with ideation – developing a range of responses to the chosen design challenge. Rather than just coming up with one idea and then moving on, it is important to remember that this is a divergent thinking phase and therefore about generating possibilities.

Also, coming up with ideas does not just happen through thinking or drawing but commonly involves using materials (using paper, card, or what is already in a space) to make ideas more tangible.

Delivery (convergent thinking)
The delivery stage is focused on making decisions about what idea(s) to take forward as well as prototyping them through continuous testing and refinement.

It is important for workshop participants to be able to understand the design thinking framework and to see where they are in the process. Fig 3 provides an overview and suggests where proposed workshop exercises sit in relation to the different phases of divergent and convergent thinking.

The following offers some advice and design principles to keep in mind:

- design is a non-linear process and what may appear as unnecessary work during divergent thinking phases actually helps save time and resources later on
- it's a creative process to tackling everyday problems
- design is future-oriented and optimistic
- if you end up exactly where you thought when you started it is not a design process
- the process should be human-centred, considering who you are designing for/ with instead of imposing ideas. This will also help ensure the development of socially just outcomes.

Materials and preparation to explain the design process to participants
- Sticky tape, pens and large pieces of paper or equivalent (e.g. whiteboard) to draw diagrams as you talk participants through the process
- Alternatively, you can also pre-draw diagrams to take the pressure off

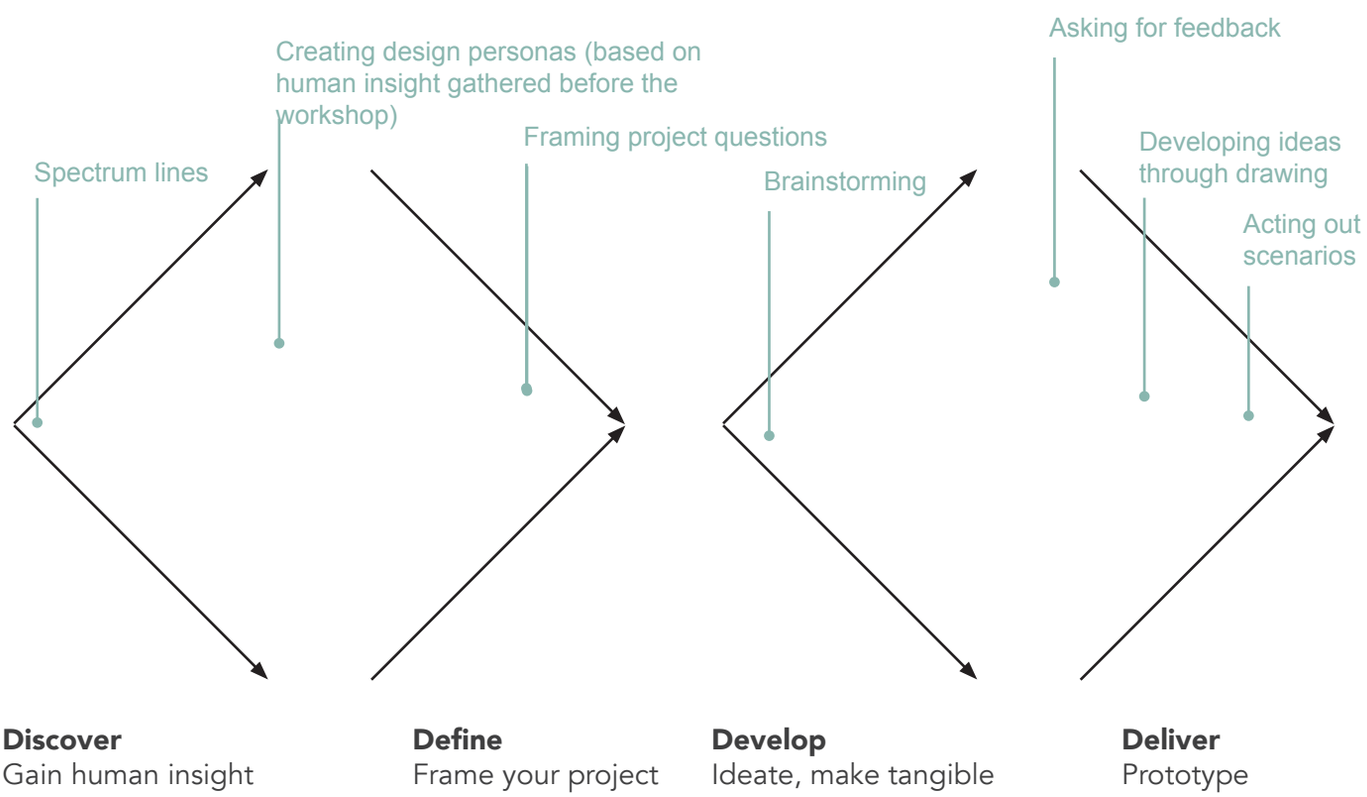

Fig 3 Overview of exercises and design thinking framework

Creating design personas

What is it for?

In human-centred design personas are used to create empathy with people, the challenges they face, attitudes and aspirations. It is a good exercise to collate and humanise data previously collected.

How does it work?

Personas are fictional characters based on real human insight. Often one character is used to describe a group of 'users'. Therefore, before you start you actually need to generate 'human insight' for example by talking to people in your neighbourhood, mapping common journeys and/ or observing people's behaviour. Prior to the workshop, the Dublin 8 Neighbourhood Greening Forum, already carried out a lot of this work. However, there is nothing stopping you from pairing your participants up and asking them to spend a 45-60 minutes spreading out in the neighbourhood and observing people crossing roads, using public spaces or doing the shopping. This needs to be done in a sensitive manner and rather than taking photographs participants might feel more comfortable creating rough sketches with small annotations. This should provide a starting point to help draw out themes.

If you did not need to do the first part, it is useful to pair participants up to create a persona. Provide them with a small number of printed examples (Fig. 4). Begin by giving your character a name and provide some basic information such as age, occupation, the area where they live and family status. Then write 1-2 short paragraphs that give the reader some context by building on the basic information above, describe some common behaviour, everyday challenges your character encounters and perhaps what they worry about or wish for.

A persona should help someone else put themselves in their shoes and so create a sense of empathy.

Materials and preparation

- Decide if participants already have insight that they can use to develop personas or if you need to send them outside to observe
- Prepare a small number of sample personas and print these as examples for participants to work off
- Provide paper and pens

Name Amy
Occupation part-time shop assistant
Family status Mum of 4 children ranging from 6 months to 7 years
Age 38
Residence Lives in Thornton Heights

Amy lives in Thornton Heights and she is married with 4 children. Previously she lived in St Michael's Estate, but she moved to Thornton Heights in 2014 and loves her new house. Jenny works part-time in the Eurospar on Bulfin Road. When she is not working she loves spending time outdoors with her 4 children as it's good for everyone to be active and it clears her head after work. As the children are getting older it is becoming more difficult. Usually she ends up pushing the buggy along the canal with the three other children walking with her but it's a really stressful experience.

All the 5 and 7 year old want to do is play football and chasing. They can't play in the paved area out front when cars are coming and going and the playspace is very noisy. There is no way she will let them play in the field beside the house as it's full of dog litter and they could easily run on to the road.

Fig 4 Example persona used during workshop

Framing project questions

What is it for?

Before you start generating ideas, it is important that you are clear about what your project is trying to achieve. A good way to do this is by framing a question around the particular challenge you have identified with your personas.

How does it work?

Frame your design challenge using this formula: How can we get [actor/ vehicle] to [action]?

Example 1) How can we get [Dublin City Council] to [build more community gardens in Dublin 8]?

Here, 'Dublin City Council' provides a clearly defined actor the question is aimed at while 'build more community gardens in Dublin 8' is the action the actor should take.

Example 2) How can we [redesign parks in Dublin 8] to [make it more accessible to wheelchair users]?

Instead of an actor, the second example uses a project vehicle, the redesign of 'parks in Dublin 8'. Here, the action is [to make it more accessible to wheelchair users].

This exercise is harder than it looks and often participants struggle to commit but you need to be specific. If both your actor/ vehicle and your action are too broad e.g. 'how can we get people to act more environmentally friendly?' it will be difficult to generate meaningful responses. In both examples 'Dublin 8' provides a context that either makes the actor/vehicle or action part more defined.

Similarly, some people tend to create questions that are overly complex. For example, 'How can we redesign parks in Dublin 8 to make them more accessible to wheelchair users and have more exciting play spaces for young children?' If you have several priorities you want to work on, generate separate questions for each of them instead of one question that tries to encompass all:

'How can we redesign parks in Dublin 8 to make them more accessible to wheelchair users?' and 'How can we redesign parks in Dublin 8 to have more exciting play spaces for young children?'

Rather than trying to get the question perfect, write down what is in your head and then continue writing versions of the question or questions you would like to address until you are happy to continue. Also, remember this is a paper exercise and you have not committed any finance or huge amounts of time.

Therefore, if in a weeks-time you have gained new important human insight that changes the project, you can simple amend your actor/ vehicle, action or both.

Materials and preparation

- Prepare a small number of sample questions to explain the structure
- Paper and pens for individuals or pairs to create questions
- Leave enough time for feedback to individual questions. Offering this in a group session will ensure that everyone can learn from one another.

Image Framing project questions

Brainstorming

What is it for?

Brainstorming is a technique commonly used to generate ideas as part of divergent thinking phases in the design process

How does it work?

The question generated in the previous exercise should provide enough focus to brainstorm around a specific issue but be open enough to generate a large range of different possibilities. During brainstorming, participants should follow these rules:

- Don't judge ideas ('but that won't work because…. ' is not allowed!)
- Encourage wild ideas
- Build on the ideas of others

Brainstorming is best done in groups as this enables participants to bounce ideas off each other. It is possible to give groups of 3-5 a large sheet of paper and pens and let them get on with it. However, if there are some people in the group who dominate the conversation through lengthy monologues whilst others tend to be quiet, try using sticky notes. Participants are only allowed to draw/write one idea per sticky note and these are then collated on a large piece of paper that has the question generated in the previous exercise written on it.

Watch out for groups who spend a lot of time talking but not writing/ drawing as well as groups that are filling up sticky notes but not speaking to each other.

If groups struggle to generate ideas, they might need to reframe their question. Alternatively, you can also swap out participants from different groups to change the dynamics.

At the end of the brainstorming session, it is a good idea to have a break. This helps participants shift their mindset from divergent to convergent thinking.

Materials and preparation

- Sticky notes, marker pens and large sheets of paper
- Write up the rules on a large piece of paper for everyone to see

Image Brainstorming ideas on paper

Asking for feedback

What is it for?

At this stage in the design process, asking for feedback from others is a way of making a more informed decision about why to take particular ideas forward. It also ensures that participants are not too precious about an idea and embrace the fact that design is non-linear. Even a great idea will evolve and change through the design process to become fully resolved.

How does it work

Firstly, look at the ideas generated in response to your question and see if there are any themes that emerge (e.g. community events, pop-up gardens to claim back local streets, the re-design of an existing green space, etc.). If you have used sticky notes during your brainstorming session, it should be easy to group these. If not, you can work on a separate piece of paper.

Secondly, you can develop a number of common-sense design specifications to help make decisions about what ideas deserve more development (e.g. needs to be doable by x date; needs to cost less than x; needs to use reclaimed materials). Participants can do this individually or in groups.

Also, in volunteer-led projects it is important to only take ideas forward that people feel passionate about and want to commit time to. It's good to encourage people to be honest with themselves and drop ideas that they think are good but don't really develop themselves.

This should have narrowed down the pool of ideas significantly and now it is time to present your favourite ideas to the wider group of workshop participants and/or experts that have been invited to provide feedback on which idea(s) to take forward. If 1-3 separate ideas emerge at this stage that is absolutely fine. Ideas often need more detailed consideration and some basic testing before a final decision can be made regarding which idea to focus on.

Materials and preparation

- More paper and pens
- Space to present and discuss ideas with the wider group and/or invited experts

Image Participants present ideas and receive feedback from the wider group

Developing ideas through drawing

What is it for?

Drawing collectively on a piece of paper is a way of having a visual discussion. This helps to tease out what people imagine when they say ‘let’s develop a community garden’ or ‘improve the play area in park x’. It can highlight shared values and meanings as well as often unexpected differences (e.g. ‘more trees will help improve the air quality close to the road’ versus ‘too many trees make it difficult to keep an eye on my child’). And it helps participants to think about the detail, making an idea more tangible and easier to understand.

How does it work

This type of drawing is not about creating beautiful, gallery worthy pieces of artwork. It’s more about using the pen to have a conversation and think through drawing.

Image Workshop participants draw their idea for a local park

Groups (2-5 people) with equal access around a large piece of paper draw one idea per sheet. For example, if the group is working on several ideas (e.g. an event in park x, a playground, a pop-up garden) ensure each idea is given the same amount of time for this visual discussion. If you have existing maps of areas the project is located in you can use them to draw on top (e.g. using tracing paper) but this is not essential.

Materials and preparation

- Provide paper and pens (felt tip, not pencil)
- You may also wish to provide printed maps and tracing paper

Acting out scenarios

What is it for?

You might be familiar with the term prototype as a physical object that looks and feels close to ‘the real thing’. In contrast, prototyping suggests a process, and specifically the testing and refinement of ideas. Phrases such as ‘failing often and early’, ‘failing forward’ or ‘failing upward’ are sometimes used to emphasise the importance of rigorous testing, refinement and iteration in the design process.

How does it work

Actually, the previous drawing exercise (p.10) is a form of prototyping as is feedback you obtain from peers, experts or users (people who match your persona). Now it’s time to take your ideas into the real world by creating physical mock-ups using simple materials to mock up your ideas. For example you can use sticks and string to to mock up the layout of the space you have designed. If possible, work in 1:1 scale and in the location you want your design to be based at.

Now think back to your persona(s) and try to put yourself in their shoes. Imagine how they would engage with the space. Can you think of typical things they might do? Is there anything they would struggle with (e.g access)? How do you imagine they would feel in the space? How do they interact with other personas? Do you need to change your perspective (think of a wheelchair user)? Do you need props (e.g. a pram, walking stick, football)?

Image Working socially distanced in a semi-sheltered space

With other people, act out and observe simple scenarios to test your idea and gain critical insight in what changes are needed to develop it further.

Materials and preparation

- Identify locations where you can carry out some physical prototyping
- source basic modelling materials such as sticks and string
- source any props you might need (prams, walking sticks, etc.)
- bring a copy of your persona(s)

Practical tips

Timings

Ideally, the workshop should be split over two half days. A break after participants have developed initial ideas offers an opportunity to reflect, fill in any gaps (e.g. carry out additional observations to better inform personas) and come back fresh after an intense start. Understanding the direction design projects are taking also enables facilitators to identify locations and source materials to better support prototyping activities such as acting out scenarios. However, the framework and exercises described here can easily be adapted to the time available and workshops can last from a few hours to a few days.

Group sizes and participants

It is useful to have a range of different experiences in the room whilst still being able to manage facilitation. Groups of 12-25 people tend to work well in this kind of scenario. You may also wish to invited a number of ‘experts’ to participate and offer constructive feedback.

A note on social distancing

You may need to consider how to comply with social distancing guidance and may wish to:

- opt for a large semi-sheltered space
- reduce the number of participants
- ask participants to wear mask
- ask participants to bring and hold onto their own drinks and snacks
- provide separate materials for each participant (paper, sticky notes, pens)

About Mapping Green Dublin

MGD is a collaborative action research project led by UCD's School of Geography in collaboration with arts organisation Common Ground, artist Seoidín O'Sullivan and event facilitators Connect the Dots. For more information visit www.mappinggreendublin.com

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