

TEH: Building a Cultural Regeneration Project for Europe

ROADMAP & TOOLKIT

Publication #3

ROADMAP & TOOLKIT

«(Re)building to Last» Project

WP2

Julie's Bicycle & Université de Liège (*Unité de
Recherche en Architecture URA*)

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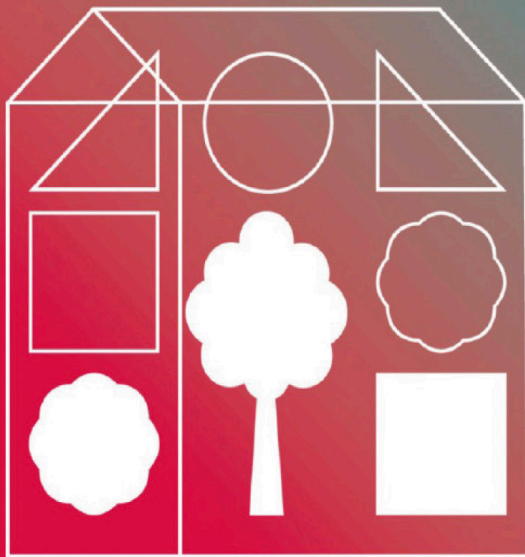
#3

Colophon

Publication realised for the «Rebuilding to Last» Project and part of the Research WP2. Members of the team : Chiara Badiali (Julie's Bicycle), Tenaya King (Julie's Bicycle), Prof. Martina Barcellona Corte (URA, Uliège), Thibault Marghem (URA, ULiège).



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REBUILDING — TO LAST



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THIS TOOLKIT offers a range of reflections, dreams, and exercises to support the visioning and decision-making on how we make tomorrow in our cultural built and unbuilt environments.

PART I WE ARE HERE (WHY ARE WE)? is an open-ended reflections and imaginations at the start of a project. These will help you think big, dream your vision, and feel your way into what matters.

PART II READING YOUR SPACE AND YOUR COMMUNITY consists in a series of information-gathering exercises to help you understand and reimagine your space. They will encourage you to see and understand your space through different lenses: from where and when energy is used, to where and why people feel comfortable, and how much (or little) space is shared with the more-than-human.

PART III HARVEST approaches to start planning and prioritising your building project(s), to help you create a roadmap for what can happen now, tomorrow, and in the future and what next steps you need to take. Considering your spheres of influence, and how the physical environment you create can ripple to have an impact beyond your walls, fences, or 'borders': encouraging you to think big(ger) about how your work can support fair climate transitions.

PART IV EVOLVING AND MAKING prompts as you turn your ideas into action to test plans, find opportunities to make additional connections, and find a balance between complexity/uncertainty and the North Star of your vision.

PART 1 WE ARE HERE (WHY ARE WE)?

Reflection 1 : Why are we?

Reflection 2 : Longer Horizons, or Time, Time, Time

Reflection 3 : New European Bauhaus

PART 2 READING YOUR SPACE AND YOUR COMMUNITY

Exercise 1: Read Your Present Space

Exercise 2: Maps and Data

Exercise 3: Experiences

Exercise 4: New Coexistences

PART 3 HARVEST

Exercise 1: From endless possibilities to possible beginnings

Exercise 2: Dreaming further

Exercise 3: From the inside to the outside

Exercise 4: Agents of Change

PART 4 EVOLVING AND MAKING

Reflection 1: Leaving things unfinished (or Time, Time, Time)

Reflection 2: A Circularity Forecast (or Matter Matters)

Reflection 3: Longevity (or Time, Time, Time Part II)

Reflection 4: New European Bauhaus Compass, Revisited

ANNEX FORCING THE READING

**USE THE TOOLKIT
REFLECTIONS TO
DREAM TOMORROW**

**MOBILISE REBUILDING TO
LAST RESOURCES + ALL THE
POTENTIAL OF YOUR PEOPLE
AND SPACE TO MAKE A PLAN**

MAKE TOMORROW !!

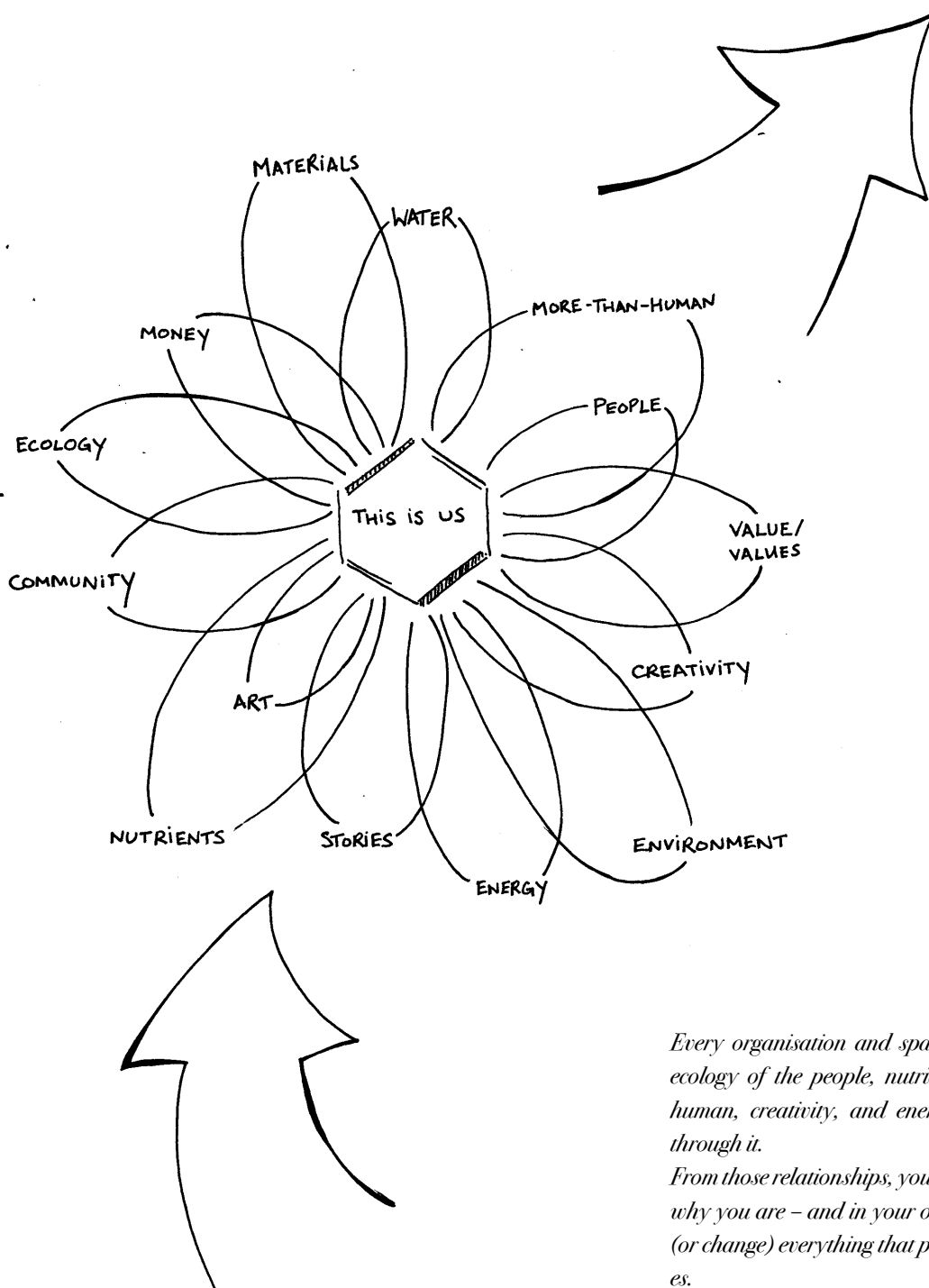
PART I

WE ARE HERE (WHY ARE WE)?

A series of reflections and imaginations for the start of (re)building: (co-)visioning a future..

Come together as a group and reflect on these questions.

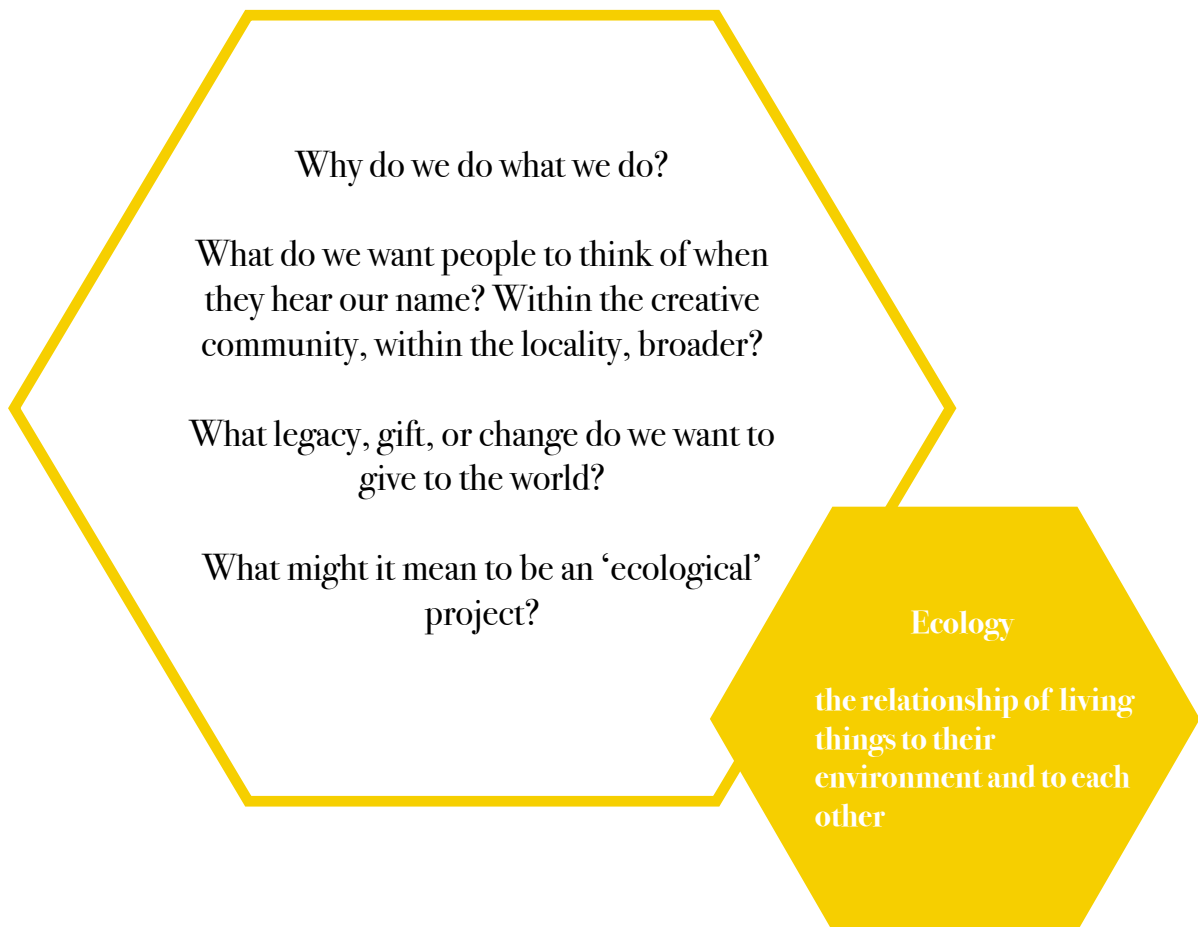
This vision can be the foundation of project plans, future relationships, and conversations with internal teams and external partners – government, funders, architects, suppliers.



Every organisation and space exists in a connected ecology of the people, nutrients, stories, more-than-human, creativity, and energy ebbing and flowing through it.

From those relationships, you make what you are, and why you are – and in your own way, you metabolise (or change) everything that passes through your spaces.

REFLECTION 1: WHY ARE WE?



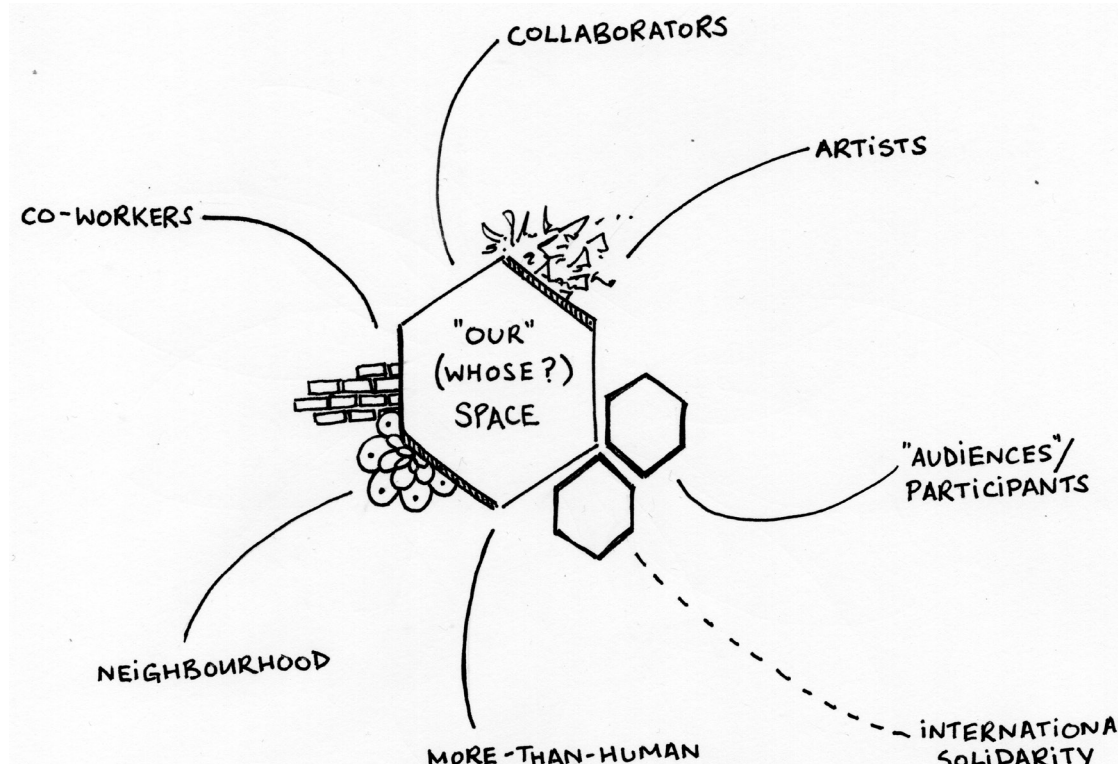
Possible Structure for Reflection 1

- Ask everyone participating to **individually undertake these reflections first**.
- **Come together for sharing:** what are the strongest commonalities? These are things to prioritise in project plans, to share with any partners or suppliers coming on board to make sure they share your vision, and come back to if you ever feel like you're starting to lose the 'why'.
- **Turn the questions upside down:** what is currently standing in our way? For example, why are we not currently an ecological project?

This is early in the process, so it's possible that no concrete project ideas emerge yet, but in case they do, keep a record of any specific project ideas, and if there is anyone on the team with the energy, skills, or interest to lead on them.

REFLECTION 2: LONGER HORIZONS (OR TIME, TIME, TIME..)

What might people need* or dream of from a cultural venue or space in 2030?



What might people need* or dream of from a cultural venue or space in 2050?

*** A brief reflection on 'needs':**

Can needs overshadow and box in our dreams? Much of the debate about climate, nature, justice is also about where we draw this line from 'need' to 'want', what is luxury and what is necessity, and how we shape a more equitable world that meets the rights of human and more-than-human within planetary boundaries. In that sense, it might be useful to think of 'needs' in the context of those 'rights': freedom from discrimination, freedom of belief and expression of sentiments and ideas, access to education, health and well-being, food and nutrition, clothing, housing, medical care, participation in cultural life, clean air and water, healthy environment, etc. And how do we recognise, protect and support the rights of the more-than-human? As the world shifts, can we dream of spaces that support those rights in the places where we are? And can our dreams shift our perception of our 'needs' – and if so, in what directions?

*** A brief reflection on 'workers':**

'Workers' immediately brings to mind power relationships of employer and employed. Many of the members and stories from the Trans Europe Halles network are actively exploring alternative models of governance, collaboration, and cooperation – a future without workers but full of people that do things. At the same time, we have chosen to keep the word 'co-workers', acknowledging that many cultural centres do remain 'employers' and a solidarity with movements of workers' rights and labour justice is also a key part of climate justice.

What might a cultural venue or space in Europe working towards climate, justice, and nature transformations look like in 2030?

● START DRAWING (DREAMING) HERE

Possible Structure for Reflection 2:

- Opening : Ask people to prepare using the ‘Forcing the Reading’ Exercises (Annex). Depending on time, team size, and skills or responsibilities, it may make sense for different people to lead on preparing and reading different background documents and bringing a summary to the workshop for Reflection 2.
- Closing : highlight anything you feel is already in place, and anything you feel your organisation or space could be very good at supporting. Think through:
 - *Your built space*
 - *Your ‘unbuilt’ space*
 - *Your neighbouring spaces*
 - *Your communities and neighbours*
- Do the reflections as a group. Are there any relationships missing?
- Keep a record of any specific project ideas, and if there is anyone on the team with the energy, skills, or interest to lead on them (or who should be involved).

REFLECTION 3: NEW EUROPEAN BAUHAUS COMPASS

The New European Bauhaus Compass is a guiding framework for designers, dreamers, project makers that you can use as a tool to shape your own ambition.

Created as an interdisciplinary initiative to support the European Green Deal, it offers a set of values (Together, Sustainable, Beautiful) supported by working principles (Participatory process, Transdisciplinary approach, Multi-level engagement) and descriptions of three levels of ambition for each.

This reflection can also be done again when project plans are more advanced, to identify where they are stronger, and where they are less strong – and whether there are any additional opportunities or changes to explore.

Possible Structure for Reflection 3:

- Ask everyone to read the New European Bauhaus Compass Values and Working Principles criteria and identify where your current space and working culture meets levels 1, 2, 3:

USE THE COMPASS



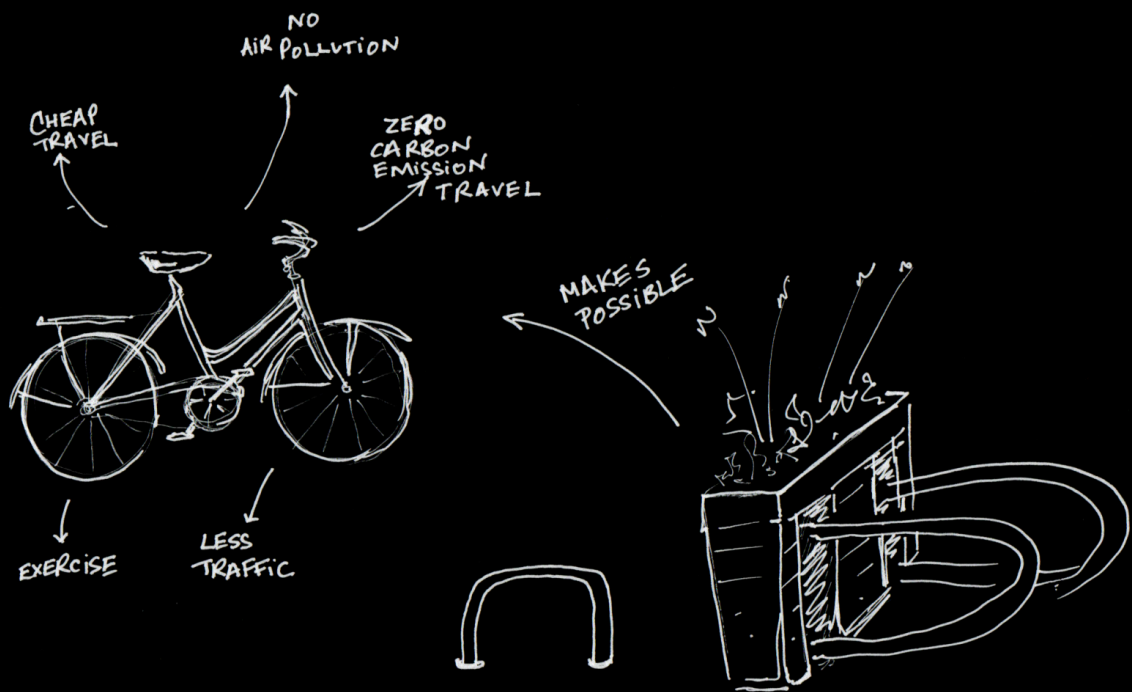
- Share as a group:

Where are you currently strongest?

Where are you currently less developed?

How do they map across to the values and vision from Reflection 1?

- Based on this, what would be specific priorities for a building or rebuilding project, and what are some initial ideas on building these in?
- Keep a record of any specific project ideas, and if there is anyone on the team with the energy, skills, relationships or interest to lead on them (or who should be involved).



PART II

READING YOUR SPACE AND YOUR COMMUNITY

A series of information-gathering exercises to help you understand your space, and plan and prioritise your building project(s). To do as individuals, teams, organisations, communities.

What are seeds of a vision you want to create?

What feels harmful or at odds with your vision?

EXERCISE 1: READ YOUR PRESENT SPACE

A - Walk through your **existing space**. Include both your building and any open space / the inside and the outside..

What kind of **materials** is your space made from?
Are they local or traditional building materials? How are they changing the feel of the space (e.g. by absorbing heat, insulating from outside temperatures, or creating shade)?
Is there anything that feels immediately **wasteful or challenging**? This might be little things, like doors being left open for heated or cooled air to escape, or it might be big things, like too much concrete outside the building capturing and radiating heat.

What do you hear?

What do you see?

What do you smell?

What do you feel?

Who is here, and where and how are they using the space?

Are there any **spaces** that feel un-used or under-used, and are there any spaces that feel (too) busy?

How do different parts of the space connect to each other (and where do they feel separate)?

Does it feel comfortable?

Are there any places you feel uncomfortable, and why? Are these places that are regularly in use?

Where can you find **beauty** in the space? What feels in conflict with 'beauty'?

Do this at a few different times of day and when a few different kinds of event are running: not every moment is the same.

B - Walk through your neighbourhood..

What do you hear?

What do you see?

What do you smell?

What do you feel?

What are the connections between your space and the neighbourhood?

Do this at a few different times of day and when a few different kinds of event are running: not every moment is the same.

New Coexistences..

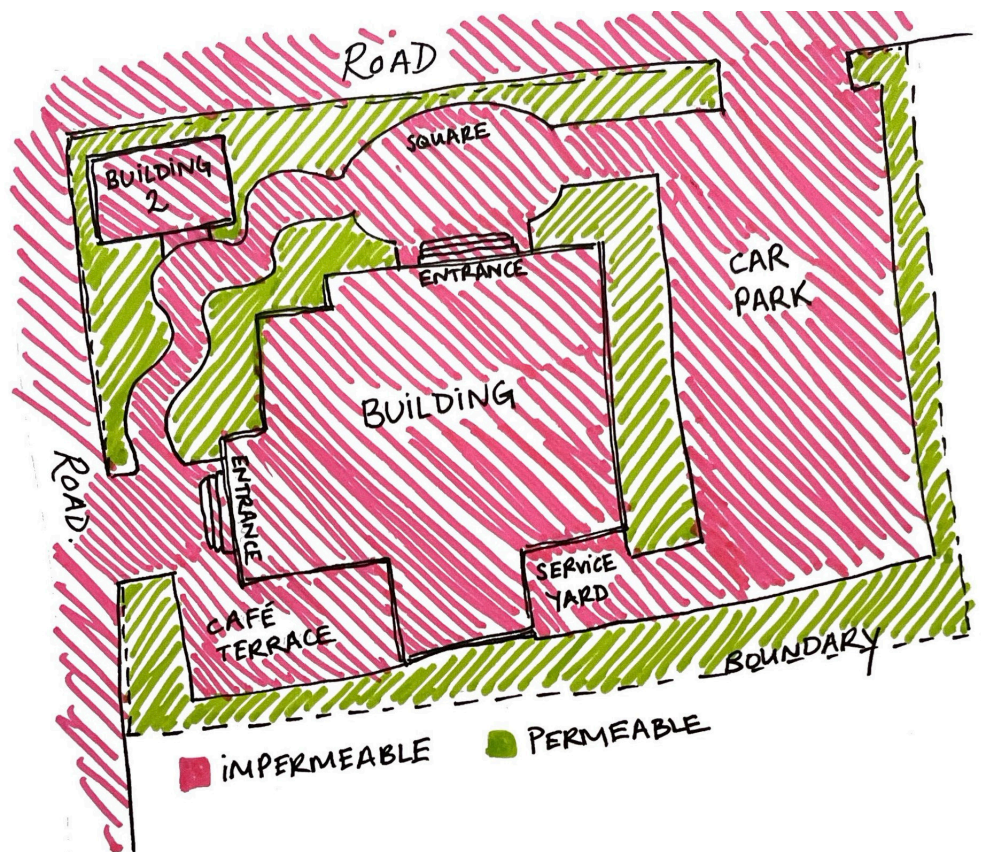
Repeat the above, but do it through the eyes of
animals or plants.

EXERCISE 2: MAPS AND DATA

Map Your Space..

• WE ARE HERE

- Map the **shade and sunshine** of your spaces (interior and/or exterior) at a few different times of the day, for example: morning, high noon, sunset. If you have a longer planning period, also do this in different seasons. This is most easily done if you have an existing map of your space, but can also be sketched by hand.
- Do an **ecological survey**, either yourself or with the help of an ecologist. What other beings do you share your space with, and what species are present in your area? What do they need and what might they dream of?
- Use a floorplan for your venue or space to map out where **public spaces** are, and where areas are that are only open 'behind the scenes' / back of house. When are they in use, and when are they closed? It's especially important to understand this between day and night for venues and spaces that might host lots of different groups.



- Map the ‘**permeability**’ of your ground: where and how can water drain or plants grow, and where is there hard covering or flooring (probably human-made)?
- Map your **human and more-than-human spaces**: where are there plants, other living species, soil, water, and other habitats? How do they interact? Which parts of your space are primarily designed for humans? When? Are there any spaces that are primarily given over to the more-than-human?
- For buildings, borrow a **thermal imaging** camera (or commission someone to come and do a survey) to understand where your space is leaking heat or cool. Thermal imaging cameras detect heat and turn it into a visual image. In some areas, these may be available through local authorities or community energy groups, in other areas, they may be tools held by energy auditors or others offering this as a service.

Add Data..

- For buildings, commission an **energy audit** if possible: what are the options for 1) improving efficiency through insulation, replacement of technologies, etc. and 2) replacing high-carbon technologies (e.g. gas heating) with lower carbon technologies (such as air source, ground source, or water source heat pumps)? If you are unable to commission an energy audit, there are plenty of resources available to support doing DIY surveys – see the **Theatre Greenbook** and **Julie’s Bicycle Transforming Energy**, or look at any local net zero business networks or services offered through your municipality that might offer free support.
- Do a **survey** of your visitors, workers, partners, others regularly using the space: how are they travelling to you, and what are the barriers for them to use other forms of travel (e.g. walking, cycling, public transport)?
- Use your energy bills, water bills, and materials procurement and waste collection volumes to build a picture of your current **consumption**. Use a carbon calculator to convert this into greenhouse gas emissions. What are your most significant areas of impact?

Useful:

[Theatre Greenbook: Sustainable Buildings](#)

Offers a ‘home survey’ tool to recommend possible technologies and investments



Useful:

[Julie’s Bicycle – Transforming Energy](#)

Offers free resources on energy management, including templates for undertaking a self-audit and night-time audit on energy use, and an equipment asset worksheet



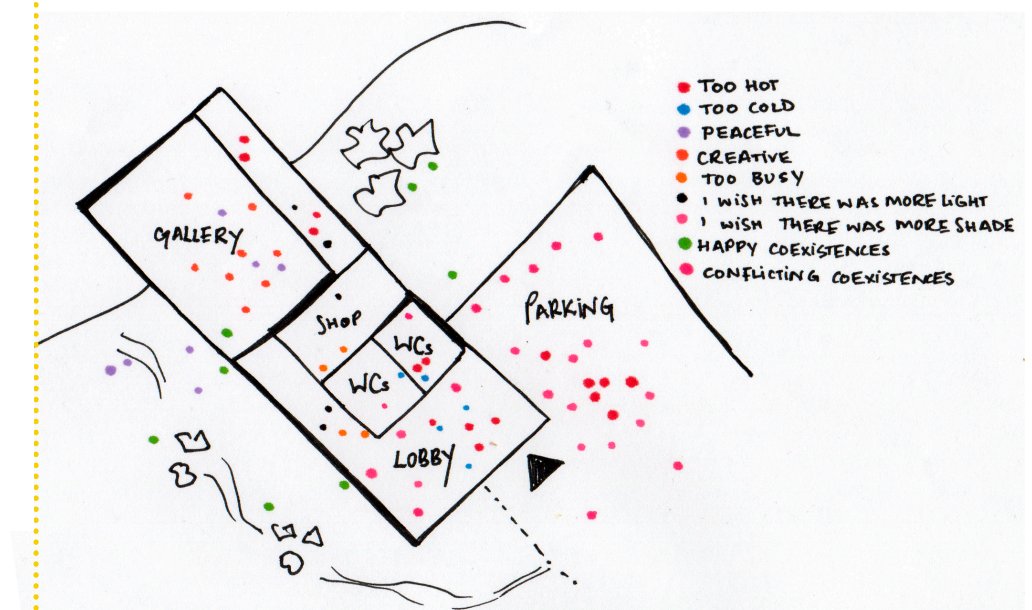
EXERCISE 3: EXPERIENCES

Speak to people working in, living around, and using the space. Try to speak to people who work in your space, artists, visitors, partners..

- We are setting out on an ecological project to change our space. What immediately comes to mind as things to address?
- How do you think our values and what our organisation means to you are expressed physically in our current space?
- What feels at odds in our current space, and the way we (can) use it?
- Where do you feel comfortable?
- Is there anywhere you feel uncomfortable (and what would make that better)?

Additional Possibilities for Exercise 3

- *Shared pinboard or magnet board for people to pin words and dreams*
- *Map of your site with different coloured stickers/dots, e.g. red for too hot, blue for too cold, yellow for too busy, purple for peaceful, orange for creative, black for 'I wish there was shade here', white for 'I wish there was more light here', green for 'happy coexistences', brown for 'conflicting or unhappy coexistences'*



EXERCISE 4: NEW COEXISTENCES

This is a **creative exercise** that can be done to support all the others.

- In your team, send everyone to **explore your site**.
- Everyone's task is to identify a **more-than-human being** sharing your spaces and quietly sit and observe it for some time. Tree, flower, moss, lichen, mammal, bird, amphibian, microbe, or it might be a river: whatever catches your attention.
- Create a **sketch** (or poem, or other creative reflection) and bring it back to the group.

- *What is the variety you found? Where?*
- *What is giving these beings a home, and how could you help them thrive even more?*
- *How might you create more space for them?*

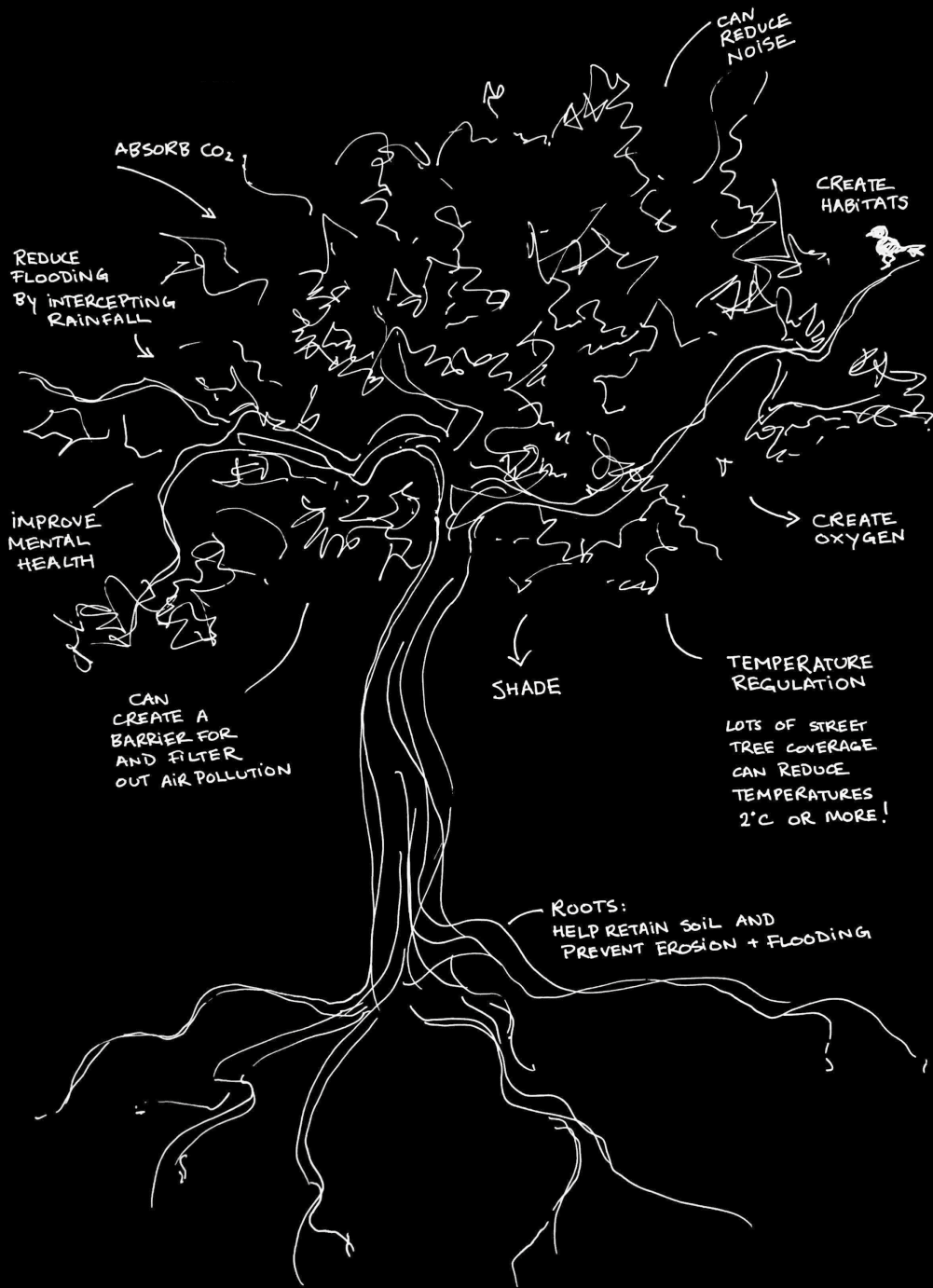
The more-than-human being becomes a companion for the person who sat with it. They are now responsible for carrying this voice into project planning meetings, and occasionally 'checking in'. (Be aware of what you cannot see: many of our fellow travellers are hiding, or only come out in the dark – this is where an ecologist can help).

How do we create new coexistences?

As you make your way through today and step back into your work tomorrow, carry the voice of this fellow traveller on Earth with you.

My fellow traveller:





PART III

HARVEST

A series of exercises to help you revisit everything you've harvested in the previous reflections and start to select priorities.

EXERCISE 1: FROM ENDLESS POSSIBILITIES TO POSSIBLE BEGINNINGS

Use the Possibilities Cards..

Remove Concrete/Asphalt and Paved Areas



New Coexistences



Climate Risk - Flooding



Climate Risk - Overheating

Breaking up and removing concrete, paved areas, and any other kind of 'impermeable' ground cover reduces the risk of flooding by allowing water to drain into the ground. It additionally helps combat the 'urban heat island effect' (where heat is absorbed and radiated back out, leading to overheating in cities), and supports new coexistences by allowing soil to breathe and other things to grow. It's especially important in urban areas. If possible, try and find a new landscaping use for the waste rubble, for example in **Gabion Walls or Cages**.

Built - Large: ***

Unbuilt - Large: ***

Cost & Complexity: Low

Green Roofs



Mitigation - Energy



Climate Risk - Flooding



New Coexistences



Climate Risk - Overheating

Green roofs involve adding a layer of growing medium to roofs, to plant climate-appropriate and low-maintenance plants, e.g. sedum, moss, perennials, wildflowers, grasses (and in some cases shrubs). Generally, they are only suitable for flat or low-angle roofs, and a structural engineer may need to check the roof can support the additional weight. Green roofs are particularly impactful for buildings in urban environments to help combat the heat island effect and create habitats for the more-than-human (and the potential to create a green oasis for humans, too). The co-benefits include acoustic insulation, temperature insulation, CO2 absorption, and reducing problems with water run-off. This initiative can be combined with **solar panels** and basic **rainwater harvesting** to support irrigation.

Built - Large: **(*)

Unbuilt - Large:

Cost & Complexity: High

Print:

Rebuilding to Last Possibilities Cards (Annex 2)

How to read the cards:

- Each card contains a title and a related short description of an **action/strategy**.

- Symbols at the top show the strategy's related **challenge/s** :

- **Mitigation – Energy:** reducing the carbon emissions from energy use, and supporting an energy efficient, renewable, and more democratic energy future
- **Mitigation – Mobility:** reducing the carbon emissions from mobility, and supporting active travel and public transport use
- **Circular Economy / Matter Matters:** reducing our unsustainable use of resources and contributing to a future where materials are reused and regenerated
- **New Coexistences:** creating a healthier relationship with our more-than-human neighbours and contributing to the regeneration of social and ecological systems
- **Climate Risk – Drought:** interventions to consider if you are in an area where drought is a high present or future climate risk
- **Climate Risk – Flooding:** interventions to consider if you are in an area where flooding (either surface, fluvial/river, or coastal) is a high present or future climate risk
- **Climate Risk – Overheating:** interventions to consider if you are in an area where overheating is a high present or future climate risk

- Strategy's **sites for action** are categorised as:

- **Built – Large:** for larger buildings with a floor area over 2000 m²
- **Built – Small:** for smaller buildings with a floor area under 2000 m²
- **Unbuilt – Large:** for large unbuilt / open outdoor spaces and environments
- **Unbuilt – Small:** for small unbuilt outdoor spaces and environments

Each strategy is then described by an **estimated impact** rating from zero stars (not applicable) to three stars (very important or impactful) to help prioritise actions for your site.

- Finally, an estimate of the **cost and complexity** of the strategy, from low to high.

Individual circumstances will vary, but the above should provide a starting point for reflection and discussion both in your teams and with any external funders, contractors, or partners.

How to use the cards:

Use the cards in two Stages, in Stage One, these cards can be used in two ways:

- The open-ended approach (V1) if you have no particular starting point or ‘idea’, and want to explore all your options
- The targeted approach (V2) if you already have a dream, priority or need and want to promote deeper conversations in this area

Identify which approach your group would like to take and play...

Stage 1 Reflection V1 – Open-Ended

Divide up the cards evenly among pairs or smaller groups (depending on the number of people). Within those pairs/groups, read the cards and pick any that 1) seem particularly important (and possible) based on the characteristics of your site or building and the priorities for climate action and adaptation you identified in other reflections, and 2) that feel exciting as part of the vision and values you dreamt together and with others during other reflections. Put any cards that seem irrelevant or not applicable to the side. Keep any you are unsure about, so you can bring them back to the larger group. Take turns to present the cards back to the whole group to open a discussion. In rounds, try to narrow down to two to five **important** cards and two to five **exciting** cards (any method might fall into both of these categories!).

Other questions you might ask:

- *Why is this being prioritised over other cards?*
- *How will it make impact and who will it impact the most?*
- *Are you just listening to the loudest voices in the room (would a different group of people – or your more-than-human companions – look at this differently)?*

You now have a plan of what to take forward.

Stage 1 Reflection V2 – Targeted

Maybe you have already identified a priority, need, or dream: a local climate risk that seems particularly pressing, something everyone has said is important (or needs fixing), or a dream that you want to follow – for example, around new coexistences, or playing an active role in a future renewable energy democracy.

Instead of starting off with all the cards, just select the ones that link to your priority, need, or dream and use those to start a conversation. What else might you dream with them?

Other questions you might ask:

- *Why is this being prioritised over other cards?*
- *How will it make impact and who will it impact the most?*
- *Are you just listening to the loudest voices in the room (would a different group of people – or your more-than-human companions – look at this differently)?*

Stage 2 Reflection – ‘From low-hanging fruit to larger projects’

Organise the cards you’ve identified as most important and exciting (or the cards linking to your priority, need, or dream) in the following order:

1. What feels possible to achieve immediately, with the resources, time, and skills you already have?
2. What might take additional time and resources, but – with collective agreement and relevant permission from budget holders (if necessary) – feels possible in the short term? This might include things that can be built into your creative or learning programmes as artistic projects, or capital projects that can be done in stages.
3. What requires a significant amount of additional fundraising, technical expertise, and additional resource in a way that will need to be written into 2, 5, or 10-year plans? This might include significant capital projects that are necessary in the longer term to reach a near-zero-carbon world, such as replacing boilers/fossil-fuelled heating for larger sites.

For each card in each category, write out three next steps (and who will take them forward).

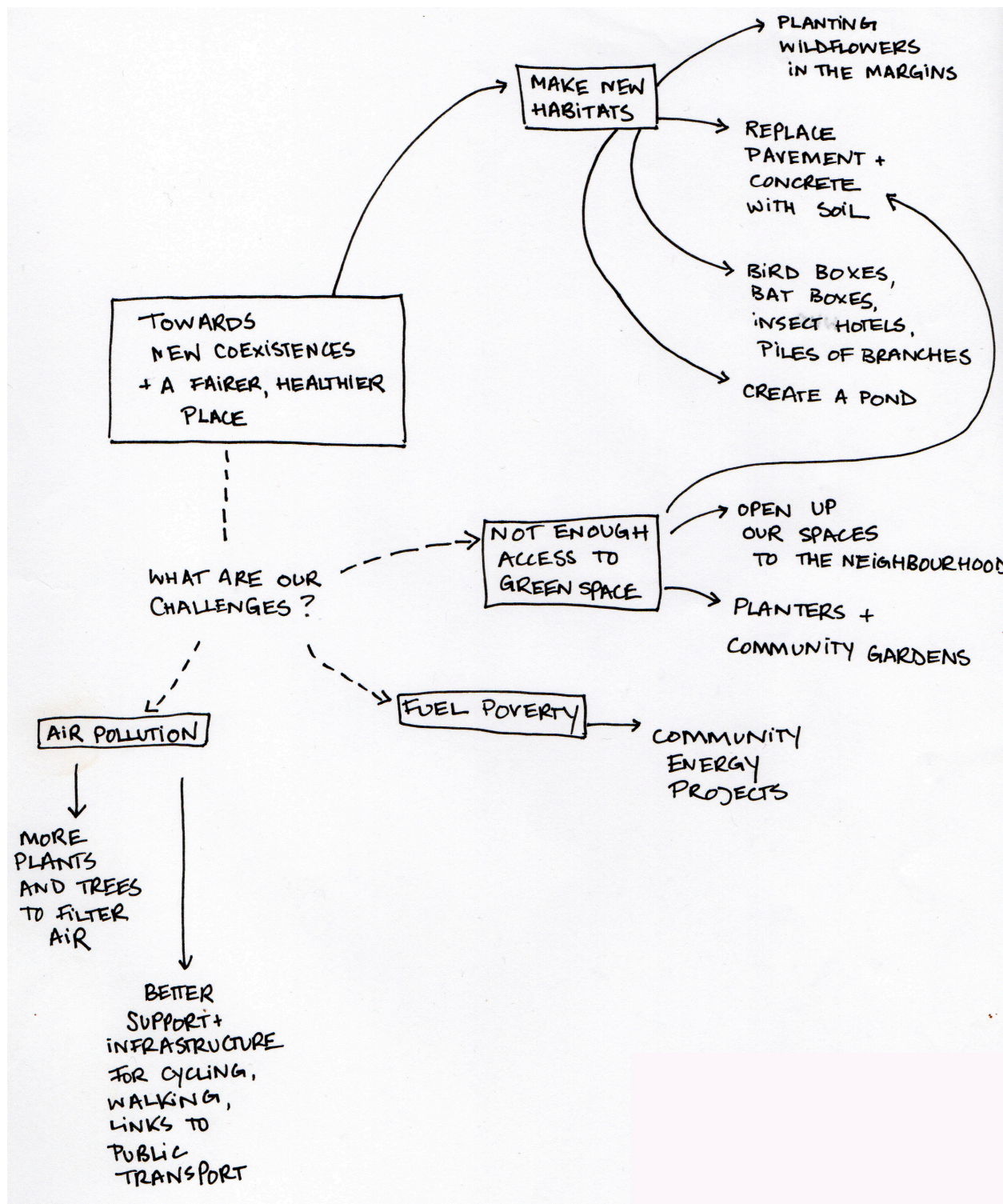
EXERCISE 2: DREAMING FURTHER

Look back and think about the **needs and dreams** in your neighbourhood.

How might your project contribute to a fairer, greener, healthier place?

Map out your possible connections, and see if you find any **new ones**.

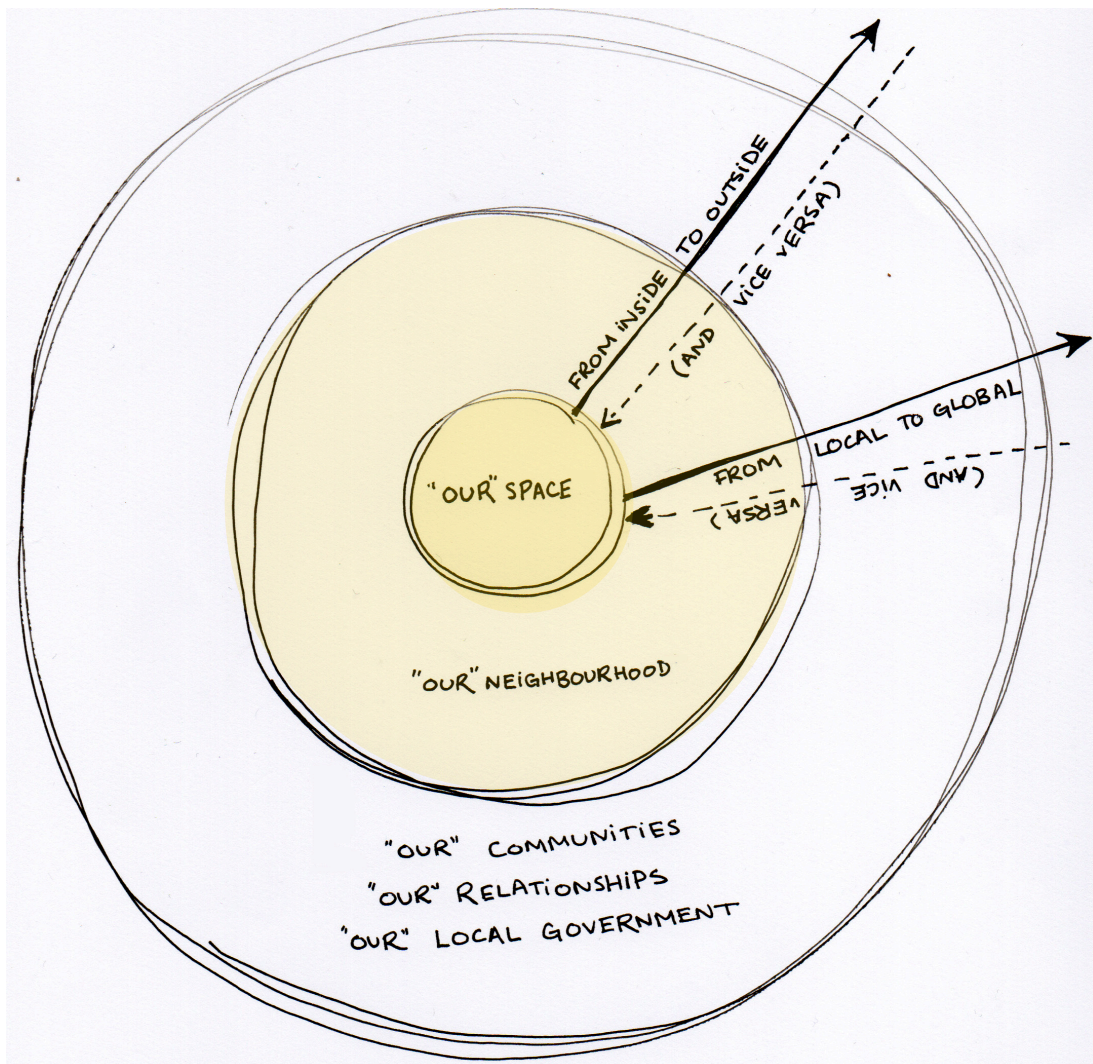
If you've done Exercise 1, look back at what you've identified as important and exciting: does it reflect the needs and dreams from Part I? **Is anything missing?**



EXERCISE 3: FROM THE INSIDE TO THE OUTSIDE

Considering your spheres of influence, and how the physical environment you create can ripple to have an **impact beyond your walls, fences, or 'borders'** and into the imagination, culture, and dreams of everyone who passes through your space.

And vice versa: how the possibilities of the neighbourhood might change your space and its possibilities.



For each of your chosen interventions and areas of priority, **map them from the 'inside' to the 'outside'** – from your space, to the people and more-than-human who will come through that space, to the systems and relationships you locate yourself in: what are the opportunities to think more generously, more connected?

How might you start linking to local to ever-larger spheres?

The following are some examples: *see how far and ambitiously you can push your imagination.*

From inside

...to outside

ENERGY

Energy efficiency retrofits: changing lighting, building fabric and insulation, etc.

Generate renewable energy on site

Link with local community energy groups and let them use your space to install community-owned a renewable energy, or offer workshops on energy efficiency or installing solar PV

Use your project to change or challenge legislation, e.g. restrictions on solar panels on heritage buildings

Future-proof your space for changes in climate, for example, more ventilation or shading, adapted building materials suitable for hotter climates, more flexible uses of outdoor or indoor space in response to temperature extremes

Create spaces of refuge during more extreme weather e.g. how to become a 'heating' or 'cooling' community hub

Link with local government adaptation groups and extreme weather emergency response frameworks

Explore creative responses to climate resilience and how cultural skills can support adaptation and 'rehearsing the future'

MOBILITY

Provide on-site facilities for locking up bicycles (ensure they are accessible for different kinds of cyclists)

Install electric vehicle charging points on site

Install signage that clearly shows nearby walking or cycling routes

Create space as part of bicycle lock-ups to host community workshops on bike maintenance

Map local public transport connections and safer cycleways (and promote these on your website and as part of marketing)

Map nearby EV charging stations and communicate these to visitors

Work locally to improve street lighting, or lobby for better cycleways or public transport

Set up partnerships with local public transport companies to offer free or discounted travel

BIODIVERSITY

<p>Create space on-site for planting of trees and plants</p> <p>Create a community garden</p> <p>Create, protect, maintain habitats for your more-than-human cohabitants across your site</p> <p>Break up asphalt wherever you can</p>	<p>Work with ecology to improve the resilience of your neighbourhood to a changing climate (e.g. trees and soil to reduce the urban heat island effect, swales and other sustainable urban drainage to combat flooding)</p> <p>Open up your green spaces to the neighbourhood and create opportunities for them to learn and be involved</p> <p>Explore creating local circular systems, e.g. composting on site to use in your own space or offer to neighbours</p>	<p>Understand how your site fits into local and regional biodiversity strategies</p> <p>Advocate for better access to green space in urban communities</p> <p>Change governance models to give nature a seat at your board or decision-making table and share the experience with others.</p>
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MATERIALS

<p>Create storage and/or workshop space on site to make more circular models of production and construction possible.</p> <p>Choose construction materials that work with your environment (look to traditional building methods for inspiration).</p>	<p>Host makerspaces, repair cafes, and workshops to help your community and neighbourhood have hands-on involvement with a more circular economy.</p> <p>Create partnerships and local reuse networks with other organisations in your neighbourhood for commonly used materials and equipment, or think 'out of the box' for how other forms of material and infrastructure might be repurposed.</p>	<p>Use your project to demonstrate and experiment with more sustainable building materials and approaches, invite local government, schools and vocational education centres to see them in action, partner with Universities to research and test.</p>
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EXERCISE 4: AGENTS OF CHANGE

Reflect on..

What **seeds of future dreams** do you have that can be nurtured and crafted from?

What are your **human, more-than-human, and non-human building blocks** from which you will make tomorrow?

This could be anything:
skills among your team or community,
built and unbuilt areas,
green or outdoor space,
thriving more-than-human neighbours ready for collaboration,
access to financial resources,
strong community ties or a strong relationship with your local government, etc.

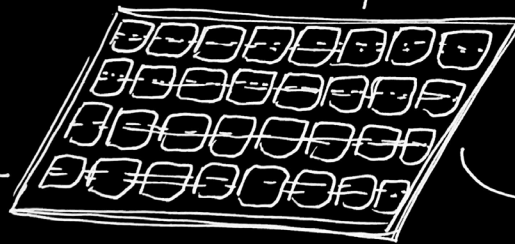
It might be helpful to do this exercise for each of the important and exciting projects you've identified as part of Exercise 1 in this section. You can even combine the exercises, or do this one first: starting from your existing seeds of potential might change what feels exciting or important.

What or who is missing to bring our dreams one step closer to reality?



POTENTIAL FOR
COMMUNITY OWNERSHIP,
DECENTRALISATION,
AND GREATER
ENERGY DEMOCRACY

REDUCE AIR POLLUTION
BY DISPLACING FOSSIL
FUEL POWER
GENERATION



→ CAN PROVIDE SHADE

CARBON-FREE,
RENEWABLE
ELECTRICITY

PART IV

EVOLVING AND MAKING

Prompts to (re)visit as you turn your ideas into action to test plans, find opportunities to make additional connections, and find a balance between complexity/uncertainty and the North Star of your vision.

REFLECTION 1: LEAVING THINGS UNFINISHED (OR TIME, TIME, TIME)

Do you need to create a 'masterplan' for your site from the start, or can you develop and evolve in phases?
Is it possible to leave certain areas 'unfinished' and keep them open to possibilities?

Revisiting your priorities from the Harvest Exercise 1, map out possible 'phases'.

For example..

Start with :

'things we can do today with the skills, time, materials and budget we already have?'

(Don't be tempted to exclude the big things entirely just because they seem impossible today.)

Work up to :

'things we need to make happen tomorrow (or the day after) even if it might take us several years to fundraise for them?'

(This might include big shifts, like removing all fossil fuel use from your site entirely.)

Against each phase, list at least one reflection or review you'd like to undertake at the end of it to come back to what is working, what could be better, and what the possibilities are.

REFLECTION 2: A CIRCULARITY FORECAST (OR MATTER MATTERS)

Once you have any kind of building project in place, do a 'circularity forecast' with your partners, architects, and others involved in the project.

What materials will be 'demolished'?

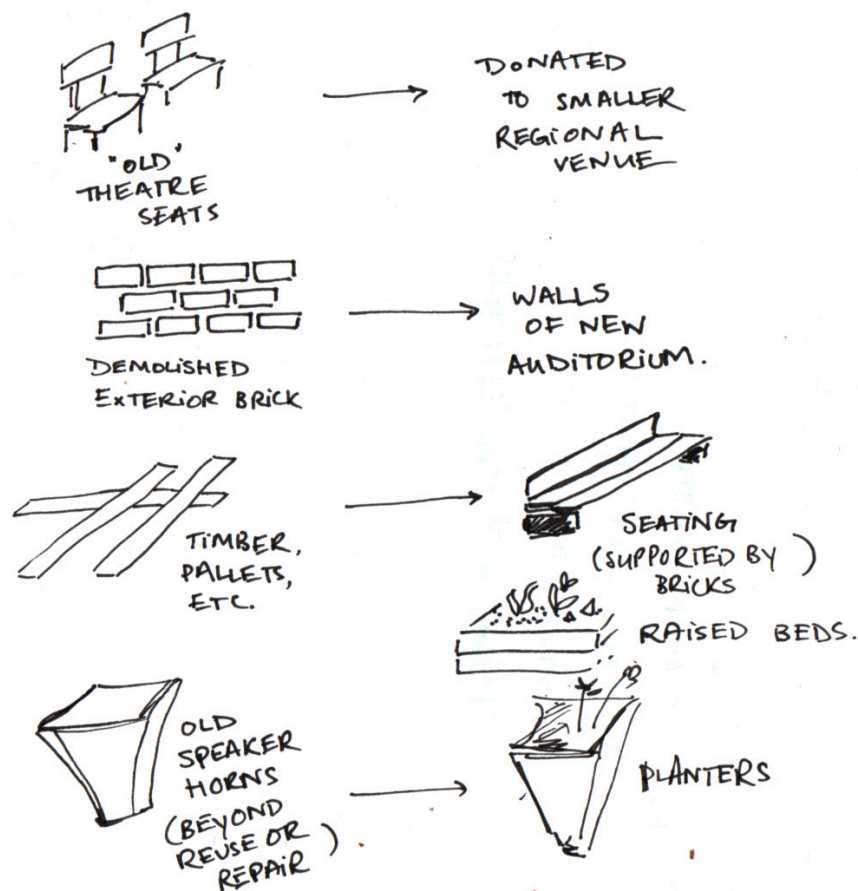
What will happen to them?

How might they be reintegrated?

Who or where else might make use of them?

What new materials do we need?

Do they need to be 'new' or could they be repurposed from somewhere else?



REFLECTION 3: LONGEVITY (OR TIME, TIME, TIME PART II)

For every intervention or part of the project, whether natural or human-made, **think through:**

Who will be responsible for maintaining and caring for this?

What level of know-how will they need, including to get outcomes (or savings) promised?

How will we keep and maintain this knowledge among our team and people using the space (manuals, training, workshops, experiences, shadowing)?

What are we 'locking in' with our currently planned project – good or bad?

Thinking about our space **in 10 years' time...**

what will still be working perfectly?

What might be in need of a renovation, or change?

Is there any way to plan our project differently so this renovation or update won't be needed? What about in 20 years' time? 50 years' time?

REFLECTION 4: NEW EUROPEAN BAUHAUS COMPASS, REVISITED

The New European Bauhaus Compass is a guiding framework for designers, dreamers, project makers that you can use as a tool to shape your own ambition.

Created as an interdisciplinary initiative to support the European Green Deal, it offers a set of values (Together, Sustainable, Beautiful) supported by working principles (Participatory process, Transdisciplinary approach, Multi-level engagement) and descriptions of three levels of ambition for each.

Now that you have a planned project, revisit your specific project through the New European Bauhaus Compass. **Where could you push for more ambition and how?**

Possible Structure for Reflection 4:

- Ask everyone to read the New European Bauhaus Compass Values and Working Principles criteria and identify where your current space and working culture meets levels 1, 2, 3:

USE THE COMPASS



- Share as a group:

*Where is the project currently strongest?
Where is the project currently less developed?
What changes might you be able to make to the project plan to strengthen the areas of the project that currently feel less developed according to the New European Bauhaus principles?*

ANNEX I

FORCING THE READING

Exercise 1: **Weather Forecast: Risk and Resilience [Adaptation]**

Look up how what likely climate and ecological impacts your neighbourhood or region might experience (or is already experiencing), and how the weather is due to change.

What are the top 3 – 5 risks and changes to consider when (re-)designing your space? In some cases, these might be obvious (e.g. increased risk of surface flooding, urban heat island effect) while in other cases, it may be harder to identify the priorities. If you are struggling, discuss as a group and/or consider contacting a local climate adaptation expert or local government representative.

- 1.
- 2.
- 3.
- (4....)

Exercise 2: **Action Needed [Mitigation]**

Look up your city or region's climate action and transformation strategy.

What are some top issues and targets your local government is focusing on?

Where are they highlighting the need for collaboration from civil society? And which do you think your space could contribute to?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- (7.)

Useful:

[Cultural Adaptations Toolkit:
Adapting our Culture](#)



Some more useful links/resources for Forcing the Reading

Adaptation

- European Environment Agency: Climate Change Impacts in Europe (supra-regional) <https://experience.arcgis.com/experience/5f6596de6c4445a58acc956532b9813d/>
- European Climate Risk Typology Interactive Map (regional): <https://european-crt.org/index.html>
- Climate ADAPT: Urban Adaptation Map (individual cities) <https://climate-adapt.eea.europa.eu/en/knowledge/tools/urban-adaptation>

& your country, region, local government, national weather organisation may have more detailed climate adaptation plans and risk assessments down to neighbourhood level.

Understanding your neighbourhood: pollution

- European Environment Agency: European Air Quality Index: <https://www.eea.europa.eu/themes/air/air-quality-index/index>

& also consider local pollution and environmental impacts relevant to your community – e.g. water pollution, near-by industrial or landfill sites.

BACKGROUND

MITIGATION: WHERE DO WE NEED TO GET TO?

We know we have to reach a goal of ‘net zero’ greenhouse gas emissions as soon as possible (but in current EU policy targets, by 2050 at the latest) to stop climate change from getting worse. The detail of transition plans will look different in different places and for different people, but there are some shared goals anyone working in the context of European society can look towards. As cultural organisations, the question should not be ‘what should our net zero target be’ but ‘how can we best support society-wide net zero transformations’. ‘Net zero’ is mainly about deep reductions in greenhouse gas emissions to ‘near zero’.

What we should be orienting ourselves towards on a European level by 2050:

Energy: stop burning fossil fuels (coal, oil, gas)

- Phasing out all electricity generation that burns fossil fuels (such as coal, oil, gas)
- Generating all electricity from renewable sources (such as wind, solar, hydropower, geothermal) and building more decentralised, democratised energy systems
- Stop using fossil fuels for heating (no gas, coal, or oil): electrify using heat pumps, or connect to local heat networks
- Energy efficiency: using less to make the transformation easier, for example through insulation, more energy efficient equipment, and different working and living practices
- Increasing “active” travel like walking and cycling, and the use and availability of public transport
- Reducing the overall number of cars on the roads and make them smaller, and reduce overall km driven
- Cars, vans, buses, or trucks that remain on the road can no longer be powered by fossil fuels (diesel, petrol, LNG): everything needs to be electrified (so that it can be powered by the renewable electricity)
- Flying less: overall demand for flights in Europe has to stay the same, or better yet shrink. While there are emerging technologies to decarbonise air travel, these will not be ready at scale on the timelines we need to reach net zero

Materials, food, water, and land:

- Shifting to a majority plant-based diet. Reducing the amount of meat (especially beef) in diets to free up land for additional agriculture or ecosystem regeneration, and reducing/eliminating food waste.
- Stopping the overconsumption of materials and resources, which drives environmental degradation and labour abuses in the supply chain
- Following a ‘Refuse, reduce, reuse, recycle’ hierarchy and shifting towards a circular and sharing economy
- In countries that still operate landfills, stop sending food, timber, paper & any other biodegradable waste to landfill (where it produces methane as it breaks down)
- Regenerating nature, rewilding, protecting ecosystems and biodiversity, diversifying agriculture, restoring soils
- Stopping the pollution of rivers, lakes, oceans; reducing water waste and over-exploitation of fresh water

People, justice, adaptation:

- Building places and making spaces that are more resilient to changing weather e.g. droughts, floods, increased heat. Reducing the urban heat island effect in cities
- Involving communities in regenerative practices
- Increasing access to open and green space for all, and shaping places that are healthy and free from pollution
- Recognising the rights of nature and the more-than-human – from animals and plants, to rivers, oceans, and mountains
- Creating ways for different people to participate in decision-making, and that take into account different lived experiences to build fairer, more equitable societies
- Recognising that climate action is about local as well as global solidarity, fairness at neighbourhood level all the way to communities at frontlines of climate change at the other end of the world: and that means anyone living and working in Europe needs to act more ambitiously and faster.

Upgrade or maintain Heating, Ventilation, Air Conditioning



Mitigation - Energy



Climate Risk - Overheating

Heating, Ventilation, and Air Conditioning (HVAC) are the largest energy users in most buildings, so it's always worth investing in maintenance (such as regular cleaning of filters) or investing in upgrades like better controls, more efficient motors, and variable speed drives. If you are replacing systems or installing new ones, explore opportunities for heat recovery or recirculation in how and where pipes are laid out. For larger buildings, a **Building Management System** can help improve how HVAC is used, although it still needs regular monitoring to make sure it is working properly, and (for example) not heating and cooling areas at the same time. Cultural buildings in Central and Northern European climate - where it has not traditionally been necessary - face difficult choices about installing air conditioning to respond to hotter summers. For example, what is the trade-off between the high cost of installation and the locking in additional electricity use against the number of days it may be needed? Can **Natural Ventilation** and **Design for Solar Shading** meet the needs? What about installing a **Heat Pump** system that can also provide cooling?

Built - Large: ***

Built - Small: ***

Cost & Complexity: Low - High

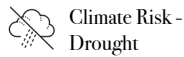
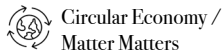
Unbuilt - Large:

Unbuilt - Small:

ANNEX II

POSSIBILITIES CARDS

Rainwater and Greywater Recycling



Capturing and reusing rainwater or grey water (water from sinks, showers, washing machines, etc) reduces water stress and costs. Using large water butts/containers to collect rainwater for use in the garden or washing outdoor areas is easy and cost effective. Integrated grey water recycling systems can be complex and expensive, so may be only relevant in areas of high water stress or if you have a large public building that uses large volumes of water. You will need to consider where the reused grey water can be used safely: for example, flushing toilets is more straightforward, but using grey water for irrigation may mean treatment/filtration, and/or paying attention to what kinds of products are used.

Built - Large: ** Unbuilt - Large: ***
 Built - Small: * Unbuilt - Small: *

Cost & Complexity: High except small DIY rain-water collection e.g. in barrels/containers

Solar Photovoltaics / Solar Panels



Solar PV installations convert sunlight into renewable electricity for use on site or for exporting back to the grid. Payback periods will vary depending on local climate conditions. In colder climates, focusing on energy efficiency first may make more environmental sense, but solar PV installations also send a strong visible signal towards a more renewable future. They additionally offer relationship opportunities with community energy groups and local energy democracy movements. ‘Bifacial’ solar panels which let through light, or panels mounted on glass, may also offer opportunities to combine shade (e.g. over walkways, foyers, or conservatories) with energy generation.

Built - Large: *** Unbuilt - Large: ***
 Built - Small: * Unbuilt - Small:

Cost & Complexity: Medium

Design for Solar Shade



The use of external structural elements or trees or vegetation to ‘shade’ exposed and southern-facing areas of buildings (especially glass or minimally insulated walls) can reduce heat in indoor spaces (and associated energy need for cooling in some climates). In unbuilt areas, structures or vegetation can be designed to provide shade for the human and more-than-human occupants of the space. This is most important in hot climates, for buildings with lots of windows/glass, and in urban environments at risk of overheating. Some solar shade can be low-cost or temporary, like putting up awnings. Consider the Design for Solar Gain card at the same time to determine if your solution can use solar passive design principles across all seasons, such as window eaves that shade from the sun in summer, but are set at a particular angle (depending on the latitude) so the sun can hit the window when it’s at a lower angle.

Built - Large: ** Unbuilt - Large: **
 Built - Small: ** Unbuilt - Small: **

Cost & Complexity: Low - Medium

Improving Insulation and Building Fabric



Reduce heat lost through walls, windows, roofs, doors, and floors by improving the building fabric. Install insulation, double- or triple-glazing for windows, and/or draught-proof doors and windows. It is essential for buildings of any size, and especially important in colder climates to reduce the energy demand for heating. The cost and complexity can be high for heritage protected buildings. If insulation is not possible in the short term, extra effort and time resource should be invested in energy management and engagement (e.g. how and when spaces are used, heated and cooled; encouraging people to wear additional layers, etc).

Built - Large: *** Unbuilt - Large:
 Built - Small: *** Unbuilt - Small:

Cost & Complexity: Low - High



Design for Solar Gain



Design building layouts so spaces with high occupancy are located where they will be exposed to sunlight and can 'gain' warmth, reducing the need for heating. This is more important in colder climates, and may need additional design to avoid the risk of overheating spaces. Consider the Design for Solar Shade card at the same time to determine if your solution can use solar passive design principles across all seasons, such as window eaves that shade from the sun in summer, but are set at a particular angle (depending on the latitude) so the sun can hit the window when it's at a lower angle.

Built - Large: ** Unbuilt - Large:
 Built - Small: ** Unbuilt - Small:
 Cost & Complexity: High

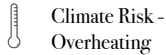
Use of Natural Building Materials



Natural building materials are often lower embodied carbon, i.e. they have less impact to produce, and some even store carbon. Many emit fewer toxic volatile organic compounds, so they contribute to cleaner air quality. Finally, recognising and learning from traditional architectural methods and materials in your region (or from bioregions with traditionally similar climates to the coming changes you expect to see in your region) can help you build 'with' your environment and take advantage of what in some cases are thousands of years of experience of what materials regulate temperature, or are suited to drought or wet conditions. Examples include hempcrete or limecrete (as alternatives to some concrete uses), cob or other forms of clay/earth (very good at insulating and regulating humidity), timber-based construction (which 'stores' the carbon in the timber), straw bales, cork, or the use of sheep's wool, flax, or other natural fibres as insulation. For larger project, additional planning permissions may be needed, and learning from existing natural building materials networks in your region will be invaluable. There are also many smaller types of project, like structures in any garden/open space that lend themselves to a DIY approach and community engagement (e.g. building a cob oven with visitors, or an outdoor auditorium/classroom). In short, for whatever you are planning to build, explore natural building material options first.

Built - Large: *** Unbuilt - Large: **
 Built - Small: *** Unbuilt - Small: **
 Cost & Complexity: Low - High

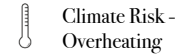
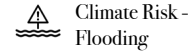
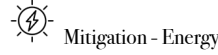
Green Walls and Facades



Greening walls and facades can be done through either: 1 – self-attaching plants attaching directly to facades, 2 – trellises or wire systems installed for climbing plants, or 3 – living wall systems constructed from planting boxes, felt, etc. Living wall systems can be expensive and very high maintenance, including requiring lots of irrigation and addition of nutrients to remain green. Consider if this approach is right for the climate of your site, based on the suitability of low-maintenance and/or drought-resistant plants. The plants provide insulation for buildings, habitats for the more-than-human, and contribute to cooling the environment and combating urban heat island effects. Co-benefits include acoustic and temperature insulation for both inside and outside spaces, air purification, and CO2 absorption. They may be particularly suitable for fences/walls facing roads as a barrier for air pollution. This initiative is best combined with basic **rainwater harvesting** to support irrigation.

Built - Large: * Unbuilt - Large: **
 Built - Small: * Unbuilt - Small: **
 Cost & Complexity: Medium - High

Green Roofs



Green roofs involve adding a layer of growing medium to roofs, to plant climate-appropriate and low-maintenance plants, e.g. sedum, moss, perennials, wildflowers, grasses (and in some cases shrubs). Generally, they are only suitable for flat or low-angle roofs, and a structural engineer may need to check the roof can support the additional weight. Green roofs are particularly impactful for buildings in urban environments to help combat the heat island effect and create habitats for the more-than-human (and the potential to create a green oasis for humans, too). The co-benefits include acoustic insulation, temperature insulation, CO2 absorption, and reducing problems with water run-off. This initiative can be combined with **solar panels** and basic **rainwater harvesting** to support irrigation.

Built - Large: **(*) Unbuilt - Large:
 Built - Small: ** Unbuilt - Small:
 Cost & Complexity: High

LED Lighting



Mitigation - Energy

Replace lighting fixtures with energy efficient LEDs to significantly reduce electricity use, reduce demand for ventilation and cooling (since LEDs waste less energy as heat), and reduce the need for maintenance (since bulbs need to be changed less often). Prioritise areas of high usage first – e.g. house lights, foyers and public areas, emergency lighting, toilets, offices, and outdoor and architectural lighting. These will have shorter payback times than less-used lights such as stage lighting. Payback times will depend on the number of lights to be replaced, operating hours, and local electricity costs, but will usually be as low as 1-2 years. For outdoor/external/architectural lighting, consider and balance need against light pollution on both humans and your more-than-human neighbours – this impact can be reduced through e.g. shading and angling light downwards. Also consider installing **Automatic Sensors** for LED lighting.

Built - Large: *** Unbuilt - Large: *
Built - Small: *** Unbuilt - Small: *
Cost & Complexity: Low

Building Management System



Mitigation - Energy

Install or upgrade a building management system (BMS) to centrally and automatically control heating, ventilation, and air conditioning. This is most suited to large and complex buildings, but beware: a BMS alone does not necessarily lead to energy savings. A badly programmed BMS or one that is not user-friendly, or over-specified/too complicated for how and by who it will be used may create additional issues. Design the system together with your current building/facilities manager, ensure a custom manual is provided as part of the installation, and write follow-up visits into the contract (6 months and one year, in different seasons) to check the BMS continues to be programmed and operating as it should.

Built - Large: *** Unbuilt - Large:
Built - Small: * Unbuilt - Small:
Cost & Complexity: Medium

Solar Water Heating /

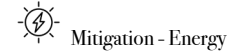


Mitigation - Energy

Using solar energy collected via panels or tubes to heat water for use in showers and taps (and sometimes for heating). This is most effective in warmer climates, though will still make a difference in summer months in colder climates. In colder climates and/or for larger public buildings, it is unlikely to meet entire demand but can still be used to reduce the need for other forms of energy.

Built - Large: *** Unbuilt - Large:
Built - Small: *** Unbuilt - Small:
Cost & Complexity: Medium

Automatic Sensors



Mitigation - Energy

Using motion sensors, such as Passive Infrared (PIR) sensors, or daylight sensors to automatically control lighting. Especially useful in areas of variable occupancy, like toilets. May also be relevant for some areas of outdoor lighting (when installing outdoor lighting, be aware of light pollution and reduce this through e.g. shading and angling light downwards). Also consider the safety and accessibility needs of your space and its users. Can be installed at the same time as **LED Lighting**.

Built - Large: *** Unbuilt - Large: *
Built - Small: *** Unbuilt - Small: *
Cost & Complexity: Low



Upgrade or maintain Heating, Ventilation, Air Conditioning



Mitigation - Energy



Climate Risk - Overheating

Heating, Ventilation, and Air Conditioning (HVAC) are the largest energy users in most buildings, so it's always worth investing in maintenance (such as regular cleaning of filters) or investing in upgrades like better controls, more efficient motors, and variable speed drives. If you are replacing systems or installing new ones, explore opportunities for heat recovery or recirculation in how and where pipes are laid out. For larger buildings, a **Building Management System** can help improve how HVAC is used, although it still needs regular monitoring to make sure it is working properly, and (for example) not heating and cooling areas at the same time. Cultural buildings in Central and Northern European climate - where it has not traditionally been necessary - face difficult choices about installing air conditioning to respond to hotter summers. For example, what is the trade-off between the high cost of installation and the locking in additional electricity use against the number of days it may be needed? Can **Natural Ventilation** and **Design for Solar Shading** meet the needs? What about installing a **Heat Pump** system that can also provide cooling?

Built - Large: ***

Unbuilt - Large:

Built - Small: ***

Unbuilt - Small:

Cost & Complexity: Low - High

Heat Pumps



Mitigation - Energy



Climate Risk - Overheating

Heat pumps work by transferring natural energy from the ground, air, or water into heat that can be used for hot water and heating systems. Some can also be used as air conditioning. When installed correctly, heat pumps deliver more energy in kWh for your building than the kWh electricity used to run the pumps – they are super efficient! They work best when buildings are well insulated. Combining heat pumps with other interventions including better insulation, green roofs, solar panels and solar thermal systems offers the greatest promise, but comes with additional cost and complexity. Given the urgent need to electrify buildings to reach net zero, replacing any gas boilers or other fossil fuelled heating like oil should be a priority for any new or one-off big capital and retrofit projects, especially in regions where district heat networks are not widespread. Longer-term plans may be needed for venues and buildings already in operation. Water source heat pumps are only really possible if your building is located near a body of water; while ground source heat pumps may need extensive excavation work to be installed.

Built - Large: ***

Unbuilt - Large:

Built - Small: ***

Unbuilt - Small:

Cost & Complexity: High

Join a District Heating Network



Mitigation - Energy

District Heating Networks redistribute heat from a large central source to individual homes and businesses through a network of insulated pipes. The heat is often 'waste' heat from another process. District heat networks are large-scale developments: check with planning offices whether any are being developed in your neighbourhood.

Built - Large: ***

Unbuilt - Large:

Built - Small: ***

Unbuilt - Small:

Cost & Complexity: N/A (generally only possible if a heat network is being developed locally)

Remove Concrete/Asphalt and Paved Areas



New Coexistences



Climate Risk - Flooding



Climate Risk - Overheating

Breaking up and removing concrete, paved areas, and any other kind of 'impermeable' ground cover reduces the risk of flooding by allowing water to drain into the ground. It additionally helps combat the 'urban heat island effect' (where heat is absorbed and radiated back out, leading to overheating in cities), and supports new coexistences by allowing soil to breathe and other things to grow. It's especially important in urban areas. If possible, try and find a new landscaping use for the waste rubble, for example in **Gabion Walls or Cages**.

Built - Large: ***

Unbuilt - Large: ***

Built - Small: ***

Unbuilt - Small: ***

Cost & Complexity: Low

Reduce Parking



Mitigation - Mobility

A huge amount of our public space is given to cars. Reducing your car parking spaces (especially in cities and areas with better public transport connections) can shift more people to arrive at your space using other means, and free up more space for humans and more-than-humans to play and rest. Some cities are allowing ‘parklets’ – car parking spaces turned into small parks or seating areas. You might also have an opportunity to Remove and Break Up Concrete to help with better drainage (reducing flood risk), reduce heat gain, and create more space for the more-than-human. When reducing parking, prioritise any remaining parking for people with accessibility needs.

Built - Large: *** Unbuilt - Large: ***
Built - Small: *** Unbuilt - Small: ***

Cost & Complexity: Low

Bicycle Storage and Lock-up



Mitigation - Mobility

People are much more likely to cycle to your space if they know there will be somewhere to store and safely lock up their bicycles. Create storage somewhere on site (e.g. a shed for your co-workers, enough space in the cloakroom) and/or bicycle stands. Some places use giant planters to provide the ‘anchoring’ for bicycle stands (especially where it is not possible to fix them directly into the ground). While creatively designed bicycle stands can be beautiful and fun, don’t forget about function: bicycle stands should be usable by everyone, including by non-standard bikes, such as those used by disabled cyclists. In many cases, traditional ‘Sheffield’ stands (large metal loops) are best. Consider how you could design a shelter or other decorations around them, and how you can incentivise or promote cycling to your space.

Built - Large: *** Unbuilt - Large: ***
Built - Small: *** Unbuilt - Small: ***

Cost & Complexity: Low

On-Site Electric Vehicle Charging



Mitigation - Mobility

While the overall goal is to reduce car and van use, you can support the shift to more electric vehicles by installing charging on site if you have space/ parking. This is especially important in rural areas or places where there is less public transport available and people are more dependant on their cars. It also opens up future opportunities for more touring with electric vehicles: productions and artists are much more likely to choose this if they know they can recharge on site.

Built - Large: ** Unbuilt - Large: **
Built - Small: ** Unbuilt - Small: **

Cost & Complexity: High

Better On-Site Storage and Equipment



Mitigation - Mobility



Circular Economy /
Matter Matters

By designing useful storage on site and investing in good lighting and audio equipment, you can reduce the need for lots of new materials being purchased repeatedly, and for visiting artists to have to transport their own.

A word of caution: storage can quickly fill up with unused things and/or nobody knowing what is there. Introduce an inventory or plan, and regularly review it. You also need to tell visiting artists and partners what they can borrow and use from you.

Built - Large: *** Unbuilt - Large: *
Built - Small: * Unbuilt - Small:

Cost & Complexity: Low - High



Better Pathways and Signage to Public Transport Connections



Improving signage and helping to direct people along well-lit and accessible pathways can improve the experience of those using public transport and build awareness. This is especially important if you have a larger space, or if local public transport stops are further away from your site. Depending on how many stops and connections are available, consider displaying last connections in any foyer, toilets, bars, or as people are leaving the space if you put on late night programming.

Built - Large: *** Unbuilt - Large: ***
 Built - Small: ** Unbuilt - Small: **
 Cost & Complexity: Low

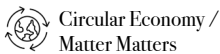
White Paint



White paint can help reflect sunlight and heat and reduce the risk of overheating. This is best used in very hot areas, and if you have a large area of flat roof, paved ground, or walls facing the sun. Consider combining with **Design for Solar Shade, Green Walls, and/or Raised Planters and/or Community Gardens.**

Built - Large: * Unbuilt - Large:
 Built - Small: * Unbuilt - Small:
 Cost & Complexity: Low

Raised Planters and/or a Community Garden



Raised planters and/or community gardens are a brilliant way to create small habitats and/or space for people to engage with green space and the more-than-human – they also look beautiful and can cool areas when it’s hot. You may also be able to grow things to support an on-site café or restaurant: even if you can’t grow all your own, plants like herbs and edible flowers are among the easiest to add to your menu. Raised planters can easily be built from re-purposed timber and other materials, and are a particularly suitable choice for smaller spaces with limited other outdoor green space. The main consideration is who will do the gardening and maintenance. There is an opportunity to combine with **rainwater harvesting**/barrels and **composting** on site.

Built - Large: * Unbuilt - Large: ***
 Built - Small: ** Unbuilt - Small: **
 Cost & Complexity: Low - Medium

Bird Boxes, Bat Boxes, Insect Hotels



Bird and bat boxes offer nesting sites for birds and bats. ‘Insect hotels’ are built to offer lots of spaces for insects to hide, live, and thrive in – the design may vary depending on what species you’d like to support (for example, solitary bees). They are easily made from DIY and repurposed materials including timber, twigs and branches, etc. If you have a large unbuilt space, you can also support habitats for insects and amphibians by leaving piles of branches when doing any maintenance or gardening work. If you are creating habitats for bats or other nocturnal species, consider how much light pollution is coming from any architectural lighting.

Built - Large: ** Unbuilt - Large: **
 Built - Small: ** Unbuilt - Small: **
 Cost & Complexity: Low



Trees, Wildflowers, Hedges



New Coexistences



Climate Risk - Drought



Climate Risk - Flooding



Climate Risk - Overheating

Trees, hedges and wildflower meadows all offer habitats for the more-than-human. Trees (and any other plant) can also help reduce overheating in urban areas from the ‘urban heat island effect’, and absorb air and noise pollution. Hedges and/or rows of trees are especially powerful along the boundaries of your space, especially if you are near a road and/or trying to reduce noise from reaching neighbours. Don’t cut back trees or hedges during bird nesting season. If you have limited green space, focus on small opportunities, for example planting native wildflowers on verges and other small areas instead of grass. Don’t cut back wildflowers in spring when they are most needed by pollinators like bees and other insects: signage for visitors can explain why, and educate visitors on biodiversity at the same time. The roots of trees, shrubs, and hedges can also help ‘hold’ soil in place and reduce the risk of erosion and/or landslides, which may be a consideration in more rural areas. Finally, trees and hedges can help reduce the risk of flooding. Plant the right plant in the right place: for example, in places at risk of drought, look for drought-resistant species.

Built - Large: **

Unbuilt - Large: ***

Built - Small: **

Unbuilt - Small: ***

Cost & Complexity: Low - Medium

Swales, Rain Gardens,



New Coexistences



Climate Risk - Flooding

Swales are shallow, plant-filled channels that are used to collect, slow down and direct water run-off, and in some cases help infiltrate water back into the soil. They can also help filter out pollution from water. Rain gardens are similar to swales, but rather than channelling water, are planted in shallow basins to slow the flow of water. Retention ponds work on a similar principle, providing more water storage capacity to catch surface run-off during rainfall.

These solutions can be created where there is already a natural depression in the land, by digging out a new one, or by building embankments. Swales are relatively easy and fast to install, while retention ponds may require more work (and space). They are particularly important in urban areas where there is limited opportunity for water to drain in heavy rains, and in other areas at high risk of flooding. Smaller swales and rainwater gardens can be especially effective along paths, roadways, or car parks. They also create new habitats for the more-than-human.

Built - Large: ***

Unbuilt - Large: ***

Built - Small: *

Unbuilt - Small: *

Cost & Complexity: Low - Medium

Natural Water Treatment System



Circular Economy / Matter Matters



Climate Risk - Drought



New Coexistences

Natural treatment of grey water or sewage on-site can reduce health hazards, reduce strain on city water treatment systems, and allow for greywater to be safely used in other areas (see **Rainwater and Greywater Recycling**). Natural solutions can also provide habitat for more-than-human and include reed beds, willow filters or constructed wetlands. Make sure to check local requirements and restrictions on safe water treatment.

Built - Large: ***

Unbuilt - Large: ***

Built - Small:

Unbuilt - Small:

Cost & Complexity: High

Ponds and Wetlands



New Coexistences



Climate Risk - Drought



Climate Risk - Flooding

Ponds and wetlands can provide much-needed habitat for the more-than-human, remove significant amounts of carbon from the atmosphere, and reduce flood risk. They are especially important in urban areas, to purify runoff water and absorbing excess water during heavy rainfall. Ensure your pond or wetland incorporates native and climate-resilient plants to support the local ecosystem and improve biodiversity.

Built - Large: ***

Unbuilt - Large: ***

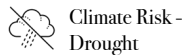
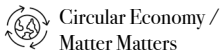
Built - Small:

Unbuilt - Small: *

Cost & Complexity: Medium - High



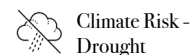
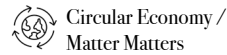
Low-Flow and Push Taps



Efficient taps ensure water is not left running or used unnecessarily. This reduces energy costs and water usage. Ensure accessibility requirements are still met with any taps installed. For existing builds, determine if sensors can be used to retrofit existing taps (instead of completely replacing taps).

Built - Large: ** Unbuilt - Large: **
 Built - Small: ** Unbuilt - Small: **
 Cost & Complexity: Low

Public Water Fountains



Water fountains encourage visitors to your space to bring their own water bottles, instead of buying plastic ones. They are often simple to install and maintain, and the water run-off can be used to water small nearby gardens. Ensure adequate signage or website information to encourage the water fountain use, and design the fountains for all accessibility requirements.

Built - Large: * Unbuilt - Large: *
 Built - Small: * Unbuilt - Small: *
 Cost & Complexity: Low

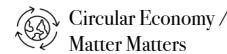
Natural Ventilation



Natural ventilation works with wind, temperature, and the physical shape and orientation of your building to passively (i.e. without the use of energy) create air movement. For example, cross-ventilation with openings on opposite sides of your space that draw through air, or stack ventilation, where cooler air is introduced at a lower level, rises as it heats up, and leaves through openings at a higher level (especially suited for open spaces like atriums). When well-designed, natural ventilation reduces the need for energy use and maintenance. It's best suited for breezy and dry climates, but the exact recommendations will depend on your site, local climate and climate trends, and the shape and material (and size) of your building. Some passive ventilation types can also be combined with heat recovery systems. Combine with **Designing for Solar Shade** and an effective **Heating, Ventilation and Air Conditioning** system to best control temperature while using less energy.

Built - Large: ** Unbuilt - Large: **
 Built - Small: ** Unbuilt - Small: **
 Cost & Complexity: Medium

Composting



Composting is the 'recycling' of organic materials like food or plants/vegetation into fertiliser (and energy, in anaerobic digestion systems). Systems can be easy to implement if your local area offers composting collection, or if you can compost on site and use the compost on your own outside space or share it with gardeners, community gardens, or even farms in your neighbourhood. There are multiple composting options (e.g. worm farms, Bokashi bins, commercial composting partnerships) depending on the size and needs of your space. It can support other environmental initiatives – for example, compostable shipping wrapping is much more impactful if there is composting available at your site.

Built - Large: *** Unbuilt - Large: ***
 Built - Small: ** Unbuilt - Small: **
 Cost & Complexity: Low



Gabion Cages / Gabion Walls



Gabions are cages (usually made from galvanised steel wire mesh) filled with materials like stone, brick, and/or broken-up concrete. They can be used to reduce or prevent erosion on river banks, shorelines, and soil slopes and/or as decorative walls and elements in outdoor space. They can offer habitat for different more-than-human species in the cracks between the rocks, and can also slow down rainfall from reaching the ground as it filters through. You can often find rubble and other materials to fill gabions from local skips and building sites (or maybe you will have some from your own building works).

Built - Large: Unbuilt - Large: ***
Built - Small: Unbuilt - Small: **
Cost & Complexity: Low

Dream your own...

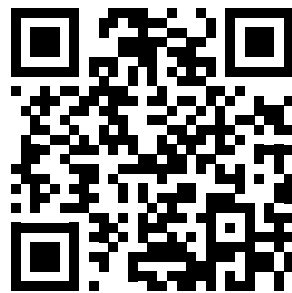
Built - Large: Unbuilt - Large:
Built - Small: Unbuilt - Small:
Cost & Complexity:

Built - Large: Unbuilt - Large:
Built - Small: Unbuilt - Small:
Cost & Complexity:

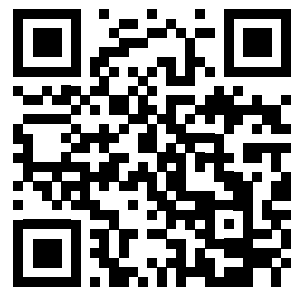
Built - Large: Unbuilt - Large:
Built - Small: Unbuilt - Small:
Cost & Complexity:



Other digital content connected to the Rebuilding to Last project



E-courses on TEH website
www.teh.net/resources/



Videos from Participatory
Architectural Interventions
vimeo.com/transeuropehalles



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