Axel Uhren
Master Thesis 2024

Chalmers School of Architecture
Department of Architecture and Civil Engineering

Examiner: Liane Thuvander
Supervisor: Shea Hagy

R O O T E D

CATALYSING REGENERATIVE LOW IMPACT DEVELOPMENT IN CORNWALL

R O O T E D

Catalysing Regenerative Low Impact Development in Cornwall

R O O T E D

Catalysing Regenerative Low Impact Development in Cornwall

Axel Uhren
Master Thesis 2024

Chalmers School of Architecture
Department of Architecture and Civil Engineering
Architecture and Planning Beyond Sustainability

Examiner: Liane Thuvander
Supervisor: Shea Hagy

CHALMERS
UNIVERSITY OF TECHNOLOGY

ABSTRACT

In the context of urgent socio-economic and environmental challenges in Cornwall, UK, the planning policy AL1 was introduced in 2023, aiming to promote socio-ecological resilience. It facilitates the transformation of agricultural holdings into residential land, with the condition that applicants demonstrate successful design and maintenance of Regenerative Low Impact Developments (RLIDs). These developments seek to support a local, self-sufficient, and environmentally conscious lifestyle, while also responding to the need for affordable housing and economic diversity.

Despite AL1's promising objectives, applicants face potential challenges in accessibility, including the policy's stringent requirements, a lack of guidance and training in regenerative practices, as well as financial constraints and insufficient access to farmland. AL1 is largely based on its predecessor, the Welsh One Planet Development policy (OPD), introduced in 2010. Studies of the success of this policy suggest that AL1's lack of accessibility could hinder the policy's appeal beyond a narrow demographic of already climate-conscious and financially secure applicants.

This research aims to tackle planning policy AL1's potential shortcomings and support its effective implementation to foster socio-ecological resilience in Cornwall. The methodology combines a literature review to gather insights into the policy's potential and limitations, with semi-structured expert interviews providing local perspectives on AL1's strengths, barriers, and its role within the broader context of the region's socio-ecological resilience. In response to these findings, a practical guide is developed, aiming to support wider adoption of regenerative lifestyles in Cornwall and enhance policy AL1's successful implementation. This guide is then applied to a specific agricultural site and tested by creating an RLID concept design. While context-specific, the findings of this research hold broader implications for similar challenges worldwide, aiming to inspire positive change and promote the widespread adoption of RLIDs beyond Cornwall.

Keywords: Regenerative Low Impact Development, socio-ecological resilience, Cornwall, planning policy AL1

CONTENTS

NETWORKING With Cornwall's Regenerative Community

INTEGRATING My Findings in a Practical Guide

IMPLEMENTING The Guide for an RLID Design Concept

REFLECTING On this Study's Process & Outcomes

ACKNOWLEDGEMENTS

Thank you
...

to the wonderful people from Cornwall
who devoted their time and energy to be part of this journey,
especially my six interviewees

to Shea, Liane and Ste
for your invaluable feedback and encouragement

to Muriel
for your boundless support and compassion,
and for sharing with me the greatest journey there is.

ABOUT THE AUTHOR

Amid today's complex societal and environmental challenges, I believe in the unique potential of the architectural profession to redefine its role and purpose for the better. This requires thinking outside disciplinary boxes and conventional confines. With a passion for both systems thinking and transdisciplinary problem solving, I'm determined to be a part of this shift. Through this dissertation, I am combining what I have learned and what I am yet to discover to explore what it takes to enable resilient social and ecological systems in a fascinating place called Cornwall. It is as much a research project as it is my personal journey, a chance to understand a new home and explore ways to contribute meaningfully to its future.

MSc Architecture and Planning beyond Sustainability
Chalmers University of Technology, Gothenburg, SE
2022 - 2024

BSc (Honours) Architecture and the Built Environment
TU Delft, The Netherlands
2018 - 2022

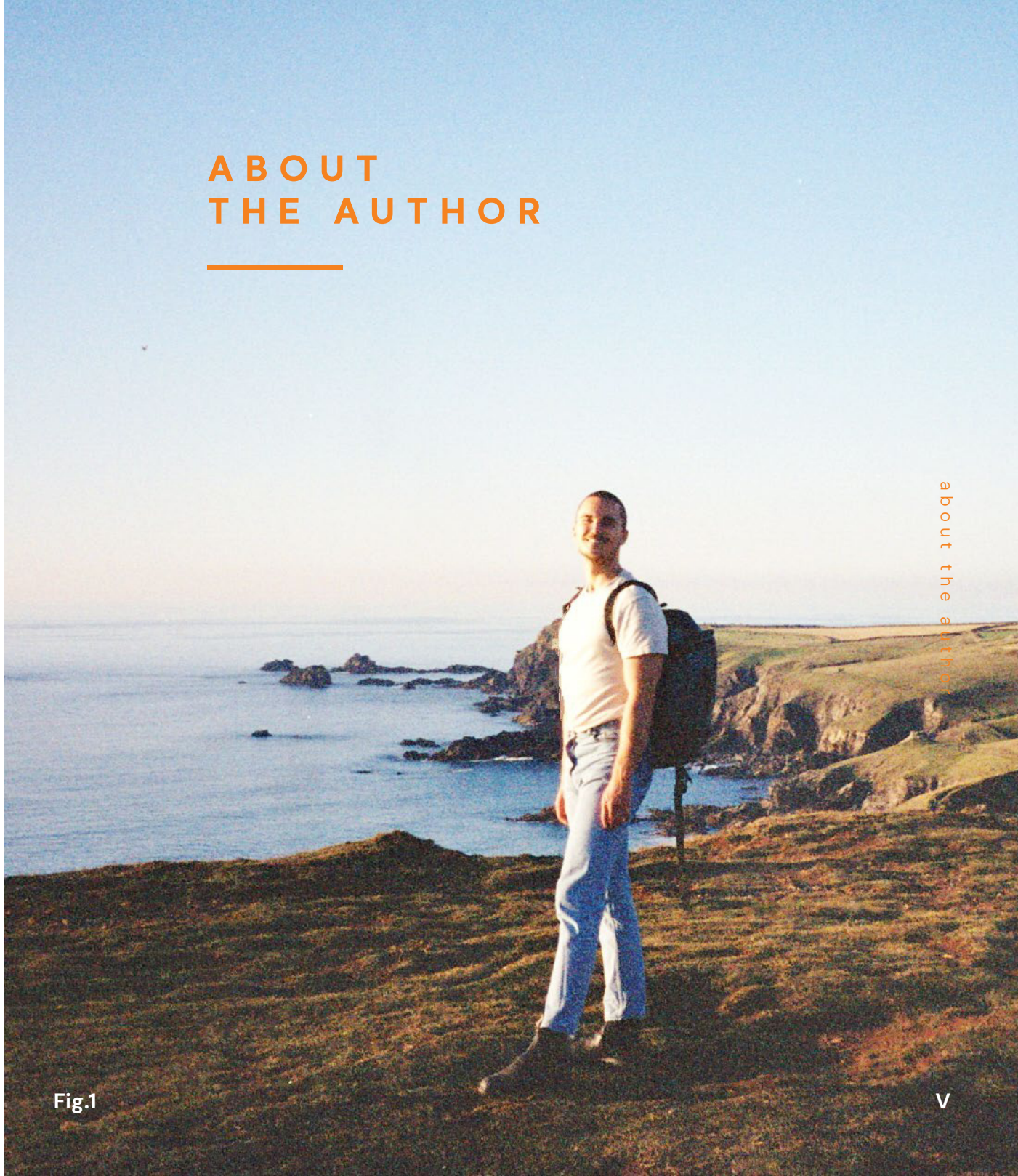


Fig.1

POSITIONING

Myself Within a Profession & its Identity Crisis

Fig. 2: Can you tell where this city is located or for whom it was built? Me neither, and that's the issue. (Lee, 2012)

CHAPTER INTRODUCTION

"We now need an architecture that fulfils the basic tasks of sharing responsibilities for caring for our world."

// from: Critical Care, Architecture and Urbanism for a Broken Planet (Fitz et al., 2019)

Before delving into the specifics of this research, I would like to set the scene with a brief reflection on the profession I am entering with this Master's dissertation. Shifting dynamics within the building sector and a growing awareness of its devastating impact on our social and environmental systems have led the conventional architectural profession into a crisis. As indicated by the quote on the left, architects must find ways to navigate their profession out of this crisis and make a positive contribution to society and our natural world.

This chapter investigates how my position within the architectural profession influences my role as a researcher. It aims to clarify my approach to this dissertation and how its topic connects to the profession I am part of. By addressing this connection throughout my work, I aim to both find answers to the core problem of this research and explore new ways in which architects can steer their profession towards a more meaningful path.

Beginning with a glossary, I will provide a selection of the most relevant terms and definitions used in this dissertation. While these terms will be revisited throughout the different chapters, the glossary serves as a reference point for readers who might get lost along the way. It also acts as a summary of the main elements within the subject under investigation, indicating the focus of this research. Connecting to the glossary, the following section explores how this dissertation relates to the field of architecture and clarifies how my own architectural perspective shapes my approach to this research and its structure.

GLOSSARY

SOCIO-ECOLOGICAL RESILIENCE

Refers to the capacity of interconnected social and ecological systems to adapt, reorganise, and maintain essential functions in the face of external disturbances, while remaining within critical system thresholds. Examples of such external stresses are ecological degradation, natural disasters, socio-economic inaqualities or political instability (Cretney, 2014).

SUSTAINABLE DEVELOPMENT

According to the UN Brundtland Report, published in 1987 the term sustainable development refers to "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Hedenus et al., 2018).

PLANNING POLICY AL1

Introduced in 2023, this Cornish planning policy allows successful applicants to convert agricultural holdings into residential land under the condition that they establish a Regenerative Low Impact Development (RLID). The policy aims to "provide affordable, low impact housing [...] tied to the restorative use of land" (Shorten & Knight, 2023).

REGENERATIVE LOW IMPACT DEVELOPMENT (RLID)

According to planning policy AL1, low impact development is closely related to sustainable development. The focus on regeneration refers to the act of "rebuilding and allowing the recovery of the natural world, and therefore also of our source of life support and wellbeing" (Shorten & Knight, 2023). RLIDs require a system-based approach, looking at land-management, design and the occupant's behaviour and lifestyle.

REGENERATIVE LIVING PRACTICES

A set of skills and systems tailored to a specific location, fostering a self-sufficient and resilient lifestyle while prioritisiting the regeneration and support of the natural environment. From horticulture and natural building techniques to renewable energy and waste treatment systems - these regenerative practices are the building blocks of RLIDs.

LOCAL EXPERTS

Within this dissertation, the term refers to Cornwall-based individuals and initiatives pioneering sustainable development in the region. These people and organisations hold invaluable local knowledge and often have extensive experience with regenerative practices and their role within the larger context of Cornwall's socio-ecological resilinece.

RETHINKING THE PROFESSION

What does this have to do with architecture?

This is a question I have often encountered when discussing my dissertation on socio-ecological resilience in Cornwall - it is supposed to be an architectural dissertation after all. Initially, I focused my response on topics such as affordable housing and locally sourced building materials. However, I soon realised that this was a helpless oversimplification. It is indeed intriguing to explore how the architectural profession fits into the framework of socio-ecological resilience. Yet, an even more fundamental question to address first is: What does 'architecture' even mean to us?

Although often hidden in plain sight, the role of architecture in society has been persistent and incredibly influential. Born as a profession primarily concerned with aesthetics and ego, it was largely disconnected from the natural environment. In his renowned "Ten Books on Architecture," written in 30 BC, Vitruvius distinguished between protective dwellings, embedded in nature, and true architecture, grounded in culture (Morgan, Trans., 1914). Later, during the early Renaissance, Alberti famously established the architect's role as that of an independent genius, distinct from craftsmen whom he deemed mere instruments (Leoni, Trans.,1755). For centuries, these ideas have shaped the image of the mighty architect and his work, leaving enduring traces to this day.

Contemporary architecture can still get away with terrible environmental performance, disconnected from place and context, and continues to celebrate starchitects as independent geniuses, although their interests seem to have shifted from studies of geometry to forests on rooftops. The reason for the profession's persistent bad habits is not surprising. Runaway capitalism has demonstrated all too well that our architecture is tied to capital, a phenomenon explained by Fitz et al. through its continuous entanglement "with the ruling power and its specific economic system" (Fitz et al., 2019). It seems that as long as short-term economic interests outdo social and environmental values, mainstream architecture will remain a medium of plain consumption.

Along the way, architecture has inevitably lost touch with nature and community. Denying its ties to our natural world has fueled ecological decline and global resource exploitation. The century-long perpetuation of the architect's ego has weakened people's relationships with the spaces they occupy, silenced the voices of the marginalised, and made the profession inaccessible to the communities most affected by its output. If this was not enough, architects find themselves in another crisis. We are living in an era where technology can produce the most captivating visuals and quickly generates ingenious architectural plans. Simultaneously, contemporary "spatial production belongs to a much wider group of actors – from artists to users, from politicians to builders", rendering the traditional role of the architect obsolete (Awan et al., 2013). But what now?

In their book "Critical Care, Architecture and Urbanism for a Broken Planet", Fitz et al. propose an architectural practice that "fulfils the basic tasks of sharing responsibilities for caring for our world, [...] sensitive to the values of repair, of preservation, of maintaining all forms of life and the planet itself" (Fitz et al., 2019). With their concept of care, the authors refer to a "life-sustaining web" that encompasses people, the environment and their interdependence. Architecture is not only seen as a part of this web but as a main contributor to its creation and maintenance. Due to its close connection with prevailing power structures, the profession has always acted as an instrument to direct care to those in favour of the respective system - after all, caring for the wealthy and powerful is a form of care too. However problematic this relationship between architecture and care has been, it showcases that, with the right intention, the architectural profession could also play a crucial role in the creation of a truly "life-sustaining web", directing care to those who are in desperate need.

So what does all of this have to do with this dissertation? Despite their profession's contribution to major social and ecological problems, architects, as potential creators of a truly "life-sustaining web", also possess valuable perspectives and expertise that can address and counteract these very problems. Perhaps architects could even become ambassadors of the environment they rely on, the crafts they bring together, and the communities they design for. It could be the first step towards a genuine architecture of care, paving a new and more meaningful path for the profession.

This dissertation happens to have a strong focus on socio-ecological challenges and how they can be overcome. Through my work, I aim to apply my architectural perspective and skills to investigate solutions to these challenges while simultaneously exploring new ways of redefining architectural practice.

MY RESEARCH, MY APPROACH

Throughout most of my research process, I was hesitant to address the role of the architectural profession at all. I recognised that conventional architectural practice and the design of our built environment only play a small part in the complex issue of a region's socio-ecological resilience. Perhaps my reluctance was also rooted in a sense of rebellion against elevating a profession so entangled with the social and environmental pressures at the heart of this research. However, I eventually came to realise that, as an aspiring architect with both educational and work experience, I inevitably bring certain perspectives and tools into the process. By thoughtfully considering their role and value throughout my work, I aim to clarify my research approach and explore how it can contribute to a more meaningful architectural practice. After all, it is an architectural dissertation, and making this explicit could help challenge others' understanding of the profession and its future direction.

To structure my dissertation, I decided to use eight chapters which are inspired by my "architectural" approach to this research. These chapters are:

1 POSITIONING
... oneself, one's values, and ambitions within a certain field or discourse.

2 ARRIVING
... the act of physically immersing oneself in a specific context.

3 UNDERSTANDING
... this context and its full complexity.

4 ANALYSING
... key elements and their specific role within the bigger picture.

5 NETWORKING
... with experts to access local knowledge and a multitude of perspectives.

6 INTEGRATING
... all findings into context-specific solutions.

7 IMPLEMENTING
... these solutions to test their effectiveness.

8 REFLECTING
... on one's process and how to move forward.

These eight chapters draw upon actions and phases commonly encountered in architectural processes, which also lend themselves well to this research. These actions are by no means limited to the architectural profession, they can be applied across disciplines and far beyond the academic realm.

Each chapter begins with a concise introduction, summarising its structure and approach. The final section "Moving Forward" concludes with the main findings and their relevance to subsequent chapters. Additionally, emphasising the notion of moving forward towards a newly defined profession, it features a brief reflection on the the chapter's relation to architectural practice. The final chapter serves as a comprehensive reflection, summarising the insights from all previous chapters and relating them to the broader context and future direction of the architectural profession.

ARRIVING

In Cornwall

Fig. 3: Kynance Cove, Cornwall – A place where the region's socio-ecological crisis is easily overlooked.

CHAPTER INTRODUCTION

"Away from the hotels and holiday lets, there is an unseen side of Cornwall, where the shifting uncertainties of the future breed resentment and mistrust."

// from: The Lip: a novel of the Cornwall tourists seldom see (Carroll, 2021)

Having clarified my position within the architectural profession and its influence on my approach to this dissertation, it is time to outline my research. This chapter, titled "Arriving", introduces both this study's topic and its central location, a place where I personally arrived for the first time not long ago.

Cornwall, a county in the South West of England and home to approximately 578,000 people, is known for its rich heritage and natural beauty. However, as the local writer Carroll implies, there is an unseen side hiding behind the region's picturesque facade. This chapter explains why and how this side of Cornwall became the focus of my research.

An introduction first outlines the core problem, followed by the study's aim and research questions. Subsequently, this chapter details the structure and methodology, and includes a delimitation to define the scope of this dissertation.

Fig. 4: Cornwall's location within the United Kingdom.

RESEARCH INTRODUCTION

The term 'socio-ecological resilience' is increasingly employed in addressing the interplay of socio-economic and environmental challenges on a global scale. Characterised by widening disparities between the affluent and the economically vulnerable, as well as a mounting climate crisis and ecological degradation, these systemic issues trickle down to local communities, posing significant risks (Khalfan et al., 2023; Lee et al., 2023).

In recent decades, Cornwall, a county in the south-west of England, has become a microcosm where these challenges profoundly impact the region's sustainable development. The prevailing socio-economic pressures include a cost-of-living crisis, a housing shortage exacerbated by a surge in second home ownership, and a precarious job market dependent on seasonal tourism (Cornwall Council, 2020). Ecological pressures are also intensifying, underscored by the council's declaration of a climate emergency in 2019. Recent reports indicate more frequent unprecedented weather events and anticipate serious risks to public health, local businesses, and overall liveability (Cornwall Council, 2022).

Amidst these challenges, however, Cornwall stands as a testing ground for innovation, ranging from grassroots initiatives and local community interest companies to governmental policies aimed at fostering socio-ecological resilience (Cornwall Council, 2023a).

A promising example of such governmental initiatives is the planning policy AL1, introduced in 2023. It facilitates the transformation of agricultural holdings into residential land, with the condition that applicants demonstrate successful design and maintenance of Regenerative Low Impact Developments (RLIDs). Central to these developments are requirements for residents to adopt a localised, highly self-sufficient, and environmentally responsible lifestyle. Inspired by its predecessor, the Welsh One Planet Development policy (OPD), planning policy AL1 aims to "provide affordable, low impact housing [...] tied to the restorative use of land" (Shorten & Knight, 2023). It represents a new opportunity for Cornwall to address its complex challenges and progress on the fronts of socio-ecological resilience.

Enticing as this new path might appear, AL1 faces various potential challenges, including its stringent requirements, a lack of guidance and training in regenerative land-based practices, financial constraints and insufficient access to farmland. These and other suggested risks are grounded in studies examining the success of the Welsh OPD model, which was introduced in 2010 and shares a very similar approach and structure. If left unaddressed, these potential challenges could significantly hinder policy AL1's appeal beyond a narrow demographic of already climate conscious and financially secure applicants (Sanders, 2022; One Planet Council, 2022).

Reflecting the global quest for socio-ecological resilience, Cornwall showcases both obstacles and potential pathways for innovative solutions within its unique socio-economic and environmental context. To effectively promote the widespread adoption of Regenerative Low Impact Developments in Cornwall and beyond, it is imperative to overcome potential barriers to accessibility, policy implementation and scalability.

AIM

This research aims to bridge the gap between the promising yet potentially inaccessible planning policy AL1 and its effective implementation. The objective of 'effective implementation' implies ensuring that the policy does not become a niche product, but instead promotes wider RLID adoption and contributes to fostering socio-ecological resilience in Cornwall. To achieve this, the study investigates how Cornwall can progress towards greater socio-ecological resilience and how planning policy AL1 fits into this framework. Furthermore, this research examines the potential and limitations of the policy, exploring ways to overcome its main barriers through the application of an architectural perspective and approach.

While this research is inherently context-specific to Cornwall, its findings and outcomes hold broader implications that extend beyond geographical boundaries. The socio-economic and environmental challenges faced by Cornwall are echoed in various other regions worldwide, suggesting that the insights derived from this study could be applied across different contexts.

RESEARCH QUESTIONS

Main research question:

How can Cornwall's regenerative low-impact development policy (AL1) be effectively implemented to support the region's socio-ecological resilience?

Sub-questions:

How can Cornwall progress towards greater socio-ecological resilience?

What are the potential and limitations of Cornwall's new planning policy AL1?

How can an architectural approach support the effective implementation of policy AL1?

STRUCTURE & METHODOLOGY

This study unfolds in six main parts, represented by the following six chapters. Each chapter builds on the findings of the previous ones, contributing to a comprehensive understanding and exploration of the subject. As shown in Figure 5 on the opposite page, every part is linked to a set of methods used to answer several key questions, which are in turn linked to the three main sub-questions of this research.

In the first part, titled "Understanding the local context," a literature study investigates the concept of socio-ecological resilience as well as the local socio-economic and environmental pressures that necessitate this type of resilience in Cornwall. This understanding is crucial for positioning policy AL1 within its specific local context.

The second chapter, "Analysing Planning Policy AL1," also based on a literature study, closely examines the policy, its aims, and specific requirements. Additionally, lessons from the Welsh OPD are integrated to explore both the potential strengths and shortcomings of policy AL1 in Cornwall.

The third part, "Networking with local experts," involves six qualitative interviews with individuals working at the forefront of socio-ecological resilience in Cornwall. These interviews aim to complement the previous literature studies by providing local insights and perspectives about the region's sustainable development, AL1's potential strengths and shortcomings, and ways to move forward.

In the fourth chapter, "Integrating my findings in a practical guide," a combination of a literature study, graphical design, and illustration is used to develop a prototype of a practical guide intended to support the adoption of regenerative low-impact lifestyles and enhance AL1's effective implementation. The guide targets people with diverse backgrounds and ambitions, including potential applicants, aiming to address knowledge and accessibility gaps revealed by the previous chapters.

During the fifth part, titled "Implementing the guide for an RLID concept", the previously created guide is tested and applied to a specific agricultural site in Cornwall, aiming to create a compact version of a design proposal for a Regenerative Low Impact Development according to AL1. This part is a brief design exploration, based on the policy's requirements and the site-specific context. It draws on traditional architectural design and visualisation methods.

Chapter six, "Reflecting on the study's process and outcomes," consists of a conclusion and discussion of this study, thoroughly reflecting on its role in the discourse on Cornwall's socio-ecological resilience and the contribution of an architectural approach. This final part also revisits and answers the main research question and sub-questions, and concludes this dissertation with a personal manifesto.

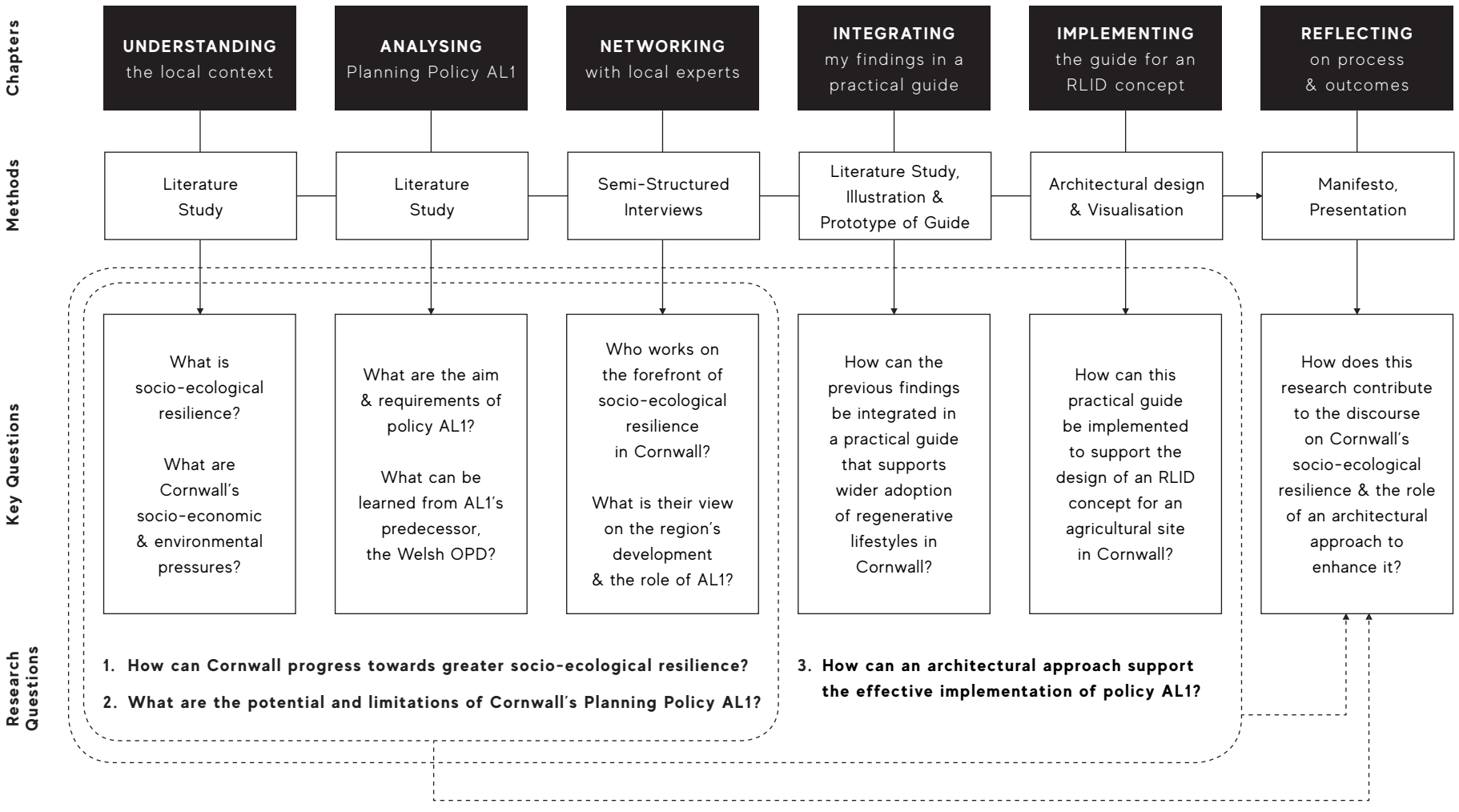


Fig. 5: Methodology Diagram

DELIMITATION

By specifying the study's scope, this section aims to set reasonable expectations and assist in the contextualisation of the respective findings. Despite the complex nature of the subject under investigation, this Master's dissertation has a limited scope and cannot be considered an in-depth study. As illustrated in Figure 6, certain aspects and methods either fall within our outside of each chapter's scope. While this upfront delimitation allows for a closer focus at the themes and methods covered by the following chapters, it will also inform the final discussion at the end of this dissertation.

The chapter "Understanding" includes a general introduction to the term socio-ecological resilience and offers a brief overview of Cornwall's socio-economic and environmental challenges. It is by no means an in-depth analysis of the Cornish context, but rather outlines the underlying problems at the heart of this research.

"Analysing" investigates planning policy AL1's structure and approach, as well as potential lessons from its predecessor, the Welsh OPD. This chapter is primarily based on AL1's guidance document and previous studies of the OPD's success. However, it does not serve as an in-depth review of either of the two policies, nor does it include personal insights or perspectives from the respective planning authorities and decision makers.

The part "Networking" features six qualitative semi-structured interviews with selected Cornish experts. The scope of this research did not allow for additional interviews. A qualitative approach was chosen to gain a nuanced understanding of the complex issue under investigation, ensuring adequate representation of local insights and expertise.

"Integrating" is a chapter dedicated to the development of a practical guide, aiming to support policy implementation and ultimately promote wider adoption of regenerative lifestyles in Cornwall. The guide introduces people with varying backgrounds and ambitions to a range of regenerative land-based practices and connects them with local experts to support further learning and engagement. It is important to note that the developed guide is a first prototype only and should be considered a design exploration rather than a finished product. For instance, it does not involve an iterative design process, with alternating phases of testing and optimisation. Ideally, this iterative process would also include active involvement of key stakeholders which creates opportunities for further research beyond this study.

The chapter "Implementing" focuses on applying the previously developed guide to create an RLID concept design for a local agricultural site in Cornwall. While this design would form the core of a real AL1 planning application, the version presented in this dissertation is not comprehensive. It does not include a detailed occupant profile, site design or business plan. Instead, it concentrates on outlining the RLID's core concept, key components, and identifying local experts and communities that potential occupants could engage with.

Chapters	Within Scope	Outside Scope
UNDERSTANDING the local context	Brief overview of Cornwall's socio-economic and environmental challenges	Indepth review / analysis of Cornwall's socio-economic and environmental challenges
ANALYSING Planning Policy AL1	Overview of AL1, Brief overview of OPD & its success	Indepth analysis of both AL1 and OPD based on thorough literature review & interviews with policy makers
NETWORKING with local experts	6 qualitative semi-structured interviews with selected local experts	Additional interviews, Combination of qualitative & quantitative methods (interviews or surveys)
INTEGRATING my findings in a practical guide	A first prototype of a guide including a selection of regenerative practices and local experts	A refined version of a guide based on an iterative design process and stakeholder involvement
IMPLEMENTING the guide for an RLID concept	A 'light' version of a RLID concept focussing key components and design aspects	A comprehensive RLID management plan including detailed design, business plan, risk assessment etc.

Fig. 6: Delimitation Diagram

UNDERSTANDING

The Local Context

Fig. 7: Local resentment manifested on the walls of a holiday home (Mundy, 2022)

CHAPTER INTRODUCTION

"Inequalities [...] exist between different groups of people and different places in Cornwall, with affluence sitting alongside some of the most disadvantaged areas in England."

// from: The Cornwall We Know, a report by the Cornwall Council (2020)

This chapter aims to provide a comprehensive understanding of the local Cornish context. Based on a literature review, it investigates the issues central to this study and reveals how problems, such as the one described in the quote on the left, have evolved.

Additionally, this chapter explores what is needed to overcome these problems and how they are currently being addressed. It lays the groundwork for the following chapter, which focuses on planning policy AL1 and its role in creating a more resilient future for Cornwall.

After introducing the term socio-ecological resilience, this chapter examines the pressures faced by Cornwall, how the region can foster greater resilience, and which current initiatives are already a step in the right direction. Finally, a conclusion highlights the main findings and links them to the subsequent chapter.

SOCIO-ECOLOGICAL RESILIENCE

Due to significant global threats that have marked the 21st century, including a health pandemic, natural disasters, and financial crises, the discourse of 'resilience' has gained significant popularity across various disciplines and actors. As a result, the term is subject to diverse interpretations and is used to serve very different and often contradicting ideologies (Cretney, 2014). Hence, this section intends to trace the origins of the term 'socio-ecological resilience' and clarify its usage throughout this dissertation.

Before becoming a global discourse, resilience emerged as an ecological framework. In the 1970s, C.S. Holling, a pioneer in ecological resilience, challenged the engineering view of the term, which emphasises a system's return to a static or ideal state after being exposed to external disturbances. This engineering resilience also introduced the notion of a system's ability to "bounce back" to a steady equilibrium, a phrase still widely associated with resilience. However, instead of a single state, Holling proposed that ecosystems have a zone of stability, allowing for adaptation and reorganisation in the face of external stressors (Holling, 1973). Similarly, social resilience, as later defined by Adger (2000), describes the ability of a social system or community to cope with external challenges of a social, political, or environmental nature. In both definitions, the focus is on adapting rather than returning to an initial state. This perspective questioned the prevailing belief in an ideal global social or environmental state and fostered a greater understanding of the links between social and natural systems (Cretney, 2014).

The term socio-ecological resilience emerged as an interdisciplinary framework acknowledging this connection and inter-dependence of social and ecological systems. For instance, the capacity of an ecosystem to adapt to severe changes caused by a natural disaster can directly impact a community's ability to cope with the pressures resulting from this changing ecosystem. In turn, communities and their social resilience can influence entire ecosystems and ultimately contribute to the pressures they face. Embracing this interdependence, the most widely used definition of the term socio-ecological resilience is:

> The capacity of interconnected social and ecological systems to adapt, reorganise and remain within critical system thresholds in the face of external disturbances (Cretney, 2014).

Applying this concept of socio-ecological resilience to Cornwall requires two key steps: identifying the external disturbances or pressures affecting the region's social and natural systems, and defining the 'critical system thresholds' or zone of stability that these systems must maintain to ensure resilience. The following sections explore these two essential steps in more detail.

CORNWALL UNDER PRESSURE

SOCIO-ECONOMIC PRESSURES

Beneath Cornwall's picturesque landscapes and vibrant communities, the region's heavy reliance on tourism represents a major socio-economic challenge. By creating a scarce and seasonal job market, this dependence significantly contributes to high unemployment and low wages. Recent reports reveal that average earnings in Cornwall are approximately 80% of the national average, while average house prices are nearly nine times the average annual wage (Local Government Association, 2023; Cornwall Council, 2020).

The county's low income rates, coupled with the ongoing cost of living crisis, have led to the formation of multiple areas of deprivation. In 2019, around 30% of Cornish households officially lived in poverty (Fig. 8), while in the same year, the Office for National Statistics reported that 17 Cornish neighbourhoods were among the 10% most deprived in the country (Ministry of Housing, Communities & Local Government, 2019). This level of local deprivation has been associated with negative impacts on education, access to services, and public health (Cornwall Council, 2020). For instance, despite agriculture being the region's largest industry, food insecurity has been a persistent issue for years and has recently been linked to a rise in hospital admissions for malnutrition (Tutty, 2024).

Cornwall attracts millions of visitors each year, but while tourism boosts the local economy, it also highlights social disparities, with "affluence sitting alongside some of the most disadvantaged areas in England" (Cornwall Council, 2020). An indicator of this disparity is the increase in second-home ownership. These homes, often owned by wealthy city dwellers who work and reside in other parts of the country, accounted for around 5% of Cornwall's residential housing stock in 2018, with this figure rising to 30 - 45% in particularly popular areas (Cornwall Council, 2021; 2020). Many of these properties are rented out during peak season but remain vacant for the rest of the year, exacerbating existing socio-economic issues. Although some second-home owners appear to believe they actively contribute to the local economy, the reality is that traditional and local populations face

Cornish Households in Poverty, 2019
(income <60% of median national income)

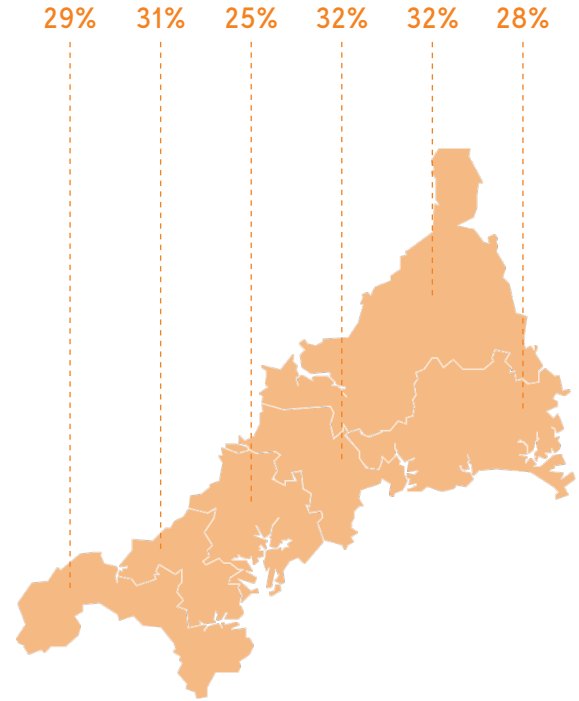


Fig. 8: Percentage of households in poverty per parliamentary constituencies in 2019 (Adapted from [Carto.com, 2019], 2024)

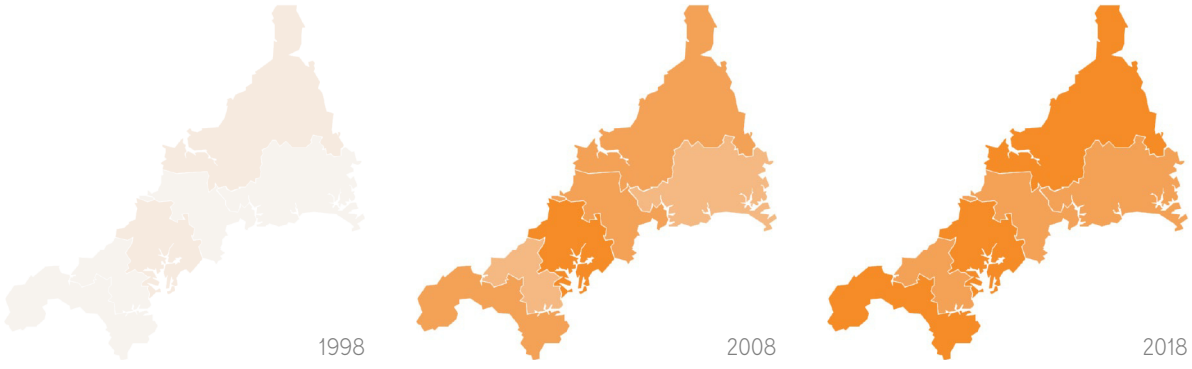


Fig. 9: Increasing Cornish median house prices between 1998 and 2018 (Adapted from [Bates, 2024], 2024)

displacement due to soaring property prices and a shortage of affordable housing (Dykes & Walmsley, 2015; Cornwall Council, 2020). As shown in Figure 9, there was a drastic increase of median house prices in only twenty years, from 1998 to 2018.

In addition to these challenges, Cornwall's geographical remoteness also causes socio-economic disadvantages. As a rural and remote county located in the far southwest of England, Cornwall has limited access to metropolitan areas. This, combined with its comparatively poor transport links, results in less economic diversity, making it difficult to escape the part-time and low-income employment offered by the dominant service sector (Burley, 2007). The county's remoteness also influences social factors, making schools and other public services less accessible and reducing opportunities for youth from low-income households (Sim & Major, 2022).

ENVIRONMENTAL PRESSURES

Environmental pressures present another significant challenge for Cornwall, as highlighted by the Cornwall Climate Change Risk Assessment of 2022. The report indicates a surge in unprecedented weather events, such as storms, flash floods and droughts (Fig. 10). Given Cornwall's extensive coastline, these findings necessitate particular attention to the repercussions of rising sea levels and coastal erosion, which threaten crucial coastal ecosystems and their biodiversity, including saline lagoons and coastal salt marshes (Cornwall Council, 2022).

The combination of wetter winters and warmer summers is likely to have substantial impacts on multiple levels. Rising temperatures and periods of drought may affect rivers and standing water, causing a decrease in water quality and species loss. The nationally important habitats of peatland and blanket bog are likely to degrade rapidly, resulting in substantial loss of biodiversity and carbon sequestration capacity. Longer growing seasons may also lead to intensified agricultural activity, impacting local soil conditions and raising nitrate levels in rivers and streams due to agricultural runoff. The expected proliferation of invasive pest species due to milder winters may further exacerbate water contamination from increased pesticide use (Cornwall Council, 2022).

Fig. 10: Dramatic low water levels at the reservoir, Colliford Lake, after a drought in 2022 (Martin, 2022)

INTERCONNECTED BY NATURE

The interconnection between socio-economic and environmental pressures in Cornwall is clearly evident. With tourism and agriculture as its main economic drivers, the region relies on two industries that are highly dependent on the health and resilience of local ecosystems. For instance, agricultural production has become increasingly vulnerable to climate change impacts in recent years, demonstrated by harvest losses and topsoil erosion due to altered growing cycles, as well as more frequent storms and extreme rainfall. Despite these pressures jeopardising farmers' livelihoods and risking local food security, the industry continues to degrade the environmental condition. With approximately 74% of Cornish land being farmed, predominantly using conventional land-management techniques, the sector is currently responsible for around 20% of the region's greenhouse gas emissions and significantly contributes to water and land contamination (Cornwall Council, 2020).

The persistent socio-economic and environmental challenges, along with their impacts on the interconnected social and natural systems in Cornwall, pose serious threats to the local economy, public health, and overall liveability (Cornwall Council, 2022; 2023). Addressing this alarming trajectory requires a holistic approach that not only treats the symptoms but also acknowledges and tackles the inherent complexity of these issues.

THE ZONE OF STABILITY

Given the external pressures identified, it is crucial to determine the critical thresholds or zone of stability that Cornwall's socio-ecological systems must maintain to ensure resilience. Due to the system's complexity, the establishment of precise stability thresholds far exceeds the scope of this study. However, a general understanding can be based on the "zone of stable functioning" (Cretney, 2014), a concept often used in resilience discourse. It considers a system resilient as long as it maintains its essential functions, even in the face of disturbances. This raises the question of which essential functions Cornwall's socio-ecological systems must maintain.

While there is extensive literature on the essential functions of social systems, established by classical theorists across disciplines, the concept most attuned to present-day realities is the 2030 Agenda for Sustainable Development. Its 17 Sustainable Development Goals cover a range of essential needs and functions, categorised into the three P's: people (physiological needs such as shelter and food security, health and well-being, education); prosperity (stable economy, reduced inequalities, responsible resource management); and planet (protection of ecosystems in water and on land, reduced emissions, climate action). According to the agenda, providing for these needs ensures that "human habitats are safe, resilient, and sustainable" both now and in the future (United Nations, 2015).

When it comes to the stable functioning of natural systems, this study diverges from the conventional reliance on ecosystem services, often critiqued for its anthropocentric and exploitative approach (Schröter et al., 2014). Instead, it adopts principles of ecosystem health and integrity, emphasising habitat provision for ecological diversity and supporting vital processes such as nutrient cycling, energy flow, and population dynamics (Weathers et al., 2012; Pimentel et al., 2013).

Combining these more general social and ecological functions with the context-specific findings from the previously discussed council reports, this study identifies the following functions as essential for Cornish socio-ecological resilience:

1. Ensuring local populations can meet basic needs, including housing and food security, regardless of age and income.

2. Providing access to public health and well-being, quality education, and equity for all.

3. Creating a stable economy that retains its wealth within the region and provides enough jobs to eliminate deprivation.

4. Fostering strong, inclusive communities, supporting their most vulnerable members (elderly, people with health issues & financial difficulties).

5. Managing all resources responsibly and with a long-term perspective.

6. Maintaining ecosystem health and integrity by supporting vital natural processes and ecological diversity, and protecting against climate change impacts.

While a genuine and active approach to these six essential functions can certainly contribute to Cornwall's socio-ecological resilience, it is crucial to consider the extent to which these functions need to be provided. In line with contemporary resilience discourse, the goal is not to achieve an ideal state, but rather to provide the essential functions as effectively as possible. If one of them is not met fully, this does not cause the system to collapse immediately, as other functions can partially compensate for the deficiency.

For instance, offering affordable housing for all is an incredibly complex and demanding objective that may never be met perfectly. Yet, despite its serious consequences, the ongoing housing crisis also does not result in complete system failure, as long as the current economy still enables most people to manage rising rents and property prices. However, this compensation of functions does not guarantee long-term resilience. The COVID-19 pandemic made this very clear, causing a loss of 27% of all local jobs in 2020 and a surge in illegal evictions and homelessness (Cornwall Council, 2020).

To ensure Cornwall's socio-ecological systems remain in a zone of stability and offer sound, long-term resilience, the six essential functions should be provided as effectively as possible, recognising their interdependence in both exposing and partially compensating for potential shortcomings.

A PLACE OF INNOVATION

While Cornwall's socio-economic and environmental pressures are longstanding, having developed slowly but steadily over time, the last decade has undoubtedly revealed their severity. With the worsening cost of living crisis, a global health pandemic and increasing climate change impacts, it becomes more and more difficult for the socio-ecological system to provide its essential functions (Cornwall Council, 2020). However, this crisis has also sparked a vigorous search for solutions, leading to innovative ideas and initiatives ranging from grassroots community projects to ambitious council programmes.

On a community level, this search heavily relies on volunteering. Based on the last 'Place Survey' in 2009, more than a third of the Cornish population volunteers formally (at least once a month), demonstrating how much the local population values mutual support. 'Volunteer Cornwall' is a local charity that helps connect volunteers with people and communities in need, addressing "emotional, social, environmental, and economic opportunities" (Volunteer Cornwall, n.d.). At the peak of the pandemic, the organisation had around 4,000 volunteers supporting close to 300 mutual-aid community initiatives (Volunteer Cornwall, 2021).

Building on this strong foundation of volunteering, Cornwall has seen a particular rise in community growing schemes (Fig. 11). A recent local study defines community growing as "sustainable food production that actively engages people within, and for the benefit of, the immediate community" (Sustainable Food Cornwall, 2023a). These schemes have developed across the county, notably contributing to local food security, public health, and wellbeing, while educating the public about regenerative agricultural practices and nature recovery.

In addition to community growing schemes, there has also been a significant increase in social enterprises throughout the county, with around 1,100 such organisations, 42% of which are less than five years old. Social enterprises are businesses engaged in commercial activities that choose to invest or donate their profits for social purposes. In Cornwall, they focus on a variety of areas, including public health, social inclusion, education and skill training, heritage and conservation, and even construction (Cornwall Community Foundation, 2021).

On a council level, several new programmes were introduced in recent years. These include projects aimed at tackling deprivation and improving neighbourhood facilities, supporting local businesses, investing in social housing, and regulating second-home ownership (Cornwall Council 2023). Responding to environmental pressures, Cornwall Council declared a climate emergency in 2019, pioneering this declaration among UK counties. With an ambitious goal of achieving carbon neutrality by 2030, the council has published various reports and guidelines to mitigate climate change impacts and promote the well-being of local communities and ecosystems. However, it acknowledges that, while current initiatives are a step in the right direction, much work remains to be done, requiring collective behavioural change, shifts in consumption and land management, and the establishment of long-term perspectives across disciplines and sectors. (Cornwall Council, 2020; 2023b).

MOVING FORWARD

Fig. 11: An event at Loveland, a local community field project in Penryn (Cartlidge, 2023)

This chapter has examined the complex issues at the core of this research. It introduces the concept of 'socio-ecological resilience' and concludes that Cornwall faces urgent socio-economic and environmental pressures. These include a scarce and seasonal job market, deprivation, a shortage of affordable housing, increasing climate change impacts, and destructive forms of land use (Cornwall Council, 2020). To maintain resilience, Cornwall's socio-ecological systems must provide essential functions, ensuring that local populations can meet their needs, the economy offers stability and reliable opportunities, and ecosystem health and integrity are preserved. While this crisis has sparked innovative ideas and actions ranging from grassroots community projects to council programmes, significant efforts are still required.

These findings provide the foundation for the following chapter which introduces one of the council's initiatives to enhance socio-ecological resilience: planning policy AL1. Understanding the complex challenges that motivated this new policy is essential for evaluating its approach and potential impact.

MY ARCHITECTURAL APPROACH

While context studies are often used in traditional architectural practice, they are usually limited to sun, wind, or volume analyses, and rarely investigate complex socio-ecological issues. The profession's reliance on a clearly defined client brief has resulted in a focus on finding the right answers to a given problem, rather than identifying the right problem in the first place. However, with a rise in social and environmental awareness, client briefs are changing, and practitioners are developing a greater sense of responsibility. Influential figures like Jane Jacobs, Buckminster Fuller, and Jan Gehl, who have blurred the lines between traditional practice, research, and activism, continue to inspire architecture and urbanism to prioritise the well-being of our communities and ecosystems.

In line with this shift in values, this study embraces the concept of developing a comprehensive understanding of the local context before generating potential ideas and solutions.

ANALYSING

Planning Policy AL1

Fig. 12: Ed Sweetman from Goonown Growers in St. Agnes proudly presenting his harvest. Horticulture is a vital part of policy AL1. (Girvan, 2023)

CHAPTER INTRODUCTION

"In many ways, our sustainable development ambition has failed to deliver an approach that is truly sustainable [...].This is where a regenerative perspective comes in."

// from: Policy AL1 – Regenerative, Low Impact Development Policy Guidance (Shorten & Knight, 2023)

After the previous investigation of Cornwall's socio-ecological context, this chapter focuses on planning policy AL1 and its role in fostering greater resilience. It draws from a literature study of the policy and its comprehensive guidance and explores AL1's origins, content, and how it responds to the failing sustainable development ambitions addressed by the quote on the left. Rather than offering an exhaustive overview, this chapter concentrates on the most essential aspects to provide a clear understanding of the policy, its approach and objectives.

This chapter begins by exploring the policy's aim and approach, followed by a more detailed analysis of its requirements. It then highlights important lessons from AL1's predecessor, the Welsh One Planet Development policy (OPD), and concludes with a summary that connects to the subsequent chapter.

AIM & APPROACH

In response to the ecological crisis, the council published the Cornwall Climate Emergency Development Plan Document (CCEDPD) in February 2023. This comprehensive plan introduced a set of new policies that address both environmental and socio-economic challenges, underscoring the region's commitment to strengthening its socio-ecological resilience (Cornwall Council, 2023a).

One of these new policies is planning policy AL1, aimed at "supporting innovative, low-carbon development that enables more self-sufficient lifestyles" (Cornwall Council, 2023a). It facilitates the transformation of agricultural holdings into residential land, provided that applicants lead highly environmentally responsible and self-supporting lifestyles. Targeting "small groups and potentially private estates", the policy seeks to foster regenerative land use while supporting rural communities in meeting their diverse needs, including access to economic opportunities and affordable housing (Cornwall Council, 2023a).

Central to AL1's approach is the requirement for applicants to establish Regenerative Low Impact Developments (RLID), a concept that "shifts emphasis for land use planning from minimising and mitigating harm to maximising benefits" (Shorten & Knight, 2023). As shown in Figure 13, these benefits include on-site ecological and household benefits, as well as broader benefits for the local community and economy. To ensure that RLIDs designed and maintained under AL1 succeed in providing these benefits, the policy outlines a set of rules and requirements. It also clarifies that AL1 deviates from traditional planning policies that highly restrict development in open rural areas, emphasising the need for strict requirements and their "rigorous assessment and ongoing monitoring" (Cornwall Council, 2023a).

According to the CCEDPD, policy AL1 aligns with the council's vision for Cornwall through 2050, encompassing goals of carbon neutrality and the resilience of communities and ecosystems. In essence, AL1 is seen as a crucial part of the CCEDPD's efforts to foster long-term socio-ecological resilience. The document explicitly considers the number of approved AL1 applications as one of the indicators of the effectiveness of these efforts.

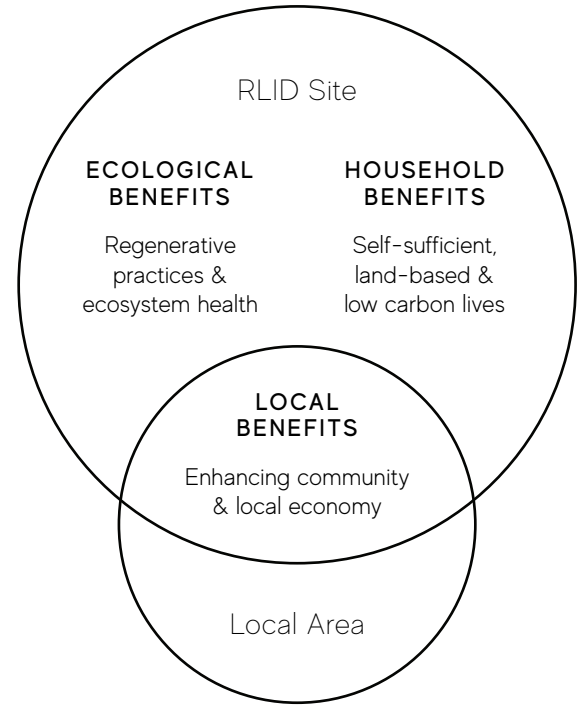


Fig. 13: RLID Benefits

THE REQUIREMENTS

Based on the official policy guidance, there are requirements regarding three main areas: the RLID functions, the site design and management, as well as the application and review.

RLID FUNCTIONS

In line with the provision of the three core benefits (Fig. 13), RLIDs are required to fulfill ecological-, household-, and local functions. At the heart of the ecological functions is regenerative land management, which not only minimises harm to ecosystems, both on-site and on a larger planetary scale, but also actively supports and enhances them. One of the most essential aspects of this regenerative land management is the responsible use of resources, including energy, water, food, and materials. These resources should predominantly be provided by the site and need to be produced and consumed in ways that ultimately benefit the environment.

Carbon plays a significant role in resource management and the assessment of RLIDs. Policy AL1 has two objectives: to minimise all carbon emissions connected to residents' lifestyles and to actively maximise on-site carbon sequestration. The latter can be achieved through suitable land management practices, including the cultivation of specific crops for agricultural production.

Improving local biodiversity is another crucial ecological function. AL1 requires a minimum of 10% Biodiversity Net Gain compared to the initial state of the site (Shorten & Knight, 2023).

Central to the RLID household functions are the concepts of self-sufficiency and land-based production. As mentioned earlier, this encompasses the localised production and harvest of energy sources. According to AL1, RLID sites need to be fully self-sufficient in the use of water and renewable energy from the sun, wind, or biomass.

Additionally, a minimum of 30% of the household's food intake must be cultivated on-site, while at least 65% of the remaining intake needs to be bought from an income derived from land-based production. This on-site land-based income must also cover all of the residents' minimum needs, including clothing, travel, technological devices, as well as local council tax.

All waste production should be reduced as much as possible and managed on-site without impacting the environment. Only a very limited amount of non-biodegradable waste may be disposed of in the municipal recycling stream. The household's annual carbon emissions are also required to be minimised, aiming for 5 tonnes per person (Shorten & Knight, 2023). According to the carbon footprint tool recommended by the policy, this figure is currently a third of a typical UK carbon footprint (Mitchell, 2022).

Beyond providing essential on-site functions, RLIDs are also mandated to have local functions that "make a positive environmental and social contribution to Cornwall" (Shorten & Knight, 2023). For instance, regenerative land management is expected to enhance the local environment by creating wildlife corridors, increasing biodiversity and offering important natural habitat. At a social level, RLIDs are required to provide opportunities for the local

community to benefit from their regenerative practices. This includes facilitating education about regenerative techniques and promoting health and well-being through contact with nature and access to fresh, locally produced food.

Due to their income requirements, RLIDs operate as businesses and are allowed to engage actively with the local economy. Residents can sell their products or services, provide employment opportunities for locals, and collaborate with other enterprises (Shorten & Knight, 2023).

SITE DESIGN & MANAGEMENT

One of the core requirements for residents is that planning policy AL1 mandates the RLID site and all its habitable structures to serve as the primary residence for its occupants, preventing the misuse of the policy for developing second homes.

Conforming to the environmentally conscious lifestyle promoted by AL1, residents are urged to minimise their use of cars or other vehicles for day-to-day journeys. This influences the site location, which should ideally be close to an existing settlement.

In terms of their design and functioning, RLID sites should adapt to existing landscape characteristics where these do not conflict with the development's essential functions. Any existing heritage assets, including built structures or living hedgerows, need to be conserved and enhanced.

Existing buildings should be utilised if possible, and new habitable structures must be highly energy-efficient and zero carbon, both in construction and use. There are specific targets for embodied carbon (<600kg CO2e/m2), annual space heating demands (<30kWh/m2), and energy use (<40kWh/m2). For comparison, in 2023, the most energy-efficient areas in England had an average annual consumption of around 200kWh/m2 (Longley, 2024). Additionally, all habitable buildings need to be compliant with building regulations. This excludes caravans and other moveable structures which must also meet the aforementioned energy requirements.

The site design should include a detailed drainage plan that allows surface water to be used as on-site water supply as much as possible before being discharged into the environment. Furthermore, any foul water drainage may only include domestic greywater and urine, necessitating the use of composting toilets instead of conventional water closets (Shorten & Knight, 2023).

APPLICATION & REVIEW

At the core of an AL1 application is a single RLID Management Plan that includes the following documents: a baseline assessment of the site's initial state; a justification plan focusing on the applicants' motivation and choice of site; a binding action plan detailing all regenerative practices, how they meet the requirements, and how they will result in a fully functioning RLID; a carbon footprint analysis of the occupants, including a transport and travel assessment; a zero carbon analysis for all buildings; and a heritage impact statement. The management plan also requires a master plan drawing of the site, showing all access points, structures, areas and their functions.

LESSONS FROM THE WELSH OPD

If planning permission is granted, applicants receive temporary consent for five years to establish a fully functioning RLID that meets all of AL1's requirements. An official review at the end of this phase assesses whether permanent consent may be granted. If successful, annual monitoring reports are required to ensure compliance with the management plan and its further development. The initial application includes a detailed exit strategy specifying how the RLID can be removed at any time, leaving the site in the same or improved condition compared to its initial state.

Despite the policy's strict requirements and rigid assessment, its guidance emphasises that RLID is not a template for one specific model or lifestyle. Instead, it is viewed as context-specific and adaptive to different locations and needs, resulting in RLIDs ranging from individual dwellings to community-scale developments. However, the policy also acknowledges that not every site will be suitable for meeting all requirements, highlighting the importance of thoroughly assessing a site's potential before applying (Shorten & Knight, 2023).

Planning policy AL1 is not an entirely new approach to rural low-impact development. It was inspired and influenced by the One Planet Development (OPD) policy in Wales. Introduced in 2010, OPDs were a pioneering effort to "encourage society to live within the capacity of the planet and to raise awareness of the continuous depletion of Earth's resources" (Shorten & Knight, 2023). Policy AL1 now brings this concept to Cornwall in a very similar manner. In structure and approach, it is almost identical to its predecessor, including matching requirements and strict assessment methods. Therefore, it is useful to take a closer look at the Welsh OPD, its implementation, impact, and challenges. This analysis will draw on two extensive studies that investigate the policy's success between 2010 and 2021 (One Planet Council, 2022; Sanders, 2022).

IMPLEMENTATION

Despite being introduced in 2010, the Welsh OPD was referred to as "stillborn" until 2015. In its early years, there were neither guidelines to support the policy nor any specific training for planning officers. This changed with the publication of a technical guidance in 2012 and the establishment of a grassroots advocacy group called the "One Planet Council" which actively promotes the policy and provides training to local planning authorities. As a result, OPDs gained momentum, with 87% of all successful applications between 2010 and 2021 made after 2016. The One Planet Council remains active today, offering expert advice, organising outreach events, and assessing the policy's success (One Planet Council, 2022).

IMPACT

Between 2010 and 2021, Welsh authorities received a total of 55 applications, 39 of which were granted planning permission. While this number may be small, successful developments have demonstrated that living an OPD lifestyle is indeed possible, including exceptionally low-impact households, the construction and use of zero-carbon homes, and the establishment of innovative land-based enterprises. Most OPD sites have shown remarkable rates of nature recovery and provide multiple benefits to the local community. A key factor that enabled

applicants to realise their OPDs was the accessibility of land at agricultural prices. The policy's success is also reflected in its inspiration of similar initiatives both nationally and internationally (One Planet Council, 2022).

CHALLENGES

Reflected by the small number of applications, the OPD policy has been criticised for being too complex and rigid to appeal beyond a "somewhat narrow demographic" (Sanders, 2022). Studies investigating this lack of accessibility have identified several key challenges faced by applicants, planning authorities, and local communities.

One significant obstacle for applicants is the relatively short five-year set-up phase for establishing OPDs. Many regenerative practices, such as cultivating trees for biomass or food production, require more time. Several occupants have suggested extending this period to 7-10 years, allowing residents to select appropriate practices and manage their land with a long-term perspective, rather than rushing decisions. Furthermore, the application process is considered highly complex and academic, often compared to the level of a Master's dissertation, which contrasts with the policy's practical nature. Consequently, most applicants have been university-educated, with negligible uptake from local farming communities. The policy further limits the pool of potential applicants by implying a high degree of specialised knowledge about regenerative lifestyles, appealing only to those already climate-conscious and determined to become low-impact pioneers. Lastly, despite relatively low land prices, establishing an OPD requires a significant capital investment, presenting financial barriers for less affluent applicants (One Planet Council, 2022).

Regarding planning authorities, challenges include deficient decision-making by councillors and planning committees, often based on poor policy knowledge and subjective opinions. OPDs introduce concepts such as carbon analyses, permaculture, and lifestyle feasibility, which planners are not traditionally trained to assess. This has resulted in lengthy application assessment times and overall ineffective implementation.

Community acceptance of OPD proposals has been mixed, influenced by perceptions of social equity, local identities, and changing rural dynamics. Some communities feel that OPD households and their unconventional lifestyles unsettle existing local identities. Resentment has also been voiced regarding the policy enabling incomers to access local property, while local households cannot afford these properties and feel excluded. In October 2020, Carmarthenshire County even passed a moratorium on OPD due to community and planning authority resistance (Sanders, 2022).

To enhance the accessibility and appeal of the policy, studies suggest adopting a more relaxed approach to requirements and assessments, reducing bureaucratic hurdles, providing targeted education and training for both applicants and planning committees, and removing financial barriers by offering council land on a tenancy basis. These improvements could support the policy's effective implementation and scalability, and ultimately help Wales achieve its sustainable development goals (One Planet Council, 2022; Sanders, 2022).

MOVING FORWARD

This chapter provides an analysis of the Cornish planning policy AL1 which allows the transformation of agricultural land into RLIDs. Based on a set of requirements, these developments enable residents to establish self-sufficient lifestyles and enterprises that meet their basic needs while providing wider ecological and community benefits. By supporting regenerative land management and rural communities in need of economic opportunities and affordable housing, AL1 addresses interconnected socio-economic and environmental issues. This makes it a promising tool for enhancing the region's socio-ecological resilience. Cornwall Council recognises this potential and aims for AL1 to have a positive impact, with a high number of successful applications serving as an indicator of its effectiveness (Cornwall Council, 2023a).

Due to its recent introduction, the policy's impact has yet to be determined. However, lessons from its predecessor, the Welsh OPD, offer valuable insights that could potentially guide the successful implementation of AL1. Both policies share a similar approach and a nearly identical set of requirements.

Studies of the OPD's success acknowledge that its regenerative lifestyle is achievable, but its complexity and stringent requirements have resulted in a low number of applications. This has made it a niche option for already climate-conscious, highly educated, and financially secure households. To improve the OPD's accessibility and scalability, studies recommend relaxing requirements and application procedures, removing financial barriers, and providing specific training for applicants and planning authorities (One Planet Council, 2022; Sanders, 2022).

Although lessons from the Welsh OPD are insightful, applying them directly to AL1 may be misleading. Despite their striking similarities, both policies were introduced under different circumstances. For instance, while OPD was a pioneering concept initially introduced without guidance, Cornish planning authorities are now more experienced with regenerative development models. As a result, they introduced AL1 with a comprehensive guidance document. Building on this chapter's findings, it is crucial to assess whether the limitations identified in the Welsh OPD could also impact AL1's success in Cornwall. The next chapter addresses this question by combining the information gathered so far with perspectives from local experts.

MY ARCHITECTURAL APPROACH

Detailed analyses of briefs and policies, along with their often complex requirements, are central to traditional architectural practice. However, similar to the Welsh planning officers, architects rarely assess entire lifestyles or ecosystem functions. AL1 delivers a clear and important message: architects and planners, trained as problem solvers, must engage more with these complex, interconnected issues. Given the limits of individual expertise, this task calls for new transdisciplinary models of problem-solving. Constructing a zero-carbon home already is a formidable task for architects, one that even AL1's guidance describes as "almost impossible" (Shorten & Knight, 2023). Therefore, developing regenerative models of living should not be the sole work of architects and planners. The following chapter explores ways to break their isolation and successfully join forces with other disciplines.

NETWORKING

With Cornwall's Regenerative Community

Fig. 14: A social event at Newquay Orchard, one of Cornwall's popular community growing schemes (Newquay Orchard, 2024)

CHAPTER INTRODUCTION

"There's still some traditional thinking in the corridors of power, but there are lots of people on the ground doing some really, brilliant stuff."

// from the expert interview with Manda Brookman

Since AL1 is a relatively new policy, there is very limited existing research about its implementation and impact on Cornwall's socio-ecological resilience. To explore potential opportunities and limitations of the policy, this chapter utilises local knowledge and perspectives gathered through semi-structured expert interviews.

As highlighted by Manda Brookman's quote on the left, many people in Cornwall are "doing some really brilliant stuff." This chapter explores who some of these people are, what they are accomplishing, and how their work relates to regenerative living in Cornwall and planning policy AL1.

The chapter begins by outlining the objectives and theoretical framework of the interviews, followed by a description of the interview structure and questions. It then introduces the six interviewees, detailing their selection process, and provides a summary of each interview, highlighting the key findings.

Finally, the chapter identifies common themes and offers a brief conclusion and reflection, relating the findings to the broader research framework.

ACCESSING LOCAL KNOWLEDGE

The interviews conducted for this study aim to engage with local experts in Cornwall to gain a deeper understanding of regenerative practices and their role in enhancing the region's socio-ecological resilience. By exploring how these practices and practitioners relate to planning policy AL1's approach and framework, the objective is to uncover new insights into the potential opportunities and limitations of the Cornish policy.

In this study, the term *local experts* refers to individuals who have extensive knowledge of regenerative practices in Cornwall and actively contribute to shaping the region's socio-ecological resilience through their work and commitment. Their perspectives are invaluable for this research as they provide firsthand experiences and knowledge.

The planning, conducting, and analysis of the interviews are based on the theoretical framework of Grounded Theory, which is particularly well-suited for exploratory research aimed at generating new insights and understanding complex phenomena. The Grounded Theory approach focuses on the importance of understanding the experiences of research participants from their perspectives (Charmaz, 2006).

The choice of the Grounded Theory framework is based on four key characteristics:

Exploratory Nature: Since AL1 is a new policy with very limited existing research, Grounded Theory provides a method to explore this new area and develop a theory grounded in the collected data.

Theory Generation: The aim is to understand potential opportunities and risks related to the effective implementation of AL1 by assessing the suitability of its framework. Grounded Theory aids in developing a theory grounded in participants' insights and experiences.

Flexibility: This approach offers adaptability in the interview process, allowing questions to be modified based on participants' responses. This flexibility is essential for uncovering insights into the new policy and understanding its role within the complex Cornish context.

Iterative Process: Grounded Theory involves constant reflection and iterative analysis. The interview approach can be continually refined as more data is gathered, ensuring a comprehensive understanding of the issues (Charmaz, 2006).

Over a period of four weeks in April 2024, a total of six interviews were conducted, each lasting between 45 and 90 minutes. After an introduction of myself and my research, the interviews followed a structured set of previously formulated questions. However, they often evolved into in-depth conversations about personal experiences, views, and concerns, offering exceptional levels of detail. With participants' consent, all interviews were recorded and transcribed. Following the grounded theory approach, coding and sorting were used to uncover common themes, which are briefly discussed at the end of this chapter. However, given the limited scope of this research, a comprehensive analysis of all the collected data is not provided.

All participants aggreed to be quoted directly throughout this dissertation.

INTERVIEW STRUCTURE

In line with their overall aim, the interviews conducted as part of this study are structured around two main fields of interest. The first focuses on the participant's experience with their regenerative practices. Some of the interviewees are involved in a specific practice while others engage in multiple practices. This first part explores how they got involved, the benefits and challenges they encountered, and how their practice fits into the local context. The intention is to shift away from objective questions about how the specific practice works to topics involving the participant's unique perspective and local experience.

The second field of interest revolves around planning policy AL1. It assesses the participant's understanding of the policy and, if necessary, provides an objective explanation of its functioning. Participants are encouraged to reflect on the policy's approach and implementation based on their experience, without considering the success or shortcomings of the Welsh OPD. To tap into the expert's specific local knowledge, this part investigates how their regenerative practices fit into AL1's framework and whether they deliver the required household, ecological, and local benefits. It also focuses on the quantification of the different aspects involved in the practices, such as time, cost, site requirements, and expected outcomes.

For instance, in the case of crop cultivation for food or material production, typical questions include: How much time and labour does the practice require? How much land is needed and what yield can be expected from that area? How much of the household's food intake or land-based income can this yield cover? Are there potential challenges for the practice to meet all of AL1's requirements within the initial 5-year set-up phase?

Drawing from the Grounded Theory approach, the majority of questions were formulated open-endedly to allow participants to express their views and experiences freely. Additional follow-up questions were used during each interview to delve deeper into certain areas. While the specific questions for each interview are included in the appendix, the following general set of questions gives an impression of the overall structure and approach:

GENERAL SET-UP OF QUESTIONS

1. Focus on regenerative practice(s)

- How did the participant get involved?
- What are the benefits and challenges connected to it?
- How does it fit into the Cornish Context?
- How does it relate to the region's socio-ecological resilience?

2. Focus on planning policy AL1

- How does the regenerative practice fit into the policy's framework?
- What are the participant's thoughts about policy AL1?
- How does someone with little knowledge and financial means get started with the regenerative practice?
- How do we move forward, and what does it take for Cornwall to become more regenerative?

SELECTING LOCAL EXPERTS

Identifying, contacting, and engaging with local experts was an intriguing process. Getting to know one person opened up new networks of people, creating various opportunities to access local knowledge. However, due to the limited scope of this research, six participants were selected based on the following criteria:

1. Extensive experience with regenerative practices related to AL1 and Cornwall's socio-ecological context.

2. Varied perspectives based on the involvement in different practices: from food cultivation and fabric production to heritage crafts, education, and innovative building practices.

3. Diversity of participants in terms of their age, interests and location, while equally representing male and female voices.

4. Varying levels of knowledge about AL1, from participants who had not heard about the policy before to those with significant experience with it through their work and personal journeys.

01
ROB HIGGS

Fighting for Retrospective AL1-Planning Permission: Trevone Quarry

Rob is an environmental activist and sculptor. In 2009, he acquired a derelict quarry which he turned into a vibrant community of creatives.
Fig. 15 (Trewhela, 2024)

02
STEPHEN DAVIES

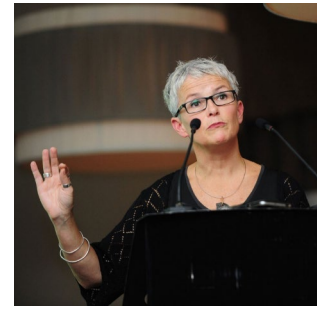
No Sustainable Architecture Without a Truly Sustainable Context

By embracing localism, Stephen actively creates resilient food systems, communities and building practices in Cornwall.
Fig. 16 (Goonown Growers, 2022)

03
HELEN BOUWKETT

Bridging the Gap between Heritage Craft & Regenerative Lifestyles

With a background in crafts, teaching, and rural skills, Hellen co-founded the Cornish Rural Education and Skills Trust in 2023.
Fig. 17 (O'Shea, 2023)



04
MANDA BROOKMAN

Connecting Climate, People & Place through Trans-disciplinarity

Manda's multi-faceted work focuses on permaculture, Green and Blue Prescribing, sustainable tourism and the refugee crisis.
Fig. 18 (Manda Brookman, 2023)

Fig. 15: Mapping the six local experts who were interviewed for this study

05
SIMON MILES

Forest Gardening for Resilient Communities & Ecosystems

With over 40 years of experience in horticulture, Simon established a forest garden, offering tours, courses and consultancy.
Fig. 19 (The Forest Garden Falmouth, 2023)

06
VICKY PUTLER

Reviving Local Industries To Create Economic Diversity

Vicky founded Flax Project C.I.C. to establish a regenerative local textile industry and education programme - from field to fabric.
Fig. 20 (Putler, 2023)

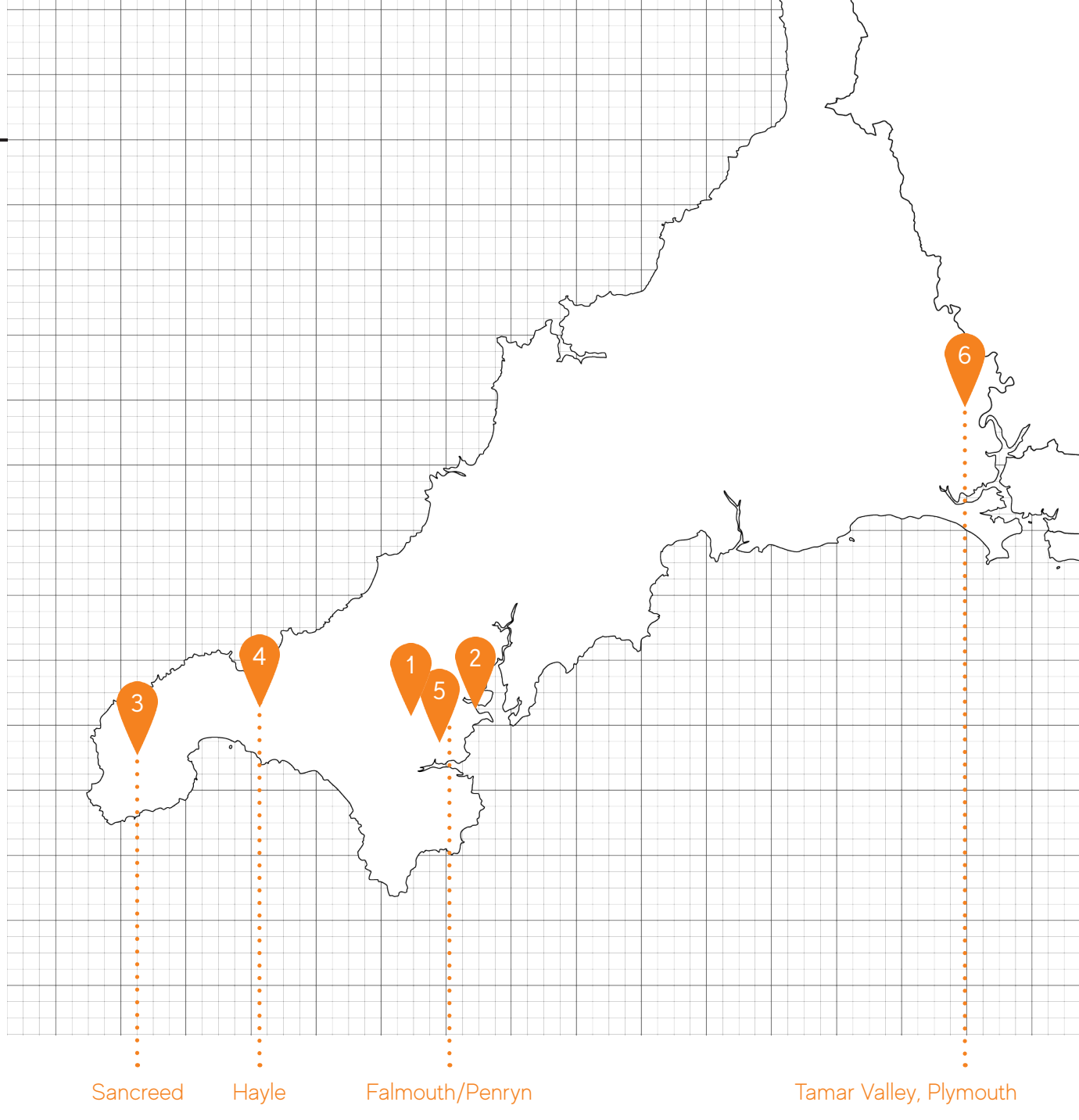


Fig. 15: Rob and his partner, artist & environmentalist Sophie Miller (Trewhela, 2024)

ROB HIGGS ON AL1 PLANNING BATTLES

"If they want actual sustainable development, their assessment should be based on site visits by a team of experts who know what they're looking at and know that it can look messy sometimes."

Despite AL1's recent introduction, Rob has already gained significant experience with its implementation - perhaps more than he would have preferred. In 2009, he and his partner acquired a derelict quarry which they transformed into a thriving community of creatives. Initially covered in junk, Trevone Quarry now features acres of woodland, orchards, gardens and apiaries, and is fully self-sufficient in water and renewable energy. Alongside his regenerative lifestyle, Rob offers affordable workshop spaces to 13 small businesses, including local artists, craftspeople, and entrepreneurs. However, in 2022, the community faced eviction when Cornwall Council cited a breach of the initial planning permission for an industrial estate, criticising the residential character and labelling the development as "visually objectionable."

After a two-year planning battle, Rob eventually obtained retrospective planning permission for AL1. Although he had collaborated with the Council on the CCEDPD, advocating for policies that support ventures like Trevone Quarry, the process was onerous. Rob notes that when planning officers first inspected the site, they overlooked many regenerative features and criticised the businesses for not focusing enough on land-based production. He recalls, "They basically said, 'You're artists and you're not farming enough, so your development is a planning contravention!'" Rob criticises AL1's current approach as overly bureaucratic and inflexible, and had hoped it would learn from the Welsh OPD's mistakes. He also highlights a lack of expertise among policymakers: "Their assessment should be based on site visits by a team of experts who know what they're looking at and know that it can look messy sometimes."

Despite his criticism, Rob sees AL1 as a step in the right direction: "It validates alternative lifestyles and builds acceptance of what is now viewed as progressive. But it does need a better definition of terms, that's what's holding it back." To improve effective implementation, Rob suggests reviewing assessment methods and providing services that help applicants access necessary resources, from knowledge to financial support.

STEPHEN DAVIES ON BUILDING RESILIENCE

With a background in architecture and a keen interest in community resilience, Stephen moved to Cornwall, attracted by the region's unique social fabric. In 2021, he co-founded Social Designs, specialising in participatory design and environmentally responsible building practices. Driven by localism, Stephen aims to facilitate architecture by facilitating communities: "If you set up a practice and let the market create your clients, you will mostly get projects that are neither socially nor environmentally progressive, or only one or the other. So we are looking to create a new market here in Cornwall", he explains.

As a C.I.C., Social Designs supports local communities and their development ideas, including funding bids and research proposals. Naturally, these projects often cross the boundaries of conventional architectural practice. Stephen believes that mainstream approaches to our global crises, particularly in architecture, rely too heavily on high-tech solutions with long development timelines. "I'm more interested in what we have here and now and how to make the best use of it," he says. In line with this, Stephen has a strong focus on Cornwall's lack of economic diversity and potential food scarcity, exacerbated by pressures such as the 2020/21 lockdown and recent climate change impacts. In 2019, he co-founded a food cooperative to support local producers and build resilient food systems.

Stephen is particularly interested in AL1 and sees the policy as more than just a set of numeric targets. He values it as an incentive for urgently needed lifestyle changes: "It's not meant to be easy; people do need to change." However, he proposes training programmes to equip applicants with the necessary skills and community support. He also notes that while AL1 focuses on farming, other policies could soon offer alternative approaches. "If you try to make one policy do everything, it becomes exploitable" he argues. In the meantime, Stephen is exploring how practices such as hemp cultivation could create viable and scalable AL1 development models, combining regenerative farming with locally sourced building materials, and ultimately enhancing Cornwall's socio-ecological resilience.

Fig. 16: Stephen Davies (Goonown Growers, 2022)

"Everyone wants sustainable architecture, but you can't have truly sustainable architecture without first having a truly sustainable context."

networking

Fig. 17: Helen during one of her hedging courses (O'Shea, 2023)

"Planning policy AL1 would have been radical 20 years ago. Now there is a mainstream understanding that this is the direction we need to take, but you need all those building blocks in place to make it attainable!"

HELEN BOUWKETT ON RURAL SKILLS TRAINING

Cornwall's hedges are both distinctive heritage features and vital ecosystems, providing wildlife corridors and preserving ancient seed banks. However, many have deteriorated due to declining traditional skills, and the craft has been recognised as endangered since 2023. Helen Bowkett and her team are working to reverse this trend. Trained as a hedger 13 years ago, she was the first woman in Cornwall to pass the training. "I realised the craft needed a breath of fresh air", she remarks. Helen envisioned an organisation to teach traditional rural skills while embracing new partnerships and innovation. In 2023, she co-founded CREST, attracting members from various backgrounds, including artists, craftspeople, educators, and academics. "Our initial project was hedging, but we deliberately established CREST as a rural skills trust focusing on everything from land-based practices to heritage building skills", she explains.

Helen notes a revival of traditional crafts driven by a growing appreciation for craftsmanship and the environment. "In Cornwall, there is such a gulf between the traditional farming community and those with a more alternative mindset. These two groups are so skilled and resourceful around land, and yet they don't mix", she remarks. CREST aims to bridge this gap and foster resilient communities by providing knowledge and mentorship. The organisation supports individuals and groups, including those applying for AL1, to gain autonomy and run their own businesses.

Helen sees potential in planning policy AL1 but stresses the need to overcome barriers such as knowledge gaps, financial constraints, and land accessibility. CREST already offers bursaries and community outreach projects in economically deprived areas. Looking ahead, Helen envisions a Cornish crofting association, modelled after the Scottish example, enabling farmers to lease their land for AL1 developments, thus increasing financial accessibility. "This would bring people back onto the land", she explains, "Farmers would benefit from income diversification and their land is in use, while those small AL1 communities could share tools and help out the farmers who are so isolated these days."

MANDA BROOKMAN ON CLIMATE, PEOPLE & PLACE

With a commitment to climate action, cultural shift, and behavioural change, Manda has worked in Cornwall for over 20 years. Initially focused on developing sustainability strategies for local tourism businesses, she later sought a deeper connection with the environment and community. This led to the creation of her social enterprise, Permanently Brilliant, which fosters system thinking and activism ranging from community networks, and discussion groups to refugee work. Her primary base is a small regenerative site near Hayle, where she has established a fully self-sufficient lifestyle following permaculture principles. The site features a woodland, orchards, a local market garden and beehives, and serves as a venue for workshops and hosting volunteers.

For her current project, Green and Blue Social Prescribing, Manda collaborates with the NHS to support mental health through nature- and community-based activities. "More people are getting sick due to a lack of access to green spaces and healthy food", Manda explains. "They end up in the NHS, which is breaking under the pressure." She envisions shifting from the clinical, carbon-intensive approach to health towards a model of health creation: "How do we create homes, lifestyles, and institutions that make it easier to be healthy than to be sick?" For Manda, such a model is intrinsically linked to environmental health and stewardship, with benefits going both ways.

Manda views policy AL1 as a promising first step, allowing affordable land-based lifestyles. However, she criticises its strict income rules. "If you're living cheaply and achieving 50% biodiversity net gain or doing incredible social work, why should you be forced to generate more money from farming?", she argues. Manda stresses that regenerative practices involve a steep learning curve and that motivating people is more challenging when profit is primarily framed in monetary terms. Nevertheless, she hopes AL1 will encourage people to embrace new approaches: "This is an opportunity for us to be ahead of the change, rather than have that change land on us. It's a much more invigorating and fulfilling option than having to do something because there is no other choice anymore."

Fig. 18: Manda Brookman (Manda Brookman, 2023)

"Our community food infra-structure is our immune system. If we could make regenerative lifestyles the norm, it would change how the land can cope with heat and drought, how our community is fed and how we connect with one another."

networking

Fig. 19: Simon checking the chestnuts in his forest garden (The Forest Garden Falmouth, 2023)

"The danger is we all carry on doing what we've always done. You've got to look at it differently. [...] Forest gardening is a way of enabling people to look after themselves and with climate change, we don't really know what's coming."

SIMON MILES ON FOREST GARDENING

Originally trained as a herbalist, Simon established a thriving forest garden just outside Falmouth, where he offers tours, courses, and a variety of plants well-suited to the local climate. Consisting of seven layers, a forest garden is a carefully designed ecosystem aimed at high productivity while requiring very little energy and machinery. "You can have one in just a few square metres, but it can also cover several acres," Simon explains.

Central to the practice is observing the local climate and mimicking natural processes by planting accordingly. As a result, Simon's garden provides year-round food abundance and supports biodiversity and ecosystem health. He has noted how the local food system has become increasingly fragile due to its heavy dependence on annual crops. While many conventional farmers experience loss of harvest and topsoil due to more frequent extreme weather events, forest gardens offer greater resilience. "The root system, healthy soil – everything here is already established," Simon says. "If we have a bad summer, you might not get as much, but you've got something." Alongside food security, Simon has also experienced direct social benefits among his visitors, including an increased sense of well-being and purpose: "Nature is a lovely healer, by just being out in it, absorbed in it, and taking it in."

Simon acknowledges policy AL1's potential to enable forest gardens in small or inaccessible fields. However, he is concerned about the strict requirements, noting that estimating yield or income without site-specific knowledge and experimentation is incredibly difficult. Additionally, benefits as increased productivity and reduced labour require long-term planning beyond the five-year set-up phase. Simon believes a practical guide to land-based skills could inspire people to join his courses, which continue to evolve based on his experience and the changing climate. He envisions forest gardens as "a series of oases throughout the county," promoting communal learning and well-being, and acting as food banks. He also advocates for managing public open spaces as forest gardens with community ownership and support from local authorities.

VICKY PUTLER ON FLAX CULTIVATION

Vicky worked with textiles and printing in London before becoming increasingly frustrated with the lack of locally grown linen. Eager to address this gap, she explored the idea of growing her own flax and, after researching the process, moved to Plymouth eight years ago to turn her plan into reality.

Historically, flax was grown throughout the UK, and the Southwest even had its own textile industry. However, international producers and increasing urbanisation led to the loss of knowledge, skills, and equipment. Today, Vicky rents a one-acre plot in the Tamar Valley, where she grows and processes flax using traditional, manual methods. "Every part of the process requires special machinery that doesn't exist in this country," she explains. "It's incredibly labour-intensive!" Despite these challenges, she remains optimistic. While applying for grants for new equipment, she hosts workshops and community events on her land, covering harvesting, processing, weaving and natural dyeing. Vicky's long-term vision extends beyond her own plot: "My goal is to establish a medium-scale infrastructure for this area, where people work cooperatively, sharing knowledge and tools. There's a whole market that we can develop." By reviving this nearly forgotten industry, she hopes to enhance economic diversity in the Southwest. She also explors integrating flax into local farmers' crop rotations to improve soil health and pollinator activity, noting its resilience against climate change impacts.

Before our interview, Vicky was unfamiliar with policy AL1 but immediately saw its potential to support her ambitions. "There is a lot of interest in small-scale farming now," she notes. "The question is whether it turns into more than that." She believes AL1 could help enable more land-based enterprises but stresses the importance of land accessibility. The farm start scheme 'Tamar Grow Local' enabled Vicky to rent her plot in the first place and she believes such initiatives are vital to unlocking the potential of AL1. She also points out that, to ensure viability, many farming practices still depend on fossil fuels, complicating the establishment of regenerative enterprises focused primarily on land-based production.

Fig. 20: Vicky on her field in the Tamar Valley (Putler, 2023)

"My goal is to establish a medium-scale infrastructure for this area, where people work cooperatively, sharing knowledge and tools. There's a whole market that we can develop."

COMMON THEMES

Each participant contributed with their own unique experiences, knowledge, and perspectives, yet several recurring themes emerged throughout the six interviews. These common themes can be categorised and summarised as follows:

SOCIO-ECOLOGICAL RESILIENCE

- Cornwall needs greater economic diversity to reduce dependence on tourism.
- Conventional agricultural practices are both destructive and vulnerable to climate change impacts.
- Localism is vital - defining local needs and how to meet them with local recourses.
- Community growing schemes combine social and ecological benefits, fostering community, enhancing food security, promoting self-reliance, and improving ecosystem health and resilience.
- Public health and ecosystem health are intrinsically linked.
- Traditional crafts or practices (e.g. hedging or flax cultivation) can offer solutions to current environmental and social challenges.

PLANNING POLICY AL1

Strengths:

- AL1 is a step in the right direction, enabling regenerative and self-sufficient lifestyles tied to land prices at agricultural rates.
- It comes at the right time, aligning with a growing ecological awareness.
- AL1 acknowledges alternative lifestyles, fostering greater acceptance.
- The policy highlights the urgency of the environmental crisis, incentivising people to change their behaviour and lifestyle to prepare for an uncertain future.
- AL1 has the potential to stimulate new local industries (e.g. flax or hemp cultivation).

Challenges:

- The policy's focus on land-based production and income primarily supports farming lifestyles, neglecting other regenerative models centred on biodiversity or social work.
- Strict requirements, complex application procedures, and assessment methods reduce accessibility and feasibility.
- The initial five-year set-up phase may result in hasty or unreasonable decisions, as some regenerative practices need more time to develop.
- There is a perceived lack of expertise among policymakers and site inspectors.

Limitations:

- AL1 alone cannot effect significant change, effective implementation is crucial.
- There are still barriers that need to be addressed, including land availability and affordability, and the lack of services for acquiring specific knowledge and skills.
- AL1 may not cover a wide range of possible regenerative lifestyles, but other policies might fill those gaps in the future.
- While AL1 focuses on rural lifestyles, there are other opportunities to enhance local socio-ecological resilience focusing on public land in and around towns.

SUGGESTIONS

About policy AL1 itself:

- Adopting a more flexible approach to AL1's requirements and assessment methods could enhance accessibility.

MOVING FORWARD

- This includes extending the five-year set-up phase and allowing occupants to generate less land-based income, e.g. if their biodiversity net gain or social impact is exceptionally high.

About policy AL1's implementation:
- Assessments and site inspections should involve an interdisciplinary team of experts.
- Providing services that assist applicants in acquiring the necessary knowledge, skills, and financial resources
- Establishing a dedicated association or initiative to improve land accessibility, e.g. by enabling farmers to sublet their land.
- Improving marketing to present AL1 as a desirable lifestyle choice.

Beyond AL1:
- Utilising public open spaces to promote community and communal regenerative practices.
- Guiding healthcare services towards proactive health creation.

This chapter focuses on the six interviews conducted for this study. All experts shared unique perspectives based on their different regenerative practices and experiences. One main conclusion is that much of the collected data aligns with the findings from the previous literature studies. This alignment concerns both the insights into Cornwall's socio-ecological resilience and the lessons from the Welsh OPD policy.

While AL1 is still relatively new and has yet to be implemented for new developments, most interviewees had some knowledge or experience with it, with one even having obtained retrospective planning permission. All participants acknowledged the policy as a promising step towards addressing Cornwall's socio-ecological pressures. However, most participants also raised concerns about its bureaucratic nature, stringent requirements, and other barriers to accessibility. These perspectives, along with the experts' suggestions for improvement, offer valuable insights that have not been studied before. While these insights only represent the beginning of a much more complex discourse on RLIDs in Cornwall, they indicate that policy AL1 can only be expected to positively impact the region's socio-ecological resilience if its effective implementation is ensured.

MY ARCHITECTURAL APPROACH

Networking is central to the roles of architects and planners, as they integrate inputs from various disciplines throughout design and construction processes. In this case, the local experts cover a range of disciplines that typically do not overlap with the architectural domain, from horticulture and rural skills training to social prescription models. However, this chapter demonstrates that all these disciplines can and should be involved in the planning and design of our living environments. This is particularly true if these environments are intended to foster community and ecological resilience, which should ideally be the goal of most developments. This chapter also highlights that architects' networking and communication skills can be applied across diverse contexts, allowing them to contribute positively beyond their profession's traditional boundaries.

INTEGRATING

My Findings in a Practical Guide

Fig. 21: Simon Miles giving one of his tours. A practical guide could introduce even more people to forest gardening, inspiring them to join a course. (The Forest Garden Falmouth, 2023a)

CHAPTER INTRODUCTION

"Planning policy AL1 would have been radical 20 years ago. Now there is a mainstream understanding that this is the direction we need to take, but you need all those building blocks in place to make it attainable!"

// from the interview with Helen Bouwkett from CREST

This chapter builds on the findings of previous sections to develop a prototype for a practical guide to regenerative living in Cornwall. The concept for this guide emerged during my research and evolved gradually alongside new insights. It serves both as a continuation of research into low-impact lifestyles in Cornwall and as a solution-oriented design exploration. The guide is considered a prototype as it marks only the beginning of this design exploration and ideally requires a more thorough and iterative design process beyond the scope of this research. Despite its limitations, it offers a tool for generating practical ideas and solutions aligned with earlier findings.

As Helen Bouwkett describes in the quote to the left, this chapter seeks to arrange some of the "building blocks" necessary for AL1's successful implementation and the wider adoption of regenerative, low-impact lifestyles in Cornwall.

The chapter begins by outlining the guide's aims and primary target groups, followed by a brief analysis of comparable guidance documents. It then explains the structure of the developed guide, focusing on the regenerative practices and expert community at its core. Finally, the chapter assesses the guide's potential and limitations, concluding with a discussion that links the chapter's insights to the broader framework of this research.

The actual prototype guide can be found in the appendix of this dissertation.

FOUNDATION & AIM

The primary objective of the developed guide is to promote regenerative lifestyles in Cornwall, enabling people to engage with land-based practices, regardless of their prior experience or knowledge. This goal is rooted in the findings of previous research chapters, which explored Cornwall's socio-ecological resilience, lessons from the Welsh OPD policy, and insights from local Cornish experts.

To strengthen Cornwall's socio-ecological resilience, it is crucial to provide balanced support for both people and the environment. The region's population needs access to health, education, economic opportunities, and inclusive communities in order to meet their needs. On the other hand, ecosystem health, biodiversity, and climate resilience need to be promoted. The developed guide aligns with these objectives by focusing on self-sufficiency and autonomy, which go hand in hand with local environmental benefits. Furthermore, by linking each regenerative practice to experts and organisations, the guide encourages people to connect with their local communities and engage in valuable social and educational activities.

Research into the success of the Welsh OPD identified key barriers to scalability, notably its limited accessibility to people who are not already climate-conscious, highly educated, or financially secure. This guide seeks to address these challenges by making complex topics easier to understand, promoting environmentally conscious decisions, and offering cost-effective ways to adopt regenerative livestyles.

The six local experts interviewed for this study also emphasised the need for specific training services to equip people with essential knowledge and skills. In response, the guide not only serves as an educational resource itself, but also connects individuals with initiatives that can facilitate further learning. Additionally, some interviewees highlighted the need for better marketing of regenerative lifestyles as both feasible and desirable. In light of this, the guide emphasises the various benefits of each regenerative practice and how easily it can be adapted to different lifestyles. By showcasing both advantages and practicality, the guide aims to inspire more people to embrace regenerative living.

TARGET GROUP

Based on the findings from previous chapters, three key target groups were identified for the guide. The first group includes individuals with little to no knowledge of regenerative lifestyles. The guide provides them with a concise and accessible introduction, along with practical steps to learn more and get involved.

The second group consists of those already familiar with regenerative living, looking to deepen their understanding or connect with like-minded communities. They may also be looking for an overview of potential regenerative practices that could aid in an AL1 application.

The third group comprises planning authorities and decision-makers. It was identified through studies assessing the OPD and input from local Cornish experts that some within this group may lack the specific knowledge needed to develop attainable policy frameworks, review applications, or inspect sites effectively. The guide can help by providing insights into specific practices and facilitating connections with local experts for additional support and collaboration.

COMPARATIVE EXAMPLES

For the development of the prototype guide, three comparative guides and handbooks were referenced. The documents "Creating Positive Spaces" (Heath et al., 2018) and the urban design guide "Coolkit" (Kluck et al., 2020) have been utilised in both professional and educational settings to promote the design of healthy spaces and climate-resilient urban interventions. Meanwhile, the "Sustainable Building Guide" (Cornwall Sustainable Building Trust, n.d.) was designed to encourage environmentally responsible building practices in Cornwall, offering valuable insights into local approaches to creating guidance documents.

The lessons from these examples can be grouped into two main areas: Structure and Layout. In terms of structure, the three guides provide clear instructions on how to navigate the document, explaining its overall approach and the meaning of specific elements, such as symbols. They introduce essential concepts in an accessible way while offering more detailed information as needed, either within the guide itself or through external resources for further learning. In addition to explaining key principles, the guides offer practical steps tailored to different scenarios - whether influenced by budget, context, or external factors. The use of case studies to illustrate the successful application of principles is another valuable feature, along with ensuring that all information is well-supported by references.

In terms of layout and design, the guides combine text with graphic charts and visuals to achieve a balance between being informative and visually appealing. To avoid overwhelming the reader, dense information is combined with sufficient white space. The use of colour coding, symbols, and icons helps group related aspects into easily comprehensible categories. Moreover, a consistent colour palette and graphic design approach ensure a visually coherent and professional appearance throughout each guide.

These lessons and strategies informed the development of the practical guide to regenerative living in Cornwall, ensuring it is user-friendly, engaging, and adaptable to various contexts and needs. It is designed to facilitate effective learning both within the document and beyond.

Fig. 22: The three guides that were used as comparative examples (Heath et al., 2018; Kluck et al., 2020; Cornwall Sustainable Building Trust, n.d.)

STRUCTURE & APPROACH

The structure of the prototype guide is divided into three main sections: an introductory part, a main section including the different regenerative practices, and a brief final section with a map locating all mentioned experts and relevant organisations.

INTRODUCTION

The introductory part offers a concise overview of regenerative living - what it means, why it matters, and how it connects to Cornwall. It introduces the concept of regenerative practices and their socio-economic and environmental implications, while clarifying key terms such as self-sufficiency. Additionally, the introductory part emphasises the importance of policies that support and enable regenerative living choices.

Although AL1 is mentioned as an example of such a policy, the guide deliberately avoids going into detail about its application, limitations, or potential. Instead, it aims to raise awareness of the policy's existence while clarifying that the guide is not a manual for policy compliance. Rather, it serves as a resource for anyone interested in adopting a regenerative lifestyle, regardless of their individual circumstances or ambitions.

The introduction also outlines the guide's structure, detailing the information provided for each regenerative practice and how to best utilise it. These instructions encourage readers to get active by reading up on specific topics of interest and engaging with local experts linked to each practice.

MAIN PART

The main section covers various regenerative practices, each introduced and summarised on a double-page spread. These spreads feature short, engaging texts complemented by icons and illustrations to ensure clarity and visual appeal. The practices are organised into seven categories, and linked to ten regenerative features that demonstrate how they contribute to a regenerative lifestyle. These categories and features are inspired by key aspects of regenerative living, as highlighted by policy AL1 and its guidance.

Furthermore, each spread is designed to cater to a wide range of readers. It is accessible and visually appealing to those with little to no prior knowledge, offers deeper insights for those wishing to expand their understanding, and provides more detailed, data-driven information that may appeal to planning authorities and decision makers.

For each practice, the guide lists a selection of local experts, including organisations, companies, or grassroots initiatives. These experts are briefly introduced along with details about their work, location, and a website link, allowing readers to connect and explore social and educational opportunities.

FINAL SECTION

The final section includes a map that presents all the mentioned experts and initiatives, along with their locations in Cornwall and the South West of England. This map supports readers interested in connecting with local communities and offers opportunities to engage more deeply with the practices highlighted in the guide.

The 7 Regenerative Categories covered by this guide are:

Food & Growing

Crop Cultivation

Animal Rearing

Waste Systems

Energy & Water

Construction & Design

Wildlife & Biodiversity

Each practice has regenerative features that can provide:

... a portion of your own **food** intake from land-based production

... opportunities for a land-based **income**

... a percentage of your **electricity** demand through on-site production

... solutions for on-site **waste management** through reusing & recycling

... ways to reduce your **water** demand or meet part of it by harvesting rainwater & reusing greywater

... strategies to achieve **carbon reduction** within your lifestyle

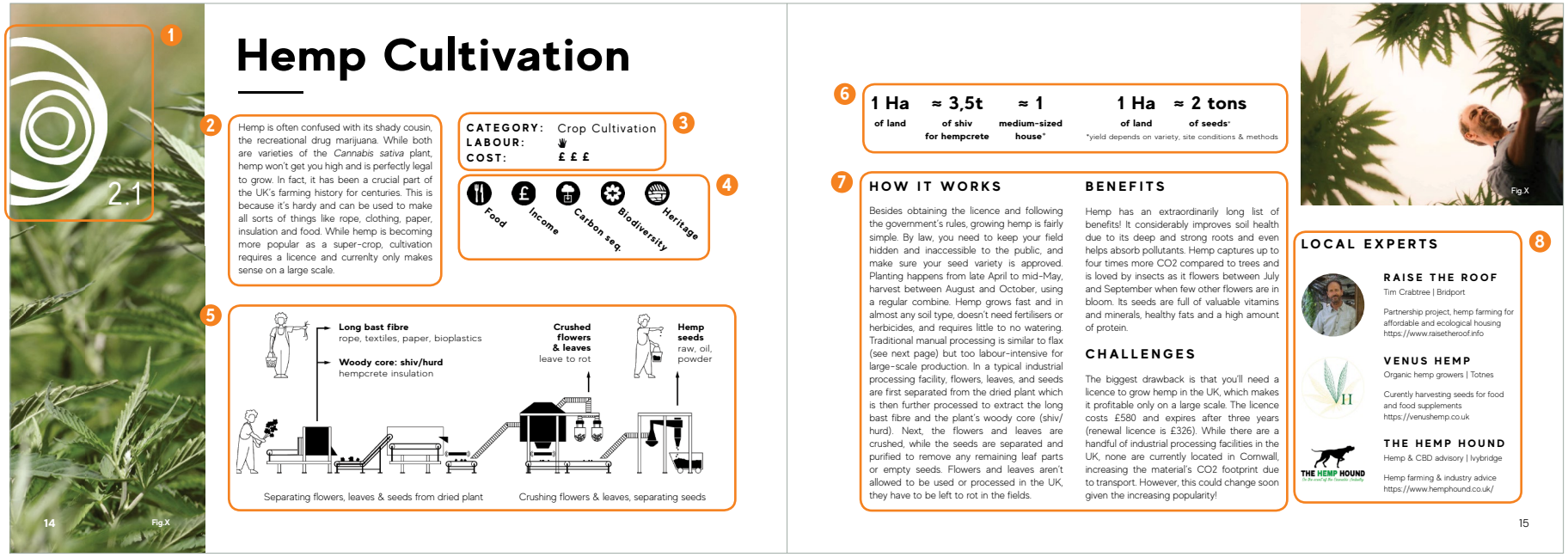
... solutions for active **carbon capture** by locking atmospheric carbon in the soil or in bio-based materials

... opportunities to support & enhance local **biodiversity**

... ways to provide local **community benefits** through recreational or educational activities

... methods for **heritage preservation** through traditional crafts

Fig. 23: Guide example pages



EXAMPLE PAGES

(1) Symbols and numbers are used to create clear, recognisable categories, helping readers navigate the document more easily.

(2) An engaging introduction summarises the benefits of the practice, sparking the reader's curiosity to explore further.

(3) Each practice's labour and cost intensity is rated on a scale of one to three symbols. These estimates are based on the references used for the guide but can vary depending on individual context, ambitions, and limitations. Where outcomes differ greatly, this is represented as a range (e.g., one to three).

(4) Every practice includes a set of regenerative features, explained at the beginning of the guide. Each feature highlights a key aspect of a regenerative lifestyle in Cornwall.

(5) A simple illustration accompanies each practice, breaking up the text and enhancing visual communication.

(6) Numerical target indicators refer to specific requirements or outputs. This data-driven approach appeals to authorities and decision-makers who prioritise measurable results.

(7) Three concise paragraphs outline how each practice works, along with its benefits and challenges, providing a summary of the most important details.

(8) A list of local experts and their contact information is included to support further learning and active engagement.

REGENERATIVE PRACTICES

Based on the seven categories, a total of 25 regenerative practices are included in the developed guide. This selection is inspired by specific recommendations from the AL1 policy guidance, a review of successful OPD applications, and the expert interviews conducted in the previous chapter. The guide is designed to be flexible, allowing for the addition of new practices as research evolves, technologies advance, or policy frameworks change. While many more regenerative practices could have been included, the selected 25 are intended as a starting point. As outlined earlier, this guide is a prototype and does not aim to be fully comprehensive.

In the context of this guide, the term "regenerative practices" refers not only to land-based activities but also to broader concepts like passive architectural design and technical systems, such as natural greywater filtration. The main focus throughout is on practices that are low-impact and contribute to self-sufficient and regenerative lifestyles.

Although the guide prioritises low-tech, easy-to-implement practices, some practices and systems are inherently more complex and require detailed research or careful consideration. For instance, hemp cultivation is currently limited by strict government regulations, making it viable only on an larger industrial scale. Similarly, photovoltaic solar panels are not suitable for DIY production or installation due to their technical complexity. In such cases, the guide clearly outlines these challenges and provides links to resources or local experts for further support, including consultancy or system installation.

Each regenerative practice is also linked to Cornwall to reinforce the local relevance of the developed guide. This takes into account factors such as the Cornish climate and its impact on horticulture or the cultivation of specific crops, as well as connections to heritage skills like Cornish hedging, which blends the region's rich history with important biodiversity features.

An overview of the selected 25 regenerative practices is provided on the left:

Food & Growing

Permaculture,
Forest Gardening

Crop Cultivation

Hemp, Flax, Straw,
Coppicing

Animal Rearing

Beekeeping,
Poultry

Waste System

Composting Toilets,
Worm Farms, Red Bed Filtration

Energy & Water

Biodigester, Solar Energy,
Wood Burner, Water Harvesting

Construction & Design

Passive Design, Recycled Materials,
Hempcrete, Cob, Strawbale, Earth

Wildlife & Biodiversity

Rewilding, Wildlife Corridors,
Nesting Boxes, Cornish Hedging

REGENERATIVE NETWORK

Given the limited scope of this research, the prototype includes detailed introductions to only 10 of the 25 identified regenerative practices. These 10 were chosen to ensure that at least one practice from each category is represented. However, the table of contents lists all 25 practices to provide a more comprehensive overview of possibilities across the different categories.

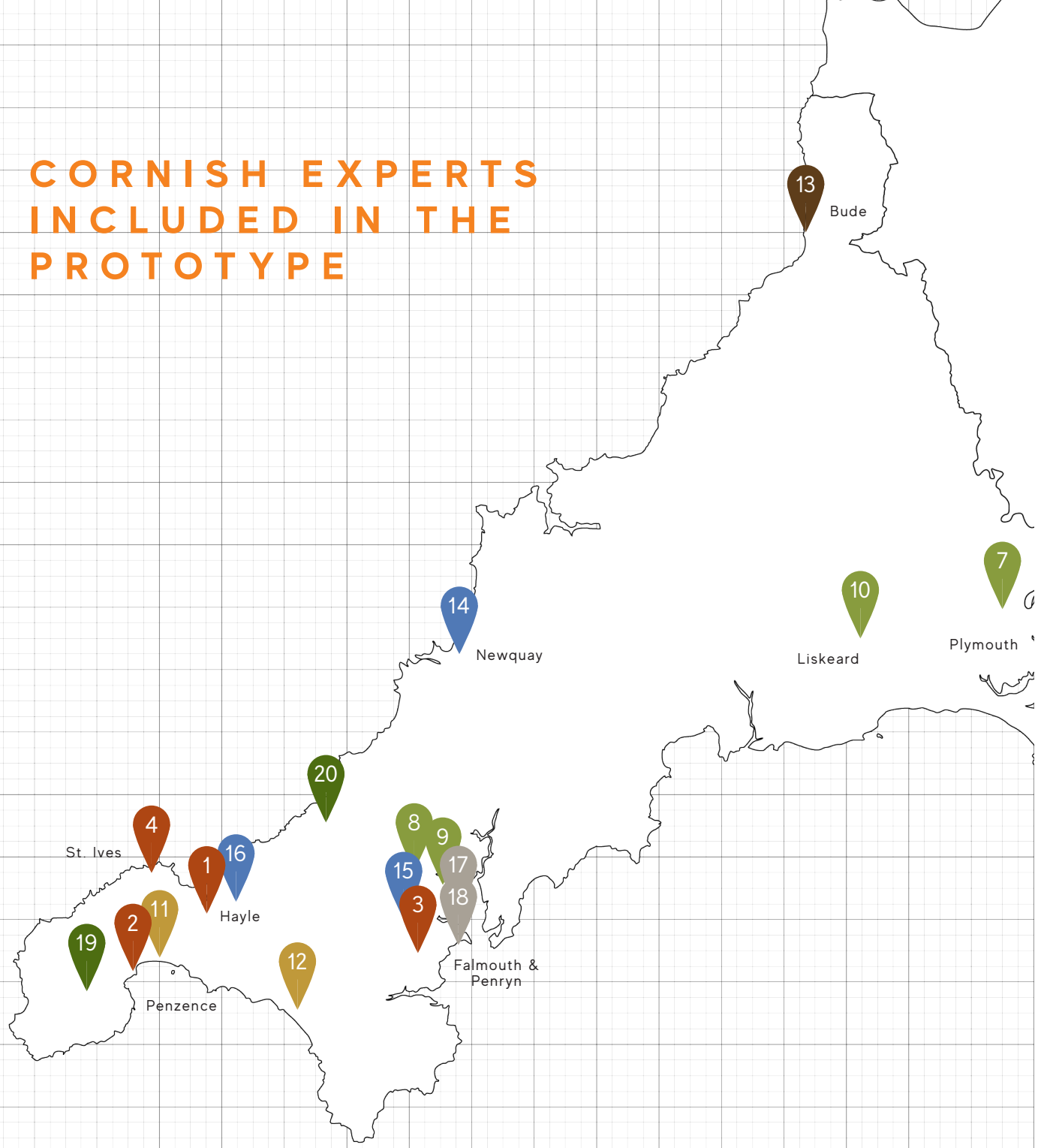
A key objective of the developed guide is to connect regenerative practices with a local network of experts and initiatives, making it specific to Cornwall's unique context and local expertise. Experts can be identified across all seven categories and range from individuals to entire communities, encompassing everything from traditional businesses to grassroots initiatives run by volunteers.

The guide is not intended to promote specific organisations or enterprises at the expense of others. Rather, it aims to present a comprehensive network of relevant experts, allowing readers to choose which ones they wish to engage with. This is reflected in the final section of the guide, which includes a map highlighting the experts associated with each regenerative practice.

This map, shown on the opposite page, features only the experts linked to the 10 practices included in this prototype. While it provides a glimpse of how such a map could be structured, it does not fully represent the true density and diversity of experts in Cornwall. For example, the organisation Sustainable Food Cornwall offers an online "Good Food Map" that visualises over 80 small-scale, environmentally friendly food producers across the county. These include community growing schemes, as well as meat and dairy producers (Sustainable Food Cornwall, 2023b). In theory, all of these could be incorporated into the guide, and they only represent two of the seven regenerative categories: food and growing, and animal rearing.

Naturally, a more accurate map of Cornish experts would need to be a constant work in progress, regularly updated to reflect the addition of new organisations or the closure of existing ones. During the guide's development, it became clear that the traditional printed format of this first prototype is not able to effectively capture the multitude of Cornish experts, nor would it accommodate the frequent updates required. A digital version - similar to the Good Food Map - would be a more practical solution for achieving this.

CORNISH EXPERTS INCLUDED IN THE PROTOTYPE



Food & Growing

1 Permanently Brilliant
2 Growing Links
3 The Forest Garden
4 Community Orchard

Crop Cultivation

5 Venus Hemp
6 The Hemp Hound
7 Flax Project C.I.C.
8 Working Woodlands
9 Carsawsan Woodland
10 Pentiddy Woods

Animal Rearing

11 Cornish Black Bee Co.
12 Heather Bell

Waste Systems

13 Cornwall Sewage

Energy & Water

14 Naked Solar
15 Trevone Quarry
16 Permanently Brilliant

Construction & Design

17 Social Designs C.I.C.
18 ReCollective

Wildlife & Biodiversity

19 CREST Cornwall
20 Guild of Hedgers

Fig. 24: Expert Map

POTENTIAL & LIMITATIONS

POTENTIAL

The guide to regenerative living in Cornwall represents a unique opportunity, as no similar resource currently exists in the region. By aligning with local efforts to reduce socio-economic and environmental problems, it has the potential to contribute meaningfully to building socio-ecological resilience, provided it is designed and implemented effectively. Incorporating more regenerative practices and connecting with a wider network of Cornish experts would allow the guide to expand its reach and impact. With sufficient time and effort dedicated to this expansion, it could offer a thorough overview of what is possible within regenerative living and highlight who in the area is already experienced and capable of offering further guidance or opportunities for engagement.

Since the idea of the guide evolved throughout the research process, I had the opportunity to discuss its concept with the six experts who were interviewed as part of this study. All of the interviewees responded positively and saw great value in a resource that makes regenerative living more accessible to people, regardless of their level of knowledge or experience. They highlighted the potential for the guide to advocate for regenerative living, assist with the often complex application processes of planning policies such as AL1, and even serve as a platform for experts in Cornwall to connect and collaborate more effectively.

LIMITATIONS

Despite its potential, the guide in its current form has clear limitations. This first prototype is limited in scope, featuring only a small selection of regenerative practices and experts, which prevents it from being the comprehensive resource it aspires to be. Additionally, this initial version has not yet undergone any testing by a wider audience. A thorough review process, ideally involving the guide's three main target groups, would be necessary to refine the content and ensure it meets its objectives.

Another significant limitation is the format. Initially designed as a physical handbook to reflect the tangible nature of regenerative practices, the prototype has certain drawbacks. A physical guide, or even a digital PDF version, lacks the flexibility for frequent updates without the need for constant re-publication. Given the vast number of potential practices and experts, a single document could also feel overwhelming to readers, particularly those new to the field. The linear structure of the current prototype limits how much detail can be provided for each practice, which may not suit more complex topics that require additional context. A digital website or app format would better address these issues. It could offer flexibility, easier updates, and a more user-friendly experience, allowing readers to explore topics in greater depth if desired, without overwhelming them with information upfront.

In summary, while the guide has the potential to contribute to Cornwall's regenerative movement, it requires significant expansion, testing, and a shift to a digital format to fully realise its objectives and maximise its benefits.

MOVING FORWARD

This chapter explores the development of a practical guide to regenerative living in Cornwall. Its objectives are grounded in the findings from previous chapters, which also shape the guide's structure and approach. In addition to offering an accessible introduction to key aspects of regenerative lifestyles, the core of the guide presents a range of regenerative practices, organised into categories and linked to specific regenerative features. These categories and features are strongly influenced by planning policy AL1 and its official guidance. However, the guide is not intended as a manual for AL1 applications. Instead, it provides a broad overview of land-based practices and solutions that align with regenerative principles and fit within the Cornish context.

The guide aims to serve three main target groups: those with no prior knowledge, those with some prior knowledge but the desire for a deeper understanding, and lastly planning authorities and decision-makers. A key focus of the guide is to connect these three target groups to local experts and communities who can facilitate further learning and engagement through social and educational activities. This makes the guide highly specific to Cornwall, reflecting the region's unique context and local expertise.

While the developed prototype has the potential to address socio-economic and environmental challenges by making self-sufficient and regenerative lifestyles more accessible, it currently has significant limitations. These include its narrow scope, lack of flexibility, and absence of thorough review. To overcome these challenges, the guide would benefit from expansion, format adjustments, and an iterative design process incorporating regular feedback and adaptation.

While the developed prototype seeks to offer a broad perspective and approach to regenerative lifestyles, the following chapter investigates how such a guide could be utilised in the specific context of an AL1 application.

MY ARCHITECTURAL APPROACH

This chapter's approach draws distinctive parallels with the architectural design process. The insights from earlier chapters act as a design brief, outlining the steps needed to strengthen Cornwall's socio-economic resilience and successfully implement policy AL1. The developed guide responds to these requirements but, just as any design brief (Yee, 2007), it represents just one of many possible approaches to addressing the identified challenges.

Architectural design typically involves iterative processes, with ongoing review and refinement. Multiple perspectives and end-user engagement usually further improve the outcome (Yee, 2007), and similar steps would benefit the developed guide. Despite its limitations, the guide offers a starting point for further development and exploration, similar to a first architectural design concept.

Additionally, this chapter highlights how the value of architectural skills can extend beyond traditional practice. This includes organising complex knowledge, generating practical solutions, and effectively visualising and communicating ideas.

IMPLEMENTING

The Guide for an RLID Design Concept

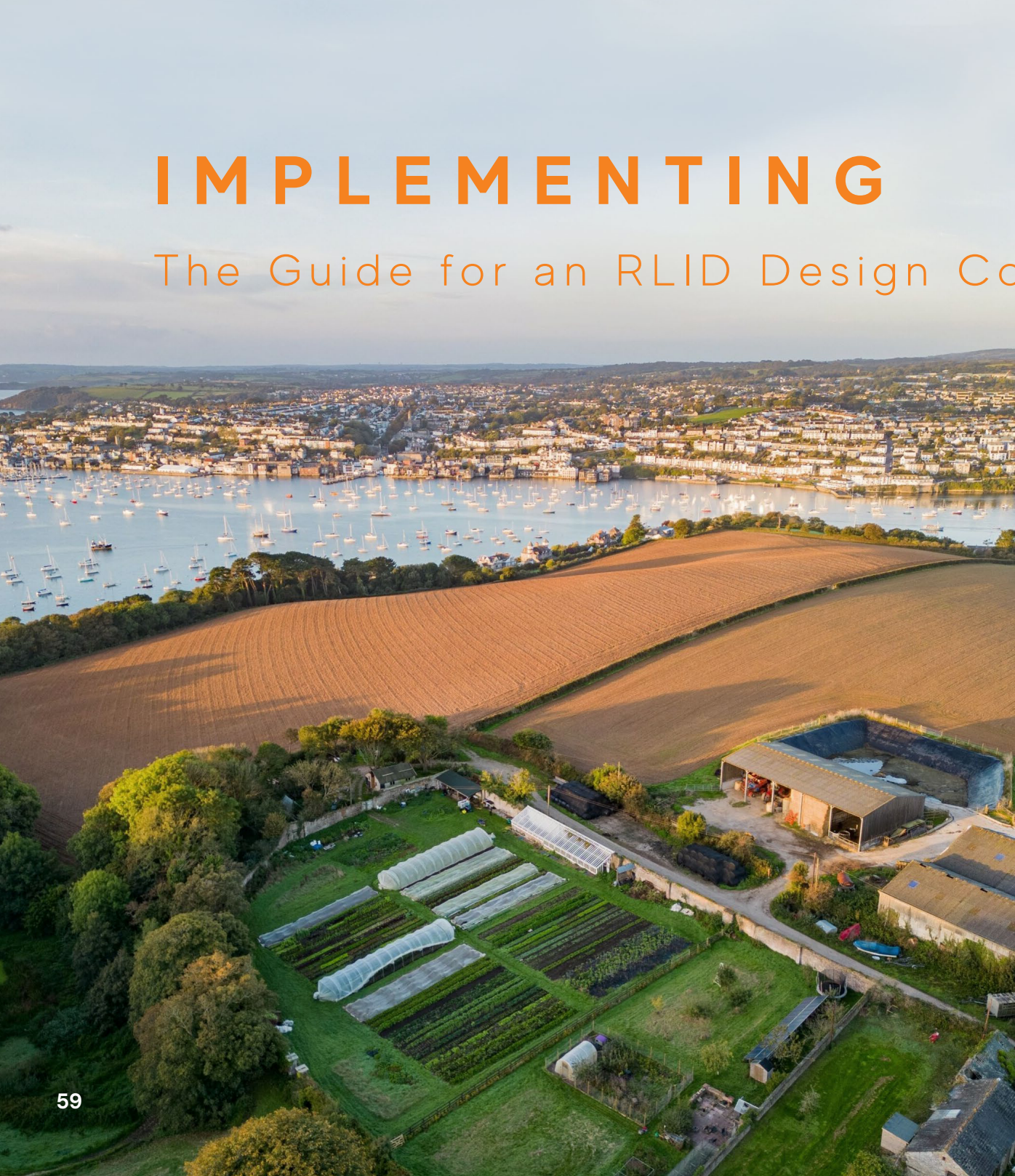


Fig. 25: Soul Farm, an agroecological market farm near Falmouth, Cornwall. (Soul Farm, 2023)

CHAPTER INTRODUCTION

"Many people would consider building a house the challenge of a lifetime: OPDs take this on in addition to setting up a land-based business, [...] reducing their ecological impact, and engaging with the local community."

// from: Review of One Planet Development in Wales, 2010-2021 (One Planet Council, 2022)

The previously developed guide promotes regenerative lifestyle choices on a broad scale, from small interventions to larger ambitions. A key objective, however, is also to support individuals and groups pursuing an AL1 planning application, streamlining the process for applicants and aiding in the successful implementation of the policy. As noted in the quote on the left, planning and designing an RLID, whether under the Welsh OPD or the Cornish AL1, is a complex endeavour. This chapter is a brief exploration of how this process can be supported and simplified using the developed guide.

A local agricultural site is selected for this purpose, based on key criteria such as land suitability and affordability. Using this site, a concept for a functional RLID is developed, forming the basis of a potential AL1 application. This concept builds on the approach and insights from the prototype guide, proposing a set of regenerative practices and solutions tailored to the site's specific context. Given the limited scope of this case study, potential occupant-specific details, such as household size and individual needs, are not discussed. The RLID concept is then visualised using traditional spatial planning and architectural design techniques.

Subsequently, this chapter investigates how exactly the guide can be utilised throughout the design and application process, serving as a source of inspiration, education, and connection to Cornwall's unique context and local expertise. The final section offers a brief reflection on the process and outcomes of this chapter, linking it to the broader framework of this research.

SITE SELECTION

The site used for this chapter's design exploration is a 3-acre block of land near the town of St Austell. This land was chosen from a selection of agricultural properties in Cornwall available for sale as of early September 2024. The selection process involved comparing listings from various estate agencies against a set of criteria, focusing primarily on land suitability and affordability.

The selected plot is well-suited for small-scale mixed-use development, comprising 0.7 acres of scrub and woodland, alongside 2.3 acres of old pasture land. Pasture land is preferable due to its lighter usage compared to arable land, which often bears traces of intensive, soil-depleting practices (Römkens et al., 1999). These traces may pose challenges to new low-impact land management techniques, especially during AL1's short five-year setup phase. Additionally, arable land is typically more suitable for other regenerative approaches such as reforestation (Flack et al., 2022). Focusing on pasture land therefore allows RLID to better integrate with the wider need for more regenerative land-management models (de Boon et al., 2022).

The land's suitability is further supported by its size, location, and features. Research indicates that nearly 40% of successful OPD developments are on plots between 2 and 4 acres (One Planet Council, 2022). At 3 acres, the land falls within this range. While the ideal plot size in a real scenario would vary depending on household needs, this suggests it is theoretically sufficient for RLID establishment. Additionally, its proximity to a larger town aligns with AL1's focus on minimising travel patterns to reduce carbon emissions. The estate agency's site plan (Fig. 26) also notes the presence of a natural water source, labeled "issues," at the southern end of the property - essential for self-sufficiency in water supply (Shorten & Knight, 2023).

In terms of affordability, the key factors were price per acre and total cost. Priced at £25.000, the selected plot is only slightly above the 2023 average price per acre for Cornish pasture land (James, 2024). It also offers lower upfront costs compared to larger, more expensive parcels on the market.

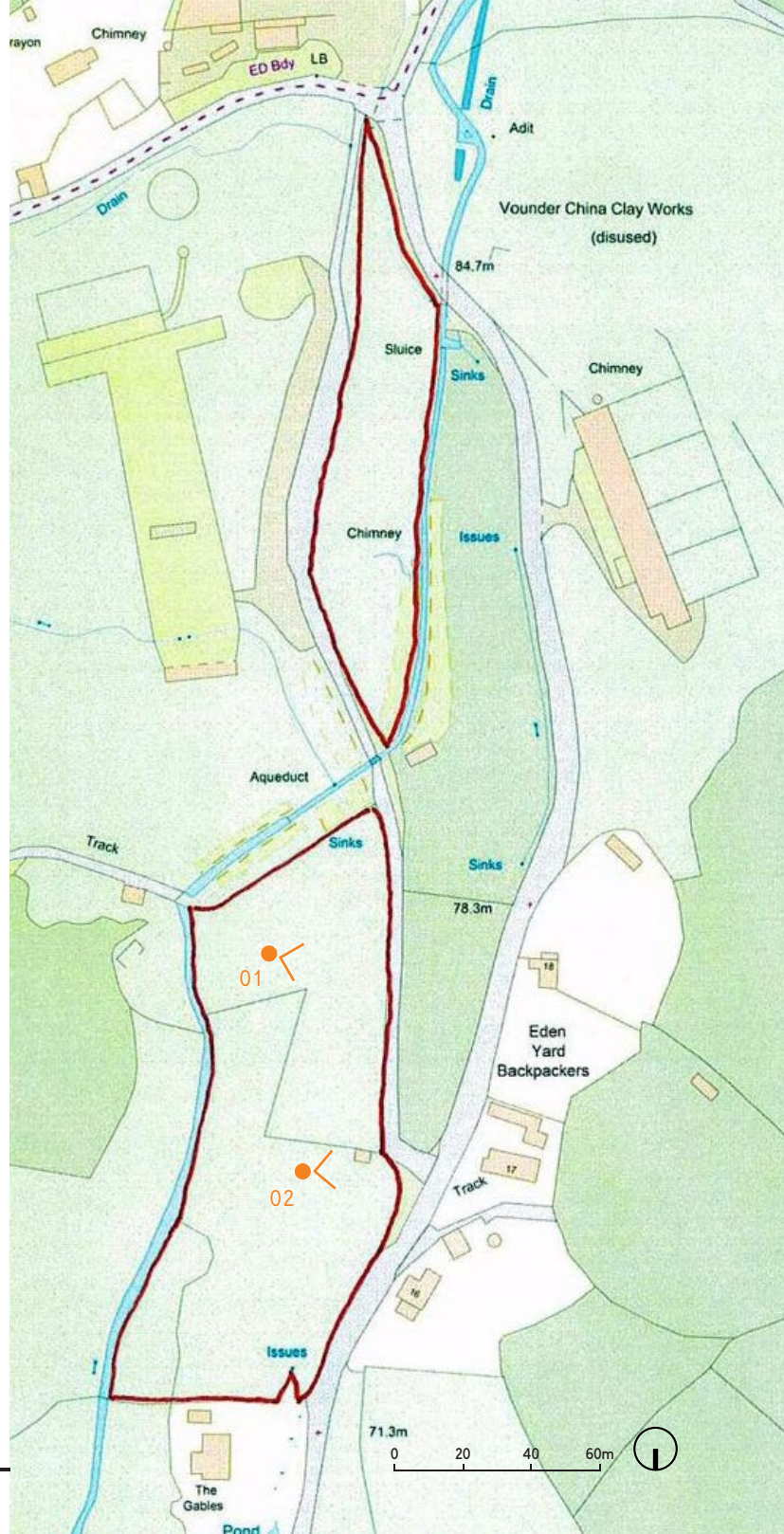


Fig. 26: Site plan & viewpoints (Jefferys.uk, 2024)

RLID CONCEPT

The site comprises a narrow northern strip of scrubland and a larger southern area of pasture and woodland. The northern part is fully dedicated to production, while the southern area combines production, recreation, and the occupant's main residence. The following paragraphs outline the RLID concept based on the seven regenerative categories.

FOOD & GROWING

The southern part includes a 1,000m2 intensive organic horticultural area focused on perennials and diverse plant guilds. Successful OPD sites show that this size is sufficient to supply a family of four with fresh produce year-round while also generating significant income from surplus (One Planet Council, 2022). A greenhouse supports early seedlings and warm-season plants. The upper half of the southern plot, an existing woodland, is being transformed into a forest garden with soft fruits and nut trees in sunny, sheltered spots, and productive shrubs and herbs along the plot's edges. A permaculture approach ensures the ideal balance between productivity and environmental benefits.

CROP CULTIVATION

On 0.5 acres of the northern section, around 2,000 short-rotation coppice willows are grown, supplying firewood for four to five RLID homes annually (The Willow Bank, 2022). Surplus is sold, and additional income comes from willow baskets and charcoal pens. Once AL1 requirements are met, some willows can be replaced with a more diverse, resilient mix of coppicing trees. Woodland management and processing also offer opportunities for courses and community involvement.

ANIMAL REARING

The northern plot serves as an apiary, where bees benefit from early flowers and wind protection offered by the willows. The hives are placed away from public paths and residential areas to prevent potential conflicts. The southern plot includes a fixed enclosure for free-range geese and a mobile run for chickens, allowing them to scarify the soil and add nutrients as needed. Both geese and chickens help with pest control, while chickens also provide eggs and occasional meat.

Fig. 27: View of pasture land and shed (Jefferys.uk, 2024a)

WILDLIFE & BIODIVERSITY

Around 150 meters of hedge are built along the western border of the southern plot for wind protection and biodiversity enhancement, with another 80 meters serving as a visual barrier to the main street. Rocks from local granite quarries are used, and hedge plants are chosen to support both pollinator activity and foraging. A wildflower meadow complements the forest garden to further boost biodiversity, while a catchment pond along the southern border provides habitat for reptiles and insects. Bird and bat nesting boxes are installed on existing and new ancillary buildings where possible.

ENERGY & WATER

Electricity needs are fully met by photovoltaic panels on the roofs of various built structures. A solar water heating system provides up to 90% of hot water in summer and 25% in winter (Energy Saving Trust, 2024). Large water tanks capture rainwater from the roofs which is purified and re-used for sinks and the washing machine. A catchment pond at the lowest point of the land collects additional rainwater for garden use, while a well at the southern border provides fresh water. In times of scarcity, water from the bordering river can be used throughout the site (Shorten & Knight, 2023).

SITE CONCEPT DESIGN

Food & Growing

01 Horticultural Area, 02 Green-house, 03 Forest Garden

Crop Cultivation

04 Short-Rotation Coppice Willows

Animal Rearing

05 Apiary, 06 Mobile Chicken Run, 07 Geese Enclosure

Wildlife & Biodiversity

08 Cornish Hedges, 09 Wildflower Meadow, 10 Pond

Energy & Water

11 PV-panels & Solar Water Heating & Rainwater tanks, 12 Well

Waste System

13 Biodigester, 14 Red Bed Filtration, 15 Composting Toilet, 16 Compost & Worm Farm

Construction & Design

11 Passive Design, Recycled Timber, Hempcrete, Rammed Earth, Efficient Wood Burner

Existing Woodland

Plot Border

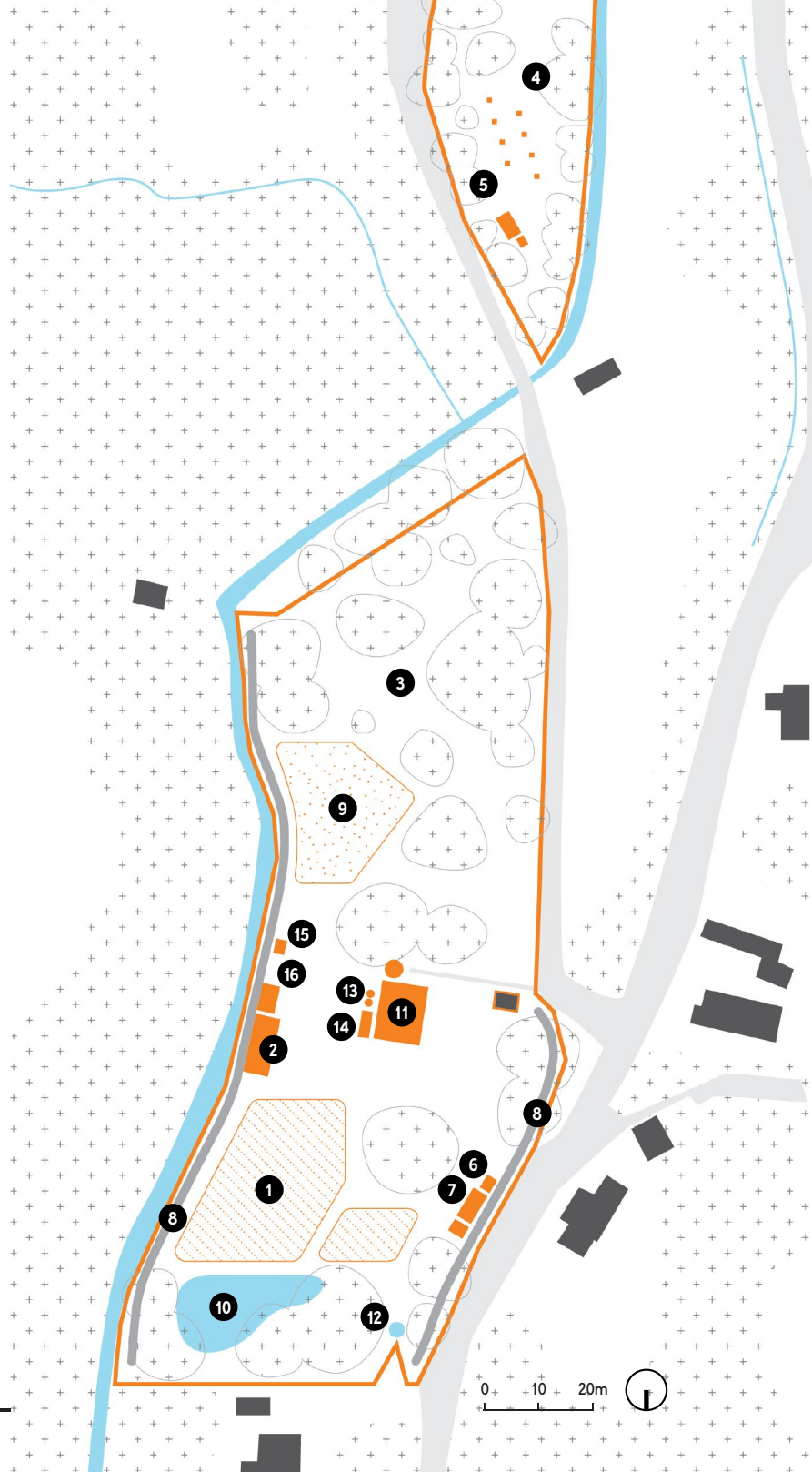


Fig. 28: Site concept design

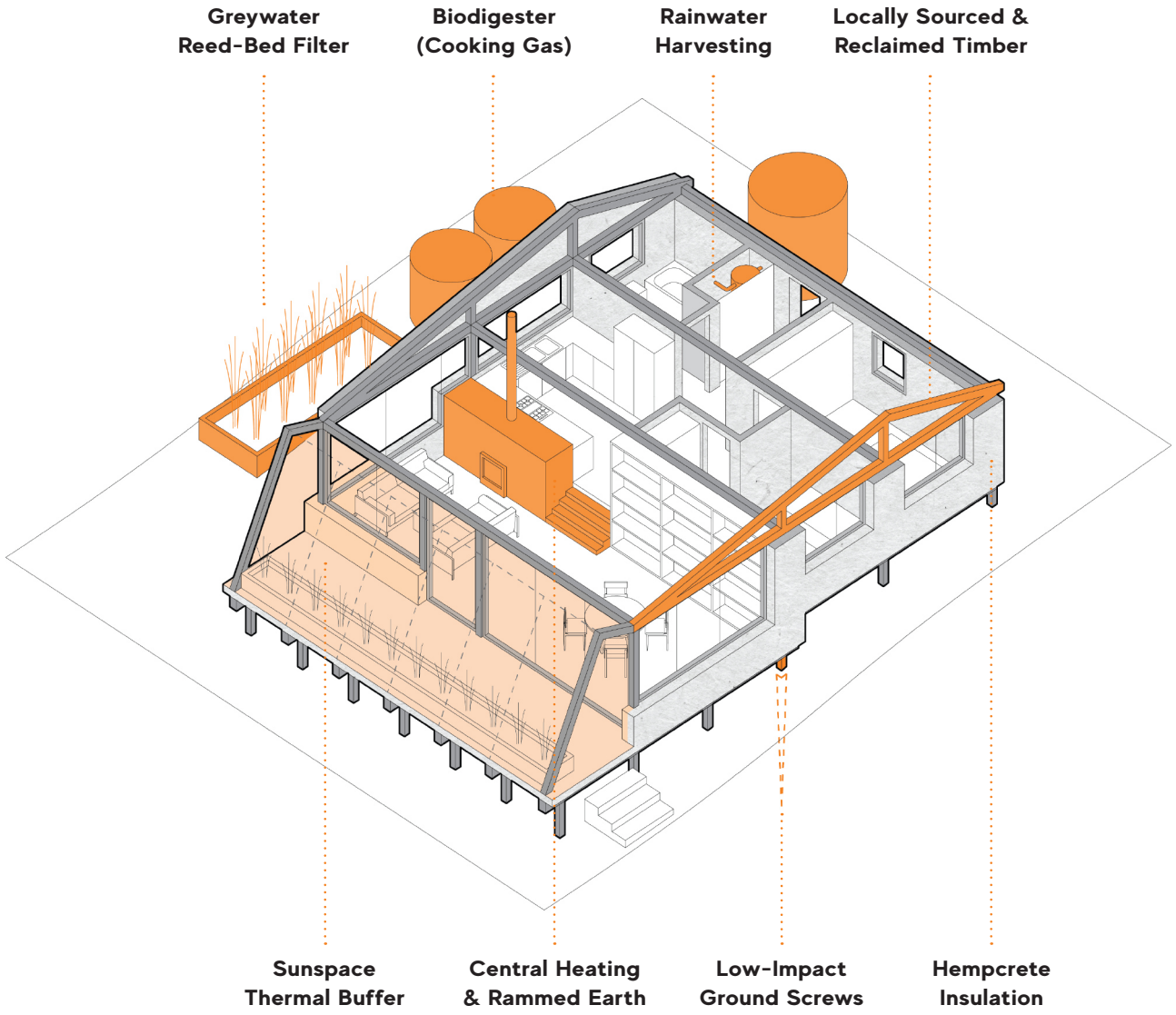


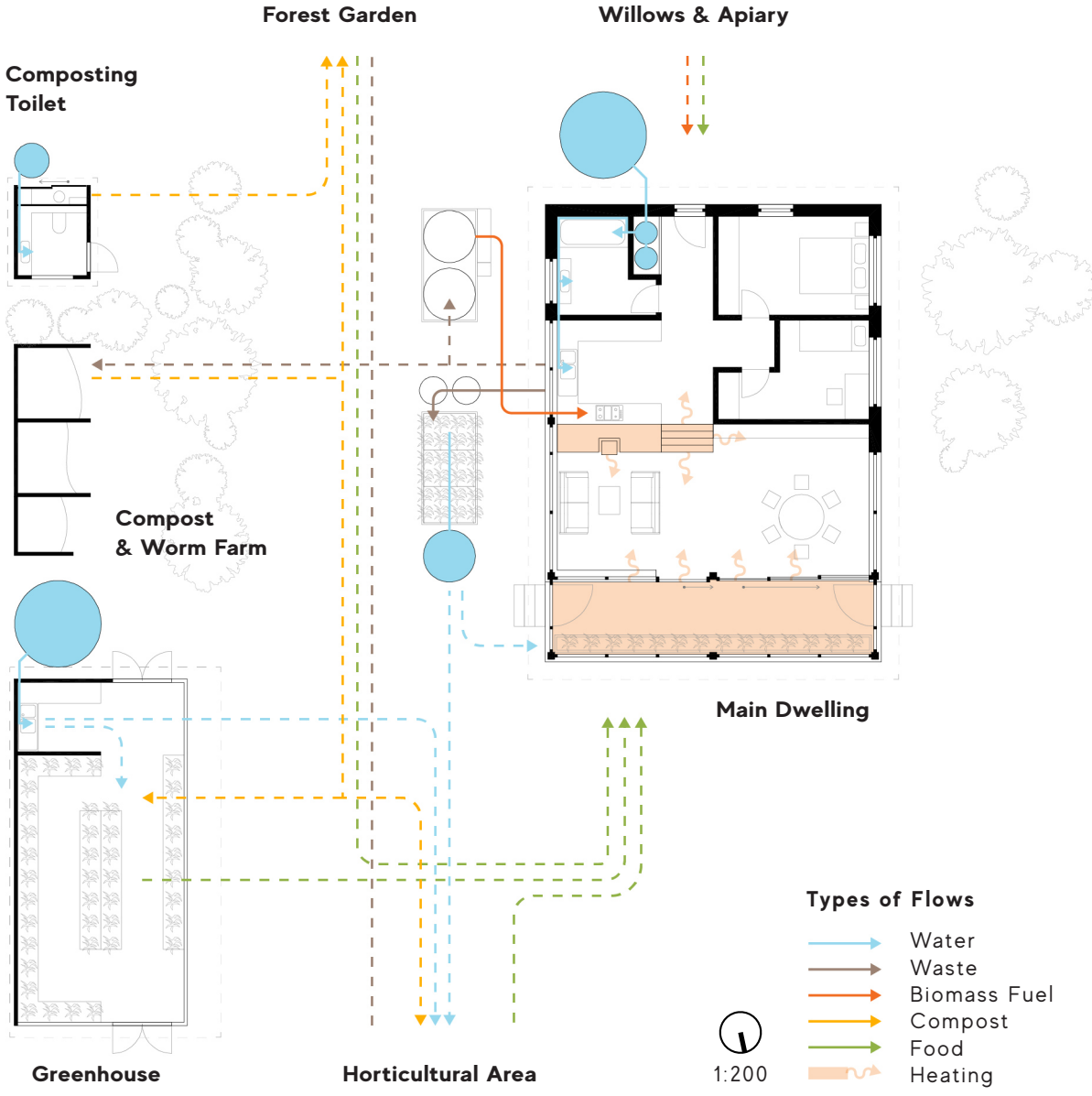
Fig. 29: Dwelling concept design

WASTE SYSTEMS

A self-built biodigester generates natural cooking gas from domestic food and garden waste, a proven solution for several OPD occupants, some of whom now offer DIY biodigester courses and other educational content (One Planet Council, 2022). A reed-bed system filters greywater from sinks, showers, and the washing machine for reuse in the garden. A composting toilet handles human waste, producing fertilizer for trees, while a compost and worm farm converts garden waste into nutrient-rich humus used for the horticultural area.

CONSTRUCTION & DESIGN

The occupant's dwelling is designed for minimal impact, using ground screws for the foundation, locally sourced and reclaimed timber for the structure, and UK-sourced hempcrete for humidity-regulating insulation. It is south-facing to maximise solar gain, with a sunspace serving as a thermal buffer. Central heating is provided by an efficient wood burner paired with a thick rammed earth element, which absorbs and evenly distributes heat. The rammed earth can be sourced locally, as the St. Austell area is rich in loamy soils with high clay and sand content. Window placement allows for natural cross ventilation.



RESOURCE & ENERGY FLOWS

The diagram on the left shows a detailed plan of the main dwelling and its amenity structures. Colour-coded arrows represent resource and energy flows, shown as direct (solid lines) and symbolic connections (dashed lines).

The main dwelling receives rainwater from a collection barrel, which is filtered and used for sinks, showers, and the washing machine. Greywater flows to the reedbed filtration system, providing purified water for the garden. Food waste feeds a biodigester that produces natural cooking gas. In addition to firewood from the willows, the occupants harvest honey from the apiary and food from the forest garden, greenhouse, and horticultural area.

The compost area receives uncooked food scraps from the kitchen and green waste from the garden. This waste is transformed into valuable compost that supports all food production areas. Human waste collected in the composting toilet is exclusively used as fertiliser for trees in the forest garden.

The resulting relational diagram highlights the strong focus on revitalising waste streams to minimise overall waste production and maximise the site's productivity and self-sufficiency.

Fig. 30: Resource and Energy Flows Diagram

USING THE PRACTICAL GUIDE

Once a site has been selected, the practical guide can assist applicants with the planning and design of their RLIDs. It offers a comprehensive overview of regenerative practices, organised into seven categories, which act as building blocks for a land-based and low-impact lifestyle.

Applicants can choose practices suited to their land's characteristics and household needs, with the guide explaining how each practice works, what it requires, and its potential benefits and challenges. All relevant information is presented in an accessible format to aid in the decision-making process. For example, in this chapter's case study, the small plot size makes cultivating crops like hemp or flax impractical, as these require larger areas and specialised machinery. However, the free-draining soil and proximity to a river make the site ideal for willows and short rotation coppicing.

For those interested in specific practices, the guide provides links to educational resources for further learning opportunities. For example, in areas like organic horticulture, beekeeping, or reed-bed systems for greywater filtration, the guide directs applicants to online resources that explore these topics in greater depth. These curated sources also ensure that the information is accurate and well-structured.

Once particular practices are selected, the guide offers an overview of local experts and provides contact details to connect with them. This enables applicants to tap into Cornwall-specific knowledge or get involved in community activities, ranging from volunteering to social events. For example, in this chapter's case study, there is a wealth of local expertise linked to the selected regenerative practices. For horticulture and garden design, there are three St Austell based organisations that run workshops and voluntary programmes (The Perennial Harvest, n.d.; Par Bay Community Garden, n.d.; Edible St Austell, n.d.). For forest gardening, the local Bolghen Tree Nursary specialises in native tree planting (Bolghen Tree Nursary, n.d.) and Falmouth-based Simon Miles organises affordable tours and courses (The Forest Garden, n.d.). Cornish Hedging offers another opportunity to connect with local specialists through Penzance-based CREST, which runs bursary schemes for hedging courses and professional training (Crest Cornwall, 2023). For beekeeping, the Cornish Beekeeper Association has local community groups, including one in Bodmin (CBKA, n.d.) and St Austell's Cob Specialist can assist in earth and clay construction using locally sourced materials (The Cob Specialist, n.d.).

The developed practical guide can support the initial planning and design phases of an RLID while also offering long-term resources, helping applicants build connections with local communities to establish and maintain their regenerative lifestyle. However, despite these potential benefits, this chapter's case study also revealed limitations when applied in an AL1-specific context. As highlighted earlier, the guide deliberately avoids detailed application guidelines to remain relevant to a broader audience. As a result, important information, such as how to select a site or explore tenancy models, is missing. This could be addressed in a separate AL1-specific guide that builds on the format and approach of the current version.

FILLING THE SITE WITH EXPERTISE & LIFE

Figure 31 shows the site plan for the chosen case study land, along with a selection of local experts relevant to the different regenerative practices. Most of these experts are based in and around St. Austell, with the farthest expert located only 60km away. Although this selection is not exhaustive, Figure 31 indicates the wealth of local knowledge and expertise that could support the development of an RLID on this plot.

The resulting expert site map also illustrates how locating and engaging relevant experts in the area can fill the site with life and a sense of community. Each expert represents not only a source of insight but also a community of like-minded individuals, offering pathways for mutual learning and social connection. Involving these communities in the design and development of the site thus provides opportunities to enhance the RLID concept while fostering engagement and social networks, potentially forming lasting relationships.

Food & Growing

1 Perennial Harvest, 2 Par Bay Community Garden, 3 Edible St Austell, 4 Bolghen Tree Nursery, 5 The Forest Garden Falmouth

Crop Cultivation

6 Pentiddy Woods, 7 Carsawsan Woodland

Animal Rearing

8 Cornish Beekeeper Association, 9 Penbugle Organic Farm

Wildlife & Biodiversity

10 CREST Cornwall, 11 Permaculture Association

Energy & Water

12 Trevone Quarry, 13 Naked Solar

Waste System

14 Essential Sewage Systems

Construction & Design

15 The Cob Specialist, 16 Social Designs

Existing Woodland

Plot Border

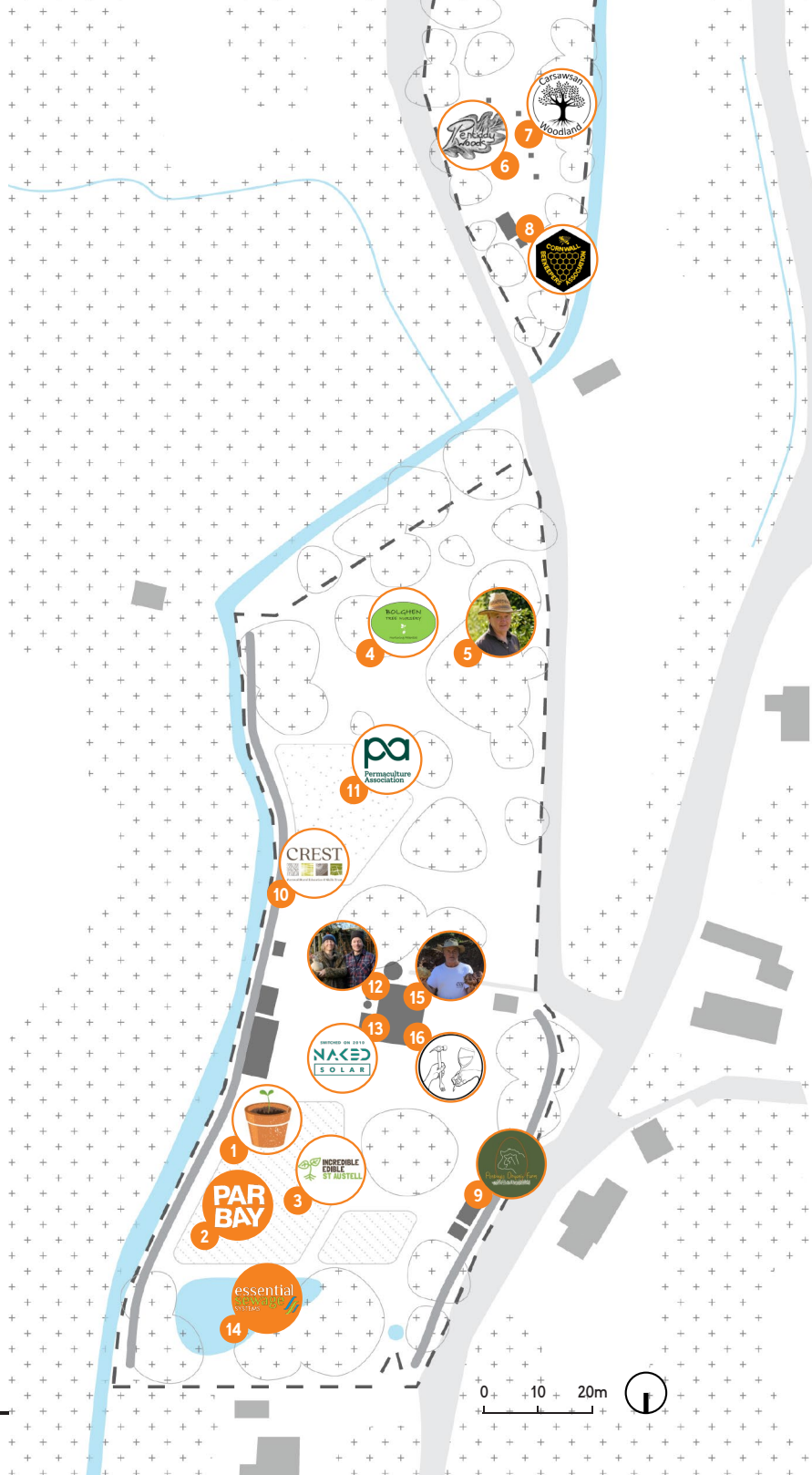


Fig. 31: Relevant local experts for the regenerative practices

MOVING FORWARD

This chapter offers a design exploration, using the previously developed guide to design a simple RLID concept. For this exercise, a piece of agricultural land in St Agnes has been selected, with suitable regenerative practices identified based on AL1's requirements and the site's specific features. The exploration highlights how the guide can be effectively utilised, particularly once the site is chosen and applicants must select a number of regenerative practices. These practices are a crucial component of the management plan, which forms the core of an AL1 application.

It is important to acknowledge that a real AL1 application involves a far more extensive process than the brief design exploration presented in this chapter. A key limitation here is the exclusion of applicant-specific details, such as household size, occupation, and individual needs or preferences. These factors contribute to the uniqueness of each AL1 application, making it impossible to create a universal design template. Nonetheless, this chapter shows how the planning and design of an RLID under policy AL1 can be effectively approached and supported using the developed guide. The resulting design concept can be seen as a site-specific yet broad model, adaptable to personal needs and requirements.

While building on all previous findings, this chapter's design exploration marks the end of this study. The following and final section reflects on this research in its entirety, linking each part to the main objectives.

MY ARCHITECTURAL APPROACH

This chapter closely aligns with the traditional role and workflow of an architect. It focuses on a physical site and addresses complex design challenges using context-specific knowledge, guided by a previously established design brief. While the brief for this case study may not include specific occupant details, it is already quite detailed, based on the requirements of planning policy AL1. The outcome is a visual representation of what is achievable within the brief's limitations, serving as a tool to communicate and illustrate both the viability and appeal of RLIDs and their associated regenerative lifestyles.

The biggest contrast to a conventional architectural design project is that, despite the absence of a clear occupant profile in this case study, the focus remains entirely on the potential end user. Since a functioning RLID represents a complete lifestyle, this design work cannot be limited to just an architectural structure or the use of a specific space. Instead, a holistic approach is required, integrating the occupants' lives with practical self-sufficiency, a philosophy of localism, and the inherent ambition of becoming part of a thriving natural environment.

This holistic approach also emphasises the role of occupants in the design process. Rather than delivering a finished architectural product, the design encourages occupants to actively participate in its realisation. This involves understanding the components of the design and engaging with local experts and communities. As a result, this method benefits RLID concepts and their long-term perspectives, while also practicing a more inclusive approach to architecture and planning by directly involving clients in the creation process.

REFLECTING

On this Study's Process & Outcomes

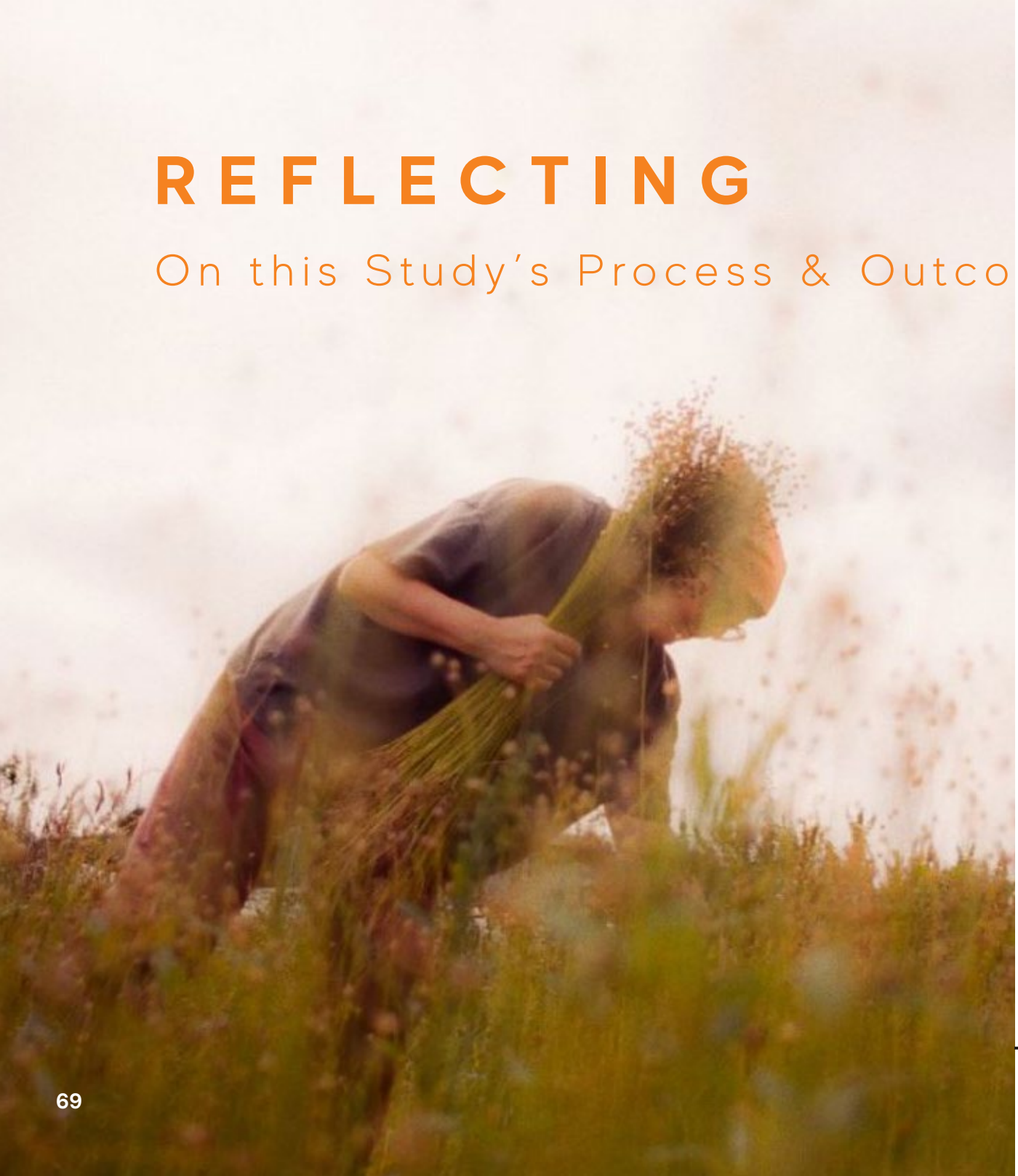


Fig. 32: Vicky Putler from Flax Project C.I.C. harvesting her crops (Berrow, 2023)

CHAPTER INTRODUCTION

This chapter marks the final part of the study, reflecting on its main findings, the research process, and its outcomes. It begins by answering the study's primary research questions, summarising the knowledge and insights gathered throughout the previous chapters, and linking their individual reflections to one another.

The chapter then discusses the study's significance, alongside its potential and limitations, guided by its initial aims and objectives. This is followed by a reflection on my role as an architect and researcher, building on the architecture-specific reflections at the end of each chapter and connecting to the first section, "Positioning," thus closing the thematic frame.

Next, the chapter presents a written and graphical manifesto, offering a personal take on the study's core issues and how they can inspire and inform comprehensive change. It concludes with some final words that highlight fundamental and unresolved questions at the heart of this study, while simultaneously indicating the need for further research. Finally, a bibliography is provided, followed by the appendix.

DISCUSSION

ANSWERING THIS STUDY'S RESEARCH QUESTIONS

How can Cornwall progress towards greater socio-ecological resilience?

Based on the literature study and expert interviews, it is evident that Cornwall's socio-economic and ecological systems face significant challenges, including localised deprivation, a scarce and seasonal job market, a shortage of affordable housing, harmful land management practices, and growing impacts of climate change. To enhance its socio-ecological resilience, the region relies on a set of enabling factors that ensure the long-term health and wellbeing of both its people and the natural environment. These factors include a cultural and behavioural shift towards regenerative lifestyles; strong and supportive communities; regenerative and adaptive food systems; affordable and ecological housing; sustainable management of energy, water, and waste; active environmental stewardship; and economic diversity (Fig. 31).

What are the potential and limitations of Cornwall's planning policy AL1?

AL1 allows the transformation of agricultural land into RLIDs. Due to its recent introduction, the policy's impact has yet to be determined. However, lessons from the Welsh OPD, and interviews with six Cornish experts offer insights into AL1's potential and limitations.

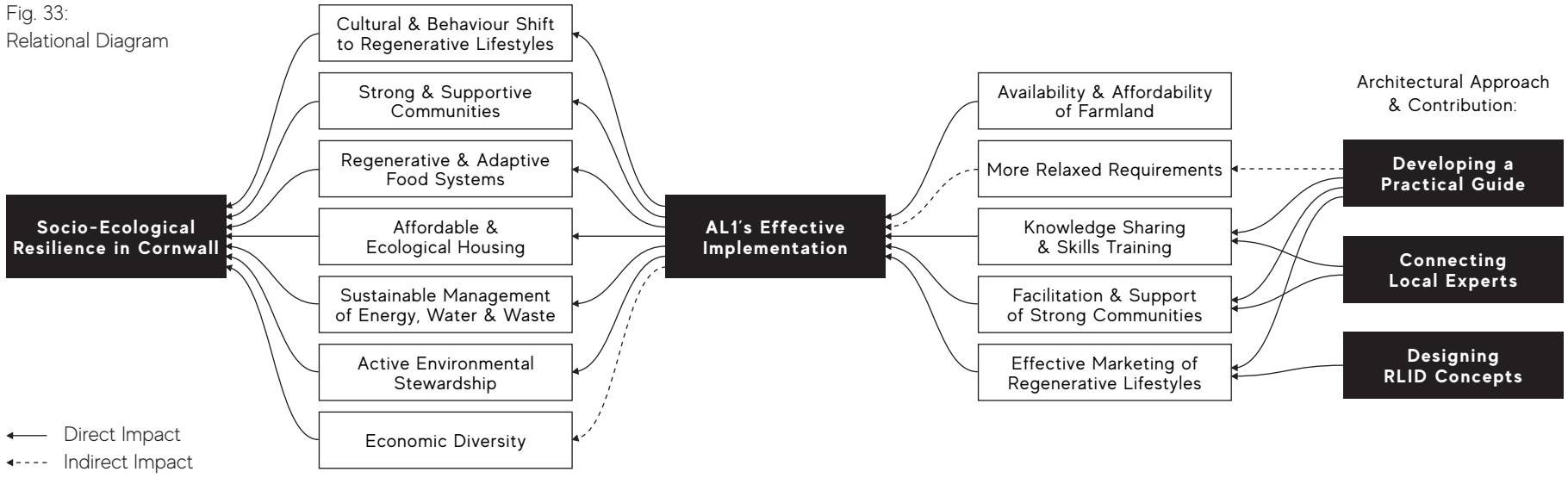
The policy's potential lies in its ability to enable regenerative, land-based lifestyles, provided applicants have access to the required resources. The strong focus on the occupant's self-sufficiency combines autonomy with affordability, while AL1's social and environmental objectives could result in wider ecological and community benefits. Furthermore, the policy ackowledges alternative lifestyles, incentivises behaviour change and has the potential to stimulate new local and highly regenerative economies.

However, AL1 faces several limitations. Its strict requirements and complex application process may reduce accessibility, making it a niche option for already climate-conscious, highly educated, and financially secure households. Additionally, the policy's focus on land-based production and income primarily supports farming lifestyles, potentially overlooking other regenerative models. A perceived lack of expertise among planning authorities, combined with insufficient support for applicants in accessing land and acquiring the necessary knowledge, could ultimately result in low application numbers and limited overall policy impact.

How can Cornwall's planning policy AL1 be effectively implemented to support the region's socio-ecological resilience?

Due to AL1's holistic approach to regenerative lifestyles, it closely aligns with the concept of socio-ecological resilience. As illustrated in Figure 31, the policy has the potential to impact nearly all identified enabling factors, except for economic diversity, given its strong focus on land-based production. However, realising this potential relies on effective policy implementation, which in turn requires addressing AL1's main barriers and limitations.

Fig. 33:
Relational Diagram



Based on this study's findings, five key factors contribute to successful policy implementation (Fig. 31). First, the availability and affordability of farmland is essential for enabling people to take advantage of AL1. Some interviewees highlighted that this could be facilitated through close collaboration with landowners and the introduction of new croft-like tenancy models. Another crucial factor is access to services that support applicants in acquiring the knowledge and skills needed for developing successful RLIDs. This also ties into the facilitation and support of strong local communities, frequently described by both literature and interviewees as Cornwall's social backbone. A regenerative lifestyle based on AL1 depends heavily on community engagement and reciprocity, meaning that the policy's success rate could be enhanced if strong communities are already established. Additionally, more effective marketing of RLIDs is essential to showcase their feasibility and appeal as a viable way of living. Finally, while more relaxed policy requirements could improve AL1's implementation, these changes to the policy are unlikely and may not be strictly necessary, as successful OPDs suggest that current targets are generally achievable.

How can an architectural approach support the effective implementation of policy AL1?

My architectural contribution to this research consists of three key elements that support the implementation of AL1 in different ways. The developed practical guide has the potential to strengthen local communities, improve RLID marketing, and facilitate education and skills training, which could indirectly influence future regenerative policies and their requirements. Furthermore, designing RLID concepts can enhance their effective promotion, while efforts to connect local experts and foster collaboration contribute to knowledge exchange and community building. These impacts, along with the broader role of the architectural approach in this research, will be explored in greater detail later in this chapter.

SIGNIFICANCE & LIMITATIONS

This research offers new insights into several key issues. While Cornwall's socio-economic and environmental challenges have been examined in prior studies, they are often treated separately. In contrast, this study approaches these challenges as interconnected socio-ecological systems. By doing so, it reinforces the existing discourse on the urgent need for greater socio-economic and environmental sustainability while advocating for a more integrated approach to building long-term resilience.

Moreover, with the recent introduction of planning policy AL1, there is a limited body of research on its impact on the region's socio-ecological resilience. Through semi-structured interviews with local experts, this study gathers valuable new perspectives, indicating that AL1's potential and limitations broadly align with earlier research on the success of its predecessor, the Welsh OPD. These findings suggest that for AL1 to achieve its intended positive impact, a strong emphasis on effective implementation is essential.

Beyond these insights, a distinctive aspect of this research is its design exploration, which applies the study's findings to generate practical solutions to the identified problems. Although grounded in an architectural approach, this design component aligns with various local initiatives that seek to foster socio-ecological resilience in Cornwall. The structured research methodology underlying this problem-solving process also suggests innovative ways of conducting impactful research, advocating for a more collaborative and transdisciplinary approach.

Despite its innovative framework, this study faces certain limitations. As highlighted throughout the chapters, all core components – literature review, expert interviews, as well as the practical guide and RLID concept design – are constrained by scope and require more in-depth exploration to fully address their underlying complexity. The semi-structured expert interviews, in particular, would benefit from a larger amount of participants and more thorough analysis to fully tap into the value of local knowledge as a resource for context-specific data and potential solutions.

Additionally, the practical guide to regenerative living would benefit from an iterative design process, with alternating phases of testing and refinement. These and other limitations suggest areas for further investigation and future research to achieve real-world impact aligned with this study's objectives.

Nevertheless, this research offers valuable contributions by providing new knowledge and insights, focusing on urgent challenges, and proposing holistic approaches to transdisciplinary research and practical problem-solving. Although its findings are specific to Cornwall, the research approach is adaptable to other contexts beyond geographical confines. This is especially relevant as socio-ecological resilience and regenerative lifestyles become increasingly critical on a global scale. This is demonstrated by the fact that the environmental and socio-economic challenges discussed here are not unique to Cornwall, but instead are becoming more evident throughout the world. Studies such as this one can help address their complexity and explore ways forward.

MY ROLE AS AN ARCHITECT

The objectives and philosophy of this research align with the concept of an "architecture of care," as coined by Fitz et al. and introduced in the first chapter of this dissertation. When discussing socio-ecological resilience and regeneration, it is hard to miss the parallels to their ideas of "repair, preservation, and maintaining all forms of life" (Fitz et al., 2019). However, it is not just the thematic focus of this study that reflects care, it is also embedded in the research approach itself. While rooted in the traditional qualities of the architectural profession, this approach pushes those qualities further, seeking new ways to create meaningful impact.

As outlined in the first chapter, the structure of this research was inspired by familiar architectural processes. However, my take on these processes was shaped by the overarching issue, rather than by the limitations of conventional architectural practice. In this study, architecture is not simply a response to a predetermined and uncontested client brief. It is not reduced to being an obedient tool or a passive product of someone else's intentions. In this study, architecture serves as a tool for defining the client brief in the first place - and even the client itself - before generating ideas and solutions that directly address the core issues. In other words, it is an architecture that steps out of its comfort zone to take responsibility for its outcomes. As Fitz et al. describe, it is a practice that "fulfils the basic tasks of sharing responsibilities for caring for our world" (Fitz et al., 2019).

With this sense of responsibility, 'arriving' is no longer just a sporadic site visit but an immersion into a place; 'understanding' and 'analysing' are not reduced to simple volume studies, but become a deep exploration of the local context and its complex dynamics. 'Networking' is not about securing deals with contractors but engaging in meaningful conversations with experts from diverse disciplines and backgrounds. 'Integrating' and 'implementing' are not steps towards a finished product but tools for ongoing exploration, allowing flexibility to adapt to an evolving context while always prioritising the needs of the end-users.

The true value of this architectural approach lies in the process itself. However, as illustrated in Figure 31, there are three key contributions that distinctly reflect an architectural nature. After defining the equivalent of a client brief, informed by Cornwall's quest for socio-ecological resilience and AL1's requirements, I reached out to local experts to deepen my understanding. Before I knew it, I had entered a whole network of local expertise and engagement. By connecting the different strands of this network and combining their expertise, I essentially mirrored a conventional architectural process: I developed solutions to a complex design problem through involving various experts. In a traditional project, this might have been a house or masterplan. Similarly, the development of both the practical guide and the RLID concept design drew upon core architectural tools, such as design thinking and visual communication.

Using these tools in this new context helped me realise that architectural skills and perspectives can and should extend beyond their disciplinary confines - in search of a new and meaningful purpose, in search of a true architecture of care.

ARCHITECTS & PLANNERS OF THE 21st CENTURY

Architects and Planners,

It's time to lay down your chains:
your superficial style codes,
your shiny CAD tools,
your stuck-up client briefs.
AI will take care of these things anyway.

For too long, you've locked yourselves
into an isolated discipline,
just as everyone else has.
Our level of specialisation is remarkable,
but it doesn't seem to be getting us very far,
does it?

Looks like there won't be much use
for most of our clever professions
in a world that can no longer
be our source of life support.

So, we need to start becoming
a source of life support for our world.

Architects and Planners,

Some of you are coming to your senses.
Slowly.
Materials that can regrow.
Gadgets that charm our energy bills.
Regenerative policies
that promise us a better life.

But what if that regrowth
is outpaced by our appetite?
What if those gadgets
are made for the wealthy 1%?
What if those policies
are out of reach for most of us?

Then it's time to realise you're not alone in this.

Architects and Planners,

You are problem solvers and visionaries.
You are system thinkers and detail geeks.
You are conductors and connectors,
merging professions to create
works of beauty and purpose.
But you cannot get us out of this crisis
on your own.

Architects and Planners,

What if, from now on, you could be
ecologists, teachers, community builders

... and you let us be architects and planners?

What if, from now on, you could
use your talents to help create futures
we can look forward to

... and you let us be creators too?

It's time to lay down your chains
and crawl out of your isolated discipline,
just as everyone else will.

It's time to join forces
and make sense of this mess.

It's time to be part
of the change that is inevitable.

BREAKING NEWS

A PIONEERING LIFESTYLE POLICY

... INCLUDING NOVEL CONCEPTS LIKE SUBSISTENCE FARMING, BARTERING AND COMMUNITY ENGAGEMENT!!

... AND CUTTING-EDGE TECHNOLOGIES LIKE RAIN WATER TANKS, WOOD STOVES AND COMPOSTING TOILETS!

ALL YOU NEED:
... YOUR OWN PLOT OF LAND
... FRIENDS IN THE PLANNING COMMITTEE
... A POSTGRADUATE EDUCATION
... EXPERIENCE IN OFF-GRID LIVING
... BE FLUENT IN SUSTAINABILITY SLANG

GET YOURS NOW !!!

THE REVOLUTIONARY, HIGHLY INNOVATIVE, REGENERATIVE, LOW-IMPACT LIVING POLICY

FINAL WORDS

As much as this dissertation has helped me better understand Cornwall's journey towards greater socio-ecological resilience and the fascinating people and initiatives already contributing to it, it has also raised some fundamental, unresolved questions about the urgent change required:

How do we effectively communicate what a more sustainable lifestyle looks like?

As a global community with access to decades of research and experience, we have no shortage of knowledge about possible lifestyles that support environmental and community wellbeing. New development policies such as Cornwall's AL1 take this even further, offering a general blueprint and legislative foundation to adapt these insights to specific contexts. However, AL1 also reveals a common paradox: truly sustainable lifestyles are often far from being cutting-edge or particularly novel. In fact, at its core, AL1 advocates for land-based living rooted in age-old practices - growing food, collaborating with local communities, and stewarding the land to sustain future generations. Framed this way, however, such a lifestyle risks being perceived as regressive, seemingly at odds with contemporary notions of progress and quality of life.

No wonder AL1 resorts to a rebranding with terms like "regenerative" and "low-impact." My graphical manifesto (p. 76) offers an ironic take on this effort. Yet, does this language effectively create a more appealing image of a sustainable 21st-century lifestyle? Or does it risk creating even more confusion and barriers to successful implementation by cloaking a seemingly straightforward way of living in vague, academic jargon? What kind of framing and language are truly needed to inspire and communicate sustainable lifestyle changes?

How do we encourage people to transition to sustainable lifestyles at their own pace when the need for change is so urgent?

Throughout this research, I have come to see this as one of the greatest dilemmas facing regenerative policies such as Cornwall's AL1. The problem is not that the policy's general targets are overly ambitious - to live truly sustainable lifestyles, we do need significant changes, which are bound to be challenging. The real difficulty lies in making the journey towards these changes both feasible and appealing for the wider public.

For instance, AL1's relatively short five-year set-up phase likely reflects valid concerns: the need for lifestyle changes to happen quickly to have real impact and for applicants to demonstrate their commitment to sustainable living. Yet, this very requirement may actually discourage people from even considering such a transition, as it could seem too daunting. How, then, do we balance the urgency of this transition with the need to give individuals the time, resources, and support to adapt at their own comfortable pace?

How can we foster environments for effective transdisciplinary collaboration to address the mounting socio-ecological challenges?

From the outset, this project revealed that

tackling complex systemic issues such as the ones addressed here, demands an unprecedented level of transdisciplinarity.

While it is easy to advocate for such collaboration in theory - as I did in my written manifesto (p. 75) - I have also come to realise how difficult it can be to achieve in practice. Our current systems often favour isolated disciplines and top-down decision-making, hindering the kind of cooperation required to drive real change. How do we break these entrenched habits to enable genuine collaboration across disciplines, sectors, and scales? How can we collectively create solutions beyond the boundaries of our traditional approaches?

More and more questions...

To some, it might seem odd to conclude a dissertation with more questions than answers. Yet, in the case of this project, it feels entirely appropriate. Indeed, there is no better way to indicate the sheer complexity of the subject - far too vast for any single study to address comprehensively.

By answering some questions and raising others of equal importance, this dissertation aims to be a step in the right direction. Much like Cornwall's regenerative development policy AL1, it is not perfect or complete, but it represents a dedicated effort to stir up the current discourse on sustainable development, provide food for new thought, and, most importantly, catalyse meaningful action.

BIBLIOGRAPHY

Adger, W. N. (2000). Social and ecological resilience: are they related?. Progress in human geography, 24(3), 347-364.

Burley, S. J. (2007). Migration and Economy in Cornwall [PhD Dissertation, University of Plymouth]. https://core.ac.uk

Charmaz, K. (2006). Constructing grounded theory: A practical guide through qualitative analysis. sage.

Cornwall Community Foundation. (2021). Cornwall's Social Enterprise Fund - eligibility and application guidelines. Retrieved July 4, 2024, from https://www.cornwallcommunityfoundation.com/social-enterprise-fund-guidelines/

Cornwall Council. (2020). The Cornwall We Know Jan 2020 snapshot COVID updates. In Letstalk.cornwall.gov.uk. Retrieved October 23, 2023, from https://letstalk.cornwall.gov.uk/4713/widgets/14409/documents/7334

Cornwall Council. (2021). Housing in Cornwall 2021, Second Homes. In www.cornwall.gov.uk. Retrieved June 29, 2024, from https://www.cornwall.gov.uk/media/k2vaas1v/cornwall_secondhomes_2021.pdf.

Cornwall Council. (2022). Cornwall Climate Change Risk Risk Assessment: Summary Report. In Cornwall Council. Retrieved February 27, 2024, from https://www.cornwall.gov.uk/climate-report

Cornwall Council. (2023a). Climate Emergency Development Plan Document. In Cornwall Council. Retrieved September 19, 2023, from https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/climate-emergency-development-plan-document/

Cornwall Council. (2023b). £79m to be invested in improving social housing across Cornwall over next five years. Cornwall.gov.uk. Retrieved July 1, 2024, from https://www.cornwall.gov.uk/council-news/communities-and-housing/79m-to-be-invested-in-improving-social-housing-across-cornwall-over-next-five-years/

Cornwall Sustainable Building Trust. (n.d.). Sustainable building Guide: Retro fitting existing buildings. In Cornwall Council. https://letstalk.cornwall.gov.uk/12830/widgets/45124/documents/25739

Cretney, R. (2014). Resilience for whom? Emerging critical geographies of socio ecological resilience. Geography compass, 8(9), 627-640.

de Boon, A., Sandström, C., & Rose, D. C. (2022). Perceived legitimacy of agricultural transitions and implications for governance. Lessons learned from England's post-Brexit agricultural transition. Land Use Policy, 116, 106067.

Energy Saving Trust. (2024). Advice on installing solar water heating - Energy Saving Trust. Retrieved September 4, 2024, from https://energysavingtrust.org.uk/advice/solar-water-heating/

Flack, J., Lukac, M., & Todman, L. (2022). Woodland planting on UK pasture land is not economically feasible, yet is more profitable than some traditional farming practices. Central European Forestry Journal, 68(2), 61-71.

Heath, O., Jackson, V., & Goode, E. (2018). Creating Positive Spaces Using Biophilic Design. In Oliver Heath Design. Interface. Retrieved August 30, 2024, from https://www.oliverheath.com/our-services/thought-leadership/whitepapers/biophilic-design-guide/

Holling, C. S. (1973). Resilience and stability of ecological systems. Annual review of ecology and systematics, 4(1), 1-23.

James, D. (2024). Farmland in your area 2024: South-west England. Farmers Weekly. Retrieved September 3, 2024, from https://www.fwi.co.uk/business/markets-and-trends/land-markets/farmland-in-your-area-south-west-england

Kluck, J., Kleerekoper, L., Klok, L., Solcerova, A., Loeve, R., Erwin, S., Liu, C., Welter, N., Lopes, M., & Rajaei, S. (2020). De hittebestendige stad: Coolkit: toolkit voor ontwerpers van de buitenruimte. Hogeschool van Amsterdam.

Local Government Association. (2023). Responding to cost of living challenges: Cornwall Council. https://www.local.gov.uk/case-studies/responding-cost-living-challenges-cornwall-council

Longley, J. (2024). Household Energy Efficiency Index. Utility Bidder. Retrieved July 16, 2024, from https://www.utilitybidder.co.uk/blog/household-energy-efficiency-index/

Ministry of Housing Communities & Local Government. (2019). The English Indices of Deprivation 2019 (IoD2019), Statistical Release. In www.gov.uk. Retrieved June 28, 2024, from https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

Mitchell, M. (2022). Carbon removals and the global Carbon Budget. Carbon Savvy. Retrieved July 16, 2024, from https://carbonsavvy.uk/latest-articles/carbon-removals/

One Planet Council. (2022). Review of One Planet Development in Wales 2010-2021. In One Planet Council. Retrieved February 27, 2024, from http://www.oneplanetcouncil.org.uk/review-of-opd-2010-2021/

Pimentel, D., Westra, L., & Noss, R. F. (2013). Ecological Integrity: Integrating Environment, Conservation, and Health. Island Press.

Römkens, P. F., van der Plicht, J., & Hassink, J. (1999). Soil organic matter dynamics after the conversion of arable land to pasture. Biology and fertility of soils, 28, 277-284.

Sanders, B. (2022). Towards an Ecotopia? An assessment of Wales's One Planet Development policy as a facilitator of open countryside low impact developments, 2010-2021. Coventry University. Retrieved February 27, 2024, from: https://pure.coventry.ac.uk/ws/portalfiles/portal/70654066/Brett_Sanders_PhD_Towards_an_Ecotopia_Ammended.pdf

Schröter, M., Van Der Zanden, E. H., Van Oudenhoven, A. P., Remme, R. P., Serna Chavez, H. M., De Groot, R. S., & Opdam, P. (2014). Ecosystem Services as a Contested Concept: a Synthesis of Critique and Counter Arguments. Conservation Letters, 7(6), 514–523. https://doi.org/10.1111/conl.12091

Shorten, J., & Knight, B. (2023). Policy AL1 – Regenerative, Low Impact Development Policy Guidance. In Cornwall Council. Cornwall Council. Retrieved February 27, 2024, from https://www.cornwall.gov.uk/media/idnc4ptm/al1-guidance-document.pdf

Sim, A.-M., & Major, L. E. (2022). Social Mobility in the South West, Levelling up through education. In University of Exeter. Graduate School of Education University of Exeter, Centre for Social Mobility.

Sustainable Food Cornwall. (2023a). Community Growing in Cornwall - The impact and potential of local sustainable food growing in Cornwall. In Sustainable Food Cornwall. University of Exeter.

Sustainable Food Cornwall. (2023b). Good Food Map. Retrieved September 2, 2024, from https://sustainablefoodcornwall.org.uk/good-food-map/

The Willow Bank. (2022). The Willow Bank - Grow your Own Firewood - the COPSE system. The Willow Bank - Willow Specialists Since 1985. https://www.thewillowbank.com/grow-your-own-firewood/

Tutty, S. (2024). More hospital admissions for malnutrition in Cornwall Partnership Trust last year. The Cornish Times. https://www.cornish-times.co.uk/news/more-hospital-admissions-for-malnutrition-in-cornwall-partnership-trust-last-year-661947

United Nations. (2015). The 2030 Agenda for Sustainable Development. In United Nations. Retrieved July 3, 2024, from https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981

Volunteer Cornwall. (2021). Volunteer Cornwall - Annual Report 1st April 2020 - 31st March 2021. In Volunteer Cornwall. Retrieved July 4, 2024, from https://www.volunteercornwall.org.uk/about-us/our-impact/annual-reports-and-publications

Volunteer Cornwall. (n.d.). Facts and statistics. Retrieved July 4, 2024, from https://www.volunteercornwall.org.uk/about-us/our-impact/

Weathers, K. C., Strayer, D. L., & Likens, G. E. (2012). Fundamentals of Ecosystem Science. Academic Press.

Yee, J. (2007). Connecting practice to research (and back to practice): Making the leap from design practice to design research. Design Principles and Practices, 1(1), 81-90.

CASE STUDY
CORNISH EXPERT REFERENCES

Bolghen Tree Nursary. (n.d.). https://bolghentreenursery.co.uk/

CBKA. (n.d.). https://cbka.co.uk/local-groups/

Crest Cornwall. (2023). https://crestcornwall.co.uk/

Edible St Austell. (n.d.). https://www.facebook.com/ediblestaustell/

Par Bay Community Garden. (n.d.). https://www.parbay.org.uk/community-garden

The Cob Specialist. (n.d.). https://thecobspecialist.co.uk/

The Forest Garden. (n.d.). https://theforestgarden.co.uk/

The Perennial Harvest. (n.d.). http://perennial-harvest.co.uk/gardening-club/

IMAGE REFERENCES

Figure 1: Author's own. [Photograph].

Figure 2: Lee, R. (2012). Anantara Bangkok Sathorn - The Met by WOHA [Photograph].

Figure 3: Author's own. [Photograph].

Figure 4: Author's own. [Diagram].

Figure 5: Author's own. [Diagram].

Figure 6: Author's own. [Diagram].

Figure 7: Mundy, J. (2022). Angry vandals have targeted a second home in Cornwall with graffiti [Photograph].

Figure 8: Adapted from: Carto.com. (2019). End Child Poverty. https://mss.carto.com/viz/c3bd5c37-9d12-4538-b176-9bc4d6b50ed1/embed_map

Figure 9: Adapted from: Bates, S. (2024). Cornwall house prices 1998-2018. Struan Bates. https://www.struanbates.com/2018/10/19/cornwallhouseprices19982018/

Figure 10: Martin, G. (2022). From the car park at Colliford Lake, visitors take in the dramatic view of the reservoir which has reached low water levels not seen for decades. [Photograph]. Cornwalllive.com. https://www.cornwalllive.com/news/cornwall-news/gallery/forgotten-land-exposed-cornwalls-largest-7426748

Figure 11: Cartlidge, M. (2023). Cornwall Food Systems Summit. [Photograph]. Sustainablefoodplaces.org. https://www.sustainablefoodplaces.org/events/cornwall_event_1683721674/

Figure 12: Girvan, S. (2023). Meet The Producer: Goonown Growers. [Photograph]. Trurofarmers.co. https://www.trurofarmers.co.uk/meet-goonown-growers/

Figure 13: Author's own. [Diagram].

Figure 14: Newquay Orchard. (2024). Social Event at Newquay Orchard. [Photograph]. https://newquayorchard.co.uk/

Figure 15: Trewhela, L. (2024). Rob Higgs and Sophie Miller. [Photograph]. Falmouthpacket.co. https://www.falmouthpacket.co.uk/news/24110855.rob-higgs-tour-disused-quarry-village-near-falmouth/

Figure 16: Goonown Growers. (2022). Social Designs: A new community building in St Agnes. [Photograph]. Crowdfunder.co. https://www.crowdfunder.co.uk/p/goon-build

Figure 17: O'Shea, J. (2023). Helen Bowkett hopes Crest will encourage more people to become hedgers. [Photograph]. BBC.co. https://www.bbc.co.uk/news/uk-england-cornwall-66499368

Figure 18: Manda Brookman. (2023). Net Zero Clinical Care. [Photograph]. https://netzeroclinicalcare.bmj.com/post_type_speaker/manda-brookman/

Figure 19: The Forest Garden Falmouth. (2023). The Forest Garden Falmouth. [Photograph]. Theforestgarden.co. https://theforestgarden.co.uk/

Figure 20: Putler, V. (2023). Founder Director at Flax Project CIC. [Photograph]. Linkedin.com. https://uk.linkedin.com/in/vicky-putler-b979243a

Figure 21: The Forest Garden Falmouth. (2023a). Course: Designing & Creating a Forest Garden. [Photograph]. https://theforestgarden.co.uk/shop/p/creatingaforestgarden

Figure 22: The three guides that were used as comparative examples. Adapted from: (Heath et al., 2018; Kluck et al., 2020; Cornwall Sustainable Building Trust, n.d.)

Figure 23: Author's own. [Diagram].

Figure 24: Author's own. [Diagram].

Figure 25: Soul Farm. (2023). Soul Farm Sustainable Farming. [Photograph]. Ethex.org. https://www.ethex.org.uk/invest/soul-farm

Figure 26: Jefferys.uk. (2024). Photo 1, Tregrehan Mills, St. Austell. [Illustration]. https://www.jefferys.uk.com/properties-for-sale/property/12442921-tregrehan-mills-st-austell

Figure 27: Jefferys.uk. (2024a). Photo 2 & 3, Tregrehan Mills, St. Austell. [Photograph]. https://www.jefferys.uk.com/properties-for-sale/property/12442921-tregrehan-mills-st-austell

Figure 28: Author's own. [Illustration].

Figure 29: Author's own. [Illustration].

Figure 30: Author's own. [Illustration].

Figure 31: Author's own. [Illustration].

Figure 32: Berrow, J. (2023). Flax Project C.I.C. Flax Project C.I.C. [Photograph]. https://www.flaxproject.uk/about-flax-project-cic

Figure 33: Author's own. [Diagram].

APPENDIX: INTERVIEW QUESTIONS

ROBB HIGGS

1. Robb, you played an active part in the history and development of AL1. How were you involved specifically?

2. How was it born - what inspired the creation of the policy?

3. AL1 is strongly based on its predecessor, the Welsh OPDs. How do they differ from each other and do you think AL1 "learned" from the strengths and shortcomings of OPDs?

4. What is your personal opinion about the policy and how do you think AL1 can bring about the positive change it strives for?

5. What are the main challenges connected to the policy's success?

6. How can AL1 become more accessible to a wider range of people, particularly those who may not be familiar with regenerative living concepts?

7. Are there any specific changes or improvements you would suggest to improve the application and monitoring process?

8. Looking ahead, what do you see as the future of policy AL1 and its impact on Cornwall's socio-ecological resilience?

9. What are the regenerative practices that you are working with at Trevone Quarry?

10. Would you be willing to offer guidance or workshops to interested people in Cornwall or do you know someone who would? If so, what would that look like?

11. Is there anything else you would like to share about your experience or your idea of how to support regenerative living in Cornwall?

STEPHEN DAVIES

1. You co-founded both the Re-Collective network and the more Cornwall-based Social Designs C.I.C. Could you tell me a little bit about the aim and the idea behind the two initiatives?

2. How do SocialDesigns' objectives fit into the Cornish context and how do they relate to ecological and social resilience?

3. Policy AL1 requires all new habitable buildings to be zero carbon in construction and use. From your point of view, how realistic /achievable is this?

4. Do you think these high targets are important or perhaps more obstructive, considering that AL1 aims to create an alternative route for more people to access affordable and ecological housing?

5. AL1 has a strong focus on using natural construction materials: What natural materials make sense in the Cornish context?

6. Unlike the Welsh OPD, AL1 also supports the use of reclaimed materials – and that's what ReCollective focuses on. From your experience so far: how straightforward is it to use recycled materials for construction in Cornwall?

7. AL1 focuses predominantly on the carbon footprint of materials and energy sources. Do you think there are other factors that should be considered when it comes to ecological housing?

8. For someone who's interested in AL1 but has little financial means and no experience with construction – how do you get started?

9. Is it possible to somehow quantify the time and costs associated with building your own home under AL1? - e.g. per m / per home (family of 4) / according to main material?

10. How to move on – What is needed to make affordable low-impact housing more accessible to people in Cornwall?

11. Is there anything else you would like to share about your experience or your idea of how to support regenerative living in Cornwall?

HELEN BOUWKETT

1. You co-founded CREST. Could you tell me a little bit about the aim of this initiative and how you came up with the idea?

2. From your website I understand that you've had a focus on hedging. How does hedging fit into the Cornish context – for how long has it been practiced here and how come it became such a distinctive feature of the Cornish landscape?

3. As a practice, how does hedging relate to ecological and social resilience in Cornwall?

4. What are some of the key benefits of hedging?

5. Could you also share any challenges you've encountered over the years?

6. I mentioned earlier that I'm exploring how sharing skills and knowledge about regenerative, land-based practices can enable more households to adopt a selfsufficient lifestyle under policy AL1. How do you think hedging fits into this framework?

7. Is it possible to give an estimate of the Biodiversity Net Gain per m you can reach by constructing a hedge on a piece of pasture land?

8. AL1's requirements are heavily based on quantification and numeric targets, to prevent people from taking over the countryside, harming the environment due to a lack of knowledge and planning. Do you think this approach is helpful or perhaps more obstructive, considering that it would be ideal if more people adopted a regenerative lifestyle?

9. How does someone with little knowledge and financial means get started?

10. What resources are necessary?

a. Site requirements – space, condition
b. Materials
c. Knowledge & skills
d. Time – learning, setting up, maintaining

11. Are there any specific resources or support systems in Cornwall that could be helpful for people to get involved?

12. How do you envision the future of Cornish hedging? Are there any emerging trends or developments?

13. Is there anything else you would like to share about your experience or your idea of how to move on and support regenerative living in Cornwall?

MANDA BROOKMAN

1. Could you give an overview of the many things and initiatives you're involved in? When and how did you get involved?

2. How do they relate to ecological and social resilience in Cornwall?

3. What are the regenerative practices you do on-site?

4. Focusing on permaculture: How does it fit into the Cornish context? For instance, does it relate to methods that were practiced here in the past? Or is it, perhaps, well suited to the local climate?

5. What are some of the key benefits of permaculture?

6. Could you also share any challenges you've encountered over the years?

7. I mentioned earlier that I'm exploring how sharing skills and knowledge about regenerative, land-based practices can enable more households to adopt a selfsufficient lifestyle under policy AL1. How do you think permaculture fits into this framework?

8. Is it possible to give an estimate of how many m2 of land is needed to provide a person with 30% of their food intake? Or an income that covers

65% of their remaining food?

9. AL1's requirements are heavily based on quantification and numeric targets, to prevent people from taking over the countryside, harming the environment due to a lack of knowledge and planning. Do you think this approach is helpful or perhaps more obstructive, considering that it would be ideal if people adopted a regenerative lifestyle?

10. How does someone with no knowledge and little financial means get started?

11. What resources are necessary (e.g. for a plot that covers 30% food intake)?

a. Site requirements – space, condition
b. Materials
c. Knowledge & skills
d. Time – learning, setting up, maintaining

12. Are there any specific resources or support systems in Cornwall that could be helpful for people to get involved?

13. How do you envision the future of permaculture? Are there any emerging trends or developments?

14. Is there anything else you would like to share about your experience or your idea of how to move on and support regenerative living in Cornwall?

SIMON MILES

1. Can you tell me about your experience with forest gardening? When and how did you first become involved in the practice?

2. How do you see forest gardening fitting into the context of Cornwall and the SWUK? E.g.: has it been practiced here in the past, or is it perhaps well suited to the local climate?

3. How exactly does forest gardening work?

4. What are some of the key benefits of forest gardening and how are they related to ecological and social resilience?

5. Could you share any challenges you've encountered?

6. I mentioned earlier that I'm exploring how regenerative and land-based practices can enable households to live self-sufficiently under policy AL1. Do you think that forest gardening has the potential to be an integral part of such a self-sufficient lifestyle? If yes, how?

7. What resources are necessary for people to get involved in forest gardening?

a. Materials
b. Knowledge & skills
c. Site requirements – space, condition

8. Could you provide an estimate of the time and costs associated with:

a. Learning the skills
b. Setting up
c. Operating / maintaining

9. Is it possible to give an estimate of the average yield per acre?

10. Are there any specific resources or support systems in Cornwall / SWUK that have been helpful to you in getting involved or practicing forest gardening?

11. Based on your website, it seems that you're already offering courses and workshops to people as a way of sharing knowledge and skills connected to forest gardening. What's your approach to these workshops and how are they received?

12. How do you envision the future of forest gardening? Are there any emerging trends or developments?

13. Is there anything else you would like to share about your experience or your vision for regenerative living in Cornwall?

VICKY PUTLER

1. Can you tell me about your experience with flax? When and how did you first become involved in flax cultivation?

2. How do you see flax fitting into the context of the South West? Is it tied to the local climate and/or culture?

3. How does the cultivation and processing work?

4. What are some of the key benefits of cultivating flax? Does it have an impact on ecological resilience or community well-being?

5. Could you share any challenges you've encountered?

6. I mentioned earlier that I'm exploring how regenerative and land-based practices can enable households to live self-sufficiently under policy AL1. Do you think that people could derive an income from flax cultivation?

If yes, how - growing and selling to processing facility, or processing on-site?
7. What resources are necessary?

a. Materials
b. Knowledge and skills
c. Site requirements - space, condition

8. Could you provide an estimate of the time and costs associated with it?

a. Learning the skills
b. Setting up
c. Operating / maintaining

9. Do you have an estimate of how much flax you can grow on 1 acre and how much this amount of flax is roughly worth?

10. Are there any specific resources or support systems in the South-West that have been helpful to you in becoming involved or in practicing flax cultivation?

11. Would you be willing to offer workshops to interested people or do you know someone who would? If so, what would that look like?

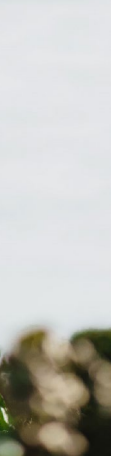
12. How do you envision the future of flax cultivation? Are there any emerging trends or developments?

13. Is there anything else you would like to share about your experience or your vision for regenerative living in the South-West?

APPENDIX: PRACTICAL GUIDE



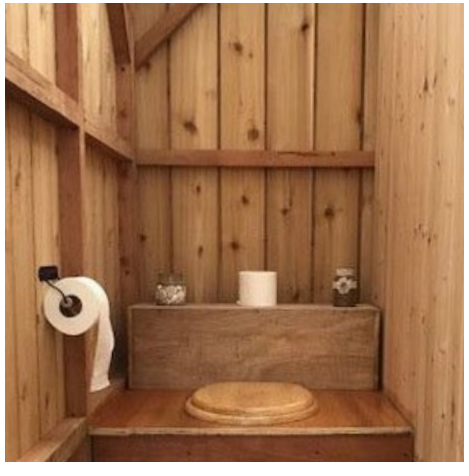




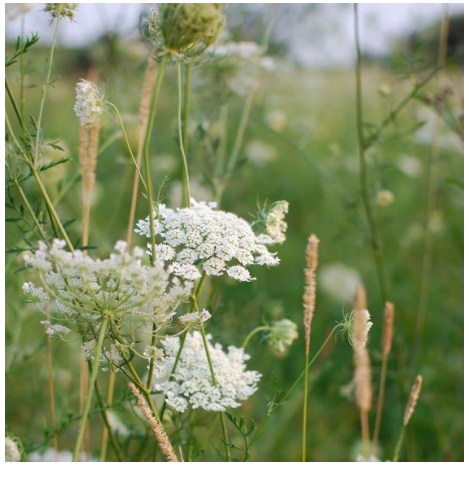
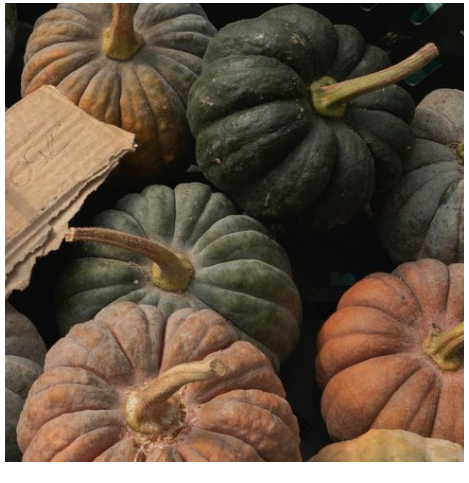

CATALYST CORNWALL

Your Guide to Regenerative Living

1st edition 2024






contents

Fig.1

Foreword

You've probably heard it all before: the climate is warming, the cost of living keeps rising, and the NHS is struggling under the weight of hospital admissions and overall ill health. Everywhere we go, we're met with talk of 'crises'. At times, it may seem like these issues – environmental, economic, and social – are unrelated. But in fact, they are all very much connected and stem from the same root cause: the way we live, both as individuals in our society, and as humanity on this planet (1).

Even though Cornwall can sometimes feel like a remote place, far from the rest of the world, these crises have found their way here too, especially in recent decades. In 2019, the county declared a climate emergency due to the worsening state of nature and the increasing climate change impacts (2). And while some of our communities are already among the most deprived in the country, the recent COVID-19 pandemic made things even worse, highlighting the risks of having an economy so reliant on tourism (1).

If you're feeling frustrated or helpless in the face of these problems, that's completely understandable. It might be easy to point fingers at the system, the government, or those who seem better off. But this guide isn't here to overwhelm you further with what's going wrong or who's to blame. Instead, it's here to help you explore what you can do to live a more secure, fulfilling, and conscious life - one that's connected to Cornwall, its beautiful nature, and the people and communities that make it so special.

It's up to you how you choose to use this guide. Whether big or small, all changes can make a difference, and it's never too late to learn something new. But what we hope this guide will achieve most of all is to show you that you're not alone in this. Every struggle can help us come together as strong and supportive communities, centred around lifestyles that meet our needs and those of the people around us.

Fig.2

Regenerative Living

You might be wondering what this lifestyle could look like. In the broadest sense, we could call it 'regenerative living'. But what does that mean? You've probably come across the term 'sustainability', which often refers to thinking about the future and how we can preserve - or sustain - what is important to us now. Lately, it seems that nearly everything can be labelled 'sustainable' to make it sound more appealing. You can almost see the term 'regeneration' as a response to this trend. Instead of merely sustaining what we have, it focuses on healing and improving what is unwell or broken. When you think about the crises we've touched on, it's clear that there is much in need of regeneration. So, when we talk about regenerative lifestyles in this guide, we're exploring ways of living that help heal our struggling society, our natural world, and in some ways even ourselves (3).

This explanation might seem quite broad, which is why it's important to pinpoint exactly what needs to be regenerated. The local context plays a key role here, because what works as a regenerative lifestyle elsewhere may not be as effective in Cornwall. This is where this guide comes in. It explores different practices you can adopt to live a more regenerative lifestyle in Cornwall. These practices are tailored to the region's climate and draw on the experience of people and initiatives already active here. They range from growing food and generating income from the land to supporting your community and caring for the environment.

Many of these practices involve the concept of self-sufficiency - your ability to provide some of your own energy, food, or income. This can help you become more independent from large industries and systems, and less affected by their crises. But regenerative living is not about isolation or turning your back on society. Instead, it's about rediscovering our connection to a way of life that ensures our wellbeing, as well as the wellbeing of our communities and the natural world we depend on (4).

Fig.3

Regenerative Policy

Even within a limited geographical area like Cornwall, regenerative lifestyles can vary greatly depending on who you are, what's important to you, and your current living situation. As a result, you might come across practices in this guide that don't interest you or aren't even possible for you to pursue. Take energy or waste treatment systems, for example. There are fantastic ways to make these aspects highly regenerative and self-sufficient, but if you're currently renting an apartment in town, you may not be able to change anything about the existing set-up.

Although you can still change your consumption and recycling habits in this example – and this is always the first step towards a regenerative lifestyle – you might agree that behaviour change alone can only go so far. Larger, more impactful aspects like your energy or water supply often depend on policy - the local framework that dictates what is allowed or not allowed, depending on where you live. Ideally, this framework should encourage or at least support regenerative lifestyle choices, but unfortunately, we still have a long way to go to reach that point.

While changing policy frameworks is always a complex and slow process, we are certainly making progress, especially here in Cornwall! You may have heard about the One Planet Development policy introduced in Wales, which allows people to live on affordable agricultural land if they follow a regenerative, land-based lifestyle (5). Since 2023, this is also possible in Cornwall under the Regenerative Low Impact Development policy AL1 (4). Policies like this are opening up new pathways to pursue regenerative lifestyles in the countryside, which is great news!

We hope this guide helps people access AL1 and other promising policies by introducing them to regenerative living and connecting them with local experts and communities. That's why many of the practices covered here focus on rural and land-based lifestyles. But keep in mind, this is not a manual for complying with any specific policy, nor do regenerative lifestyle choices require you to buy a plot of farmland and live off-grid. The practices in this guide are here to show you what's possible and offer opportunities to engage with Cornwall's regenerative communities. For example, if you're interested in growing organic food but don't have land, check out Cornwall's popular community growing schemes, where you can join as a volunteer or try their fresh produce.

Whatever your interests or limitations, we hope you will find this guide useful on your journey towards a more regenerative lifestyle in Cornwall!

How to use this Guide

Get inspired!

This handbook covers 25 regenerative practices, grouped into 7 main categories: Food & Growing, Crop Cultivation, Animal Rearing, Waste Systems, Energy & Water, Construction & Design, and Wildlife & Biodiversity. Each practice is explained in a simple and practical way, with one double-page spread dedicated to each.

On the first page, you'll find a brief introduction and an overview of the key features of the practice. This will give you an idea of how much labour and cost may be involved, though these factors depend largely on your own ambitions and the specific methods or solutions you choose. There's also a list of regenerative features for each practice, which can range from helping meet your food or income needs to providing broader community or biodiversity benefits. On the right, you'll find an overview of these 10 regenerative features and their meanings. The first page of each practice also includes an illustration to highlight an important aspect of the practice.

The second page delves deeper, offering more detailed information on how the practice works, the benefits you can expect, and any challenges to be aware of as you get started.

Get active!

Each regenerative practice is linked to a selection of local experts. These experts can be individuals, organisations, or small companies with extensive knowledge and experience in the specific practice. To make it easier for you to connect with them, we've included a map at the end of this guide, showing where all these local experts are based.

Be sure to look up these experts or reach out to them. Many offer volunteering opportunities and regularly organise community events, giving you the chance to get hands-on experience. If you're keen to learn more, check out the workshops and courses offered by many organisations. These often come with bursary schemes, making them affordable or even free to attend.

Finally, you might have noticed numbers in brackets throughout the text. These refer to sources of information, all of which are listed at the end of the guide. Feel free to explore these sources if you'd like to dive deeper into any specific topic or practice.

The 7 Regenerative Categories covered by this guide are:

Food & Growing

Crop Cultivation

Animal Rearing

Waste Systems

Energy & Water

Construction & Design

Wildlife & Biodiversity

Each practice has regenerative features that can provide:

... a portion of your own **food** intake from land-based production

... opportunities for a land-based **income**

... a percentage of your **electricity** demand through on-site production

... solutions for on-site **waste management** through reusing & recycling

... ways to reduce your **water** demand or meet part of it by harvesting rainwater & reusing grey water

... strategies to achieve **carbon reduction** within your lifestyle

... solutions for active **carbon capture** by locking atmospheric carbon in the soil or in bio-based materials

... opportunities to support & enhance local **biodiversity**

... ways to provide local **community benefits** through recreational or educational activities

... methods for **heritage preservation** through traditional crafts

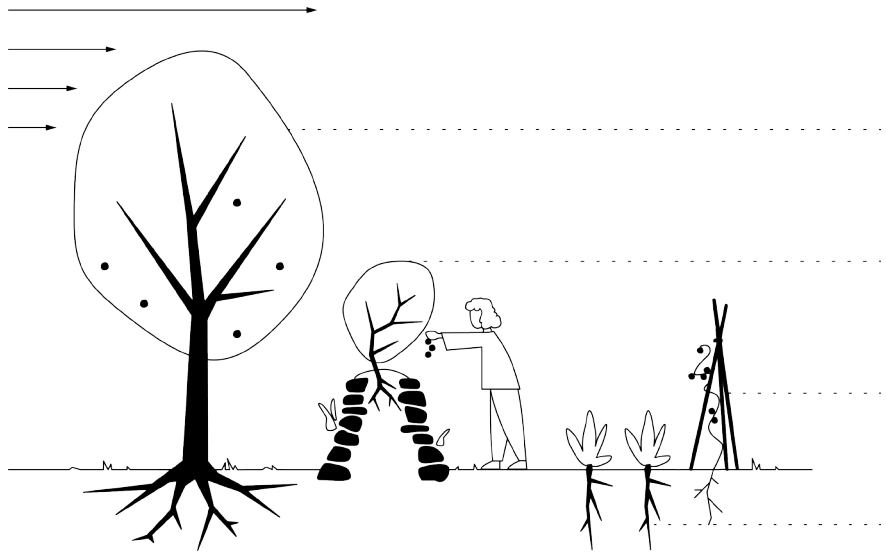
1.1

Permaculture

The concept of permaculture extends far beyond just growing food. Rooted in systems thinking, it applies to everything from land management and settlement design to community building. Although it relates to all categories of regenerative living, the permaculture journey often starts in the garden. That's why we're approaching it from a horticultural perspective in this handbook. While horticulture alone isn't necessarily regenerative, combining it with permaculture principles can be incredibly beneficial for us, our communities, and the land we live on (6).

CATEGORY: Food & Growing
LABOUR: -
COST: £

Food · Income · Carbon red. · Biodiversity · Community



4 Examples of growing food based on Permaculture Principles

Understand your microclimate
plant according to sun & wind

Celebrate boundaries & margins
e.g. hedges, wildflower patches

Grow resilient varieties & perennial food plant

Create diverse plant guilds

Fig.4

370 m^2 **≈ 1 person's vegan diet**

of land* **for one whole year**

*highly depends on climate, weather, soil, methods, time investment (9)

HOW IT WORKS

Derived from 'permanent agriculture', permaculture explores ways of year-round productivity, working with nature rather than against it. Here are four principles to consider in our Cornish context: *Understand our unique microclimate:* our temperate Oceanic climate offers great conditions for growing your own food! Observe how the sunlight interacts with your site and plant accordingly. Use hedgerows or trees to protect your garden from strong winds. *Grow resilient crops and perennial food plants:* potatoes, kale, beans and salad greens are well-suited to our mild and wet conditions, while apple, pear, raspberry, rosemary and thyme are all perennial plants that will yield food year after year with minimal maintenance. *Create diverse plant guilds that mimic natural ecosystems:* for example, nitrogen-fixing legumes like broad beans work well with heavy feeders such as squash and will enhance your soil. *Celebrate boundaries and margins:* plant fruiting hedgerows or wildflower patches to increase biodiversity and growing space (7).

BENEFITS

By mimicking our natural ecosystems, permaculture helps building fertile soil, conserve water and enhance biodiversity. Core practices such as no-till farming, crop-rotation and high planting diversity create a reliable food system, much more resilient to drought, erosion and pests. Local production also lowers the reliance on industrial agriculture and long-distance transportation, resulting in a substantial carbon reduction. Permaculture supports cooperation and community involvement, by shared gardening, swapping seeds or offering courses and workshops (8).

CHALLENGES

Establishing a permaculture garden can come with a steep learning curve and an initial investment in materials, plants and systems. Sharing knowledge and resources is ideal. Ecosystem health is valued over maximum yields. This is important to realise when considering it as a source of income.

Fig.5

LOCAL EXPERTS

PERMANENTLY BRILLIANT

Manda Brookman | Hayle

Permacultural off-grid site, network-based collective action, courses, events
http://www.permanentlybrilliant.com

GROWING LINKS

Community Garden | Penzance

Establishing a resilient & local food system, courses, volunteering
https://www.growinglinks.org.uk

PERM. ASSOCIATION

International network

Find Cornish permaculture courses on their website under: Learn - Courses
https://www.permaculture.org.uk/

1.2

Forest Gardening

Imagine a garden that works like a mini forest, where trees, shrubs, and plants grow together in a clever and regenerative way. This type of garden is called a Forest Garden. In line with permaculture principles, practising forest gardening is all about understanding and mimicking the structure of a natural forest and ensuring a stable and healthy ecosystem. The main goals of a Forest Garden are simple: To be resilient and handle changes in climate and weather, to be productive, and to be low-maintenance once established (10).

CATEGORY: Food & Growing
LABOUR: -
COST: £

Food Income Carbon seq. Biodiversity Community

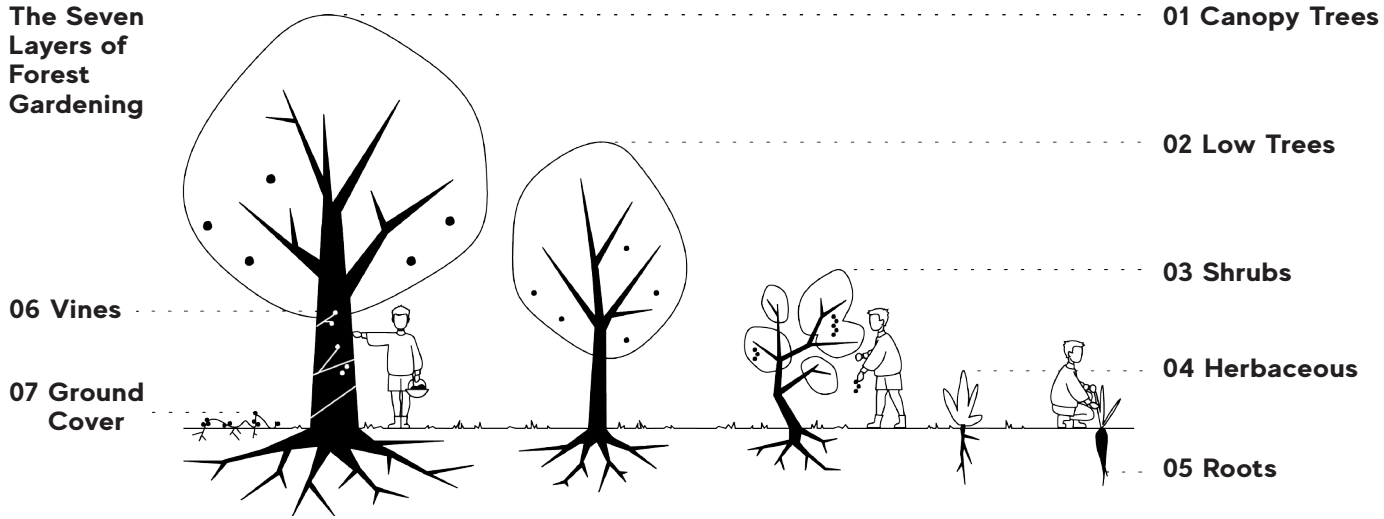


Fig.6

1 Ha

of a diverse forest garden (at leat 3 layers, ~80 species)

supports up to 20 people*

*yield highly depends on varieties, site conditions & methods (11)

HOW IT WORKS

Forest gardens have been around for ages in tropical areas, where they're a crucial part of how people grow food. In recent times, we have started establishing them in our temperate climate too and they are a great success! Diversity is key, some plants add vital nutrients, while others fend off pests. Mixing lots of different plants ensures they'll help each other out and keep things thriving. Generally, a forest garden has up to seven layers of plants: 1. Tall canopy Trees, like chestnuts, apples, and plums, 2. Small Trees and Large Shrubs, such as bamboo or serviceberries, 3. Shrubs, from the shade-loving currants to barberries, 4. Herbaceous Perennials, think herbs that stick around, like mints and sage, 5. Ground Covers, the carpeting plants like wild gingers and carpeting brambles, 6. Climbers and Vines, such as grapes and hardy kiwis which are added late, once they have something to climb up, and finally 7. Rhizosphere: The underground crew, including vital root systems and various beneficial fungi (10).

BENEFITS

These thriving ecosystems, incorporate a diverse range of plants, attracting beneficial insects, birds, and other wildlife. Forest gardens also provide an abundant and nutritious food source and reduce reliance on external food systems and transportation. Their diverse root systems help building organic matter, circulate nutrients and prevent erosion. Once established, forest gardens require minimal upkeep while creating a resilient food system, withstanding changes in climate and weather due to high plant diversity. Beyond their practical benefits, forest gardens also offer beauty and tranquility, creating incredibly nurturing spaces for communities (10).

CHALLENGES

Depending on the size (you can start with just 2m²), establishing a forest garden can involve a significant amount of knowledge, plants, and effort. Join a course or local community to make this process more fun and supportive.

Fig.7

LOCAL EXPERTS

THE FOREST GARDEN

Simon Miles | Falmouth

Tours, courses, consultation, selling trees & perennial plants, Cornish varieties
https://theforestgarden.co.uk

COMMUNITY ORCHARD

Community | St. Ives

30 acres on Penbeagle Hill, volunteering, events, community learning
https://www.stivesorchard.co.uk

AGROF. RESEARCH TRUST

Martin Crawford | Totnes

non-profit, courses & guides on agroforestry and perennial crops
https://www.agroforestry.co.uk

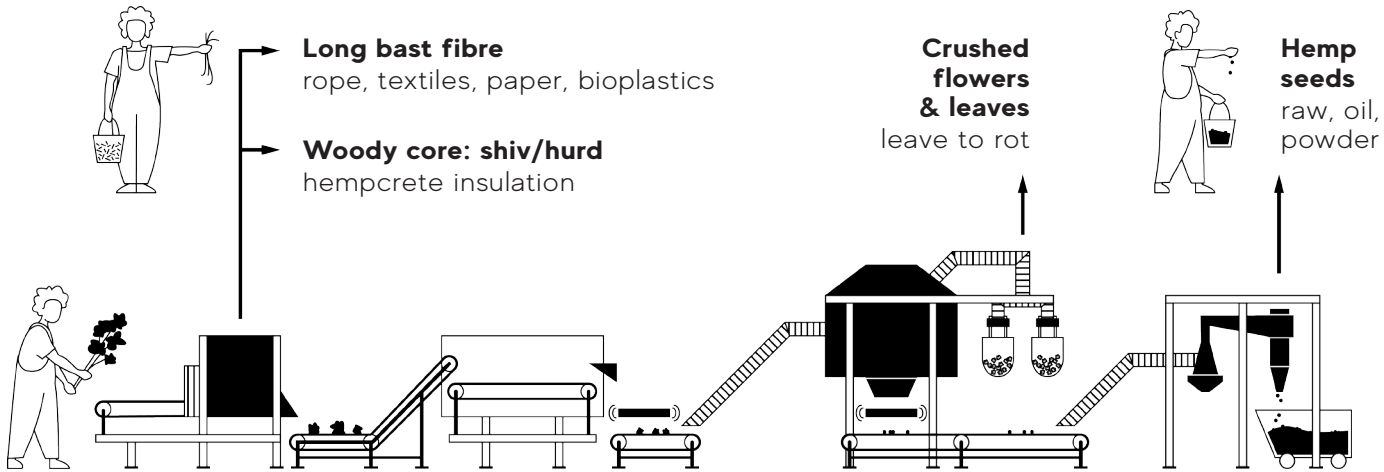
2.1

Hemp Cultivation

Hemp is often confused with its shady cousin, the recreational drug marijuana. While both are varieties of the *Cannabis sativa* plant, hemp won't get you high and is perfectly legal to grow. In fact, it has been a crucial part of the UK's farming history for centuries. This is because it's hardy and can be used to make all sorts of things like rope, clothing, paper, insulation and food. While hemp is becoming more popular as a super-crop, cultivation requires a licence and currently only makes sense on a large scale (12).

CATEGORY: Crop Cultivation
LABOUR:
COST: £ £ £

Food · Income · Carbon seq. · Biodiversity · Heritage



Separating flowers, leaves & seeds from dried plant

Crushing flowers & leaves, separating seeds

Fig.8

1 Ha of land ≈ **3,5t** of shiv for hempcrete ≈ **1** medium-sized house*

1 Ha of land ≈ **2 tons** of seeds*

*yield depends on variety, site & methods (13)

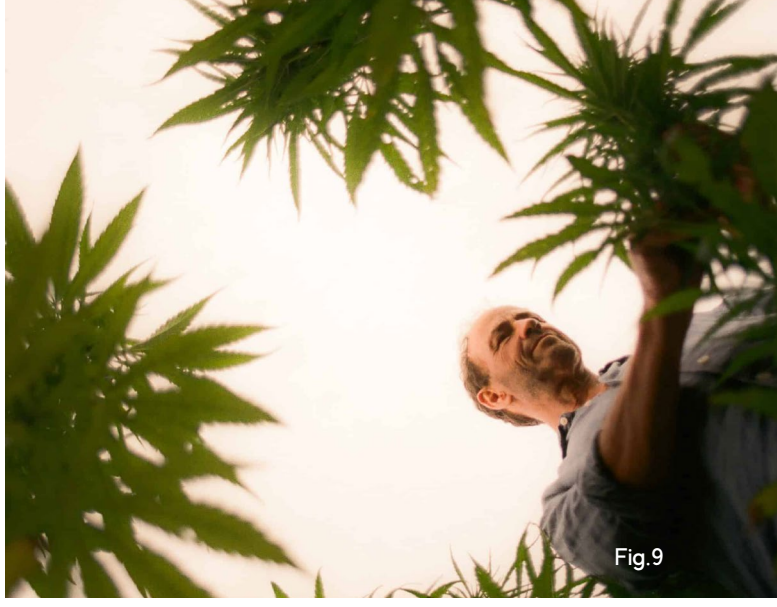


Fig.9

HOW IT WORKS

Besides obtaining the licence and following the government's rules, growing hemp is fairly simple. By law, you need to keep your field hidden and inaccessible to the public, and make sure your seed variety is approved. Planting happens from late April to mid-May, harvest between August and October, using a regular combine. Hemp grows fast and in almost any soil type, doesn't need fertilisers or herbicides, and requires little to no watering. Traditional manual processing is similar to flax (see next page) but too labour-intensive for large-scale production. In a typical industrial processing facility, flowers, leaves, and seeds are first separated from the dried plant which is then further processed to extract the long bast fibre and the plant's woody core (shiv/hurd). Next, the flowers and leaves are crushed, while the seeds are separated and purified to remove any remaining leaf parts or empty seeds. Flowers and leaves aren't allowed to be used or processed in the UK, they have to be left to rot in the fields (13).

BENEFITS

Hemp has an extraordinarily long list of benefits! It considerably improves soil health due to its deep and strong roots and even helps absorb pollutants. Hemp captures up to four times more CO2 compared to trees and is loved by insects as it flowers between July and September when few other flowers are in bloom. Its seeds are full of valuable vitamins and minerals, healthy fats and a high amount of protein.

CHALLENGES

The biggest drawback is that you'll need a licence to grow hemp in the UK, which makes it profitable only on a large scale. The licence costs £580 and expires after three years (renewal licence is £326) (14). While there are a handful of industrial processing facilities in the UK, none are currently located in Cornwall, increasing the material's CO2 footprint due to transport. However, this could change soon given the increasing popularity!

LOCAL EXPERTS

RAISE THE ROOF

Tim Crabtree | Bridport

Partnership project, hemp farming for affordable and ecological housing
https://www.raisetheroof.info

VENUS HEMP

Organic hemp growers | Totnes

Curently harvesting seeds for food and food supplements
https://venushemp.co.uk

THE HEMP HOUND

Hemp & CBD advisory | Ivybridge

Hemp farming & industry advice
https://www.hemphound.co.uk/

2.2

Flax Cultivation

Flax is a hardy plant which has been cultivated in the UK for thousands of years. This shows how well it grows here, loving our temperate climate and thriving in lots of different soil types. Some varieties are grown for their tasty and nutritious linseeds, great for making linseed oil, while others are grown for their long fibres used in linen production. Below, the labour-intensive manual processing of flax is illustrated, but with the right machinery, it can also be scaled up (15).

CATEGORY: Crop Cultivation
LABOUR: -
COST: £ - £ £

Food Income Carbon seq. Community Heritage

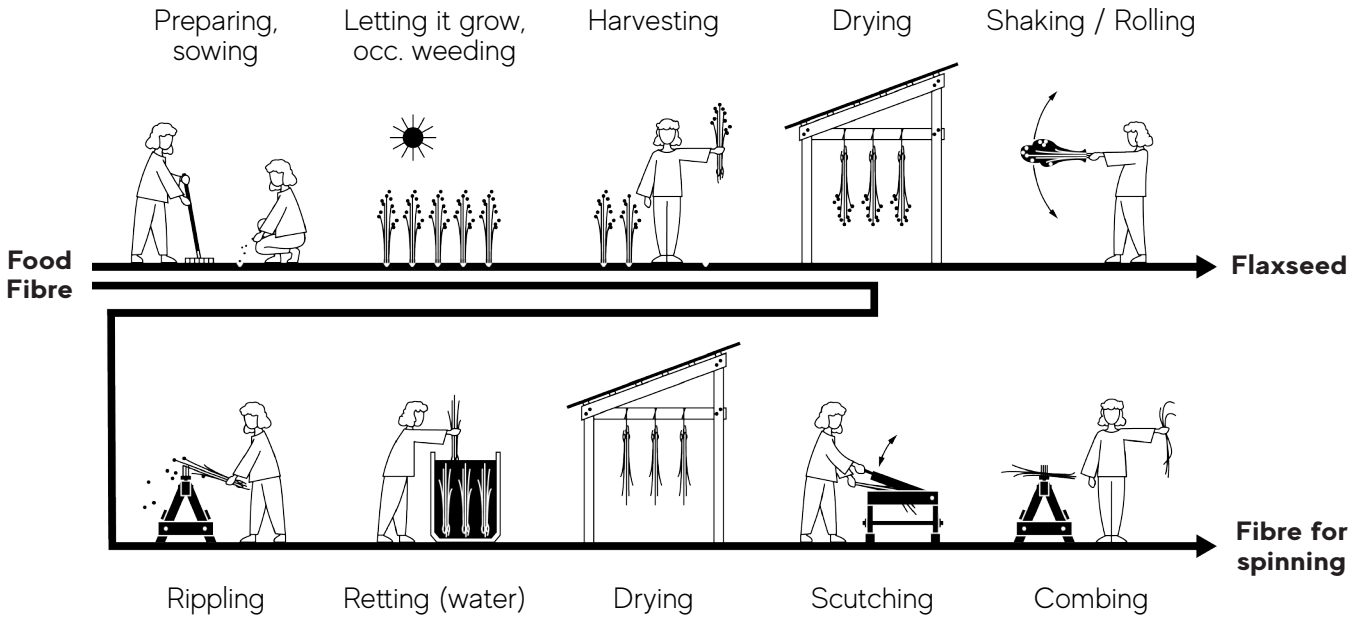


Fig.10

1 m² **of land** ≈ **200g** **of raw flax fibre** ≈ **70g** **of linen (1 tea towel)***

1 m² **of land** ≈ **125-250g** **of linseeds***

*yield depends on variety, site & methods (16)

HOW IT WORKS

Cultivation requires unshaded land, typically tilled before sowing. Variety choice depends on whether you're after the linseeds or fibre. Sowing from late March to May, with ~2000 seeds per m² for fibre and ~600 per m² for linseed. Generally, no watering required, but hand weeding is recommended until the plants gain height. Flax grows quickly and can be harvested ~100 days after sowing. Manual fibre production relies on a series of processes - rippling, retting, drying, scutching and combing - to extract the soft fibres for spinning. One acre yields ~800kg of raw fibre, equivalent to ~250kg of linen. For linseed production, the flax should be harvested during dry weather to prevent premature sprouting. Bundles of flax are hung in a well-ventilated space to dry. Remove the seeds by shaking or rolling the bundles while wrapped in a cloth. From one acre, you can expect between 1/2 and 1t of linseeds. Yield and processing time vary significantly depending on variety, weather, and farming methods (15).

BENEFITS

Flax is a hardy plant and does not require fertilisers. It can considerably boost carbon sequestration in the soil, especially if you combine it with crop rotation (growing different crops in the same area over several years) and minimal or no tilling. You can generate income by selling your products (linseeds, oil, linen), but you can also organise courses and workshops to engage the local community in the various stages of manual processing (17).

CHALLENGES

Harvesting and processing flax by hand on a larger scale is labour-intensive and carries the risk of incomplete harvest due to its short harvest window. Unfortunately, there is a lack of specialised machinery in the UK for efficient harvesting and processing. However, the determined team from Flax Project C.I.C. is currently coming up with solutions to make it a more profitable practice for local growers!

Fig.11

LOCAL EXPERTS

FLAX PROJECT C.I.C.

Vicky Putler | Tamar Valley

Local growing & processing
Workshops & courses
https://www.flaxproject.uk

FIBRESHED

Network in South West England

Community of fibre & dye growers, processors, makers & manufacturers
https://southwestenglandfibreshed.co.uk

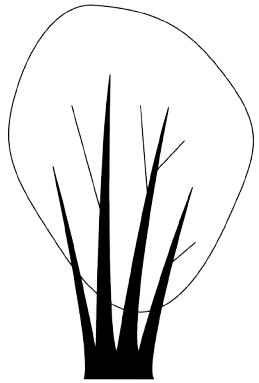
2.4

Coppicing

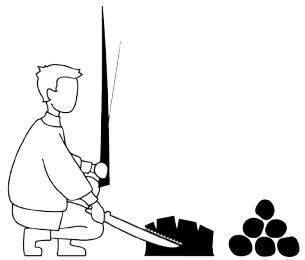
This ancient woodland management method involves cutting trees at their base to stimulate the growth of new shoots from the stump. Instead of dying, the tree continues living and can be re-harvested after a number of years. You can use coppiced wood as a consistent supply of firewood, crafting fences or benches, and certain species are particularly well-suited for basket making or creating charcoal pencils. Today, coppicing is also embraced to enhance biodiversity and foster a variety of habitats for plants and wildlife (18).

CATEGORY: Crop Cultivation
LABOUR:
COST: £

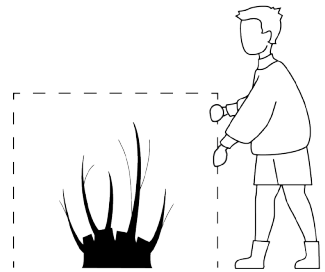
Energy Income Carbon red. Biodiversity Community



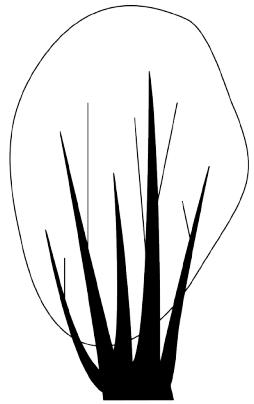
Willow to be coppiced



Cut at an angle to 5-8cm from ground at the end of winter



Regrowth in spring protect from deer (fence or "dead hedge")



Ready for new harvest after just 5 years

Fig.12

100 m^2 of land

≈ 100 willow trees

≈ 1 ton of firewood after 5 years

≈ 4,000 Kwh of heating energy (19)

HOW IT WORKS

Coppicing involves establishing a woodland that can be large or small, depending on your site and preferences. Hazel, sweet chestnut, ash, and lime are particularly well-suited for coppicing among our native trees. However, very fast-growing willow varieties are the highest yielding trees in the UK. The woodland is divided into sections known as copses, which are selectively cut in rotation. Hazel typically undergoes coppicing every eight years, whereas willow follows a cycle of only five years. This rotation ensures a balance between harvesting and regrowth. The actual coppicing is very easy, just trim all stems to about 5-8cm from the ground, or to where last year's growth was cut. Coppice your trees from February to March, right before they enter their new growth phase. After a tree is coppiced, the tender new shoots are a popular snack for deer and rabbits. Protect them by using pruning material to create barriers known as 'dead hedges', or use high deer-proof fences instead (19).

BENEFITS

Coppiced firewood is a renewable resource from rapidly growing trees. It helps you substantially reduce your carbon footprint compared to conventional heating systems that rely on fossil fuels. Coppicing also has a much lower environmental impact compared to large-scale logging, since only specific trees or sections are harvested at a time, allowing the rest of the woodland to remain intact and continue providing habitat for wildlife. Additionally, the coppicing work can involve local communities, fostering a sense of connection to the land and teaching traditional and regenerative skills. The production of firewood, charcoal, furniture, or baskets can also provide an additional income.

CHALLENGES

The shoots' regrowth may be slower in less fertile soil or due to pests, but these challenges can easily be overcome with proper woodland management.

Fig.13

LOCAL EXPERTS

WORKING WOODLANDS

C.I.C. | Devichoys Wood

Sustainable woodland management, firewood, charcoal, tours & courses
https://workingwoodlandscornwall.com

CARSAWSAN WOODLAND

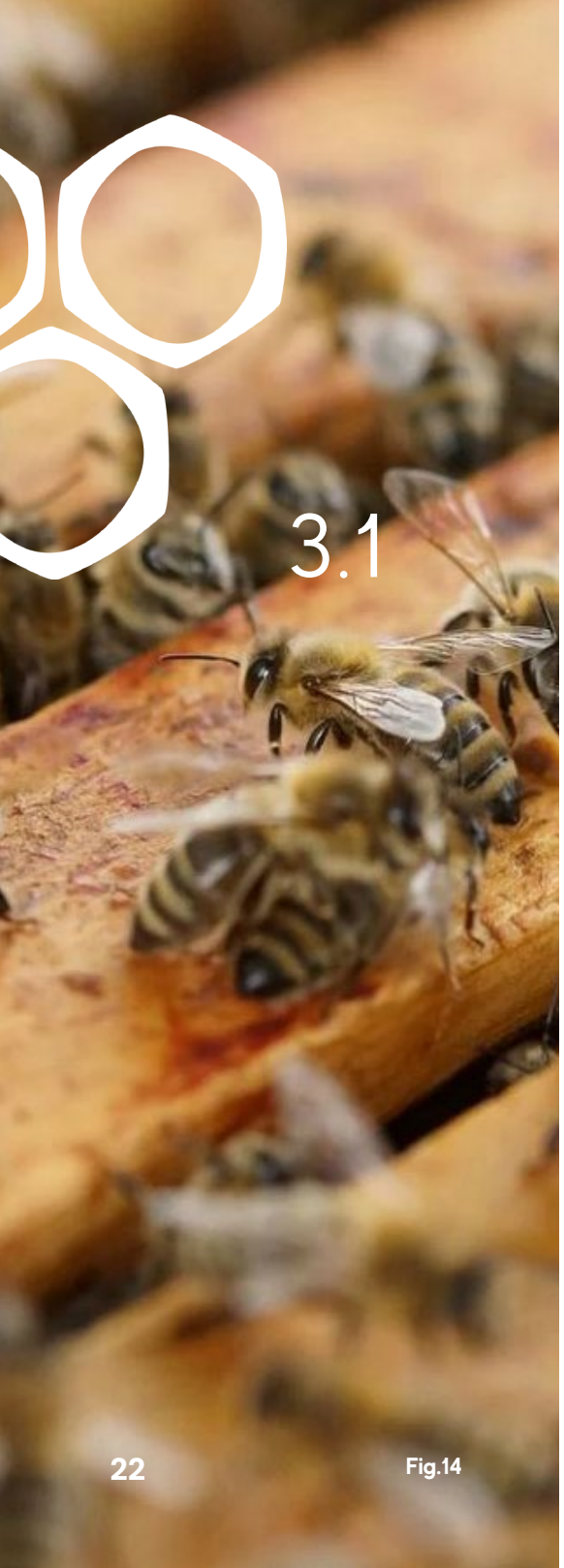
Family run woodland | Mylor

Traditionally and sustainably managed woodland, local wood products
https://carsawsan.com

PENTIDDY WOODS

Small-holding | Liskeard

Range of woodland services, products, courses, community woodland
https://pentiddy.co.uk



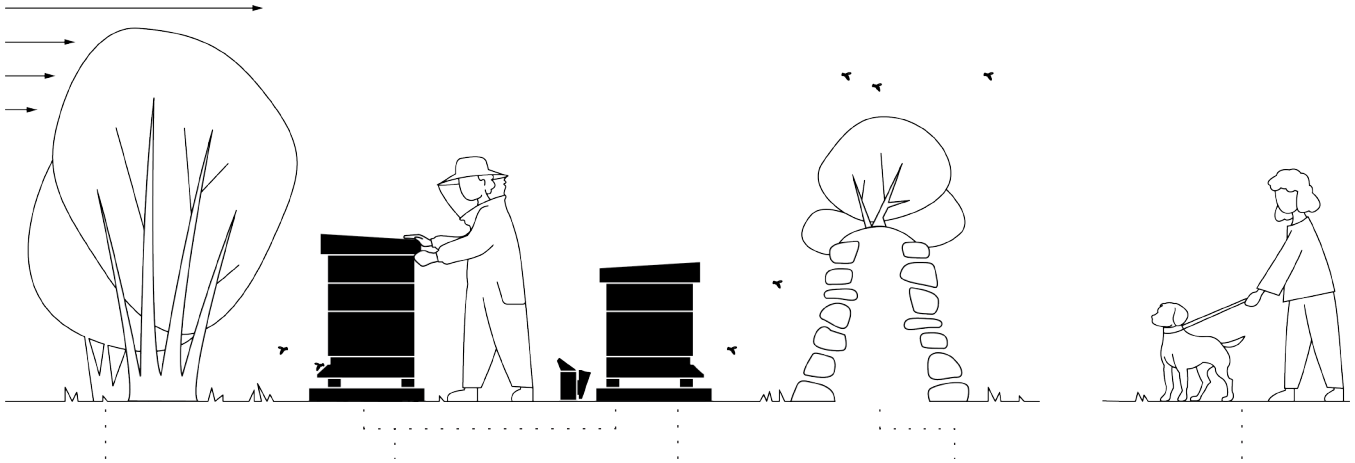
3.1

Beekeeping

Beekeeping isn't just about harvesting honey - it's a fascinating journey that connects us with our environment and even our own well-being. In regenerative beekeeping, we work alongside our little buzzing friends, the honey bees, to maintain their thriving populations, while simultaneously meeting our own needs. This means creating bee-friendly spaces that burst with colourful wildflowers and biodiversity. Bees are vital pollinators and by keeping them happy and healthy, we're also boosting our food production (20).

CATEGORY: Animal Rearing
LABOUR: 🖐🖐 - 🖐🖐🖐
COST: £ £

Food · Income · Biodiversity · Community · Heritage



Plant willows for wind protection & early flowers

At least 2 hives per apiary (if one colony fails split the other one)

Brick / stone foundation as moisture barrier

Entrance facing wall encourages bees to fly above head height

Place hives at least 10 m away from public paths

Fig.14

1 **beehive**

≈ 10–25 kg **of honey per year***

*yield depends on conditions & management, no honey production to be expected in the 1st year (20)

HOW IT WORKS

Contact a local group or association for advice, join a course and do lots of reading. Once you're ready, move on to ordering your equipment: a hive, protective clothing, a smoker, hive tool, feeder, and bees. The "British National" hive is popular for its ease of use and availability of equipment, and local bees suit our climate best. Will you get stung? Probably! It's part of the fun, but good handling minimises risks over time. Choose a sheltered spot with space (half an acre) that provides food year-round and water for your bees. Avoid facing hives towards neighbours and keep them about 10 meters from paths. Beekeeping is seasonal: winter requires occasional checks; spring and summer need weekly inspections to manage possible diseases, swarming and honey production. Harvest honey in summer and expect around 10-25 kg per hive, but this can vary. Feed bees in autumn and during poor weather with sugar syrup. Prepare for winter by uniting weak colonies, insulating hives, and ensuring ventilation.

BENEFITS

Beekeeping improves local biodiversity by promoting bee-friendly habitats that also benefit other pollinators and wildlife. Beekeeping can be combined with other regenerative practices such as horticulture, foraging and coppicing. A healthy bee population supports pollination services, contributing to food security. Planting willows for coppicing creates shelter for bees and provides nutritious flowering catkins early in the year when little else is in bloom (21). Engaging others in regenerative beekeeping also offers educational opportunities to raise awareness about the importance of bees and regenerative agriculture.

CHALLENGES

This practice involves a steep learning curve and requires an up-front investment (starter kit including equipment and one hive ~£260) (22). Knowledge is essential as an entire colony can be lost due to diseases or swarming.

Fig.15

LOCAL EXPERTS

CORNWALL BEEKEEPERS

Association | Cornwall wide

Local groups, education & courses, information & swarm reporting
https://cbka.co.uk

CORNISH BLACK BEE CO

Local business | South-West Cornwall

Specialised in Cornish "black bees", sustainable methods, courses & products
http://www.cornishblackbee.co.uk

HEATHER BELL

Local business | Helston

Equipment & honey bee colonies for every scale, breeders, consultancy
https://cornishhoney.co.uk

4.3

Reed Bed Filters

Reed is a fascinating plant often found along rivers and wetlands. It helps keep the water clean by absorbing lots of nutrients. You can also use reed in your garden, for example, if you collect rainwater in a pond. Another great use is for purifying grey water – that's all the waste water from your sinks, showers and washing machines. In the UK, each person flushes around 60 litres of grey water down the drain every day (23). Why not use all this water in your garden instead?

CATEGORY: Waste Systems
LABOUR:
COST: £

Water Waste Carbon red. Biodiversity

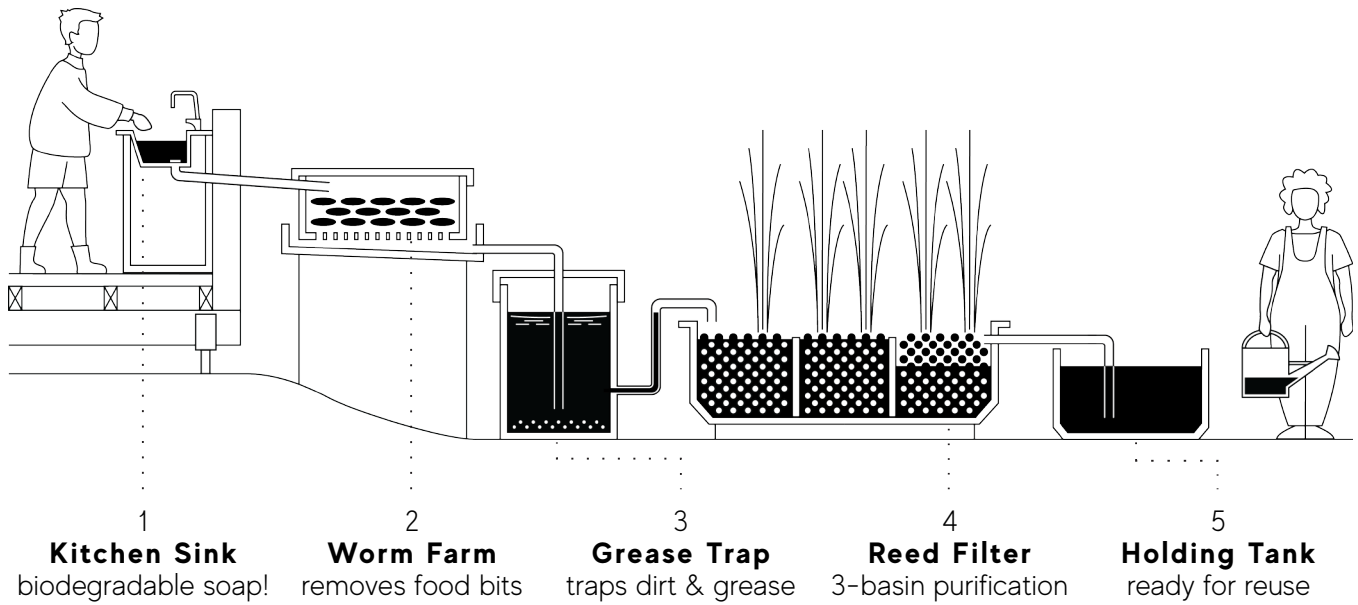


Fig.16

~ 60 litres of grey water /person/day

can be reused in your garden if you use a simple reed filtration system (23)

HOW IT WORKS

Building your own reed bed filtration system can be a fun and surprisingly simple project. There are different designs, but the key to all of them is to use only biodegradable soaps and detergents when reusing grey water in your garden. The illustration on the left shows a setup with three main filters. The first filter is a worm farm – a simple container filled with mulch and a sieve at the bottom. Water from your sink runs through the mulch, where worms break down food bits, creating valuable humus for your plants. Check your worm farm monthly to prevent clogging. Next is a large bucket, where dirty water settles at the bottom, and grease floats to the top (empty once a year). An outlet at mid-height directs the water into the reed filter, which can be an old bathtub divided into three basins filled with porous gravel or rocks. Microorganisms in the rocks and the reed roots work together to further purify the water. After this, you can collect the water in a tank and safely reuse it in your garden (24).

BENEFITS

A DIY reed filtration system is a great way to reuse wastewater and create your own natural fertiliser (humus) at the same time. It can be inexpensive to build, especially if you consider reusing scrap materials like old pipes, buckets, water tanks, or bathtubs. The reed itself can also be a beautiful addition to your garden, providing habitat for insects and attracting pollinators (24).

CHALLENGES

A natural grey water filtration system like this one needs occasional maintenance to prevent clogging and smells. The good news is that you can easily empty the contents of your worm farm and grease trap under a tree in your garden. If you're not comfortable creating a system like this on your own, it could make for a fantastic community project! Alternatively, there are local firms experienced in designing reed bed filtration systems.

Fig.17

LOCAL EXPERTS

CORNWALL SEWAGE

Sewage Service | Bude

Sewage & water treatment specialists, Custom reed beds, wildlife trust member
https://cornwallsewageservices.co.uk

PERM. ASSOCIATION

International Network

Articles & blog posts about reed filtration systems, useful links & expert contacts
https://www.permaculture.org.uk/

5.2

Solar Energy

When we talk about renewable energy, many people think of solar panels. While solar panels are an excellent way to produce your own electricity, they are quite complex, and it's best to leave their production and installation to local specialists. However, there are also simple ways to make clever use of the sun's warmth. A solar water heating system is a great example. You can build one yourself and save a lot of energy for heating your water.

CATEGORY: Energy & Water
LABOUR: -
COST: £ - £ £ £

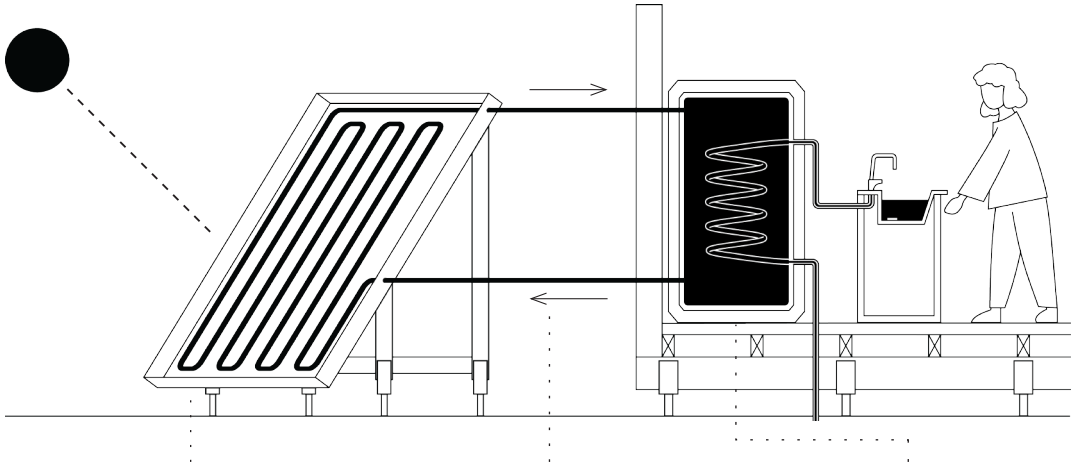
Electricity

Carbon red.

Simple DIY Solar Water Heating System

You'll need:

- PVC pipes (collector loop)
- Copper pipes (water loop)
- Pipe joints
- Sealant
- Water tank
- Insulation material
- Wooden planks
- Glass sheet



Solar Collector Pipe System
wooden frame acts as a greenhouse

Natural Water Circulation
through heating up and cooling down

Heat Exchanger
fresh water pipe spirals up and absorbs heat

Fig.18

Depending on your Solar Water Heating System's efficiency, it can cover:

~ 90%

of your hot water requirements in summer

~ 25%

of your hot water requirements in winter (27)

HOW IT WORKS

The system illustrated on the left heats water by circulating it through pipes exposed to sunlight. The setup includes a collector loop and a fresh water loop. The collector loop is made up of a grid of PVC pipes mounted on a wooden frame and connected to a water tank. To maximise heat absorption, paint the pipes black and cover the frame with glass or polycarbonate to create a greenhouse effect. Place the water tank above the pipes for natural water circulation. As the water in the pipes heats up, it rises into the tank, and cooler water from the tank flows down into the pipes to be reheated. Cover the tank with insulation material to retain the warmth for as long as possible. For the fresh water loop, use copper pipes connected to your fresh water source (such as a well). Let the pipes spiral up in the water tank so they can absorb the heat from the water in the collector loop. By keeping both loops separate, you can continue using your fresh water loop even if you decide to turn off the collector loop (25).

BENEFITS

You can save both energy and money by using solar energy during the times of the year when it's available. Although any system requires upfront costs, whether you hire a professional or do it yourself, it will pay off in the long run and provide you with greater self-sufficiency.

CHALLENGES

DIY solar water heaters can be damaged when temperatures drop below zero, causing the water in the pipes to freeze and expand. In Cornwall, this is rarely an issue, but if it does get that cold, simply drain the system in advance. However, during heat waves, the pipes can become extremely hot, potentially causing the water to steam (26). It's important to research how to design your system safely to avoid any hazards. If you feel uncomfortable tackling a project like this on your own, don't hesitate to contact local experts or specialised companies for help.

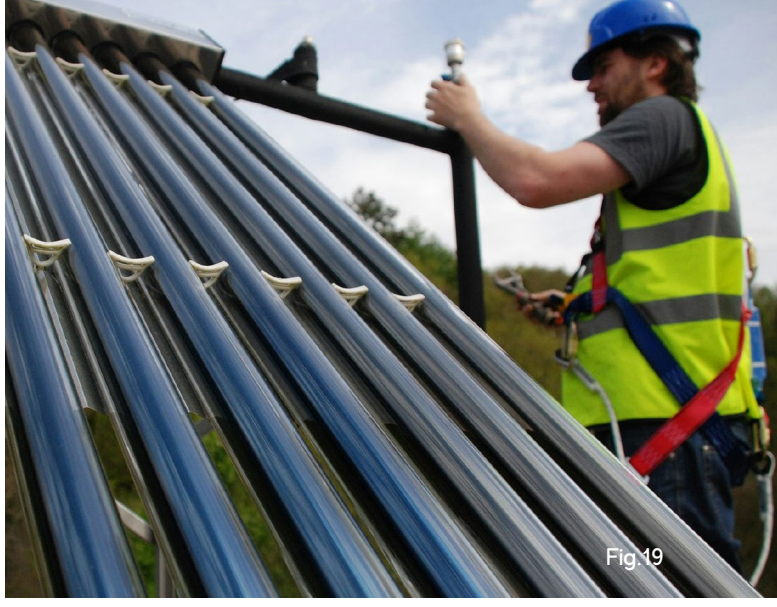


Fig.19

LOCAL EXPERTS

NAKED SOLAR

Solar Panel Installer | Newquay

Local company specialised in installing solar panels (PV)
https://nakedsolar.co.uk/storage

TREVONE QUARRY

Community | Mabe, Penryn

Residents and entrepreneurs have built their own solar water heating systems
www.facebook.com/trevonequarry/

PERMANENTLY BRILLIANT

Manda Brookman | Hayle

Manda's off-grid site is a great example for energy efficiency & solar systems
http://www.permanentlybrilliant.com

6.1

Fig.20

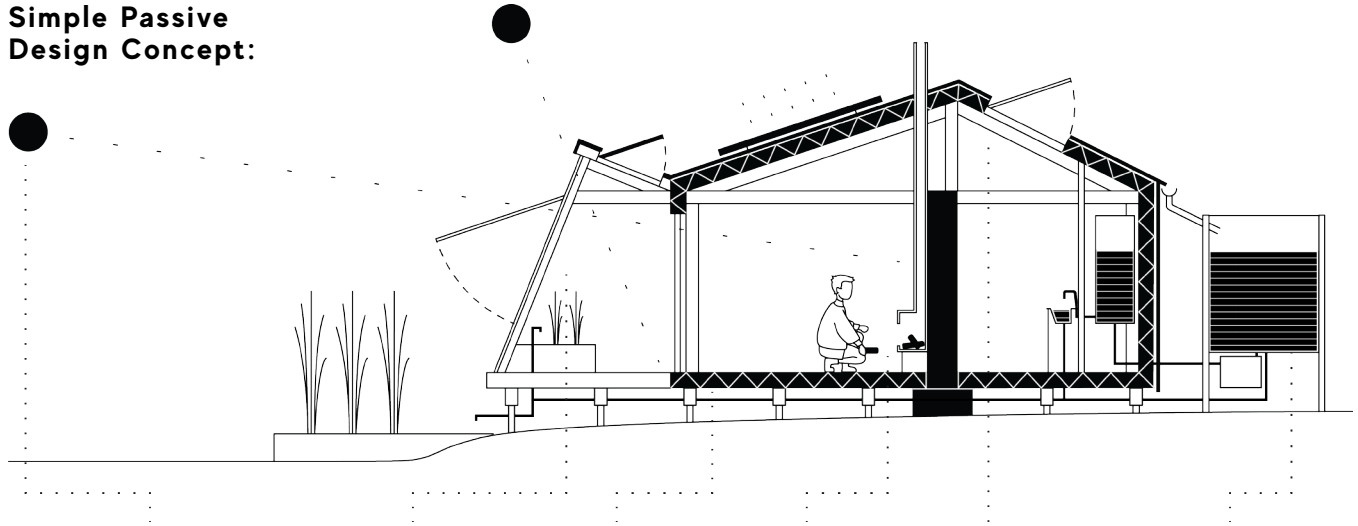
Passive Design

You might have heard of the term "passive house" – an approach to building homes that optimise energy use. While this is a great idea, passive houses often rely on high-tech solutions and materials, which can make sustainable architecture seem complicated and utterly expensive. However, smart passive design can achieve similar, or even better, results and offers a range of options to suit your needs and budget (28).

CATEGORY: Construction & Design
LABOUR: -
COST: £ - £ £ £

Carbon red. Waste Electricity Water Heritage

Simple Passive Design Concept:



Embrace the low winter sun, keep out high summer sun

Sunspace thermal buffer zone

Breathable insulation layer

Efficient & central heating

Natural ventilation system

Harvest rain water to irrigate plants & filter + reuse inside

Your home's energy efficiency can be increased by

~ 30%

by using a well-designed sunspace as a thermal buffer, though this depends on site conditions, climate, and usage patterns (29).

HOW IT WORKS

Passive design is a broad topic, with entire books dedicated to it. But the core principles are simple. Let's take a look at the illustration on the left to understand some of them! The first and most crucial step is understanding your site. Orient your living spaces towards the sun and consider wind direction for both protection and enhancing natural ventilation. The sun provides free energy, and you can use it. Sunspaces act like greenhouses, offering extra warmth in winter and shielding you from the summer sun. If it gets too cold in winter, central heating can help distribute heat evenly. Efficient wood burners are a great choice, especially when paired with bricks or rammed earth, which store and slowly release heat. A layer of insulation helps keep warmth inside. Natural materials like hemp or wood fibre are excellent insulators that also help regulate humidity and prevent mould. Finally, passive design focuses on reusing resources – from choosing your building materials to simple rainwater harvesting systems (28).

BENEFITS

Our houses shouldn't just be machines focused on efficiency. While saving and producing your own energy benefits both the environment and your wallet, there's more to consider. Ideally, our homes should be safe, comfortable, and enjoyable living spaces. Passive design doesn't compromise these qualities – on the contrary, it can enhance them. For example, naturally breathable walls are a healthier choice compared to conventional airtight systems, which often rely on questionable materials and chemicals. Additionally, efficiently using solar energy can create beautiful, light-filled spaces.

CHALLENGES

Designing and building a home can feel overwhelming if you have little or no experience. Fortunately, there are local initiatives specialised in connecting architecture with communities. Don't hesitate to reach out and explore how you can get involved.

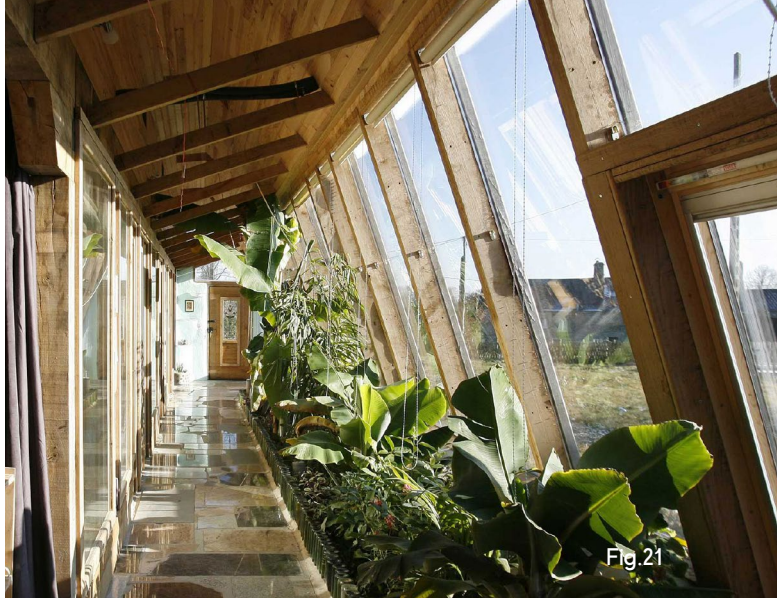


Fig.21

LOCAL EXPERTS

SOCIAL DESIGNS

Community Interest Company | Penryn

Specialised in sustainable building practices, workshops & consultancy
https://www.socialdesigns.org/

RECOLLECTIVE

UK-wide network with links in Cornwall

Enabling community projects with reused construction materials & passive design
https://recollective.uk/

7.4

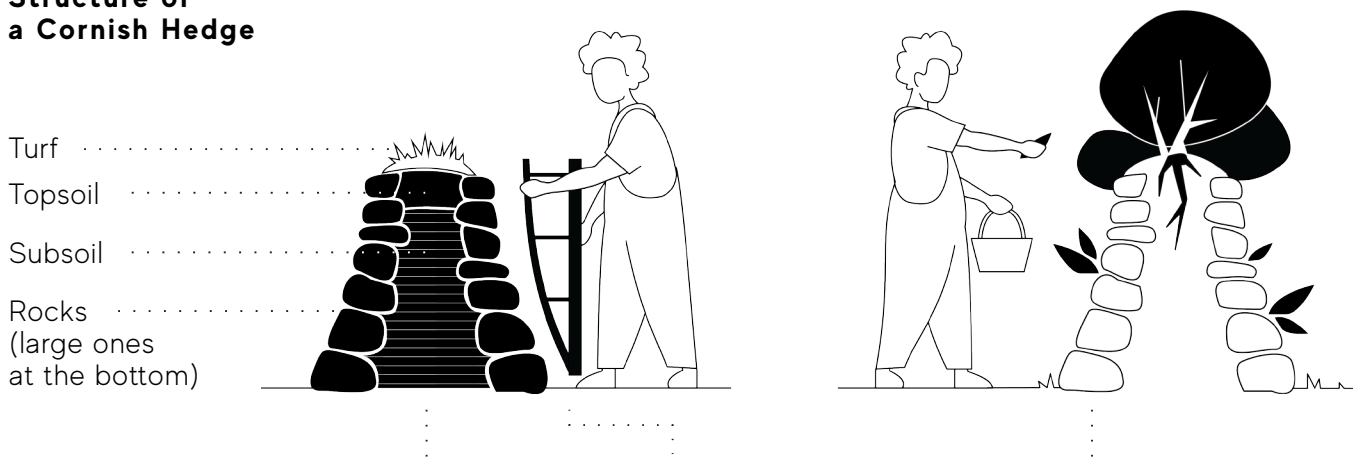
Cornish Hedging

The Cornish landscape is known for its vast network of hedges, which have been used to manage farmland for centuries. Some are incredibly ancient, dating back up to 4,000 years. But they are more than just a heritage feature! Often overgrown with a variety of plants, these hedges provide a sanctuary for biodiversity and a vital habitat for wildlife displaced by conventional agriculture (30). Why not build your own Cornish hedge to upgrade your garden?

CATEGORY: Wildlife & Biodiversity
LABOUR:
COST: £

Heritage · Biodiversity · Food · Community · Income

Structure of a Cornish Hedge



Dimensions: height equals bottom width

For optimal strength: concave shape

After a few years: plants have populated the cracks adding stability with their roots & providing food

Fig.22

~30,000 miles of hedges

cover the county, making the Cornish hedge one of the most distinctive landscape features and the region's largest semi-natural habitat (30)

HOW IT WORKS

Building a hedge isn't rocket science, but having the right knowledge and technique is important for ensuring durability and maximising its benefits. A hedge should be widest at the bottom, with the height roughly equal to the width at the base, tapering to about half that width at the top. For stability, the slopes on both sides should be concave rather than straight. The illustration on the left gives you an indication for the optimal shape. For the hedge's core, use dense subsoil, which is found deeper in the ground. Avoid using too much topsoil with organic matter, as this can cause the hedge to collapse over time as the soil compacts. Cover the top with topsoil and finish with turf to promote plant growth. Over time, plants will grow on the top and in the cracks of your hedge. Their root system will improve stability by binding the rocks together, acting like a glue. You can even plant specific shrubs or plants to provide fresh fruit and herbs throughout the year (30).

BENEFITS

Hedges boost biodiversity by providing important habitats and wildlife corridors, allowing animals to safely move through the countryside. But the benefits don't stop there. Hedges can also shield your garden from harsh winds and attract pollinators, which will improve the quality of your produce. Building a hedge can be a wonderful community project and a calming activity, as it encourages you to slow down and place each rock carefully. Hedging can even be a source of income, as demand for this craft continues to grow (30).

CHALLENGES

Hedging is a labour-intensive practice, which can make it even more frustrating if a hedge collapses due to poor technique or the wrong choice of materials. If you're interested in learning more, be sure to explore local training opportunities. These will not only equip you with the right skills but also connect you with a community of like-minded people.

Fig.23

LOCAL EXPERTS

CREST CORNWALL

Rural Education & Skills Training | Redruth

Teaching land-based skills & crafts, focus on community & nature, bursary schemes
https://crestcornwall.co.uk/

GUILD OF HEDGERS

Guild of Cornish Hedgers

Information, training, contracting fully-certified craftsmen
https://www.cornishhedgers.org.uk/

Regenerative Community

Food & Growing

Crop Cultivation

Animal Rearing

Waste Systems

Energy & Water

Construction & Design

Wildlife & Biodiversity

BIBLIOGRAPHY - PRACTICAL GUIDE

1 Cornwall Council. (2020). The Cornwall We Know Jan 2020 snapshot COVID updates. In Letstalk.cornwall.gov.uk. Retrieved October 23, 2023, from https://letstalk.cornwall.gov.uk/4713/widgets/14409/documents/7334

2 Cornwall Council. (2019). Climate Change Plan. In Cornwall Council. Retrieved August 27, 2024, from https://www.cornwall.gov.uk/environment/climate-emergency/our-action-plan/

3 Cornwall Council. (2023). Climate Emergency Development Plan Document. In Cornwall Council. Retrieved September 19, 2023, from https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/climate-emergency-development-plan-document/

4 Shorten, J., & Knight, B. (2023). Policy AL1 – Regenerative, Low Impact Development Policy Guidance. In Cornwall Council. Cornwall Council. Retrieved February 27, 2024, from https://www.cornwall.gov.uk/media/idnc4ptm/al1-guidance-document.pdf

5 One Planet Council. (2022). Review of One Planet Development in Wales 2010-2021. In One Planet Council. Retrieved February 27, 2024, from http://www.oneplanetcouncil.org.uk/review-of-opd-2010-2021/

6 Permaculture Association. (n.d.). What is Permaculture? Retrieved July 25, 2024, from https://www.permaculture.org.uk/what-is-permaculture

7 Manner, L. (2023). How the 12 Principles of Permaculture can transform your garden. Green Connect Illawarra. https://green-connect.com.au/heres-your-guide-to-the-12-principles-of-permaculture/

8 Smith, D. (2020). How to grow your own fruit and vegetables - a beginner's guide. Bristol Live. https://www.cornwalllive.com/whats-on/whats-on-news/how-grow-your-fruit-vegetables-4038753

9 Jeavons, J. C. (2001). Biointensive sustainable mini-farming: II. Perspective, principles, techniques and history. Journal of Sustainable Agriculture, 19(2), 65-76.

10 Forest Gardening – the Agroforestry Research Trust. (n.d.). https://www.agroforestry.co.uk/about-agroforestry/forest-gardening/

11 de Hart, R. A. J. (1996). Forest gardening. Rediscovering nature and community in a post industrial age.

12 Digital, P. (2021). Is hemp legal in the UK? Good Hemp. https://www.goodhemp.com/hemp-hub/is-hemp-legal-in-the-uk/

13 Midcalf, R. (n.d.). Interested in farming hemp in the UK? UK Hemp Ltd. https://ukhempltd.co.uk/pages/interested-in-farming-industrial-hemp-in-the-uk

14 Industrial hemp licensing: factsheet. (2023). GOV.UK. https://www.gov.uk/government/publications/industrial-hemp-licensing-guidance/industrial-hemp-licensing-factsheet

15 Growing and sowing. (n.d.). https://www.flaxland.co.uk/growing

16 Linseed | The Linseed Farm. (n.d.). https://www.thelinseedfarm.co.uk/linseed

17 Dyer, M. H. (2023). Flaxseed harvesting time: Learn how to harvest flaxseed in gardens. Gardeningknowhow. https://www.gardeningknowhow.com/ornamental/flowers/flax/how-to-harvest-flaxseed.htm

18 What is coppicing a tree? (n.d.). National Trust. https://www.nationaltrust.org.uk/discover/nature/trees-plants/what-is-coppicing

19 The Willow Bank. (2022). The Willow Bank - Grow your Own Firewood - the COPSE system. The Willow Bank - Willow Specialists Since 1985. https://www.thewillowbank.com/grow-your-own-firewood/

20 Becoming a beekeeper. (n.d.). British Beekeepers Association. https://www.bbka.org.uk/becoming-a-beekeeper

21 Willow, Salix candida | Heather Bell Honey Bees Ltd. (n.d.). https://cornishhoney.co.uk/info.php?pages_id=66

22 National Bee Hive, Starter Kit with Options. (n.d.). Heather Bell Honey Bees Ltd. https://cornishhoney.co.uk/product_info.php?products_id=30

23 Recycling bathwater for watering gardens set to become mainstream. (n.d.). Royal Horticultural Society. https://www.rhs.org.uk/science/articles/greywater-to-become-mainstream

24 Living Big In A Tiny House. (2018). Simple Permaculture-Based Grey-Water treatment system [Video]. YouTube. https://www.youtube.com/watch?v=uZXMOfkrZYA

25 A simple DIY thermosyphon solar water heating system. (n.d.). https://www.builditsolar.com/Projects/WaterHeating/ThermosyphonDIY/ThermosyphonDIY.htm

26 Solar thermal - DIY flush/refill using mains water. (2023). The Renewable Energy Hub. Retrieved July 23, 2024, from https://www.renewableenergyhub.co.uk/forum/solar-thermal-solar-hot-water-systems/solar-thermal-diy-flushrefill-using-mains-water/

27 Energy Saving Trust. (2024). Advice on installing solar water heating - Energy Saving Trust. https://energysavingtrust.org.uk/advice/solar-water-heating/

28 UK Green Building Council. (n.d.). Sustainable Design Practical Guide. In UK Green Building Council. Retrieved May 16, 2024, from https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://ukgbc.org/wp-content/uploads/2023/03/Sustainable-Design.pdf&ved=2ahUKEwiz7778plIAxWpaUEAHRKwAkoQFnoECBIQAQ&usg=AOvVaw0-TY8yJXFGYni_c1_OJumz

29 Emma. (2020). Architecture Design Basics - Passive Solar Design. First In Architecture. https://www.firstinarchitecture.co.uk/architecture-design-basics-passive-solar-design/

30 Home - Crest Cornwall. (2024, March 7). Crest Cornwall. https://crestcornwall.co.uk/

Image References

Figure 1: Girvan, S. (2023). Meet The Producer: Goonown Growers. Trurofarmers.co. https://www.trurofarmers.co.uk/meet-goonown-growers/

Figure 2: Cartlidge, M. (2023). Cornwall Food Systems Summit. Sustainablefoodplaces.org. https://www.sustainablefoodplaces.org/events/cornwall_event_1683721674/

Figure 3: Williams, C. (2020). Unique barn photographed for an eco-friendly retreat. Claire Williams Photography. https://www.clairewilliamsphotography.co.uk/blog/2020/9/30/unique-timber-framed-barn-photographed-for-a-eco-friendly-retreat

Figure 4: Pandian, G. (2012). Writing and Gardening. Gigi Pandian. https://www.gigipandian.com/gigipandian/tag/green+smoothie

Figure 5: Aranya. (n.d.). South Trelowia Barn. Permaculture Association. https://www.permaculture.org.uk/education/course/east-cornwall-residential-permaculture-design-course-aranyas-home-site

Figure 6: Miles, S. (n.d.). Asian Pear: Kumoi (Pyrus pyrifolia). The Forest Garden Falmouth. https://theforestgarden.co.uk/shop/p/pears-asian-pear-pyrus-pyrifolia-variety-olympic-nrl27-t7b9m

Figure 7: The Forest Garden Falmouth. (2023). The Forest Garden Falmouth. Theforestgarden.co. https://theforestgarden.co.uk/

Figure 8: Singh, A. (2023). Tilray Brands aims bolster Beverages Portfolio through Acquisitions. Reuters. https://www.reuters.com/legal/transactional/tilray-brands-aims-bolster-beverages-portfolio-through-acquisitions-2023-07-27/

Figure 9: Berrow, J. (2023). Rebuilding the Connection Between Fibers, Textiles, and the UK Landscape. Textile Exchange. https://textileexchange.org/fieldnotes-farming-fibers-uk-soil/

Figure 10: Karmana. (2020). Flax field. Karmashiki. https://karmashiki.ru/lessons/theory/fabric-composition/

Figure 11: Berrow, J. (2023). Flax Project C.I.C. Flax Project C.I.C. https://www.flaxproject.uk/about-flax-project-cic

Figure 12: Log Holder Company. (n.d.). Carlow Co Carlow Premium Firewood Logs. The Log Holder Company. https://logholdercompany.com/carlow-co-carlow-premium-firewood-logs-for-sale-delivered-free/

Figure 13: Working Woodlands Cornwall CIC. (n.d.). Oakbuds. https://workingwoodlandscornwall.com/

Figure 14: Sellman, P. (2016). Beehive Democracy. Waldenlabs. https://waldenlabs.com/bee-hive-anarchistic-monarchy/

Figure 15: My Beeline. (n.d.). 7 beekeeping tips every beginner should know. http://www.mybeeline.co/en/p/7-beekeeping-tips-every-beginner-should-know

Figure 16: What are the benefits of reeds in the garden? (2022). Sems Garden. https://www.semsgarden.com/blog/gardening/grasses-and-ferns/what-are-the-benefits-of-reeds-in-the-garden/

Figure 17: Arm Reedbeds. (n.d.). Uffington Waste Water Treatment Works. https://armreedbeds.co.uk/projects/uffington/

Figure 18: Do Solar Panels Work on Cloudy Days. (n.d.). Natures Generator. https://naturesgenerator.com/blogs/news/do-solar-panels-work-on-cloudy-days

Figure 19: CAT. (n.d.). Installing Solar Water Heating at CAT. Centre for Alternative Technology. https://cat.org.uk/info-resources/free-information-service/energy/solar-water-heating/

Figure 20: Proctor, O. (2020). Margent Farm Flat House. Material Cultures. https://materialcultures.org/flat-house/

Figure 21: Earthship Eco Home. (n.d.). Realestate.com.au. https://www.realestate.com.au/advice/what-the-hell-is-an-earthship/

Figure 22: Westend61. (2018). Great Britain, Cornwall, near Newquay, Marsh daisies on natural stone wall. Gettyimages. https://www.gettyimages.co.uk/detail/photo/great-britain-cornwall-near-newquay-marsh-daisies-royalty-free-image/909232626

Figure 23: CREST Cornwall. (n.d.). Crest Image 34. https://crestcornwall.co.uk/