E-book format of webpage

Site: Fab Lab Learn
Course: Cradley Heath Living Lab
Book: E-book format of webpage

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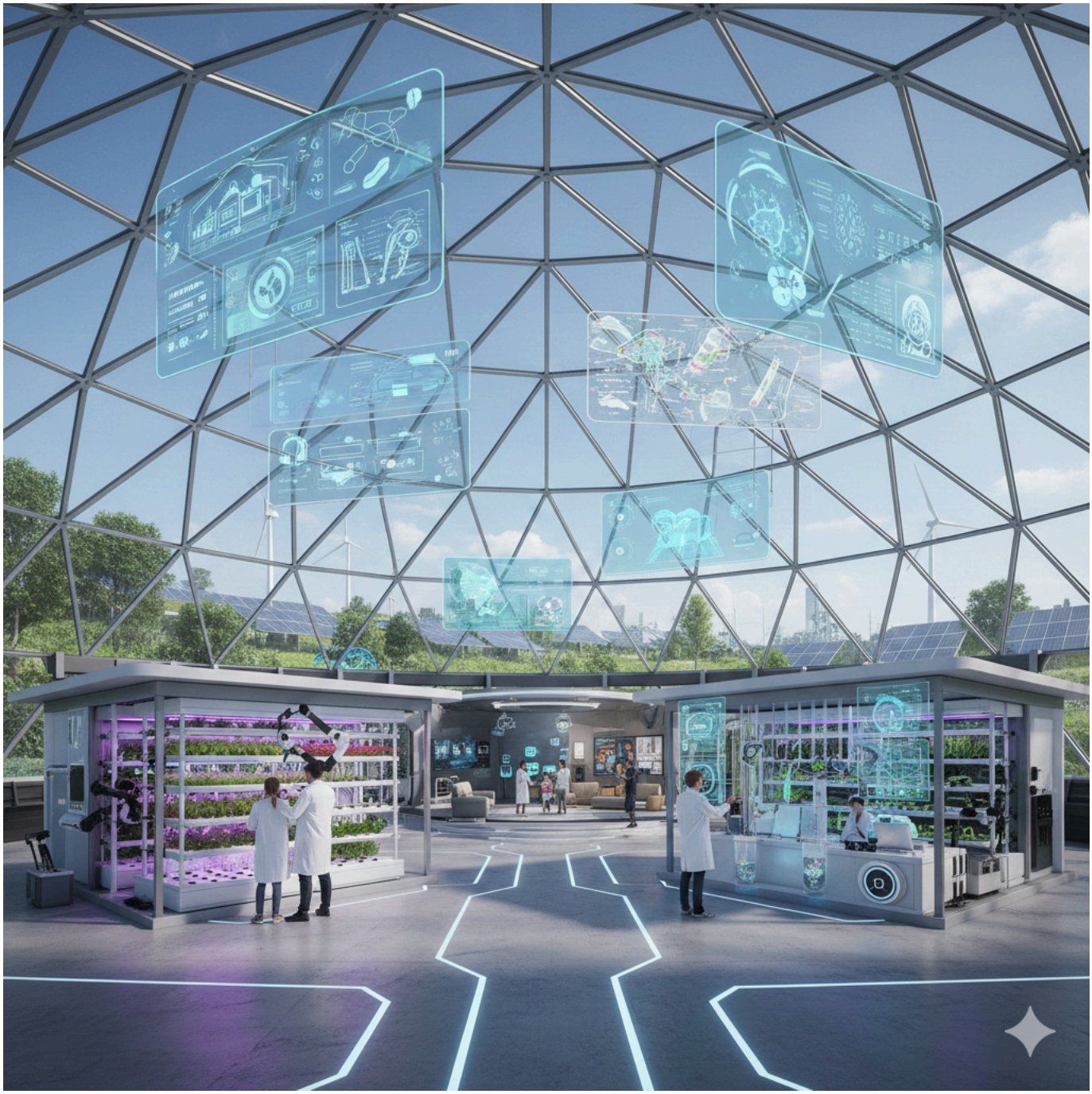
1. Welcome

What is a "Living Lab"?



A **Living Lab** is a research and innovation concept that moves experimentation out of the traditional, closed laboratory and into real-world environments.

Instead of scientists testing a product in a vacuum, a Living Lab tests ideas in actual neighborhoods, homes, or workplaces with the people who will actually use them.

The 5 Core Characteristics

According to the **European Network of Living Labs (ENoLL)**, a project must generally meet these five criteria to be considered a true Living Lab:

1. **Real-Life Setting:** Testing takes place in "wild" environments (like a city street or a education campus) rather than a controlled lab.
2. **Co-Creation:** Users aren't just "test subjects"; they are active partners who help design and suggest improvements to the solution.
3. **Multi-Stakeholder:** It involves the "Quadruple Helix"—government, industry, academia, and citizens—all working together.
4. **Active User Involvement:** Users provide continuous feedback throughout the entire development process, not just at the end.
5. **Multi-Method Approach:** Researchers use a variety of tools (interviews, data sensors, ethnography, and prototyping) to gather a complete picture of how the innovation works.

Why use them?

Living Labs are specifically designed to tackle **"wicked problems"**—complex issues like climate change, urban congestion, or healthcare for aging populations—where there is no single right answer and human behavior is a huge factor.

Common Examples

- **Urban Living Labs:** A city might block off a street to cars and install smart sensors to see how residents change their walking habits or how local air quality improves.
- **Campus Living Labs:** Universities often use their own buildings to test green energy technologies or waste-reduction programs, using students and staff as the primary "users."
- **Health Living Labs:** Testing new "smart home" technologies in the actual apartments of elderly citizens to see if the tech actually helps them live more independently without being intrusive.

In short, a Living Lab is a way of saying: **"Let's build this *with* the people it's for, in the place where they'll use it."**

2. How Can the Living Lab Benefit You as an Employer?

In the care sector, the "Living Lab" model is a game-changer for employers because it solves one of the industry's biggest headaches: **the gap between high-tech promises and the messy reality of daily care.**

By turning a care home or home-care service into a Living Lab, employers gain several strategic advantages:

1. Better Staff Retention and Job Satisfaction

Care work is physically and emotionally demanding. Living Labs involve frontline staff in the design of their own tools.

- **Empowerment:** Instead of having a new software or lift system forced on them, staff act as "co-creators." This increases their sense of professional agency.
- **Reduced Burnout:** Innovations tested in Living Labs often focus on reducing administrative burdens or physical strain (e.g., ergonomic sensors or automated reporting), allowing staff to focus on the human side of care.

2. De-Risking Investments

New technology in the care sector is expensive and often fails because it doesn't fit the workflow.

- **"Fail Fast" and Cheaply:** Employers can test a new falls-detection sensor in one wing of a building before buying it for the entire organization.
- **Evidence-Based Buying:** Employers get real-world data on whether a product actually saves time or improves resident safety, rather than relying on a salesperson's pitch.

3. Improved Quality of Care (and Ratings)

Regulators and families are increasingly looking for evidence of "innovation" and "person-centered care."

- **Continuous Improvement:** A Living Lab creates a culture of constant feedback. Issues (like a resident's rising social isolation) are caught earlier because the "lab" environment encourages active monitoring and creative problem-solving.
- **Marketing Advantage:** Being a "Living Lab" signals to families that their loved ones are in a cutting-edge environment that values resident and family input.

4. Direct Collaboration with Experts

Living Labs usually involve a partnership with a university or research institute.

- **Access to Talent:** Employers get direct access to researchers & students, who can provide data analysis and fresh perspectives that a standard care business couldn't afford on its own.
- **Funding Opportunities:** Many government grants for "Innovation in Ageing" require a real-world testing site. By being a Living Lab, an employer becomes a magnet for research funding.

Summary of Benefits for Employers

Benefit Area	Impact
Workforce	Higher morale, lower turnover, and improved skills.
Financial	Avoids "white elephant" tech purchases; attracts research grants.
Operations	Streamlined workflows and reduced administrative "friction."
Reputation	Positioned as an industry leader and center of excellence.

3. How Can the Living Lab Benefit You as a Employee?

While employers see the strategic and financial gains, the **employees** (nurses, care assistants, and support workers) experience the benefits of a Living Lab in their day-to-day work life. It shifts their role from being "passive users" of equipment to "active experts" of their environment.

Here is how a Living Lab specifically benefits care sector employees:

1. Reduced Physical and Mental Strain

Living Labs focus on co-designing technologies that solve actual pain points.

- **Ergonomic Support:** Employees help test and refine assistive devices (like smart hoists or exoskeletons) that reduce the physical risk of back injuries.
- **Reduced "Tech Frustration":** Because staff are involved in the design, the resulting software (for records or scheduling) is usually more intuitive, leading to fewer "computer says no" moments and less administrative burnout.

2. Decision-Making Power (Job Control)

One of the biggest causes of stress in care is a high workload combined with low "job control" (the ability to influence how you work).

- **Professional Agency:** In a Living Lab, an employee's expertise is treated as equal to a researcher's. Being asked "How should this work?" instead of being told "Do it this way" significantly boosts morale.
- **Mastery and Skills:** Staff gain "mastery" over new innovations early on, making them internal experts and leaders within their teams.

3. Increased Safety and Efficiency

- **Better Data, Better Care:** Living Labs often implement real-time monitoring (e.g., smart sensors for fall detection). For a night-shift nurse, this means being alerted to an actual emergency immediately, rather than the anxiety of "checking in" and potentially missing a resident who has fallen.
- **More "Care Time":** When technology is designed to handle repetitive tasks (like automated fluid-intake logging), employees can spend more time on the human aspect of the job—actually talking to and supporting residents.

4. Professional Development and Status

Working in a Living Lab elevates a care worker's career profile.

- **Interdisciplinary Exposure:** Employees get to work alongside engineers, data scientists, and academics, broadening their professional network and understanding of the sector.
- **CV Enhancement:** Having experience in "Clinical Innovation" or "Co-Design Research" makes an employee more competitive for senior or specialized roles.

5. Improved Team Cohesion

The collaborative nature of a Living Lab breaks down silos.

- **Shared Purpose:** Working on a specific innovation project together can improve the bond between different departments (e.g., catering, nursing, and maintenance).
- **Supportive Culture:** Because Living Labs rely on honest feedback, they often foster a culture where staff feel safer speaking up about what isn't working without fear of blame.

Comparison: Traditional vs. Living Lab Work Life

Feature	Traditional Care Work	Living Lab Care Work
Technology	Imposed from above; often clunky.	Co-created; fits the workflow.
Feedback	Top-down instructions.	Constant, valued loop.
Daily Stress	High demand, low control.	High demand, high support/control.

Feature	Traditional Care Work	Living Lab Care Work
Career Path	Linear and repetitive.	Dynamic; involves research and design.

4. How Can the Living Lab Benefit You as a Learner?

For learners in the care sector—whether they are students in nursing, social work, or vocational care trainees—a Living Lab transforms education from a textbook exercise into a high-stakes, high-reward apprenticeship in innovation.

Here is how the Living Lab model specifically benefits the "next generation" of care professionals:

1. "Hidden" Knowledge and Mastery

Traditional training focuses on clinical tasks (how to take blood pressure or use a hoist). Living Labs teach **mastery of the environment.**

- **Contextual Learning:** Learners see how a resident's mood, the physical layout of a room, and a piece of technology interact in real-time.
- **Hands-on with Emerging Tech:** Learners get to use "future-tech" (like care robotics, VR for dementia empathy, or AI-driven monitoring) before it hits the mainstream market, making them highly employable "digital champions."

2. Bridging the "Theory-Practice Gap"

One of the biggest shocks for care learners is moving from a sterile classroom to a chaotic real-world setting.

- **Experiential Learning:** Living Labs act as a "soft landing." Learners participate in real research and problem-solving but within a structured, collaborative framework.
- **Evidence-Based Practice:** Instead of just being told "this is the best way to do things," learners participate in the data collection that *proves* why a certain method works, reinforcing the importance of research in daily care.

3. Development of "Human-Centric" Soft Skills

Because Living Labs are built on **co-creation**, learners are forced to step out of the "expert" role and into the "collaborator" role.

- **Empathy and Communication:** Learners work directly with residents and their families to design solutions. This teaches them how to listen to the *lived experience* of service users, not just their symptoms.
- **Interdisciplinary Teamwork:** A learner in a Living Lab might find themselves in a meeting with a software engineer, a sociologist, and a local government official. This builds professional confidence and a broader understanding of how the care system works as a whole.

4. Career Empowerment and Agency

Learners often feel like the "lowest" person in the hierarchy. In a Living Lab, their fresh perspective is a valuable asset.

- **Becoming "Change Agents":** Learners are encouraged to ask "Why do we do it this way?" and "Could we do it better?" This fosters a mindset of continuous improvement rather than passive compliance.
- **Portfolio Building:** Participating in a published study or a successful tech pilot provides a significant boost to a CV, demonstrating that the learner is capable of innovation and high-level critical thinking.

Comparison for the Learner

Learning Aspect	Traditional Education	Living Lab Education
Primary Goal	Qualification / Compliance	Innovation / Problem Solving
Technology	Theory-based / Outdated	Cutting-edge / Experimental
User Interaction	Practical placement (Tasks)	Co-creation (Partnership)
Skillset	Clinical & Administrative	Strategic, Creative & Technical

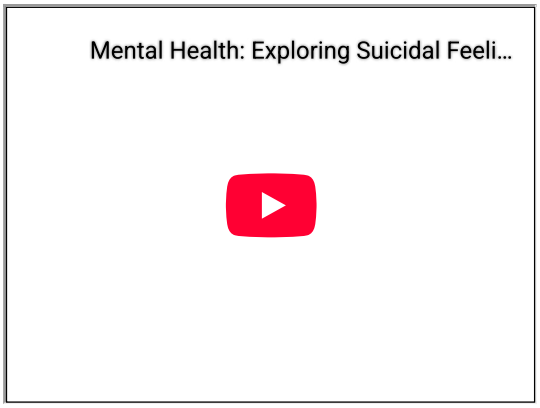
5. Accessing Innovative Technology at the Cradley Heath Living Lab

Here at the Cradley Heath Campus we have a range of innovative technologies that can be made available to use with employers, employees and learners alike in the development of real life problem solving, skill and knowledge acquisition.

Virtual Reality Head Sets

For several years now, the college have worked in close partnership with EdTech companies such as Bodyswaps. Bodyswaps is a "soft skills" development suit of simulations which enable users users to engage with real life scenarios in a variety of different contexts. In our partnership work, we have specifically fed into the development of their health and care simulations.

Here is one example of how skill development was explored with a simulated service user experiencing mental health challenges:



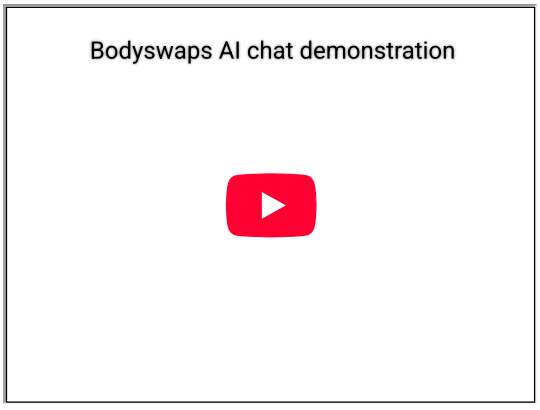
An additional notable feature of the Bodyswaps software is their integration and application of **Artificial Intelligence**.

Here, bespoke scenarios can be created for users to engage with an "unscripted" avatar that has custom personality and behaviour traits. With this, users can not only engage with specific service user dynamics in a "safe" environment, but from the VR head set sensor input, they can receive feedback on their handling of the situation with metrics such as:

- Levels of eye contact
- Pace and tone of voice
- Words used
- Body language

These metrics can be recorded and collated in a pdf file format for post session analysis.

Here is a worked example of such a session where a tutor is using the AI simulation to engage with a bespoke avatar:



3D Printing and Assistive Technology

The Living Lab at Cradley Heath has a on site 3D printer where bespoke solutions to specific challenges can be talked out, designed and created.

Additional to this we have an array of mechanical and non-mechanical assistive technologies that reflect how assistive technology can be used within real life settings.