

Pattern Language Assembly Guide

How Workshop Outputs Become Collective Knowledge

February 2026 | Version 1.1 | CC BY-SA 4.0

Assembling the Pattern Language of Place

How Workshop Outputs Become Collective Knowledge

Erdpuls Müllrose — Living Laboratory & Makerspace Garden

Version: 1.1

Date: February 2026

Changelog

Version	Date	Changes
1.1	February 2026	Institution name updated; license footer added; version updated for OER publication
1.0	October 2025	Initial release

Why This Document Exists

The Pattern Discovery Toolkit describes the *theory* of pattern languages. The twenty living experience guides describe *how to run workshops* that generate observations. This document bridges the gap: it explains how the facilitator takes the accumulated outputs of a full year of programming — pattern cards, field sheets, GPS tracks, maps, token records, photographs, memory recordings, quality evaluations — and assembles them into a living, place-specific pattern language.

A pattern language is not a database. It is a web of named relationships, connected across scales, that describes how a specific place works — ecologically, socially, culturally, economically. It is authored collectively by everyone who has participated: children who saw a transition adults missed, elders who remembered a stream that no longer exists, artists who drew a sound-map of the valley, Polish neighbours who mapped the same glacial landscape from the other side of the border. The facilitator is the weaver. This document is the loom.

PART ONE: What the Workshops Produce

The Raw Materials of a Pattern Language

After one full year of programming (all 20 guides conducted once), the following materials have accumulated:

From Appendix A — Questions to the Soil (5 workshops)

- 5 sets of completed soil field sheets (Feldbogen), each documenting a different target group's observations at the campus soil stations
- Soil color, texture, pH, temperature, moisture, and organism count data from each session
- Sensory descriptions (smell, feel, sound near the ground) from different cultural and generational perspectives
- Photographs of soil profiles, organisms, and texture tests
- Audio recordings (from elder sessions) of soil memories
- Sensor data from the permanent monitoring stations during each workshop period
- The "Mein Wert / Sensor-Wert" comparison data (human perception vs. instrument)

Pattern potential: Micro-climate patterns, soil-life-seasonality patterns, the "warm strip" pattern (south-facing wall creates a temperature gradient), the compost-succession pattern, the moisture-memory pattern (soil remembers last week's rain), the smell-of-geosmin pattern (why healthy soil smells like rain).

From Appendix B — Token Economy (5 workshops)

- Token transaction cards (Green/Blue/Orange/Gold) from each workshop
- The Exchange Mapping worksheets (adults — showing existing reciprocal networks)
- The Memory Market Ledger entries (elder skill-knowledge exchanges)
- Game round data from the children's Garten-Wirtschaftsspiel (extractive vs. reciprocal round outcomes)
- Artist/researcher reflections on value-beyond-price
- Cross-border exchange documentation

Pattern potential: The reciprocity-radius pattern (how far does reciprocal exchange travel before it breaks down?), the skill-gap pattern (what skills the community is losing), the cross-border-exchange-barrier pattern (what prevents economic reciprocity across the political boundary), the elder-knowledge-reservoir pattern (specific knowledge held by elders that has no younger replacement), the repair-as-relationship pattern (the social bonds created by fixing things together).

From Appendix C — Bioregion Mapping (5 workshops)

- GPS tracks from all walking transects (children's loops, adult 5–8 km routes, artist 8–15 km routes, cross-border transects)
- Transition observation tables with coordinates, photographs, and descriptions
- The composite analog maps (colored overlays on satellite images) from each workshop
- The Memory Map (elder temporal bioregion)
- QGIS project with all layers: hydrology, geology, vegetation, land use, historical maps, administrative boundaries, participant GPS tracks, transition points
- Multiple boundary proposals (yarn on maps, digitized)
- Landscape Letters (adults) and turnaround reflections
- The cross-border "Same Landscape, Different Systems" comparison table
- Sensory Closure Maps (proxemic enrichment — which senses fade at what distance)

Pattern potential: The glacial-moraine-transition pattern (where sand meets clay, vegetation changes, water behavior changes), the Schlaubetal-microclimate pattern (the valley creates a temperature/humidity gradient distinct from the plateau), the border-as-ecological-continuum pattern (the landscape doesn't know about the border), the elder-bioregion-vs-contemporary-bioregion pattern (lived territory has shrunk but virtual territory has expanded), the acoustic-horizon pattern (how far you can hear the Schlaube from the campus).

From Appendix D — BNE Quality Framework (5 workshops)

- Learning Portfolio Sheets with Quality Star ratings (children)
- Quality Compass worksheets (adults)
- Elder Quality Criteria (community-generated quality principles)
- Residency Quality Reflections and proposed supplementary evaluation methods
- Framework Comparison Matrix with Cross-Border Quality Criteria
- Quality Ambassador reports (if ongoing)

Pattern potential: Quality evaluation data does not directly generate patterns *about the place*, but it generates patterns *about learning in the place*: the seasonal-engagement pattern (which seasons produce deepest learning?), the return-rate-as-quality pattern, the proxemic-depth-engagement pattern (workshops at intimate distance produce higher quality ratings), the intergenerational-knowledge-transfer pattern (what types of knowledge flow most readily between generations?).

PART TWO: From Observations to Pattern Cards

The Pattern Recognition Process

Pattern cards do not emerge automatically from raw data. They require a synthesis step — a moment when the facilitator (or a group of participants) looks at accumulated observations and says: "There is a relationship here. It keeps appearing. It resolves a tension. It has a name."

Step 1: Gather Everything to One Place

In January (the synthesis month), bring all year's materials to Zone E. Lay them out:

- All field sheets on one table
- All maps on the wall (analog) and screen (GIS)
- All token records and exchange maps on a second table
- All quality evaluation materials on a third table
- All photographs projected or printed
- Audio recordings transcribed and printed

This is the annual "material encounter" — the facilitator's equivalent of Ring 0 body-calibration. Before analyzing, simply look. Walk the tables. Let the materials speak.

Step 2: Identify Recurring Observations

Read through the field sheets and transect records looking for observations that appear independently in multiple workshops, across different target groups, at different times of year.

Example: In April, a child wrote on their Feldbogen: "The soil near the old wall is darker and warmer." In June, the resident photographed the same wall strip and noted a 3°C temperature differential. In November, an elder said: "My grandmother always planted her first lettuce against that wall — it was always the warmest spot." The children's bioregion transect in July recorded a vegetation transition at the same wall corner.

Four independent observations, from four target groups, across three seasons, all converging on the same spatial relationship. This is a pattern waiting to be named.

Step 3: Write the Pattern Card

Using the Pattern Card template (Section 3.1 of the main toolkit):

PATTERN CARD

Name: Die Warme Mauer / The Warm Wall / Ciepła Ściana

Ring: 1 (Site) — with connections to Ring 2 (Garden)

Location: South-facing exterior wall of the Heritage Hub (Zone E), 52.4428°N 14.4302°E

Discoverers: School class April 2026 (initial observation), Artist-in-residence June 2026 (measurement), Elder group November 2026 (historical confirmation)

Date & Season: First observed April 2026; confirmed across spring, summer, autumn

The Tension: The campus needs growing space, but Brandenburg springs are cold and the growing season is short. Building walls absorb solar radiation during the day and re-emit it at night, creating a microclimate — but only if the wall orientation, material, and surrounding planting work together.

What We Observed: South-facing Heritage Hub wall (brick, 60 cm thick, dark mortar, no overhang). Soil strip 0–80 cm from wall base is visibly darker, moister in spring, drier in summer. Vegetation in this strip is 2–3 weeks ahead of the open garden phenologically. Insects (particularly solitary bees) active at this wall face 3–4 weeks before the open garden. Elder confirmed: this strip has been used as early-season planting space "since before my time" — at least 80+ years of continuous use. The wall itself retains heat detectably (hand test) for 2–3 hours after sunset.

Instrumental Data:

- Soil temperature (10 cm depth): 3.2°C warmer than open garden soil 5 m away (June 2026, 14:00, senseBox station + hand thermometer)
- Air temperature (5 cm from wall, 15 cm height): 2.1°C warmer than ambient (same measurement)
- pH: 7.2 (wall strip) vs 6.4 (open garden) — lime leaching from mortar
- First bumblebee sighting 2026: wall strip March 28, open garden April 18

The Pattern (Proposed Resolution): A south-facing masonry wall of sufficient thermal mass (≥ 40 cm brick or stone), with a planting strip at its base (60–100 cm wide, well-mulched), creates a reliable microclimate 2–4°C warmer than the surrounding garden. This microclimate extends the growing season by 2–4 weeks and provides critical early-season habitat for pollinators. The pattern has been culturally recognized in this place for at least three generations. Where heritage walls exist, the planting strip at their base should be maintained as the garden's earliest and most sheltered growing zone.

Connections to Other Patterns:

- *Depends on:* [Ring 4] The Glacial Sand Substrate (the sandy soil at the wall base drains well and warms quickly — a different substrate might not respond the same way)

- *Depends on:* [Ring 1] The Heritage Building Orientation (the Heritage Hub faces south because of the street layout, which follows the medieval settlement pattern — the wall's orientation is not accidental but historical)
- *Supports:* [Ring 2] The Early Pollinator Corridor (the warm wall is the first food source for bees emerging in March — if removed, early-season pollinators would have 3 fewer weeks of forage)
- *Connects to:* [Ring 3] The Settlement Memory (elders remember when every south-facing wall in Müllrose had a planting strip — the pattern was once community-wide, now reduced to a few gardens)

Questions for Further Investigation:

- Does the north-facing wall of the same building create a cold microclimate? (Inverse pattern?)
- At what distance from the wall does the temperature differential disappear? (Pattern boundary?)
- How does the lime leaching affect which plants thrive in the strip? (pH-pattern intersection?)
- Do other heritage buildings in Müllrose show the same pattern? (Ring 3 extension?)

Status: Confirmed across multiple observations

Step 4: Look for Dependency Chains

Once you have 15–30 pattern cards from the first year, lay them out on the Zone E wall, arranged by ring. Use string or tape to connect patterns that depend on each other.

The dependency chain often reveals the deep structure of the place:

Ring 4 (Bioregion): The Weichselian glaciation deposited sandy outwash plain at Müllrose → which determines the sandy soil →

Ring 3 (Settlement): The sandy soil is easy to dig, hard to farm richly, good for brick-making → the settlement tradition uses brick → which creates thick masonry walls →

Ring 1 (Site): The thick masonry walls retain heat → creating the Warm Wall microclimate →

Ring 2 (Garden): The microclimate supports early-season planting and pollinator habitat → enabling the garden to produce food 2–4 weeks earlier →

Ring 0 (Body): Standing by the warm wall on a cool April morning, you can feel the radiant heat on your skin — the geological history of the last ice age, transformed through ten thousand years of deposition, centuries of building tradition, and decades of gardening practice, is detectable by your body at intimate proxemic distance.

This chain — from glacial geology to body sensation — is the pattern language speaking. It is what Alexander meant by "a web of recurring relationships that sustains life." And it was discovered not by a single expert but by the collective observation of children, adults, elders, artists, and cross-border neighbours across a full year.

Step 5: Identify Cross-Scale Resonances

Some patterns echo each other across rings. The Warm Wall pattern (Ring 1) resonates with the Schlaubetal Microclimate pattern (Ring 4) — both are instances of thermal sheltering created by mass and orientation. The valley shelters its stream the way the wall shelters its planting strip. The pattern repeats at different scales because the same physics (thermal mass, solar orientation, wind protection) operates at every scale. Noting these resonances enriches the pattern language.

Step 6: Identify Gaps

After mapping the first year's patterns, some rings will be rich and others sparse. Typical first-year gaps:

- Ring 0 patterns may be thin (body sensations are noticed but rarely formalized as patterns)
- Ring 3 (Settlement) patterns may be thin if most workshops focused on the campus rather than the town
- Winter patterns may be thin if most workshops ran in warmer months
- Sound patterns may be thin if the auditory channel was under-explored (the proxemic enrichment addresses this)
- Cross-border patterns may be thin if only one cross-border cycle was completed

These gaps become the programming priorities for Year 2: schedule a winter transect, add a sound-mapping workshop, extend Ring 3 observation into the town, run a second cross-border cycle with different participants.

PART THREE: From Pattern Cards to Pattern Language

The Narrative Synthesis

A collection of pattern cards is not yet a language. A language has grammar — rules of connection, hierarchy, and generativity. The pattern language of a place is the story of how its patterns relate.

The Wall Display

In Zone E, create a permanent wall display (minimum 3 × 2 m). Divide it into five horizontal bands, one per ring:

- | | |
|---------------------|--------------|
| Ring 4: Bioregion | [cards here] |
| Ring 3: Settlement | [cards here] |
| Ring 2: Garden/Near | [cards here] |
| Ring 1: Site | [cards here] |
| Ring 0: Body | [cards here] |

Place each pattern card in its ring band. Draw connections between cards with colored string:

- **Red string:** Dependency (this pattern requires that pattern to exist)
- **Blue string:** Support (this pattern nourishes that pattern)
- **Green string:** Resonance (these patterns echo each other across scales)
- **Yellow string:** Tension (these patterns are in conflict or competition)

Over the year, the wall fills. Visitors see the language growing. New participants can read existing patterns before going out to discover new ones. The wall display is the pattern language in its most public, socio-petal, participatory form.

The Narrative Document

At year's end, the facilitator writes (or facilitates a collaborative writing session for) the Annual Pattern Language Narrative — a prose document that tells the story of the place through its patterns.

The narrative follows the rings outward, as the toolkit does, but now with content:

"Erdpuls Müllrose sits on glacial outwash sand deposited 15,000 years ago by the Weichselian ice sheet [Ring 4: The Glacial Substrate]. The sand drains quickly and warms early — two properties that have shaped everything built and grown here. The settlement grew where water was accessible along the lake chain [Ring 3: The Lake-Chain Settlement], and the building tradition used brick fired from local clay deposits at the moraine edge [Ring 3: The Brick Tradition]. These thick brick walls, oriented to the medieval street pattern, create microclimates against their south-facing surfaces [Ring 1: The Warm Wall] that have been cultivated for at least three generations [Ring 2: The Early Planting Strip]. Standing against this wall on a cool spring morning, the radiant heat is perceptible on the skin [Ring 0: The Warm-Wall Body Sensation] — a direct, embodied encounter with the geological and cultural history of the place..."

The narrative continues through all discovered patterns, connecting them through their dependency chains and resonances. It is the pattern language in its most communicable form — a story that can be told to a newcomer, published, shared with partner organizations, and used as the basis for educational programming in subsequent years.

The Proxemic Structure of the Pattern Language

The pattern language itself has a proxemic architecture. Patterns at Ring 0 operate at intimate distance (body sensations, soil contact). Patterns at Ring 4 operate at public distance (watershed boundaries, geological formations visible only from hilltops). The language as a whole moves from intimate to public — from touch to sight, from particular to panoramic.

This means the pattern language can be *experienced* as well as read. A guided tour of the campus and its surroundings, following the ring structure, is a walk *through* the pattern language — and a walk through the proxemic gradient. Begin at the Warm Wall (intimate: touch the bricks, feel the heat). Move into the garden (personal: handle soil, smell plants). Walk through the settlement (social: read the building facades, hear the town). Climb the nearest rise and look toward the Schlaubetal (public: see the watershed, the forest edge, the glacial terrain). The tour is the pattern language made spatial — and it is, in proxemic terms, a progressive opening of the sensory field from all-channels-active to vision-dominant.

PART FOUR: Year-Over-Year Accumulation

The Living Pattern Language

The first year produces a draft pattern language — perhaps 20–40 pattern cards, a preliminary wall display, a first narrative. It has gaps, uncertainties, and unresolved questions.

Year 2 deepens it:

- New participants observe patterns that last year's participants missed
- Returning participants confirm, contest, or extend existing patterns ("I noticed the Warm Wall isn't warm in October — the sun angle changes")
- Seasonal coverage fills in: a winter workshop discovers the Frost Heave pattern that was invisible in summer
- The cross-border dataset grows: a second cycle adds Polish observations that enrich the Glacial Substrate and Border-as-Continuum patterns
- Elder contributions continue: each elder adds irreplaceable temporal depth ("There used to be a spring where the parking lot is now")

By Year 3, the pattern language is substantial — 60–100 patterns, rich in cross-scale connections, deepened by seasonal repetition, enriched by multiple perspectives. It begins to function as Alexander intended: a generative system that helps people make good decisions about their place. "Should we remove this wall? Let's check the pattern language — The Warm Wall pattern suggests it creates microclimate, pollinator habitat, and a three-generation gardening tradition. Removal has costs the demolition plan doesn't show."

By Year 5, the pattern language is a significant local knowledge resource — comparable to a comprehensive environmental survey but richer, because it includes embodied, cultural, and temporal knowledge that no survey captures. It is also a community achievement: hundreds of people contributed to it, their names on the pattern cards, their observations in the QGIS project, their memories in the audio archive.

Status Progression

Each pattern card carries a status field:

- **First observation:** Recorded once, by one group, in one season. Provisional.
- **Confirmed:** Observed independently by multiple groups, across multiple seasons. Reliable.

- **Contested:** Different groups or different seasons produce contradictory observations. This is not failure — it is data. Contested patterns are the most interesting because they reveal complexity the toolkit is designed to explore.
- **Refined:** A confirmed pattern that has been updated with additional detail, extended to a new scale, or connected to newly discovered patterns.
- **Archived:** A pattern that was once observed but is no longer present — the stream that dried up, the tree that fell, the practice that was abandoned. Archived patterns are the pattern language's memory of loss.

Over years, the proportion of "First observation" cards decreases and "Confirmed" and "Refined" increases. The language matures. But new first observations should never stop — they are the sign that people are still looking, still noticing, still discovering.

PART FIVE: Outputs and Uses

What the Pattern Language Produces

For Erdpuls Programming

- Workshop content: New workshops can be designed around specific patterns ("Today we investigate The Early Pollinator Corridor — who depends on the Warm Wall?")
- Seasonal themes: Each season's programming can focus on the patterns most visible/active in that season
- Returning participant continuity: A participant who discovered a pattern in Year 1 returns in Year 2 to check its status — did the frost heave damage the wall? Did the early bees return?

For BNE Certification

- Pattern cards are direct evidence of BNE Areas 2 (multi-dimensionality), 3 (experiential learning), and 4 (all 12 Gestaltungskompetenzen)
- The cumulative pattern language demonstrates BNE Area 5 (quality development over time)
- The cross-border patterns demonstrate Area 2.2.2 (global-local connection) and Area 4.1.1 (openness to new perspectives)

For Citizen Science

- GPS tracks, transition observations, and species counts enter the Erdpuls GIS database — available as open data
- Soil data, once standardized, can contribute to national and European soil monitoring networks
- The Sensory Closure Map data (proxemic enrichment) is, as far as we know, a novel dataset — the distance at which human sensory channels close in a specific landscape has not been systematically documented before

For the Community

- The pattern language is a knowledge commons — it belongs to everyone who contributed
- The wall display in Zone E is a public artifact — visitors see the community's collective understanding of its place
- The narrative document can be published, shared with the Gemeinde (municipal council), used in planning discussions, and offered to schools as local curriculum content

For Other Initiatives

- The method (not the content) is transferable. Other places will discover different patterns, but the process — concentric rings, phenomenological observation, citizen science data, collective synthesis — works anywhere
 - The Erdpuls pattern language can be compared with pattern languages from other places — what is unique to Müllrose? What is shared with other glacial landscapes? What is universal?
-

PART SIX: The Annual Synthesis Ritual

How to Run the January Data Synthesis

Timing

2–3 days in late January. Invite 3–5 participants from across the year's workshops (at least one adult, one elder, one returning young person if available). Quality Ambassadors are ideal participants.

Day 1: Material Encounter and Pattern Sorting

Morning (3 hours):

- Lay out all year's materials in Zone E (see Part Two, Step 1)
- Walk the tables in silence (Ring 0 discipline — attend before analyzing)
- Each person reads through one appendix's worth of materials and marks observations that recur, surprise, or contradict
- Report back: "What patterns did you notice?"
- First-pass grouping: cluster related observations on a sorting table

Afternoon (3 hours):

- Write draft pattern cards for the strongest 10–15 candidates
- Place on the wall display by ring
- Draw initial connections (string)
- Identify gaps: "Where did nobody look? What season is missing? What ring is thin?"

Day 2: Deepening and Narrative

Morning (3 hours):

- Review draft cards critically: "Is this really a pattern (a recurring resolution of a tension) or just an observation (a one-time event)? Demote single observations to "first observation" status.
- Write dependency chains for the strongest patterns
- Look for cross-scale resonances
- Integrate the elder Memory Map data: do elder memories confirm, extend, or contradict current patterns?

Afternoon (3 hours):

- Draft the Annual Pattern Language Narrative (collaborative writing: one person per ring, then edit together)
- Update the QGIS project with new layers and annotations
- Photograph the wall display
- Plan Year 2 programming based on identified gaps

Day 3 (Optional): Quality Report Integration

If the Quality Report is compiled simultaneously:

- Compile all Quality Star, Quality Compass, Elder Quality Criteria, and Residency Quality Reflection data
 - Match quality findings to pattern language gaps: "The children rated 'Did it change how I see things?' lowest in the mapping synthesis — that's the proxemic engagement drop we discussed. Next year we need sensory anchors during the GIS phase."
 - Write the Quality Report section on learning outcomes, using pattern cards as evidence
-

License & Attribution

© 2025–2026 Erdpuls Müllrose - Center for Sustainability Literacy, Citizen Science and Reciprocal Economics

Licensed under [Creative Commons Attribution-ShareAlike 4.0 International \(CC BY-SA 4.0\)](#)

All software components referenced in this document are licensed under the
[GNU Affero General Public License v3.0 \(AGPL-3.0\)](#)

This project uses the services of Claude and Anthropic PBC to inform our decisions and recommendations. This document and its translations were developed with assistance from Claude (Anthropic PBC). All strategic decisions, philosophical positions, and project commitments are those of the author.