

# **Some Notes on the Permaculture at the HoriZone Ecovillage**

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**by Starhawk**

While all the details are still fresh in my mind, I want to record some notes on the systems we created, what worked and didn't work, and on the overall process and organizing.

## **The Overall Site Design**

The site of the rural convergence was two fields behind the football stadium on the outskirts of Stirling. One field was close to twenty acres in size, but about a third of it proved to still have methane emissions on it from an old rubbish tip (dump) and we had to fence it off and left it unused. The second field was smaller, probably about ten acres. They were divided by an old farm road, lined with hedgerows of hawthorns studded with old oaks. Behind was a derelict farmhouse, bricked up and fenced off as the structure was unstable, and some room for trucks to turn around some live-in vehicles to park. We were able to use the parking area of the stadium for cars to park. The land was in a bend in the river, and the roundabout by the stadium was the only access for vehicles, although there was potential pedestrian access on the edges of the site. The River Forth was extremely dangerous, with swift currents, and surrounded by extensive mudflats that were meters deep. The soil was a very heavy clay, that retained for posterity every footprint of every cow that ever stepped in it, so much of the area was lumpy and difficult to walk on.

Activists from the Dissent Network had been looking for a site for months, and one possibility after another had fallen through at the very last minute, sometimes moments before signing, due to either community or covert police pressure. Finally, the site was found for us by the Stirling Council, which realized that thousands of people converging on the area with no place to stay would lead to public health and safety issues. But the delays and the bureaucratic necessities meant that we only officially got the site a week before the events began, and had very little time for specific design and setup.

A prototype site design for one of the earlier sites was done by a small group at the Earth Activist Training in May and presented to a Dissent meeting where it received strong approval. But just after the course finished, we lost that site. The Stirling Council, at the last minute, found us the site by the stadium, and we had a short time to rework a new site design. I worked with Beth to adapt the original design, and then together we worked with Robin and Amy of the 'bureaucracy bloc', the group who were

handling all the legal and financial aspects of the site for Dissent, and Sophie, who had experience in setting up festivals.

The mandate from the Dissent meetings was to organize the camp around 'barrios' or neighborhoods, each of which would be centered around a kitchen and a meeting space. The original design was based on a loop of road enclosing a 'village green', with meeting tents, IndyMedia, medics, etc. in the center, and kitchens and radiating barrios around the circumference. In the redesign, the loop became a meander linking the two ends of the farm road that divided the two camps. The concept was to keep roadway to a minimum, to save costs and labor, while providing vehicle access to kitchens and camp facilities. Lanes radiating out from the meander would be kept free from tents to provide emergency vehicle access to the outlying ends of the field. The second field had a simpler version of the concept, with one end roped off for the People and Planet group, who were having their own festival within the space and, because they included underage students, needed some form of separation. The lane between was pierced with key openings which led to destinations on either side.

In the design, we were consciously attempting to use the physical form of the camp to make visible and reinforce the social structure of barrios and affinity groups as decision making units, with central meetings and spokescouncils for overall coordination. We were using some specific patterns—circular spaces for meetings and gathering, the meander, a flow pattern, for movement. In the book *A Pattern Language*, architect Christopher Alexander and his team outline over a hundred patterns that define how physical space creates social space. One that he suggests is to have pathways run alongside the edges of gathering spaces, so that people can be drawn into conversations or activities, or choose to move on. The relationship of the main pathway to the kitchens and meeting spaces reflected this pattern.

Some aspects of this design worked beautifully. The kitchens and barrios functioned well, and some became true social spaces. The Irish barrio built a firepit, surrounded it with straw bales (which they purloined from the central fire circle) and every night were gathered around, playing fiddle, singing, reciting poetry, or having discussions. Because the overall ground was very rough and difficult to walk on, the meandering roadway became the quickest and easiest way to get around the site, and it functioned like a boardwalk, a place to go and meet people, to stop for conversation. It touched on many of the kitchens and meeting spaces, and it created eddies where music could be played or gathering could happen. It was an esthetically beautiful shape and a pleasure to walk.

The entry area also worked well in many ways. There was a roundabout, a parking lot with welcome signs, then a short walk to the welcome tent outside the main gate, with recycling bins just across. The main gate could be shut at need, and inside was a portacabin office, another portacabin staffed by National Health medics, a sandpit where some people and live-in vehicles camped, and a large paved area for supplies and general tat. The entry to the main camping area was further on. On the left, People and Planet had their own entry and separate area. On the right was the entry to the main field, and in the center, the farm lane through the middle, a pleasant, shady walk. The overall effect was of a graduated entry into a more and more private world, and it gave the camp a sense of enclosure and safety.

But the village center never did work as planned. During setup, someone dug a beautiful, heart-shaped central firepit. We surrounded it with straw bales and held some of our meetings there. But on the days when the actual setup occurred, the main meeting tents did not arrive, and the weather turned cold and rainy. We held meetings in the trainer's tent, nestled against the central lane. Someone built an offshoot of the roadway straight across the central area to the trainers tent, cutting close to the firepit and destroying the circular gathering space around it. The Irish barrio made off with the straw bales, and the space was never used again. IndyMedia, for reasons of its own, and the Power collective located themselves in the second field, along with the medics and two of the three largest kitchens, the Anarchist Teapot and the Belgian kitchen, where many people unconnected with specific barrios went to be fed. The smaller field became a de facto village green, while the central space remained fairly empty until more tents arrived later in the week. In the end, the physical space reflected the social decentralization that was also reflected in the organization of the actions.

Another aspect that was problematic was noise. The entertainment area was originally planned to be located on the far end of the smaller field, but the Council wanted it moved to be further away from the neighboring houses which were closest to that spot. Because it needed road access, possible locations were limited and it ended up very close to the meeting tent—a very bad location as several times the spokescouncils were disturbed by loud music. The music was also so loud that the entire camp was affected by it, and agreements about ending times were not kept. On one night, almost every barrio seemed to have their own sound system, and the disco went on until morning. This reflected some basic differences about the purpose of the camp and what kinds of activities were appropriate. Was it an action camp, or a festival? A meeting ground, or a party? Many people wanted some of both, but the needs and desires of those who wanted sleep and quiet were entirely overridden by the noisy faction. The overall site was too small to accommodate both amplified sound and sleep at any given time. Having to confront this issue, and the issue of drunkenness that went with it, gave the group a chance to wrestle with the very real-life applications of issues that are generally theoretical: how to balance individual freedom and social responsibility? When does the common good override an individual's desires, who decides and how? How do we enforce agreements when we are reluctant to use force? As fascinating as it was to watch the group wrestle with these issues, some of us would really have preferred some unbroken sleep.

Finally, the site was enclosed in a bend of the river and vulnerable to being blocked in by police. The enclosure did contribute to the sense of privacy, of being truly in a bit of that other world we say is possible, but the police did block us in for several days. Had we had any other choice, we would not have accepted the site for that reason, but we didn't. However, the police could undoubtedly have blocked us into just about any site, and the obvious vulnerability of this one did lead us to plan for it and have most people stay offsite the night before the first action day.

### **Composting Toilets:**

The design concept we used for the composting toilets was for barrel toilets, built around containers which could be removed, sealed before transport, stored, and left to

compost for two years, after which time we could assume that they were safe to use on trees and ornamentals. We came to that concept because we were originally told we could not do pit or trench toilets, where the toilets are built over a long and/or deep trench and then moved along as it is filled in. The barrel toilets are a good solution where groundwater is high and/or the compost is useful. Another advantage (over simply throwing it into a compost pile that will reach high enough temperatures to kill pathogens) is that no one has to handle the humanure or risk contamination until after it has undergone enough of a biodegrading process to be safe. Their disadvantage is that the barrels must be stored and transported if the humanure cannot be used on site. They also work best if liquid is kept to a minimum, although they can handle some urine. We encouraged people to pee elsewhere if that was all they needed to do, and the barrels remained primarily dry.

Like almost everything involved with this project, the information about what we could or could not do changed, and Jim, an activist who has built many toilet systems for Earth First! and other gatherings in Britain, got permission to build pit toilets, which he did. He has excellent designs for lightweight, moveable frames and simple seats which can easily be moved down the trenches, which were dug to a depth of two-three feet by a mechanical digger.

We were also supposed to get forty chemical toilets, but never got more than fifteen or so. For a camp of up to 5000 people, we were going to provide seventy-five toilets altogether, most of which were required by the Council to be chemical toilets that would be emptied and cleaned each day. In fact, getting them cleaned proved to be very problematic—at times the police wouldn't let the truck through, and in one incident a rowdy group from the camp apparently harassed the driver, and during the peak days of camp they became filthy and stinking. In the end, we built nine barrel toilets, and several banks of pit toilets, also three pee stations (basically, privacy screens over straw bales.) People also peed out in the fields and a few, in spite of the diversity of toilet options we provided, just went out into the open fields beyond the camp to shit. A noble crew eventually went out and buried the remains.

The constraints on the pit toilets were the limited area with high enough groundwater where they could be dug. We expanded them to the limit, and they remained reasonably pleasant to use and easy to fill in and close down at the end. The constraints on the barrel toilets were finding enough barrels, which turned out to be harder to get and more expensive than we'd hoped. We found one stash through a recycle website but they turned out to not be available when the truck to bring them was. Eventually we were given a bunch of wheely bins (wheeled garbage cans) due to be recycled, and built the toilets around them.

Building the toilets was essentially a carpentry project—providing a sturdy step up, frames around for privacy, and a roof to keep the rain off. With a bit more time and labor, we could have fitted the roofs for rain catchment. The other constraints were the difficulty of transporting full bins over rough fields, and the need to transport the humanure offsite for storage and eventual use. In retrospect, I would ideally use containers that are smaller than wheely bins in a situation where they need to be moved far and transported, as they become extremely heavy. But we did have a large pool of strong, burly people willing to do hard work, and we used them!

I would also arrange the ultimate transport myself before the action started. I delegated that task to someone else who offered to do it, then called me late on the Friday night before the take-down weekend to say he hadn't succeeded. Most rental agencies close midday on Saturday. I frantically arranged a second truck and driver, only to get a call at 11 AM on Saturday from the driver, to say that he had been unable to get the truck because he was missing one part of his license. Fortunately someone else found a truck that could be rented on Sunday, but the delay added to the stress and cost of the takedown.

Handwashing stations were provided near every bank of toilets, and people were encouraged to wash their hands after use and before eating. However, by midweek about forty people were down with a stomach ailment, that proved to be a virus, but for a short time there was fear among the medics that it was some bacterial dysentery or parasite.

However, the barrel composting toilets remained clean and pleasant to use throughout. Sawdust was added after each deposit, and they had little or no smell, in contrast to the chemical toilets. Changing the barrels as they neared full and keeping the toilets stocked were the major maintenance issues.

During the takedown, with few people left to defend the camp, the police got a search warrant and entered the camp for a thorough sweep search of the grounds. This was the day we were loading the wheely bins full of humanure to be transported away. While the police pawed through woodpiles and medical supplies and confiscated every golf club on the premises, after a quick glance inside one wheely bin they utterly ignored all the rest. We loaded the truck under the eyes of the Chief Inspector, and it was as if the wheely bins were covered with a veil of invisibility. For all he knew, we could have had the missing Iraqi weapons of mass destruction inside, yet he declined to investigate. There's something to ponder here.

### **Greywater:**

The greywater systems were designed to have three parts: filtration for food particles and grease, a bio-filter of gravel or wood chips that would provide a medium for beneficial bacteria, and a final soakaway, for the ultimate disposal of the water and natural filtration.

We set up greywater systems (or at minimum, drainage) for eleven kitchens and eight or nine handwashing sinks, including one at the Medic's tent which might potentially handle more contaminated water. The kitchens ranged from small ones serving twenty to thirty people to the Anarchist Teapot, which could cook for a thousand people. Each system was slightly different. The basic filter was a box or bin plumbed with a 1 1/2 inch (40 mm) outflow into a mulched soakaway. Some sinks drained directly into natural swales or woodlands, and those all worked well. Some of the bins were filled with gravel as a medium for biofiltration, others with woodchips, primarily to filter food particles and grease as they are a less effective medium for biofiltration.

We encountered some challenging situations with the greywater. The large kitchens use huge pots which they are accustomed to simply setting on the ground and dumping into

a soakaway. Indeed, they are too heavy to lift. There is no sink or strainer to filter food particles. We dug soakaways with a mechanical digger, and set our filter box directly into the ground, but the kitchens didn't always dump into it. The soil was such heavy clay that it mostly didn't drain at all. So many of the soakaways rapidly became lakes of greasy water.

Soakaways are a basically fine method for disposing of kitchen water, as the natural bacteria in the soil will take care of any pathogens in the water and the food particles will compost. Our systems were designed as demonstrations, and to provide extra filtration. But soakaways that don't soak away are really a demonstration only of how disgusting greywater can actually be.

Midweek, we brought back the digger and enlarged some of the soakaways. We were now considering them as storage ponds, so we redesigned some of the filtration systems leading into them. Juniper, a fellow member of our training collective RANT and an environmental engineer, contributed who expertise and took on a great deal of the responsibility for the greywater. For the Irish kitchen, one of the big ones, We calculated the amount of storage needed, and began digging a double pond with a smaller, primary filter area about 18 inches deep and four feet in diameter, designed so the kitchen could simply dump the big pots directly in. It led into a larger storage pond of about two feet depth and five feet in diameter, each with a shallower lip for water plants and to prevent anyone accidentally stepping in from landing immediately in waist-deep water. (They were also fenced.) A lip between the two sections would contain food particles and waists, and gravel and wood chips would line the first section. As we were digging the larger pond, however, we struck an old drain pipe that underlay the field. (The Anarchist Teapot soakaway had also, fortunately, hit drainpipe, and actually drained.) Immediately we redesigned the system again, now channeling in water from a nearby handwashing sink, lining the trenches with woodchips and building up baffles of straw inoculated weeks before with oyster mushroom mycelium, held in place by some impromptu wattling. We piled up the mounds of soil left by the digger to create a barrier to the pits, and planted flowers.

The Newcastle system had our most elaborate and successful biofilter—a bathtub filled with 1/4 inch gravel, with a baffle in the middle and plumbed with an outflow from the drain. The sink drained directly into the tub, with a mesh-lined basket to catch food particles. The biofilter was inoculated with pondwater, as well as lactobacillus and essential microorganisms that students in our permaculture course in May had cultured. It drained into a soakaway that we enlarged into a series of ponds, adding water plants and duckweed and azolla contributed by the Living Machine at Findhorn, the greenhouse/tub system that handles the wastewater of five hundred people. Michael Shaw, the engineer who designed the Findhorn system, was enormously helpful to us as well, and personally built the ninth barrel toilet when he came down to camp.

The bathtub gravel filter worked well, and never clogged, But the primary filter for food particles needed to be more substantial and much larger. In retrospect, I would redesign all the systems to empty first into some removeable filter for food particles, lined with straw or sawdust to soak up grease, and emptied after each meal into a compost pile. For the really big kitchens, I would make this a pit that drained easily into a larger soakaway or storage pound, deep and large enough so that a new layer of sraw could be added periodically and the whole thing could eventually be filled in to compost

in situ. Then I would put it through a biofilter with a gravel medium. Although we were experimenting with wood chips for these temporary applications because they are much lighter than gravel, they are not the best medium for bacterial growth and they are so light that they are easily displaced by a flow of water or float when water backs up instead of functioning as mulch.

For the Medics' sink, we did a small box filter that was half wood chips, half straw, separated by a baffle, and topped with a layer of straw inoculated with mushroom mycelium that break down toxins. This seemed to work well for handwashing although we have no way of really knowing how much actual biological treatment took place in it. Again, with more time and more people, we could have made the systems much more beautiful and planted at least temporary gardens around them.

## **The Process and Organization of our Permaculture Team**

In July of 2004, during an Earth Activist Training course in Gloucestershire, some of us hatched a plan to offer a special course in the lead-up to the G8 protests that could help train people who would be involved in setting up a rural encampment ecovillage. Many of the organizers in Scotland and Britain had been inspired by the ecovillage at Evian, and wanted to create something similar but even better near Gleneagles.

Finding a time and place for the course was difficult—holding it enough before the G8 so that people would have time to attend, but close enough to build on the tide of energy for the actions. Lots of thanks to Maren, Rooh, Nancy, Rob and Harry who worked on organizing it and finding a place for it.

Talamh was chosen as a site because it was close to both Gleneagles and Glasgow, a center of support for the actions, and very inexpensive, allowing us to offer the course cheaply or for free to activists. The course was conceived as having three parts: a weekend introduction to permaculture for those who had not taken a design course, a five day focus on systems for temporary situations, and a final weekend 'training for trainers', aimed at preparing those who had been through the course to pass on their skills. We expected to provide some design input into the ecovillage and be a resource for the groups already working on it.

In some ways the plan worked well. We did hold the course and something like forty people attended all or part of it. We did offer input into the design and set up and maintained some of the systems of the camp. A lot of valuable learning and awareness raising took place.

But the group never quite gelled as a team, and most of the people who took the course did not actually help with the setup of the ecovillage. Of those who did help, very few remained to maintain and monitor the systems during the week of action. Perhaps we didn't stress team building enough, or anticipate clearly enough the need for an ongoing group to help anchor the ecoprojects. We assumed people would be around or would return to help, who didn't. Others did, and we had lots of willing hands during setup, and even quite a few during take-down, but we could have used lots more.

Talamh as a site had the advantage of being welcoming, engaged in many permaculture

practices and immersed in the action preparations, but the disadvantage of being a place where lots of people were continually coming and going and there was a high degree of chaotic energy. The course design also seemed to make people feel it was okay to come and go whenever they wanted, instead of sticking with the scheduled beginning and ending times for components of the course. And—although I really hate to think this is true, I can't help but think that offering the course for free made people less committed to sticking with it and much more likely to not show up at the last minute or leave halfway through. The course organizers turned people down when the course seemed over-enrolled, only to have many people decide at the last minute not to come.

A course for organizers and activists meant that a lot of people who took the course were already heavily overcommitted to organizing other parts of the action. The mobilization itself was spread over three cities and included a whole, separate, organizing campaign around the Cre8 Summit. Moreover, there was almost an underlying energy of chaoticness that seemed to permeate the whole thing, beyond anyone's control. The sites we had planned on fell through, supplies we were assured were coming didn't come, marquis promised to the organizers didn't appear, etc. etc. During the leadup to the action, we tried to gather participants to build parts of the systems ahead of time, but in spite of all our efforts we were not able to get the people, the materials, and the tools together in one place at the same time until we were onsite.

I do give lots of credit to everyone who did come and contribute. I don't want to name people individually—because I'm sure if I did, I'd leave someone out! But I will mention one person who did far more than her fair share of the work—Eileen. She took on responsibility for transporting all the kitchen compost up to the Dunblaine allotment, building them a compost pile, and emptying the bags and barrels of food scraps throughout the week of actions. At the end, she rented and drove the truck that brought all the barrels of humanure up to the place where they will be used and stored—then ended up driving another full day to help with road take-down, making a late night trip up to Findhorn with leftover food, going back with the truck to Glasgow, etc. She had help and companions but she really took on the responsibility and made it happen. Thanks you, Eileen! And may your compost rot into super-fertile soil, forever!

With all of that said, we did succeed in teaching many people about permaculture, and in creating systems for the camp that demonstrated some of its principles and practices. We built nine compost toilets and more than twenty greywater systems in just a few days, maintained them throughout the week, and disposed of the results in eco-friendly ways. We composted the kitchen waste of thousands of people and left a resource for the community allotment. We created a camp that helped foster the social relations of shared power and responsibility. And we learned a tremendous amount.

For me, the most fulfilling moment came when, one morning, I was meeting with representatives for different barrios, explaining how to maintain their greywater systems and care for the composting toilets. Two young women were a little alarmed at the idea that they'd have to recruit their friends to change wheely-bins or deal with shit. "We can't get enough people to help in the kitchen," they admitted. But as we went on to talk about the greywater, one looked up at me. "I never really thought about where the water goes," she said. "I guess we're really privileged, most of the time, that we



don't have to think about it, or deal with our shit." And at that moment, I realized that with all its flaws, our project was a success.

### **For the Future:**

I've had lots of ideas about how to do temporary permaculture. I don't think I would replicate the particular model we used for this situation as far as the course and the organizing went. Instead, I would ideally get someone to do a course a year or six months ahead of time, or a series of courses, and then offer shorter trainings in the way the clowns or medics do, perhaps in modules that would focus on particular systems.

I would also build as much as possible on caravans or trailers or wheelbases that could just be towed out afterwards. Caravans can be cheap, and could, with plenty of lead time and some funding, be fitted out for composting toilets, showers and greywater, and even a compost bin on wheels that could be simply towed in and towed out again if necessary. I hear the German organizers are looking for land now...

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To learn permaculture, effective activism, and magic with Starhawk and co-conspirators Penny Livingston-Stark and Erik Ohlsen, see information on Earth Activist Training at [www.earthactivisttraining.org](http://www.earthactivisttraining.org) (page will open in a new browser window).

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