

Technology for Community Garden Operations

Community gardens use technology for communications, planning, management, and storing and sharing knowledge. Here, we refer to community gardens that serve as community centers: spaces for rest, relaxation, play, activism, local arts & culture, educational workshops, and volunteering.

These community gardens are organizations rooted in locality and are composed of many different kinds of members varying in age, background, and technical ability. The choice of technology used should match the unique needs and principles of community gardens:

- Accessible, where practical, to those who are non-technical, prefer not to use digital technology, cannot manage user accounts or passwords, or speak English
- Redundant management. Systems should not be administered or dependent on any one person.
- Easy to administer even by someone who is not particularly technical.
- Inexpensive, even if the technology is not as powerful or featureful
- Flexible. The backend technologies should be able to be changed without overly affecting end-users.

In order to accomplish these goals, there are a few core ideas regardless of which technology your garden chooses:

- Use mailing lists for internal communications. Email is still the gold standard for accessibility. Essentially everyone knows how to use it, it does not require a smartphone, it does not require anyone to sign up for a particular 3rd-party service.
- Own your domain name. The website, mailing list, etc. should reside under a domain name owned by the community garden to allow easily switching the backend system without disruption of service. The "main site" should not be a social media page like Instagram or Facebook (though it can link to them).
- Information like newsletters, calendars, bylaws, meeting notes should be printed out and physically available at the garden.
- Posters and critical information should be translated to common languages of the surrounding community.
- For most online resources, prefer open permissions ("anyone with the link") over requiring logins, where practical
- Do not require sharing email accounts/passwords. These days, email providers, especially Google, make sharing email accounts very difficult. Instead, create a mailing list group (e.g., contact@garden.org, webmaster@garden.org) including all the members who need access to external communications or all members who administer garden technology.

Our Technology

At Green Oasis Community Garden, we currently use the following technology stack. It has evolved slowly and organically over time, and still has lots of room for improvement. We try to follow the above principles but are not successful in all respects. Let us know if you have suggestions!

Summary

We have a mailing list containing all garden members. Our website, greenoasisnyc.org, embeds our public calendar, and has a password-protected internal members portal. The internal page includes links to documents such as meeting notes and bylaws, the internal calendar, and open hours signups.

- Domain registrar: Porkbun
- Garden-wide mailing list: Google Groups
- Webhost: Bearblog.dev
- Newsletter: Bearblog.dev
- Mailing lists for each committee and shared inboxes: Google Groups
- Mailing list addresses at our own domain through Google Workspace for Nonprofits
- Public and internal shared calendars: Google Calendar
- Knowledge sharing and file storage: Google Drive with "anyone with the link" permissions
- Event requests: Email template sent to a shared inbox
- Donations: Venmo and Paypal
- Open hours signup: Google Calendar Appointment Scheduler
- Photo album: Google Photos
- Social media: Instagram and Facebook
- Analog media: posters, guestbook, printouts of calendar, newsletter, bylaws, etc.

Garden meetings

The basis for communications is our biweekly in-person garden meetings, where we sit down at the garden and discuss any relevant matters. Because as much discussion as possible is pushed to these meetings, digital communications are kept to a minimum other than time-sensitive topics. At each meeting, the secretary takes meeting notes and uploads them to a shared Google Doc.

Internal communications

The garden primarily communicates on a mailing list hosted on Google Groups. New members are added by email by the secretary, and do not need to have a Google account to participate. Email is relatively infrequent; around 5-10 emails per week, and members are encouraged to take long discussions or debates to private messaging or garden meetings. Before each meeting, the secretary sends a reminder. After each meeting, the secretary sends the meeting notes to the garden. These emails may also include upcoming events and other important information.

Some gardens prefer to use messaging apps such as Whatsapp or Signal. While these can work well for small gardens, they become very noisy in medium-to-large sized gardens. We find email is more suitable for general communications. Additionally, it doesn't require everyone to have to sign

up for a particular app, and is accessible to those without a smartphone. Email offers fine-grained filtering and controls so people can choose exactly how often they want to get notifications (for example, Google Groups allows users to choose to get a daily digest rather than every single email). A downside is that email is not encrypted, so some gardens may opt to choose a platform like Signal if security is a paramount concern.

Our garden is divided into committees of 5-10 people for Gardening, Events, Composting, etc. Each of these committees has its own mailing list, as detailed below. An alternate approach could be to create a Whatsapp or Signal group which may be effective for these smaller groups.

External communications

We aim to make our communications accessible to all of our neighbors, and at the same time, reduce the amount of work we have to do.

Our website hosts our public calendar of events, a link to sign up to our newsletter, and information about the kinds of activities we do at the garden, how to volunteer, how to become a member, how to apply to host an event, how to donate, the history of the garden, and photos.

We have a monthly newsletter, where we briefly describe upcoming events for the month, meetings, and volunteer opportunities, as well as recent work we've done at the garden and some photos of plants or animals. Our goal was to write this newsletter once and syndicate it across multiple channels. To keep up with the garden, one can sign up by email, follow the RSS feed, read it on our website, read it on our Instagram, or read a printed out copy on a cork bulletin board outside our garden.

Finally, the garden does have Instagram and Facebook accounts, and members do post to these. However, keeping these platforms updated was a lot of work, and we found that many neighbors were not on social media themselves. Our syndicated newsletter strategy addresses multiple channels with a limited amount of work from garden members.

The newsletter is currently hosted on Bearblog.dev.

Website

Our website is currently hosted on Bearblog.dev. It is quite simple and inexpensive. Editing is in Markdown which is user-friendly enough.

The website includes an internal members portal that is password-protected. The password is simple, easy-to-remember, and does not rotate. The members portal links

- Open hours shift signups (through Google Calendar appointment scheduler)
- Editable Google Docs of member directory, meeting notes, bylaws, and helpful information
- Link to the shared Google Drive with all shared files
- Instructions for how to add events to the public and internal Google calendars
- An embed of the internal Google calendar

The domain name is registered with Porkbun, which is cost-effective and simple. Namecheap is also a good option.

Google Workspace for Mailing Lists

Our community garden is a registered 501(c)3 non-profit, which allows us to sign up for Google Workspace for Nonprofits at no cost. We are primarily using this to create mailing list addresses at our domain name.

In addition to our general mailing list, each committee (such as Gardening or Events) has their own mailing list, and the secretary adds new members to the committees they wish to join.

We also have three special external-facing lists: contact@greenoasisnyc.org for receiving external inquiries (this email is posted on our website), events@greenoasisnyc.org for event requests, and webmaster@greenoasisnyc.org, which is the email address all accounts (like web hosting and social media) are registered under. For each list, the people who are interested in those communications are added to the mailing list. Google Groups requires you to specifically allow these groups to receive external email in the account settings. Spam can be an issue, as we've posted the contact and events addresses on our website. The built-in spam filter for Google Groups works very poorly, so we unfortunately had to turn on manual approval of all email, which a few people are responsible for (so everyone else does not get spammed).

Before, we used to have a shared Gmail account where we would receive external inquiries and use for account registrations. These days, Google strongly discourages sharing Gmail accounts, sometimes requiring 2FA by phone number, which made it very difficult for multiple people to access this inbox. One person, whose phone was registered for 2FA, would have to tell others the 2FA code every time before they could log in. This mailing list system makes it so no one needs to remember another password, for email to go directly to your personal inbox (which can be filtered as desired), and there are no more issues with members being locked out. It also easily lets us add and remove people from the mailing list without needing to change the password.

The workspace is administered by a few people (should not be only one, to ensure redundancy) who are reasonably technically adept. However, no one else needs to make an account in the workspace, and all groups add the members' own personal email addresses (not necessarily Gmail).

Knowledge sharing

We created a shared drive in Google Drive. The shared drive is created in the Google Workspace and owned by multiple people, and the settings allow people outside the organization to access files.

The shared drive includes meeting notes (a single running document), a member directory (names, phone numbers, and email addresses for all current members), list of committees and members, garden bylaws. It also includes other files like graphics, grant application materials, historical archives, and so on. The permissions allow anyone with the link to edit or create any document.

There are two documents outside of the shared drive. One includes passwords for accounts such as the website, social media, and blog, and is shared with anyone who wants to edit the website or post to social media. The other has the password for the domain registrar, and is only accessible by a few trusted people.

The internal page on the website includes a link to the shared drive, as well as direct links to the most important documents such as the meeting notes and member directory.

Some documents, like the bylaws, are printed out and kept in a binder in the gazebo at the garden.

Calendar and open hours signups

There are two calendars created on Google Calendar. One is public list of events, garden meetings, and workdays. The other has private events and the open hours schedule.

It's currently not possible to give edit access to "anyone with the link" to calendars, so access is granted to the mailing list: if one is signed into Google with the email address in the mailing list, then they can add and edit these calendars. This does not require a Gmail account; anyone can create a Google account with an email address from a different provider. In practice, this seems to be confusing for people, so the secretary can just add their Gmail address to the mailing list (if they have one) to solve this issue.

The internal page on the website includes links to add both of these calendars to their Google Calendar. Once they have done so, users can create events and then select the 'Calendar' as the public or internal calendar (this is easier on desktop compared to mobile). The public calendar is embedded on the website events page for everyone to see, and the internal calendar is embedded on the internal page.

Our garden requires members to hold the garden open for two weekend days per year; otherwise, it is locked. Google Appointment Schedules has proved to be an effective way for us to organize and communicate signups. In the internal calendar, there is an appointment schedule that makes slots for each weekend day, and automatically sends reminders to those who have signed up. The internal page has a link to the signup form where users can see what slots need to be filled. This does not require a Google account.

The calendar (both public and internal) is printed out every 2 weeks by the secretary and placed in the gazebo at the garden after every garden meeting, so garden members and outsiders can see what the upcoming events are without going online. The open hours signup seems to be easy enough for most people, but some garden members may need assistance. We used to use a paper signup system on a giant calendar in the gazebo, but members could not access this calendar at home, and people often forgot they had signed up for a shift.

In addition to being posted on our calendar on the website and the syndicated newsletter, some events are submitted to external aggregators such as NonsenseNYC, The Skint, cal.red, NYC Parks Events, and Eventbrite. Additionally, we sometimes print out event flyers and post them on street poles and bulletin boards of local coffeeshops and bookstores.

Event requests

We get event requests for people outside the garden wishing to host community events, such as free concerts, drawing workshops, and theatre performances. We have our calendar and event rules on our website events page. In addition, we have an link prefilled with a form template that emails events@greenoasisnyc.org (a mailing list for anyone interested in fielding external event requests). Such a link can be generated with a "mailto link generator" you can find online. The actual template is pasted directly on the website as well, because this does not work for all people, especially if they are not logged into their email account on the device they are accessing the website with.

This email template includes all the required information, like dates requested, event description, and so on.

In the past, we used to use Google Forms, but have found the email based form system is more convenient as people can directly reply to the event request and everyone on the events mailing list is kept in the loop.

Photo sharing

We have a shared Google Photos album. The link to join is in the internal page on the website. Members can add photos and videos to this album. In practice, this is a bit cumbersome, and we would like a system that is easier to use.

Donations

We have Venmo and Paypal accounts to which members can pay dues and people can donate money, managed by the treasurer. We also have donation buckets in the garden for cash donations.

Garden guestbook

We have a paper notebook in the gazebo for guests to leave feedback about the garden. The resulting comments are quite gratifying and motivating.

Posters

We created a poster with our garden open hours, ways to get involved, meeting and workday schedule, and newsletter signup. The poster is translated in English, Spanish, and Mandarin Chinese and posted on our garden gate. In addition, we plan to create miniature versions of the poster and pin them up at local coffeeshops' and bookstores' bulletin boards. Posters are important because the audience for a community garden is very local. We want to reach people who are already active in the neighborhood (no matter what language they might speak), and physical media is much more effective than digital media for this purpose.

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